

The magazine for **AUSTRALIAN** radio amateurs

Volume 75 Nos 1 & 2
January/February 2007

Amateur Radio



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2006
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Aussie scouts get into amateur radio

plus

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Amateur Radio

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Note Icom and Wyong,

Outside Back Cover advertisement. There has been a late change of arrangement and the donated door prize will now become a raffle prize instead.

Our Cover this month

**Nathaniel,
VK3FNAT, at the
21st Australian
Jamboree.**
See our cover story
on page 11.



Photo:
Robert Broomhead

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

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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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International Amateur Radio Union

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Editorial Comment

Peter Freeman VK3KAI

Here we are at the start of a new year. I trust that you all enjoyed the festive season. Personally, all went well. I spent several days engaged in family activities, which tends to happen at that time of the year. The down side – the radio gear was predominantly in the OFF state and it appears that I missed lots of Es propagation events on the six and two metre bands! I am sure that David Smith VK3HZ and his team will have coverage in the VHF/UHF column. I was lucky enough to come home early from work one day last week to find that two metres was open to VK4, resulting in seven contacts. Now that the “silly season” is behind us, we need to think of other activities and tasks.

AJ2007

Early January saw significant exposure of amateur radio to an almost captive audience of over 10,000 young Australians. For almost 2 weeks, amateur radio was one of the on-site activities at the Australian Jamboree 2007 held at Elmore. See our cover story, which outlines the VI3JAM station and reports on the ARISS contact with the International Space Station. The ARISS contact sounded great, even though I could only hear the signal from the ISS whilst monitoring the downlink frequency from Churchill. Two neighbours that I invited into the radio shack to listen certainly found it fascinating.

Weather and its consequences

Much of Australia has been experiencing low rainfall for an extended period – at least six years here in the Latrobe Valley in south-eastern Victoria. As a consequence, much of the country is very dry. Combine that fact with high wind days, some thunderstorms and the undesirable activities from some people with anti-social attitudes and the inevitable occurs – bush fires. Here in Gippsland, the fires started in early December. They are still burning as I write this report, in the middle of January. Fortunately, most of the fires have been in the “bush”, with little impact on private property. Some houses were lost and one person died after falling from a trailer whilst in motion.

There have been fires in other areas as well – I trust that few individuals have been impacted directly. Here, we have had many days with the air filled with smoke, making life uncomfortable and physical activity outside inadvisable, due to the high concentration of smoke particles.

Throughout much of the period, WICEN in Victoria has been on “standby”, although mainly unofficially. There have been official periods of standby status and activations. A dedicated band from RECOM – a group of trained amateurs who are also members of Red Cross – have been active in maintaining the flow of information regarding the movement of displaced people and providing back up communications to the Red Cross Emergency Relief Headquarters.”

Official WICEN members are usually in a good state of readiness, can you say the same? If a major event occurs, the normal communications channels rapidly become stressed by the increased usage. This will often result in an activation of WICEN. With very large events, additional volunteers may be required. Are you prepared? One way of checking your preparedness is to participate in one of the Field Day contests. As I write, the Summer VHF/UHF Field Day is less than a day away. By the time you read this comment, it will be well gone and the logs submitted. Your next chance will be the John Moyle Memorial Field Day Contest. The rules are listed elsewhere in this issue and are also available on the WIA website. With both six hour and 24 hour sections, you do not need to commit the entire weekend. Please participate, even if only as a home station. Remember to send in your log – give Denis VK3ZUX/VK4AIG some more work as Contest Manager!

As has been the practice for several years, the January and February issues have been combined. We will be back to our regular monthly schedule from the next issue.

With lots of content and the Annual Index, I must apologise for not including the VK7 and Moonta ARC news items. These should appear next month, when more space should be available.

Cheers,
Peter VK3KAI

What is amateur radio?

The WIA started the year 2006 with 3,675 members and by the end of 2006, there were 4,113 members of the WIA.

This represents a 12% increase in the year, reversing the annual drop of around 5%, which until a couple of years ago had almost become accepted as inevitable, with what many considered to be a dying hobby.

That increase is very important, because the WIA can either grow or shrink. It cannot just stand still. If it shrinks, it cannot afford to offer members more services, rather it may have to restrict what it does offer and so being a member is less attractive.

The total cost of the basic administration of an organisation of 4,000 members is not that much different from the total cost of the basic administration of an organisation of 5,000 members. As an organisation grows, so it can afford to provide better services for its members, and importantly for the longer-term security of the organisation, ultimately employ a qualified and experienced manager. As the organisation grows, so it should become more attractive to be a member, and so it should continue to grow.

Of course, there may be a number of reasons for the current increase in WIA membership, including at least 1,000 new amateurs in the period, thanks to the Foundation licence, a better image of the organisation, perhaps avoiding conflicts and what is so often called "politics", perhaps better marketing, perhaps a better recognition of what the WIA does to represent amateurs as the advocate for amateur radio, perhaps an organisation that is seen as vital for the qualification of amateurs, perhaps an organisation that is seen as being more open, perhaps all of the foregoing.

I am sure that a major contribution to the increasing membership is the fact that the number of amateurs is increasing.

But how do we attract new amateurs? Or, at least, generate a better awareness as to what amateur radio can be?

One of the things I have repeatedly been told when I have visited clubs is the need for a new, attractive brochure,

to promote not just the WIA, but amateur radio generally.

We have now produced such a brochure, and we are enclosing a copy with each mailed copy of this month's AR.

It represents a lot of time and a lot of effort. Many people have contributed to the concept and we have had the assistance of a professional design company. It attempts to identify amateur radio in association with a whole range of activities. We have attempted to make it socially relevant.

I do hope you like the new brochure, and even more importantly, you will be able to make use of it.

We will also be sending a number of copies to each affiliated club, and we will be able to provide further copies for particular events.

To produce such a brochure costs money. We believe that in today's world of sophisticated marketing and eye grabbing competition, we have to produce high quality brochures and other materials (such as the Foundation Licence Manual) to be effective.

We want to grab attention, and to encourage the reader to seek more information.

When I first started writing this "Comment" I assumed, in a very non-analytical way, that how best to use the brochure as a tool was obvious. But then I started thinking about that, mainly because I had a couple of hours with Robert Broomhead, who with Phil Wait, were the two Directors behind this project.

It is interesting, isn't it?

How we can best use the brochure depends, I suspect, on two major factors – where you are and what you identify as the best opportunities.

It may be placed on the community notice board in the local supermarket, perhaps it may be available in the local library, or at the local high school, perhaps it may be useful at a local Rotary or Lions or similar meeting, it may be at a display, or (as I found only yesterday at the 21st

Scout Jamboree at Elmore as they made contact through amateur radio with the International Space Station) at a major Scouting event.

The more I thought about it, the more apparent it became that how a marketing tool is best used may be quite different in each capital city, but even more different outside the cities and in remote parts of Australia.

That is why I really do hope we receive feedback from individuals and clubs, identifying the best means of using the brochures in the environments they know.

It is also why I see the role of the clubs as vital, just as vital as they are in the whole education program.

I know that many clubs conduct amateur radio displays at shopping centres, festivals or at other special events. Some operate special event stations at museums and the like, and some are involved in the Scouting movement and in setting up displays for Scout groups and the like. We hope that at all these events those conducting them will be assisted by an appropriate brochure.

But at the same time it doesn't make sense to have a whole bunch of brochures sitting in a box in a clubroom doing nothing or overflowing in brochure stands but not being read. That is why we have decided to send them in appropriate quantities for a particular event.

And of course we want feedback, so that we know how they are working.

The WIA is asking its members and clubs to share with us their comments on the brochure, how they have used them and on their effectiveness in delivering the message.

The WIA Board hopes that we have produced a useful tool, which at least goes some of the way to answer the question that is the title of this "Comment".

In the end, the objective is simple: let's work together to make amateur radio grow and the WIA better and stronger.

ar

WIA news

Late delivery of AR in December

Some members did not receive their December 2006 issue of Amateur Radio until after Christmas.

It appears that Australia Post gave priority to Christmas mail, and unfortunately this was the result.

If you still have not received your December issue by the time you receive this issue, please let the office know and you will be sent a replacement copy.

The WIA responds to Discussion Paper

On 13 November 2006, ACMA published on its website a discussion paper by their commissioned private consultants, Spectrum Wise Radiocommunications Consultants, reviewing government spectrum holdings. It sought comments by 31 December 2006.

The amateur service must have an interest in this review because of the existing spectrum sharing arrangements with government bodies through "secondary user" status recognised in the Australian Radiocommunications Spectrum Plan. The main "primary user" is the Department of Defence. These bands are most of the bands between 420 MHz and 24250 MHz.

WIA President Michael Owen VK3KI appointed a group of experts to advise the Board on the issues raised by the Discussion Paper and, if thought appropriate, prepare a submission.

The group consisted of Peter Young VK3MV, licensed since 1965, with a background as a maritime communications engineer and former ACA/ACMA Regional Manager. Peter was the first Manager, BPL project team, for ACMA; Keith Malcolm VK1ZKM, who has been a licensed amateur since 1967 and is the retired manager of former Department of Communications, IT and the Arts Communications Laboratory, with extensive experience of ITU-R Study Group and WRC meetings, and the WIA's nominated member of the Australian delegation to WRC-07; and John Martin VK3KM, a licensed amateur since 1967 and Chairman of the WIA Technical Advisory Committee.

Peter acted as chair and WIA Secretary Ken Fuller VK4KF acted as coordinator and rapporteur to the group.

The group recommended to the Board that the WIA make a submission, which they had drafted. The WIA Board accepted the recommendation, and just before Christmas, it was lodged with the Consultants. A copy of the submission has been placed on the WIA website.

In releasing the WIA's response, the President said that the WIA Board acknowledges with gratitude the valuable work of this group, whose expertise and knowledge must be very hard to equal.

The 2007 John Moyle Memorial Contest

WIA Director, Trevor Quick VK5ATQ released the following statement in early January:

If you think you are ready for providing communication assistance at any time then give it a try. You will be surprised at all the things that can go wrong, or right if you plan well. A great way is to combine your trial with a contest. The most appropriate is the John Moyle.

The aim is to encourage portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation. The contest takes place on the 3rd full weekend in March and runs from 0100 UTC Saturday to 0059 UTC Sunday, 17-18 March 2007.

This is your chance for a time away from home, to play radios, and test your skills. You will meet a lot of fellow amateurs as well. Enter either the 6-hour or the 24-hour section. Designed for you to enjoy, so send your logs to Denis Johnstone VK4AIG / VK3ZUX and make sure he has plenty to do as Contest Manager.

Details and the official 2007 rules can be found on the WIA website.

ISS contacts Australian Jamboree

On Sunday 7 January 2007, at about 2115 local time, Suni Williams KD5PLB on board the International Space Station made contact through Bill Lynd VK4KHZ via the Telebridge with the station established by the Scout Radio and Electronics Unit (Victoria) at the 21st Australian Jamboree at Elmore, north central Victoria.

20 Scouts who had won a competition for submitting the best questions were lined up and ready to ask their questions

during the 10 minutes the space station was in range.

The contact was repeated on the Jamboree FM station, and is available on the WIA website. In addition, several hundred people at the Jamboree were listening to the almost perfect signals.

The contact had been organised by the Australian ARISS coordinator, Tony Hutchison VK5ZAI, with NASA.

The amateur radio activities at this Jamboree of over 11,000 Scouts had been supported by ICOM, the Wireless Institute of Australia and Amateur Radio Victoria, and were a great success, with many Scouts now seeking to get their Foundation licences.

ARRL takes the FCC to court over BPL rule

The ARRL, the national society of radio amateurs in the USA, has filed a Petition for Review in the United States District of Columbia Circuit, seeking a review of the Federal Communications Commission's (FCC) recently adopted rule that exempts BPL operators from having to do anything to correct interference to mobile operations other than to notch emissions to a level 20dB (below 30 MHz) or 10 dB (above 30 MHz) below the absolute limits specified elsewhere in the rules.

The FCC is the regulator of non-government spectrum in the US.

Essentially, the ARRL (supported by two other parties intervening) is saying that the FCC has ignored certain facts that it should have taken into account in formulating its rules.

If the ARRL succeeds, the Court will order the FCC to reconsider its decision taking into account the facts that it previously failed to take into account.

The Court will not substitute its judgement for that of the expert agency, nor will the decision deal with more than this rule affecting mobile operations.

This sort of legal challenge is very expensive, no doubt the ARRL Board has acted very carefully, but are convinced that a successful outcome will influence the FCC to act in the future having better regard to its legal obligations.

Unfortunately, because of the very narrow issues of fact involved and the very specialised nature of administrative law, the US case cannot be seen as a model for Australia.

The magical (noise cancelling) properties of Delta Loops

Felix Scerri VK4FUQ,

Yes, I know we're all concerned about BPL but, as I recently remarked to someone, 'BPL, that's nothing. I've got severe power line noise!' Blessed (cursed?) with aerial power lines in my location, power line noise 'hash' has been a very long time problem at this QTH (since at least the mid 1980s, when I was first licensed). By its very nature, it is dependent upon general weather conditions and, as such, can be highly variable in its appearance and intensity. It is often so severe that interference is evident on the VHF FM broadcast band and UHF television channels, not to mention the HF bands!

Speaking of the HF bands, trying to read any station through an S9 noise level is a painful and demoralising experience, let me assure you! Noise blankers have very little useful effect, and DSP units are marginally useful, but not a cure. Particular antenna configurations can be useful, but nothing really solves the problem to any great extent.

However, perhaps now I have at least 'cured' the problem as much as it is ever likely to be! In some ways I have been revisiting the past, as the solution involves the use of an antenna type that I was heavily involved with, particularly on 20 m, when I first became licensed in the late 1980s, 'The One Wavelength Delta Loop'. In those days, when I had several pipe masts available to me (sadly, no longer the case), a favourite configuration of mine was the 'inverted' Delta Loop supported between two pipe masts.

Apart from the general excellence of that antenna, as a result of several experiments, I had noted at the time that general power line noise hash pickup could be minimised by a specific feed-point position along the loop. As the loop runs through both horizontal and vertical planes (when mounted 'vertically'), it is easy to vary the general polarisation of the antenna through feed-point position. Due to changed circumstances, it has been many years since I've been able to erect a Delta Loop antenna. However, spurred on by this maddening power line noise hash, I decided to give it another go, at least on the 20 m band.

Having only one 10 metre pipe mast available, I erected a Delta Loop antenna as a triangle, with the apex up. It was initially fed (with balanced feeder as a 'tuned line'), in the middle of the lower horizontal section. Sadly, no real reduction in power line pickup was noted, compared to my standard inverted V antenna.

Next, I tried feeding it at one of the

corners along the bottom horizontal section. The result was a very marginal improvement but not significant. I was ready to give up on the loop, but there was one more position to try – feeding it at the top. It was at this point that I was glad I use pulleys on the mast, something that makes raising and lowering an antenna relatively easy. I quickly reconfigured the antenna with the feed-point at the top and pulled the loop into shape.

I went upstairs and switched the transceiver on. The noise level on receive, previously around S7, now was only S1-2. A remarkable reduction in noise pick up. To be sure, I looked out the window to check if the antenna was still up. It was! This was clearly the optimum feed-point position for minimal noise pickup.

One of my antenna texts tells me that the antenna polarisation in this case should be 'mixed', containing both horizontal and vertical components. Whatever the reason, it works just fine. It would be interesting to find out if the Delta Loop is actually preferable to a traditional Quad Loop owing to this 'mixed' polarisation profile. It is indeed a pleasure to be able to hear signals normally hidden beneath the power line noise. The power line noise is still there, even on the Delta Loop, but at least now it's at a tolerable level. The reason for this improvement is probably complex but, without a doubt, being able to tweak the overall antenna polarisation is the key; and as I already knew, the Delta Loop is a pretty good antenna overall!

It would be nice to see if this noise reduction can be further enhanced. However, my personal feeling is that individual noise problems are likely to be unique and, as such, will need to be customised for best results. Certainly, carefully optimising the feedpoint position on my 20 m Delta Loop has effected a great reduction in power line noise hash pickup at this location on that band.

It is interesting to note that, before I decided to erect the Delta Loop, I had tried different 'orientations' with my standard inverted V antenna. No reduction in noise pickup was noted during those tests. Sadly, it would appear that 20 m is the only band where I can take advantage of this approach, given space and other practical considerations. Having said that, if you are plagued with severe power line hash interference and/or other noise problems, and are able to erect a full wave Delta Loop, then this approach is worth trying.

It has been nice to re-establish my earlier love affair with the Delta Loop antenna, even though this latest investigation has been prompted by a strong desire to ameliorate the effects of severe power line hash interference. I had initially thought that the 'triangle' form of the Delta Loop I ultimately used would suffer from a big reduction in 'effective' height compared to other loop configurations or simple dipoles. But, at least on 20 m, I've noticed absolutely no performance deterioration compared to my usual 20 m inverted V with a top height of 10 metres. I suspect that 'top' feeding actually helps matters here as well.

In fact, using the Delta Loop for an extended period has made me realise that there is something special about the Delta Loop antenna overall. Those who've also extensively used full wave loops in their various forms, either singly, or as a parasitic array, will probably know what I mean. Anyway, I'm very happy with mine. It's an easy antenna to erect, works very well and, best of all, with a little 'feedpoint position optimisation', is a very quiet antenna 'on receive'.

Incidentally, the Delta Loop data is as follows: length formula l (ft) = $1005/\text{frequency}$. Each side length is 1/3rd of the formula length (equilateral triangle).

ar

A 50 ohm, 200 W dummy load/power meter

Draw Diamond VK3XU

When extended tests are performed on transmitting amplifiers, it is preferable that the transmitter's output power be absorbed in a non-radiating "dummy load" of appropriate impedance, for which a purely resistive element of (usually) 50 ohms is required.

Ordinary wire-wound resistors - the usual method of obtaining higher power dissipation - have far too much self-inductance for radio frequency work. Non-inductive high-power metal-film resistors are available in some values, but supply is usually difficult and costly.

Experimenters have had some success in using arrays of high value carbon, or metal-film resistors, each of perhaps 2 W or 3 W rated dissipation. The usual execution comprises two discs of brass or circuit board, with resistors of appropriate number and value, all connected in parallel and spaced around the perimeter of the discs to provide the necessary terminating load resistance (Reference 1). However, two discs, or rectangles, with sufficient area to contain 200 W worth of resistors has significant capacitance (typically 4 pF), so the SWR of such an arrangement may be unacceptable at higher frequencies.

Offered here is a load that uses an alternative method of housing an array of 94 ordinary, 4.7 k Ω , 2 W carbon resistors to provide a low SWR, convection-cooled 50 ohm load capable of absorbing 200 W continuously, or 400 W at 50 % duty cycle. SWR of the prototype is less than 1.2 from DC to 28 MHz. Metering of the RF load current is provided, thus permitting direct estimation of dissipated power. Being a peak responding meter, PEP readings of reasonable accuracy are obtained. In addition, a -40 dB signal sample port is fitted to allow for the convenient connection of other instruments, such as an oscilloscope, frequency counter or spectrum analyser.

Circuit

See Figure 1. 94 x 4700 ohm resistors are spaced along a 260 mm length of transmission line, comprising a 5 mm (5/16th inch) brass rod "inner" conductor positioned centrally between circuit board strips, which form the "outer" of the line,



Photo 1 - The 200 W dummy load.

as shown in Photos 2 and 3. Unwanted stray inductance and capacitance is thus kept to a minimum.

Current transformer T1 has a turns ratio of 40:1, so the current through the 470 Ω metal-film terminating resistor will be 1/40th of that in the line (References 2 and 3). Therefore, for a 50 ohm load current of 1 A, current in the 470 ohm is 25 mA, thus establishing a voltage of 11.75 V. When applied to a single diode detector, a voltage very near 1.3 times the RMS will be available at the 100 nF filter capacitor for metering. Therefore, we get 1.3 x 11.75 = 15.275 rounded to 15.3 V dc.

The 0 - 50 scale of an ordinary 50 μ A meter suits our measuring range of 0 - 5 A RF. For the above example, where 1 A RF

is flowing (which shall read 10 μ A on the meter), and 15.3 V dc is produced, then the series multiplier resistance must be 15.3 divided by .00001 = 1.53 Megohm. In practice a standard 1.5 M resistor gives a sufficiently accurate result.

The ammeter circuit is utterly replicable (i.e. iterations of the circuit give predictable results), so the current meter, if duplicated closely, does not need individual calibration. Thus, power delivered to the load may be estimated:

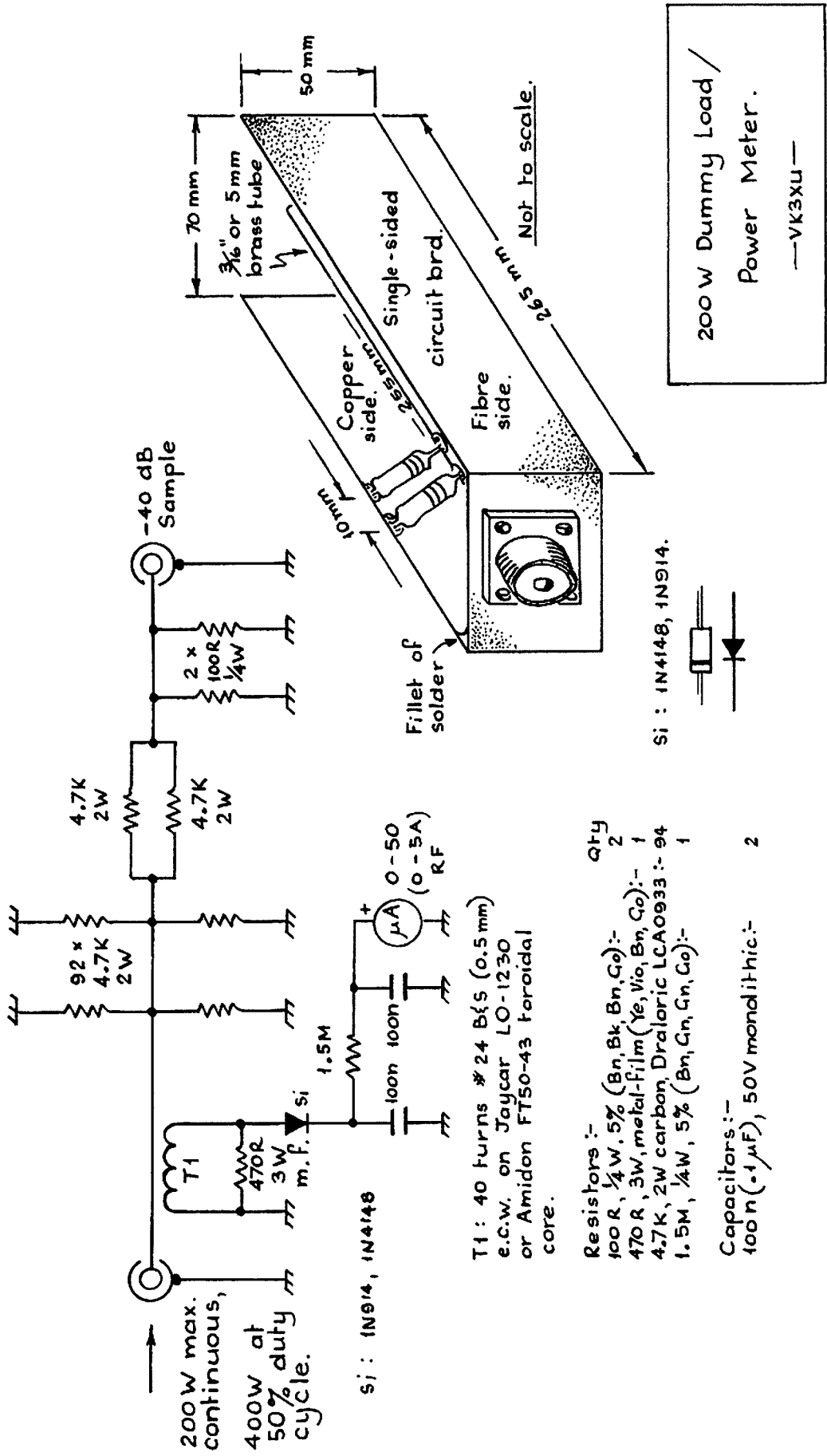
$$P = I^2 \times R \text{ (Watts)}$$

so when the load is 50 ohms

$$P = I^2 \times 50 \text{ (Watts)}$$

For example: 1 A in 50 ohms = 50 W, 2 A = 200 W, and so on.

The two right-hand 4.7 k, and two 100 ohm resistors form a -40 dB pi attenuator



T1: 40 turns #24 B&S (0.5 mm) e.c.w. on Jaycar LO-1230 or Amidon FT50-43 toroidal core.

- Resistors:-
- 100 R, 1/4 W, 5% (Bn, Bk, Bn, Co):- 2
 - 470 R, 3W, metal-film (Ye, Yo, Bn, Co):- 1
 - 4.7K, 2W carbon Draloric LCA0933:- 94
 - 1.5M, 1/4W, 5% (Bn, Gn, Gn, Co):- 1

- Capacitors:-
- 100n (-1 μ F), 50V monolithic:- 2

Figure 1 – Schematic of the dummy load/power meter.

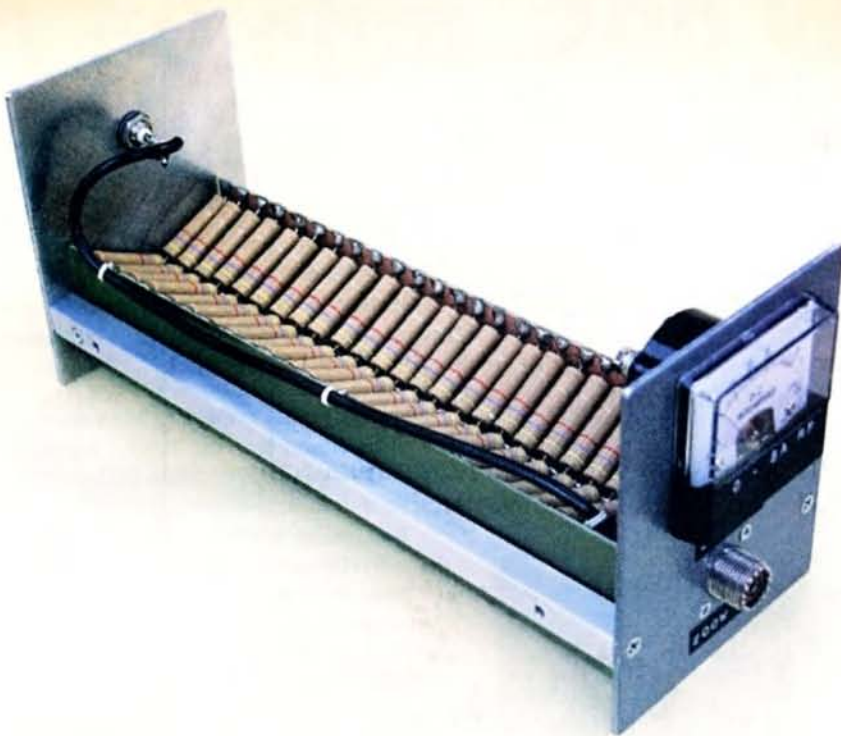


Photo 2 – The resistor assembly.

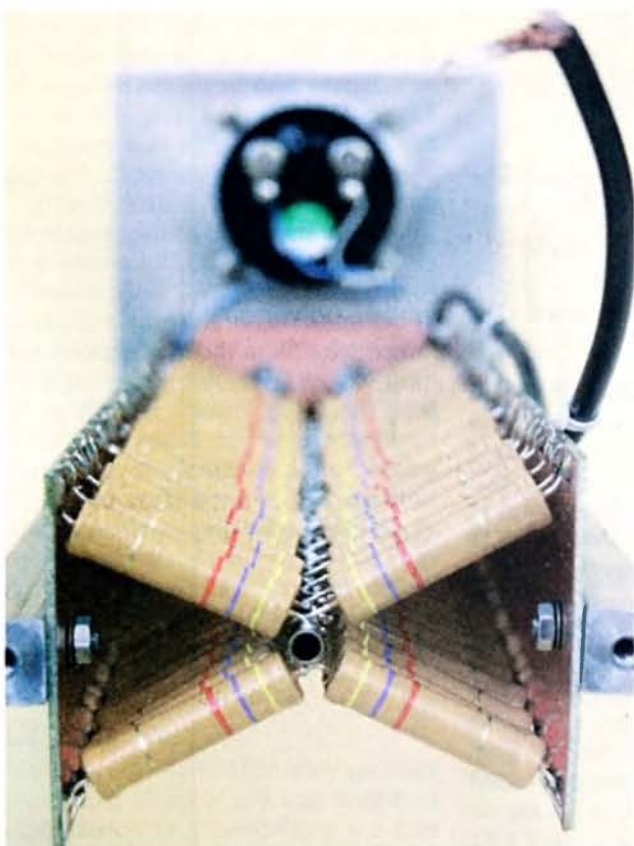


Photo 3 – End view of the resistor assembly

which, when connected to an instrument whose input impedance is 50 ohms (or “terminated” right at an instrument’s high impedance input with a 50 ohm thru termination), provides an exact replica signal whose voltage will be 1/100th that of the input signal – a very handy feature.

Construction

A suggested method of housing the load is shown in Photo 2, where the resistor assembly is a snug fit between two parallel 12 mm square aluminium rods. Front and back panels, made from 3 mm aluminium sheet, are attached with 4 mm countersunk screws, which engage in threaded holes in each end of the support rods. The mounting flange of

the SO-239 coax socket is sandwiched between the front panel and the resistor assembly.

The resistor assembly end-view is pictured in Photo 3, which illustrates how the individual resistors should be arranged. Note the additional support given by fitting 3 mm countersunk screws and nuts near the rear end of the resistor assembly. Top and bottom covers were fabricated from 1.3 mm perforated aluminium sheet, obtained from a local metal recycler.

When building the resistor assembly, begin by making the circuit board sides and pre-drilled connector end, dimensioned as shown in Figure 1. Use a flat reference device, such as a mirror, as an aid to soldering the sides straight and parallel. Test for rightness upon the mirror with an engineer’s square. Apply small “tacks” of solder first, and then form a fillet when correctly aligned.

Temporarily mount the SO-239 socket. Remember to install the current transformer at the connector end before soldering. For the Jaycar toroid, you will need an insulated spacer to hold the core upon the tube. Photo 4 shows a suggested method, where a short length of RG-8 inner insulation has been bored out to 5 mm, then slipped over the tube upon which the wound core is a snug fit.

Solder the brass tube (obtainable from model shops) to the coax socket centre pin. Use a wood block, or similar object, at the far (rear) end to correctly position the tube prior to soldering. A small hole, or filed slot in the connector end of the tube, will considerably aid in getting the solder to flow where required for a good connection.

Begin soldering the resistors at the far end of the assembly, spaced by 10 mm in each row. Mark with pencil down the fibre of one of the sides, thus giving a guide to their spacing. By alternating each resistor side to side, top to bottom, we accommodate all 94 without difficulty, and allow space at the connector end for the current transformer.

The last two resistors are connected to two parallel 100 ohm short lead resistors for the -40 dB output. If this feature is not required, simply solder all 94, 4.7 kΩ resistors to the circuit board foil. A short run of RG-58 coax, wired as shown, may be used to connect the attenuator to a suitably different (suggest BNC-f) connector fitted to the rear panel.

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Midi towers 10m (Midi 10) – 12.5m (Midi12.5)

Maxi towers 10m (OMT10) – 12.5m (OMT12.5) 15m – (OMT15)

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the Azimuth rotator.**

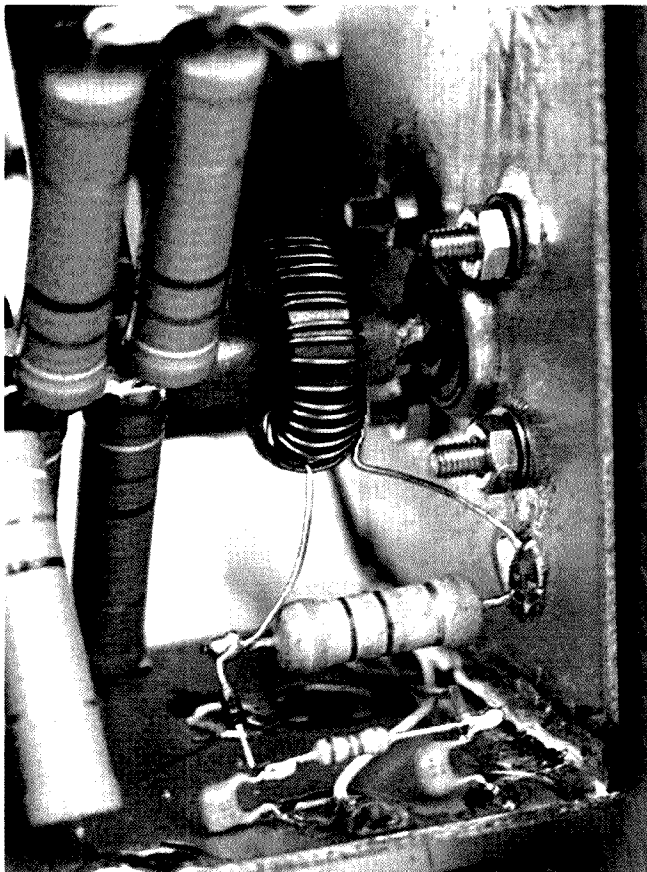
In addition. We also offer a very competitively priced Australian made 5:1 braking winch.
(it is not only stupid to lift with an ordinary boat winch – it is illegal)

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Browns Plains. 4118
Qld. Australia.

Mob. Ph. 0414 254 080

email: aeitower@spin.net.au



Operation

The load can dissipate 200 W continuously - if properly ventilated. For higher power (above 2 A), use a proportionately shorter duty cycle. To estimate CW or PEP power, simply square the current reading and multiply that by 50.

Parts

The Draloric 4.7 k Ω , 2 W resistors were purchased from Rockby Electronics (Ph 03 9562 8559). Minimum order is a box of 250 resistors at 2 cents each, P/N 19782 - total \$5 plus post (I suggest building one with a mate - otherwise you will have 156 spare resistors!).

Any good 50 μ A

meter will serve - mine is a QP-5012 from Jaycar.

Toroidal core for T1 may be an LO-1230 (pack of six for about \$2 from Jaycar), or an Amidon FT50-43 (see Hamads for your local supplier).

A suitable length of 3/16" (5mm) tube, described as "K & S Engineering 3/16 round brass, stock # 129" - was purchased for a few dollars at a local model shop.

The remaining electronic parts are obtainable from any of the usual component suppliers, including Altronics, Jaycar, DSE and Electronic World.

References and Further Reading

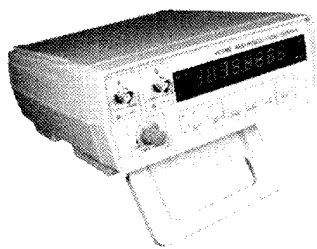
1. VHF/UHF Handbook; Edited by Dick Biddulph, G8DPS, 1998 edition., pp 11.8, 11.9.
2. "RF Ammeters for High Frequency Measurements"; Amateur Radio, November 2004.
3. Backyard Antennas; Peter Dodd, G3LDO, published by RSGB, pp 184,185.

Photos: Andrew Diamond
(www.andrewdiamond.net).
ar

Photo 4 - Current transformer and diode detector assembly.

WA's new Yaesu Dealer

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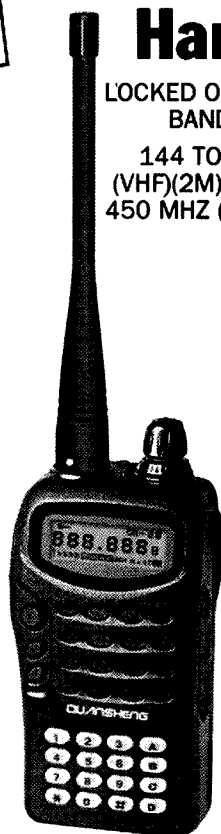
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- 8) Hi & Lo Power select
- 9) Channel spacing: 5KHz, 10KHz, 12.5KHz, 25KHz
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Headset/Microphone	\$8
SMA to BNC Converter	\$5

21st Australian Scout Jamboree

Robert Broomhead VK3KRB
vk3krb@unixtech.com.au

The cover photo depicts Nathaniel Ballinger VK3FNAT, who attended the 21st Australian Scout Jamboree at Elmore, in central west Victoria in early January. On this page, we see his homebrew two-metre antenna, and a glimpse of part of the campsite.

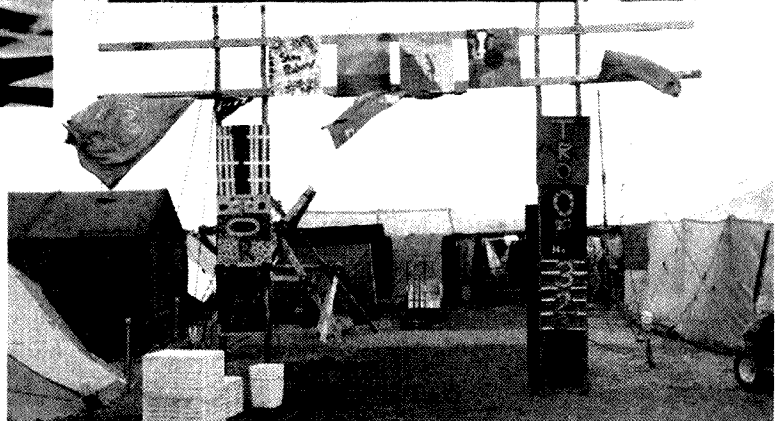
Nathaniel fitted his Scout group out with a homebrew two-metre quarter wave ground-plane antenna which he constructed with the help of Scout leader Ash Clark VK3SSB.

Nathaniel reported excellent coverage from his Scout portable QTH, with 5/9 signals into all local repeaters.



Photo 1 and 2 (above and above right): Nathaniel with his homebrew quarter-wave vertical for the 2-metre band.

Photo 3 (right): The entrance to the troop's campsite –the mast and antenna is just visible to the right of the entrance gate



The 21st Australian Scout Jamboree AJ2007 – Get in the game Sleepy Elmore invaded by 13,000 energetic youngsters

Robert Broomhead VK3KRB

On 2nd January 2007, the quiet Victorian country town of Elmore had a population explosion by a factor of about 10 as it became host to around 13,000 Scouts and 8000 leaders and assistants attending the 21st Australian Scout Jamboree called AJ2007. The 12-day Jamboree, held at the Elmore Field Day grounds, came complete with its own police station, hospital, fire station, FM radio station, multiple rock stages, and of course hundreds of amazing activities for 13,000 energetic Scouts.

Taking prime location near the centre of the Jamboree site was the Scout Radio and Electronic Service Unit's amateur radio station VI3JAM. Visually locatable from just about anywhere within the site (due to its enormous antennas and masts), visiting Scouts kept VI3JAM active and on the air since early Tuesday morning. *The Jamboree had only just started and we had so many contacts within Australia and overseas, it was fantastic. All the station equipment is working perfectly and the Scouts have just been having a ball* said station manager Hayden McManus VK3FRST.

The Radio and Electronic Service Unit constructed four individual operating positions within a large modern air-conditioned Atco hut. Each operating position was fully decked out with state of the art radio and computer equipment kindly donated by Icom Australia and BKB Internet. Outside, the antenna farm constructed by the Service Unit was very impressive. Independently rotatable beams were in place for 2 m and 70 cm,

10/15/20 m, and 6 m, as well as a series of dipoles for operating on the lower HF bands.

VI3JAM was on the air, on the usual calling frequencies for all bands 160 m through 70 cm.

Encouragingly, a number of Scouts attending AJ2007 and visiting the VI3JAM station had already heard of the new Foundation Licence. A number of young Scouts attending the Jamboree already had Foundation call signs and were spotted roaming the Jamboree with 2 m or 70 cm handhelds strapped to their belts.

All Scouts visiting the VI3JAM station were given information on amateur radio and the new Foundation Licence by way of promotional material provided by the WIA. The material included the WIA's new colour brochure "Calling CQ", which outlines the many enjoyable and interesting aspects of the hobby. Also included in the promotional material was a listing of contact details for the group leaders from the various radio

clubs providing Foundation training and assessment. The promotional material also included a follow-up form, which could be filled out to request follow up by the Radio and Electronic Service Unit with more information on how to become a radio amateur. Also on sale at the VI3JAM station were copies of "Your entry into Amateur Radio", the Foundation licence manual, for anyone who was keen to purchase a copy and start studying.

A highlight for the Jamboree, and the VI3JAM station, was when the 20 lucky Scouts who had entered the "What would I ask an astronaut" competition via the AJ2007 website and were selected to pose their questions in person to Suni Williams KD5PLB in an ARISS hook-up with the International Space Station (see the following story).

A commemorative QSL card is being issued to all stations who have worked VI3JAM. The WIA website has a series of photos taken around the Jamboree and VI3JAM station sites.

Spotlight on SWLing

Robin L. Harwood VK7RH

2007 has arrived and HF propagation has been up and down. There have been several fadeouts which have disrupted telecommunications. Also, a minor earthquake near Taiwan knocked out undersea cables, severely disrupting telecommunications between Asia and the rest of the World for about a week.

As predicted, DW largely ceased using senders from Germany, following the contract with VT Merlin. Although the Nauen site in the former East Germany is still being used, the majority of DW

programs now are transmitted from outside of Germany.

The former German Telecom sites of Werchatal and Julich are still transmitting, but for other clients such as the Polish Radio or sundry religious broadcasters. Christian Voice International takes possession of these two sites mid year.

Radio Finland exited HF on the 31st December, leaving Radio Sweden International as the sole Scandinavian broadcaster left on shortwave. The disappearance of Radio Finland also saw

the cessation of regular weekly news bulletins broadcast in classical Latin. Vatican Radio only has Latin Masses.

I must apologise for this hurried brief column this month due to my father's death from a terminal illness. I have a eulogy to prepare. I soon shall get back to normal monitoring, as I have renewed my subscription to dxtuners.com and Bigpond Broadband also has significantly increased their download limit for the same rate, which will make matters more economical.

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The lucky Scouts erupt in a cheer at the end of the contact with the International Space Station.

VI3JAM contacts the ISS

Robert Broomhead VK3KRB

Over the last couple of weeks, we have been keeping you up to date with the preparation and activities of VI3JAM the special event station of the 21st Australian Scout Jamboree held in the country town of Elmore in Victoria. The highlight of AJ2007, the 21st Australian Scout Jamboree, was on Sunday evening when a planned hook-up with the International Space Station took place, enabling 20 Scouts to speak with Suni Williams KD5PLB. The 20 lucky scouts were selected from the 13,000 attending the Jamboree through a "What would I ask an astronaut" competition conducted via the AJ2007 Jamboree website. Everything was going to plan – well almost everything. The contact was on schedule, the equipment was working, the 20 scouts were pumped, but unfortunately so was popular New Zealand rock band *Evermore*, which was providing a concert on the main Jamboree stage some 500 metres away and playing

through a massive EAW PA system. The acoustic interference was causing the entire VI3JAM shack to vibrate and shake. Luckily Alistair VK3FAWB, a professional in the audio industry, came up with the great idea to line the exterior shack wall facing the band with a 6 foot stack of hay bales. The team constructed the wall and provided what felt like 3 dB of noise reduction from the band. With this in place and 20 Scouts ready at the microphone, and many hundreds more outside the shack looking on via close circuit television and with the event simulcast on the local Jamboree FM radio station, the contact was underway.

An ARISS telebridge was utilised and Philip Adams VK3JNI kicked off proceedings initially talking via the telebridge to Will Marchant KC6ROL from the space science laboratory at the University of California, the team leader for the evening's ARISS contact, then in turn speaking with Shane VK4KHZ

providing the uplink from his home in VK4 to the ISS orbiting some 300 km above the earth.

Right on schedule, the voice of Suni Williams KD5PLB was heard loud and clear and the question and answer session began. Everyone listened intently.

The whole contact worked perfectly and ended in an enthusiastic cheer from both the team inside the shack and the many hundreds listening outside.

The AJ2007 team would like to acknowledge ICOM, BKB Internet, Minuteman Press, ARV and the WIA who all generously supported the amateur station and enabled the ISS contact.

If you would like to hear a full recording and see pictures of the contact, then visit the WIA's website, <http://www.wia.org.au/> and click on the news story titled "NAISS calling – and the band played on".

Photos by Robert Broomhead VK3KRB.

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Global Educational Network for Satellite Operations

Attention all telemetry and data collection buffs! An ESA Assessment Study for this project began in June 2006 and a large number of the study team attended the AMSAT-UK 2006 Colloquium as part of the SSETI contingent. AMSAT-UK representatives later attended a meeting hosted by Neil Mellville of ESA, where they received a briefing on the purpose of a project called GENSO, which is to provide a global infrastructure that will be available for future educational satellite projects. It is envisaged that a world-wide network of ground stations could increase real time collection of telemetry data from amateur [and other scientific] satellites from an average of 3% at present to a potential 60%. This data could be available in real time on the www resulting in a huge improvement in efficiency. As a result of this meeting,

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net.

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:
AMSAT-VK,
9 Homer Rd,
Clarence Park, SA. 5034
Graham's e-mail address is:
vk5agr@amsat.org

AMSAT-UK joined with ESA, the SSETI Association, UNISEC, and several universities around the world, to determine the technical feasibility of the project and define a comprehensive set of technical requirements with suggested design solutions. A month later, the first workshop was held at the University of Tokyo to discuss the proposal and the potential for inter-continental collaboration. The response from the amateur radio and academic communities was particularly promising. The implementation plan produced at the second workshop, held in September, included work packages, a preliminary schedule and a budget framework. The plan was presented to the International Space Education Board during the International Astronautical Congress held in Valencia in October. The Board gave the go-ahead to start the design and implementation of the software and hardware, with the objective of running a pilot phase in around a year's time. A workshop is planned for February 2007 to discuss progress and the core features should be ready for testing by mid-2007. If all goes according to plan, they hope to have the network fully operational from November 2008 onwards. ESA will provide funding for software development and overall project management. The project will bring together other space agencies like CSA, JAXA and NASA. Neil Melville of ESA said, "One of the key aspects of this project will be that the network is developed 'by students for students', with the technical support and guidance of the space agencies and the radio amateur community". So far the amateur radio input has been provided by AMSAT-UK, who has been asked to define the typical ground station in terms of hardware and to provide supporting software. They will be asking for your input in the form of a questionnaire which will appear on AMSAT-BB. The data collection and ground station software, developed as part of the project will be made available to the AMSAT community. More information can be found at:

http://www.esa.int/esaED/SEM8HFZBYTE_index_0.html
Watch also the AMSAT-UK website.

AMRAD AO-27 controllers lose contact.

Reports are to hand that the AMRAD team members are having difficulty in establishing communications with this LEO. It has not figured highly in activities in this part of the world. Apart from brief periods early in its life, it has only been switched on while over the northern hemisphere. AO-27 was launched on September 26, 1993. It carried an uplink on 145.850 MHz FM and a downlink on 436.795 MHz FM.

More Cubesats

Another batch of Cubesats was due for launch on 11th December 2006. AX.25 1200bps FM/AFSK telemetry transmissions should be available on 70 cm immediately after deployment. Details will be available at www.Genesat1.org.

Six-monthly review of operational satellites in the amateur radio service

VO-52 HAMSAT

Catalogue number: 28650
Launch Date: May 05, 2005
Status: Operational
U/V: Indian Transponder in use at present
Frequencies:
Indian Transponder:
Uplink: 435.220 MHz to 435.280 MHz
LSB/CW
Downlink: 145.870 MHz to 145.930 MHz
USB/CW
Dutch Transponder:
Uplink: 435.225 MHz to 435.275 MHz
LSB/CW
Downlink: 145.875 MHz to 145.925 MHz
USB/CW
Indian Beacon: 145.859330 MHz CW
Dutch Beacon: 145.860 MHz 12WPM
with CW message
Webpage: <http://www.amsat.in/hamsat.htm>

AO-51 ECHO

Catalogue number: 28375
Launch date: June 29, 2004
Status: Operational
Analog voice downlink:
435.300 MHz FM

435.150 MHz FM
2401.200 MHz FM
Analog voice uplink:
145.880 MHz FM
145.880 MHz USB
145.920 MHz FM 67 Hz PL tone
1268.700 MHz FM 67 Hz PL tone
Digital Downlinks: Pacsat Broadcast Protocol
435.150 MHz FM, 38k4 Digital
435.150 MHz FM, 9k6 Digital
2401.200 MHz FM, 38k4 bps, AX.25
Digital Uplink:
145.860 MHz FM, 9k6
1268.700 MHz FM, 9k6
Broadcast callsign: PECHO-11
BBS callsign: PECHO-12
Webpage: <http://www.amsat.org/amsat-new/echo/>

SO-50 SAUDISAT-1C

Catalogue number: 27607
Launched: December 20, 2002
Status: Operational.
Uplink: 145.850 MHz
Downlink: 436.795 MHz

To switch the transmitter on, you need to send a CTCSS tone of 74.4 Hz to arm the ten minute timer. Then transmit on 145.850 MHz (FM Voice) using 67.0 Hz to access the repeater within the 10 Minute window.

FO-29 JAS-2

Catalogue number: 24278
Launch Date: August 17, 1996
Status: Operational
Voice/CW Mode JA
Uplink: 145.90 to 146.00 MHz CW/LSB
Downlink: 435.80 to 435.90 MHz CW/USB
Beacon: 435.795 MHz
Digital Mode JD
Uplink: 145.850 145.870 145.910 MHz FM
Downlink: 435.910 MHz 1200-baud BPSK or 9600-baud FSK
Callsign: 8J1JCS
Digitalker: 435.910 MHz
Current mode switching details on the AMSAT web site.

AO-7 AMSAT OSCAR 7

Catalogue number: 07530
Launch Date: November 15, 1974
Status: Operational when in sunlight
Current Reported mode: Mode-A
Uplink:
145.850 to 145.950 MHz CW/USB

Mode A
432.125 to 432.175 MHz CW/LSB
Mode B
Downlink:
29.400 to 29.500 MHz CW/USB Mode A (1W PEP)
145.975 to 145.925 MHz CW/USB Mode B (8W PEP)
Beacons: 29.502 MHz, 145.972 MHz
Official Webpage:
http://www.amsat.org/amsat-new/satellites/sat_summary/ao7.php

International Space Station (ISS) – ARISS

Catalogue number: 25544
Launch date: November 20, 1998
Status: Operational
Current Mode: Occasional Voice
The Expedition 14 crew is:
Commander: Michael Lopez-Alegria - KE5GTK
Flight Engineer: Mikhail Tyurin - RZ3FT
Flight Engineer: Thomas Reiter - DF4TR

Digital/APRS:

Worldwide packet uplink:
145.990 MHz FM
Worldwide packet downlink:
145.800 MHz FM

Voice:

Region 1 voice uplink: 145.200 MHz FM
Region 2/3 voice uplink: 144.490 MHz FM
Worldwide downlink: 145.800 MHz FM
SSTV testing reported on 145.800 MHz FM

Callsigns:

German: DP0ISS
Russian: RS0ISS, RZ3DZR
USA: NAISS
Packet Mailbox: RS0ISS-11
Digipeater callsign: ARISS
Official ARISS Webpage: <http://www.rac.ca/ariss>

AO-51 ECHO

Catalogue number: 28375
Launch date: June 29, 2004
Status: Operational
Current Mode(s):
FM Repeater - V/U
PBBS - V/U - 9k6 PBP
Analog voice downlink:
435.300 MHz FM
435.150 MHz FM
2401.200 MHz FM

Analog voice uplink:
145.880 MHz FM
145.880 MHz USB
145.920 MHz FM 67Hz PL tone
1268.700 MHz FM 67Hz PL tone
Digital Downlinks:
435.150 MHz FM, 38k4 Digital, PBP, 1 watt output
435.150 MHz FM, 9k6 Digital Pacsat Broadcast Protocol
2401.200 MHz FM, 38k4 bps, AX.25
Digital Uplink:
145.860 MHz FM, 9k6 Digital, Pacsat Broadcast Protocol
1268.700 MHz FM, 9k6 PBP Digital
Broadcast callsign: PECHO-11
BBS callsign: PECHO-12
Webpage: <http://www.amsat.org/amsat-new/echo/>

AO-16 PACSAT

Catalogue number: 20439
Launch Date: January 22, 1990
Status:
Semi-operational, the digipeater command is open for APRS users.
Uplink:
145.900 FM
145.920 FM
145.940 FM
145.960 FM
Downlink:
437.026 MHz SSB (1200-baud PSK)
Mode-S Beacon: 2401.1428 MHz
Broadcast callsign: PACSAT-11
BBS callsign: PACSAT-12
Webpage: <http://www.amsat.org/amsat/sats/n7hpr/ao16.html>

UO-11 OSCAR-11

Catalogue number: 14781
Launched: March 1, 1984
Status: Semi-operational
Telemetry Downlink: 145.826 MHz.
Webpage: <http://www.users.zetnet.co.uk/clivew/>

The above list is not exhaustive but includes those of most interest to amateurs in this part of the world. A number of satellites are listed elsewhere as operational but only their beacons are active – or they are at present undergoing testing or recovery efforts. A complete list is kept up to date on the AMSAT-NA web site.

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Awards

Mal Johnson VK6LC
WIA Awards Manager.

WIA Multiband DXCC Program annual "DXer awards" 2006

This new annual award was introduced in June 2005 and has only been running 18 months. We have now 17 stations certified.

For this period, we have six operators that have top tallies for 3BDXCC, 4BDXCC, 5BDXCC, 6BDXCC and 9BDXCC.

They are:

1. 9BDXCC - VK.

Peter Forbes VK3QI of Glen Iris, Victoria. Top tally of 2416 countries over 9 Bands.

2. 6BDXCC - DX.

Helio Carlota PY2DBU of Jundiai, Brazil. Top tally of 993 countries over 6 Bands.

3. 5BDXCC - DX.

Harry Kotlyarov UA6LDD of Taganrog, Russia. Top tally of 907 countries over 5 Bands.

4. 5BDXCC - VK.

Allan Greening VK3PA of Dunolly,

Victoria. Top tally of 848 countries over 5 Bands.

5. 3BDXCC - VK.

Eddie de Young VK4AN of Maryborough, Queensland. Top tally of 722 countries over 3 Bands.

6. 3BDXCC - DX.

Charlie Ho VR2XMT of Fanling, Hong Kong. Top tally of 615 countries over 3 Bands.

Multiband DXCC Program, 1st September 2005

W.I.A. DXer Awards

The "W.I.A. DXer" awards are for 3-11 Band classes, awarded to Australian and Overseas participants where applicable. The close off date for these awards will be 31 December each year.

It can only be awarded to the same person once in every 3 years and all awards will be judged on performance, participation and spirit exhibited towards the MultiBand DXCC Program.

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WIA Awards Manager.
Mal. VK6LC
ar

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WIA DXCC Standings, January 2007

Callsign	Countries	Callsign	Countries	Callsign	Countries	Callsign	Countries	Callsign	Countries
DXCC Ex. (337)		VK3DP	274/277	HS1NGR	101/000	Honour Roll		VK4CXQ	179/000
Phone		VK3UY	264/266	VK5JAZ	100/000	(328) Open		DL6UGF	161/000
VK5WO	337/370	JA7MGP	260/000	VK6ZAI	100/000	VK2UK	336/341	VK5ATU	158/160
VK6LK	337/362	VK2XH	257/000	DXCC Ex. (337)		VK4LC	335/382	VK2AR	156/159
VK3QI	337/351	DL3ASJ	256/000	CW		VE6VK	335/380	VK3VB	153/155
VK3DYL	337/343	VK8NSB	255/000	Position Vacant		VK4UA	335/372	VK6HZ	151/000
VK3SX	337/343	VK3CIM	254/258	Honour Roll		VK3AMK	335/354	VK3JXO	146/000
Honour Roll		VK8DK	253/254	(328) CW		VK3AKK	335/348	VK2SPS	144/145
(328) Phone		VK6DU	245/252	VK6HD	336/357	VK3EW	335/341	SV1XV	142/144
VK6HD	336/362	VK2FHM	243/000	VK3QI	336/348	VK3OT	334/348	VK4EZ	140/147
VK5MS	335/389	VK4AG	240/000	VK5WO	335/351	VK2AVZ	333/344	ON9MCR	129/140
VK4LC	335/382	VR2XMT	235/000	VE6VK	330/357	CT1EEN	333/337	ON5SPA	127/000
VE6VK	335/372	VK8KTC	231/233	General listing		VK4AAR	333/337	VK3OZ	126/127
VK4UA	335/370	VK4DMP	227/228	- CW		VK3UY	333/336	VK7CQ	123/125
VK3AMK	335/354	DL6MRS	226/000	VK6RZ	322/327	PY2DBU	328/343	VK5DC	117/118
VK3AKK	335/348	UA6LDD	225/226	VK6RJ	312/317	VK6RZ	328/334	N0MSB	117/000
VK2FGI	335/341	VK8AM	225/000	VK3AKK	312/317	General listing		VK9RS	111/000
VK3EW	335/341	VK2AU	210/000	VK3KS	307/335	- Open		VK2AJE	109/000
VK6NE	333/349	VK3DVT	206/209	VK4LV	300/307	VK6RO	326/333	VK2WL	105/106
VK2AVZ	333/344	VK6RZ	201/204	CT1EEN	294/000	VK4LV	324/332	UA0IGV	103/000
VK1ZL	333/339	VK7JAB	198/000	VK6AJ	292/304	VK3JI	322/351	VK2AWD	102/106
VK2DEJ	333/339	VK2EO	195/000	VK4ICU	291/000	VK6LC	318/320	VK5CO	100/106
VK3TZ	332/336	G0VXX	184/000	VK4AN	281/287	VK4DV	315/330	VK5GX	100/101
CT1EEN	332/336	VK3PA	178/179	VK3JI	274/299	VK4AN	311/319	DL1APX	100/000
VK3OT	331/345	VK2EJK	176/000	VK2CWS	245/247	VK4ICU	311/313	RA3BZ	100/000
VK4AAR	331/335	9A2KL	172/175	VK3DP	245/247	DL1TC	302/303	VK1AI	100/000
VK6APK	330/335	VK6EH	170/000	VK3DQ	243/270	VK3KE	300/303	General listing	
VK3CSR	329/338	VK2BQS	166/169	VK3CIM	235/236	VK7TS	295/296	- Data	
VK3EUZ	328/329	DL9UBF	165/000	RD3AF	233/000	PY2DBU	294/298	VK3EBP	253/255
General listing		DL6USA	162/000	VK7TS	219/000	VK2HV	289/000	VK3AMK	200/202
- Phone		VK5EMI	160/000	VK3KE	215/000	VK3CIM	284/288	VK3KE	197/000
VK3YJ	327/333	VK7LUV	160/000	VK6RO	209/211	VK6ANC	284/288	VK2BQS	126/128
VK5FV	326/329	VK4ARB	159/160	DL7PA	203/000	9A2KL	280/283	VK4AN	123/000
VK4SJ	326/327	JA6KTY	156/000	VK2GR	181/188	UA6LDD	279/280	DL4ARJ	120/000
VK2UK	324/329	VK6HZ	151/000	PY2DBU	181/183	VK6DU	277/280	ON5SPA	111/000
EA3AKN	323/331	VK2SPS	143/145	VK4CXQ	174/000	VK3JMB	277/000	CT1EEN	110/000
VK6ABS	322/000	VK2QV	141/000	VK5UO	171/172	VK6MK	256/259	VK5RY	100/102
VK4LV	319/321	VK3JXO	141/000	SP9ADV	168/171	VK8NSB	256/000	Gen-listing 6 m.	
VK1TX	319/000	VK3DQ	138/152	DK6AP	168/000	VK3DQ	255/284	Open	
VK6LC	317/319	VK8LC	137/000	DL6USA	165/000	VK5UO	251/255	VR2XMT	154/000
VK6RO	313/320	OK1ZSV	136/000	VK4UA	151/164	VK2CWS	251/253	VK4FNQ	141/000
VK3JI	310/325	VK4FNQ	134/000	VK4AAR	145/147	VK2FHN	247/000	CT1EEN	110/000
DL2AWG	309/000	SV1XV	130/131	VK2AR	140/143	VK4DA	237/239	VK4ABW	109/000
PY2DBU	308/315	WA5UA	128/000	VK8AM	138/000	VK8AM	236/000	VK6JQ	103/104
VK4ICU	303/305	VK4VIS	127/129	N0TM	135/000	DL9UBF	206/208	VK4CXQ	101/000
VK4EJ	300/302	VK5ATU	126/128	DL1TC	133/000	DL6USA	201/000	Gen-listing -	
VK6DY	297/301	VK2IRP	125/101	VK7DQ	131/132	SP9ADV	200/203	Satellite	
JA3EY	296/300	CU3AAT	125/000	DL6UGF	126/000	VK3PA	187/188	VR2XMT	112/11
VK3KE	295/298	SV1UT	123/000	VK6DU	125/127	VK2GR	184/191	VK3XDQ	106/000
DL1TC	294/295	VK2VZQ	122/000	DJ4BG	121/000	VK2BQS	183/186		
VK3DU	292/301	VK4EZ	119/125	VK5BWW	110/113				
VK2CA	291/000	VK5UO	112/115	SM6GZN	110/111				
VK2CSZ	290/293	VK3CML	109/000	T94VT	108/000				
VK4AN	289/296	AX4EJ	105/000	9A2KL	103/000				
VK2HV	288/000	SV1EOS	105/000	DL3GDS	102/000				
VK4BAY	287/290	VK9RS	104/000	DXCC Ex. (337)					
VK7TS	285/286	VK2RO	103/105	Open					
9V1RH	283/285	3W2LC	103/000	VK5WO	337/374				
VK6ANC	282/286	SV1FTY	102/000	VK6HD	337/364				
VK3JMB	275/000	SV1GYG	102/000	VK3QI	337/352				
		VK6ISL	102/000	VK3SX	337/343				

If your callsign is not listed it means you have not updated in the last 5 years.

Awards information and downloadable files are available on our WIA website <http://www.wia.org.au/awards/> or email to: awards@wia.org.au.

WIA Awards Manager
P.O.Box 196. Cannington.
Western Australia. 6987.
Mai. VK6LC

What you should know about the WIA QSL collection

The first thing that should be realised is that, as a member of the WIA, this is your collection of QSL cards. We hope that it is a collection of which you can be proud, for it has been built up over a period of more than forty years through the generous donation of hard-earned QSLs of hundreds of amateur radio operators from both Australia and overseas, together with valuable QSL cards donated from 'silent key' estates.

Some may believe that the Collection is concerned only with old QSLs. It is true that it contains a vast selection of such QSL cards dating back to 1921, when QSL cards were not printed, but were hand-written. It is indeed an extremely historically valuable collection that can be used by researchers of radio history. Photocopies of valuable QSLs may be obtained by historians free of charge upon request. Any member of the WIA is welcome to visit, by arrangement, the vast collection of QSLs, numbering hundreds of thousands. Displays of QSL cards have been held at several Radio Conventions. Individuals and clubs have the opportunity of purchasing at cost price a DVD (with audio) portraying a range of both pre-war and post-war QSLs. Such images give some idea of the early story of amateur radio, especially in the field of DX.

The pre-war part of the disc contains approximately 160 images of the QSLs of our own old-timers as well as those of many pioneers of radio, including Reinhartz IXAM of the USA and De Loy of France F8AB, who in November 1923 became the first operators to bridge the Atlantic. The QSL of Alf Traeger 5AX, inventor of the pedal radio is here, together with the antenna designers Reg Varney G5RV, Carl Mosley KOAXS, Loren Windom W8GZ and Dick Bird G4ZU. Present in the Collection are the QSLs of Frank Bell Z4AA and Cecil Goyder G2SZ, who together made the first two-way radio contact on the amateur bands between NZ and Australia in October 1924. Also there are the QSLs of the world's most well known DXpeditionists, as well as those of kings, princes and senators.

The post-war part of the DVD (approximately 230 images) contains special prefix call-signs, most of which commemorate some significant historical event. It also contains an interesting thematic section and some of the most attractive pictorial cards in the world.

It should be remembered that today's QSLs will be rare items in another fifty years, so modern QSLs are also important to the Collection. It is a wonderful thing to save something for the future, be it vintage

cars, heritage buildings or amateur radio equipment and QSL cards.

From time to time, the WIA makes appeals to all WIA members to play a part in building up and maintaining this valuable archival QSL card collection. Will you play your part?

The WIA takes this opportunity of wishing its members many happy hours on the bands, and for those interested in DX, good DXCC hunting.

Yours in amateur radio
Ken Matchett VK3TL
Hon. Curator, WIA QSL Collection
4 Sunrise Hill Road,
Montrose Vic 3765
Tel: 03 9728 5350
Email: jeandawson@iinet.net.au

Thanks for contributions to the collection

The WIA would like to thank the following for their kind donation of QSLs:

Estate Gil Moody VK3ZR. A good DX'er in his day. These were pre-war German QSLs carrying the old prefix D. A few of them showed the swastika and one QSL showed the operator at his desk with a photograph of Herr Hitler on the wall behind him. It's all history, isn't it? Cards courtesy of John VK3IQ.

continued on page 47

WIA MultiBand DXCC Program. January 2007

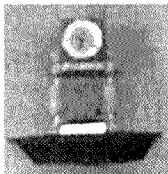
Callsign	2m	6m	10m	12m	15m	17m	20m	30m	40m	80m	160m	Bands	Total
VK6HD			303	259	321	299	332	303	331	314	240	9	2702
VK3QI			289	271	300	282	335	303	292	236	108	9	2416
VK3EW			278	231	304	254	328	137	292	284	106	9	2214
CT1EEN		110	294	290	324	305	328	146	243	163		9	2203
VK6WO			155		153	106	254	109	225	134		7	1136
PY2DBU			199	125	187	104	276	102				6	993
UA6LDD			189		190		191		189	148		5	907
VK6LC			119		153		307		180	134		5	893
9V1RH				141	264	119	222		129			5	875
VK3PA			133		139		253		136	187		5	848
VK2CA			163	102	205	112	210					5	792
VK4AN			217		233		272					3	722
VR2XMT		154			127	162	172					4	615
VK3DYL			114		168		296					3	578
VK3KE			114		175		286					3	575
VK2DEJ					114		305		101			3	520
WA5UA			102		106		128					3	336

We hope Father Christmas brought you all you (thought) you wanted for Christmas and that despite this, you all had a great Christmas and New Year.

From the weather maps, it would seem that Australia is living up to its reputation as the 'driest continent' in the world and that South Australia is the driest state in Australia – well, except for parts of Western Australia, where they had better than average rains. But that is Australia, isn't it? A land of extremes. But isn't it the best country to call home?

The Florence Mackenzie Trophy

At last it is mounted on a suitable shelf in a prominent position – proudly on show, in the headquarters of the Scout Radio Interest Group in South



Australia. If you remember, this is where the radio gear donated to ALARA several years ago is housed and used regularly.

Interestingly, this group came into being associated with the Radio Shack set up at the Jamboree in VK5 several years ago, and in the email this week is this story:

On 2nd January 2007, the quiet Victorian country town of Elmore had a population explosion by a factor of 10 as it became host to around 13,000 Scouts and 8000 leaders and assistants attending the 21st Australian Scout Jamboree called AJ2007. The 12-day Jamboree being held at the Elmore Field Day grounds comes complete with its own police station, hospital, fire station, FM radio station, multiple rock stages and of course hundreds of amazing activities for 13,000 energetic Scouts.

Taking prime location near the centre of the Jamboree site is the Scout Radio and Electronic Service Unit's amateur radio station VI3JAM. Visually locatable from just about anywhere within the site (due to its enormous antennas and masts), visiting Scouts have already kept VI3JAM active and on the air since early Tuesday morning. "The Jamboree has only just started and we have had so many contacts

within Australia and overseas, it's just been fantastic. All the station equipment is working perfectly and the Scouts have just been "having a ball" said station manager Hayden McManus VK3FRST"

The precedent set in VK5 has been continued in VK3 with the radio activity being a prominent part of the whole Jamboree. The callsign VI3JAM was used for the earlier Jamboree, so the tradition is continuing.

How good it is to see Hayden VK3FRST, obviously one of the first VK3 Foundation licensees, as the spokesman for the station.

I hope many of you had contacts with VI3JAM and continue to encourage the young people who will be our future amateurs.

There was a contact between VI3JAM and the International Space Station which would have been heard by everyone listening on the frequency. I hope lots of the readers heard the contact and enjoyed it.

The International YL Meet in Mumbai

from Gwen VK3DYL

For 4 days in October, I had fun representing the YLs of both Australia

and New Zealand while attending the 8th International YL Meet, this time in Mumbai, India. This was my 5th International Meeting and I enjoyed catching up with past friends and making new ones.

The Meet was under the direction of Sarla VU2SWS, herself a member of ALARA.

Sarla had hired a couple of buses to take us sight-seeing around Mumbai, though how those buses managed to make their way through the horrendous traffic was quite unbelievable. ALARA members Unni and Ingrid, together with myself, one afternoon hired a Tuk-tuk in which to travel to the shopping area – never again! Our nerves were frazzled but we still managed to shop and drink beer/coffee. However, we returned to the hotel by taxi!

Two of India's leading dance troupes entertained us for 2 evenings – absolutely fantastic – and another night we were let loose in a shopping Mall – no comment!

The stall traders (and monkeys) on Elephanta Island must have rubbed their hands with glee when they saw us coming but we had fun bargaining, and that's the main thing.

After 4 days, the main part of the group took off for a train and bus trip to Agra, Delhi and other nearby parts, while I had



Mumbai photo - L to R: Ikuko JA5GSG, Sarla VU2SWS, Carol WD8DQG, Eine SM0UQW, Ingrid LA8FOA, Evelyne FB5RPB, Gwen VK3DYL, Mio JR3MVF, Nori 7K3EOP, Unni LA6RHA, Phyllis W2GLB, Inger OZ7AGR (AWOL)

Photograph by Hardy DL3KWF

booked a car and driver to take me to see what I wanted to see, particularly bathing in the Ganges at Varanasi.

At a rough count there were 46 YLs, 14 OMs, 5 VU YLs, and some Indian officials.

I had to give a PowerPoint presentation covering the 30-year history of ALARA – all in 10 minutes, hard work!!!! Altogether another great trip (but I'm glad I don't have to wear a sari every day – hi!)

The photo shows the happy group of ALARA members at the Meet. Thank you for representing us internationally.

Remember the regular lunches

In VK5, these are held at the S.A. Museum in Adelaide at 12 pm on the second Friday of each month.

In VK6, the regular lunches are held on the third Thursday of the month at

the Royal Park Hotel in West Perth at 12 noon. Please contact the appropriate State Representative if you are visiting either of these cities.

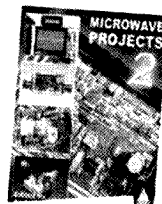
And the regular radio nets

Once a month, on a Sunday morning, there is a Friendship Net on Echolink. Contact Shirley VK5JSH for details of frequency, etc.

Each Monday afternoon at 0530 Zulu, the 222 Net is run on 14.222 MHz and on Monday night we have the ALARA Net on 3.580 +/- MHz at 1000 Zulu in summer and 1030 Zulu in winter. All YLs are welcome and the OMs can join in after one or two rounds.

In fact, please do this if you are looking for YL contacts for your ALARA Award. We are always prepared to give you an official contact after the net finishes.

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'Twas The Night Before Christmas – Radio Style

'Twas the night before Christmas,
And all through two-meters,
Not a signal was keying up
Any repeaters.

The antennas reached up
From the tower, quite high,
To catch the weak signals
That bounced from the sky.

The children, Tech-Pluses,
Took their HTs to bed,
And dreamed of the day
They'd be Extras, instead.

Mom put on her headphones,
I plugged in the key,
And we tuned 40 meters
For that rare ZK3.

When the meter was pegged
By a signal with power.

It smoked a small diode,
and, I swear, shook the tower.
Mom yanked off her phones,
And with all she could muster

Logged a spot of the signal
On the DX Packet Cluster,
While I ran to the window
And peered up at the sky,
To see what could generate
RF that high.

It was way in the distance,
But the moon made it gleam -
A flying sleigh, with an
Eight element beam,
And a little old driver

who looked slightly mean.
So I thought for a moment,
That it might be Cousin Dean.
But no, it was Santa,
The Santa of Hams.
On a mission, this Christmas
To clean up the bands.
He circled the tower,
Then stopped in his track,
And he slid down the coax
Right into the shack.
It into the earth, till
The station was grounded.
He tightened loose fittings,
Resoldered connections,
Cranked down modulation,
Installed lightning protection.
He neutralized tubes
In my linear amp...
(Never worked right before
'Twas the Night Before Christmas'
Now it works like a champ).
A new, low-pass filter
Cleaned up the TV.
He corrected the settings
In my TNC.
He repaired the computer
That would not compute,
And he backed up the hard drive
And got it to boot.
(It might be QRP!) Yes!
The Ultimate Station!
How could I deserve this?

Could it be all those hours that
I worked Public Service?
He hooked it all up
and in record time quickly,
Worked 100 countries,
All down on 160.
I should have been happy,
It was my call he sent.
But the cards and the postage
Will cost two month's rent!
He made final adjustments,
And left a card by the key:
"To Gary, from Santa Claus.
Seventy-Three."
Then he grabbed his HT,
Looked me straight in the eye,
Punched a code on the pad,
And was gone – no good bye.
I ran back to the station,
And the pile-up was big,
But a card from St. Nick
Would be worth my new rig.
Oh, too late, for his final
came over the air.
It was copied all over.
It was heard everywhere.
The Ham's Santa exclaimed
What a ham might expect,
"Merry Christmas to all,
And to all, good DX."

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kn4aq@arrl.net

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ar



See you at
Wyong Hamfest

Get In Tune



The Gold Standard **SG-230**

The SG-230 Smartuner was the first in the HF market with fast, flexible tuning without any user interface. It senses RF when you transmit and automatically finds the best SWR match to your antenna. Works with ANY radio and ANY antenna and requires NO special interface. Use with base station, mobile, marine applications.



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The PM2000A (Bench top) and the PM2000AM (Mobile/Portable) watt meters feature cross-needle meters, peak and peak hold with backlighting. Switchable power ranges are 300 and 3000 watts.



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News from...VK2

Westlakes Amateur Radio Club's Motto is "Progress through Activity".

Frank Lusa VK2FJL

Activities include an ongoing Education program, covering Foundation, Standard and Advanced level tutoring and examinations. The pass rate speaks for itself. Westlakes Field Days have become a must for hundreds of local and interstate amateurs. Each week members can be found in the activity room both giving and seeking assistance in repair of various pieces of equipment. The weekly meat tray has become a much sought after activity, possibly more popular than Westlakes acclaimed Field Day BBQ's.

The radio shack is fully operational; on some days it is standing room only. Contesting has once again become a part of the club's activities, thanks to the efforts of a few dedicated testers led by Paul VK2BPL. Last year's Inaugural Westlakes Cup



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VK2ATZ

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CQ Zone 30

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Operator's name

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Date	Time	Freq	Mode	R.S.T	

Rtg: Antenna: Pse. QSL via Bureau

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This Is a Westlakes Amateur Radio Club Project

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Ozgear – Tigertronics' only Australasian distributor – announces: The new SL-USB radio-to-PC interfaces are now available... & SL-1+ sound-card model still stocked.

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for the latest product info plus on-line ordering.

Payment ?



VK2

Tim Mills VK2ZTM

Via vk2wi@ozemail.com.au

Westlakes continued

was another first in many years for the club and should continue to grow. Another contest worth mentioning is the CQ Repeater Contest held in May each year. This is an attempt by the club to encourage more use of at-times stagnant repeaters. It runs for one week and is open to all.

The WIA QSL Bureau is a continuous area of activity where, thanks to VK2ZM with a couple of apprentices, hundreds of cards are processed each week ready for posting.

Once a month, the Library becomes a chaotic mess of paper, staplers and envelopes as the monthly magazine is assembled and made ready for postage.

Last year's activities culminated in a Christmas get-together. Our thanks go to Gloria, our canteen manageress, who unselfishly volunteered to cater for the 70 plus members, families and friends who attended. Gloria was assisted by an energetic committee; however the credit for the result, which was advertised as a buffet lunch but could only be described as a banquet, must go to Gloria's expertise. Amid balloons, streamers, bon bons and jazz caps, the tables were overloaded with a variety of typical Christmas offerings from Turkey to Trifles and everything in between. Unfortunately, the club rooms could not accommodate all the guests; many had to set up under the adjacent awning creating a carnival atmosphere. Pre-dinner activities included a try out with a set of quoits. The ability of those who fronted up is best left unsaid. They certainly would be well advised to stick to playing radio. All agree the day/evening was an outstanding success.

You don't have to take my word for any of the above, check out our web site www.westlakesarc.org.au.

Better still, call in any Saturday afternoon or Tuesday evening and judge for yourself.

Clubs

A new club on the scene is the Snowy Mountains Amateur Radio Club Inc., with the club call sign VK2SNO. They are operating a 2 metre repeater on 147.025 MHz, which is giving coverage up to 50 km from Adaminaby. Increased coverage is planned. Testing is underway with a repeater on 53.575 MHz. They have a net on Saturday night at 2030 on the 2 metre repeater. Their members have a range of activities including HF nets, VHF weak signal, aircraft enhancement, meteor scatter and Morse practice sessions. Instead of meetings and lectures, the Club intends to focus activity on field days and portable operation. The committee is President, Richard VK2HRM, Vice President and Treasurer, Bill VK2ZZF, Secretary and Public Officer, Alan VK2ADB and Repeater and Technical Officer, Fred VK2TVZ. A contact point is via adpeake@internode.on.net.

Last month, Coffs Harbour held their annual field day at a new venue in town rather than at the small clubrooms. A report will be given in future notes. This month is the Central Coast Field Day at the Wyong Racecourse, on Sunday the 18th February. It has been held since 1957. Don't forget the annual Urunga Convention at Easter, first held in 1948. This is followed on the June long weekend by the Oxley Region field day. Hornsby and District have introduced a Morse net to their club activities – Thursday at 8 pm on 3525 kHz.

A note to repeater officers to check out the entries in the 2007 callbook and advise Brian VK2WBK of NTAC and John VK3KWA of FTAC of any corrections. Also on the subject of repeaters – don't sneak your system 'on test' into any site, particularly a commercial one. Every so often the ACMA does a site audit and your test unit could be determined as an unlicensed device with embarrassing results.

The Oxley Region ARC has swapped around their 70 cm repeaters. The southern VK2RPM site now has 438.425 in place

of 8525 due to interference at the site. 8525 will be relocated to the northern VK2RCN site. Equipment overhaul and new antennas at VK2RPM have improved the operation of 6700.

The Hunter Radio Group has made a frequency change to their 70 cm VK2RCN repeater. It is now to be found on 438.025 MHz. The HRG resume meetings this month as well as the Monday evening news net at 7.30 pm. They use some of the VK2WI material in their coverage, so it is a chance to catch VK2WI news should you miss the Sunday transmissions.

Forty years ago, the then VK2 VHF Group was involved in a flying fox hunt on Saturday the 21st January 1967. These bats were raiding the apple orchards at Bilpin in the Blue Mountains and the thought was to equip one of them with a matchbox sized 2 metre transmitter and then track it back to their daytime roost. Well 'Charlie' the volunteer flying fox had other ideas and refused to become airborne before daylight arrived. So everyone packed up and went home and the reporter tagging along with the operation filed his story. The story broke on national radio news at lunch time Sunday, about how 'Charlie' had out foxed the hunters. Upset were some wildlife researchers who had been trying to obtain frequencies for tracking animals without success. A question to the authorities as to why these 'amateurs' could do it and they could not, brought a phone call Monday morning to the VHF Group President who had all the ramifications explained to him. The outcome was that the Department issued an edict that 'flying fox hunts were banned', something which confused other parts of Australia who were not aware of the operation.

ARNSW

It is 50 years since the formal opening of the VK2WI building by [the late] Allan VK2KB, while he was Minister for the Interior in the Federal Government. This took place in May 1957, but I have found a couple of dates. I am asking some of the older Amateurs who were around in 1957 if they can remember the occasion.

There is a plaque at VK2WI, which says it was on the 15th of May. However this day was a Tuesday. A more likely date which comes up is the 19th, which was a Saturday. Who remembers? If you can help please use the contact details below.

Allan VK2KB received life membership of the NSW Division for services to the hobby. Scanning back into the Amateur Radio notes in *Electronic Australia*, which were then written by Pierce VK2APQ, there is a report in November 1969 of the presentation to Allan at the September 5th meeting of the Hunter Branch in Newcastle. During the time Allan was in Parliament, there were many occasions that he went in to bat for the hobby. There was one time when the Department had its eyes on the 40 metre band, which they wanted to take away from the Amateurs. Allan had the head of the Department brought before the House to explain the reasons. Needless to say we still have 40 metres.

The Annual General Meeting of ARNSW, the trading arm of the former NSW Division, will take place on Saturday the 14th April 2007. The Secretary of ARNSW, Owen VK2AEJ, has called for nominations for the next Council and for agenda items for the meeting. The close for these will be at 12 noon on Saturday the 3rd March 2007. In early December, ARNSW held an EGM to consider five suggested changes to the Articles. They

were on the number of Councillors and club affiliations. None attained the number of votes required by a Special Resolution to change the Articles. Following the EGM, a period of discussion was held and the meeting then adjourned for the annual end of year party.

Commencing this year, ARNSW will hold Foundation Licence Assessments and exams for Standard and Advanced on the last weekend of the even months. The first will be this month on 24th and 25th February. The April one will occur on 28th and 29th. Inquiries should be directed to the ARNSW office on 02 9689 2417, mail to P. O. Box 9432, Harris Park 2150 or email vk2wi@ozemail.com.au.

Anybody who has been involved with building development knows that it is never a speedy process. At year's end, the proposed shed for the Dural property was still with the local Council. It is going to be a while until the Trash and Treasure has its new home. The next T&T event will be on Sunday 25th March.

2007 Radio Homebrew Challenge

"The Radio Homebrew and Experimenters Group is posting a challenge for all members of ARNSW to build their own transmitter", announced Peter VK2EMU, their Coordinator, recently. It is to be more than a one transistor QRP CW rig, something really useful. The transmitter

is to be Amplitude Modulated in the 80 metre band and crystal locked on 3686.4 kHz. This is a standard computer crystal. The transmitter is to have a power of at least 20 watts, be self contained in its own box and include its own power supply. It can be solid state, valve or a mixture of both. The design can be your own, a commercial kit or anywhere in between. The judging will probably be in July 2007 and the aim of the challenge is for the transmitter to be substantially built during 2007 and not an update or rehash of a 20 year old project.

Learning Morse

ARNSW has a group of volunteers who provide on air transmissions under the call VK2BWI on 80 metres – 3550 kHz. Ross VK2ER, who helps coordinate the operation, advised that there was an increasing interest shown by the callbacks received. What is interesting, however, is that to date there have been no calls in by holders of a Foundation call. Ross further commented that he was recently in Europe, where there is still considerable interest in and use made of Morse in all aspects of operation, even though most countries in Europe had by then dropped the requirements. Strongest interest appeared to be in the eastern European countries. VK2WI continuous Morse is to be found on 3699 kHz.

All the best for 2007.

VK3

Amateur Radio Victoria News

Australian Jamboree – dust settles

What a sterling event to kick off the year! The Scout Radio and Electronics Service Unit worked hard and focused on making the special event station VI3JAM a success.

Amateur Radio Victoria is pleased to have been part of this activity at the 21st Australian Jamboree through its sponsorship and two volunteers who helped put VI3JAM on air.

The activity that occurred 2-13 January

at Elmore in north-central Victoria is well reported elsewhere in this edition of *Amateur Radio* magazine.

Centre Victoria RadioFest

This new event will take place on Sunday 22 April, at the Kyneton Racecourse only 50 minutes (75 km) by road from metropolitan Melbourne and an hour from Ballarat and Bendigo.

It is being established with the combined resources of the Midland Amateur Radio

Website: <http://www.amateurradio.com.au>

Email: arv@amateurradio.com.au

Jim Linton VK3PC

Club, Central Goldfields Amateur Radio Club and Amateur Radio Victoria.

The possibility of holding a new regional amateur radio event was discussed earlier at the inter-club BBQ on 8 October, 2006, at Laanecoorie. An organising committee was formed late in 2006 with representatives from each group.

Major commercial traders have had instant enthusiasm for the event; some seem to have been waiting for such a marketing opportunity in Victoria.

For the latest information visit the

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Don Jackson VK3DBB

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Note: Prize drawn 3PM 18th of February 2007 at Wyong Racecourse. Winner notified directly via phone or in person. Name published in March edition of Amateur Radio magazine

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TET-EMTRON

Antenna Manufacturers

New Tet-Emtron Vertical Range Features

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- No adjustment needed to main antenna.
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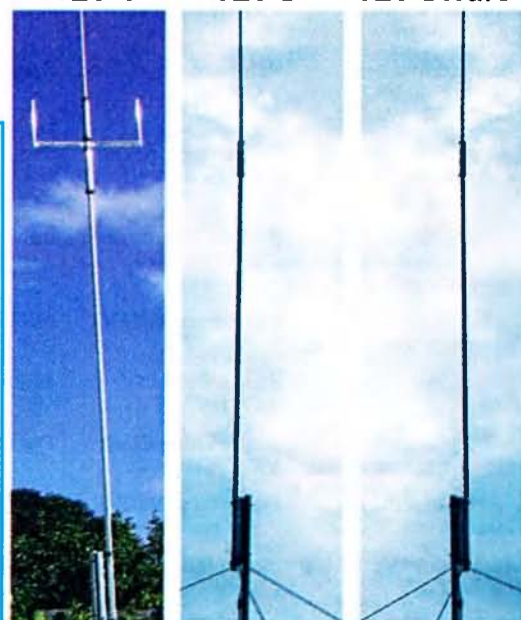
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New Tet-Emtron Vertical Range

TEV-4

TEV-3

TEV-3Warc



Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

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STOP PRESS

Parkes to be venue of next WIA Annual General Meeting

The WIA Annual General Meeting is planned for Saturday 5 May 2007 at Parkes, NSW.

The location had been chosen as it would provide the opportunity for a special technical tour of the Parkes Radio Telescope, which should be of great interest to amateurs.

Confirmation of the date and venue and details of the program being arranged around the AGM will be announced in the near future.

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News from...

VK3

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Centre Victoria RadioFest website <http://radiofest.amateurradio.com.au/>.

“Calling CQ” a useful tool

The WIA has produced a colourful new brochure called “Calling CQ” which is ideal for promoting amateur radio.

Get a copy, have a read and put it to good use during 2007 to encourage others to join the hobby.

The upcoming Foundation Licence training and assessment sessions being held by Amateur Radio Victoria are: February 17 – 18, March 17 – 18, April 14 – 15 and May 19 – 20. For inquiries contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Oppose change to RD Contest

A proposal to expand the memorial aspect of the Remembrance Day Contest is not supported by Amateur Radio Victoria.

The RD Contest Manager, Peter Harding VK4OD, in part said in December, “I personally believe that while we have many thousands of Australians on Service in a Foreign Country, we should be honouring any fallen Australian Radio Amateur Operators from any Overseas conflict, be it Military or Civil, as we have put our safe future in their hands.”

However, the Council meeting of Amateur Radio Victoria on 19 December carefully considered and rejected the proposal. It believes the contest should remain solely as a memorial activity for

those honour roll radio amateurs who lost their lives in service of their country during World War II.

The WIA Federal Convention in 1947 resolved that there be established “Interstate contests on all bands annually to perpetuate the names of Amateurs who lost their lives in the services of this country in the recent war.”

The preamble for the first RD Contest in 1948 stated that the contest be held annually “during the week-end nearest to 15th August each year – the date on which hostilities ceased in the South West Pacific Area.”

Amateur Radio Victoria asks its members to oppose the proposed change which would not only dilute the traditional purpose of the contest, but be impractical to implement.

The RD Contest Manager is seeking the views of all radio amateurs and can be contacted either QTHR or by email vk4od@wia.org.au.

Annual General Meeting

The Secretary, Peter Mill VK3APO wishes to advise members that the Annual General Meeting will be held on Wednesday, 23 May, at St Michael’s Hall, corner Victory Boulevard and High Street, Ashburton, commencing at 8 pm.

Notices of Motion for the meeting close 2.30 pm on Tuesday 20 February. A further notice of the AGM and details of the business items to be discussed will be included in an annual report to members.

2007 VHF/UHF Field Day

Over the weekend of January 13-14th, the VHF/UHF Summer Field Day was held, stations all over VK, ZL and P29 took part. Max VK3WT and I (VK3WWW) had planned to get the 2 m and 70 cm phased arrays ready by the contest as it turned out we only managed to sort out the 2 m array. We packed up all the gear and headed off to the Wombat State Forest.

I had been consulting Radio Mobile and noted that the highest point in the forest

was about 889 m, so with Ozi Explorer running on the PDA, we turned off the bitumen and headed into the forest. It wasn’t long before I had doubts about my navigation so shortly after entering the forest we pulled over and fired up Ozi Explorer on the laptop and could now see the big picture and realized that we had made a wrong turn. It was not long before we arrived at the pre-determined grid reference and looked about for a suitable operating position, the entire area was at

News from...

a similar altitude so we looked for the highest point. We ended up travelling only a short distance along a reasonable track and chose a nice shady spot at an altitude of 900 m. As you can see in the photo Max is operating 6 m and 70 cm SSB, the 2 m station is off to the left and the generator is located in the foreground. There was quite a bit of activity during the day and it was great to work a few VK5 stations and hearing a VK2 from Kings Cross.

The weather was excellent with a gentle breeze and in the shade I noted that the ambient temperature was 15° C so we both were wearing jumpers. We didn't make a lot of contacts but it was a great day out and as a result we have a few issues to attend to before the John Moyle Memorial Field Day in March. It was around 19:30 when we packed up, but this time when we left Max insisted that the laptop was activated so he could

navigate out of the forest. I think I need to learn more about planning a route and navigating between waypoints. I took some video of our operating and will post one or two to my site on youtube. To locate these just go to www.youtube.com and do a search for "vermontcreekbed".

Don't forget the JMMFD in March, now is the time to start preparing your gear.

VK3WWW Jack and VK3WT Max.



TVI High Pass Filter with Braid Breaker.



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A large amount of TVI can travel down the outer braid of Coax as well as the centre conductor. The braid breaker isolates the centre conductor and braid from the TV/VCR/DVD. The High Pass filter cuts in at 50MHz. This filter has -80dBm attenuation at 40, 80 and 160 Metres.

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A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

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VK3

continued

Geelong Radio And Electronics Society (GRES)

Rod Green VK3AYQ

The last months of 2006 saw our members involved in many community based activities. John Collins VK3JCC taught a Foundation Licence course for the last school term of the year. John taught this on a Tuesday morning at the local Grovedale Secondary College. It is hoped that his initiative in approaching schools with the offer of teaching this course will lead to more courses being offered in the future. Bill Husin VK3YHT and Albert Stevens VK3EFO gave a presentation on amateur radio to one of the district SES groups. The SES group had observed the club operating portable in the John Moyle Memorial Field Day. As a result of this, they wanted more information about the activities of amateur radio operators.

Our group of retired members, who meet on a Wednesday, have also been out and away from the clubrooms. On more than one occasion, they gave their time to a local charity organization who build and donate computers for those not fortunate enough to be able to afford a new computer system. The group has also been behind bars. They have reconstructed the wireless in the "Old Geelong Gaol". During the 1950s and 60s, a two channel wireless station was available for the entertainment of the prisoners. This was

not wireless in the true sense, as each cell was hard wired to a main radio room. The station was operated by one of the inmates and offered music and "local" news. The interesting thing about this project is that it did not cost anything. All material and equipment used for the project was either sourced from the very large GRES junk box or was donated by members.

Most of our members are also members of WICEN. These WICEN members supplied communications for the annual Otway Classic Bike ride. This is a 160 km ride through the Otway Ranges and also along the historic Great Ocean Road. Entrants pay a fee to participate and all money raised is donated for heart research. Fortunately, there were no incidents during the ride and all message handling was of a routine nature.

Once again this year, a group of Girl Guides came and used our workshop facilities. The evening was organized by John Collins and the girls constructed a small one transistor FM transmitter. This evening was one of the girls' activities nights. It was interesting to see how easily they learnt to solder proficiently. John was assisted on the night by Keith VK3XKS and Rod VK3AYQ.

During November, we were given a presentation on electrical interference in cars by Bob Tait VK3XP. This was the same presentation that Bob had recently given at GippsTech. Bob had been our guest speaker on one other occasion and both times his talk was not only entertaining but also extremely educational. We were indeed fortunate to have Bob, as he had to make the journey to our club from Melbourne and then drive home again. The round trip duration is over two hours.

Our informal Christmas break-up was held at the new home of Neil Hancock VK3XNH and his wife Jenny. Neil and Jenny have a small country property about 20 minutes drive out of Geelong. Members and their families enjoyed a barbecue lunch in a very relaxed atmosphere. This was a pleasant way to finish the year. The club has a break from meetings over the Christmas New Year period until normal meetings resume in mid January. The club meets at 237a High St., Belmont, Geelong, on Thursday evenings at 2000 local time. Visitors are always welcome.

VK6

VK6 QSL Bureau

Following the previous 2 years' survey of the overall bureau activities, here are the 2006 figures added to those of 2004/2005. With the propagation in the doldrums, QSLing activity is at a low point. If it were not for the big world wide contests, the QSL card count would no doubt be very low.

INWARDS 2004, 11798 cards; 2005, 11170 cards; 2006, 10441 cards

OUTWARDS 2004, 6356 cards; 2005, 3430 cards; 2006, 3661 cards

The following is a synopsis of the incoming QSL cards to the VK6 bureau. Listing in some order is the country by prefix, number of deliveries for 2006, and the numbers of cards received.

4X/1/88..9A/1/360..9K2/1/

3..9V1/2/27..BY/1/7..CT/1/160..
DL/3/1545..ER/1/55..G/2/211..
HA/1/62..HB9/1/130..HL/1/495..
1/3/1108..JA/7/1405..K/W/4/665...
LY/1/38..LZ/1/35..OE/1/50..OH/1/260..
OK/2/465..ON/PA/4/410..OZ/2/88..
S5/1/191..SM/1/196..SP/1/335..TA/1/9..
UA/4/1156..UR/1/596..VE/3/163..
VR2/2/17..YL/1/31..XE/1/17.

There were other very small deliveries from individual amateurs who bypassed their bureau.

Some cards arrived from a bureau that was the first delivery for three years, and many others were two years old. Also remember that the bureau would have been collecting the cards for some considerable time before despatching the packet.

The Sunspot Numbers chart, as published in AR magazine, indicates that the curve is now near the bottom of the cycle and from 2007 should gradually rise (WE HOPE). It will be interesting to follow the curve and relate it to QSLing activity. Will it follow the curve?

With the increase in the number of amateurs via the Foundation licence and the subsequent upgrades, the bureaux will see an increase in QSL activity?

It is an unfortunate fact that some amateurs are not WIA members and many cards arriving into the bureaux are left unclaimed. From the experience of the VK6 Bureau manager, approximately one third of the cards are for non-members.

73 Neil VK6NE,
VK6 QSL Bureau Manager.

VK5

Adelaide Hills Amateur Radio Society

Mid-November saw the AHARS Buy and Sell – the time and place where amateurs from Adelaide and the surrounding areas come to meet each other, and we hope, to find some bargains.

There were several traders with new equipment as well as many tables of “my junk is your treasure”. There were two door prizes, so two people went home with unexpected goodies.

Darcy VK5RJ, the real ‘old-timer’ featured in the December issue of AR, was there with a box in his hand (his XYL had threatened dire consequences if he bought anything, but he must have been prepared to face those!) and new Foundation licensees (new-timers?) too numerous to count had boxes and bags of goodies, too.

The queue outside before we started was as long as ever and the hall was crowded, but no-one complained.

AHARS also had a successful Christmas Dinner on December 6th and will have a Club Barbecue in the middle of January.

After that, we get back to normal with meetings at the Belair Community Hall on the third Thursday of each month. Meetings start at 7.30 pm officially but there are usually people around before that. The speakers are heard first. There are usually some odds and ends on a table at the back of the hall. These are available for whatever you like to give to the Treasurer, as gifts to the club.

All lectures are filmed and copies are available on DVD on application.

Visitors are always welcome. Please contact the President Jim VK5NB or look on the website for more information.

A Frequency Counter Project

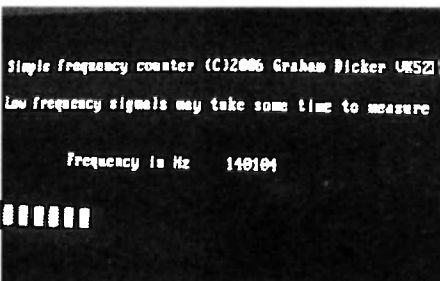
In November 2006, AHARS had a construction night conducted by Graham VK5ZFZ.

These are always interesting and well run. Graham brings along all the components, explains what we are to do to make the device and wanders around making sure we have no problems.

He also usually has a testing station set up to use when the device is completed. The testing station this time was an old computer into which you plugged your



The sample finished project



The results as they appeared on the screen of the computer

Christine Taylor VK5CTY

completed board, when, lo and behold, some numbers appeared on the screen to show that you were counting!!

The photos show the amount of interest the project generated. All participants, (over 60 of them) from the oldest to the youngest, or most recent, had their heads down and eyes focussed.

What is more, most of the completed counters did just that, they counted.

We were told that the counters could be put to use at home as well as just on this night.

Thanks for another interesting night, Graham.



A picture of concentration - Sue VK5AYL



Sasi VK5SN and his YL, May VK5FMAY

**JOHN MOYLE
MEMORIAL FIELD DAY
17/18 MARCH**

Contests

Phil Smeaton VK2BAA

Contest Calendar for February 2007 – April 2007

Feb	3/4	Mexico Intl. RTTY Contest	(RTTY)
	10/11	CQWW RTTY WPX Contest	(RTTY)
	10	Asia-Pacific Sprint	(CW)
	10/11	RSGB 160 Metres Contest	(CW)
	17/18	ARRL Intl. DX Contest	(CW)
	23/24	Russian PSK WW Contest	(PSK31)
	24/25	CQWW 160 Metres Contest	(SSB)
Mar	3/4	ARRL Intl. DX Contest	(SSB)
	10/11	RSGB Commonwealth Contest	(CW)
	17/18	John Moyle Memorial Field Day	(CW/SSB/FM)
	17/19	BARTG RTTY Contest	(RTTY)
	17/18	Russian DX Contest	(CW/SSB)
24/25	CQWW WPX Contest	(SSB)	
April	7/8	Marconi Contest	(CW/SSB/RTTY)
	7/8	SP DX Contest	(CW/SSB)
	7/8	EA WW RTTY Contest	(RTTY)
	8	QRP Hours	(CW/PSK31/RTTY/SSB)
	14/15	Japan Intl. DX Contest	(CW)
	14/15	Yuri Gagarin Intl. Contest	(CW)
	21	Holyland DX Contest	(CW/SSB)
	21	TARA Skirmish Digital Prefix Contest	(PSK)
	21/22	YU DX Contest	(CW/SSB)
	28	Harry Angel Sprint	(CW/SSB)
28/29	Helvetia Contest	(CW/SSB)	
28/29	SP DX RTTY Contest	(RTTY)	

A somewhat belated Happy New Year to all for 2007.

Stairway to Ham Heaven

This isn't a tribute to Led Zeppelin. It's not an entrance facility to the final resting place for deceased porcine and it's definitely not the name for a non-Kosher butcher's shop either! The title of Ham Heaven has been proudly bestowed by the Northern Corridor Radio Group on their premises located in Whiteman Park, Perth.

Having had the privilege of visiting the group in November for the 2006 CQWW CW contest using the callsign VK2BAA/6, I'd say that this is highly appropriate nomenclature for the venue,

as the group members have been busily putting together a set-up which falls very neatly into said category. But first, a bit of history on the group:

The Northern Corridor Radio Group was formed 20 years ago by an enthusiastic group of amateur radio operators, located in the expanding residential northern corridor of Perth. There were no clubs or premises that would satisfy the local amateurs' aspirations to be found anywhere in this area at that time, but the locals craved premises in which to socialise, hold meetings and have an operational club radio station. Anyone was welcome to join the group, which had membership with interests covering many aspects of amateur radio's broad church of topics. At that time, a local college was

conducting amateur radio courses and was sympathetic to the group's request for a room for two nights a month for meetings and discussion. For many years the group was happily accommodated in the college and the operation of the station was enhanced by the erection of a 20 m mast within the college grounds. With the group conducting Amateur Radio Exams in a lecture room of the college, this symbiotic arrangement continued for many years up until the college was sold a few years ago and the group had to vacate the premises.

The search for another suitable location proved fruitless for almost two years, but then a contact was made with a local Pony Club which had a lease as part of the Equestrian Centre at Whiteman Park

in Perth. Negotiations took place and two years later, the NCRG has almost completed the project.

And what a project it has turned out to be. The members have managed to build a new club venue housing meeting areas, radio operating rooms, a kitchen, workshop, office and a storage room. Even a parking area for 25 vehicles, along with a water supply, power and fencing has been installed.

The ultimate driving force was a desire to be remote from any residential areas so as to have no possibility of causing domestic radio or TV interference problems and have no restrictions on the building of radio masts. Any work carried out requiring a licensed person was performed by a club member holding the required qualifications – saving a fortune in the process!

Ham Heaven features one self supporting mast, a tapered steel mast of 20 metres and two windmill stands, 20 metres and 8 metres high. Radio rooms 1 and 2 are painted and carpeted, lighting provided, power points installed and each room has a split unit A/C unit along with the all-essential antenna and rotator cables in place.

After all this hard work and effort, the group now has an almost fully functional club house. Meetings take place twice a month and the Sunday morning working bees and socialising have strengthened the group membership. The VK6 radio relay broadcast of the Wireless Institute's News now takes place from the group's station, using the callsign of VK6ANC.

Members often operate the radio equipment and enjoy aspects of Amateur Radio which may be denied at home because of Council restrictions on antennas or supports – and even neighbour issues for perceived visual or television reception reasons.

The obvious question that you might be asking yourself at this point is "How on earth can they afford all this hardware? Are they all rich?" The answer is "No"; they're not millionaires and they don't have a 'Sugar Daddy' wealthy benefactor either. The group have had a modicum of luck in making the right contact at the right time and a large helping of common sense in getting their act together. As a group, they spend many hours working at a weekend on various projects and use their networking skills to acquire mate's rates for materials and labour. They are a

prime example of what can be achieved when like-minded people group together and pull in the same direction.

The reason I've featured the group in this column is quite simple. The group participates in both international and interstate Radio Contests and often plays host to visiting amateurs such as myself. Bernd VK2IA operated in the 2006 CQ WPX CW Contest from the group shack using the callsign VK6AA, for example. The group has far-reaching aspirations in this direction, with thoughts turning to Multi-Multi (multiple operators using simultaneous multiple transmitters) type of configurations to enable VK to be represented in this category in international contests such as CQWW, with consummate ease. The NCRG already have plans for a further tower and have embarked on a directional antenna system for LF. There have previously been successful ad-hoc groups in this category (a team from VK entered CQWW SSB in 2006 in the M/M section – very successfully) but I'm not aware of any stations utilising facilities such as this of a permanent nature within this category, with plans for further expansion. Maybe you know better and can let me know? I'd be delighted to feature similar contest groups in AR.

From first-hand experience, and if you find yourself in the general area, I can recommend that you make contact via the group website <http://www.ncrg.org.au> and arrange a visit. I'm sure that you won't be disappointed. As an aside, if you have a spare beer fridge then please get in touch with the group, as theirs shuffled off this mortal coil during the November contest, no doubt due in part to the vast quantity of stubbies I loaded into it. As all guest operators should do, I made a donation to the group funds upon my departure to cover electricity etc – but the cash might need to go towards a new fridge! Vale fridge.

Spring VHF-UHF Field Day 2006 Results

The results and write-up for the Spring Field Day are published in this month's AR. It's great to see a good turn-out for the contest, with some impromptu operations of some bands reaping rewards for the brave and some increased activity arising in various areas of VK. The Summer Field Day usually attracts even more onto the

bands, so it all bodes well for summer – unless of course the occasion is spoiled by fires. Why not have a go next year, as either single or multiple operator? See if a few others at the local club fancy submitting an entry – the contest manager John VK3KWA would be delighted to hear from you.

Additional BERU information – The VP8GQ Trophy

Building on the BERU/Commonwealth Contest information published last month, an additional award has been announced. With the intention of stimulating some new interest in the Commonwealth Contest, the VP8GQ Trophy will be presented to the highest-placed non-UK station (who has not won the trophy in the preceding two years) in the 12-hour category, regardless of section, Open or Restricted. This award takes the form of an attractive wood mounted plaque and will be retained by the winners. This trophy has been made available through the generosity of Peter Hobbs G3LET.

Commonwealth Traveller Award

A special "Commonwealth Traveller" certificate will be awarded to the highest-scoring entrant who operates from a Commonwealth Call Area which was not active in the previous year's (2006) event. At the discretion of the RSGB HF Contest Committee, additional "Commonwealth Traveller" certificates may be awarded to entrants from especially inaccessible Call Areas.

Century Club Special 70th Award

This new award is a special promotion to coincide with the 70th Anniversary of the Contest and the inaugural Commonwealth Team Competition. It is available for 2007 only. It may be claimed by any licensed radio amateur having contacted a minimum of 70 (Seventy) Commonwealth Call Areas on the current list between 0001 UTC 1st January 2007 and 2359 UTC 31st December 2007.

Full details of these awards and a useful checklist are available at www.beru.org.uk, or contact the organisers via g3pjt@btinternet.com.

continued next page



Your humble scribe during the 2006 CQWW CW contest at NCRG
Photo: VK6HZ

(Left) The Northern Corridor Radio Group Clubhouse, showing the tribander at 20 metres and the all-essential BBQ area. Photo: VK6NE

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John Moyle Memorial Field Day

The John Moyle Memorial Field Day is due next month, so why not take a leaf out of the Westlakes Club's book and have a go - if the fires permit of course.

Westlakes won the HF/Open section last year as VK2ATZ/P and made a weekend of it by setting-up their equipment near Woodberry, near Maitland. The club gathered together sufficient equipment to make the entry and by their own

admission, a huge amount of expensive hardware is not required to be competitive and win the contest. Tenacity, skill and operator BIC (Bum In Chair) is what's required to enable an excellent placing and to have fun with a group of like-minded friends. Jessica, VK2FJES took part in the contest, helping to amass the winning score for the Team. I hope you

enjoyed the contest Jessica and will be back for more contest fun soon.

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.


73 de VK2BAA Phil Smeaton



Westlakes Club VK2ATZ/P HF/Open section winners: Allan VK2JED, John VK2FJKD and Paul VK2BPL in the heat of battle during John Moyle Contest Photo: VK2BPL



Jessica VK2FJES under the guidance of Allan VK2JED, operate Westlakes Club station VK2ATZ/P during John Moyle - showing the Team how it's done! Photo: VK2BPL



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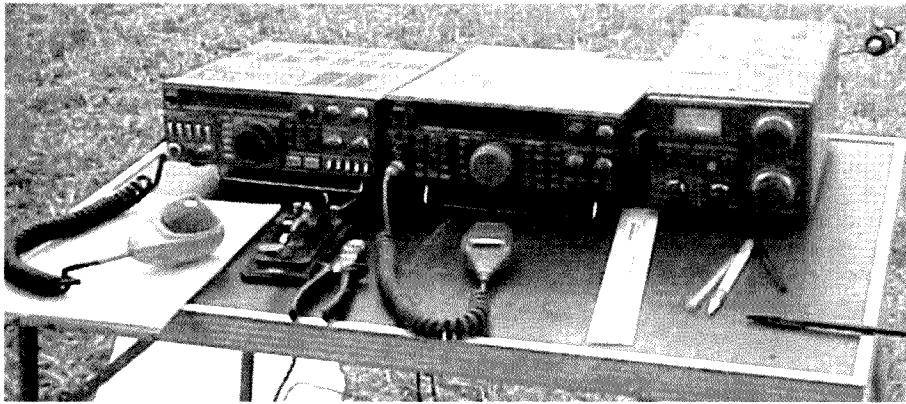
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Picture 5: Westlakes Club VK2ATZ/P HF/Open section winners, station equipment. Photo: VK2BPL

CQ WW 160 Metre CW Contest 200 Results

(VKs only\Call\Score)

VK6DXI	3,587
VK3IO	2,240

The Commonwealth Contest 2007 – the Australian team needs you!

By Steve Ireland VK6VZ

The RSGB's Commonwealth Contest is one of the oldest radio contests in existence, having been first run back in 1931 when it was known as "British Empire Radio Week" and lasted for six days!

All those countries that were part of the great family of the British Empire – including Australia, of course – were invited to participate. While the Sun set several decades ago on the Empire and the colonies are long gone, strong ties still exist between the countries that once were all coloured pink in atlases, as a sign of their being ruled by the Queen or King of England.

British Empire Radio Week metamorphosed into the 24-hour

British Empire Radio Union or BERU (pronounced berroo) contest in 1935 [1], with the objective of linking all those having an interest in amateur radio within the Empire. In 1976, BERU morphed into the Commonwealth Contest, substituting the Commonwealth for British Empire, but with the spirit of the original objective intact.

It seems to me that this spiritual objective survives to this day – and is one of the main attractions of the Commonwealth Contest for me – which sits alongside the Australian Remembrance Day Contest as my favourite radio events.

As an ardent Australian republican, I find it is quite amusing to have developed such a strong affection for an event

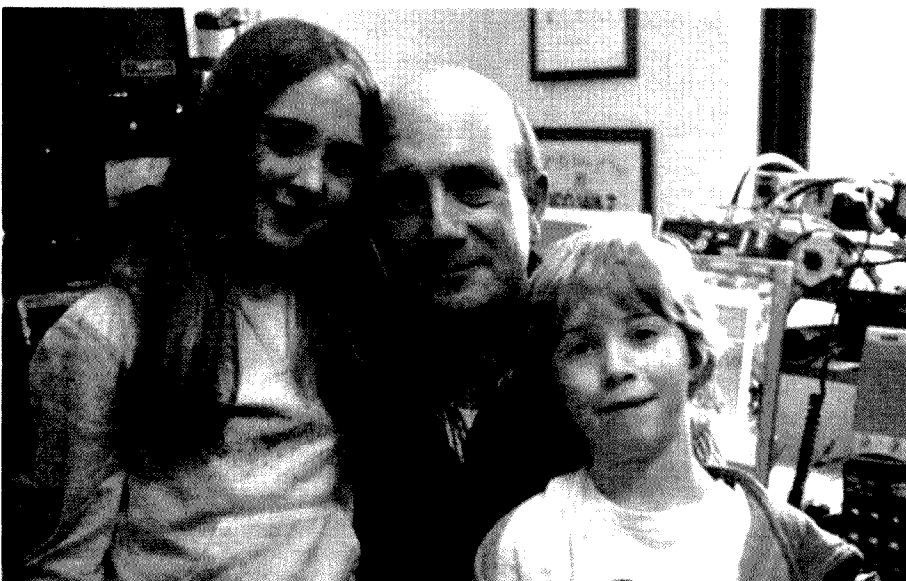
that some regard as a sort of colonial hangover. The reason is that for me the Commonwealth Contest stands for everything that is good about being part of a big family – friendly exchanges, mateship and a fierce rivalry that never tips over into antagonism.

Once you have taken part in a Commonwealth Contest – in which entrants use Morse code – you seem to become part of the family. The next year, some of the regular operators greet you by name – a pretty weird event in the breakneck speed world of CW contests – and the year after, and the year after that, more and more operators seem know who you are and offer a greeting.

The event also has something in it of the game of cricket – a contest of strategy, rather than just brute force (high power and huge antennas). Sure you can sit on a frequency and blast away in a manner akin to Adam Gilchrist, but you aren't going to place very high unless you engage the grey matter and do some elegant Ricky Ponting-esque bonus-point chasing and band changes.

There is a saying that in order to know where you are going, you have to know where you have come from – and in the case of Australia, Canada, New Zealand, the West Indies, India and Pakistan, we all owe our existence (rightly or wrongly) to the Commonwealth. Whatever Aussies, Kiwis or Canucks or other people who live in a Commonwealth member country feel about the past, we can do battle with the mother/father country at cricket or in the Commonwealth Contest – and give 'em a good friendly hiding if we can.

This year, the Commonwealth Contest 2007, which takes place on 10/11 March,



Picture 6: Steve Ireland VK6VZ plus his daughter, Hannah and son, Sam. Behind VK6VZ can be seen the Panda Cub transmitter used by famous Commonwealth Contester, the late Derek Ritson G5RI

has a new team section, which should give a whole new twist to these traditional rivalries. The format of this team contest will follow loosely that of the 2007 Cricket World Cup, which is being held around the same time, with teams from the United Kingdom, Australia, New Zealand, Canada and the Indian sub-continent. Hopefully, winning the team section will become the radio equivalent of taking home the World Cup cricket trophy.

Full rules for the Commonwealth Contest 2007 can be found at: <http://www.contesting.co.uk/hfcc/rules/rberu.shtml>

I (VK6VZ) have been given the job of coordinating the Australian team entry and, on the first day of the Ashes, passed on the names and callsigns of the 14-person squad to take part in the 2007 event to the RSGB. Our squad consists of:

1. Les VK4BUI
2. David VK2NU
3. John VK4EMM
4. Alan VK8AV*
5. Barry VK2BJ
6. Mike VK6HD
7. Russ VK4XA
8. Kevin VK6LW
9. Phil VK2BAA
10. George VK4XY
11. Bernd VK2IA*
12. Rob VK6HG
13. Alan VK6BN
14. Steve VK6VZ

The asterisked members of our squad are those who may not be able to take part owing to personal circumstances, but hope to be available. Rob VK6HG has offered to be our "12th man", as he has only a few low antennas, lives behind a big hill and runs QRP, but we are delighted to have his company and great Aussie spirit.

As with the current Australian cricket side, we are an interesting blend of experience and even more experience and are quite happy to be known as "Dad's Army". Our team motto is: "Too old, too slow, too good."

In order to make the best possible score, it is important for each member of the Australian squad to work as many "bonus stations" as possible. Each Australian state counts as a separate call area for the contest on each band, and the first three contacts we make with each Australian state other than our own on each band each earns us a vital twenty bonus points.

What this rather confusing statement means in practice for a VK6 station is that each of the first three contacts with VK5 on each band is worth 60 bonus points. If you multiply this by five bands, as the contest covers 80, 40, 20, 15 and 10 m, this means that contacts with the state next door alone can be worth 300 points – a huge amount in the Commonwealth Contest.

On this basis, if as many Australian amateurs as possible can get on in the Commonwealth Contest and help the team out by working them on as many of the HF bands as possible, that would help us to beat the Poms, Kiwis and Canucks, and all those others.

Please help us to win the Commonwealth Team Contest. You might also have a lot of fun too!

For those who would like to enter, there is a brilliant free software program called SDC, which has been written by Paul EI5DI especially for the Commonwealth Contest. This runs under Windows and

can be downloaded from: <http://www.ei5di.com/sd/sdcsetup.exe>

See you in the Commonwealth Contest 2007, I hope – and "Go Australia" in the Cricket World Cup!

Websites

Commonwealth Contest rules at: <http://www.contesting.co.uk/hfcc/rules/rberu.shtml>

Call areas for the contest are listed at: <http://www.contesting.co.uk/hfcc/information/codes.shtml>


There is some general Commonwealth Contest information at: <http://www.beru.org.uk>.

References


- [1] Reflections in a Rosebowl – a history of the Commonwealth Contest from 1931 to 1996. By Bob Whelan, G3PJT. Published by Lambda Research, 36 Green End, Comberton, Cambridge CB3 7DY.

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Spring VHF-UHF Field Day 2006: Results

Contest manager: John Martin VK3KWA

Call	Name	Location	50	144	432	1296	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	Total
Section A: Single Operator, 24 Hours											
VK4QE	Doug Friend	QG61, 62, 63	76	483	550	720	330	-	-	-	1609
VK1DA	Andrew Davis	QF44	45	498	565	-	-	-	-	-	1108
VK4JMC	John McPherson	QG62	50	444	550	-	-	-	-	-	1044
VK1PWE	Scott Whitton	QF44	53	501	215	-	-	-	-	-	769
VK4DMC	Dale McCarthy	QH32	41	294	420	-	-	-	-	-	755
VK2EAH	Andy Hood	QF57	-	180	170	-	-	-	-	-	350
VK1DSH	Dale Hughes	QF44	-	117	-	-	-	-	-	-	117
Section B: Single Operator, 8 Hours											
VK3IH	Paul Stampton	QF21, 30, 31	44	351	430	-	-	-	-	-	825
VK4DMC	Dale McCarthy	QH32	35	192	235	-	-	-	-	-	462
VK2GG	Dan Joyce	QF56	-	-	-	-	210	-	210	-	420
VK2TRF	Jack Swart	QF56	-	-	-	-	210	-	210	-	420
VK5ZUC	Andrew Russell	PF94	-	183	230	-	-	-	-	-	413
VK2EAH	Andy Hood	QF57	-	144	170	-	-	-	-	-	314
VK5UE	Colwyn Low	PF95	21	120	-	161	-	-	-	-	302
Section C: Multi Operator, 24 Hours											
VK3UHF	(1)	QF21	81	567	820	736	560	-	-	220	2984
VK5OM	(2)	QF03	70	483	775	776	-	-	-	-	2104
VK4WAT	Tableland REC (3)	QH22	131	465	585	168	-	-	-	220	1569
VK2AES	(4)	QF45	50	597	550	304	-	-	-	-	1501
VK1BL	(5)	QF44	78	603	620	-	-	-	-	-	1301
VK3JTM	(6)	QF12	23	246	405	368	-	-	-	-	1042
VK5ZUC	(7)	PF94, 95	-	291	295	168	-	-	-	-	754
Section D: Multi Operator, 8 Hours											
VK3IDL	(8)	QF12	34	183	295	448	320	-	-	-	1280
VK3JTM	(6)	QF12	23	246	405	368	-	-	-	-	1042
VK5ZUC	(7)	PF94, 95	-	198	215	168	-	-	-	-	581
VK3FRC FAMPARC	(9)	QF21	-	237	330	-	-	-	-	-	567
Section E: Home Station, 24 Hours											
VK3AAK	Michael Coleman	QF21	55	468	570	416	-	-	-	-	1509
VK3YLV	David Timms	QF13	48	297	430	288	-	-	-	-	1063
VK4TJ	John Kirk	QG52	37	258	335	256	-	-	-	-	886
VK2DAG	Matt Hetherington	QF56	66	342	465	-	-	-	-	-	873
VK2KOL	Colin Hadland	QF56	-	393	455	-	-	-	-	-	848
VK4FNO	John Goldfinch	QG39	56	381	340	-	-	-	-	-	777
VK3UDX	Geoff Beadle	QF22	23	174	230	184	-	-	-	-	611
VK4AQ	Ross Anderson	QH32	68	228	240	-	-	-	-	-	536
VK1WJ	Waldis Jirgens	QF44	50	177	250	-	-	-	-	-	477
VK2EI	Neil Sandford	QF68	-	249	105	-	-	-	-	-	354
VK3AJR	Andre Jones	QF21	-	132	125	-	-	-	-	-	257

- (1) Chas. Gnaccarini VK3PY, David Learmonth VK3QM.
- (2) Jim Bywaters VK5OM, William Day VK3LY, Bruce Farmers VK3AQX.
- (3) Tableland Radio & Electronics Club: John Roberts VK4TL, Dave West VK4ADW, Ulf Larsen VK4TUL, Trevor Gregory VK4ZFC, Jeff Cochrane VK4BOF.

- (4) Andy Sayers VK2AES, Russell Manning VK1JRM, Sean Barwick (SWL).
- (5) Ted Gamett VK1BL, Greg Parkhurst VK1AI.
- (6) Tim Morgan VK3JTM, Dylan Cator VK3JWC.
- (7) Andrew Russell VK5ZUC, David Clegg VK5AMK.

- (8) Ian Lloyd VK3IDL, Ian McDonald VK3AXH.
- (9) Frankston & Mornington Peninsula ARC: Roy Seabridge VK3GB, Gerard Werner VK3GER, Ed Parsons VK3GD, Kim Day VK3FDXX, Brian Rich VK3VBJ.

Comments

One interesting feature of the Field Day was the large number of entrants who haven't sent in a log before. The patterns of activity were different too – some entrants reported less activity than usual, while others reported more. It seems that the main hot spots of activity this time were south-west VK3, VK1 and surrounding areas, and also northern VK4. There were no reports of unusually good propagation.

Not long before the Field Day, I made a request for entrants to avoid DX calling frequencies where possible and make use of the recommended contest frequency (.150 on each band) instead. It was disappointing to see a fair few 59 contacts logged on frequencies like 144.100. I don't want to totally prohibit the use of such frequencies unless necessary, but strings of 59 contacts on frequencies like 144.100 aren't in the spirit of the rules!

Some comments from the logs:

This VHF field day was different from past contests because, for the first time in years, we had four field stations in

the VK1 area plus some home stations. This increased the activity level and made the weekend much more rewarding – it's much more fun when there are plenty of contacts to be had. Radio conditions to the southwest (generally the Melbourne direction from Canberra) were disappointing ... To partly make up for that we had some excellent signals in from north east, with many contacts into Sydney, the coastal areas north and south of Sydney and contacts further north to Forster on 144 and 432 which were very welcome. – VK1DA

I was surprised by the level of activity here around VK1. Also for the first time there was some SSB activity on 52 MHz, probably sparked by one field station's inability to use the lower band segment. – VK1WJ

It provided an impetus for me to get an antenna operational on 23 cm, which resulted in 12 contacts, 3 grid squares and over 25% of my final tally. – VK3AAK

I was pleasantly surprised by the level of support semi-locally for this contest. At the last minute, I got a Yagi half way up the tower for 1296, which resulted in some points and a couple of new grids for me on that band. – VK4TJ

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John Moyle Memorial Field Day Contest Rules 2007

Presented by Denis Johnstone (VK4AIG/VK3ZUX)

17 – 18 March, 2007
0100 UTC Sat – 0059 Sun

**I wish all entrants good luck, and
look forward to hearing you on air
during the contest!**

N.B. new email address: jmfd2007@wia.org.au and/or check out latest info at <http://www.wia.org.au/contests/>.

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 3rd full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 17-18 March 2007.
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 (e.g. 6 hour, portable, phone, VHF/UHF):
 - a 24 or 6 hour;
 - b Phone, CW, or All modes;
 - c HF, VHF/UHF or All Bands.
5. Multi-operator portable entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
 - a 24 or 6 hour;
 - b Phone, CW, or All modes;
 - c HF, VHF/UHF or All Bands.
6. Home and SWL single operator entries may be either, 24 hour or 6 hours, all modes, all bands.

Scoring

7. Portable HF stations shall score 2 points per QSO.
8. Portable stations shall score the following on 6 m:

- | | |
|----------------------|--------------------|
| a 0-49 km | 2 points per QSO |
| b 50-99 km | 10 points per QSO; |
| c 100-149 km | 20 points per QSO |
| d 150-299 km | 30 points per QSO |
| e 300-499 km | 50 points per QSO |
| f 500 km and greater | 2 points per QSO |
9. Portable stations shall score the following on 144 MHz and higher:

a 0 to 49 km	2 points per QSO
b 50 to 99 km	10 points per QSO
c 100 to 149 km	20 points per QSO
d 150 to 299 km	30 points per QSO
e 300 km and greater	50 points per QSO
 10. For each VHF/UHF QSO where more than 2 points is claimed, either the latitude and longitude of the station contacted or other satisfactory proof of distance such as the 6-figure Maidenhead Locator 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. For each contact: UTC time, frequency, station worked, RST/serial numbers sent / received and claimed score. (VHF and above location of other station and distance showing the Lat Long or Maidenhead Locator to 6 figures for the station worked.)
13. Logs must be accompanied by a summary sheet showing: call sign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, and equipment used, and a signed declaration stating "I hereby declare that this station was operated in accordance with the rules and spirit of the contest and that the contest manager's decision will be accepted as final". For multi-

operator stations, the names and call signs (legible) of all operators must be listed.

- 14 Paper logs may be posted to "John Moyle Contest Manager, 27 Laguna Ave, Kirwan 4817 Qld". Alternatively, logs may be emailed to jmfd2007@wia.org.au, vk3zux@wia.org.au or to vk3zux@hotmail.com or snail mailed via the WIA Contest Manager JMMFD, P.O. Box 2175 Caulfield Junction, VIC 3161. The following formats are acceptable: EXCEL or Microsoft Word, ASCII text or electronic log programs such as VK Contest Log (VKCL). Logs sent by disc or e-mail must include a summary sheet and declaration, but the operator's name (legible) is acceptable in lieu of a signature. Logs must be postmarked no later than 30 April 2007.

Certificates and Trophy

- 15 At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Additional certificates may be awarded where operation merits it. Note that entrants in a 24 hour section are ineligible for awards in a 6 hour section.
- 16 The Australian portable station, CW section, 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

- 17 General WIA contest disqualification criteria, as published in Amateur Radio from time to time, apply to entries in this contest. Logs which are illegible or excessively untidy are also liable to be disqualified.

Definitions

- 18 A portable station comprises field equipment operating from a power source, e.g. batteries, portable generator, solar power, wind power, independent of any permanent facilities which is the normal location of any amateur station.
- 19 All equipment comprising the portable station must be located within an 800 m diameter circle.
- 20 A single operator station is where one person performs all operating, logging, and spotting functions.
- 21 A single operator may only use a call-sign of which he/she is the official holder. A single operator may not use a call-sign belonging to any group, club or organisation for which he/she is a member or sponsor except as part of a multi-operator entry.
- 22 A multi-operator station is where more than one person operates, checks for duplicates, keeps the log, performs spotting, etc.
- 23 A multi-operator station may use only one call-sign during the contest.
- 24 Multi-operator stations may only use one transmitter on each band at any one time, regardless of the mode in use.
- 25 Multi-operator stations must use a separate log for each band.
- 26 Logs submitted electronically can use a separate Excel worksheet for each band linked to a summary sheet. A typical example is shown at <http://www.wia.org.au/contests/> which can be copied and adapted for the individual use of either single or multi-operators stations.
- 27 A station operated by a club, group, or organisation will be considered to be multi-operator by default.
- 28 None of the portable field equipment may be erected on the site earlier than 28 hours before the beginning of the contest.
- 29 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 3 years.

- 30 Phone includes SSB, AM and FM.
- 31 CW includes CW, RTTY, and packet.
- 32 It is not expected that any other modes will be used in the contest, but if they are, they shall be classed as CW.
- 33 All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 MHz. Note: On 50 MHz, the region below 50.150 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.
- 34 Cross-band, cross-mode and contacts made via repeaters or satellites are not permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency where a repeater is not used for the contact.
- 35 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: 0100-0359, 0400-0659, 0700-0959, 1000-1259, 1300-1559, 1600-1859, 1900-2159, 2200-0059 UTC. If you work a station at 0359 UTC, a repeat contact may be made after the start of a new block providing they are not consecutive,

or are separated by at least five minutes, since the previous valid contact with that station on the same band and mode.

- 36 Stations must exchange ciphers comprising RS(T) plus a 3 digit number commencing at 001 and incrementing by one for each contact.
- 37 Portable stations shall add the letter "P" to their own cipher, e.g. 5900IP.
- 38 Multi-operator stations are to commence numbering on each band with 001.
- 39 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.
- 40 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 commences with the first contact on any band or mode, and finishes either 6 or 24 hours later.

If anyone wishes to contact me privately to discuss rules, my home phone number is (07) 4723 4229, and my snail mail and email address is as shown in the Log Submission section above.

Denis Johnstone (VK4AIG/VK3ZUX)
ar

Thanks for contributions to the QSL collection *continued*

from page 19

Estate Ron VK2ASJ courtesy of Wal Stuart.

Estate Vince Nugent VK2ALZ courtesy of Mrs Frances Nugent.

Estate Jim Swan VK2BQS courtesy of Mrs Helen Swan, (included QSL A5ITY from Bhutan).

Additional QSLs from Jeff VK6AJ: Scotland DL6MHW/MM, IOTA 009, Aland Is. OH0NH, France F/DJ9RR. IOTA 064. Moldova ER2000A (millennium), ER50CE (50 years Council of Europe), German Club DM4E, Azores G300K/CU2, Australian Commonwealth Games AX3MCG and AX3GAMES.

Jim Smith VK9NS on Norfolk Island. Some rare IOTA Europe. EU092 Scotland, EU088 and EU029 Denmark, EU070 France, EU060 Greece, EU083 Italy,

EU150 and EU 040 Portugal, EU160 Russia, EU179 and EU180 Ukraine. Jim is known world-wide through his numerous DXpeditions and has been a contributor for many years.

Mike VK6HD. Sweden Si6, SJ2, 8S4. Mexico 4B7 and 6F1. Latvia YL2000, YL85. Another top DX-er and contributor.

Austrian QSL Bureau, courtesy of Wolf OE1WHC for some rare prefixes. Sweden 8S6, SJ1, SJ2, Germany DP5, Belgium OO175, 75OMG, 7S6, San Marino T72. Spain AN2, Canary Islands EH8, France FQ2, HY2, TH6, TW7 and TW4. Malta 9H9, Italy 107, IS8 (new prefix; first time on the air), Canada VD5, VF6, XN2 is truly a prefix chaser's dream!

More acknowledgements next month.

ar

VHF/UHF - an expanding world

David Smith VK3HZ vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

So far this summer, we've had one of the best VHF DX seasons for many years - some say 20 years. On the 2 m band, there have been good openings to ZL, VK6 to VK3 and from VK7 to the mainland far and wide (including VK6). The 2 m Sporadic E openings have been numerous, long-lasting and widespread with several contacts that appear to be double-hop. What more could we want!

Firstly, thank you to all those who sent me reports of their contacts. Unfortunately, there's been so much happening (not helped by the one month break for AR) that I have no hope of reporting it all without earning a stern reprimand (and slash of the red pen) from our illustrious editor. So, I'll try to summarise what's happened and give you the highlights.

On 19/11, 2 m opened from VK2's AWD, FZ and EAH to ZL3TY.

On 21/11, Norm VK7AC worked Colin VK5DK in Mt Gambier on 2 m, 70 cm and 23 cm with 5/9 signals on all bands.

On 23/11, 2 m again opened across to ZL.

On 24/11, Norm VK7AC worked into the Adelaide area making contact with (2 m) VK5ZLX 5/9+, VK5BC 5/9, VK5AKK 5/9+, VK5OM 5/9, VK5ZK 5/9; (70 cm) VK5ZLX 5/9, VK5BC 5/6, VK5AKM 5/2, VK5ZK 5/9, VK5AKK 5/9. The highlight of the day was the 1009 km contact with Phil VK5AKK on 23 cm at 5/9 - a new VK7 23 cm distance record.

On the same day, Mark VK2EMA in central NSW also managed to work into Adelaide, to (2 m) VK5ZLX 5/9+, VK5BC 5/2, VK5ZK 5/9, VK5AKK 5/9; and (70 cm) VK5ZLX 5/9, VK5AKK 5/9, VK5ZK 5/9.

On 27/11, Wally VK6WG reports working (2 m) VK5NY 5/9+, VK5AKK 5/2, VK5ZAI 5/4, VK5BC 5/5, VK5DK 5/5 VK3AAK 5/1, VK3XPD 5/1 VK3TW; (70 cm) VK5NY 5/8. On 23 cm, Wally was heard by VK5BK. On 2 m, he was heard by VK7AC. The Mt Gambier VK5RSE beacon was audible all day.

On 28/11, between 0550Z and 0900Z, Wally reports hearing VK5RSE on 2 m, 70 cm and 23 cm and VK3RGI

(Gippsland) on 2m, 70 cm and 23 cm. Despite numerous calls on 144.1, no contacts were made. Huge signals from VK3 to VK7 - VK3PY to VK7AC S9+20 on 23 cm.

On 7/12, Brian VK5BC reports working VK4FNQ.

On 8/12, the Sporadic E openings started in earnest. Phil VK3YB worked ZL1IU 5/1. ZL1BT worked VK3VHF 5/8, VK3ZYC, VK3EK 5/8, VK3YB 5/1 (2616 km), and is heard several times by VK3NX on (very) sporadic E. Jim VK5OM with a very modest station (25 W to two stacked halos) worked VK4KAY and VK4BKP. VK5BC worked VK2DAG and VK2ZT.

On 9/12, probably the best contact of the season (so far) when Nick ZL1IU worked Garry VK5ZK and Peter VK5ZLX on 2 m - a distance of 3160 km. Gordon VK3ACC and Trevor VK3VG also both worked Nick. Both of them reported hearing both sides of the VK5/ZL contacts, leading to speculation that the mode of propagation was either double-hop Sporadic E or tropo-enhanced Sporadic E. Trevor reports that he tried 70 cm to Nick, but nothing was heard despite the S9+ signals on 2 m, backing up the theory that Sporadic E was involved, at least to central Victoria. This is the longest distance VK 2 m contact for many a year.

Continuing on the 9/12 (which was a very busy day), Glenn VK4TZL reports working VK7AC 5/9+40, VK5ZK, VK3ZQB 5/9, VK3XQ, VK3AKK, VK3CAT, VK3AMK, VK3DMW, VK3KAQ, VK3KAI and VK7AC again. Norm also worked VK4CP and VK4KK. Russell VK3ZQB reports that he gave up trying to watch TV as there were 3 Ch 2 stations competing for his viewing. On 2 m, he then worked VK4TZL 5/9, VK4WS 5/8, VK4ARN 5/9, VK4ZAA, VK4ARS 5/3, VK2FMB, VK2BA, VK2DVZ 5/9 and VK2FAD 5/9+ at Taree. Ross VK2DVZ reports working VK1, 2, 3, 4, 5, 7 and both islands of ZL. Steve VK2ZT reports the same spread of coverage, with 20 contacts and 22 on the 10/12. VK3VHF worked ZL1IU 5/5. Phil

VK4CDI reports working ZL1IU, then 7 VK3s and 1 VK7. David VK2BA reports that he was working VK6s on 6 m and, with the short skip, decided to try 2 m. The band opened strongly to VK3 and he worked 10 VK3s through the only pileup of interstate stations he has ever heard on 2 m. He also worked VK7AC 5/9 - all with his beam towards VK6.

Still on 9/12, Andy VK2AES reports working ZL1IU. He then contacted some Canberra stations and, as a result, Ian VK1BG and Rob VK1ZQR both had good contacts with Nick. This is possibly the first opening on 2 m from the VK1 area into ZL for a couple of decades.

On 10/12, tropo was the main form of propagation. On 2 m, ZL3TY worked 13 VK2s and 9 VK3s. VK5ZLX was also heard. Rhett VK3VHF worked ZL3TY 5/5 on 2 m and -23 on 70 cm JT65.

On 11/12, the tropo enhancement had moved and ZL3TY reports working 15 VK2s and 3 VK4s on 2 m. VK2FZ was worked on 70 cm.

On 16/12, Simon ZL1SWW reports working VK2FZ, VK2ARA and VK2BX on 2 m and heard "someone from the Dandenongs" (probably VK3KAQ).

On 22/12, another strong Sporadic E opening. Paul VK3DDU reports working 8 VK4 stations on 2 m. Colin VK5DK worked 7 VK4s, 2 VK2s and 2 VK3s. Steve VK2ZT reports 1 VK3, 3 VK4s, 6 VK5s, 2 ZL1s and 5 ZL3s (over 2 days). Rex VK7MO reports working VK4KDD, VK4WS, VK4ZBH, VK4APG, VK4ZAA, VK2YO, VK4ADM, VK4EME, VK5AKK, VK5EME, VK5UK, VK5ZBK and VK5ZK. Doug VK4OE reports working VK5BC, VK3KAQ and having a 15 min rag-chew with VK3PY at S9+. Then the skip shortened to VK2AYM (Albury). Then VK3DDU, VK5ZK, VK3DUT, VK3VHF, VK3AMK and VK3WN. After a break, he worked VK7AC, VK5ZAI, VK5DK and VK3ZQB. He also heard VK4TZL (Hervey Bay) work VK7ZIF near Hobart.

On 23/12, another spectacular contact occurred. At 0900Z, Cec VK6AO worked Joe VK7JG on 2 m, in a brief opening,

over a distance of 2977 km. This is a new VK6 and VK7 2 m distance record and, it is believed, the first 2 m contact between VK6 and VK7.

Still on 23/12 (and the same opening), Colin VK5DK worked VK6HK 5/3 and VK6AO 5/7 and heard VK6ADI 5/6. The opening only lasted about 30 mins and the VK6RPH 144.460 beacon was audible. VK7MO worked (2 m) ZL4LV, ZL4DK, ZL3TY, ZL3NW, ZL3OZ, ZL3AAU, ZL3AIC, ZI3MF and ZL3CU. Murray ZL3MH worked VK1BG and VK2KU on 2 m.

On 25/12, plenty of sleigh-enhancement early morning. Jeff VK8GF worked VK4ARN, VK4CP, VK4APG, VK4JMC, VK4ASB, VK4TJ and VK4AFL. The VK4RTT beacon was S9+ from 0045-0155Z.

On 26/12, Rob VK4TWR reports working VK2GKA 5/9, VK2BXT 5/8, VK3NX 5/3, VK3ACC 5/4, VK2EMA 5/9+, VK3AMK 5/9+, VK3AAK 5/9+, VK3XQ 5/5, VK3II 5/5, VK3BBB 5/9 and VK2KRR 5/5.

On 2/1/07, Neil VK2EI reports working VK4BOF 5/6, VK4FNQ 5/9, and VK4BEC 5/5.

On 4/1, several big E's openings

occurred. A dog pile built up on 2 m, although operation was reasonably orderly with most stations calling on 144.1 but announcing that they were listening on another frequency. Trouble was, quite often you would QSY and find the other frequency now in use! There were many QSOs between VK1, 2, 3, 4, 5 and 7 stations – too many to list. The opening lasted for about 4 hours. John VK4FNQ reports working 36 stations.

5/1 was a similar day. Ron VK3AFW reports that he observed 3 E's opening periods – 0030 to 0100Z, 0300 to 0540Z and 0905 to 0908Z. For the VK4s the opening was continuous from 0030 to past 0600Z. VK4 stations that were consistently heard in



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Melbourne included VK4TWR, VK4BKP, VK4BLK, VK4FLR and a Foundation License holder Tom VK4FTDX who seemed to be having a ball. Many other VK4s came and went as the enhancement moved around. Gordon VK3ACC on the Murray reports working 13 VK4 stations. Trevor VK3VG in central Victoria reports working VK1, 2, 3, 4, 5, 7 and 8 in the UTC day and had excellent back-scatter signals when beaming west, but no VK6. Steve VK2ZT reports working ZL3FV and VK8GF – both just over 2000 km in opposing directions from him.

So, it's been a very lively two months. Hopefully there's a lot more to come before the season ends.

Microwave

Colin VK5DK reports some interesting activity on the 24 GHz band:

Russell VK3ZQB at Port Fairy and Trevor VK5NC and myself in Mount Gambier have had our first contact on 24 GHz since we altered the feeds on our systems.

On the evening of November 19th, a check of the VK5RSE 1296.550 MHz beacon by Russell showed a very strong signal at 5x9+. I set up at my portable location on the edge of the crater of the Blue Lake and was able to hear the 10 GHz beacon, located temporarily at Russell's QTH, at 5x9. Russell then proceeded to his portable location in the sands dunes just outside Port Fairy – a distance of just over 200 km. A 5x9+ SSB contact was made on 10 GHz.

We set up the 24 GHz units and Russell transmitted a signal to me but nothing was heard. I then transmitted a signal back to Russell who found me about 40 kHz lower than he expected. After aligning our dishes, we had good 5x9 signals both ways. This is the best signal heard over this path on 24 GHz with very steady signals over the 30 minutes QSO.

Alan VK3XPD reports on some further activity:

On Tuesday, November 28th at 1010Z, the current National VK Record for 24 GHz was extended from 201 km to 230.05 km.

Russell VK3ZQB, operating from the summit of Mt Warrnambool (east of Warrnambool) worked Alan VK3XPD operating from Berwick in the eastern suburbs of Melbourne. Signal Reports were 5x5 both ways.

Our 10 GHz systems were initially used for determining bearings because

the "pointing" of our 24 GHz systems is extremely sharp/critical. Several other QSOs followed on from this initial record claim with signal reports up to 5x9.

An attempt was made over a longer path of circa 400 km to Colin VK5DK and Trevor VK5NC operating from a site near Mt Gambier. However, this proved unsuccessful. It was later found, when Russell and Alan tried again, that the propagation had collapsed. This phenomenon occurred within a matter of minutes and is usually the result of rising humidity, which attenuates 24 GHz signals heavily.

Station parameters are tripod-mounted 600 mm Dishes fed by transverters which develop a rather modest 500 milliwatts on 24048.1 MHz and 2 metre IFs.

The weather conditions prevailing at that time of our record attempt (2110 hours EDST) were fine and calm and coincided with some excellent propagation south into VK7 and west to VK6 on several days prior.

Spring Field Day

As I write this, Summer VHF/UHF Field Day is almost upon us. I received a few notes about the Spring Field Day that may be of interest.

It's good to see a bit of activity from the VK1 area, with several stations perched on the hilltops. Ted VK1BL reports:

What a fantastic weekend. Thank you to everyone who participated. VK1 and surrounding area saw quite a lot of activity, although things started pretty slowly on Saturday afternoon. It was great to have home stations coming up in support of people in the field, and the tropo duct on Saturday night up the coast was just great for those willing to stay up to lam Sunday...

Greg VK1AI and I had a great time on Mt Coree (QF44iq). We'd planned to camp down in the forest, but the activity Saturday night kept us on the summit where we eventually slept under the stars after closing down at 1 am Sunday. Rain woke us at around 3:30 am but we caught a few hours sleep cramped in the front of Greg's Range Rover until about 7 am...

Here's for even more fun on the Summer Field Day in January.

Doug VK4OE also had some fun:

I, as usual, had a great time operating five bands as a single operator during the recent Spring VHF/UHF Field Day event, but I particularly want to describe the best tropo QSO that I have experienced

during such a contest. Normally, good propagation seems to be reserved for times other than contests...

Early on the Sunday morning I set up my portable gear on Springbrook Mountain which is just inland from the Queensland Gold Coast, right on the NSW border (QG61PS) and at 2000 immediately made contact with some Brisbane stations. A weak signal coming from the North was evident behind those strong stations and it was a thrill to discover that it was John VK4FNQ in Charters Towers (QG39EX). The ensuing contact at 1148 km was a steady 5x1 to 5x2 without QSB over a few minutes, and very satisfying. Attempting 70 cm was without success.

The weather chart showed a large, long and stable high pressure ridge in the right place to make this contact possible through enabling a coastal duct to form.

A point that interests me about this QSO was that Brisbane stations in elevated locations or with a good take-off to the North, those who can and do occasionally work North Queensland stations when there is a coastal inversion in place, were not hearing John at this time. Propagation at the Southern end was to the 1050 m elevated site where I happened to be.

Some other Queensland coastal paths that have been worked, e.g. Brisbane to Cairns and the Atherton Tableland area, are longer. However, for propagation to occur when operating portable is rather special!

Beacons

A short note from Doug VK4OE to advise that VK4RBB has commenced transmission on 432.440 MHz, 1296.440 MHz and 2403.440 MHz from its permanent location at Murrarie in Brisbane, QG62NM. Transmitter powers are 8 W, 9 W and 2 W respectively, and each antenna is horizontally polarised and omnidirectional. Reception reports from distant stations would be greatly appreciated to Doug at friends@squirrel.com.au.

The northern Tasmania 2 m beacon – VK7RAE – on 144.474 MHz has been put back into operation at a new site on Don Hill near Devonport (QE38DU). It is running 10 W to a Big Wheel antenna, and has been heard several times already in VK3. Thanks to Joe VK7JG and the others involved in the work.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

John VK4JMC joined the group and puts out a good signal on FSK441. Peter VK3SO is operational and getting his feet wet by listening in to the activity sessions held from 0700 to 0800 ESDT each Saturday and Sunday.

The procedure developed by the group for working more than one station at a time is working well and has advantages even when working one station in that other listeners can identify the transmitting station and, as it takes fewer characters, it will sometimes get through on a shorter ping. Thus it is suggested that this procedure be generally applied in VK-ZL even when working only one station at a time. An example of this procedure is as follows:

Message Sent	Station Transmitting
CQ VK2AWD	VK2AWD
VK2AWD/27 VK4CDI/37	VK3II
VK3II	
VK3II/R26 VK3AXH/38	VK2AWD
VK2AWD	
AWD/RRR VK4CDI/26 VK3II	VK3II
II/73 VK3AXH/38 VK2AWD	VK2AWD

There is a limit of 28 characters on the WSJT program which means it is not possible to work more than two stations at a time.

Around 18 November, a number of stations were testing the limits of FSK441

at the time of the Leonids meteor shower. While the Leonids did not produce more than a marginal increase in meteor pings, they did encourage activity. There were more burns than normal and the best burn recorded was of 88 seconds duration from VK4EME that was copied in VK1, VK3 and VK7 at the same time. A number of stations attempted QSOs over longer distances to ZL with the following results:

- ZL4LV VK7MO 1862 km QSO
- ZL3TY VK7MO 1951 km 4 x QSO
- ZL3TY VK2EAH 2003 km Identifiable ping
- ZL3CU VK7MO 2045 km 2 x QSO
- ZL3TY VK1WJ 2077 km 2 x QSO
- ZL3TY VK3ZYC 2093 km Identifiable pings
- ZL3TY VK3VHF 2162 km Identifiable pings
- ZL3TY VK3HZ 2272 km Identifiable ping
- ZL1IU VK7MO 2431 km 4 x Identifiable pings in 4 hours
- ZL3TY VK4EME 2451 km Identifiable ping when VK4EME working VK1WJ

These results show the maximum distance QSO was 2077 km but that a few pings were seen out to as far as 2400 km.

The results support the view that there is a practical limit of just over 2000 km for meteor scatter.

There is strong evidence that meteor scatter can be extended beyond the practical limit of 2000 km by tropo-ducting, with pings copied last year by Gary VK5ZK and Peter VK5ZLX from Bob ZL3TY at around 2800 km. In order to explore this dual mode of propagation, Nick ZL1IU has been running tests with Rex VK7MO. They report that on both 11 and 26 December, when the Hepburn charts indicated ducting on Nick's side of the Tasman, QSOs were completed with ping rates of up to 60 per hour compared to less than one per hour under normal conditions. Thus it is worth watching for this dual mode of propagation whenever the Hepburn charts indicate the possibility of a tropo extension. While a tropo extension will generally not go over high mountains, the meteor scatter part of the path is well above mountains and would, for example, allow stations west of the Great Dividing Range to work into ZL. Similarly a duct on the VK side of the Tasman will allow ZLs on the other side of the New Zealand Alps to work extended paths into VK.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland VK5BC

After some good openings in October, the band continued to improve in November. By December, the sporadic E season was in full swing with openings on most days. Most operators consider the season as one of the best sporadic E in memory with high activity from all call areas. Typical of comments and a summary from a VK6 perspective are those I received in a message from Graham VK6RO:

"The December 2006 6 m sporadic E DX season was the best I have ever experienced in the 28 years I have been DXing on 6 m.

I use a quarter wave vertical at about 10 metres high and an old Kenwood TS 680s as my scanning setup. This TS 680s has been scanning every day for about 20 years. For QSOs, I have a 6 element log periodic.

This past season was outstanding for the

number of openings to indicators or actual QSO openings. The band was open to New Zealand for 1 day in November and 4 days in December, this is outstanding; I do not remember this number of ZL openings before.

Please see below some statistics from my log. I log every indicator as they show up.

November 2006 [number of openings in brackets]

- Days open: 6
- Beacons heard: VK6RSX [4] VK5VF [1] VK8RAS [1]
- TV: 46.240 [1] 46.172 [2] 45.250 [1] 57.250 [3] 57.260 [1]
- Hams worked VK5BC AND VK7AC

December 2006

Number of days open to indicators or

hams: 25 This must be a record for my shack.

New Zealand QSO

Openings occurred the following 4 days,

- 16th with ZL3AAU
- 17th with ZL3NW, TY, MF and AAU.
- 23rd with ZL2AA, DX, ZL3NW, DAC, ZL1CX and ZL3TY
- 26th with ZL3TY

This number of QSO openings to ZL is virtually unheard of in OF77XX

BEACONS: See below the number of openings to each beacon heard.

- VK6RSX (17), VK8RAS (9), VK5RBU (2), VK3RMV (6), VK5VF (7), VK7RAE (2), FK8SIX (1)

Video or audio indicators:

continued on page 53

DX - News & Views

John Bazley VK40Q,

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.

Email: john.bazley@bigpond.com

New Year Greetings to everyone. Even now, we know that we have plenty of DX to look forward to in 2007! What is still uncertain though, is have we passed the Sunspot Minimum yet? If we have, then the experts will undoubtedly soon be telling us what to expect in the coming months and years. Hopefully, a major improvement in conditions, with the prospect of 10 metres opening up again as a major DX band. 10 metres is quite an exceptional band. When conditions are really good, it is super for DX, with really strong signals, even when they are QRP, and it is relatively easy to erect some form of directional array in even small lots.

I hope that all of you who needed the Lakshadweep Islands (VU7), as I did, succeeded in working them during their operation during December 2006. ARIS have done an excellent job in arranging for these Islands to be reactivated. If you missed the first operation then hopefully you will have managed to work the second operation that took place in the latter part of January 2007 which will have included the use of 30 metres.

What DXpeditions are being planned, apart from the ones that have yet to be announced – January: S.M.O.M. (1A4A), Bangladesh (S21XA), Lakshadweep Islands (VU7RG), Niger (5U5U), Djibouti (J20SA), Burkino-Faso (XT2C), Zanzibar Island (5H1Z); February: Moucha Island (J20M & J20), Montserrat (VP2M), Aves Island (YW0DX); March: Spratly Islands (9M4SDX), April: Agalega (3B6), Swains Island (N8S); September: St Brandon Islands (3B7C) ?

I wonder if we will have any new entities activated in 2007?

The ARRL DXCC Desk has approved the following operations for DXCC credit: ZA/IK7JWX (Albania), July 10-30, 2006; 3V6T (Tunisia), July 5-15, October 22-31 and November 22-30, 2006; 3V7A (Tunisia), May 22-31, 2006; 9G5UR (Ghana), current operation effective September 22, 2006; 9M0/9M2TO (Spratly Islands), June 9-12, 2006; 9Q1NT (Democratic Republic of the Congo), the current operation effective from September 22, 2006; C91TL (Mozambique), June 29-July 13, 2006; FO/F8UFT (Clipperton Island), March 1-31, 2005; OJ0LA (Market Reef),

September 9-15, 2006; ZL9BSJ (Auckland and Campbell Island), September 12, 2006. For more information, visit the DXCC Web page <http://www.arrl.org/awards/dxcc/>.

The DXCC Award programme also has a "DXCC Frequently Asked Questions" that can answer most of the questions about the DXCC programme and can be found at <http://www.arrl.org/awards/dxcc/faq/>.

While on the subject of DXCC, we are going to miss Wayne Mills N7NG, who has run the DXCC Programme now for over 6 years and had driven the development of the LOTW programme.

I quote from a note issued by Wayne: *All in all, it's been a fun six and one-half years. The League has been a great place to work, and I'd do all but the last 22 months over again. I thank all of you around the World for your great support. In particular, I offer special thanks to our volunteers - advisory committee members, log checkers and advisors. I also urge all of you to support the ARRL financially. Be sure to tell them what you want, though - they don't always ask. I hope to regenerate an active interest in Ham Radio back in Wyoming. Maybe there'll be another DXpedition or two as well, and look for N7NG - Jackson Hole - to be an active Wyoming contributor to LOTW as long as it's in business.*

73, Wayne, N7NG

The Spratly Island DXpedition in March (9M4SDX) is going to be a big operation with a large group of operators from Japan, including at the time of going to press, JA1OCZ, JE1CKA, JF1PJK, JK1FNL, JR1AIB, JJ2VLY, JQ2GYU and JR7TEQ, and from Malaysia - 9M2CF, 9M2KT, 9M2TO, 9M2/JH3GCN and 9M8YY. They will be active from Layang Layang (AS-051) from the 10th March to the 19th March with four stations on all bands and modes. QSL via 9M2TO, direct or bureau. The web site for the expedition can be found at <http://island.geocities.jp/layang9m4sdx/>.

The Sovereign Military Order of Malta, 1A0.

Starting from January 2007, a new Amateur Radio Station license (1A4A) has been issued for the SMOM, The

Sovereign Military Order of Malta. The licence is held by SMOM, and its management is the responsibility of Giorgio IZ4AKS. The first activity from this station was from the 2nd January 2007 to the 8th January 2007, from the extraterritorial zone of the Magistral Villa on the Aventine Hill in Rome. The operators were IZ4AKS, IZ4DPV, I4UFH, IK4UPB and HV5PUL (IW0DJB). Activity covered all bands from 2 m to 160 m, SSB/CW/RTTY modes. Three stations were active at the same time. Special attention was made to DX areas, such as Japan, South America and the U.S. West Coast, particularly on the low HF bands of 30, 40, 80 and 160 metres.

The licence was granted for a special fundraising programme to support the worldwide relief activities of the Order of Malta. The Order follows its historic Hospitaller mission providing help to the needy and the sick.

1A4A (One Aid 4 Africa) first period of activity aimed to collect funds to build a school for young girls, as part of a support plan for the rebirth of Southern Sudan, coordinated by the Order of Malta, together with the Italian government.

QSL Manager: IZ4DPV Massimo Cortesi, P.O. BOX 24, 47100 FORLI' CENTRO (FC) – ITALY.

We hear that S9SS is due to retire in February from his job as Manager of the VOA station on Sao Tome. He plans to retire to the Mountains in North Carolina. The QSO's for S9SS are downloaded on LOTW and for those requiring a paper QSL these are available from his Manager N4JR. Over the years he has been very active from Sao Tome.

XT2C operation was scheduled for January 6th to January 20th on all bands. QSLs should be sent direct to F9IE.

5H1Z planned to be active from January 18th to January 29th on 80 to 10 metres running 400watts to vertical antennas, CW and SSB. QSLs to be directed to F6AML.

VU7RG activity was planned from January 15th to January 25th, any further information is available on their website.

C6ARI A group of German amateur

radio operators activated the rare Elbow Cay – part of Cay Sal Bank (NA219) from January 3rd to January 9th. Their QSL manager is DL3OCH.

FR/F4ACQ Tibo is running 100 watts into an inverted V dipole. He is expecting to receive his FR5 callsign soon. Tibo will be staying on Reunion Island as a permanent resident. QSL information will be announced soon. His main activity will be on 20 metres SSB.

D2NX - JM1CAX, (ex JY9NX, VK9NX, YJ0NX, 3DA0NX), Koji, is now working in Angola and QRV as

D2NX. He is running an IC-756PRO and IC-PW1. QSL via JH7FQK

6W and J5 African trip by Sid DM2AYO, Mel DL6CT and Hans DL7CM, who will be active from Senegal and Guinea Bissau between the 3rd and 23rd March. They will operate CW, SSB, RTTY and PSK as 6W/DM2AYO, 6W/DL6CT and 6W/DL7CM (QSL via home calls, direct or bureau) 160-6 metres, and as J5UAR (QSL via DL7CM, direct or bureau). Further information on their trip can be found at <http://www.qsl.net/dl7cm/6W/6W.htm>

VP8 South Shetlands Sang DT8A reports he “will be now on the air with the call HL8KJSJ, the original callsign for the King Sejong station”.

Happy DXing.

Special thanks to the authors of *The Daily DX* (W3UR) and 425 Dx News (IIJQJ) for information appearing in this month's DX News & Views.

For interested readers you can obtain from W3UR a free two week trial from www.dailydx.com.

ar

VHF-UHF _ an expanding world continued

46.172 (25), 57.260 (15), 57.250 (20), 46.240 (14), 45.240 (16), 45.250 (9), 45.260 (9), 50.740 (1) 50.750 (1) [not all recorded, too exciting trying to work ZL's to listen] 48.239.6 (1), 55.250 (1), 55.250.1 (2), 55.260.5 (1), 57.750 (1)

QSO results:

All states were worked except VK6. Usually VK6JQ in Broome is heard, but nothing this season so far.

Best day

The best day overall in my shack was December 23

Cheers from Graham VK6RO/
VK6SIX IN OF77XX.”

In VK5, the band was open on most days in December, often from first thing in the morning until late in the evening. On many days all states were worked with often very short skip occurring. There were several openings to VK3 and during one of these opening, stations from Mt Gambier were S9+ into the Adelaide area. Also on several occasions both sides of VK6/ZL contacts could be heard.

A welcome addition this season is the Darwin VK8VF beacon on 50.310. It has been heard in most states and it has been great to work several stations including Mark VK8MS, VK8AH, Richie VK8RR and Joe VK8VTX from the Darwin area. Along with the Darwin stations, Jeff VK8GF has been worked regularly from Alice Springs and this season Wayne VK8ZAA has been active from Alice.

Activity from VK7 has also been high this season with several active stations from both Northern Tasmania and Hobart.

I received the following information from Jack VK2XQ:

53 MHz Repeaters: Auckland (no callsigns on ZL repeaters) has a great repeater on 53.725 MHz in RF73, it's into Sydney most days; worked Grant ZL1WTT and Michael ZL1ABS, not many other ZLs use it.

Christchurch repeater was in on Saturday (6th January) morning on 53.850 MHz, no one worked, must have all been on 50 MHz! I usually cannot get this repeater as the Sydney WIA repeater is on this frequency. However, it has been off air during the past three days which is a bonus.

Both Adelaide repeaters regular into Sydney, however a lack of operators mean calls go unanswered. Worked Steve VK5AIM and a couple of others in recent days.

Both Tassie repeaters also into Sydney, a few VK7s worked on both.

52.525 MHz Simplex: VK4, VK5, VK7 and ZL3 worked during Dec/Jan festive season break. Congestion means it becomes unusable many times; I often get my contacts to drop to 52.500 or 52.475 MHz to escape the melee on 525. Rod ZL3NW in Christchurch worked at 2330Z on 52.525 MHz 5X9 report on Sat 06th Jan.

52.050 MHz (old call frequency): Some ZL2s and ZL1s heard/worked on this one, these ZLs are not allowed on 50/51 MHz due to Channel 1 TV restrictions and thus are only allowed 52 MHz and above. These fellows are largely forgotten there, one chap said I was the 1st VK he had worked in 7 years as everyone is on 50.110 these days. Also worked a VK4 and a VK7 on 52.050 MHz, the VK7 was a “H” call and said they are not allowed below 52 MHz.

Interesting Grid Squares worked:

VK2KRR QF34, VK3AS QF13, VK4EK QG36, VK5ZPG PF97, VK5GA QF05, VK5AYD PG71, VK6BE OF84, VK6WG OF84, VK6RO OF77, VK8MS PH57, VK8GF PG66, FK8GX TG28, FK8BG RG28, ZL2TMB RE79, ZL2DX RE78.

Last week (end Dec), the ZL's came in just after 5.00 am local time (1800Z) with James ZL3FV at Hokitika RE57 worked 5X7 at 1815Z or 5.15 am local!! I am usually up around 4.30 am. Also, yesterday I heard VK8RAS beacon at 1945Z or 6.45 am local, very surprising, VK2KRR was also hearing it.

Gary VK4ABW north of Townsville reported hearing the V73SIX beacon in the Marshall Islands 579 around noon on New Years Eve and at the same time the KH6 was just audible.

The New Caledonia beacon FK8SIX on 50.080 has been heard regularly in all states but unfortunately there appears to be very few active 6 m operators from FK8 and only a few contacts have been made.

December certainly was a very busy month on 6 m, with high activity from all states. It also has been very pleasing to work many stations new to 6 m, my log indicates that I worked approximately 60 new callsigns.

Please remember to send any 6 m information to Brian VK5BC at bclceland@picknowl.com.au.

ar

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• Visual, D/F Indicator Type 1 (Stores Ref. 10Q/2) for use with airborne radio receiver Model R-1155. Also, external to fuselage of aircraft, Loop Aerial Type 3 (to obtain D/F bearings). Ref: Manual A.P. 2548A, Vol.1, Chap. 5. Both for use in restoration project. Peter VK1CPK pkloppen@iimetro.com.au, 02 6231 1790.

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• 2 x 100 watt solid state linear amps 3-30 MHz GWO. VK4DV email vk4dv@yahoo.com.au, QTHR, phone no. 07 4928 5537 preferable nights.

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• New Foundation licence amateur radio enthusiast looking for a suitable weatherproof preloved ATU to mount at base of a MOONRAKER type 29F 05 Marine HF antenna (HF Marine Band 2-30 MHz) for use with allowable Foundation Licence HF bands. Details/Contact to: Eldon [Don] Bryant, email: vk4fnqa@wia.org.au or landline at 07 4775 6579. Cheers 73.

• Directional aerial for 2 m/70 cm, also 100 W linear for 2 m/70 cm bands. Reply to Brent Doncliff VK4YOH at brentd@bigpond.net.au.

FOR SALE SA

• KENWOOD TS-120S HF Transceiver S/N 009130 with cradle and mounting bracket \$400. YAESU FT-101ZD HF Transceiver S/N 210496 \$400. YAESU FT-227R 2 m S/N 030880 with power supply \$150. YAESU FT-290R 2 m S/n 220378 Bracket and charger \$300. Universal antenna coupler HC-500A \$150. ICOM IC-745 HF Transceiver S/N 06191 \$500. Realistic scanner Pro 2020 \$80. Contact Peter VK5BWH 08 8642 2363 or 08 8642 3424.

• VK5JST Antenna Analyser kits. [see AR article May 2006] Build yourself an extremely useful item for your shack, and improve your HF antenna efficiency. For more details see www.scarc.org.au; contact SCARC PO Box 333 Morphett Vale SA 5162, or email: kits@scarc.org.au.

• A give-away: A PRO SAT digital satellite receiver not in working order was given to me but is of no use to me. Satellite communication is not my "cup of tea" so to speak. If anybody would like this unit and can repair it, I would be happy to give this unit away to anybody interested who can restore this receiver. There is no external damage. M.M. Gell QTHR, Phone 08 8294 6906 evenings only.

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• SMALL HF VHF transceiver for use in a small car plus a suitable antenna for fitting to a Z type mounting bracket. Because of the limited space it would be necessary to "try the radio for size" max Space available approx 9" x 9" Is this at all possible? Phone 08 8294 6906 evenings only.

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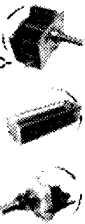
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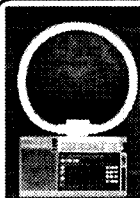
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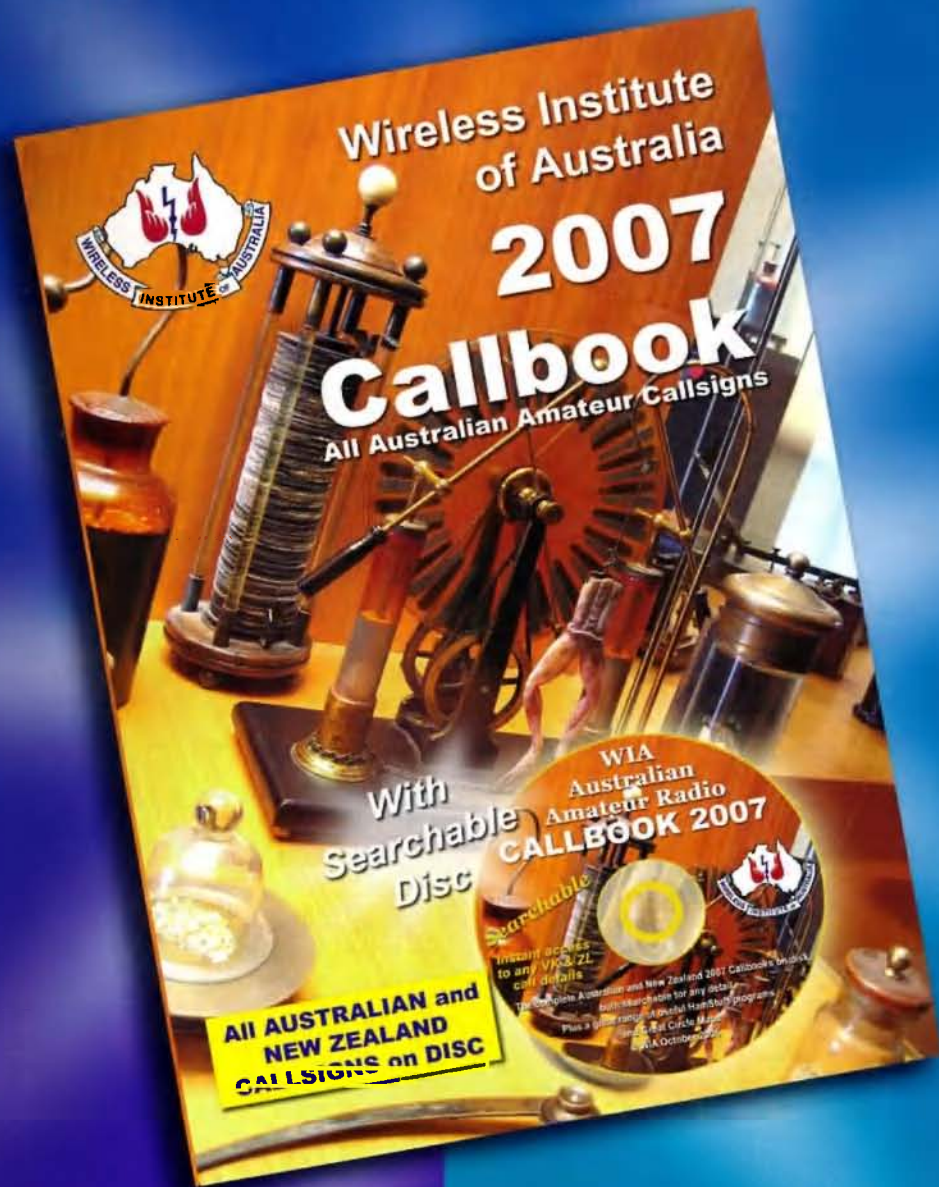
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1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

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Amateur Radio



Volume 75 No 3

March 2007



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Amateur Radio

Volume 75, Number 3
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Our Cover this month

An image of the Sun at the extreme ultraviolet (EUV) wavelength of 304 Angstroms, taken by the Extreme ultraviolet Imaging Telescope (EIT) aboard the Solar and Heliospheric Observatory (SOHO) spacecraft on 11 February 2007 at 07:19:38 UT. The Sun's EUV radiation is important to the formation and control of the Earth's ionosphere, and thus HF radio communications (Roger Harrison VK2ZRH). Image courtesy of NASA Goddard Space Flight Center, Solar Data Analysis Center; <http://umbra.nascom.nasa.gov/images/latest.html>

A more detailed description appears on page 17

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA National

Office (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 an additional \$2 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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Editorial Comment

Peter Freeman VK3KAI

Almost at the end of February and weather continues to be a hot topic. In Gippsland and North-Eastern Victoria, the large "Great Divide" fires appear to be out and the clean up has commenced. Other states have also had significant fires. Unfortunately, the southern states face at least another month of high fire danger, with much of the country looking extremely dry. On the other hand, we are seeing extremely high rainfalls in the north, as the wet season progresses.

These weather extremes present challenges for all, including amateurs. The more extreme events are likely to cause significant damage via either fire or flood and it is possible that emergency communications support may be required. This issue has reports on such involvement – one on recent WICEN involvement in the Great Divide fires and another on the fortieth anniversary of amateur involvement in support of the fight against fire in Tasmania in 1967. As the Scouts say, we should all "Be Prepared".

AGM & Elections

With this issue is a comprehensive set of information and reports for the Annual General Meeting, to be held in Parkes in May. Members will need to consider the reports. You can still be involved in the meeting, even if not physically present, through an open or a directed proxy.

I understand that an election for Directors is to be held. I urge members to consider carefully how they exercise their vote. How do you decide who should receive your support? I suggest that we should be looking for those that have the *time, skills and experience* to contribute to the WIA. These attributes must be present in a candidate, if we are to elect him or her to the Board. It is all too easy to simply consider geographical location or area of interest. But in the long run, will this produce a Director who will give maximum benefit to the hobby?

Reviews

The Publications Committee is attempting to plan out a series of equipment reviews. Our approach may be a little different to those that we have conducted in the past – we may not necessarily conduct a suite of technical measurements, as modern methods tend to produce a product that

meets the claimed specifications. As well as considering transceivers, we intend to consider other items such as antenna "tuners" and other station accessories. If you have any suggestions, advise the committee through its Secretary, Ernie Walls VK3FM, at armag@wia.org.au

In this issue

A large part of this issue is devoted to an article on the on-line IPS Propagation Prediction Tools, by Stephen Arnold VK2SJA. Stephen has put in considerable effort and received significant assistance from staff at the IPS. I reinforce our collective thanks for the assistance freely given. While he has good computer skills, Stephen was a newcomer to the on-line prediction tools. I trust that those of you who need propagation predictions find the article useful in exploring these excellent on-line tools. Many local libraries provide free access to the internet; with a little effort, you can have an up to date set of predictions using the latest data.

I also thank Roger Harrison VK2ZRH for supplying the excellent cover photograph and description, in response to my approach for suggestions for something suitable to support Stephen's article. As noted elsewhere, the photo was sourced from NASA.

Neil Sandford VK2EI describes a simple method for the production of printed circuit boards for that next project. Paul Stampont VK3IH presents a review of the latest edition of *Radio Theory Handbook* by Fred Swainston VK3DAC. Among the reports from our regular club contributors and columnists, we see the results for the major VHF/UHF contests for the year – the Ross Hull Memorial VHF/UHF Contest and the Summer VHF/UHF Field Day. I must say that I was very pleasantly surprised with the outcome of the Ross Hull – you never know what can happen if you submit your log as an entry!

Do not forget the John Moyle Memorial National Field Day on March 17 and 18 – go out somewhere and have some radio fun, even if only for a few hours. Then take the small extra effort to complete the entry for the Contest and submit your information to Denis Johnstone VK4AIG/VK3ZUX.

73, Peter VK3KAI

The year ahead

I know that this looks like a heading for the first edition in a year, not the second, but last month I wanted to tell you about our new brochure.

I think that 2007 will be a critical year for the WIA.

In the formal Report of the Directors for the Annual General Meeting in early May, enclosed with this issue of Amateur Radio, together with the other documents for the AGM, the Directors said this:

"The retention of the right to manage Amateur examinations is of critical importance to the Institute. If it loses that right, a substantial resource, including the resource of so many people who have been qualified as WIA Assessors, will be lost, and a significant cash flow will disappear, and the ability of the Institute to employ adequate staff seriously diminished."

As is also pointed out in the formal Report, the Board believes that the ACMA will seek a single body to manage amateur examinations, certificates and call signs, as set out in the ACA's "Outcomes of the Review of Amateur Service Regulation", May 2004 (the "Outcomes Paper").

We are lucky that we have had the time to establish a totally new examination system to meet the requirements of the new Amateur qualification requirements, particularly to assess the practical element.

We are lucky that we have had the support of so many people who were prepared to be qualified by our RTO, giving us the ability to assess candidates across the country. We are lucky that we have had the support of an RTO completely understanding the Amateur environment and requirements.

But do not for one second underestimate the problem we face. Somehow, we must be able to put together a workable proposition, both contractually and financially to provide the services that the ACMA seeks.

We must be able to meet the needs of the other aspects of the outsourcing, including, I suspect, investing in specialist help, as we need it. We have to deal with the highly structured Commonwealth requirements for this kind of contract.

We have to recognise the need for total professionalism in everything we do, be it conducting an assessment, reacting to a potential candidate or putting together a proposal as to how the WIA can deliver the services required by the ACMA, the main one (in our eyes) already properly delivered, the others, well we have to develop that.

If we fail, what will the WIA be?

That is, for me, the major challenge of the year ahead. It is the challenge that led some of us to believe that we needed a restructured WIA to face the future. But, while we have the structure, it still depends on the skills and experience of those representing the WIA.

Another new thing ...

This year, we have the third Annual General Meeting since the restructure. As you will see from the material enclosed with AR, the Board has decided to hold it at Parkes, in New South Wales. Our first AGM was in Canberra, our second in Sydney, so why retreat to the outback?

Parkes is the site for Australia's prime Radio Telescope facility and special technical tours have been arranged so that we can see some of the frontline developments in signal collection and processing. In addition, let us show that we are not completely city-bound, and find out whether we enjoy the support of our country members.

I have been impressed by the many people who have expressed their support for this venue. I believe that, with a good venue, reasonable accommodation and a very interesting tour, our decision to try something really new is fully justified.

I do hope that this AGM will be our best yet, so please do think carefully about making this a special weekend.

The other major event this year is the ITU's World Radiocommunications Conference (WRC-07) in Geneva, for four weeks around November.

In our brochure promoting the WIA, we give first priority to the WIA's advocacy role, and the WRC-07 really is "your subscriptions at work".

Two of the WRC-07 agenda items directly affect the Amateur Service

and a number of other items may also affect amateurs. The major items are the proposal for a low frequency secondary allocation from 135.7 - 137.8 kHz and the still unsatisfied requirement for a 300 kHz world-wide harmonised allocation at 7 MHz. There is also the possibility of a secondary allocation for emergency communications around 5 MHz that has emerged in some recent WRC-07 preparatory documents, which could perhaps become an agenda item for a future Conference.

Through its two representatives, Keith Malcolm VK1ZKM and David Wardlaw VK3ADW, the WIA has been fully involved in the many stages of the Australian preparation for the WRC, and Keith will be a member of the Australian delegation to the WRC.

I also believe that this year, perhaps even the first half of the year, will at last see the final steps in giving effect to the Outcomes Paper. I expect that Australia will participate in the European Conference of Postal and Telecommunications Administrations (CEPT) licensing system, enabling amateurs to operate during short visits to CEPT countries without obtaining an individual temporary licence, and at the same time issuing a Class licence for amateurs from CEPT countries visiting Australia.

As well, the other changes to the Australian Amateur LCD will come into effect, hopefully clarifying some matters and making internet linked radio systems easier.

I believe that, despite the need to persuade ACMA that WIA should continue to manage Amateur examinations, the WIA Examination Service and the WIA Assessors will continue to provide an invaluable service, and that we have every opportunity to attract and welcome at least another thousand new amateurs during the year.

Despite all the challenges, and the critical challenge I first referred to, I believe that amateur radio and the WIA has every opportunity to grow and prosper during the year ahead.

WIA news

WIA seeks experimental access around 500 kHz

The WIA has applied to ACMA for experimental access to a small band of frequencies near 500 kHz.

Amateur radio operators in the United States, Sweden and Germany have recently been granted experimental access to frequencies just above 500 kHz. Applications for access to this band have also been lodged by the NZART and the RSGB.

Inquiries last year to ascertain if there was an interest in a similar allocation in Australia met with an enthusiastic response said WIA Director, Glenn Dunstan VK4DU.

The WIA submission requests a temporary/experimental MF amateur allocation be made for the frequency range 505-515 kHz. *This proposed allocation places us above the guard band around the distress and safety channel at 500 kHz, and lines up with the current amateur MF allocations in Europe and the US*, Glenn said.

The limited spectrum available precludes the use of wide band telephony type modes. The WIA submission proposes a maximum necessary bandwidth of 200 Hz, to limit operation to CW and slow speed robust data modes, such as PSK31. This is the practice adopted in the current experimental MF amateur band in Europe and the US.

The WIA also proposed that because of the technical challenges involved, the MF band be only made available to Advanced class amateur stations.

It is also proposed that normal amateur output power limits be used.

The WIA recognises that the former marine distress and calling frequency of 500 kHz remains so designated in the International Radio Regulations (guard band 495-505 kHz), and that this status will not be changed until WRC-11 at the earliest.

ACMA changes high power EME conditions

The WIA Board is aware that many amateurs are not happy with the transmitter power limits for Australian amateurs.

WIA President, Michael Owen VK3KI has announced that the WIA had been advised of a change in ACMA policy that will affect those engaged in EME communications.

Amateur operation using a transmitter power greater than that ordinarily allowed is authorised by ACMA, on a case-by-case basis, only for earth-moon-earth experiments above 50 MHz.

Previously the ACMA policy required that amateur stations so authorised be assessed for compliance with the EMR requirements by persons accredited by the National Association of Testing Authorities (NATA).

Following representations by the WIA and individual amateurs, that requirement has now been repealed. It is now the responsibility of the amateur to comply with the relevant Determination.

The WIA has been advised by ACMA that in order to highlight the importance of complying with EMR requirements, the following Advisory Note will be applied to all Amateur licences:

Amateur stations have the potential to generate high levels of electromagnetic emissions. Compliance with the Radiocommunications Licence Conditions (Apparatus Licence) Determination 2003 will ensure that these emissions do not exceed safe levels for general public exposure.

Information about high power operation may be found in the 'Amateur Licence Information Paper' on the ACMA website.

A copy of the official letter from ACMA is on the WIA website.

New BPL interference report form

The WIA has developed a new downloadable form for use when lodging a formal BPL interference complaint with ACMA, ensuring that all relevant information is presented in the correct format.

Amateur radio terminology is often different from that used professionally. For instance, ACMA staff expect to see received signal strength readings in dBuV (decibels above or below one microvolt), not S-units. Although reporting signal strength in S-units is the accepted practice in amateur radio, it is not used by any other radiocommunications service and it is notoriously inaccurate.

The new form, which has been developed by Peter Young VK3MV, attempts to overcome such difficulties and should be used in conjunction with the WIA's BPL Interference Advisory Service.

The form is downloadable from the WIA website <http://www.wia.org.au/>

WIA lodges cost recovery submission

Just before Christmas, ACMA placed on its website a paper "Cost recovery arrangements for services provided by ACMA", calling for comment by 1 February 2007.

A 15% increase in the non-tax component of amateur licence fees was proposed, as well as substantial increases in the cost of amateur examinations conducted by ACMA.

As a number of matters in the paper were not clear, WIA President Michael Owen VK3KI and Peter Young VK3MV sought a meeting with ACMA officers and on Thursday 18 January 2007 they attended a videoconference with ACMA officers in Sydney and Canberra.

On 29 January 2007, the WIA lodged a submission in response to the paper and the following are some extracts from that submission:

There are, however, a number of assumptions underlying the proposed fees for licence issue and renewal that the WIA seeks further clarification. The discussion paper refers to an amortisation period for amateur licences of seven years as the average period that an amateur licence is held. The WIA believes this period, particularly for the Advanced Licence, to be understated and suggests that the amortisation period be reassessed in light of the fact that this assumption has not been tested for some ten years.

The WIA raised the opportunity to renew apparatus licences for periods up to five years and thus provide a saving in administrative costs. Information on multi-year licences is missing on the offer to renew apparatus licence notice.

The other issue of concern to the WIA is the significant leap in costs associated with ACMA administered amateur examinations. The WIA understands that ACMA does not normally administer amateur examinations itself, though it could administer special examinations if necessary. As you will be aware, the WIA is continuing to develop protocols to administer special examinations, and it is our understanding that it would be only in unusual circumstances that ACMA would, in fact, administer such examinations.

Review of *Fred Swainston's* **Radio Theory Handbook** Fourth Edition

Paul Stampton VK3IH,
WIA Assessor.

It would be easy to make this article very short: If you are a Foundation or Standard Call and you want to get more out of your hobby, buy this book, study it, take the examination and upgrade to more power, bands and modes!

However, I should probably flesh out the nature of the book and its suitability for the sometimes overwhelming task of upgrading or obtaining one of the two higher grades of licence in the new licensing structure.

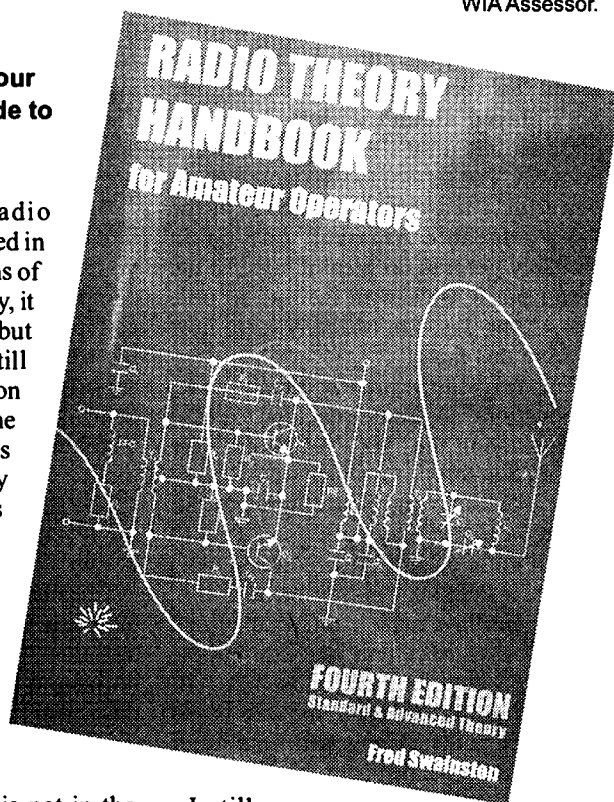
Perhaps I should acknowledge that a much earlier version of this book was instrumental in my success in the then AOCPE examination, so I was already positively predisposed towards the 'handbook' before the fourth edition arrived on my desk for review!

Those Foundation Licensees who have used the excellent text "The Foundation Licence Manual" produced by the WIA will instantly recognize that there are several fundamental differences between the two books:

The Foundation Manual is designed to provide basic radio information in an easy to understand manner that is appealing to people with little or no knowledge of Amateur Radio. It does this through modern presentation and the use of colour diagrams, photographs and simple, easy to understand text. The Swainston text has a different role to perform. It is required to detail the entire area of knowledge required to achieve the level of theory required for the much harder Standard and Advanced levels. To do this in the same manner as the Foundation Manual would require a voluminous work and is largely unnecessary, as the Swainston text doesn't require the same general audience appeal. Personally, I have written a smaller distance learning manual ('Plant Identification') for the University of Melbourne and can appreciate the time and effort required to create this sort of work on this scale.

Information in the Radio Theory Handbook is presented in chapters based on the sections of the ACMA Syllabus. Actually, it is based on the old syllabus but the vast majority of it is still relevant, and a comment on the text's jacket highlights the minimal extra information's presence. The required theory is assisted by simple drawings and diagrams to help with the reader's understanding. It does this very well, with little in the way of diversion or distraction. A short chapter on practical work is a good taster for homebrewing, a fundamental aspect of the "Ham radio" tradition that is not in the exam syllabus. Each chapter has a short test section that helps you review your study, and an appendix has two Standard and two Advanced theory papers.

Two new appendices cross reference the Advanced and Standard syllabi with the relevant sections of the book. This enables you to go through and highlight those sections that apply to the Standard Licence only. This is a little long winded and perhaps highlights the fact that the text is much easier to navigate and use if you are attempting the Advanced Licence. Personally, I found that studying for the old Novice level (the approximate equivalent of the new Standard Licence) was easier and less daunting from one of the now old, Novice licence texts that were once available at outlets around Australia and can still be found at hamfests.



I still have my copy of the Radio Theory Handbook and I have often found myself re-reading sections before trying to expand my knowledge via other texts or the internet. I find that while it is not a bedtime read, it helps to refresh your knowledge from the original source!

In short, I think that if you are thinking of attempting, particularly the Advanced Licence examination, you should buy this book, study it, take the examination and upgrade to more power, bands and modes! Good luck with your studies.

Note: Fred Swainston's Radio Theory Handbook Fourth Edition is published by ElecTrain. The book is available from the WIA Bookshop or orders can be placed via the publisher on phone (03) 9417 0700.

Ionospheric Prediction Service (IPS) Tools

Stephen Arnold VK2SJA,
vk2sja@wia.org.au

Some time back, while “surfing” the Internet, I stumbled across a set of free on-line web tools for doing High Frequency (HF) ionospheric path predictions. These tools were provided by none other than our own Australian IPS Radio and Space Services.

Being a new Amateur and with a background in the computer industry, I found this service of particular interest. So I played around with it for a few minutes but didn't really make much headway. The service looked tantalizingly powerful. I felt that in the hands of the knowledgeable Amateur, one could probably get it to do great things. At the time I put it aside with the mental note that – “one day, I must really learn how to drive this thing!”

Recently the *Amateur Radio* (AR) Publications Committee decided to cease publication of the “HF Predictions”, the information source for which was the very same IPS Radio and Space Services. So I thought that it may be a good time to re-visit these on-line HF prediction tools and see if I couldn't master them.

So I enrolled myself on what turned out to be an excellent one-day course at the IPS covering the Ionosphere, HF propagation and the use of the web-based prediction tools. Along with one other amateur and a whole bunch of chaps from the Australian Air Force, what I learnt that day and have discovered along the way since, I now present here in the form of a “how-to” article, in the hope that it may be of some benefit and interest to fellow amateur radio operators.

The IPS in “IPS Radio and Space Services” stands for the Ionospheric Prediction Service and for the sake of brevity I'll simply refer to this Australian Government Agency as IPS from here on. The IPS is also referred to as the “Australian Space Weather Agency” and this name is worth pausing to consider for a moment. While there is real and exacting science behind HF propagation predictions, Space Weather, much like the more urban terrestrial weather forecasts, is an exercise in scientific probabilities. Sometimes despite our best efforts, mathematical models and available data, the forecast is quite simply wrong. This

does not mean we shouldn't use the HF Predictions. Much like the weather forecast, they get it right far more often than wrong. But all the same, it is well to appreciate that a prediction is just that, a prediction.

Before we go any further, I would like to encourage you to grab a cup of your favourite beverage and turn on the computer. While I hope that this article conveys some understanding on its own, the web tools that I am about to discuss are much more readily understood if you actually use them whilst reading along. With that said, let's look at the IPS Web tools.

The internet web site maintained by the IPS can be found at <http://www.ips.gov.au>

This site contains a wealth of information but the area of most interest to us is “HF Systems” which is a link located in the horizontal menu at the very top of the page. You can go there directly via http://www.ips.gov.au/HF_Systems.

Once you have reached this page, you should see seven little square event boxes. These are like the Weather Bureau's storm warnings. Here they deal with the Ionosphere. Before proceeding to use the tools, it is well to note the condition of these seven little boxes. The four upper boxes under “HF Propagation” are warnings and alerts of relevance to HF systems. Under normal conditions they are all green. If not, clicking on the boxes will provide specifics. The three lower boxes indicate the present condition of the ionosphere in the various regions. If they look predominantly green in colour then the conditions that exist right now are very close to those expected for the time of day and for the time of year. If they contain any large regions of colour other than green then conditions are substantially different from those expected. You can still use the prediction tools in either case as you can choose to link them to “live”

data matching the conditions that are apparent right now. It is important to be aware of any exceptional circumstances, as this may change the way in which we use the tools or perhaps even our decision to get on-air today.

So where are these on-line HF prediction tools? Looking at the “HF Systems” web page, there is a vertical menu to the left hand side of the page. At the very bottom you will see an entry called “Online tools” and just under that a hyper-link to “Prediction Tools”. Selecting this should take you to URL http://www.ips.gov.au/HF_Systems/7/1.

On this web page we can see that the IPS offer no less than six different on-line prediction tools. Listed here in the same order as displayed on the Web page:

1. HAP Prediction Display
2. Min-Max (Area of Coverage) HAP Prediction Display
3. URSL - Upper, Recommended, Secondary and Lower - HF Frequency Prediction
4. GRAFEX Prediction Display
5. Air Route Chart
6. RAAF Air Route Chart

(Authors note: During the production of this article a 7th tool called LAMP for Local Area Mobile Prediction was added. Nothing about the Internet ever remains static! Due to time constraints, I have not been able to cover this tool).

The first thing I had to grapple with was which tool to use? What are the differences between them? Well, tools five and six on this list deal with Aircraft, where one station is a fixed ground station but the other is a mobile aeroplane. I'll not be covering these tools as they are of only passing interest to most amateurs. Unless of course you happen to be one of the many amateurs with a pilot's licence. In this case, these tools may be of considerable interest. I'll leave it to you to investigate them.

That leaves us with the first four tools

to deal with. These four tools can be broadly grouped into two groups of two. The first two tools "HAP" and "Min-Max HAP" are both HF "Area" Prediction (HAP) tools. For example, you would use these tools if you were interested in communicating with another station in say, Canada, but did not particularly care where in Canada that station was located. Both of these tools operate by drawing the "Area" of your desired target communications end-point onto a map of the World. Apart from that they present similar information in different ways. We shall look at them in more detail shortly.

The other two tools are "Point-to-Point" tools, useful where the precise latitude and longitude is known for both communicating stations. I should point out quickly that within the tools there is a very good utility for finding the latitude and longitude of any well known city or town around the world. So in practice you can typically enter the name of your transmitter location and the name of the town which marks the end of your communication circuit and the tools can supply the required latitude and longitude.

The first tool we shall look at is the HF Area Prediction tool or HAP. We shall cover the use of this tool in some detail. Fortunately, most of the specifics of driving the user interface to these tools are applicable across all of the tools. So if we learn to use one thoroughly, only small incremental changes in knowledge and technique are required to operate all of the other tools.

Click on the HAP Prediction Display link and it should open a new browser window and take you to http://www.ips.gov.au/HF_Systems/7/1/1. You could of course enter this URL into the browser directly and even bookmark it should you wish.

At this point, you should see the tool load and after a short while a black map of the world is displayed immediately below a series of buttons and text box fields. (If you don't see the black map of the World then you probably need to download and install a copy of the Java Runtime Environment. See <http://www.java.com/en/download/index.jsp> for more information). At this stage you might want to maximise this new browser window so that it fills the entire screen. First I would like to draw your attention to the most important button of all, the "Help" button. This button is located

in all of the tools. Clicking this button will open another window containing scrollable help information for the tool in question. While somewhat succinct and laden with acronyms, it is nonetheless very helpful. Most of this article was prepared just by dutifully reading and understanding the content of the help screens. As for any strange acronyms, they can be found explained at other parts of the web site. In particular, a *Glossary of Solar Terrestrial Terms* can be found by clicking on "Educational" in the main menu across the top.

Alright, let's get down to it and use the HAP tool.

Locate the drop down box with the default option of "180deg centre". Drop this box down with the arrow alongside and you should see only two options. The default "180 deg centre" and a "0 deg centre". Select the "0 deg centre" and carefully watch the world map. This option simply selects where the centre-line of the map will be, at either 180 degrees of longitude (default) or at 0 degrees of longitude. Which you select is a matter of personal preference and largely dependent on the area you wish to select for making your end-point for communications. Selecting the entire sub-continent of Africa is impossible unless you switch the map to a 0 degree centre. Now change it back to the "180 deg centre" default and observe the map change again.

I mention this option up front because changing the map view resets other form properties such as your "Area" selection. So if you are going to change the longitude centre-line of the map projection, you are best off doing this first before entering any other data.

Having set the map projection, the next thing to do is to tell the tool the location of our transmitting station, called the "Base" by the tools. This can be done in one of two ways, either just by pointing the mouse to a position on the World map and clicking or by using the "Base Locator" tool.

Let's look at the first option, using the mouse. Simply move the mouse pointer over the map of the world till it is pointing at your transmitter location. As you move the mouse pointer around inside the black map of the world note that the selected latitude and longitude is displayed in a white message box just at the top of the map on the far right hand side. Once you have the pointer

where you want it you can "left-click" the mouse. The map is now updated with some text saying BASE: followed by the latitude and longitude. In addition some text containing the latitude and longitude is also entered into the first data entry field alongside the caption "Base:"

If you make an error or wish to change your mind about where this base should be then you may press the "Clear" button but be aware this clears all fields and not just the base location.

The other way to locate your base and perhaps an easier way at that is to use the Base Locator Tool. Click on the button "Base Locator". A new dialogue window opens containing a Name text field, and two buttons, search and clear. I did discover that on occasion when this window is opened it is not large enough by default to display both buttons. If you are not seeing both search and clear buttons then resize the window by clicking on the edge and dragging it to enlarge it.

In the text box entitled "Name", enter the name of your home town or location. For example my QTH is Nowra, so I enter "Nowra" and press the "Search" button. A database lookup occurs and the latitude and longitude for this location is now displayed. Back on the browser window containing the map of the World locate the button called "Load Base". Click this button and two things will happen. First the Base location will be loaded into the HAP tool updating the text field "Base". Secondly, the "Locate Base" dialogue will close.

You can use the Base Locator tool over and over. Just press the clear button to clear any text. Enter a new location and press search again. But don't forget to press the "Load Base" button after doing your final search so that you correctly load this location into the HAP tool.

The next thing we should probably do is define the target area for our communications. As an example let's say we want to communicate with New Zealand. Position the mouse point at the top left of New Zealand on the world map and then holding the left mouse button down drag the mouse pointer down and to the right. This drag-n-drop operation will draw a rectangular box around our target Area of New Zealand. This action may take a little practice but you can repeat the process over and over until you get the box exactly where you want it to be.

We have now set the two end points of our communications circuit: our

transmitter base by latitude and longitude using the Map or Base Locator tools, and the area of desired communication using mouse drag-n-drop on the world map. We should now set all the possible HF frequencies that we may wish to use or are able to use.

Up to ten different frequencies may be entered into the fields "Freq1" through to "Freq9" and they are entered in whole kilohertz (kHz). If you had a specific frequency or set of frequencies in mind then you could just enter those frequencies but for most amateurs it is probably much easier to use the default set of amateur frequencies.

Locate the drop-down box which by default contains the text "Arbitrary". Use the down arrow alongside this box to see the options. There are only two and they are "Arbitrary" and "Amateur". If we select "Amateur" then the Frequency boxes one through nine are automatically populated with the centre frequency for

each of the HF amateur bands (as per Australian regulations). The tool is now ready to produce a set of HF amateur band predictions.

Next we set the day, month and year fields to the particular day that you want your prediction for. Note that the program defaults these fields to today so if you are interested in a prediction for the current day you can leave them as is.

Finally we come to the all important "T-index". What is a "T-index"? In broad terms it is a numerical index that tells us what the current level of ionospheric support is for HF radio propagation. While in simplistic terms, it is likely that the "T-Index" will be proportional to the number of sun-spots (the greater the number of sun-spots, the higher the "T-Index"), the "T-Index" itself is not actually derived from the sun-spot count.

The value for the "T-Index" is actually calculated by the IPS using data obtained from its own extensive data collection

network and through data exchange with similar overseas organizations.

The "T-Index" is an ionospheric index and is derived from the measurement of the level of ionospheric support for HF systems using ionosondes. These ionosondes regularly sound or measure the ionosphere by transmitting pulses of radio frequency energy upwards. The received signal echoes tell us much about the current state of the ionosphere.

More information regarding the "T-index" may be found in the "T Index FAQ", which is located under "Educational" - "Other Topics" - "Radio Communications" at <http://www.ips.gov.au/Educational/5/3>. This same location also has an excellent tutorial called "Introduction to HF Radio Propagation". Well worth a look.

If we click on the down arrow of the "T-Index" drop-down menu we can see that there are seven choices for the "T-Index" and they are:

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Input Data:

Date: 23 8 2006

Base Name: NOWRA Base latitude: -34 Base longitude: 150

Region NW latitude: -35 Region NW longitude: 165 (rounded)

Number of Frequencies: 9

1838 3650 7150 10125 14175

18118 21225 24940 28850 -1

Data is being Processed.

Execution time varies with machine load, and area of HAP chart.

T index used for prediction: 0006

Figure 1: The Initial output screen from the IPS system using the HAP Prediction Display tool

Tmonth	monthly forecast T index	Tnh	real time Northern Hemisphere T index	Tnz	real time New Zealand T index
Tday	daily forecast T index (southern hemisphere)	Tsh	real time Southern Hemisphere T index	Tant	real time Antarctic region T index
Taus	real time Australian region T index				

TET-EMTRON

Antenna Manufacturers

New Tet-Emtron Vertical Range

TEV-4

TEV-3

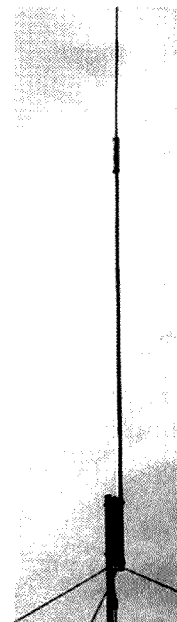
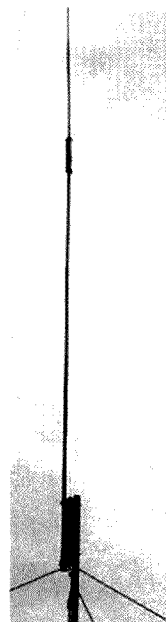
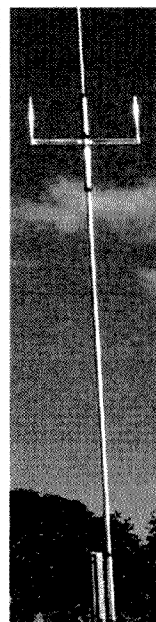
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Ph: 61 3 5145 6179

Fax: 61 3 5145 6821

ABN: 87404541761

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3900 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

Base: NOWRA Date: 23 August, 2006 Tindex: 6
 IPS Radio and Space Services
 On-Line Hourly Area Predictions (HAP)

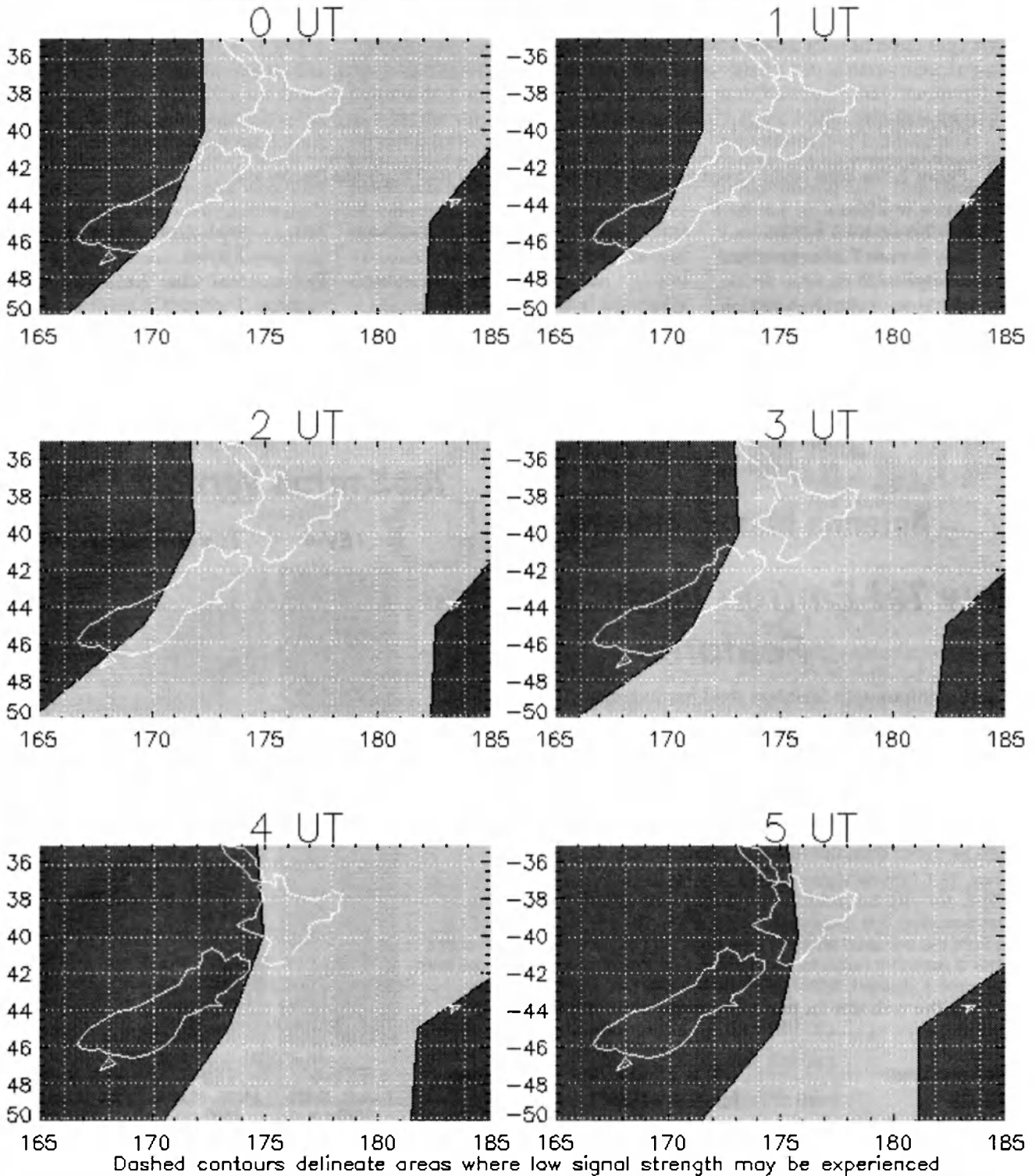
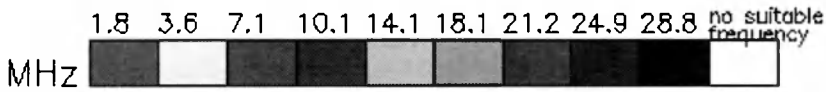


Figure 2: HAP tool output

So which of the seven possible values for "T-Index" should we be using? That depends on what we are trying to do. Consider that the first two values for T-Index, the Tmonth and Tday are forecast or predicted values. All the remaining fields are real time, actual live values of T-Index for various world zones or hemispheres.

If we were trying to do a meaningful prediction for a scheduled communication which is to take place "next month" then the Tmonth value would be most relevant. However if we are doing a prediction for the current day then a greater level of accuracy may be achieved by using either the Tday value or one of the other "live" real time values for T-Index.

The Tday forecast is a daily forecast prediction issued by the IPS. Just as the long-range weather forecast is likely to be much less accurate than the weather bureau's prediction for tomorrow so it is with the monthly vs. daily IPS forecast. The last remaining question is why use Tday instead of one of the actual "live" data values? Assuming that we are trying to make a prediction for the current day then it is always better to use one of the "live" data T-Indexes. In fact the only reason for not using the "live" data at any particular moment would be if it happened to be unavailable or off-line, in which case you would revert to using the Tday or Tmonth values.

If we have decided to use "live" real-time data for T-Index then the choice is easy. Just pick the zone in which your transmitter lives. Most of us probably live in Australia so we would use the current Taus value. Or is it that easy?

What if you are communicating from

one zone or hemisphere to another, say from the Southern Hemisphere to the Northern Hemisphere? In such a case for the most accurate prediction we should always check the T-Index values for both zones and use whichever is the "lowest" of the T-Index value. For example, if I wish to talk to Canada from Australia I would check both the Australian Taus index and then the Northern Hemisphere Tnh index and then use the lower of these two values.

One final word regarding T-Index values: Normal values are between -50 and +200. If you see a value of 999 being used at any point, what this is really saying is that there is "no-data" available for that particular "T-Index". Try changing your year field to 3006 and you can see this in action. The tools won't let you do a prediction with the T-Index set to 999. It knows this means "no-data". If one of the seven T-Index values above gives you 999 then you will have to choose another one.

Finally it should be noted that if you just happened to know what the T-Index value is, or is going to be then you can simply enter that number into the T-Index field. An unlikely event perhaps, but you may wish to directly enter values here if you are doing some "what if" type modelling.

Now we have pre-loaded all the required data fields so that the program can do a prediction. We have:

1. Set our base location using the Base Locator tool or mouse on map.
2. Set the "Area" of the desired end-path of our communications circuit using drag-n-drop on the map.

3. Entered the desired frequencies in kHz that we may be able to use (probably the default Amateur set).
4. Told the program the day or date when we intend to communicate.
5. Then set the all important ionospheric indicator the T-Index to an appropriate value for the time of our communication.

With all this information loaded we can now press the "Do Pred" or "Do Prediction" button and take a look at the results.

If you press the "Do Pred" and nothing appears to happen then we may have forgotten to set one of the required pieces of information listed above (another possibility is that your browser is blocking pop-ups, which will need to be enabled for the IPS web site). Look carefully for a text error message which will be displayed immediately above the map, right justified. You may see something like:

"Not sent! tindex missing/out of range (-50 to 200): -999.

This would indicate that we have not set a valid T-Index for the prediction. Or perhaps:

"Not sent! Drag area of box in display below",

which is trying to tell us that we have not defined the area that we wish to communicate with using the mouse left click and drag method on the map.

Assuming that all values are set correctly then the data is sent to the IPS computer systems and the results are then calculated and returned a few seconds later to your web browser. A new browser

```

URSL Input Data:
Date: 23 8 2006
Chart Name: NOWRA-WELLINGTON
T-index: -3
Latitude1: -34.88 Longitude1: 150.6
Latitude2: -41.3 Longitude2: 174.77
Number of Frequencies: 9
  1.8 3.6 7.2 10.1 14.2
 18.1 21.2 24.9 28.8 -1
  
```

Processing data...Please wait

ADDRESS NO. 1234

URSL - RECOMMENDED FREQUENCIES FOR HF COMMUNICATIONS FOR CIRCUITS LISTED

23 August, 2006

**UNITS: FREQUENCY - MHZ, TIME - UT , DISTANCE - KMS

R AND S ARE RECOMMENDED AND SECONDARY FREQUENCIES**

U AND L ARE UPPER AND LOWER USABLE FREQUENCIES**

NO SUITABLE FREQUENCY INDICATED BY ZERO**

VERTICAL ANGLE(S) - DEGREES

NAME	DISTANCE	UT	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
NOWRA-WELLINGTON	2223	U	14	14	14	14	14	14	10	10	7	7	7	7	3	3	3	3	3	3	3	3	3	7	10	10	14
		R	14	14	14	10	10	10	10	7	3	3	3	3	3	3	3	3	3	3	3	3	3	7	10	10	14
		S	10	10	10	7	7	7	7	3	1	1	1	1	1	1	1	1	1	1	1	1	3	7	7	7	10
		L	7	7	7	7	7	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	3	7	7	7	7

1F 6-10 2F 19-26 IE 0 ZE 6

Prepared by IPS RADIO AND SPACE SERVICES, Sydney
PO Box 1386, Haymarket NSW 1240, Australia

Figure 3: URSL tool output

window opens up with a text header that will look something like Figure 1.

This simply echoes the data I used for the prediction. Under this text banner we have four hyperlinks that will take us to four different web map pages. These four pages break the day up into four groups of six hours to cover a full 24 hour period. Remember the results are returned in "Universal Time" or UTC not your local time. The links will look like this:

[Click here for HAP Result Page 1 \(00-05UT\)](#)

[Click here for HAP Result Page 2 \(06-11UT\)](#)

[Click here for HAP Result Page 3 \(12-17UT\)](#)

[Click here for HAP Result Page 4 \(18-23UT\)](#)

Which page to look at?

Let us assume that I wish to talk to someone in New Zealand and I wish to do it now. Current time as I write this is 11:05 AM or 11:05 hrs local and we happen to be +10 hours in front of UTC. So adjusting our time back to UTC would be 11:05 - 10:00 = 1:05 hrs UTC. So we now select the hyper-link that contains this hourly segment; which happens to be the first one which contains the 6 hourly

period from 00:00 UT to the end of the 05:00's or 05:59. The next map starts at 06:00.

In our example the six hourly maps returned by this particular web page looked like Figure 2.

Each of the maps above represents a period of one hour. The map we are interested in is labelled 1 UT which is the hourly period from 1:00 to 1:59 UT. Above the six maps we can see a colour code legend that matches the frequencies we selected for prediction which corresponds to the 9 HF Amateur bands. At a glance I can clearly see that to talk to New Zealand right now I should

GRAFEX Input Data:

Date: 23 8 2006

Tx Name: NOWRA Tx latitude: -34.88 Tx longitude: 150.6

Rx Name: WELLINGTON Rx latitude: -41.3 Rx longitude: 174.77

T-index: -1

IPS GRAFEX HF FREQUENCY PREDICTIONS

ADDRESS NO. 1234

Circuit: NOWRA

WELLINGTON

Date: 23 August, 2006

T-index: 0

Bearings: 116 281

Distance: 2223 km

First Mode	F r e q u e n c y (MHz)										Second Mode
1F 6-10 1E 0	1	5	10	15	20	25	30	35	40	2F 19-26 2E 6	
UT OWF EMUF ALF	...	...	...	...	...	...	...	...	...	OWF EMUF ALF UT
00 14.5 0.0 9.3			ASSXX	XFFF.						8.3 11.5 5.5 00	
01 14.8 0.0 9.4			ASSXX	XFFF..						8.6 11.6 5.6 01	
02 14.7 0.0 9.4			ASSXX	XFFF..						8.8 11.4 5.6 02	
03 14.2 0.0 9.1			ASSXX	FFFF%..						9.0 10.8 5.5 03	
04 13.2 0.0 8.6			SSSXM	FFF%..						9.1 9.9 5.3 04	
05 13.0 0.0 7.7			ASSXMM	FF%...						8.8 8.3 4.9 05	
06 11.8 0.0 6.1			SSMMMF	F%...						8.0 4.2 4.2 06	
07 9.2 0.0 0.0	XMMMMMM	F%	%..							6.4 1.4 0.0 07	
08 7.2 0.0 0.0	XMMMMMF	%%	..							5.3 1.4 0.0 08	
09 6.4 0.0 0.0	XMMMMM	%%	..							4.8 1.4 0.0 09	
10 5.9 0.0 0.0	XMMMM	%%	..							4.6 1.4 0.0 10	
11 5.6 0.0 0.0	XMMMM	%%	..							4.4 1.4 0.0 11	
12 5.3 0.0 0.0	XMMMM	%%	..							4.2 1.4 0.0 12	
13 5.2 0.0 0.0	XMMMM	%%	..							4.2 1.4 0.0 13	
14 5.2 0.0 0.0	XMMMM	%%	..							4.1 1.4 0.0 14	
15 5.0 0.0 0.0	XMMMM	%%	..							4.2 1.4 0.0 15	
16 5.1 0.0 0.0	XMMMM	%%	..							4.2 1.4 0.0 16	
17 5.0 0.0 0.0	XMMM	%%	..							4.0 1.4 0.0 17	
18 4.6 0.0 0.0	XMMM	%%	..							3.8 1.4 0.0 18	
19 4.5 0.0 0.0	XMMM	%%	..							4.0 1.4 0.0 19	
20 7.4 0.0 4.6			AMMF%	%.						5.0 0.0 3.6 20	
21 10.8 0.0 7.3			ASXMFF	%...						7.0 7.7 4.6 21	
22 12.7 0.0 8.3			SSXXF	FF%..						7.9 9.7 5.1 22	
23 13.9 0.0 9.0			SSXXX	FFF..						7.9 10.8 5.4 23	
UT OWF EMUF ALF	...	...	...	...	...	...	...	...	...	OWF EMUF ALF UT

. USABLE LESS THAN 50% OF DAYS	% USABLE (50%-90%) OF DAYS	
B BOTH E&F MODES 90% OF DAYS	M MIXED	FIRST AND SECOND F MODES
F FIRST F MODE ONLY	E E LAYER PROPN	P 90%E & 50-90%F
S SECOND MODES ONLY	A HIGH ABSORPTION	X COMPLEX MODES
 (c) 23-Aug-06 IPS Radio & Space Services, Sydney Australia +61 2 92138000

Figure 4: The GRAFEX tool output

be using the 20 m band (14.1 MHz equals light blue from the legend). Unless I'm trying to talk to the very far south of the South Island in which case I would be better off with the 30 m band (green). We can also see that in a few hours; say 05:00 UT or 3:00 pm local time the 30m band will give much better coverage for almost all of New Zealand except the very North of the North Island.

Now if we want to look at another 6 hour period from within this day we can press the back arrow button on the browser to return to the previous page. Then select one of the other hyper-links. If we wish to print the results out this can be achieved using the standard method for printing nearly anything, the "File" followed by "Print" combination. When we are finished with this prediction we can close this browser window with the standard "X" close button. The other browser window with the map of the world and our entered data is still open and we can return to it and modify some or all of the data and do another prediction.

Now that we have seen an Area Prediction a quick word about what you can't see in HAP. With a view to simplicity this HAP report omits several important details. For instance, they do not tell us what layer of the Ionosphere is being used, they do not tell us how many hops are required for this signal path and perhaps most importantly they do not tell us what antenna take-off or radiation elevation angle is required. However all of this additional information can be obtained by doing a point-to-point prediction using the GRAFEX tool discussed below.

I should probably mention at this point that the IPS also produces a software package for a PC called Advanced Stand Alone Prediction System (ASAPS). This program is a lot more sophisticated than the Web tools and allows for HF propagation predictions incorporating additional information such as specific antenna characteristics (antenna modelling) and signal-to-noise ratio (SNR) predictions. There is a free demo version of the ASAPS software available for download from the IPS web site.

So we have now seen start to finish a HAP prediction. As indicated earlier all the other prediction tools operate in much the same way requiring similar data. So you should be now able to drive any of the tools. Let's just take a quick look at the other tools to see what they offer.

MinMax HAP

This prediction tool is much the same as the HAP tool already covered in detail. It is an "Area" prediction tool. It differs from HAP in that rather than doing a prediction for an entire day it does one for a particular nominated hour of the day. Rather than just showing the preferred frequency of use for that hour it creates a colour HAP map (as above) for that hour for each of the frequencies that you selected. Thus it will show both the minimum and maximum frequencies for the path and not just the preferred. This will enable you to see for instance there is no possible way to communicate using 10 metres but that it might be possible to communicate using 80 metres albeit with much reduced signal strength.

URSL (URSL - Upper, Recommended, Secondary and Lower - HF Frequency Prediction)

The most significant difference between this tool and the two above is that this tool is a "point to point" tool. Meaning that the communications circuit is defined as being from a specific place on the Earth's surface to another specific place both defined in latitude and longitude.

Left click once on the map and it will set your transmitter location and indicate this with a ".T" displayed on the map. Click again and this will set the receiver location as indicated with a ".R". Clicking again will reset the ".T" location and then the ".R." will follow. You can keep changing these in sequence. It is however probably still easier to use the Base Locator tool.

Place your cursor using the mouse in the "Name 1" field and use the Base Locator. This sets the transmitter location. Now place the cursor in the "Name 2" field and use the Base Locator again to set the receiver location or communication destination.

In this tool, unlike the Area tools, you can directly enter the latitude and longitude into the appropriate data entry fields. But be aware the program makes no attempt to change the text name of the circuit in the matching "Name 1" or "Name 2" fields if you do so.

No pretty graphics this time, only raw textual information. The output will look something like Figure 3.

The table in Figure 2 tells us the preferred or recommended frequency to use for this circuit. It also tells us the

secondary or second best choice frequency to use. It also tells us what the absolute maximum and minimum frequency that will function for this circuit.

The GRAFEX tool

Last but not least the GRAFEX tool. Again this is a point to point circuit tool with no pretty graphics. It is also unique as compared to the tools above in that it is the only one which does not require you to enter the desired communication frequency or set of frequencies. It always generates a report covering 1 to 40 MHz. The output of the tool will look something like Figure 4.

An awful lot of information is crammed into this single page report, so much in fact that the interpretation of it could be another entire article. Suffice to say that this graph while not exactly the same is the one closest to the HF Predictions published in AR previously. So even though it is by far the most complex output of all the tools it is probably more familiar to many.

In summary then we have looked at the freely available, zero cost tools available from the IPS Radio and Space Services. These tools enable the Amateur to do very accurate predictions of ionospheric support for HF propagation at a moment's notice using live "real-time" data collected from current ionospheric conditions.

To the best of this author's knowledge, there are only a handful of on-line ionospheric prediction services and only the Australian IPS provides anything like the level of sophistication apparent in the on-line prediction tools discussed in this article. Once again, Australian science is world class.

So drop by the IPS web site next time you're contemplating long distance HF communication and see what it has to offer. You may well be surprised and impressed.

ar

Contact information:

The IPS Web site is located at <http://www.ips.gov.au/>

For more information on any of the online Web tools, the one day IPS HF propagation course or for details regarding the advanced standalone HF prediction software package - ASAPS, please send an email to office@ips.gov.au or call (02) 9213 8000.

To contact the author send an email to vk2sja@wia.org.au

WICEN: The voice of the bushfire fight

Graeme Scott VK2KE

Our happy volunteer describes the personal ins and outs of the WICEN effort in providing communications at the recent massive Victorian fire fight

Conscription

I was called up by the State Coordinator of Vic WICEN recently to attend the offices of the Department of Sustainability and Environment (DSE) at Swift's Creek and provide service as a radio/telephone operator during the bushfires in the local area.

I agreed to go. The commitment was for 3 days of 12 hours each, on day shift. The shifts were to be from 8 am to 8 pm each day - Wednesday, Thursday and Friday, 17 - 19 January. So we were looking at 12 hour shifts in line with the government agency staff.

Reporting for duty

I chose to drive via the Omeo 'Highway' (which hardly earns the title 'highway' in my book). The Omeo Highway was entered just east of Tallangatta on the Murray Valley Highway. I hadn't been too sure which way to get to Swift's

Creek and thought the Omeo Highway would be OK. As it turned out there was a significant amount of slow winding road and a lot of, at times, rough gravel road. Perhaps it was indicative that I was not passed by another vehicle in either direction along this road!

Anyhow, I left Albury at about 10.20 am and rolled into Omeo at about 2 pm, having had a short drink/lunch stop at Mitta Mitta. The road was very scenic but one wonders about the quality of a road that could carry much more traffic, and could be a tourist road, but the off-pot is the poor state and so much gravel surface.

Anyway I eventually arrived at Omeo (having noticed quite a bit of smoke in the hills in the area) and then proceeded the extra 27 km to Swift's Creek where I found the DSE centre and checked in with reception. I was told to go to the accommodation officer to ensure my motel was confirmed. This done, I then

went to the ICC control room and met the Incident Controller, Claus VK3AZE, and Don VK3DON, who was to be my colleague for the next three days. Claus, having decided that he had completed his shift, went home.

As it turned out, I had taught Don his ham radio theory at Box Hill TAFE many years ago and so it was quite a reunion!

Learning the ropes or revisiting old skills

I began the task of getting oriented into the local fire management system and getting to know the staff, the geography and the government systems on-site. It was quite impressive to see so many government departments working together on the fire-fight. There was Parks Victoria (PV), Department of Sustainability and Environment (DSE), Country Fire Authority (CFA), Victoria Police (VICPOL), Rural Ambulance Victoria (RAV) and St John Ambulance, among a number of others. This appeared to be very similar to what I encountered at Ovens near Myrtleford in the 2003 fires.

The deputy incident controller in this case was from PV and seemed to be the main executive officer in relation to fire control and personnel deployment. The table I was stationed at had a very large map of the area on it, where fire trends and people and truck/tanker movements were being constantly plotted.

Noise and Fury

There were a number of phones in the room which was an 'open plan' set up and of course a number of radios on the trunk system. At the time the fires were very active and many trucks, tankers and fire fighters were out on the fire grounds in the area. Many messages and phone calls were occurring. So, we got into the swing of it pretty quickly.

My first impressions were that the setup was very similar to what I encountered at Ovens during the 2003 fires.

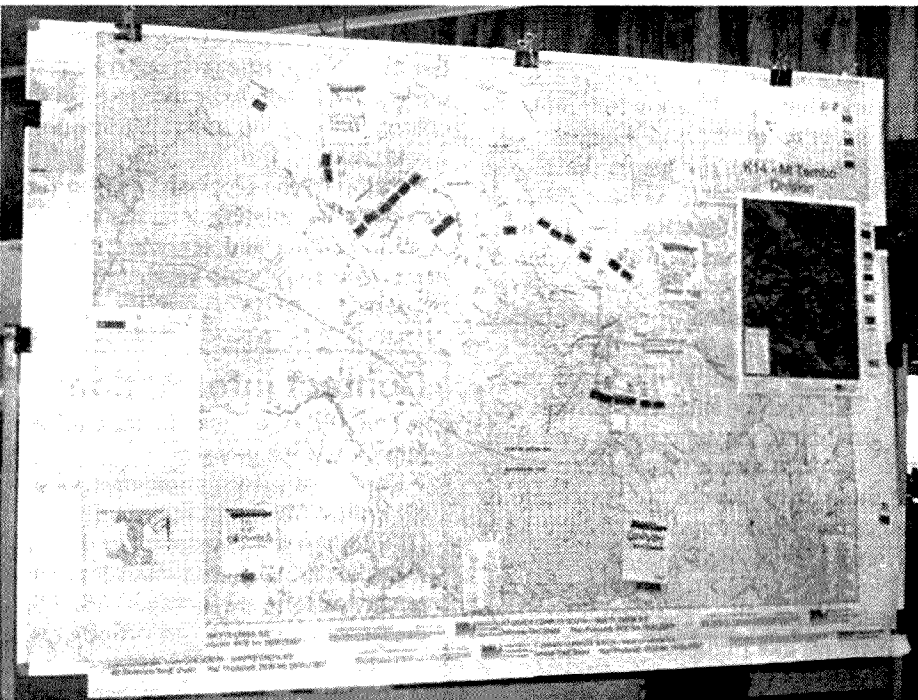


Photo 1: One of the fire area maps in the Incident Control Centre

My preference would have been to have had separate operating booths for each operator but it was evident that the incident controller liked to hear what was going on via the trunk radios. However, the IC was not always at the table in charge of proceedings, as he left the room to talk to people and was frequently in briefings and meetings. At these times we moved into writing down the incoming messages and I was doing this on the WICEN message form I developed at Ovens, as I found it best to do this and then be sure the right recipient eventually got the message.

Occasionally I took the message to the recipient, usually the CFA bloke or the PV IC in a meeting as the message seemed to be urgent and important. At times they slipped out of the meeting to make a call so it must have been important!

My experience at the SES in Melbourne during the Ash Wednesday fires was that we were stationed in booths with headphones on and then we handled messages and took down incoming ones on forms so that they could be passed on to the relevant person. The operation in this case was smooth and much less noisy than the incident control centre for these fires, where the open plan room allowed for many loud messages to be heard, at times over the din of people coming into the room and talking; sometimes it was a bit of a cacophony. However, after years of being on 20 metres in contests and fighting the dog piles in rough conditions trying to get a 'rare' country, the job wasn't too hard! I've got a DXCC certificate on the wall to prove it.

Army marches on its

The system was very good at welfare for all personnel. Food was delivered regularly to the lunchroom and this was morning tea, lunch and evening meals. Fruit bowls were always out on the tables and even my downfall, chocolate bars, were also on tap. So we certainly were very well looked after.

All hands to their own pump

The system was also very highly organised in that special sections of staff were placed in offices to do certain tasks of importance. They included communications planning, resources, mapping, accommodation, ambulance/medical/first aid, information/media, plant and equipment.



Photo 2: The author in action, manning the telephone

Who, what, where, why how, and when

Some of the messages we handled related to bulldozers needing repairs, changeover drivers, refuelling and relocating dozers, Air/Ambulance service for a heart attack patient in Omeo, information re road closures, police controlled convoys on closed roads, meals to be delivered

to teams at the fire front, SITREPS, weather reports, NZ and Canadian team deployment and welfare, rainfall reports, wet tracks, lightning strike locations, warnings about 'stags'- dead trees that might fall, flood reports from farmers, visibility reports to pilots, airstrip open/closed reports to pilots, blood samples to be delivered to Bairnsdale.



Photo 3: Don VK3DON using one of the trunking radios.

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10/11 beams comp opt 5 ele	\$370
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Tri band IIB 35 C 10/15/20 m	\$782
3 ele 20 m comp opt	\$475
log periodic 9 ele 13 30 8.4 m boom	\$1098
NEW 160 m Vertical SUBURBAN	\$355
40 m linear loaded 2 ele beam	\$595
M B Vert auto switch 10/80 m	\$339
6 m 7 ele Yagi beam 60 mm boom	\$397
6 m 5 ele comptr opt beam	\$285
Top loaded 160 m vert	\$439
10 ele high gain 2 m 3.9 m boom	\$159
17 ele high gain 70 cm 3m boom	\$139
Rotable dipole 40 m	\$250
80 m top loaded vertical	\$273
dual band 2 m 2 5/8 verticall	\$120

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Operations

the job's not done until the paper work is complete

The whole system was a very efficient one in most cases, as it had to handle many aspects of the fire-fight. Once we had got the hang of the personnel and the geography we settled into a routine and handled messages in fine fettle. Don and I decided to make up a list of key people and their jobs and locations. This was most helpful when you are under pressure. The quick-look-up list became invaluable so that a person and their location and phone extension number could be easily found. We also generated a "WICEN" folio to leave for the next operators and hope they got it as it had useful stuff in it including the alphabetic list of staff and their departments and spare message forms.

And so to bed....

The long 12-hour shifts were indeed l-o-n-g and we usually crashed into bed once the evening meal had been delivered. The alarm would go off at 0600 the next day and after a quick breakfast in the motel, we left to commence at about 0700 so there was a short handover period from the night shift before we commenced the day shift at 0800.

Don and I experienced a fatigue period of about 2 days afterwards. I likened it to the let-down after teaching classes in TAFE, as the intense concentration takes a toll on one. You are not physically tired, rather, you are mentally tired and this takes a while to wear off. You feel tired

but do not always sleep it off easily. It's maybe a bit similar to being jet-lagged after a long flight with little or no sleep.

Raking over the ashes

The experience was great, as we felt we were contributing in a positive way to the whole fire-fight effort. It also honed our message handling skills. We found that three days on a 12-hour shift was long enough, as any more would have been quite exhausting.

I asked the IC on the last day of our duty period if he wanted more WICEN guys to fill our shoes and without hesitation he said 'yes please', as it would allow him to keep staff in the field on fire fighting activities and not lose them to working on the phones and radios in the ICC.

Demob and home

For the return trip to Albury, I decided to take the Mt Hotham road via Dinner Plain, Harrierville and Bright. It turned out to be sealed bitumen all the way and was much more pleasant, and safer for driving. The scenery is spectacular too. It was also about 75 km less for me on my trip home. The only downside was that there were no coffees at Dinner Plain, Mt Hotham or Harrierville, as I was too early for the locals to have got up and put on the coffee machine! They lost out to the bakery in Bright!

Would I do it again? Yes, but with about a week or two for a break.

The motel meals and car travel will be paid for by the Victorian Government and for this we are grateful. As it was, I lost some paid work time over the duty period, but that's part of being a volunteer.

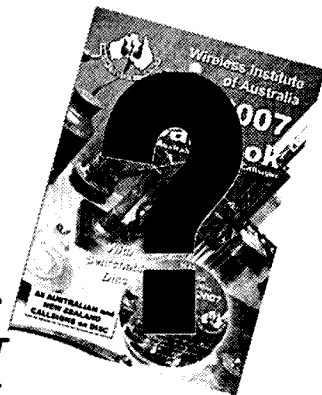
ar

WANTED

2008 Callbook is getting under way.
Photos suitable for the cover are sought.

Send to 'Callbook' at Federal Office.

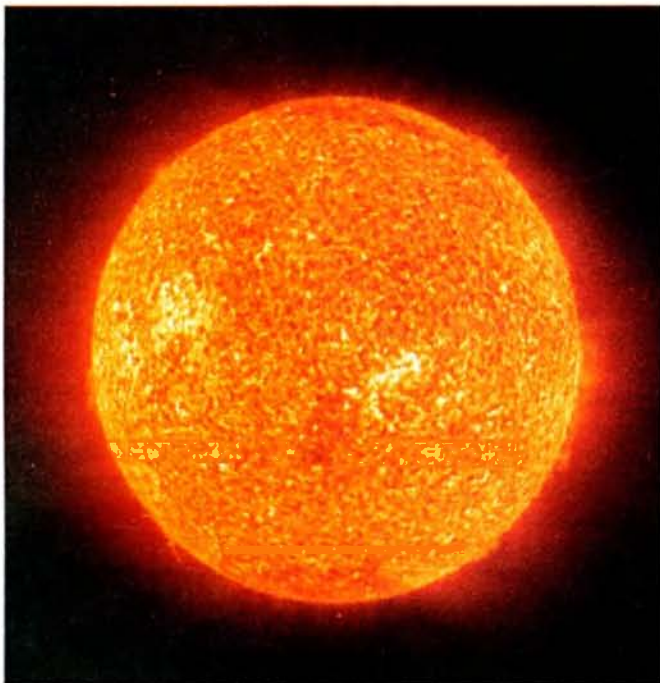
Brenda VK3KT
 Editor.



Our friend and foe

Roger Harrison VK2ZRH

The image on this issue's cover shows the Sun's radiation at the extreme ultraviolet (EUV) wavelength of 304 Angstroms, coming from completely ionised helium (He II) at a temperature near one million degrees Kelvin. This is a region above the Sun's photosphere, the visible disc (never look at the Sun directly!), and the thin chromosphere



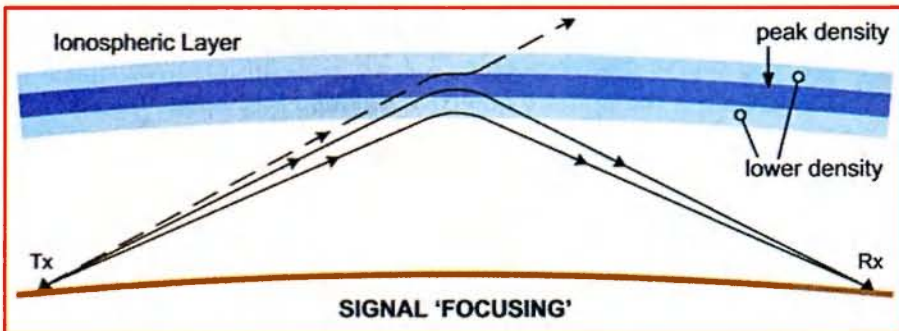
('or colour sphere', from the red glow of ionised hydrogen), but below the corona - the very hot, huge, wispy outermost part of the Sun's atmosphere. You're looking at the 'transition region', the source of the EUV that forms the Earth's ionosphere and other processes that are important to predicting space weather that affects HF communications.

Many features of solar activity can be seen in the image.

Just to the lower right of the image's centre is a bright, C-shaped region called a 'plage' (literally, French for beach). These are typically found near sunspots, though, not always.

What looks like grass around the rim are called 'spicules' - thin fingers of luminous gas that rise and fall over about 10 minutes. Larger features, called

continued next page



TVI High Pass Filter with Braid Breaker.



An inline TVI filter with Braid Breaker.

A large amount of TVI can travel down the outer braid of Coax as well as the centre conductor. The braid breaker isolates the centre conductor and braid from the TV/VCR/DVD. The High Pass filter cuts in at 50MHz. This filter has -80dBm attenuation at 40, 80 and 160 Metres.

Pager Notch Filter:

A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

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Our friend and foe continued

'prominences' or 'filaments', can be seen standing out from the rim at about 1 o'clock, 3-4 o'clock, 7 o'clock and 11 o'clock. These giant plumes of gas, which can last days to weeks, are the source of many Coronal Mass Ejections (CME), a spray of high speed particles that disturb our ionosphere when the Earth passes through the spray. When that happens, conditions on the HF bands are generally depressed, but opportunities for anomalous VHF propagation via the ionosphere can result, e.g. auroral reflection.

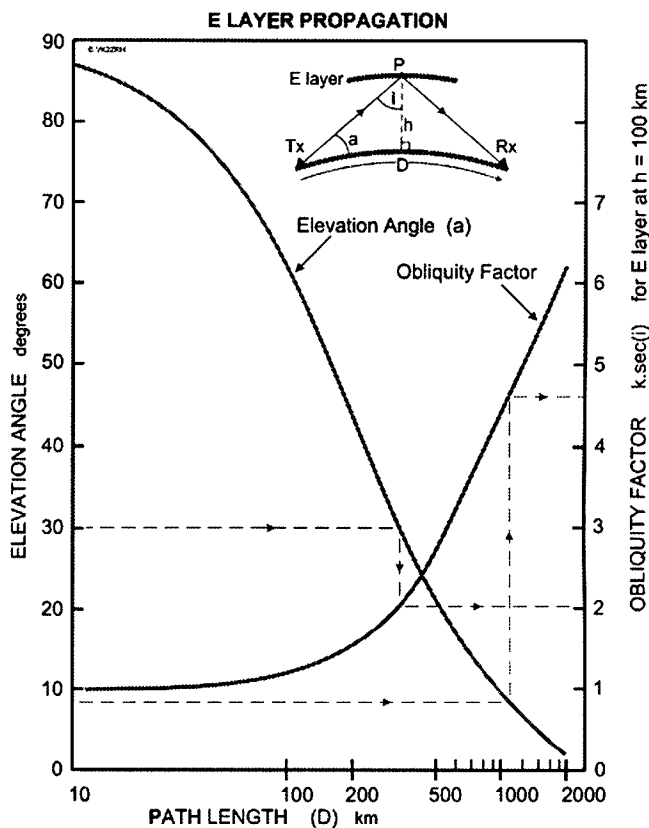
The Sun is thus at once our friend, because it creates the ionosphere which allows us to work HF DX, and our enemy, because it disturbs the ionosphere and makes the HF DX disappear!

Further reading:

<http://www.ips.gov.au/>; or <http://wikipedia.org/> and enter 'chromosphere' and 'solar transition region'.

ar

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Simple production of printed circuit boards

Neil Sandford VK2EI
neilsan@tpg.com.au

Many methods for home users to make their own PCBs have been described in the past. Here are the details of a simple, cheap and the most reliable method I have found and used. No originality is claimed. The method is suitable for quite complex and intricate artwork. Hopefully this will encourage first-time users to have a go.

In the early days the procedures were messy and time consuming, requiring a darkroom for photo mask processing, chemicals, UV lamp, etc. Photo resist spray-on negative or positive films eased the task somewhat. Next came the various stick-on and pre-prepared photo resist boards. Techniques using paper transfer suffer from problems with the paper fibre and it can be difficult and messy to remove the paper. Although I haven't tried it, there should be fewer problems using clay-based papers. With the advent of laser copiers and printers, a ready means of image transfer was provided. Also, using a convection oven instead of the more usual iron-on method further enhances the repeatability. So the convection oven method is the one described here.

Method

1. Prepare the print by photocopying the artwork from a magazine article or whatever. Adjust if necessary for the correct final 1:1 size and copy to a photocopy transparency. Ink jet printers are not suitable for this; it must be a device using carbon transfer and the transparency must be suitable for laser copying to withstand the transfer heat. The contrast should be as dark as possible, even to the point where there is a very slight greying of the clear areas. Some of the modern laser devices are too clever in that they automatically adjust the maximum contrast, so limiting the carbon thickness. If possible, manually adjust the contrast.
2. On this first copy the carbon may be on the wrong side of the transparency depending on the orientation of the original, thus producing a reversed image. Should that occur, make a copy of the first transparency taking care with the orientation and contrast adjustment. Check that when you

look through the transparency to be used you have the desired image orientation and that any printing is not reversed (see Figure 1). The carbon must be on the opposite surface so that it is in direct contact with the PCB. Any doubtful or flawed areas may now be touched up with a regular etch resist pen.

3. Next prepare the PCB. The surface must be clinically cleaned using steel wool, one of the green scouring pads or very fine 1200 grit wet and dry emery paper. Wash with detergent, taking care not to touch the cleaned surface. The surface should readily wet all over when thoroughly clean. Dry with a gentle heat.
4. For the transfer process refer to the cross-section view in Figure 2. I use two pieces of 3 to 6 mm thick aluminium plate with dimensions larger than the PCB. Ceramic tiles are also suitable so long as the surface is flat. Place the PCB on one plate with the copper plane to be etched uppermost. Next, place the mask and check that the carbon is in contact with the PCB surface to be etched. Also, check for the correct image - you should be able to read any lettering. It is a good idea to use

a couple of small pieces of sticky tape, clear of the image, to secure the mask in place. Cut and place 20 or so layers of butcher's paper on top of the mask, followed by the second piece of aluminium plate or similar. As some PCB material has a slightly irregular surface due to the texture of the fibreglass, the paper ensures there is full contact between the carbon film and the PCB surface.

5. Carefully place the assembly in a convection oven (I am one of the lucky ones that doesn't have to wait until the XYL is out!). Place a heavy weight on the assembly taking care not to disturb the set up. A convenient weight is one of those old TV power transformers; the heat probably does it good in case you may want to use it one day.
6. Set the oven to 150°C for 50 minutes, or an hour if you are using ceramic tiles.
7. Let the assembly cool in the oven without disturbing and if possible remove it when just warm to the touch. The carbon transfer seems to be better before the transparency has completely cooled. Remove the top plate and paper, then carefully peel off the mask starting from one end.

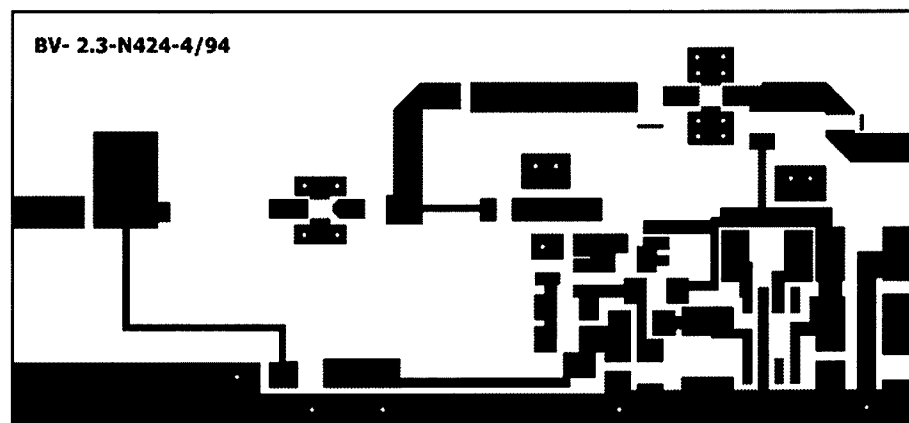


Figure 1: Sample of the graphics ready for PCB production

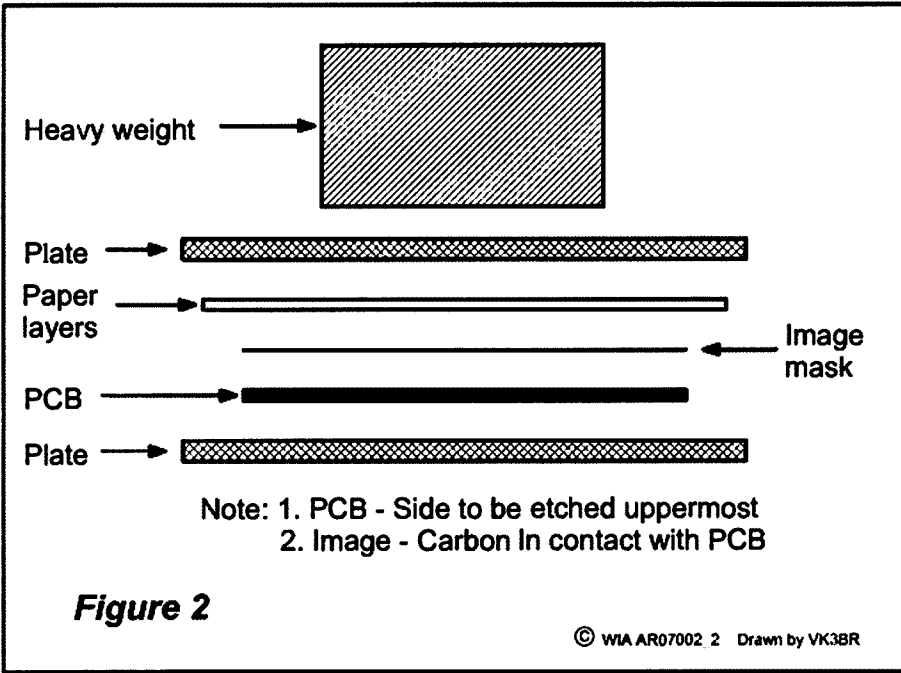


Figure 2: Side view of the lay-up stack

All being well you should have a good transfer of carbon. Sometimes some areas that were not thoroughly clean will not transfer properly. These areas can be touched up with a regular etch resist pen before etching.

8. Etch in the usual manner. Remove the PCB after a short while and examine to ensure all exposed areas are etching. Any areas that should be etching but have not started can be encouraged by gently scraping with a scalpel or the like.

9. Once the etching is completed, wash the PCB thoroughly then remove the resist with turps or good old WD40, followed by a final detergent wash.

Comments

The problem with print reversal of the artwork can arise when it is produced with a graphics program such as Paint, or with a PCB CAD program. For regular use with wide tracks, the first image can be printed on a high quality paper. For the finest tracks it may be necessary to use a higher quality photographic paper. A regular ink jet printer is suitable for the first copy where reversal is required. Besides saving a sheet of transparency it is also more convenient when using a laser printer at the Library or other shop. Most of these printers will only have A4 sheets of transparency available so fill your Master copy with as many images as will fit. When you have backups Murphy is less likely to surface and you will also have copies for future use.

Should the scan or copy be a bit tatty then the clean-up can be performed using the previously mentioned programs. Sometimes, easier touch-up can be achieved by converting the image to a negative copy so that the normally clear areas become black. Then reverse the image back to the original positive copy. Another means to clean up a really poor copy is to use a program that can handle layers. Place the copy on a lower layer then redraw on the top layer. This is especially useful for microwave circuits. If your program is not layered then the image can be blown up to pixel level to clean up edges and/or remove blemishes. You will find this tedious but it is very effective.

I never had a lot of success with the iron-on method, possibly due to slight movement of the transfer and also the difficulty of judging the optimum amount of heat required.

Should you wish to use double-sided board to provide a ground plane, it will be necessary to protect the ground plane from the etchant. A simple way is to use strips of PVC insulation tape, taking care to seal along the joins. Any stick-on film is also suitable and more convenient than using a paint type resist.

Happy etching.

Reference:

Silicon Chip, May 1993, p 92.

Silent key

John Edmonds VK3AFU/VK3ATG

John Wilson Eadie Edmonds was born at Natimuk in the Wimmera 82 years ago.

He fitted a lot into his life, including much amateur radio.

After his schooling at Clear Lake Primary School and Horsham High School, he joined the Air Force as a Navigator, spending most of his war years in PNG. After discharge from the Air Force, he completed a B Agr. Sc. at Melbourne University, married and produced four children.

As well as working the family farm, he participated fully in all the community activities, including tennis and the Fire Brigade. It was at this time that the Rural Fire Brigades were investing in radio communications for fire-fighting, which led to his interest in amateur radio.

He was licensed as VK3AFU in 1960, relinquishing the callsign only in recent years because of ill health.

In 1967 the family moved to Frankston,

where he held a research position with the then Vermin and Noxious Weeds Department (now DSE). He was a Founding Member and Life Member of FAMPARC, where he gave considerable time to running classes for potential amateurs.

He held the position of Federal Historian for the WIA for several years, sorting and classifying part of the extensive WIA Historical collection.

He leaves a partner, Ros, and two children, Adam VK3JEA and Samantha, and grandchild Archie, as well as a wife, Brenda VK3KT, four children, Brenda VK3QT, Charles VK3AFV, Vicki VK3LT, and Alex VK3BQN, and grandchildren, Kim VK3FHQT, Peter VK3FLIP, Matthew VK3FMJG and Nicole VK3FXYL.

Vale John VK3AFU. You got me started in this radio game.

Brenda VK3KT

Herbert (Bert) Harmer VK5AUS

7.4.1916 – 16.10.2006

Bert was born in the township of Broken Hill, N.S.W., on 7 April 1916, one of nine children. At six years of age, his family moved to Clare, S.A., and then to Port Pirie where he completed his education. The depression was at its worst but he was fortunate to find employment as a postman at a nearby town. Later he found a casual job in a cycle store in Port Pirie and this led him to become interested in cycles, and so he decided to enter cycling events and he started winning. The highlight of his cycling career was to win the Port Pirie Diamond Jubilee Wheel Race, along with some other events on that same day.

The army (A.I.F.) was looking for people with Morse code experience and he joined the 19th L.O.C. at Keswick Barracks and gained the rank of N.C. Sergeant. He was very proficient at Morse code, and instructed other personnel, which also included a number of women. He spent three years in the islands of New Guinea and New Britain with a heavy wireless task force. While there he contracted Malaria and Dengue and did not recover for years after.

Before being discharged from the army he met and married his wife, Lorna. He

opened a cycle business at Solomontown before working as a branch manager for Super Elliot Cycles, first in Port Pirie, then in Adelaide. He then opened his own cycle business in Sefton Park, a suburb of Adelaide and was there for 20 to 25 years before retiring at the age of sixty.

It was during this part of his life that I met Bert and became friends. On one occasion we agreed on an arrangement that he would teach me Morse code if I would instruct him on amateur radio theory. I passed my code and Bert passed his Novice exam to become VK5NHH on 21/11/1978. Not happy with this, on the 18/8/1981 he passed his A.O.C.P. and became VK5AUS.

Most of his communication was with Morse code and he regularly communicated with some of his army friends via this mode on the HF bands. He was very proficient, usually operating around 40-60 WPM. Most of us 'hams' would have a microphone attached to a transceiver mounted in a vehicle. But not Bert, he had a Morse key that would pivot out. He received his WAS award and almost had sufficient contacts for the WACC award. Amongst his other hobbies

was gardening and he was very good at that as well. He carried out everything with excellence in mind.

Bert is survived by his two daughters, Pauline and Sandra, and by his brothers and sisters. A true gentleman and friend.

Submitted by Colin Rieger VK5ACE

It is with sadness that I inform you that my father Mr. Herbert Charles Harmer VK5AUS, membership number 184888, has passed away on 16/10/06 at Hamley Bridge Hospital, Albert Street, Hamley Bridge, SA, at 90 years of age.

My father passed away peacefully after suffering a stroke. He was in the hospital for over twelve months, as he fractured his hip in June 2004.

Dad was very passionate about his radio companions and for many years enjoyed communicating with them from all over the world. He even got me to speak on radio one day to one his friends, which gave me quite a thrill.

So I guess Dad will sign off for the last time. VK5AUS signing off. We thank you all on behalf of my father for many enjoyable years on Amateur Radio.

Kindest regards,

Mrs Sandra Pink.

Wal Stuart ex VK2AYJ

Wal Stuart obtained his AOC in 1975. He had been interested in radio since his boyhood days when he built crystal sets featured in "The Wireless Weekly". During his teenage years in the 1930s, he walked to school so he could spend his tram fare on parts to build his first valve radio. When he entered the army in WW2, he asked to be a signaller. His infantry unit spent the war stationed at Geraldton, WA.

His eldest son Peter also developed an interest in radio and electronics, and in 1975, the pair enrolled in Sam Voron's (VK2BVS) study classes at UNSW. Father and son passed all exams, except for Peter who failed his first Morse exam. Wal's army training in Morse had given him a distinct advantage.

Wal fitted out a campervan for his

retirement. He packed it with HF, VHF and CB radios. He and his wife drove to many places in Australia. Peter (in Sydney) had a sked with them every day they were away. For most skeds Wal erected an 18AVT on the van's roof rack. He got some funny looks when he did this in King's Park in Perth. He also became very adept at erecting long wires using fishing tackle, when trees were close by.

When at home in Sydney, Wal had a regular weekly sked with Peter on 2 m. The pair also used RTTY for a few years.

Wal ran a JOTA base for the Guides at Cabarita for many years, and he received a certificate for his service. He was a member of the WIA for the 30 years he was licensed.

Wal's main interest was experimenting with homebrew antennas and building

his own ATU's and power supplies. Increasing illness led to him and his wife relocating to a retirement village in 2005. He was forced to give up his hobby and he let his licence lapse.

Wal passed away on 20th July 2006, aged 83. He is survived by his wife, three children and eight grandchildren.

Peter Stuart, VK2BEU.

Chris Spikins VK6TCS

I am saddened to inform that Chris Spikins VK6TCS passed away on 6 November, 2006.

Submitted by Mrs Spikins.

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Visit "The Dish"

WIA AGM to be held at Parkes

Robert Broomhead VK3KRB

The Parkes Radio Telescope, or "The Dish" as it has become well known after a movie of the same name, is owned and operated by the CSIRO. It is an active scientific research instrument performing daily radio measurements and related studies. As a working research instrument, the Telescope is closed to the public. Visitors can visit the Radio Telescope site but are restricted to walking around the grounds surrounding the dish and viewing a documentary video at the visitors centre. By special arrangement with CSIRO management, the WIA is pleased to announce that it has been granted a series of detailed "technical" tours inside the Telescope facility for

WIA members. These tours will be conducted on the Sunday of the AGM weekend and members will be able to see first hand the inside workings of the Radio Telescope and ask technical questions of the site engineers.

Make no mistake, for most members, this will be a once in a lifetime opportunity to step inside and see the workings of one of the world's most active and powerful Radio Telescopes.

To be part of this exciting upcoming



AGM weekend, taking place on 4th to 6th May, please complete the registration form which is included in this month's AR.



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The Lunar Transponder question comes up again

Every so often this question comes up in discussion on the BB. This time it was triggered by a NASA announcement of plans to establish a lunar base as a testing ground and possible staging point for a Mars base at some later date. Questions usually take the form "Why can't we have a transponder on the moon?"etc..... The most recent query took it one stage further. "With the amount of libration on the moon, what's the maximum antenna gain per band that you can get before it becomes too much of an issue". The person asking the question was referred to James Miller's now years old article on the subject.

The AMSAT group in Australia.

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members, AMSAT-VK operates two monthly nets. AMSAT-Australia Echolink Net. The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net.

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park. SA. 5034
Graham's email address is:
vk5agr@amsat.org

<http://www.amsat.org/amsat/articles/g3ruh/110.html>

This is such a perennial question that James' article should be prescribed reading for everyone in the satellite game. Every time the moon is propelled into public notice for some reason, the moon transponder question comes up on the BB soon after. In addition to James' full treatment of the technical difficulties, there are issues of security and encoding and access. There's a lot more in this question than first meets the eye. James' article is an essential starting point for anyone interested in learning more.

AO-51 operations change

Drew Glasbrenner KO4MA [AMSAT-NA VP Operations] recently made this announcement on the AMSAT-NA bulletin board. It concerns operations on the popular AO-51 satellite. "The primary FM repeater modes on AO-51 have historically required a 67 Hz subaudible tone to access the satellite. This tone was originally designed to allow the downlink to be switched off when the satellite was not in use. Because of the difficulties in power management between orbits seeing heavy use and those with light use, this scheme is not practical with the current software onboard the satellite. The use of the subaudible tone access has also been problematic when trying to identify the seemingly growing interference issues experienced on most 2 metre uplink frequencies, and when the satellite is over areas of heavy use. Furthermore, despite the near ubiquity of subaudible tone enabled radios in North America, many areas of the world have limited or difficult access to this type of equipment, even in commercial off-the-shelf gear. After careful evaluation and discussion, I have made the decision to suspend the subaudible tone access on AO-51 until such time as it becomes necessary or useful for power management. Please continue to listen to the downlink before and as you transmit to reduce QRMing other users. This means full duplex operation is the most courteous and efficient means of operating the FM satellites. Also, please continue with renewed vigour to help identify and

eliminate both non-amateur interference, and amateurs operating outside of the established band plan that interfere with our satellites. Operators with questions or feedback regarding this policy can email Drew at ko4ma@amsat.org, and those with special mode requests can continue to submit them to ao51-modes@amsat.org for consideration". The Operations Committee meets each month to consider and set the schedule for the following month: your input is always welcome.

Updated firmware now available for the LVB Tracker

Howard G6LVB reminds users of the LVB Tracker rotor control system that he has a new set of firmware that includes compatibility for use with the Predict tracking program. Howard explained, "I discovered that Predict sent null characters at the start of each command that meant the old firmware got confused and ignored the command. The updated LVB Tracker version ignores these null characters." If you would like to test the new firmware, contact Howard at g6lvb@amsat.org When you purchase an LVB Tracker kit, a handsome donation goes towards building new satellites!

Pehuensat-1 launched and active

AMSAT Argentina announced that Pehuensat-1, the 2nd Argentine amateur satellite was launched from India by an ISRO PSLV-C7 4 stage rocket on January 10. It attained a 635/640 km polar sun synchronous orbit with an inclination of 97.92 degrees. Once activated, Pehuensat-1 will transmit voice messages in three languages, English, Hindi and Spanish, and will be heard on 145.825 MHz plus an AX25 1200 baud packet following the voice message. More information can be found at: <http://www.amsat.org.ar?f=6>. Alejandro LU8YD, at the Pehuensat control station at the University of Comahue, reported hearing weak signals on 145.825 MHz after the satellite was activated. The satellite's controllers are investigating and plan to report on their findings. PEHUENSAT is pronounced "Pe-when-sat" in English.

Australian Scout Jamboree - ISS contact successful

A successful Amateur Radio on the International Space Station (ARISS) contact was carried out with Scouts attending the Australian Scout Jamboree 2007 on Sunday, January 7, via the telebridge station VK4KHZ. Nineteen Scouts were able to ask one question each of Sunita Williams KD5PLB. Approximately thirteen thousand Scouts and eight thousand leaders from 53 countries attended the event. Photos taken of the Jamboree's amateur radio station may be viewed on:

<http://www.wia.org.au/news/2007/20070103-01.php>

For a write up and photographs of the ARISS contact, see: <http://www.wia.org.au/news/2007/20070108-01.php>

The conversation from ISS was clearly

audible here on my 2 m hand-held TRX with rubber duckie antenna. ISS was still high in our sky when contact was lost with VK4KHZ and the transmission was terminated.

Latest news on P3E

The projected launch date of the AMSAT-DL Phase-3E high orbit satellite is drawing closer. Many in the fraternity are eagerly anticipating a return to the halcyon days of Amsat Oscars 10, 13 and 40 and the French Arsene. Those who have preserved their 2 m, 70 cm, 23 cm and 13 cm radios and tracking antennas will be champing at the bit. The development team of AMSAT-NA's "Eagle" satellite have been required to wrestle with the longer term problems of crippling noise pollution on these bands world-wide. As a result, Eagle may turn out to be a very different high orbit satellite from the birds we have seen in the

past. It will need to be if the requirements of city operators are taken into account, and they constitute the vast majority of satellite users. A more traditional satellite would not fulfil their needs into the future in today's digital noise ridden city environment. The teams at AMSAT-DL and Marburg, having a more immediate aim in mind, have kept many of the functions of earlier birds. P3E's primary mission is as a test bed for circuits and systems which are being tested in preparation for the Marburg University Mars Mission. P3E will therefore appeal to those operators who live or operate on the fringes of cities or out in the country or in remote areas not so badly affected by the current noise saturation prevalent in inner cities and suburbs. So, what's the latest from AMSAT-DL? A quick trip to their web site will reveal all.

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Plan ahead

Centre Victoria RadioFest

Kyneton, 22 April

Centre Victoria RadioFest at Kyneton, less than an hour from Melbourne, Ballarat and Bendigo on Sunday, 22 April.

Major traders, second-hand market, club corner, come n' try activities and interesting mini-lectures.

For sales tables & car-boot spaces contact Nick Angelo VK3UCK 0448 653 201 or vk3uck@hotmail.com

It will be a family friendly event with a children's playground and shaded areas for a picnic at the picturesque Kyneton Racecourse.

More details on this new event, organised by Amateur Radio Victoria, Central Goldfields ARC and Midland ARC, can be found at the website <http://radiofest.amateurradio.com.au/>

Watch out for an advertisement in the April edition of Amateur Radio magazine.

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Secretary: Ray Deane (VK5RK) Ph 82715401

Assistant Secretary: Ron Coat (VK5RV) Phone 8296 6681

Ray Deane

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or Bill VK3BR on 03 9584 9512,

or email to raotc@raotc.org.au for an application form.

Mountains of Fun!

VHF-UHF Summer Field Day 2007

Andy Sayers VK2AES

The 2007 Summer VHF-UHF Field Day Contest took place on the 13th and 14th of January, and a group of amateurs, mainly employees of CEA Technologies in Canberra, took to the hills to compete using the callsign VK1CEA.

There is growing interest in the VK1 area in operating portable for field day contests, which is great for the hobby, but it means there is fierce competition for the best locations from which to operate! Greg VK1AI, and Ted VK1BL, operated from Mount Coree, west of Canberra in the 2006 Spring Field Day (see Greg's article in the December issue of AR), and they were happy to let us have a turn at operating from this spot for the summer contest.

Mount Coree is located about 25 km west of Canberra and is 1420 m above sea level. It's not the highest peak in the ACT but it is a fantastic site for radio, as it has an unobstructed view in all directions and is completely bare of trees, which can be very lossy on the UHF and microwave bands. Another important factor is the absence of any high power transmitters or repeaters on the mountain which can wreak havoc by causing interference or desensitising receivers.

After loading up all the gear on Saturday morning, we headed for the hills and made our way up the rough 4WD track to the summit, where we were greeted by a friendly fellow who was manning the fire tower (I want his job!). The area was severely burnt in the 2003 bush fires and is showing signs of recovery, but is still extremely dry.

After setting up the antennas and some shelter from the sun, we made our first round of contacts with the Canberra locals and the other portable stations in the region. All had needle-bending signal strengths! Later in the afternoon it was time to setup for a "sched" with some locals on the microwave bands. We had only very basic equipment (literally micro-watts of power), but the extra

points to be gained from contacts at higher frequencies made it very attractive. By this time the easterly wind had whipped up and it made holding a dish antenna steady quite an act of strength and endurance! After more than an hour of tweaking the equipment, we finally made CW and then SSB contact with VK1DOH and VK1BLM, 33 km away, on 2.4 GHz and 3.4 GHz. Attempts at contacts on 5.7 GHz and 10 GHz were unsuccessful. Next time we hope to have a bit more power and antenna gain.

By evening, the strong easterly breeze had brought in moist air from the coast and we found ourselves enveloped in cloud. The temperature dropped to about 7° C and everything was dripping wet! Some medicinal beverages helped to ease the shivering, and we took advantage of the improving propagation conditions to work some more distant stations in VK3 and on the central coast of NSW. By about midnight we decided it was time to climb into our swags and get some sleep.

We woke at dawn to see the sun emerging from a sea of cloud a few hundred feet below us, and not a breath of wind. We spent quite a while soaking up the view and taking photographs before we even thought about boiling the billy or turning on the radios. I think we were all mesmerised by the sheer beauty and tranquillity.

Most of the other portable stations were up early too and provided plenty of activity for us as we ate our breakfast. As more stations began to appear at increasing signal strengths, it became clear that some tropospheric enhancement was brewing - you can clearly see the duct caused by a temperature inversion in Photo 3. As the morning progressed we

continued on page 29

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Mountains of Fun continued



Photo 1 The view to the west at sunset



Photo 2 The campsite enveloped in cloud



Photo 3 Sunday morning



Photo 4 Sunrise

made some pretty remarkable contacts, including to VK2DVZ in Taree on 23 cm (518 km), VK2KWM and VK2IF in far northern NSW on 2 m and 70 cm (nearly 600 km), and to far north Queensland on 6 m (over 2000 km). The 6 m propagation was probably sporadic E.

To top it all off, after the contest finished we had a half hour rag-chew on 1296 MHz with the VK3UHF guys 515 km away! Who says you can only rag-chew on 80 m!

There's heaps of fun to be had by getting out into the field and joining in one of the field day contests. You don't need lots of fancy equipment, in fact most modern multi-band transceivers are all you need for operating 6 m, 2 m and 70 cm,

along with some simple antennas. Just find a bit of high ground and give it a go! If you can't get out into the field then get on the air from the home QTH and give the portable stations a few points. Remember, our VHF and UHF bands are valuable bits of spectrum; so "use them or lose them"!

ar



Photo 5 The campsite and antennas

VK2

Tim Mills VK2ZTM
Via vk2wi@ozemail.com.au

Clubs

The Coffs Harbour and District ARC field day held last January was well attended. 102 registrations plus exhibitors were logged. A warm day was made pleasant by a good breeze through the hall, which was full of traders, disposals and displays. There were traders from Melbourne, Sydney, Brisbane and the North Coast. Groups included WIA, WICEN, ALARA and the Oxley Region club. It was interesting to note that activities at these events are changing. Most like to arrive early, well before the official start and then leave early – by lunchtime. Most like to observe and hassle the traders, partake of the food source and talk to those not seen since last time. What is not attracting much interest these days are field events, even scrambles and brain testers like quiz papers. Event organiser was Gary VK2ZKT, who promises a bigger and better event next year; to be possibly held at an even larger venue.

Last month the Central Coast ARC held its annual field day at the Wyong Racecourse. Next month, over the Easter period, the annual Urunga Convention will be held in the village of Urunga, on the NSW Mid North Coast. It starts on Saturday the 7th April and concludes on Sunday, the 8th. It is held in the local Progress Hall and there is time for field events like fox hunts and the famous Urunga Scramble on the Sunday morning. For details, seek out Arnold VK2ADA or Ken VK2DGT. Still on the North Coast of NSW, the June long weekend is the turn of the Oxley Region ARC, at Port Macquarie, to hold their two day event.

This month, the Karuah Valley Radio Group – they are just north of Newcastle – have exams on the weekend 17/18th. Contact Grahame VK2FA 02 4954 8688.

Westlakes ARC have exams on the first and fourth weekend in March. Contact Keith VK2PKT vk2pkt@hotmail.com telephone 0402 338 948. Hornsby and District ARC have the full range of exams – contact Tony VK2BTL 02 9487

3383. Blue Mountains ARC – contact the Secretary Daniel VK2DC by email secretary@bmarc.org . Central Coast ARC at foundation@ccarc.org.au . Any other groups currently conducting exams? Please advise the ARNSW office vk2wi@ozemail.com.au or use the contacts at the end of these notes.

Emergency Communications

WICEN in its current form has been about since 1955, when it was decided to form an organised body to provide Amateur Radio assistance to authorities in their time of need. The first name was CDEN – Civil Defence Emergency Network. About the same time, the authorities were setting up the SES. At a national training operation held in Victoria that year, the Amateurs in attendance felt the name CDEN was too similar to SES and instituted the change to WICEN – Wireless Institute Civil Emergency Network. Over the years, the various States have developed their WICEN to suit the local environment. In VK2, it moved away a bit – along with a slight name change – to take advantage of the facilities available by association with other emergency bodies like the VRA. In more recent times, the NSW authorities have been creating their own emergency bodies, using their own agencies, (Fire Brigade, Ambulance, etc and Rescue) along with their own communication networks. Greg VK2GRJ has watched this transformation and is concerned that the Amateur Radio Service in VK2 is likely to be sidelined. He had investigated and floated AREN – Amateur Radio Emergency Network – where he has tried to get direct Government acknowledgement of the part that the Amateur Radio Service could play in emergency communication, if the need arose. The government communication network is fine as long as no one digs up the ‘fibre’. There are already many tiers of established government emergency management structures, which – except in a few cases – have no Amateur

involvement. You will not be noticed or known without being involved. If you wish to know more about these emergency management organisations, contact Barry VK2AAB.

ARNSW

In the February notes, clarification of the opening date of the VK2WI building in 1957 was sought. Michael VK2YC has been able to verify with a dated photo of the event that it was on Sunday the 19th May 1957. The plaque at Dural indicates the date as the 15th. An error, one can assume in a hand written layout for the plaque, where the written script in those days formed 5 and 9 in a similar style.

The AGM for ARNSW will be held on Saturday the 14th April 2007 at the West Ryde Leagues Club. Nominations and agenda items closed on Saturday the 3rd March. The paperwork is currently being prepared and will be sent to ARNSW members later in the month. Some members have previously opted to receive paperwork by email. Now is the time for them to confirm their email address – as many do change. Please do this by sending your current details to vk2wi@ozemail.com.au if you wish to use this method of delivery.

The next Trash and Treasure will be at the Dural site – 63 Quarry Road – on Sunday the 25th March. Start time about 11 a.m. It is followed by a sausage sizzle lunch and, in the afternoon, by the Home Brew and Experimenters Group. It will still be a while until the T&T has their shed. At the start of the recent holiday break, the local Council required more paperwork, this time a plan of the tree profile of those near the proposed shed. While waiting for the shed, the ARNSW Council is looking towards the expansion of, or additions to, the existing building, which houses the transmission facilities. This development would be to provide some of the facilities which were part of the previous headquarters properties. The NSW Division – now trading as ARNSW – acquired the Dural property in 1955. They purchased the first headquarters at

VK2 Silent keys

Ian Dunlop VK2AVS	Murwillumbah
Sir Allan Fairhall KBE VK2KB	Newcastle
Lawrence Kennedy VK2TKJ	Mortdale Heights
Raymond Nelson Fry VK2FRY	Chatswood
Michael Roll VK2HMR	Balmain

14 Atchison Street, St. Leonards in 1959 and sold it in 1982. The Division acquired the 109 Wigram St. Parramatta property in 1982 and sold it in 2006. This month is also the ninety seventh anniversary of the founding of the Institute in Sydney in 1910.

A memo to VK2 Clubs and Groups that VK2WI News with its state-wide coverage is available to promote your activities to the wider audience. Many already use the service. If your group does not, remind your publicity officer. Have them send items to the News Compiler Brian VK2TOX via the ARNSW email address. The text of VK2WI news, as

well as other ARNSW information, is to be found on the web site.

The next round of exams provided by ARNSW is scheduled for the weekend of April 28 and 29th. For inquiries and bookings - contact the office by phone 02 9689 2417, fax 02 9633 1525, mail to P. O. Box 9432 Harris Park 2150 or email vk2wi@ozemail.com.au . Application forms can be downloaded from the web site.

Details of other group's exams, as advised, appear on the ARNSW web site: <http://www.arnsw.org.au/> .

73 - Tim VK2ZTM.

VK3

Amateur Radio Victoria News

QSL cards unclaimed

The VK3 QSL Bureau is one of the most efficient but a continuing disappointment for the volunteers who sort incoming cards are the QSLs that don't reach their intended destination.

Clearly the majority of those radio amateurs who are not registered with the Bureau don't want the cards, which number in their hundreds. When approached individually in the past, they often state having no interest whatsoever in QSLing.

However, a new opportunity exists to try and minimise the number of unclaimed cards. Those involved with the Bureau operations will be at the Centre Victoria RadioFest at Kyneton next month to answer any questions, provide information packs and assist with registrations on the spot.

New logo

Work has begun on producing a new logo for Amateur Radio Victoria. A graphic designer has been asked to create a logo that incorporates our traditional wings and lightning bolt, and a map of Victoria.

Since its founding in November 1911, the organisation has had four logos, or 'badges', 'emblems' or 'motifs' as they are also known in earlier days.

The first featured a spark gap, the next adopted a version of the 'wings' - often

believed to have been derived from army wireless or signal units. Currently the logo is similar to that of the Wireless Institute of Australia.

The state-wide organisation Amateur Radio Victoria, as part of the necessary transition processes associated with the WIA becoming a national body, is now seeking a new logo to better reflect its identity.

The logo will seek to preserve the essential heritage elements of its current logo yet become a distinctive, fresh and readily recognisable new brand mark.

Licence classes

The next weekend Foundation Licence training and assessment weekends at Box Hill North will be on 17 and 18 March, and 14 and 15 April.

These popular sessions have assisted many since November 2005 to enter the hobby through its entry level licence.

The trainers are Mark Forsyth VK3ZMF and Kevin Luxford VK3DAP. Supporting them is an Education Team lead by Barry Robinson VK3JBR with a pool of assessors.

Inquiries and enrolments are handled by Barry VK3JBR on 0428 516 001 or arv@amateurradio.com.au

Thank you to those who are directing prospective radio amateurs to the classes.

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

The "Calling CQ..." brochure issued by the WIA last month will assist anyone to easily promote amateur radio.

Waffle award winners

The Welcome Aussie Foundation Licensees award period ended on Australia Day, 26 January 2007.

Claims have so far been received from Andre Jones VK3AJR, Ron Hanel VK3FAHR, John Lovell VK3FELA, Cohen Lewis VK3FCLL, Peter Dernikos VK3FGRC, Paul Brown VK3HJU, Ashley Clark VK3SSB, Terry Murphy VK3UP, David Rose VK5FDMR, John Nieuwenhuizen VK5NJ and Iain Harrison ZL1KK.

It's good to see so many new radio amateurs making this their first amateur radio operation award. The award certificate is a little way off but will be sent to all who make a valid claim for it.

F-Troop net

Continuing strongly is the F-Troop weekly. Sunday net mainly for new licensees held at about 11.40 am through the Mt Macedon 2-metre repeater VK3RMM immediately after the broadcast callback.

The rostered net controller, Ross Pittard VK3FCE, Keith Proctor VK3FT or Terry Murphy VK3UP, provides information of interest and answers questions.

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

Not a lot happens within our club during the festive season. But we will be into the swing of things very soon.

Our New Year Barbecue was another one to remember, but for exactly the opposite reason to last year's function. Last year, the barbecue was held on a day when the temperature was 42° C. This year, after several days at close to that temperature, the day of the actual barbecue was one of torrential rain! It was unbelievable that there could be such a contrast from one year to another.

Nevertheless, regardless of the weather, over 50 people were there and everyone claimed to have had a good time. Barry VK5ZBQ and his XYL Shirley were our hosts, and although the two gazebos with a tarpaulin between them let us down when the rain really bucketed, Barry's shed is large enough to accommodate those that didn't risk a drenching.

Luckily there was ample room for two hot plates to be running continuously well under cover, and after the food was cooked, by covering at least one of the barbecues, we had sufficient table space.

The weather certainly gave everyone a topic for conversation. After the drought, we were all delighted to see and smell some rain.

In February, we will have had our AGM followed by a couple of short talks, and

in March we have the Members' Buy and Sell, where all the items that did not sell, or were bought and are now not needed, change hands again.

A varied program of speakers has been arranged for the rest of the year. If you are visiting Adelaide on the third Thursday of the month, you are welcome to come to a meeting. They start at 7.30 / 8.00 pm, and are held in the Belair Community

Hall at the top of the Old Belair Road. Please contact the President, Jim VK5NB, or John VK5EMI, the manager of our website, for more information.

Please accept my apology for the incorrect callsign in the caption to the picture in the bottom right hand corner of the AHARS notes on page 37 on the February AR. The YL's name is Ash and her callsign is VK5FASH.



Yes, Barry's shack was well used! Barry is in the centre, Sasi VK5SN on the left and on the right, Steve VK5AIM.

VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au Regional Web Site:
<http://www.reast.asn.au/>

It was great to see Barry Fraser VK7FR interviewed on the ABC Stateline program celebrating the first 50 years of ABC TV in Tasmania. Barry spoke the first words on television in Tasmania and those dulcet tones still permeate the amateur radio waves HIHI.

The "Sewing Circle Net" is sponsoring a "Meet The Voice" BYO BBQ at the Ross Caravan Park on Sunday March 18, 2007, and invites ALL amateurs state-

wide to attend and take the opportunity of meeting fellow members. The invitation is extended particularly to amateurs who have joined our hobby in recent times. Registration is from 10:30 am, BPL discussion at 11:30 am and BBQ at 12:30 pm. A cover charge of \$5.00 per amateur will be used to cover costs and any surplus will go to Repeater maintenance funds throughout the state.

2006 VK7 Regional News Callbacks Explode

Overall, across all of the 14 VK7 broadcast frequencies and repeaters, there has been a 28.2% increase in amateurs calling back after the VK7 Regional News Broadcast. This means that on average 102 amateurs each Sunday call in on a repeater, MF, HF or CB frequency. This increase can be

mainly attributed to a 48% increase in the number of MF and HF callbacks. In 2006, there were over 5300 callbacks recorded, thanks to John VK7JK. More details and charts for the last six years are available at: <http://reast.asn.au/archive.php>

North West Tasmanian Amateur Radio Interest Group

The 6 m Repeater VK7RNW has been returned to its normal home at Lonah following repairs. World Wide Amateur Radio News is available for listeners on the Central Coast and around the Ulverstone area on 147.400 MHz FM simplex, repeater VK7RNW on 53.825 MHz and ATV frequencies. The NWTARIG AGM was held on February 3 with the following elections – President, Tony Bedelph VK7AX, Vice President, Ivan Ling VK7XL, Secretary, Stephen Bush VK7EQ, Treasurer, Shirley Hardstaff VK7HSC and Committee member Keith Winkler VK7YBP.

Northern Tasmania Amateur Radio Club

The annual Christmas Myrtle Park BBQ was held along with the inaugural “Slippery Trout Fishing Competition” which was won by VK7JG. Joe gave the trout a loving Rex Hunt style kiss and released it back to the stream. The new diplexer, which was purchased with the WIA grant, has been installed on Mt Barrow on VK7RAA 147.000 MHz. It is operating well, along with a number of antenna improvements and installation of an intelligent mute squelch circuit in this

Biennial Tassie 2006 Ham Fest at Miena

Miena is in the Central Highlands of Tasmania and played host to the biennial Tassie HamFest. This event is hosted by the Central Highlands Amateur Radio Club of Tasmania and involved all AR clubs throughout Tasmania, ALARA, and many suppliers. The following report is from Dave VK7KDO and Justin VK7TW.

Well, in fine Tasmanian tradition, we had four seasons in one day including snow but, for those that attended, I didn't hear one complaint about the facilities



VK7 Regional News Readers on ATV – L: Ian VK7IR and R: John VK7JK

repeater. The VK7REC repeater has also had its long awaited antenna upgrades thanks to Allan VK7ZAR, Paul VK7KPG, Peter VK7PD and Joe VK7JG. Are you interested in participating in WICEN in the North and North East? A lot of interest has been shown of late and if you'd like to participate, contact Geoff VK7ZOO on the East Coast, who has volunteered to act as interim co-ordinator.

Radio and Electronics Association of Southern Tasmania

We welcome our new F-calls – Estelle VK7FMEL, Sam VK7FBMX, Bernard VK7FBWB, John VK7FAAE, Richard

VK7FRHD, Shane VK7FAAF and Tony VK7FGMH. We look forward to hearing you all on the air. We also congratulate Fernando Mendonca and Mark Finlayson who are awaiting their call signs after successfully passing their Foundation licence assessment in January. Congratulations to Andrew Cavill who passed his Advanced licence assessment in January as well.

March 7 will see Mike VK7DMH give us an illustrated talk on the history of Radio Control along with early equipment and some equipment Mike is rebuilding. This should be a fascinating talk.

Dave VK7KDO,
Hamfest Convenor



The well heated (HIHI) and packed Miena Community Hall.

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The Gold Standard SG-230

The SG-230 Smarttuner was the first in the HF market with fast, flexible tuning without any user interface. It senses RF when you transmit and automatically finds the best SWR match to your antenna. Works with ANY radio and ANY antenna and requires NO special interface. Use with base station, mobile,



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The **AT-100Pro** requires just 1 watt, but will handle up to 125 watts. All bands including 6 meters and like all LDG tuners features a two-year warranty. Cables included.

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Mitch VK7FMCH electing to use his foot in the Morse contest.

and certainly inside the hall was VERY comfortable.

Traders included: TTS Systems, G&C Communications, TET-Emtron, Bushcraft antennas (all the way from VK6!), Ashley Copper Electronics (AJC) and Little Devil antennas. All major rig manufacturers currently on the market were represented.

We certainly over-catered in the food department and the unused surplus

of the helical vertical antenna, the verbal DX-pile, amateur quiz, the lucky door prize and the Morse code contest with a twist! Participants were not allowed to use anything above their waist to activate the key. Those lucky enough to win walked away with a very nice prize.

All traders were satisfied with their sales on the day. If you chose your mark, you could certainly pick up a bargain, with prices in some cases hundreds of dollars below that seen advertised in AR magazine.

Given the difficulty in accessing much radio and associated equipment in Tasmania and having to purchase sight unseen and with considerable freight costs involved, it was certainly an opportunity to view some of the latest in ham radio gear and purchase items for the shack. When next you are considering a purchase, remember those people that supported our ham fest and give them a chance to meet your needs.

Many an eyeball QSO was achieved by participants and it was great to see the involvement from all clubs in VK7. The day finished off with the committee of The Central Highlands Amateur Radio Club and our trader visitors returning to VK7KDO's holiday home and enjoying a well earned rest, steak dinner and glass of wine.

Thanks to those who supported us I hope you had a great day.

continued next page

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Our MC for the Hamfest was Brian VK7RR.

VK7 continued

40th Anniversary of the 1967 Bushfires in VK7

Justin Giles-Clark, VK7TW
Email: vk7tw@wia.org.au

Over the 2006 Christmas period, there was a timely reminder of the role amateur radio plays in time of natural and (unfortunately) un-natural disasters like bushfire. Tasmania experienced terrible fires on the East Coast and South East in December and it was many of our F-calls who excelled themselves on the East Coast by using a 2 m simplex channel to keep the lines of communication open when power and phones failed. Merv VK7FLED, Stuart VK7FEAT, Tanya VK7FTAN, Steve VK7FJBL, Terry VK7YBN and Geoff VK7ZOO were all involved and an extra special mention of Leon VK7FLCA whose home was destroyed by the fire.

In the South, WICEN personnel were called upon to assist the Tasmania Fire Service with radio operators at the Cambridge Operations Centre for the fires in the South East. This involved 21 amateurs working over 240 hours over 9 days. Nearly half of that time was covered by F-calls. This was an early start to what is predicted to be a very busy fire season. We need more resources if we are to continue to help in these situations so, contact Roger VK7ARN or Gavin VK7HGO if you are willing to help when the need arises.



Danny VK7HDM and Peter VK7TPE assisting at fire control. (Photo Courtesy of Roger VK7ARN)

The April 1967 edition of AR magazine contained the lead story by Greg Johnson VK7ZKJ of AR's role in the devastating VK7 1967 bushfires. February 7 was the 40th anniversary of this event. These fires covered over 2,600 square km and saw 62 deaths and over 1400 homes destroyed. Amateur radio played a special part due to power outages and jammed telephone exchanges. Only one commercial radio station (7HT) was still on air and a 6 m mobile station was setup outside the radio station to relay information. Dave VK7ZMD (now VK7DM) was posted at the Fire Brigade HQ, Jack VK7JB was at the Civil Defence HQ with Ted VK7EB and WICEN control from the QTH of Lee VK7KC. Also involved were Tom VK7AL, Ted VK7EJ, Crosby VK7CR, Greg VK7ZKJ, Ian Ellings, 22 6 m mobile and 10 HF mobile stations feeding information from the affected areas into HQ. A 6 m relay was setup on Mt Rumney

by Barry VK7ZBJ and Ron VK7ZRO. Myles VK7MF, VK7ZZ, and VK7DR were involved in setting up a 40 m net for PMG communication replacement requirements.

Contact with Huonville in the Huon Valley was only established when a 6 and 80 m mobile station was setup by Winston VK7WH with relays via Terry VK7CT and VK2AGH via CW! Mike VK7ZMC operated his base station from Woodbridge. VK7ZZ was handling traffic to the mainland for Department of Social Security, Labour and National Service. Later in proceedings, John VK7ZJG and Greg VK7ZKJ setup a relay station on Mt Wellington using the TVT6 facilities, with Mike VK7ZMC relaying to/from the North on Mt Barrow. By February 14, infrastructure was back in place and WICEN involvement ceased.

Dave VK7DM and Myles VK7MF were interviewed for the ABC Radio National program "Hindsight" which aired over the week of the 40th Anniversary and they were also interviewed on ABC local radio. The Hindsight program is also available on the ABC Radio National website.

(Sourced from reports from Dave VK7YUM, Roger VK7ARN and original article by Greg VK7ZKJ)

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Photo from the original article. - Civil Defence HQ Hobart - LtoR: Jack VK7JB, Crosby VK7CR and Ted VK7EJ.

A Queensland gathering

The Central Highland ARC held its AGM as part of a pleasant get-together weekend. There were five licensed YLs among those present: Dawn VK4HER, Gail VK4FGLS, Joscelyn VK4JJ, Mary VK4PZ and Lyndall VK4ZM. The idea of an auction held under the stars sounded great, but the predations of the possum, fed on biscuits, which later managed to eat a whole cake, when everyone's backs were turned, sounds rather too much!!

JOTA in VK2

Norma VK2YL and OM Frank had better luck this time with their equipment than they had a few years ago, when the antenna was blown down in a storm the night before they were planning to run a GOTA (Guides on the AIR) station.

They ran JOTA from Winston Hill Guides using 40 metres, 80 metres and Echolink through 70 cm. All was very successful, but for Norma and Frank, one of the best parts was that all three of their newly-licensed girls were able to participate for part or all of the weekend.

A lovely family occasion, as well as a Scout and Guide one.

Nominations for the AGM

We are sorry to hear that Bron VK3DYF is giving up her position as Minute Secretary. She will be a hard act to follow. Over the years Bron has been in ALARA, she has held almost every position on the committee and is constantly called upon to tell us whether we are doing things correctly.

Enjoy a well-earned retirement from ALARA, but do still come up on the Nets so we can hear your cheerful voice.

Gwen VK3DYL, who has been the Publicity Officer for ALARA since our incorporation (and who was involved in the rewriting of the Constitution prior to that event), is also vacating her position. To fill this one we must, by law, have someone living in VK3.

Please put your hand up if you can help. Neither of the tasks is particularly onerous but the Minute Secretary does have to be able to participate in the committee meetings on air.



Photo 1: The ladies at the Central Highland ARC AGM (L to R): Dawn VK4HER, Helen, Gail VK4FGLS, Helen, Dot, Joscelyn VK4JJ, Mary VK4PZ, Lyndall VK4ZM

The CLARA Challenge

Some of the girls are already working for this Challenge, so the rest of us had better get our skates on!

The Challenge is open to OMs as well as to YLs. The aim is to contact as many YLs as possible during the year 2007 (this is the year within which CLARA will be 40 years old, or young).

ALL modes may be used: CW, phone, HF or VHF, or any of the digital modes, including RTTY, IRLP and Echolink or PSK31 are all accepted.

Net contacts count in this challenge. Signal reports are not needed, just the date, and mode of contact along with the name and callsign of the YL.

The YLs do not have to be members of CLARA but do have to have a licence.

Some ladies have already made 40+ contacts, but I cannot say how many contacts some of the OMs have made so far.

A certificate will be sent to you on presentation of your log before 30 March 2008. Logs may be sent in on paper or electronically – a special email address will be set up shortly. The cost of the certificate is only \$5.00 US.

I am sure this will be a welcome addition to your Brag Wall.

Thelma Souper Contest

This could be an opportunity to pick up some of the ZL YLs for the CLARA Challenge.

The contest is held over the March 31st to April 1st weekend but ONLY from 0800 to 1000 Zulu.

All contacts to be on 80 metres, Phone or CW may be used. Both YLs and OMs earn points for contacting each other. If you have made more than 10 contacts, and are a WARO member, you act as a multiplier on the night worked.

Stations may be worked again after half an hour, so it is possible to have four contacts with a particular station each evening.

There will be a bonus station operating each night; ZL6YL will be operating at random times on both nights.

Details of scoring are in the ALARA Newsletter, or can be obtained from any ALARA member if you are unsure of the details.

Please participate. Have fun and help the ZLs have fun.

ALARAMEET in Tasmania

It is time to start planning to be in Northern Tasmania in September 2008. The venue is Ulverstone (mid-way between Devonport and Burnie), and there are caravan parks (with cabins and on-site vans as well as spaces), motels and hotels, so you can choose your preferred type of accommodation.

An interesting program of entertainment has been arranged, starting with the informal dinner on Friday 12th. The actual MEET occurs on Saturday and Sunday, with an all day tour to Cradle Mountain on the Monday for those staying on.

Usually, caravanners start arriving during the week before and some stay

continued page 38

Beyond our shores

David A. Pilley VK2AYD

With over 60 years as a Radio Amateur, I have never heard the HF bands so bad. Today, whilst writing this, I took a listen on 20 metres. Totally dead – the only noise came from the so called 'pristine' Country Energy power lines clocking a S-3 to 5 noise. I tuned 14.100 MHz – no beacons – however my neighbour's touch light on 14.002 MHz was still radiating (a great band-edge marker). So really, what is happening – is the ionosphere being annihilated by man-made pollution? Yes, I know the sun-spot readings are at a minimum, but they were the same 12 years ago and 23 years ago, etc. So what is really happening?

USA

The end of Morse testing

Morse testing to obtain or upgrade an Amateur Radio licence in the United States ended on Friday February 23rd. This followed a 30-day "take effect period" after the January 24th publication in the Federal Register of the Report and Order on FCC rule-making W T Docket 05-235. And on February 23rd, Morse testing became a part of ham radio history.

According to an earlier bulletin released by the American Radio Relay League, the FCC maintains that this change will eliminate an unnecessary regulatory burden. One that the FCC says may discourage current Amateur Radio operators from advancing their skills and participating more fully in the benefits of Amateur Radio.

The new rules mean that all Technician licensees, whether or not they've passed a Morse code examination, will gain some High Frequency operating privileges identical to those of current Novice,

Tech Plus or Technician with Element 1 Morse credit licensees, without having to apply for an upgrade. Novices and Technicians with Element 1 credit already have Morse privileges in segments of the 80, 40, 15 metre bands. They also have Morse, RTTY, data and SSB privileges on a portion of 10 metres.

(ARNewsline)

USA

Dayton Ohio Hamconvention

As most of you know, this is the biggest gathering of radio amateurs in the world. If you are planning to visit this year, then make a note that the dates are 18th – 20th May. It's a must do, at least once-in-a-life-time, event for every true Radio Amateur.

ET

Radio may be the key to finding ET

That's E-T as in an Extra Terrestrial civilization or two.

Now here's the challenge that will put internet on the back-burner. Who will go where no ham has gone before and be the first to receive a signal from another world?

Astronomers from the Harvard-Smithsonian Center for Astrophysics in the US have unveiled a new initiative aimed at detecting extraterrestrial life. The project, due to kick off in early 2008, will use a new radio telescope to search other planets for radio transmissions similar to those that are generated on Earth.

At present, most attempts to find alien life look for radio signals that are deliberately beamed across space, but the new initiative by the Harvard-Smithsonian Center is different in that it will look for the residue of radio transmissions sent from one place on a planet to another. It will search the part of the electromagnetic spectrum that is used on Earth for radar, television and FM radio broadcasts.

David Aguilar, Director of Communications at the Center for

ALARA continued

on afterwards, before setting off on their own expeditions. Others will have been on a tour before that weekend or will plan one to follow.

There are many options. If you are planning a holiday in 2008, try to include Ulverstone for September.

The VK5 lunches continue to grow

The January ALARA Luncheon in Adelaide grew like topsy. There were only four of us to start with but we ended with eight.

As photo 2 shows, we have left to right, Susie VK5FSUE, Meg VK5YG, Christine VK5CTY, Ash VK5FASH, Myrna VK5YW standing behind Ash,

Jenny VK5FJAY, Jeanne VK5OQ, with Ann VK5FANN standing at the back on the right hand end.

The discussion went from making sushi to what we'd done over Christmas, to the way we were managing our gardens within the water restrictions. Very little radio was mentioned.

We meet at the Museum on the 2nd Friday of the month at 12.00 approximately. Please join us if you are in Adelaide.



Photo 2: See the VK5 lunches item to identify the lunch participants.

ar

Astrophysics, said: *We may pick up spurious signals from people that were never meant for us to hear and get an inkling that something's going on.*

A new low-frequency radio telescope is currently being built in the Australian outback to detect these weak signals. That area was chosen because it is remote enough to avoid most radio interference. The researchers behind the project believe that they will be able to detect Earth-like radio signals within a distance of 30 light years. There are more than 1,000 stars within this area.

(GB2RS via ARNewsline)

eBAY

Online auction

Back in November, the ARRL conducted their first ever Internet Online Auction. It was really an experiment and fund raising idea that became a real success. 109 items were put up for auction and some 4,400 people registered to bid. It raised \$US37,340 for the ARRL's General Fund which will be used for Public Service and Education. For example, a Kenwood TS-2000 received a winning bid of \$2500 and

over 56 bids were received for a Yaesu FT-897D that eventually went for \$1,001. The ARRL have now decided to have this as an annual event. Perhaps we could do something similar here in VK.

UK

Free of charge licensing

Effective December 2006, amateur radio licences in the U.K. became free of charge and only need validating (online) every five years or whenever there is an address change. The new licence no longer specifies the operating modes that can be used on the various bands, so that new Foundation Licensees can quite happily join in digital or slow scan QSOs. They also have access to the amateur satellite services as well as the 10 cm and 3 cm bands that were previously forbidden territories. Logs are now optional, but then few stations operating mobile ever kept one. What's the reason for all this? – Administration costs! We hope our government is listening!

(RSGB RadCom)

World's most difficult award

The Elser-Mathes Cup.

The Elser-Mathes Cup is a beautiful carved dark tropical hardwood trophy. It takes the form of four stylized human figures, two standing, two seated, and is a trophy that should grace any Amateur's mantelpiece. It has been available to be won for the past 80 years. The catch is that to win the trophy, you need to make the first two-way radio contact between radio amateurs on Earth and the planet Mars!

The award was dreamt up in the 1920's when people had enormous faith in technological progress and contacts over 1,000 miles were excitement. Apparently they rejected giving the award to the first two-way amateur radio contact with the moon, because they thought it would be too easy. The ARRL are the custodians of the trophy and just before you get any ideas, the contact must be with a human. QSOs with robots are strictly outlawed in the rules.

(RSGB RadCom)

Silent key

Ronald Francis Cohen VK2TF

I wish to advise the passing of my father, Ronald Francis Cohen VK2TF, on 30 November 2005.

He became a member of the Wireless Institute of Australia on 20 May 1937 and his membership was current at his passing.

As was common in the pre WW2 days of amateur radio, he built all his early radio equipment, and Morse code was his preferred on-air communication mode. In later years, with the problems of noise emissions becoming an increasing distraction, he dismantled much of

his station and mainly listened on the Kenwood radio he purchased in 1993, which he continued to do and enjoy until his passing at age 94.

Vale VK2TF.

Details forwarded by his son, name unknown.

PENNANT HILLS, N.S.W.

47 RAMSAY ROAD,

VK2TF

Radio.....confirming our QSO of.....

at.....G.M.T. on.....M. Your sigs. RST

Xmitr.....Rcvr.....Ant.....

PSE QSL TNX 73 RON F. COHEN

VK2TF QSL card



A copy of his WIA membership certificate dated 20 May 1937.

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QSLs of the WIA National QSL Collection

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The WIA would like to acknowledge the generous contributions of QSLs from the following:

Gwen VK3DYL

Some 3000 QSLs received from several of her DXpeditions to Christmas Island, Cocos, Vanuatu, Tonga, Cook Islands, Lord Howe and Norfolk Islands. QSLs include China BA4, BD7, Taiwan BNO, BX2, BU2, Chatham Island ZL7, Belize V31, Philippines 4F2, Saigon KHO, Netherlands PB1 (new prefix), Italy IL7, Argentina LW8, Mexico 6F1 etc. etc. A very generous contribution to the Collection from Australia's top DX XYL.

Estate Andy Domjan VK3AEW

Some 3000 QSLs contributed courtesy of his son, Andrew, including Taiwan BV0, USA N84, Nigeria 5N6, Mayotte FH4, Guyana 8R1, Canada VY1, CK7, CH3, Belgium OR7 etc.

Robin VK6LK

Thailand HS2000, Turkey YM75DS, Vietnam XV4BP, Netherlands PC50, Marshall Islands V7X, Italy IH9P, France TM2F, St Peter & Paul Island ZVO5B, Denmark 5P1ER (new prefix), South Korea 6KOHG and DTOH, Saudi Arabia 7Z1UG, Brazil ZX7U, Switzerland HE1TELE (not SWL), Turkey TA3J/4 (lighthouse) etc. Is there any DX Robin has not worked?

John VK2ARK

Collection of newly issued QSL cards of

Foundation Licence holders. VK3FJNF, VK3FUJI, VK3FELA, VK3FIDX and an interesting VK9FLHI from Norfolk Island.

Hans Kiesinger VK4/HE9RFF (SWL)

Chile XQ5SM, IO1PDT, II1D, HB2CC, Tonga A35XM, Vietnam XVIX, Burkina Faso XT2DR, Juan Fernandez CEOZIS, Franz Josef Land R1FJZ, Spratley Islands MOZ etc.

QSLs from Adelaide Hills ARC courtesy of John VK5EMI

John Smith ex VK3IQ.

A few hundred QSLs of yesteryear such as VP9, VQ8, VR5, VS9 (Kuria Maria), ZE1, ZB1, HH2, CR8 etc.

Estate Don Shand VK3DZM courtesy of John VK3JJB.

QSLs from Oxley Region ARC courtesy of John McLean VK2KCE

Robin VK6LK

YU6A0 Montenegro, KH6SI (Swains Island), OM500KM Slovakia, K5H Kingman Reef, CK3AT Canada, XW30 Laos.

Jeff VK6AJ

BW0S Taiwan, BN0W Taiwan, 5H2MN (Tanzania), XV2NA Vietnam, XV9SW Vietnam, AH05 N. Mariannas.

Mike VK6HD

6DIAA Mexico, LXIARU Bulgaria, S20VT Bangladesh, GX0AAA England, ES9SL Estonia, 6UIWCY Sudan.

Melbourne

VK3DYL

Australia



Contests

Phil Smeaton VK2BAA

Contest Calendar March – May 2007

Mar	3/4	ARRL Intl. DX Contest	(SSB)
	10/11	RSGB Commonwealth Contest	(CW)
	17/18	John Moyle Memorial Field Day	(CW/SSB/FM)
	17/18	BARTG RTTY Contest	(RTTY)
	17/18	Russian DX Contest	(CW/SSB)
	24/25	CQWW WPX Contest	(SSB)
April	7/8	Marconi Contest	(CW/SSB/RTTY)
	7/8	SP DX Contest	(CW/SSB)
	7/8	EA WW RTTY Contest	(RTTY)
	14	QRP Hours	(CW/PSK31/RTTY/SSB)
	14/15	Japan Intl. DX Contest	(CW)
	14/15	Yuri Gagarin Intl. Contest	(CW)
	21	Holyland DX Contest	(CW/SSB)
	21	TARA Skirmish Digital Prefix Contest	(PSK)
	21/22	YU DX Contest	(CW/SSB)
	28	Harry Angel Sprint	(CW/SSB)
	28/29	Helvetia Contest	(CW/SSB)
	28/29	SP DX RTTY Contest	(RTTY)
May	12/13	CQ-M Intl. DX Contest	(CW/SSB)
	13	VK/Trans-Tasman 80 Metres Phone Contest	
	19/20	Baltic Contest	(CW/SSB)
	26/27	CQ WW WPX Contest	(CW)
	27	VK/trans-Tasman 80m CW Contest	

Welcome to this month's Contest Column.

Contesting with 2 radios – SO2R

SO2R, aside from being a valid callsign in Poland, is an acronym for "Single Operator, 2 Radios" and describes an operating practice employed by some contest competitors. A single station operator uses two radios to listen simultaneously to two different radio frequencies. When the two radios are on different radio bands, an operator can be listening to one radio while the other is transmitting. This can result in increased operating efficiency, as the operator can always be looking for new contacts to increase his or her score. SO2R operation can be a challenge to learn and requires practice to achieve proficiency.

The basics of SO2R – why bother?

Using two radios simultaneously is all about boosting your contest score. It is a means of maximising one's productivity during the contest and permits the contestant to be as competitive as possible. It is a difficult skill to master and can even

be detrimental to your overall score if not properly mastered, as it is highly distracting and fatiguing. As with most things in life, practice makes perfect, but some operators do it very well indeed and boost their overall score as a result. Even just adding a few QSOs an hour can greatly boost the overall score.

The enhancement to operation is accomplished by increasing efficiency during "dead" time, specifically when you are transmitting on one radio. The technique requires an operator to listen to one radio whilst transmitting on the other radio, so a CQ can be made on one band, whilst listening for a multiplier on another band, for example. If a suitable multiplier is heard on the 'second radio', the CQ call on the first radio is interrupted and a call made to the multiplier station on the second radio. Once the full exchanges have been made, the CQ can recommence on the first radio. Notice, that at any one time, only a single transmission is made.

Technical challenges

Transmitting and receiving simultaneously calls for careful thought as regards inter-station interference. For instance, harmonics from one transmitter could readily overload (or even damage) the



WIA AGM

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fx 07-3216 8075

front end of the other rig. Thought must be given to antennae separation, band-pass filters, possibly even coaxial stub filters for the bands of interest.

Once this particular aspect has been effectively cured, the next is to think about the interconnections between the two rigs and the rest of the shack. For instance, with two rigs and one pair of headphones, where do the headphones plug in to enable the audio from both rigs to be heard? Taking SSB operation as an example, if you wish to call CQ on the first radio then the microphone needs to be routed to that radio, but still have the ability to be quickly routed to the second radio if a multiplier is heard.

The same story exists for the CW key, PTT, amplifier/s keying, antenna selection, band pass filter selection, coaxial stub selection, and so on. Synchronisation of the switching is then required, so that the output from one radio doesn't get fed directly to the input of the other radio, resulting in a costly repair bill! Some radios feature entirely separate receivers within them, such as the FT1000D and other more recent models. This feature allows dual bands to be effectively monitored simultaneously, as long as the antennae are separately fed to the rig of course.

Getting started

So, how to achieve all this? Without the politically incorrect inference of having been a birth product of Tasmania and using all appropriate attributes (only joking!), there are plenty of products in the marketplace available for people to purchase, such as Array Solutions, DX Doublers, Top Ten Decoders and the like, but a basic system can be assembled without all the bells and whistles and of course the subsequent expenditure.

Firstly, add a second rig to your station. Most of us have a second rig tucked away in the shack or sitting in storage somewhere, which can be pushed into service again. The philosophy for SO2R is to allow any two radios to be used and they do not have to be identical. A large percentage of the very serious SO2R operators use identical radios just to reduce the confusion factor, but having identical radios isn't necessary. Sounds obvious, but some people do tend to upgrade equipment and not have the 'original' rig on the desk any more. Connect one antenna to one rig and another antenna for another band to the

second rig, and practise calling CQ on one whilst listening to and tuning around on the other. This is the fundamental skill required for SO2R and is the point where you can make the decision as to whether or not the approach is 'right' for you. Even a rig with dual VFOs can be used to listen to a single band but tune around the same band on the second VFO in-between CQ calls.

Using two radios on the same band with separate antennae is likely to cause damage to the front end on the second radio, due to high levels of RF being present at the antennae from the other radio, so this is not recommended!

The technique is good for searching a second band for multipliers or simply for other stations that you haven't worked in the contest yet. Listening on another band can tell you if that band is more likely to yield a higher QSO rate than the band you're presently on, or even when the band is open or not. A decision can be made to QSY or not whilst calling CQ on the first band, but with no interruptions.

The more complex stations provide for antennae switching to automatically select the appropriate antenna for a given band when the radio band is changed, and to allow for maximum flexibility for the two radios, so that all bands are available to both radios. An automated CW keyer and/or a digital voice keyer (DVK) for SSB operation is often also used. However, as an interim approach, manual switching can be used for CW key lines, receiver audio and microphone audio as the next step to see if the technique sparks an interest and to allow the technique to be attempted with little, if any, expenditure.

APC could also be pressed into service, with software available to enable a myriad of SO2R functionality and flexibility, such as N1MM logger or K1EA's CT, for example. Linkage between the PC and the remainder of the hardware may be required of course, to allow for dual radio frequency control (although this isn't absolutely essential), CW keying, automated antennae and filter selection and, of course, logging contacts on the appropriate band.

An unfair advantage?

The use of SO2R in HF contests has been controversial in the past. Some feel that the extra expense, complexity, and improved performance that can be achieved from SO2R operation merits

the separation of SO2R operations into a distinct competitive entry class from other single operators. While no major contests have yet done this, some will list individual scores in contest results with an SO2R designation where the station reports that SO2R was used. But is it unfair? Well, it could be argued that the station with a multiple Yagi stack has an unfair advantage over the single Yagi station, so a separate category should be provided for such entrants, so as to compare apples with apples. Contest organisers need to draw the line somewhere, so it'll be an interesting debate to observe. From a personal standpoint, I see it as another acquired skill by an operator trying to excel in a given aspect of a hobby. Installing narrow filters in your radio to reduce the receive bandwidth enables improved readability of some signals and assists in getting more stations into the log – I don't suppose anyone would argue that this is an unfair advantage. So if someone is able to assemble the required hardware for SO2R in order to get more contacts into the log, I don't see it as unfair – but everyone will have their own opinion of course.....

For now at least, it's an interesting and proven technique for those trying to get the best out of their contesting station and indeed themselves. It's a difficult skill to master (especially using CW) and only practice will enable excellence. Amateur Radio is one of those hobbies where the learning curve seemingly never ends for the willing.

I have some additional material – diagrams etc – of typical set-ups which I can email to anyone interested in SO2R, so please contact me via vk2baa@wia.org.au if you'd like copies sent to you. The information is freely available on the Internet however and a quick search for "SO2R" on Google will point you in the right direction.

Commonwealth Contest – A Reminder

AR might appear just after the contest, but just in case, here's a reminder that the VK team need your help to win the Commonwealth Team Contest. You might also have a lot of fun too! VK6VZ has been given the dubious task of coordinating the Australian team entry. Our squad consists of:

1. Les VK4BUI
2. David VK2NU

3. John VK4EMM
4. Alan VK8AV
5. Barry VK2BJ
6. Mike VK6HD
7. Russ VK4XA
8. Kevin VK6LW
9. Phil VK2BAA
10. George VK4XY
11. Bernd VK2IA
12. Rob VK6HG
13. Alan VK6BN
14. Steve VK6VZ

In order to make the best possible score, it is important for each member of the Australian squad to work as many "bonus stations" as possible. Each Australian state counts as a separate call area for the contest on each band, and the first three contacts we make with each Australian state, other than our own, on each band each earns us a vital twenty bonus points.

On this basis, if as many Australian amateurs as possible can get on in the Commonwealth Contest and help the team out by working them on as many of the HF bands as possible, that would help us to beat the Poms, Kiwis and Canucks, etc.

For those who would like to enter, there is a brilliant free software program called

SDC, which has been written by Paul EI5DI especially for the Commonwealth Contest. This runs under Windows and can be downloaded from: <http://www.ei5di.com/sd/sdcsetup.exe>

See you in the Commonwealth Contest 2007!

QRP Hours Contest – Date Change

Ian Godsil VK3JS, Contest Manager for the QRP Hours Contest, writes to advise that the QRP Hours Contest now has a revised date of the 14th of April, due to a clash with Easter in the calendar.

Summer VHF-UHF Field Day 2006 Results

The results for the Summer VHF/UHF FD contest should be in this edition of AR. It's really pleasing to see a contest in such a healthy condition, with an increase in submitted logs and an increase in activity in some call areas. It's all good credit to John Martin VK3KWA, who has put so much effort into making the contest the success that it is. Thanks John!

Ross Hull Contest 2006 – 2007 Results

The results for the Ross Hull contest should also be in this edition of AR. The news is not so good for this contest, as log entries were not making the contest manager John Martin VK3KWA work very hard. Peter Freeman VK3KAI, our illustrious AR magazine editor no less, was busy during the contest with a commanding score on 2 m aiding Peter to win Section A, but also winning Section B too, with contacts on all bands up to 10 GHz! Well done Peter! Rex Moncur VK7MO won Section C with an impressive score on 23 cm.

The contest manager is open to comment on the current scoring system and wishes to bolster contest activity. John can be contacted via vhf-contests@wia.org.au and would be delighted to discuss the issue and consider any input offered.

If you have any contest related material for inclusion within the column, topics that you'd like covered, or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

Results of the 2006 WPX SSB Contest for VK stations: (Call\Bands\Score)

Multi-Operator Single TX

VK4WR	All	1,735,120
AX6ANC	All	1,330,950

Single Operator

VK4CZ	All	3,585,504
AX7GN	All	523,642
VK3IO	All	334,825
VK3KE	All	75,000
VK3AVV	All	42,420
AX2GR	All	18,060
VK6HZ	All	17,484
VK2BCQ	All	5,928
VK2KPP	21	1,677,312
AX4EJ	All	379,950
VK2ICQ	All	47,841
VK2KDP	All	34,584
VK3BGH	All	9,240
VK2WL	All	3,102
VK4VCC	14	1,323

QRP

VK2BAA	All	88,638
AX8AA	All	21,527
VK3JS	All	3,060
VK2NU	All	1,679

Results of the 2006 IARU Contest for VK stations:

Call	Score
VK2AYD	59126
VK7GN	46295
VK6ANC	45678
VK2GR	32361
VK4DMP	18914
VK4TT	8029
VK1AA/M	5913
VK4VCC	540
VK4WR	207
VK2CZ	168
VK2BAA	Unknown – log missing

from the results!

QRP Hours Contest

Saturday, 14th April, 2007

0930 – 1030 UTC CW/RTTY/
PSK31

1030 - 1130 UTC SSB

Sponsored by the CW Operators' QRP Club, the AIM of this contest is to make as many contacts as possible within a one-hour period using your choice of mode. Whilst it is hoped that the event will be strongly supported by QRP Club Members, it is open to all licensed amateurs.

Output Power: Preferably 5 watts, but not more than 10 watts of carrier power. This is to stress the QRP nature of the event.

Modes: First Hour - CW (including RTTY and PSK31) 0730 pm Eastern Std. Time

Second Hour - SSB 0830 pm Eastern Std. Time

Frequencies: CW/PSK31/RTTY
3.500-3.540 MHz
SSB 3.550-3.630 MHz

Exchange: a three-digit serial number starting at 001 and incrementing by one for each new contact.

Score: one point per contact.

Logs must show the name, address and callsign of the operator and the number of points claimed.

Send Logs by mail to: Ian Godsil VK3JS, 363 Nepean Highway, Chelsea, 3196; or by email to: vk3js@bigpond.com

Please consider using email and sending the log immediately after the event. Otherwise logs should be received by last mail on Friday, 20th April, 2007.

Certificates will be awarded to the highest scorers in each Mode in each State.

Harry Angel Memorial Sprint

1000 Z – 1146 Z Saturday 28th April, 2007

This is an annual Contest to remember VK's oldest licensed operator, Harry Angel. Please note the time length of the Contest - 106 minutes, 106 years being Harry's age when he died in 1998. It is open to all HF operators.

Object is to make as many contacts as possible on 80 metres, using modes CW and SSB. Categories: Single Operator (CW, Phone, Mixed) and SWL. Frequencies: CW: 3500 - 3535 kHz, Phone: 3535 - 3700 kHz. Contacts in DX window not permitted. Exchange RS(T) and serial number starting at 001.

Score two points per CW QSO and one point per Phone QSO.

Stations may be worked once only per mode. Logs must show time UTC, callsign worked (both callsigns for SWLs), mode, RS(T), serial numbers sent and received for each QSO. Send summary sheet showing name and date of Contest, name and callsign of entrant, category entered, address, points claimed and a signed declaration that the rules and spirit of the Contest were observed. Send logs to Harry Angel Sprint, 363 Nepean Highway, Chelsea, 3196, by Friday, 11 May, 2007. Logs may be sent via email to: vk3js@bigpond.com

Ross Hull Memorial VHF-UHF Contest 2006 - 2007: Results

Contest manager: John Martin VK3KWA

The last Ross Hull Contest was not well supported. There were some good openings during the contest period, but these did not translate into large numbers of logs. I hope that activity will be greater next time around, and it may be possible

to help it along by simplifying the scoring and log-keeping requirements.

Congratulations to the winners of this year's contest. They are Peter Freeman VK3KAI (who for the first time has won two sections), and Rex Moncur

VK7MO. Congratulations also to all other entrants.

Any comments or suggestions? VK3KWA(QTHR) or vhf-contests@wia.org.au

Ross Hull Contest 2006 – 2007

Call	Name	50	144	432	1296	2.4G	3.4G	5.7G	10G	TOTAL
Section A: VHF-UHF (6m - 23cm)										
VK3KAI	Peter Freeman	1	591	175	72	-	-	-	-	839
VK2TG	Robert Demkiw	59	387	285	-	-	-	-	-	731
VK2ARA	Ted Thrift	390	183	35	-	-	-	-	-	608
VK7MO	Rex Moncur	-	402	95	64	-	-	-	-	561
VK6ADI	Barrie Burns	334	153	-	-	-	-	-	-	487
VK3BG	Ed Roache	26	225	80	80	-	-	-	-	411
VK3ECH	Rob George	155	162	50	32	-	-	-	-	399
VK2AH	Brian Farrar	142	201	10	-	-	-	-	-	353
VK1WJ	Waldis Jirgens	21	132	120	-	-	-	-	-	273
Section B: Microwaves (23cm and above)										
VK3KAI	Peter Freeman	-	-	-	72	30	30	10	30	172
Section C: Digital modes, All Bands										
VK7MO	Rex Moncur	-	90	-	23684	-	-	-	-	23774
VK1WJ	Waldis Jirgens	-	207	-	-	-	-	-	-	207

JOHN MOYLE MEMORIAL FIELD DAY March 17 & 18

Ross Hull Contest – List Of Winners 1950 – 2007

1950 - 1951	VK5QR	R. Galle	1979 - 1980	VK3ATN	T. R. Naughton
1951 - 1952	VK5BC	H. Lloyd	1980 - 1981	VK6KZ	W. J. Howse
1952 - 1953	VK4KK	A. K. Bradford	1981 - 1982	VK6KZ	W. J. Howse
1953 - 1954	VK6BO	R. J. Everingham	1982 - 1983	VK6KZ	W. J. Howse
1954 - 1955	VK4NG	R. Greenwood	1983 - 1984	VK6KZ	W. J. Howse
1955 - 1956	VK3GM	G. McCullough	1984 - 1985	VK3ZBJ	G. L. C. Jenkins
1956 - 1957	VK3ALZ	I. F. Berwick	1985 - 1986	VK3ZBJ	G. L. C. Jenkins
1957 - 1958	VK3ALZ	I. F. Berwick	1986 - 1987	VK3ZBJ	G. L. C. Jenkins
1958 - 1959	VK3ALZ	I. F. Berwick	1987 - 1988	VK5NC	T. D. Niven
1959 - 1960	VK4ZAX	D. R. Horgan	1988 - 1989	VK5NC	T. D. Niven
1960 - 1961	VK3ARZ	W. Roper	1989 - 1990	VK3XRS	R. K. W. Steedman
1961 - 1962	VK5ZDR	M. J. McMahon	1990 - 1991	VK3XRS	R. K. W. Steedman
1962 - 1963	VK4ZAX	D. R. Horgan	1991 - 1992	VK3XRS	R. K. W. Steedman
1963 - 1964	VK5ZDR	M. J. McMahon	1992 - 1993	VK3XRS	R. K. W. Steedman
1964 - 1965	VK3ZER	R. W. Wilkinson	1993 - 1994	VK3XRS	R. K. W. Steedman
1965 - 1966	VK3ZDM	J. R. Beames	1994 - 1995	VK3XRS	R. K. W. Steedman
1966 - 1967	VK5HP	J. H. Lehmann	1995 - 1996	VK2FZ/4	A. Pollock
1967 - 1968	VK3ZER	R. W. Wilkinson	1996 - 1997	VK2FZ/4	A. Pollock
1968 - 1969	VK5ZKR	C. M. Hutchesson	1997 - 1998	VK2FZ/4	A. Pollock
1969 - 1970	VK3ZER	R. W. Wilkinson	1998 - 1999	VK3XPD	A. P. Devlin
1970 - 1971	VK4ZFB	E. F. Blanch	1999 - 2000	VK3EK	R. G. Ashlin
1971 - 1972	VK5SU	J. W. K. Adams	2000 - 2001	VK4TZL	G. R. McNeil
1972 - 1973	VK5SU	J. W. K. Adams	2001 - 2002	VK4TZL	G. R. McNeil
1973 - 1974	VK5SU	J. W. K. Adams	2002 - 2003	VK3EK	R. G. Ashlin
1974 - 1975	VK5SU	J. W. K. Adams	2003 - 2004	VK3EK	R. G. Ashlin
1975 - 1976	VK5SU	J. W. K. Adams	2004 - 2005	VK3UH	L. Mostert
1976 - 1977	VK4DO	H. L. Hobler	2005 - 2006	VK4TZL	G. R. McNeil
1977 - 1978	VK3OT	S. R. Gregory	2006 - 2007	VK3KAI	P.L. Freeman
1976 - 1979	VK4DO	H. L. Hobler			

Summer VHF-UHF Field Day 2007: Results

Contest manager: John Martin VK3KWA

Support for the Field Day has continued to increase. Once again we have a record number of logs—nearly twice as many as the previous record in January 2006. This Field Day also saw the first entries from Foundation licensees. The propagation conditions were average, with no major openings but still plenty of very good contacts. Comments and photos received with the logs showed that much fun was had.

Logs were well presented and easy to check—thanks to all for this—and it was only necessary to make minor scoring adjustments to a couple of logs.

There still seems to be some uncertainty about the rules re the use of calling frequencies. The answer is to please avoid designated DX calling frequencies wherever possible. A string of S9 contacts made on “point one” is definitely not in

the spirit of the rules. For the next contest there will also be a change in the wording of the rule about grid hopping.

Congratulations to the winners of the five sections, and to all who took part. I look forward to seeing another all-time record number of logs for the Spring Field Day in November.

Call	Name	Location	50	144	432	1296	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	TOTAL
Section A: Single Operator, 24 Hours											
VK3KAI	Peter Freeman	QF21/ 22/ 31/ 32	21	486	610	640	660	670	320	670	4077
VK4OE	Doug Friend	QG61, QG63	73	285	485	696	450	-	-	320	2309
VK2SMC	Rod Collman	QF44	80	591	805	608	-	-	-	-	2084
VK4JMC	John McPherson	QG62	174	543	590	176	-	-	-	-	1483
VK3ECH	Rob George	QF23	34	402	340	360	-	-	-	-	1136
VK4AQ	Ross Anderson	QH32	199	297	460	-	-	-	-	-	956
VK5XE	Ian Northeast	PF96	104	318	355	-	-	-	-	-	777
VK4DMC	Dale McCarthy	QH21/22	240	285	160	-	-	-	-	-	685

VK2EAH	Andy Hood	QF57/58/67/68	-	297	340	-	-	-	-	-	637
VK3BJM/2	Barry Miller	QF07	57	345	175	-	-	-	-	-	577
VK2KWM	Wayne Memphis	QF59	22	243	235	-	-	-	-	-	500
VK5AR	Alan Raftery	PF94/95	46	228	225	-	-	-	-	-	499
VK3UBM	Michael Borthwick	QF21/ 22	-	219	-	-	210	-	-	-	429
VK5FAAF	Robert Allen	PF96	-	218	112	-	-	-	-	-	330
VK4TGL	Gerard Lawler	QG62	76	111	105	-	-	-	-	-	292

Section B: Single Operator, 8 Hours

VK3WRE	Ralph Edgar	QF31	-	426	490	728	690	680	430	580	4024
VK3KAI	Peter Freeman	QF21/ 22/ 31/ 32	-	249	340	544	660	670	320	670	3453
VK3BG	Ed Roache	QF23	35	411	350	448	-	-	-	-	1244
VK3ECH	Rob George	QF23	34	402	340	360	-	-	-	-	1136
VK3YFL	Bryon Dunkley-Smith	QF12, 22	58	399	425	-	-	-	-	-	882
VK3DQW	Ken Asplin	QF21	-	330	450	-	-	-	-	-	780
VK5OQ	Keith Gooley	PF95	64	186	290	200	-	-	-	-	740
VK5FAAH	Andrew Hall	PF95/96	-	198	315	-	-	-	-	-	513
VK5AR	Alan Raftery	PF94/95	46	228	225	-	-	-	-	-	499
VK4DMC	Dale McCarthy	QH21/ 22	172	159	160	-	-	-	-	-	491
VK2TPK	Peter Kohlmayer	QF56	46	162	260	-	-	-	-	-	468
VK3UBM	Michael Borthwick	QF21/ 22	-	219	-	-	210	-	-	-	429
VK2FMAM	Paul Read	QF56	-	162	260	-	-	-	-	-	422
VK2EAH	Andy Hood	QF58/67/68	-	180	220	-	-	-	-	-	400
VK5NI	John Ross	PF95	22	66	110	192	-	-	-	-	390
VK4EV	Ron Everingham	QG62	51	147	120	-	-	-	-	-	318
VK4DFG	Harry Debnam	QG62	-	123	-	-	-	-	-	-	123
VK5JQ	Jeanne Sayers	PF95	-	99	-	-	-	-	-	-	99

Section C: Multi Operator, 24 Hours

VK3UHF	GUMEG (1)	QF21	93	810	1060	1112	820	550	320	910	5675
VK1CEA	(2)	QF44	136	810	870	584	210	210	-	-	2820
VK4WAT	Tablelands REC (3)	QH22	336	483	635	216	-	-	-	290	1960
VK1BL	(4)	QF44	203	651	860	-	-	-	-	-	1714
VK2DO/1	(5)	QF44	128	468	600	480	-	-	-	-	1676
VK5ARC	SCARC (6)	PF94	147	471	645	176	-	-	-	-	1439

Section D: Multi Operator, 8 Hours

VK5SR	(7)	QF02	90	444	555	462	440	310	210	210	2721
VK3IDL	(8)	QF12	56	312	490	472	320	-	-	-	1650
VK5VST	(9)	QF02	-	246	330	176	210	-	-	-	962
VK3WT	(10)	QF22	32	357	330	-	-	-	-	-	719
VK4CZ	(11)	QG62	31	195	130	-	-	-	-	-	356

Section E: Home Station, 24 Hours

VK3BDL	Michael Goode	QF22	68	579	745	856	-	-	-	-	2248
VK3AAK	Michael Coleman	QF21	76	681	700	544	-	-	-	-	2001
VK4BEG	Russell Norton	QH22	256	387	435	216	-	-	-	-	1294
VK2DVZ	Ross Barlin	QF68	-	411	565	288	-	-	-	-	1264
VK2DAG	Matt Hetherington	QF56	200	483	520	-	-	-	-	-	1203
VK3YLV	David Timms	QF13	48	297	430	288	-	-	-	-	1063
VK4ZDP	David Purkis	QH32	256	387	390	-	-	-	-	-	1033
VK2KOL	Colin Hadland	QF56	-	378	475	-	-	-	-	-	853
VK2TG	Robert Demkiw	QF55	61	315	315	-	-	-	-	-	691
VK3ACA	John Adcock	QF22	-	408	185	-	-	-	-	-	593
VK5FIVE	Rick Cybul	PF94	-	285	285	-	-	-	-	-	570
VK1WJ	Waldis Jirgens	QF44	37	192	260	-	-	-	-	-	489
VK2EI	Neil Sandford	QF68	-	339	105	-	-	-	-	-	444
VK5ALX	Alex Glinski	PF86	23	147	165	-	-	-	-	-	333
VK5FD	Allen Dunn	PF95	45	138	105	-	-	-	-	-	288
VK2KGX	Eric Le Cheminant	QF46	-	144	96	-	-	-	-	-	240

What would you have said?

Jinkin (Jay) Frame

It's surprising how quickly the monthly Radio Club meeting comes round but it is an excellent means of keeping up to date with what is happening locally. Quite a discussion was taking place over planning permission for antennas. Should you 'just put it up' and hope for the best or should you 'risk' applying for permission and having it rejected.

In the middle of this Alan approached - Jay I'm glad you're here for I need some advice - I have some great news! An uncle of mine has left me \$2000.00 to spend on my hobby and I really cannot make up my mind on the best way of spending it - we all can do with problems like that I thought!

Well Alan - what are your priorities? What aspect of Amateur Radio really interests you the most? No hesitation from Alan on this - DXing - increasing my country total and of course getting the contacts confirmed!

That simplifies the choice somewhat for the old maxim always applies to dxing 'you must be able to hear them before you can work them', obvious really - but true. So possibly the best investment is in improving the antenna - I know that the long wire you have really does work well - but there really is no substitute for a beam for you benefit two ways - you have the gain on receive and transmitting.

Remember if you do go down that route then do not be mean by not spending dollars on good coax. No point in getting gain from an antenna and loosing it in the feeder - every fraction of a dB counts if you're really serious about DXing. Cheap coax can be VERY lossy. Also spend good money on good quality connectors and take the trouble to seal them properly - a few dollars invested here will keep your expensive coax good for years.

Whether \$2000.00 is enough for a beam, rotator and good quality cabling, I'm not sure, but you have a look at the adverts and maybe be able to pick up a second hand antenna and rotator reasonably priced. But as I have said get good quality feeder and look after it.

You may as well and join the group over there still discussing the merits of planning permission - will be interested to know what you decide to do.

What would you have said?

ar

Over to you

Radio repairs

Finding a competent and reliable organisation for servicing amateur radio equipment is not easy. My own experience during recent years had taken me to the point of despair all too often. In years past, I was able to service my own equipment. Modern 'black-boxes', however, are beyond me.

Anyone else in the same boat will be well advised to have a look at web site: <http://www.rfrepairs.com.au/>

I have had one item repaired by this organisation, and am well satisfied with the repair and (almost as important) the good customer service.

RayVK2COX

Those IC-706 microphone plugs

Some owners of the IC-706 transceiver may have had the misfortune of breaking off the holding clip of the RJ45 microphone plugs. Then, the plugs will not stay in the socket of the rig.

After breaking the plug on my Headset Boom Microphone (refer AR March, 2006), I had to hold it in with BlueTack. I decided something had to be done. I even bought an expensive crimp tool for RJ plugs.

The answer to the problem is the 'Clip-On' covers, or 'Boots' as they are called, for the plug. The Boots are available from most electronic component stores, in packets of ten. So, buy a packet and share them with your other IC-706 owner friends - they will be forever grateful.

The Boots clip over the plug and seem fairly secure, although I did put a dab of Hot Melt Glue on both of mine.

I believe the Icom IC-7000 also has an unprotected microphone plug!

It is interesting to note that another brand of transceiver has a moulded type cover on their microphone plug!

I hope to hear all IC-706 owners on the bands.

Steve Mahony VK5AIM

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Summer VHF-UHF Field Day 2007: Results continued

- (1) Geelong UHF-Microwave Experimenters Group: David Learmonth VK3QM, Chas Gnaccarini VK3PY, Charlie Kahwagi VK3NX.
- (2) Andy Sayers VK2AES, Russell Manning VK1JRM, Dale Hughes VK1DSH, Sean Barwick SWL, Simon Pennington VK1SJP.
- (3) Tablelands Radio and Electronics Club: John Roberts VK4TL, Dave West VK4ADW, Ulf Larsen VK4TUL, Trevor Gregory VK4ZFC, Jeff Cochrane VK4BOF.
- (4) Ted Garnett VK1BL, Greg Parkhurst VK1AI.
- (5) Chris Davis VK2DO, Andrew Davis VK1DA.
- (6) South Coast ARC: Barry Bates VK5KBJ, Peter Paterson VK5FPGP.
- (7) Colin Hutchesson VK5DK, Trevor Niven VK5NC, John Drew VK5DJ, Colin Huon VK5HCF, Tim Hann VK5AV, Tom Aubrey VK5EE, Bill Jackson VK5FWEJ, Kevin Jackson VK5NKJ, Chris Skeer VK5MC, Andrew McKinnis VK5KET, Ian Bishop VK3FNBL.
- (8) Ian Lloyd VK3IDL, Ian McDonald VK3AXH.
- (9) Simon Vickery VK5VST, Jim Bywaters VK5OM.
- (10) Max Chadwick VK3WT, Jack Bramham VK3WWW.
- (11) Adam Maurer VK4CP, Scott Watson VK4CZ, Graeme Hope VK4FI, Alan Meek VK4WR.

DX – News & Views

John Bazley VK4OQ,
P.O. Box 7665, Toowoomba Mail Centre,
QLD 4352.
Email: john.bazley@bigpond.com

Well – how successful were you with all the DX activity during the latter part of December and the beginning of the New Year? We certainly started the New Year on a ‘high’ with plenty of rare DX activity from some of the DXpeditions including 1A4A -VU7RG - VU7MY - XT2C - S21XA and T32MO.

There certainly has been a lot of comment on the DX cluster regarding these various operations. I am sure that no matter what each DXpedition does there will always be someone who does not agree with the bands/modes that they are using at a specific time, the QSO rate, or the areas that they are working. I personally think that the taking of beams on DXpeditions has not helped the situation. A typical example is the recent XT2C DXpedition (I am not being critical, for they gave VK a good break) when beaming to JA the edge of their beams were on VK. To fully appreciate this, you can visit their web page where they have a very good great circle map centred on their operation.

A further point about beams is that DXpeditions operating from the antipodes (that is from VK) occasionally have some very good, but short openings, on the Long Path which are more easily ‘picked up’ when the DXpeditions are not using beams. This point has been forcibly made by “The Microlite Penguins DXpedition Team” - when on their DXpeditions they only operate using vertical antennas and no linears. Likewise, the very successful operations by G3SXW and G3TXF have relied on verticals and they most certainly have had no trouble generating pile-ups!

Another point that affects us, is that the aim of a DXpedition is to make as many QSOs as possible. That means concentrating on areas of high amateur populations – USA, Europe and Japan. It must also be remembered that a lot of sponsorship that enables these trips to take place in the first place comes from those areas. BUT having said that, most DXpeditions are aware of the difficulty that we have in VK working certain areas of the world, and do make determined efforts to contact us.

Now to DX news!

VP8 Falkland Islands

Readers may recollect that I mentioned in this column in May last year that Richard VP8DIZ is quite happy to make skeds,

for he appreciates that the path from the Falkland Islands to VK is a difficult one. He is active on all bands and prefers SSB and Data modes.

After many months of keeping weekly skeds, he and I had a QSO on SSB (JUST!) but the bonus was using OLIVIA. This mode was suggested by Richard as we had not been successful, in spite of many attempts, using RTTY and PSK. On our first sked using OLIVIA, we made contact with 100% copy and chatted for 20 minutes during which the signals were barely audible. This was my first introduction to OLIVIA and I was VERY impressed how robust the system is for VERY weak signals. A bonus is that Richard DOES keep skeds and he DOES QSL! His email address is richard.paul@interserve.com

Since writing the above, I have again heard from Richard – and I quote:

As you may appreciate, I get a lot of sked requests and I will do my best to accommodate them all, but how does this sound for an extra.... I believe now that the best time for contact with VK-land is on Sunday at between 0900 and 1100 Z (which is around 1900 and 2100 your time, I guess). I would like to suggest a VP8 – VK SSB party for readers of the WIA magazine. A date at the end of March – say the 28th would be good for me as my wife is coming over to visit me here in the Falklands for a holiday late February. We are both very excited about it. This will be the furthest she has ever travelled, least of all on her own.

So, readers – the ball is in your court! If you want a sked or to join in his “activity period” drop Richard an email for details!

3B6 Agalega

Members of Poland’s IARU society, Polski Zwiasek Krotkofalowcow (PZK) and the SP DX Club have a planned DXpedition to Agalega (3B6) in March. The team, led by SP9MRO, Witek, and SP9PT, Wojtek, both of whom have done multiple operations around the

world, have received their licences and landing permits after waiting a year. Other members of the team will include SP9BQJ, SP3IQ, SP5BFX and SP9-31029. The team is planning a big effort using several stations for a 12 to 14 day period. They will be operating on all bands, 10 through to 160 meters on CW, SSB, RTTY and PSK31. They may also operate from Seychelles (S7), Mauritius (3B8) and Maritime Mobile (/MM) from the Indian Ocean.

9M4SDX Spratly Islands

9M4SDX is the Spratly Islands callsign for a large group. This one is set for March 10-19 with four stations, all bands and modes. The operators scheduled to go are JA1OCZ, JE1CKA, JF1PJK, JK1FNL, JR1AIB, JJ2VLY, JQ2GYU, JR7TEQ, 9M2CF, 9M2KT, 9M2TO, 9M2/JH3GCN and 9M8YY.

They will be on Layang Layang, AS-051. QSL via 9M2TO, direct or via the bureau:
<http://island.geocities.jp/layang9m4sdx/>

FR/Glorioso

F5OGL says that the Clipperton DX Group’s principal project for 2007 is still Glorioso, FR/G, “but we have some troubles with the new status of these islands.” Tromelin, Europa, Juan de Nova and Glorioso are all now administered by the TAAF, Terres Australes et Antarctiques Francaises agency in Paris, with new operating permission procedures and forms to deal with. The CDXG is also working on a big expedition to Chad, TT, that will concentrate on 160, 80 and 40M.

6W Senegal & J5 Guinea-Bissau

A three-op German group is going to Senegal, 6W, and Guinea-Bissau, J5, in March. DL7CM says their flights and hotels are booked and the licences are OK. A Jeep and 2 kW generators have been ordered. This time they will be

Expanding horizons

I am glad that things are back to normal now, after a very stressful period during December and January. I am getting back to normal with the DXtuners website. They have available 50 remote receiving locations and it has certainly expanded my monitoring horizons, compared to my very limited set-up here. This is also helped by the recent increase in my download limits on Broadband.

There is still quite a lot to hear, despite the marked reduction of broadcasting activity on shortwave. There is so much activity, especially on the 80 and 160 metre bands, when there is no propagation locally. The 80 metre band above 3.6 MHz is extremely active between 0300 and 0600 Z with several eastern European nets. Western Europeans start around 0500, as well as the Americans now operating much lower down on SSB.

160 metres is mainly CW and there are regular transAtlantic QSO's prior to the local sunrise. Signals quickly drop off with the rise of the Sun and you can follow propagation. Naturally, one encounters plenty of QRN and unfortunately many receivers do not have narrow filters for ideal CW copy. I have yet to hear any amateur activities on the various 60 metre allocated channels.

I noted that HCJB Radio has been renamed HCJB Global, indicating that they have broadened their base to include other ministry activities. They have been developing co-operative local media platforms throughout the World with the decline of shortwave broadcasting, particularly from Ecuador. The former Pifo site is to be dismantled and turned into the new Quito International airport. HCJB Australia has been increasing their HF output and hopes to have a third

sender operational later this year. Senders are based in Kununurra (WA), while the studios are in Kilsyth (Vic).

It has been confirmed that there will be further reductions in English programming from the VOA in Washington DC. "News Now" is to be dropped. Naturally, programming is going to be dramatically increased in Arabic, Farsi (Persian) and the two Afghani languages of Pashtoo and Dari. Programs to the Somali Republic were also increased, following the removal of an extreme Islamic regime that was alleged to be closely aligned with Al Qaeda.

It is also worth noting that it has become increasingly difficult to get reliable accurate utility HF information from America, because of security concerns post 9-11. This has led to European monitors forming clandestine monitoring groups, often devoted to American signals. I personally do not want to become involved in this unofficial slanging match and therefore rarely post my utility loggings, despite difficulty in identifying who or what they are. I still concentrate of the many Asian and Pacific utilities, many of whom are unlicensed and illegal themselves, and quite often appear in our exclusive amateur allocations.

Don't forget that on the 25th of this month, the A-07 broadcasting period commences.

This is in line with the introduction of Daylight Saving in the Northern Hemisphere.

That date also sees Australia and NZ revert to standard time.

Well, that is all for now. You can email me at vk7rh@wia.org.au

73 de VK7RH

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using amplifiers with tubes since they've previously had trouble with solid state amps. Look for 6W/DM2AYO, 6W/DL6CT and 6W/DL7CM March 3-23. They'll be operating from the hotel in Cap Skirring, Senegal, 160-6 m CW, SSB, RTTY and PSK. The rig will be an IC-706. DL7CM, Hans, notes local sunrise will be 0655 Z and sunset will be 1847 Z. Senegal is in the GMT time zone. QSL via their home calls.

The callsign for Guinea-Bissau will be J5UAR. The dates for this one are still a little flexible but it will be some time between March 4 and 22. This is apparently the more portable part of the two-country operation, with the antennas more limited, just a ground-plane, and running the IC-706 on generator power. They will be camped north of Varela village.

E51PJT South Cook Islands

Bob G3PJT - will be using a K2 and vertical antennas from the Cook Islands during BERU and then will be operating from New Zealand. QSL via the bureau or direct to his home call.

3DA0 Swaziland

In celebration of the 75th anniversary of the Irish Radio Transmitters Society (IRTS), Ireland's IARU society, members of IRTS will be putting on a DXpedition to Swaziland starting March 16th through to March 25th. Team members include Peter EI7CC, Aidan EI8CE, Paddy EI8BFB, David EI4DJ, Rory EI4DJB, Brendan EI3GV, Pete GI4VIV, and Paul EI2CA. They do not, at the moment, know their callsigns. The team has a Web page at <http://www.irts.ie/afri75>

Happy DXing.

Special thanks to the authors of The Daily DX (W3UR) and 425 Dx News (I1JQJ) for information appearing in this month's *DX News & Views*.

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**Harry Angel
Memorial
Sprint**

**Saturday 28th April,
2007**

Join WIA online
<http://www.wia.org.au/join.php>

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wla.org.au

Weak Signal

David Smith - VK3HZ

As could be expected, the exceptional Sporadic E conditions over Christmas have now largely ended. However, we have had a couple of openings to finish things off.

Brian VK5BC reports: *On 15 Jan at 6.50 pm SA time, I was fortunate to work three stations in Perth and Bob VK6BE in Albany on 2 m Sporadic E from Corny Point PF85mc. I worked Phil VK6ZKO 5/9, Cec VK6AO 5/8 and Peter VK6RZ 5/3 all in Perth - a distance of approx. 2000 km. About 1/2 hour later, I worked Bob VK6BE in Albany. I first heard the Perth 2 m beacon VK6RPH at S9 off the back of my Yagis and made a quick call on 144.1 and worked Phil prior to turning the beams in the Perth direction. The Perth stations were workable over about a 5-minute period and although I heard other weak signals in the following 1/2 hour, none lasted long enough for a contact. A couple of other Perth stations also copied my signal - namely VK6RO and VK6AKT. I also heard the Bunbury 2 m beacon VK6RBU up to S9 and a little later the Mt Barker 2 m beacon VK6RST.S5.*

Garry VK5ZK at Goolwa also worked VK6ZKO and VK6AO.

This opening was the highlight for me of what has been an excellent 2 m Sporadic E season. I have recorded 2 m E openings on 9 separate days – the first on 7th Dec and the last one on 20th Jan and have worked over 50 stations during these openings. I have worked several VK4s from both my home QTH (Gawler PF95jj) and Corny Pt (PF85mc). Contacts have been made with John VK4FNQ in Charters Towers on 5 separate occasions.

On 17 January at 0215Z, Rob VK1ZQR reported on the VK/ZL Logger that he was hearing the VK8RAS 2 m beacon at 5/1. Jeff VK8GF saw this message at work, and managed to work Rob using 100 W to a 5/8 vertical antenna. The opening – probably Sporadic E – lasted for 20 minutes.

On 19 January, Brian VK5BC again worked John VK4FNQ at Charters Towers on 2 m. John also worked Larry VK5LY in Renmark. Brian also heard Trevor VK4AFL in Brisbane.

On 25 January at 0930Z, Garry VK5ZK worked Rob VK4TWR at 5/5. Peter VK5ZLX also worked Rob. The openings were very brief – 20 second bursts – with Rob continuing to be heard sporadically for about 15 mins.

Moving on to Tropo enhancement, there have been many VK5 to VK3 to VK7 openings resulting from high-pressure cells moving across the region. Stations on the north coast of Tasmania (mainly Norm VK7AC, Paul VK7BBW and Karl VK7HDX) seem to be having a particularly good run working many times across Bass Strait well into VK3 and as far as Adelaide in VK5 on 2 m, 70 cm and 23 cm. On 17 January, Norm reports working ZL3MH, ZL3FV, ZL3AAU and ZL4DK on 2 m.

Rex, VK7MO has been exploring coastal ducting up the east coast from Tasmania with SSB contacts on 8 January on 2 m to Colin VK2KOL, Steve VK2ZT, Dave VK2AWD and Ross VK2DVZ; on 9 January to VK2DVZ, VK2ZT, and Neil VK2EI on 2 m and VK2ZT on 70 cm. The duct opened again on 15 January with SSB contacts to VK2EI on 2 m, VK2DVZ on 2 m, 70 cm and 23 cm – the 23 cm contact being a new VK7 record using CW. On 16 January, Rex reports a late season Sporadic E opening with SSB contacts to ZL3TY 5/9+ and ZL3FV and a tropo-ducting opening to ZL3TY using JT65 on both 2 m and 70 cm on 23 January. There was a further coastal duct opening on 3 February to VK2DVZ on 2 m and Matt VK2DAG, on 2m and 70 cm. Rex uses the Newcastle channel 5a TV on 138.276 MHz as an indicator of the coastal duct.

On 4 February Rex completed a dual propagation mode tropo-ducting to meteor scatter 2327 km contact using FSK441 with Chris ZL2DX, 50 km East of Wellington. Chris is shielded from tropo-ducting by 1500 to 2000 metre high mountains on the north of the South Island and this is his first ever VK contact. Because of this shielding, it is necessary to use meteor scatter to cross the mountains and for the tropo-ducting extension of the path to be at the Tasmanian end. The duct was confirmed with 5/9 SSB

signals to VK2ZT after the ZL contact. Rex is coming to the conclusion that dual propagation mode tropo-ducting to meteor scatter might be present most times there is a big yellow ducting patch indicated by the Hepburn charts at one end of a long 2000 km plus path, with three examples so far this summer.

And in the “Close, But No Cigar” category, there have been a number of reports of beacons heard at good strength, but no stations around to contact.

John VK6JJ in Perth advises that, on the 2 February at about 0200Z, he heard the VK5VF 2 m beacon up to S9. He then called both on SSB & CW on 144.1 but unfortunately no contact was made.

On the morning of 3 February, ZL1IU reports hearing the VK3RGI (Gippsland) 2 m beacon up to S5. No contacts resulted.

For several days in early February, the VK6RST (Albany) beacons on 2 m and 70 cm were heard for extended periods and at good strength in VK5 and VK3. Once again, no stations could be raised.

Trevor VK5NC dropped me a note concerning the claim that the VK6 to VK7 2 m contact reported in the last column was the first ever between those two states. In February 1988, VK6AOM in Esperance had a 2-way SSB contact with VK7DC in Burnie, which is believed to be the first between VK6 and VK7.

Summer VHF/UHF Field Day

For once, the weather, at least in VK3, was kind to participants in the field – neither blowing a gale, freezing, nor pouring with rain.

Chas VK3PY, David VK3QM and Charlie VK3NX were at Barabool Hills near Geelong operating as VK3UHF. Chas reports: “Highlights included working 18 grids on 2 m, 14 grids on 70 cm and 10 on 23 cm. Oh, and I mustn’t forget the overseas contact to VK7 on 2 m! We also knocked over quite a few grids on the microwave bands, 2.4 GHz to 10 GHz, although we couldn’t raise anybody on 24 GHz. Two 23 cm contacts stand out in my mind: VK3VHF in Gippsland, (about

150 km away), who was running 1W to a 60 cm dish and VK1CEA on Mt. Coree, who had 10W to a 1.2 m dish, but no pre-amp. At the conclusion of the contest, we had a lengthy rag-chew with the latter - no aircraft enhancement required. Our 23 cm system comprised 50 W to a 42-el Yagi with Minikits LNA”.

Colin VK5DK reports that the South East Radio Group operated in the 8-hour section on all bands from 50 MHz to 10 GHz. Greatest distance worked was to Ralph VK3WRE - just under 530 km - on 144 MHz, 432 MHz, 1296 MHz, 2403 MHz and 3400 MHz. Details are on the South East Radio Group web site: serg.mountgambier.org then go to “Recent Happenings”, “Current”, then click on 2007 Field Day for all the photos and contact details.

Andy VK2AES reports: “We had a hoot of a time operating VK1CEA from Mt Coree over the weekend. The amount of activity seems to be increasing with every contest. Thanks to all of the home stations who gave us regular contacts. We barely had time to sit back and relax the whole weekend! We made about 240 contacts all up. Some impressive distances too - 2014 km on 6 m, 598 km on 2 m and 70 cm, 518 km on 23 cm and 33 km on 2.4 and 3.4 GHz (with 300 micro-watts!). The duct which allowed such good propagation up the NSW coast was clearly visible from our location”.

Things didn't go quite so smoothly for Doug VK4OE: “I'm sure I'll do better another time, due to a number of ‘challenges’ of field operation that were experienced. I could describe:

- forgetting to pack my main 2.4 GHz antenna for my Saturday evening operations (I knew I should load it, but it was missed at the last minute!)
- light rain all Sunday morning at my location on Springbrook Mountain, high on the NSW-Qld border, inland from the Gold Coast. With the wisdom of hindsight, a different location would have been better - it wasn't raining anywhere else.
- having completed and tested a new 10 GHz transverter in the week before the contest, my previously-reliable other 10 GHz unit chose this time to develop a fault that made 3 cm QSOs very difficult.
- rather flat propagation in this part of the country during the times I was operating, and not as many stations operating as in previous events.

- and finally, my ‘rover’ comrade Alan VK4UAT encountered an unexpected blocked-off road on the Sunday morning at one point and, after having to drive an extra 50 km or so, did not get set up in his final grid square in time to make all the contacts we could before 0100Z, which was to include 12 cm and 3 cm.

- And, would you believe, that despite trying and despite the Gold Coast being a high population area, I failed to work any other station in QG61 square on 2 metres! [Also, unusually, not one VK2, either....]”

Such is the ‘fun’ of field operation in contests! Nevertheless, I was grateful for the support that I received from many VK4s and I am looking forward to next year's event already!

Aircraft-Enhanced Propagation

Ron VK3AFW writes about his efforts in working a distant, and rare, grid square via aircraft-enhanced propagation.

This is for those of you interested in AE working on different paths but have limited experience in doing this. Recently I worked Barry VK3BJM/P near Broken Hill on 2 m, a distance a bit over 700 km. The normal tropospheric propagation wasn't helpful, as although Barry could frequently hear my CW, I could not copy his SSB although snatches of audio were heard in the noise from time to time. Following a contact between David VK3HZ and Barry on 70 cm that was clearly via AE, Barry and I decided to get serious about the QSO. Examination of the airline timetables showed that a Sydney to Adelaide flight would have been the likely enhancer for the 70 cm QSO, so the next available similar flight was found.

My rough prediction was signals commencing 30 minutes after the scheduled departure, based on the 70 cm QSO. Subsequent better calculations give roughly 40 minutes, based on flight times and path geometry.

After a phone conversation, Barry set up his keyer, calling CQ with breaks commencing 25 minutes after published departure. About 41 minutes after scheduled departure of the Adelaide flight, Barry's CW signal suddenly rose out of the noise to 529. I waited for the sequence to finish and then quickly called Barry on SSB giving his report. He responded with

my report and acknowledgement of his. I confirmed receiving his report but by then signals were fading. A couple more quick exchanges and signals were gone.

The total window was about 20 seconds, (as it was for the 70 cm QSO) during which the aircraft travelled less than 5 km!

Lessons for all:

It is possible to predict times of AE openings from the published timetables and basic geometry. Allow some tolerance for variable flight conditions and gate delays.

Available contact times may be short. Fast SSB exchanges are preferable although good CW operation can allow completion. (I missed a previous QSO with Barry on another outing through my clumsy CW procedure.)

Having one station run a keyer or recorded calling message with listening breaks every 5 or so seconds helps considerably.

Barry was using 100 W to a 10 ele Yagi, so it isn't necessary to have a semitrailer full of gear to mount an expedition.

Beacons

Alan VK3XPD advises that a new beacon - VK3RXX - is now up and running on 2403.530 MHz. The beacon is located in Melbourne - QF22le. Power is 16 watts into an Alford Slot up about 13 metres. Ident is CW. It is currently about 1 kHz low and slowly drifting down. There is phase noise on the signal - it sounds a bit raspy/scratchy - but this will be improved shortly. The beacon has already been heard in Ballarat. Alan is looking for more signal reports - alandevlin@bigpond.com.

Annual Gridsquare Table 2006 Results

Final results are in and the table has been closed off for the AGT 2006 competition.

The AGT competition was created by Adam VK4CP to stimulate more activity on our VHF/UHF bands. The rules are similar to that of the Grid square League Table, where entrants record the number of grid squares worked on the VHF, UHF and microwave bands. The main difference is that the competition runs from 0000Z each year when the slate is wiped clean, making everybody start on a level playing field annually.

Congratulations to Leigh VK2KRR who managed to work 133 grid squares on the bands from 50 MHz to 24 GHz. A total of 53 operators submitted scores for 2006. The top 10 scores are shown in Table 1:

Full details of the results may be found at www.vklogger.com/agt

The 2007 competition is in full swing, with the current top score at 83. It's not too late to enter (63 people have already). Go to www.vklogger.com/agt2007 and enter your current grid square counts to join in on the fun.

Operator Details		Terrestrial Contacts					EME		Total
Callsign	Name	50	144	432	1296	10G	144	432	Squares
VK2KRR	Leigh	29	44	24	8	-	26	2	133
VK4WS	Wayne	51	40	5	2	-	25	1	124
VK5UBC	Brian	60	37	21	1	-	-	-	119
VK4ABW	Gary	71	10	3	-	-	21	1	106
VK7AC	Norman	45	41	8	8	-	-	-	102
VK5AKK	Phil	25	37	23	11	-	-	-	96
VK3UH	Len	39	26	15	8	2	-	-	90
ZL3TY	Bob	-	14	-	-	-	70	-	84
VK4ZQ	Roy	40	20	12	5	-	-	-	77
VK3AAK	Michael	30	27	15	4	-	-	-	76

Table 1

VK/ZL Logger Enhancements

I seem to write regularly about the VK/ZL Propagation Logger, and for good reason. Not only is it proving to be a very valuable resource for the VHF/UHF operator, but it is also being continually improved with new functions being added by Adam VK4CP on an almost daily basis (only slight exaggeration there).

One of the latest significant enhancements is the addition of a Spot facility where notable QSOs or beacon reports can be entered. A map, courtesy of Google Maps, is displayed in the top corner of the page showing the paths of recent Spots. The example below is from 3 February when VK6RST was being heard in VK3 and VK5, VK7s were working VK3s and ZL1IU was hearing the VK3RGI beacon and working into VK2.

ACMA to the Rescue

Sometimes people complain that ACMA is very willing to take our licence fees, but then treats us as "self-regulating" and is reluctant to provide any assistance when it is the amateur that suffers from interference problems. Alan VK3XPD sent in this report of his very positive dealings with ACMA when he had a severe interference problem on 2 metres:

Recently I noticed the sudden appearance of an unusual S9+ "Birdie/Interference" on and around 144.100 MHz - the 2 metre SSB Call Frequency. The interfering signal was loudest when beaming at Adelaide from my QTH in Camberwell, Melbourne, so that was the end of any "weak signal" QSO's until the problem either cleared itself (as is normal) or the interfering source was located and eliminated.

After 3 days of enduring the problem for 24/7, I was becoming a bit desperate. The interference was moving up and down the band. I asked a few nearby amateurs to take a listen, but nothing heard. So it had to be close-by and rather weak in nature.

Finally, I decided to access the Australia

after all, not part of the commercial world and, to a great degree, we are indeed self-regulated.

I rang the ACMA Interference Hotline and started to discuss the interference I was experiencing only to be cut short by: "I'm not technical - you will have to lodge your complaint by email". This I did with plenty of detail in the hope of getting some action.

A week passed ... nothing. The interference was still there and still agile. I followed up with another complaint. Another week later and still no action. I was beginning to look at my alternate options when there was a knock at the door and an unexpected visit by ACMA officer Peter Tapai.

I showed him the nature of the interference and its direction and I guess he surreptitiously looked about my station/gear to ensure that I was not the cause of the interference.

On his way out to investigate further, I happened to ask: "What will you be using to locate this problem"? I was rather taken aback by his response - An old R7000 general coverage receiver. And the antenna I asked? Oh, just a vertical he replied.

So off he trotted in the direction of the interference.

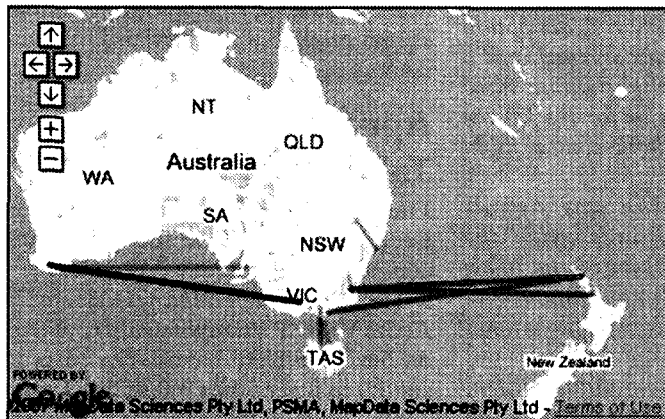
Not 30 minutes later, he returned with good news. It turns out the offending interference was located at the rear of a house some 3 kilometres to the north west of this QTH. The cause - an unstable general-purpose amplifier attached to some "rabbit ears" feeding an FM Tuner. The owner had just returned from the UK and fitted this amplifier to improve his FM reception.

My sincere thanks must go to ACMA and Mr Peter Tapai for their efforts in assisting this Amateur.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.

DX Path GMap

Plots: 10 2m: 8 70cm: 2 23cm: 0 (Bcst: 0) (Misc: 0)



<http://www.vklogger.com/50logger>

Communications Management Authority (ACMA) website. However, in today's de-regulated communications environment, I was not confident that an Amateur Radio enthusiast lodging an interference complaint would elicit any action. We are,

au Digital DX Modes

Rex Moncur – VK7MO

In the normal arrangement for JT65, WSJT is set up to run a QSO in EME format with the OOO report. For terrestrial contacts it is generally required that a report include at least 2 unknown characters. In VK, it is a requirement for record claims and most VHF contests to send at least two characters of unknown information. WSJT makes provision for sending two character reports based on the dB level of the signal in the range -01 to -30 dB. These dB level reports are sent in place of the grid square and can be typed over the standard EME message in any line, but it is usually easier to use the first line. WSJT also makes provision to send Rogers (RRR) and 73 in conjunction with both callsigns in this way. Whether you send RRR or 73 in conjunction with callsigns or in short-hand form is a matter of choice as both methods give a very high level of QSO integrity – providing the short hand method is supported by clear evidence of two tones on the waterfall. An example

of a terrestrial QSO using JT65 is as follows:

CQ VK3II
VK3II VK2DAG -23
VK2DAG VK3II R-21
VK3II VK2DAG RRR
VK2DAG VK3II 73

The last line with 73 is useful only to tell the other operator that the QSO is completed and is not in itself an essential element of a valid QSO.

The dB format reporting system requires close adherence to the correct format to ensure it is correctly sent. For example if you put an extra space in front of the signal report or send reports outside the range -01 to -30 or leave in say part of the grid locator, this will all lead to sending something other than what you intended. You must send the signal report as the two numerals (e.g. -01 rather than -1) to have it sent correctly. Another restriction is that it is not possible to combine the

EME OOO report with a dB report, which is a good reason to always use the first line to prepare your terrestrial messages. The easy way to check what is being sent is to look at the transmitted message that appears at the bottom right hand corner of the WSJT window at the time of transmission. It is wise to get into the habit of checking what is being sent each time you send a message when using the terrestrial format.

WSJT measures the signal level by looking for the level of the sync tone, which has a particular format that does not occur when using shorthand messages. Thus WSJT will not give accurate measurements of signal level on shorthand messages and these should be avoided if you are for example using WSJT for propagation studies.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

Good Sporadic E conditions continued through January and into early February. Although the number of active stations decreased in January, the band continued to open on most days - I guess a lot of operators were back at work.

In VK5 openings were recorded at my QTH on the following days in January:

2nd	ZL, VK2, VK1
3rd	VK4
4th	VK6
5th	VK8 (Alice Springs)
6th	ZL, VK2, VK7
7th	ZL, VK1, VK2, VK3, VK4, VK5 (Mt Gambier), VK6, VK8
8th	VK8 (Darwin)
11th	ZL, VK2, VK4, VK7
12th	ZL, VK3
13th	VK2
14th	VK6, VK7
15th	VK2, VK3, VK6
16th	VK3, VK4, VK6
17th	VK2, VK4
18th	VK4
19th	ZL, VK1, VK2, VK3, VK4
20th	VK2, VK4, VK8 (Darwin & Alice Springs)
21st	VK4
23rd	VK4, VK6
24th	ZL, VK2, VK4, VK6
25th	VK4
26th	VK6
27th	VK2
28th	VK4, VK6

30th VK6
31st VK4

One of the more interesting contacts this season was with Wayne VK6JR, operating portable from the balcony of a hotel in Kalgoorlie. Wayne was using a vertical strapped to the balcony rail and using an IC-706MkII at about 30 W on a Gel Cell battery. He was 5/9 into VK5 and also managed to work some VK4's.

Other than the many ZL openings, there has been no international activity except for a brief opening to JA from VK5 on January 20th with weak JA signals being heard in Adelaide. The only contact made though was between Col VK5RO and a JA1 on CW.

This summer sporadic E season has been one of the best with high activity from all states. Notably there has been good activity from VK8 (both Alice Springs and Darwin) as well as higher activity from far Northern Queensland (Cairns area). Also VK7 has been well represented from both the Hobart area and the Northern coastline. Other notable features have been the high number of openings to New Zealand and the regular VK6 openings to the eastern states and ZL. On the downside has been the lack of activity from New Caledonia. The FK8

beacon has been regularly heard from all states but I have only received one report from Brad VK2GWB of a contact with FK8GB on the 7th January.

Received a note from Tony P29AJ who says he has been hearing VK's on 6m on his IC-706 using a long wire antenna. He is in the process of getting a tuner to cover 6 m but if he can raise enough aluminium tubing will build a small Yagi. If you can help Tony, his email is service@prosec.com.pg. Certainly would be good to have a P29 active on 6 m.

One big enhancement to 6 m operating this season has been the introduction of a 6 m logger produced by Adam VK4CP. This allowed 6 m information to be logged separately from the existing V/UHF logger. The logger has many features including operator and beacon information and allows you to spot beacons, stations etc with the logger then pictorially displaying the spots on a map so that with a glance of the map you can see where the band is open. The logger can be found at:

www.vklogger.com/50logger

Good work Adam.

Please remember to send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

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•Service manual or schematic diagram required to buy or copy for an YAESU FT-7 HF Transceiver. Cost of coping refunded. Vince VK2PVD 02 6732 2597 A/h email: deputydawg@ozemail.com.au.

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FOR SALE SA

•ICOM IC-735 HF transceiver, Serial No. 28758. Ideal for Foundation Licence. User Manual and Service Manual on CD. Would require 13.8 V power supply. \$450.00. Ron Holmes VK5VH QTHR, 08 8363 9008 or email vk5vh@chariot.net.au.

•VK5JST Antenna Analyser kits (see AR article May 2006). Build yourself an extremely useful item for your shack, and improve your HF antenna efficiency. For more details see www.scarc.org.au; contact SCARC PO Box 333 Morphett Vale SA 5162, or email: kits@scarc.org.au.

•VK5LS complete station for disposal. List may be supplied by email on request to Navdenn@optusnet.com.au. QTHR correct in Call Book.

WANTED SA

•Copy of instruction sheet for STAEDTLER No 54106 ELECTRO slide rule.Ivan VK5QV QTHR, vk5qv@esc.net.au. 08 8322 3668.

•Your Boat-anchor on air.After a conversation on 40 m one evening, the idea was mooted by a few blokes after a few "Gassy 807s", that once a week operators with Valve Radios or Hybrid Valve

radios meet for a general "Rag-Chew" on 40 m. The frequency of 7.087 MHz + or – QRM was suggested with a calling time 0900 Z on Tuesday evenings with the idea of forming an Australian Boat-anchor group. If the interest is there this can be a bit of fun, with the emphasis of keeping valve equipment running and on the air. So pull your old YAESU, KENWOOD, SWAN, DRAKE, HEATHKIT, COLLINS, HALLICRAFTERS, HAMMARLUND and homebrews out of the cupboard and fire em up, remember Keep em glowin! Contact me if you have any queries Frank Woolfe VK5MFW, frankwoolfe@optusnet.com.au.

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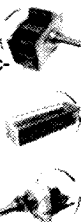
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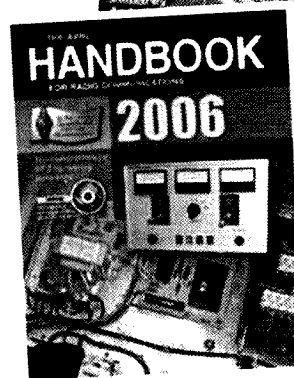
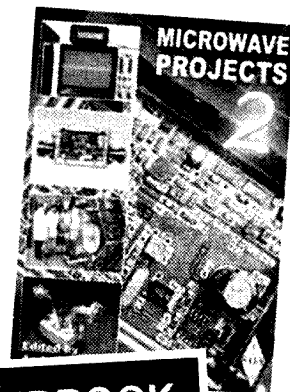
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1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

Comet McNaught

Doug McArthur VK3UM

This photo was taken of Comet McNaught on 25th January 2007 at the QTH of VK3UM, 10 km North of Glenburn, Victoria. The Dish is 10 metres in diameter and has dual 23 cm (IMU feed) and 70 cm dual polarity dipoles. The camera used was a 2001 Ricoh 4MP with an exposure of 800 ISO (ASA) at 8 seconds.



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Our Cover this month

'The Dish' at Parkes is connected with momentous events. Among these, the moon walk, the movie of the walk and now the WIA 2007 AGM. Photograph courtesy of Emil Lenc.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA National

Office (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 an additional \$2 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.

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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Editorial Comment

Peter Freeman VK3KAI

One quarter of the year gone already! Things have been busy, but it is always somewhat surprising how quickly the months slip past. The year is certainly into the "hamfest"/"Field Day" season, with events occurring regularly.

I personally try to attend several such events each year, if only for the chance to catch up with others in person. Of course, one may also be tempted by some of the "goodies" on offer.

From all reports, the Central Coast Amateur Radio Club event at Wyong is probably the largest that we have in Australia. It will be interesting to see how the forthcoming Centre Victoria RadioFest at Kyneton later this month compares. This event is very interesting, as it sees three clubs cooperating to hold a single event, rather than running one each.

This event, if successful, may see a change in the way these events are organised, with perhaps some rationalisation of the number of events being held. Time will tell the story.

WIA Annual General Meeting

Early May will see many amateurs gathering at Parkes for the WIA Annual General Meeting. By the time that issue reaches readers, the voting for office bearers will have closed, so some decisions will have been made before we get to Parkes.

The organising committee has an interesting program scheduled, with the highlight being the technical tours of the Parkes Radio Telescope. I do hope that those planning to attend primarily for the tours will participate in the AGM. I am planning to attend the event, so I look forward to meeting many readers.

Additional details can be found on our cover story commencing on page 9, or via the WIA web site.

Publications Committee activities

This magazine is published regularly because of two key groups of people: those who contribute articles for publication, and the members of the Publications Committee.

The combined efforts of the members of the committee ensures that we have content ready to publish, that it has been reviewed to ensure that the material makes sense, that any diagrams are clear, and that we have hopefully removed any

typographical and grammatical errors that may have slipped through the review process.

The committee has several ideas and issues that are under discussion. One process that we have commenced is to increase the number of review articles that appear in the magazine. For example, I expect that we will publish a review of the Yaesu-Vertex FT-2000 in the May issue. This month we have a review of the bhi ANEM DSP processor.

We will attempt to review a mixture of items, both transceivers and ancillary equipment. Of course, a review process requires some time to be spent exploring the item before the drafting of the review article. Our other requirement is cooperation from the equipment suppliers. I am happy to report that most suppliers that we have approached have been very willing to assist through loaning us equipment.

This issue

In our DX News column, we see that the DX hunters will be busy this month, with both Swains Island (a new entity) and Scarborough Reef being activated. Good hunting!

In addition to the normal range of news columns from our contributors, we also have a slight tendency this month towards antenna related articles. Lloyd Butler VK5BR tells us of his experiments in deliberately attempting to create an out-of-balance antenna feed. Felix VK4FUQ reports on his fault-finding activities with an antenna and feed line.

Michael VK3CH reports on a different style of amateur radio retail activity. Bill VK3BR reviews the bhi ANEM DSP processor, whilst Hank VK5JAZ reviews a book about emergency communications. Dale VK2DSH describes a useful function generator.

I trust that you all enjoy this month's reading.

73 Peter VK3KAI

ar

**Centre Victoria
RadioFest
Kyneton
Sunday 22 April
see page 34**

The Advisory Committees

The next step (and perhaps last step) in the evolution of the WIA from a state and territory based federation to a single national entity is about to happen.

The WIA Constitution provides for Advisory Committees, initially in respect of each area previously the responsibility of a Division, with the first members being the members of the then Council of each Division when the Constitution was adopted who were willing to be members of the Advisory Committee.

After three years the Advisory Committees are to be elected, but with the Board able to appoint one member to each Advisory Committee.

The Constitution thus sets out the bare bones of the structure, leaving the Board to fill in the details by making regulations.

It did not turn out to be an easy task.

The Board first seriously discussed the structure of the Advisory Committees at its April 2005 meeting.

Since then, a great deal of time has been devoted to identifying the issues and trying to find solutions.

One temptation was to make it all too big and too elaborate, another was to say let's not bother, they cannot do anything anyway. But at least it forced us to go back to the basic questions, starting with the question what could or should an Advisory Committee do?

Of course, the fundamental role is to advise; that is what the Constitution says.

But is that all?

We are not trying to insert some group between the WIA's Board and the members. We regard the direct contact between the WIA, its members and its affiliated clubs as an essential element of the change from a federal structure to a national structure.

Essentially, we must look to the Advisory Committees to provide a local WIA presence.

Obviously, we want the WIA to be represented at hamfests and the like, and indeed, thanks to various Directors and people like Chris Flak and others, the WIA has been represented at very many amateur functions. But the 7 Directors cannot go to every such event across the country, and the WIA needs help to be represented and promoted at such events.

The Queensland Advisory Committee has organised for the WIA several very successful meetings of club representatives. If requested, I have no doubt that Advisory Committees would be able to organise these functions for us.

Frankly, I do not know how these roles will develop, even though I am sure there is a real need.

We then looked at the geographic areas to be the responsibility of each Advisory Committee and how many members were needed for each Advisory Committee.

In the 'previous' WIA, different solutions in different places had been found. For example, the Queensland Divisional Council, covering the vast area from the north to the south, had evolved to a representative body, with members from the major centres meeting by phone conference. On the other hand, the Northern Territory, basically Darwin and Alice Springs, were part of a single Division, with its centre in Adelaide.

We were attracted by the idea of more smaller geographic areas ignoring state borders, in part overcoming the problem of unusual distances.

I floated the idea of new and smaller geographic areas at a number of meetings in different parts of Australia. Many people expressed the view that the present boundaries should be preserved. Perhaps it was a rejection of change. Perhaps it was a belief that what had worked well should be kept. We concluded that it was too soon to change the areas from the state and territory boundaries, though we thought it right to create a new area for an Advisory Committee for the Northern Territory.

A much more difficult question was how large should the Advisory Committees be.

We reached the conclusion that defining different structures for different geographic areas did not make sense, and that a single model was needed.

We also concluded that a small effective group was better than a large group. In reaching that conclusion we were conscious of the problem in a state with a population spread over a large area, such as Queensland, and we hope that its Advisory Committee members do not all come from the same region.

We reached the conclusion that in addition to the member appointed by

the Board (called in the Regulations the Nominated Member), there should be three other members.

We decided that each Advisory Committee (three elected members and the Nominated member) should appoint one of their number as Chairperson, who keeps the Board informed and otherwise conduct their business in the way they see best suiting them.

So far as the election process is concerned, we decided that we should follow the procedures that we had adopted for the postal election of directors, centralising the process to the national office, and if an election was necessary for a particular area, we can insert the voting papers in the Amateur Radio magazines for that state or territory.

So, the Board reached its conclusions, on many issues balancing apparently competing considerations and then formulated the Advisory Committee Regulations and published them in January this year, with a news release on 17 January 2007, placing the complete Regulations on the WIA website.

So at its face-to-face meeting in March, the Board started the process by appointing a Returning Officer and is currently addressing the appointment of Nominated Members for each Advisory Committee. The formal Notice seeking nominations will be in the May 'Amateur Radio'. That will also set out the timetable for the further steps.

The one thing that one does learn from the process the Board has followed in formulating this approach, is that there are an untold number of permutations available on very many of the issues, and it is far from clear which is really the best overall. The Board has adopted what it considers to be the best solution, but has also agreed to review the whole process next year, in the light of experience.

I believe that we can turn these local Advisory Committees into one of the strengths of the national WIA, providing a better service for members and a higher profile for the WIA. Whether that belief is right will depend largely on the people who become the members of each Advisory Committee. Their support of the WIA can only advance the WIA.

WIA Board announces Club Grant Scheme for 2007

The WIA Board at its meeting in Melbourne over the weekend of 10 and 11 March 2007 decided to allocate \$5,000 to the Club Grant Scheme for 2007.

The Scheme, introduced last year, had been very successful and this year the scheme will operate on the same rules as last year.

Clubs affiliated with the WIA having at least 50% of their members also WIA members qualify under the WIA Club Grants Scheme to apply for a grant to support a useful and/or innovative project undertaken or to be undertaken by the Affiliated Club. The 50% WIA membership refers to 50% WIA membership of licensed members excluding full time students.

The Rules of the Scheme are on the WIA website and advertisements calling for submissions will be published soon.

Jim Baxter VK3KE appointed WIA Treasurer

Sadly, Bruce Bathols VK3UV who has been WIA Treasurer during a period of great change presenting many challenges, is now finding the pressures of time and family too great, and asked the WIA Board to relieve him of the responsibility of Treasurer, though he was happy to continue in a supporting role.

Jim Baxter VK3KE has been providing Bruce with assistance for some time, assisting with the review and revision of the structure of the WIA's accounting system. Jim has been Treasurer for Amateur Radio Victoria and has a background of many years university administration.

The WIA Board at its meeting in Melbourne over the weekend of 10 and 11 March 2007 appointed Jim Baxter VK3KE WIA Treasurer with Bruce Bathols VK3UV continuing as Assistant Treasurer.

WIA Board reviews WIA Examination Service

The WIA Board at its meeting over the weekend of 10 and 11 March 2007 undertook a detailed review of the WIA Examination Service.

The Board has appointed a Committee to oversee this important activity. The Examination Service Committee will comprise Owen Holmwood VK2AEJ (coordinator), Fred Swainston VK3DAC, Ron Bertrand VK2DQ, Robert Broomhead VK3KRB (systems) and the WIA President for the time being.

It was considered that the WIA Assessment system was working well, and that many clubs were providing valuable training for candidates for amateur examinations, though some clubs may not have appropriate resources.

The Board has approved the introduction of WIA Learning Facilitators. WIA Learning Facilitators will replace the Invigilators, currently nominated by the clubs. Under the previous approach to conducting amateur examinations, the Invigilators actually conducted the examination, and the papers were returned to Melbourne for marking. Today, with the accredited and WIA registered Assessors, the previous Invigilators have in many cases become WIA Assessors, or now assist the Assessors conducting assessments.

Every Invigilator registered by the WIA since June last year has been advised that the WIA was going to introduce this change, and that the WIA would write to them and invite them to qualify as WIA Learning Facilitators.

It is intended to continue the identification of the primary examination/training contact at each club as the Group Leader, though the Group Leader will need to be qualified as a WIA Learning Facilitator.

Further information on how to apply for qualification as a WIA Learning Facilitator will be announced shortly.

"The purpose of these changes is to further enhance what has been one of the most successful initiatives of the WIA to take advantage of the new ACMA amateur examination structure, particularly the new entry level licence and to attract new amateurs." said WIA President Michael Owen VK3KI.

WIA Board meets in Melbourne

The WIA Board met over the weekend of 10 and 11 March 2007 at the WIA premises in Caulfield, Victoria.

The WIA Directors, together with Secretary Ken Fuller VK4KF, new Treasurer Jim Baxter VK3KE and Assistant Treasurer Bruce Bathols VK3UV worked from 9.30 on Saturday morning until 4.30 on Sunday afternoon addressing a big and important agenda.

Among many matters, some reported separately, the Board reviewed the preparation for the ITU's World Radiocommunications Conference, to be held in November this year in Geneva for four weeks, with a number of items directly or indirectly affecting the amateur service. The Directors listened to a telephone briefing by Keith Malcolm VK1ZKM. The Board reconfirmed its earlier decision to nominate Keith as a delegate on the Australian delegation for the amateur service.

The Board reviewed the position in respect of the ACMA outsourcing, in particular the critical importance of the WIA retaining the examination management function.

The magazine, Advisory Committees, BPL, emergency communications, the QSL service and improving the WIA website were also considered, and a budget for the 2007 financial year was also fixed.

ACMA Measures BPL Emissions at Mt Beauty

The Australian Communications and Media Authority (ACMA) performed background noise and emission measurements at the Mt Beauty BPL trial in Victoria, over the 20th -21st February.

The measurements were in response to an interference complaint lodged with ACMA by Ian Paul VK3LJJ.

Gary Smith, Manager BPL Projects Team Regulation and Compliance Branch, and Colin Payne, Regulation and Compliance Branch Melbourne, represented ACMA. Yoram Apter, Project Manager BPL, represented SP-Ausnet, and WIA Director Phil Wait VK2DKN represented the WIA.

continued on page 5

New Antenna for VK5ROC

Keith Gooley
VK5OQ

The Elizabeth Amateur Radio Club operates a repeater on 70 cm located at Lower Light, on the flat plains about 40 km north of Adelaide. On Friday February 23rd, four Club members and two riggers installed a new antenna at the top of the 53 m tower. Prior to this, the repeater had been operating with an experimental antenna, a single folded dipole at about 8 m above ground. The results with this antenna were quite encouraging so a 4-dipole array was constructed by Dennis VK5FDEN and Keith VK5OQ.

This array was installed at the top of the tower by the riggers and a feedline of Andrews LDF5-50 (22 mm) Heliax was hauled to the top. A second similar feedline was also installed to be used at some future date for a purpose yet to be decided. The 70 cm array has a gain of about 8 dB and a front to back ratio of about 10 dB. The wide beam is aimed in the south-east direction to cover the Adelaide metropolitan area and the Hills. Due to the modest F/B ratio, coverage is 360 degrees and should cover the mid north and upper York Peninsula as well.



Figure 1 l to r. New member Paul, Club Secretary Paul Gale VK5ZKG and John Ross VK5NI hauling one of the two LDF5-50 coaxes to the top of the tower. The workers also give some scale to the structure

To give some scale to the shot looking up the tower, the angle iron making up the 4 corners of the tower is 200 x 200 x 13 mm: a very substantial structure.

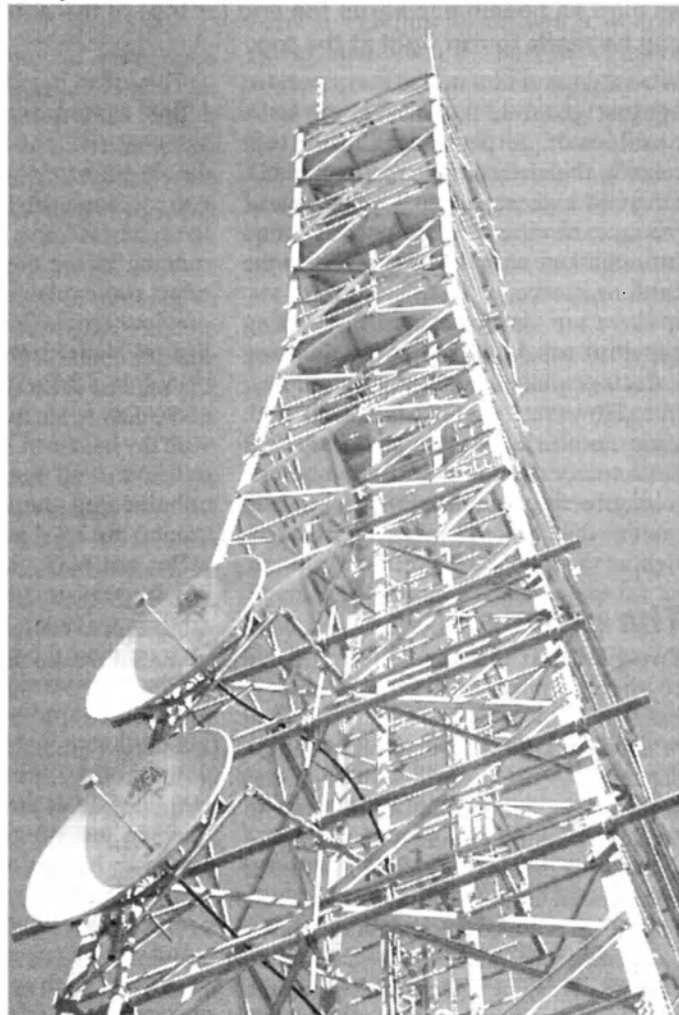


Figure 2 53 m tower, repeater antenna is at the top on the left.

continued from page 4

ACMA Measures BPL Emissions at Mt Beauty

As expected, high level BPL emission was measured in the trial area. The maximum notch depth measured within amateur bands was about 35dB.

Phil Wait recorded observations of BPL emissions received on Ian Paul's amateur transceiver and G5RV antenna. Those observations confirmed that in the vicinity of Ian Paul's QTH, SP-Ausnet has notched all affected HF amateur bands except for 10 metres.

SP-Ausnet demonstrated new network control software that allows remote

notching of frequencies or bands of frequencies, in any segment of their trial BPL network, from an office anywhere.

As the maximum notch depth was measured at about 35dB, the WIA is of the opinion that both software and hardware notching will be required to adequately protect amateur radio operation from substantial interference from BPL emission, and that should be the focus of further development by BPL equipment manufacturers.

The WIA has now attended ACMA

measurement events at Mt Nelson (TAS) and Mt Beauty (VIC) BPL trials.

It is apparent that all stakeholders involved in BPL trials are now taking interference complaints from radio amateurs very seriously, and are making changes to their BPL technology and systems to improve the outcome for radio amateurs.

ar

Top loading by reverse feed

Lloyd Butler VK5BR

Where short antennas have to be loaded with inductance, there are various ways of getting the current running as high as possible towards the end (or top) of the antenna radiator. But here is a way where the highest current can be made to run right at the top.

Where an antenna radiator is operated against ground, there is always the problem of getting antenna current running as high up the antenna as possible. Often the highest current is at the base of the antenna where it can do least good for radiation, with most of it lost in the earth resistance.

There are various systems of adding capacity top hats and series loading inductors placed well up the radiator line. However, we still finish up with almost no current running at the apex of the antenna where high current might be most effective. But here is an interesting system that can put maximum current right at the top.

The principle

Two plates at the end are connected so that their coupling to ground is unbalanced. This in itself has little effect in unbalancing the line currents but the capacitance between these two plates is resonated with a parallel inductor to produce a tuned circuit with as high a Q factor as possible. The line is coupled unbalanced into the inductor and the effect is to produce a high voltage across the plates equal to Q times the applied voltage. This, in effect, multiplies the out-of-balance current reflected to the line by the factor Q.

This effect became very apparent when I first started experimenting with EH antennas (which all have an unbalanced dipole connection) and I found that the current running in the centre conductor of the coax feed line was around twice that running in the outer coaxial braid. The effect was explained in more detail in my previous article (Ref 2) and, in particular, Figure 4 of that article. The whole principle I have just outlined became even more apparent when I experimented with my balanced X3 antennas and found out how well they worked by simply unbalancing the tuned circuit formed around the X3 dipole.

But one really important fact showed up: for transmission line lengths of a quarter-wave or less, the unbalanced (or common mode current component) reached a maximum close to the dipole or antenna termination connection and was still reasonably high running back down the line. So here we achieve highest current right at the top or far end of our line pair just where it can do most good simply by making a terminal unit with two plates resonated against a high Q inductor connected for an unbalance.

But we don't need to build a special type of antenna, such as the EH, to produce the phenomenon. Just concentrate on the design of a terminal unit that encourages

the current imbalance in the feedline.

There is probably plenty of scope for experimentation with the size of the plates, and the separation between them, to get best feedline current imbalance. I chose plates 5 cm square and a length of about 1% of a wavelength. The only reason for doing this was that I already had the plates available that I had recovered from previous experiments with the X3 antennas.

Terminal unit for 40 metres

I turned my 40 metre (or 7 MHz) X3 into the terminal unit by discarding the original two-coil assembly which it originally had and wound a single inductor placed between the two original 50 cm square plates forming a dipole. The arrangement is shown in Figures 1, 2 and 3. For the line pair (as in the original X3), open wire TV line is used. This is matched at the transmitter end using a Z Match tuner.

Terminal unit for 80 metres

I figured that the reverse feed idea might have more application to the 80 metre band as most radio amateurs usually find they don't have enough space for an

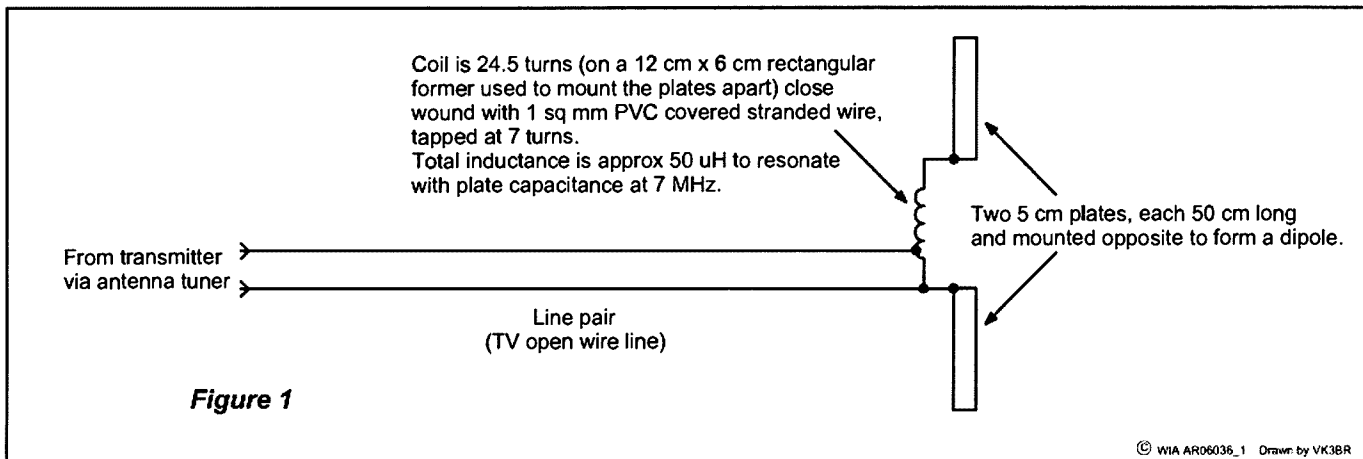


Figure 1 – 7 MHz terminal unit for reverse feed antennas (function is to encourage out-of-balance line current).

80 metre half wave and usually have to operate what wire they can fit in against ground return. For 80 metres, I tried out two plates side by side but spaced 10 cm apart. This reduced the size of the terminal unit to that of a dipole assembly and also increased the capacitance between the plates. The higher capacitance allowed

me to tune the circuit to resonance with a smaller coil than would have been required for the dipole assembly.

The arrangement for the 80 metre (3.5 MHz) system is shown in Figures 4, 5 and 6. Open wire line pair is a bit hard to get so that I have given an alternative using "Figure 8" power flex for the transmission line. I have suggested this as a possible

alternative as its transmission loss is fairly low at 3.5 MHz and I have carried out tests using it. However, I don't recommend its use on the higher frequency bands, where the losses can get quite high (particularly in the resonant feeder type mode which is used). Figure 7 is a photo of the open wire TV type line alongside the power flex.

Tuning up

The precise frequency of resonance between the plate capacitance and the shunt inductor in the Terminal Unit is not critical. It is simply set somewhere within the frequency range of the relevant band. This can be easily checked using a dip meter poked near the coil with the feedline disconnected from the coil. As the open wire feed line is allowed to become partly resonant itself, reactance is fed up the line from the Z Match to bring the antenna circuit precisely in tune and is properly matched by adjustment of the Z Match.

The degree of current imbalance (or common mode current) which results in radiation from the feedline can be checked by inserting an RF ammeter in each leg of the line connected to the Terminal Unit. Using the dipole type plate assembly as shown in Figures 2, 3 and 4 (and with plates about 1% of a wavelength long), I usually find that the current in one line leg is about double that in the other. In the case of the 80 metre terminal unit as shown in Figures 4, 5 and 6 (also with plates about 1% of a wavelength long), the currents

measured in the ratio of 2:3. Perhaps this lesser ratio means that particular design, set out to limit the physical size of the assembly and the resonating coil, could be improved, or perhaps it is just a function of the lower operating frequency of 3.5 MHz. This might be a further area of experimentation.

If the length of unbalanced feedline current extends more than a quarter wavelength down the line, the common mode current peak could be further down than the top end of the line. I suggest that, if the line length is greater than a quarter wavelength, some form of balun unit or out of balance trap be fitted at the quarter wave point so that the line currents beyond that point towards the transmitter are balanced.

It seems unlikely that, in the usual amateur radio backyard, more than a quarter wave of line for 80 metres would be needed, requiring a trap. Also the balanced output of the Z Match might provide a suitable limit to stop too much common mode current component getting back into the radio shack. This might not be true for 40 metres but I have not yet attempted to build a suitable trap for the twin line on that band. However, I have made and tested one for 20 metres and this is shown in Figures 8 and 9.

Clearly, for 40 metres the coil would require enlargement for longitudinal resonance at 7 MHz. One might think of using a ferrite type of core in a coupled circuit but there can be difficulties in selecting the right core characteristics to suit the particular line impedance at the point of insertion. Get it wrong and the result can be an overheated core and for this reason I prefer to stay with the open coil.



Figure 2
7 MHz terminal unit.

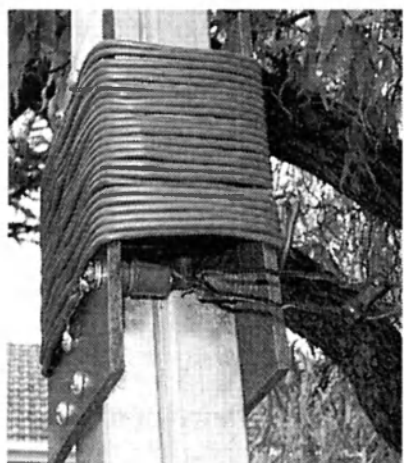


Figure 3 - Coil of 7 MHz terminal unit.

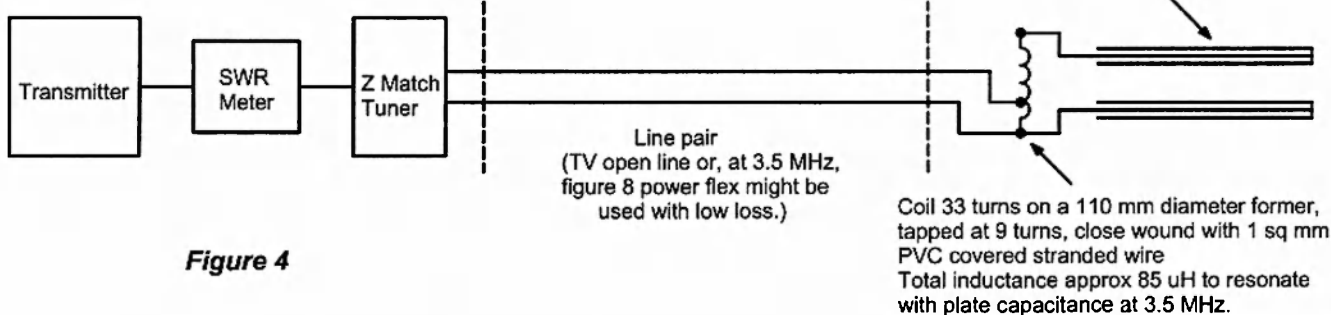


Figure 4

© WIA AR06038_4 Drawn by VK3BR

Figure 4 – Reverse feed with 80 metre terminal unit (function is to encourage out-of-balance line current).



WIA AGM

to be held in

PARKES

Sat 5 May

Visit

"The Dish"



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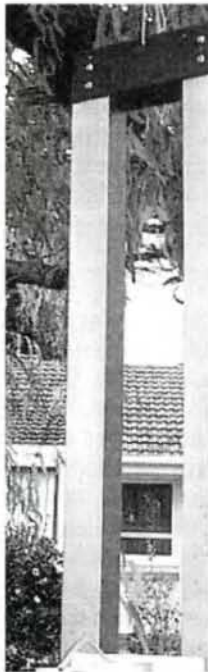


Figure 5 - 80 Metre terminal unit.



Figure 6 - Coil of 80 metre terminal unit.

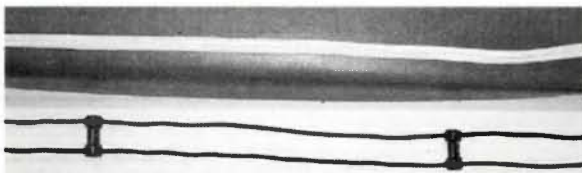


Figure 7 - Open wire TV type line and Figure 8 power flex

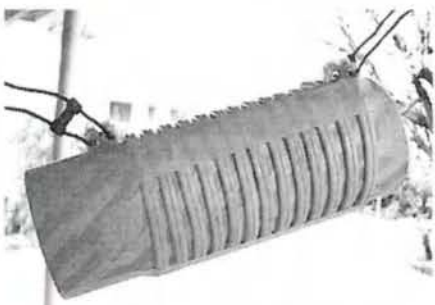


Figure 8 - Balanced trap for 20 metres.

Summary

Here is an interesting idea to get high current running at the top of an antenna wire by feeding the signal to the top and exaggerating an out-of-balance condition at the top using capacitance plates resonated with a high Q coil.

If you have been reading my recent articles on experiments with the EH antenna (which has an unbalanced resonant termination), and the unbalanced version of my X3 antennas,

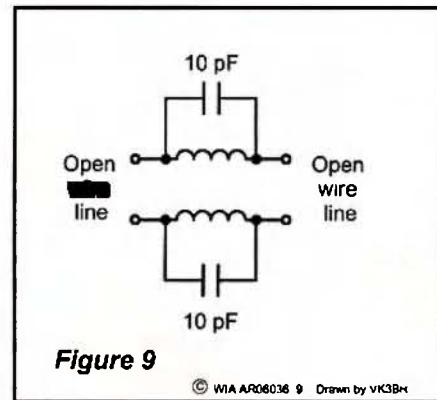


Figure 9 - Balanced trap for 20 metres. 13 turns of "Figure of 8" power flex, spaced to 11 cm. Former - 4 cm diameter. Inductance 6.5 μ H. Parallel resonant at 14 MHz (tuned with 2 x 10 pF capacitors).

you will realise I believe they are relying on the phenomenon I have just described for their good performance rather than the claimed crossed field theory.

There is plenty of room for more experimentation in the best design of a terminal unit to produce the out-of-balance current condition down the feed line legs. If I were a Broadcast Station engineer, I would be interested to see whether the system I have described would generate higher field strength than some of the well established top loading antenna systems now used.

Some interesting references

- (1) The VK5BR-X Antennas. Some modified ideas on how they work. By Lloyd Butler VK5BR - Amateur Radio, April 2006
- (2) Some Different ideas on the EH Antenna. By Lloyd Butler VK5BR - Amateur Radio, June 2006. Also refer to <http://www.qsl.net/vk5br/EHAntennaFurtherTests.htm>.
- (3) http://www.qsl.net/vk5br/NewX2_X3.htm - The VK5BR X2-X3 Small Dipole Antennas.
- (4) <http://www.qsl.net/vk5br/X3UExperiment.htm> - Some interesting results in operating the X3 out of balance
- (5) http://www.qsl.net/vk5br/Lo_Key_EH_X3.htm - EH & X3 Antennas (As published in QRP Club Journal "LoKey").

Parkes – the radio telescope and the WIA AGM

Robert Broomhead VK3KRB

The third Annual General Meeting of the WIA will be held on Saturday 5th May in Parkes, NSW. Until this year, each AGM of the WIA has been held in a capital city location. However in 2007 we are engaging our regional members to be hosts for the AGM and for what will be a very exciting weekend for radio amateurs Australia wide joining together to meet in the NSW country town of Parkes.

Why Parkes ?

After the 2006 AGM, the WIA Board of Directors discussed options for the 2007 AGM. The directors and in particular the then Secretary, the late Chris Jones VK2ZDD, expressed enthusiasm for incorporating the AGM into a weekend of activities of particular interest to radio amateurs. A subcommittee was elected comprising Phil Wait VK2DKN and the writer, assisted by the Secretary. We were charged with selecting a venue and planning the weekend. It took quite a bit of work, but after much discussion and consultation, we decided to have the event at Parkes NSW.

Parkes is the home of the CSIRO's Radio Telescope, affectionately known as "The Dish", after a movie of the same name. Parkes is a strategic location for the Radio Telescope as it is distant from other major population areas and provides the necessary quiet RF location for Radio Astronomy. The Dish is just 20 kilometres down the road from the Parkes town centre.

The weekend activities will commence Friday evening, the 4th, and run through to midday Sunday 6th May.

Friday 4th – kick off with a good "Dish"!

Activities kick off at 6:30 pm with a light meal at "The Dish Cafe" located at the Radio Telescope site. Cafe manager Craig Smith has an reputation for some of the district's finest meals, all at very reasonable rates. After the meal we will join with the local Central West Astronomical Society (CWAS) for their Friday club meeting and presentation being held in the Visitors' Centre theatre at the Telescope Site. Following this meeting, CWAS will

have a number of telescopes set up on the lawn outside the Visitors' Centre and will invite us to join them in looking at some distant planets and stars.

Saturday 5th – formalities, food, and more of "The Dish"

Saturday sees an informal start to the day, with breakfast at the Coachman Motel. Over the course of the morning folk will be arriving from interstate, so a Meet and Greet barbeque lunch has been organised at Kelly Reserve (Bushman's Dam). This will be an ideal opportunity for a chat and to catch up with those folk who have just arrived. The WIA will be providing catering at the BBQ for just \$10 per head.

The formal part of the weekend commences Saturday afternoon at 2.00 pm, with the WIA AGM, which is being held at the Parkes Leagues Club, 194 Clarinda Street, Parkes. The AGM will be followed by the Open Forum, where reports on amateur radio activities over the year will be presented and members are encouraged to raise any issue they wish. The Open Forum is expected to conclude at 5:00 pm. The Parkes Leagues Club is a short distance from the railway station, close to the city centre.

The WIA Annual Dinner will commence at 6.30 pm Saturday evening at the Coachman Hotel, Welcome Street Parkes, just a short walk from the AGM venue. A set dinner will be available at \$35 per head (not including drinks) and dress for the evening will be smart casual.

Please advise the WIA office when making your booking if you have any particular dietary requirements.

There will be a late night screening of the movie classic "The Dish" after the

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AGM dinner at the Coachman Hotel. Management have agreed to keep the bar open for those who may enjoy a night cap or two.

Sunday 6th – a first hand look at the inside workings

The CSIRO Radio Telescope or "The Dish" has become one of the world's most active and productive Radio Telescopes, performing radio measurements and collecting scientific research data.

Because it is a working research instrument, it is normally closed to the public. The WIA are grateful to the CSIRO Radio Telescope management for providing WIA members and their partners the unique opportunity to participate in a series of "technical" tours through the Telescope facility.

You will be able to see first hand the inside workings of the Radio Telescope as well as being able to ask any questions of the site engineers. This will likely be a once in a lifetime opportunity for most amateurs to step inside and see the inner workings of one of world's most powerful and active Radio Telescopes.

Where to stay

Enthusiasm for the weekend has already outstripped our expectations, at the time of writing all rooms at the Coachman Motel have been booked and other

motels in and around Parkes are quickly filling. To assist you in making your accommodation arrangements, we have included below contact numbers for a range of places offering accommodation in Parkes. If in doubt we would suggest you contact the Parkes Visitors centre on 02 6863 8860 or free call 1800 624 365 to obtain more information on the various accommodation options available.

Parkes Accommodation in alphabetical order:

All Settlers Motor Inn	(02) 6862 2022
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Coachman Hotel/ Motel	(02) 6862 2622
Comfort Inn Parkes International	(02) 6863 4333
Commercial Hotel	(02) 6862 1526
Court Street Motel	(02) 6862 3844
Grand Hotel	(02) 6862 1003
Hamilton's Henry Parkes Motor Inn	(02) 6862 4644
Moonraker Motor Inn	(02) 6862 2355

Don't Miss Out – Reserve Your Spot Today!

Come and join in the excitement of the 2007 AGM and weekend activities. It is vital we know you are coming so we can reserve your place and send you further information. If you haven't already done so, please take a moment to complete the

registration form included in last month's AR (the registration sheet was included in the mailed copies as an insert). Or alternately you can download a copy from the WIA website at <http://www.wia.org.au/> Please fill it out and fax or mail the form to the WIA office.

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Please note:

- **The tour involves steep steps and is unsuitable for people with an aversion to heights.**
- **For safety reasons people of limited mobility, including toddlers and babies needing to be carried, will only be able to do part of the tour.**
- **For safety reasons appropriate (enclosed) footwear MUST be worn during the tour. Thongs, other open footwear such as sandals, high heels and bare feet are not acceptable. Visitors without suitable footwear will not be able to take the tour.**

The Film, "The Dish": Fact versus Fiction

(Refer to "Parkes: 30 Years of Radio Astronomy" available through Visitors Centre, \$30).

Several true things in the film:

- we did point at the Moon, and, as arranged, did take signals, and successfully, for the moonwalks
- we normally 'park' our dish at wind speeds above 35 km/hr. On the day of the moonwalk it was gusting 100 km/hr.
- Goldstone (USA) signals did "disappear into the ground" on the day
- there is a visitors' centre nearby
- staff do take "hayrides" as one means to get equipment up onto the dish
- Parkes did use an "off-axis" feed to acquire signals of the first few minutes
- the astronauts did go outside ahead of schedule
- we do have a UPS and backup diesel generator
- NASA did get coordinates wrong occasionally on very early missions
- the control room set and operation of the dish was a very realistic representation of 1969

Pure fictions (to make a good story)

- there was no power failure
- there was no animosity with Americans; we are accustomed to sharing expertise
- the Prime Minister visited Honeysuckle Creek, not Parkes
- Director, John Bolton died in 1993; Letty Bolton lives in Queensland and visits occasionally

Understated/overlooked aspects

- the first few minutes of the televised broadcast originated from Honeysuckle Creek, near Canberra
- more NASA staff and OTC (Telecom) staff were present; it was a larger team effort
- the congratulatory telegram included a lot more players than just Parkes
- quality control and foresight at Parkes were much greater than portrayed. The Director had actually calculated how fast teams of men could wind the electric motors in the event of a total power failure.
- it was quite normal to scan side to side to find a source and strongest signal
- the wind kept blowing a gale during the moonwalks

- our then Director, John G Bolton, made the decision to keep pointing in the wind. In this universe he got away with it!
- Parkes Radio Telescope is ten thousand times more sensitive than when first commissioned in 1961. No time is wasted on the dish, one the best radio telescopes in the world.

Puzzling aspects

- Prime Ministerial ignorance (we were well known — half the construction funds were from the Commonwealth Government)
- as big as a football field (it is big, but not that big; what foxy field is that small?)

Cricket on the Dish

- It never happened. True, the actors went up there for about an hour, but they were told where they could stand, what they could do, what they could throw (a tennis ball). It wasn't a "stunt-double" dish; it really was the Parkes dish they were standing on, but neither was what the film showed "highlights of a day's play!"

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See pictures of "The Dish" inside the back cover

Beware of unrecognised and undetected loss!

Felix Scerri VK4FUQ

I have to admit that I was thinking of the title of the great George Harrison song, "Beware of Darkness" when thinking of a title for this article and I couldn't think of anything more accurate or descriptive! I've had some interesting experiences of late, where a totally unrecognised fault that occurred on a VHF antenna system had resulted in a large and unexplained additional loss and some very strange fault symptoms.

Eventually the fault was found and corrected, and the result is an antenna system now working to full capacity. As with so many 'life experiences', some luck was involved, but the whole experience goes to show that serious fault conditions (especially involving RF) can occur through strange means, and 'eternal vigilance' is needed. As many of these kinds of faults develop slowly with extended time, on many occasions the true severity of the fault is not recognised until very late in the piece! A factor that had muddied the situation in my own case was a tendency to 'chop and change' things around a lot at this QTH. This serves to produce a lot of general uncertainty into the equation, and sometimes other real faults often compound things further!

The story

Over some months, I had noticed generally deteriorating performance with my 2 m antenna system. This was put down to several things, such as lossy feedline, corroded antenna connections, varying weather, and propagation conditions, etc, etc. The interesting thing was that all of these things did indeed play a part in proceedings!

Swapping antennas for test purposes periodically added to the general confusion. However, things had become more standardised of late and the other faults detected were rectified. However, regardless of that, the antenna just did not appear to be working as well as hoped. I merely concluded that limitations in my antenna system were being exposed, as the Yagi antenna itself and feedline were tested at 100% OK. There was really nothing else in the system that could be affecting general performance. Or was there?

Actually, indeed there was: A high quality (and trusted) SWR meter and short patch cord used for general monitoring of SWR and power output, etc here in the shack.

Another one of the strange symptoms

I'd noticed was the increasing presence of many "intermods", spread right across the 2 m band. These intermods were painful, as they popped up seemingly everywhere, making scanning a very tortuous exercise! One day I chanced to brush my hand against one of the PL259 connectors on my SWR meter. The shell felt a little "loose". This seemed promising, so I unplugged all the connectors, thoroughly cleaned all contacts and then reattached them. A few tests seemed to indicate some improvement; however, all of the intermods, which I had blamed on nearby paging installations, were still there.

A little later on, in a moment of inspiration, I decided to take the SWR meter and patch cord completely out of circuit and connect the antenna feedline directly into the 2 m rig. To be honest, I did not really expect any difference. However, after putting the rig 'on scan' and listening for a while I realised that most of the intermods were gone!

Shortly after, I gave a call on our local repeater and asked for a signal report. I was told, "loud and clear". This was a genuine surprise, as on previous occasions my signal was uniformly "readable but noisy". I sat there somewhat stunned as I couldn't quite believe the implications of this signal report. Either my SWR meter and/or the patch cord were the cause of all that I had noted. Something was introducing a lot of additional loss and/or non-linearity into the transmit and receive path.

I have since thoroughly tested both the SWR meter and patch cord and both test 100% OK. Yet, when patched back into circuit, all the problems return! Something is clearly amiss, but to be perfectly honest, I don't feel inclined to do any more investigation. The easy solution is to just leave the SWR meter and patch cord completely out of circuit unless needed.

As SWR meters invariably contain

"sampling" diodes, the SWR meter is the prime suspect, but once again its performance has been tested 100% OK. Likewise the patch cord is apparently free of faults.

Yes, it's an ongoing mystery, but these strange things do happen at RF sometimes! I have read of documented accounts of strange harmonic production and interference attributed to similar sources, so perhaps this incident is not that unusual, all things considered. Yes, it pays to be 'eternally vigilant'!

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Over to You - Kits

Dr Bernardo León de la Barra

We would like to use radio platforms/kits to encourage school students to study science, engineering and technology. Having read AR Vol 75, No 3, it was very difficult to find any kits under \$50.

Do you know of any kits that cost less than \$50? I am new to this area and would appreciate your advice on this issue.

Thanks very much for your assistance. Regards, Bernardo,

Dr Bernardo León de la Barra
School of Engineering
University of Tasmania
Private Bag 65 Hobart TAS 7001
email: b.a.leondelabarra@ieee.org

Editor's comment: I am sure that there are others wishing to access low cost kits for radio projects to use to encourage and/or attract newcomers to our hobby. If you know of suitable kits, please respond to Dr León de la Barra, with a copy to me, - I would be happy to collate suggestions into an article.

If you have ideas for projects that fit these criteria, please forward them to the Secretary of the Publications Committee. We will work with you to polish any submission into an article for publication.

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A DRM down-converter for 455 kHz IF receivers

John Titmuss VK4JWT

DRM, which stands for Digital Radio Mondial, is the only universal, open standard, digital AM radio system with near-FM quality sound available to markets worldwide.

The quality of DRM audio is excellent, and the improvement upon analogue AM is immediately noticeable. DRM can be used for a range of audio content, including multi-lingual speech and music.

Besides providing near-FM quality audio, the DRM system has the capacity to integrate data and text. This additional content can be displayed on DRM receivers to enhance the listening experience.

Unlike digital systems that require a new frequency allocation, DRM uses existing AM broadcast frequency bands. The DRM signal is designed to fit in with the existing AM broadcast band plan, based on signals of 9 kHz or 10 kHz bandwidth. It has modes requiring as little as 4.5 kHz or 5 kHz bandwidth, plus modes that can take advantage of wider bandwidths, such as 18 kHz or 20 kHz.

This project came about due to my interest in a new form of radio transmission called DRM. This is a new form of digital

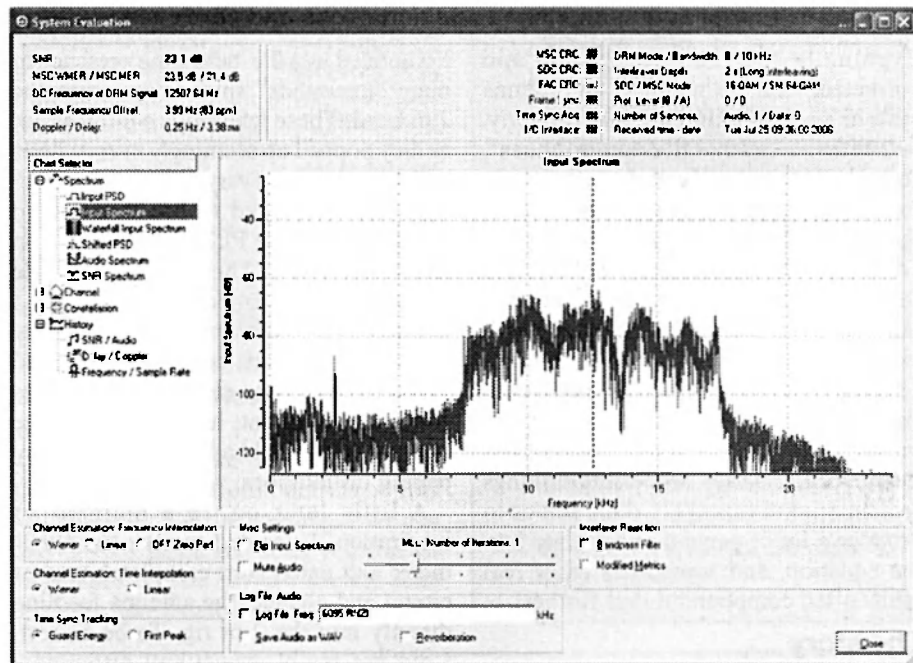


Fig 2 - RNZI being received on 6,095 kHz.

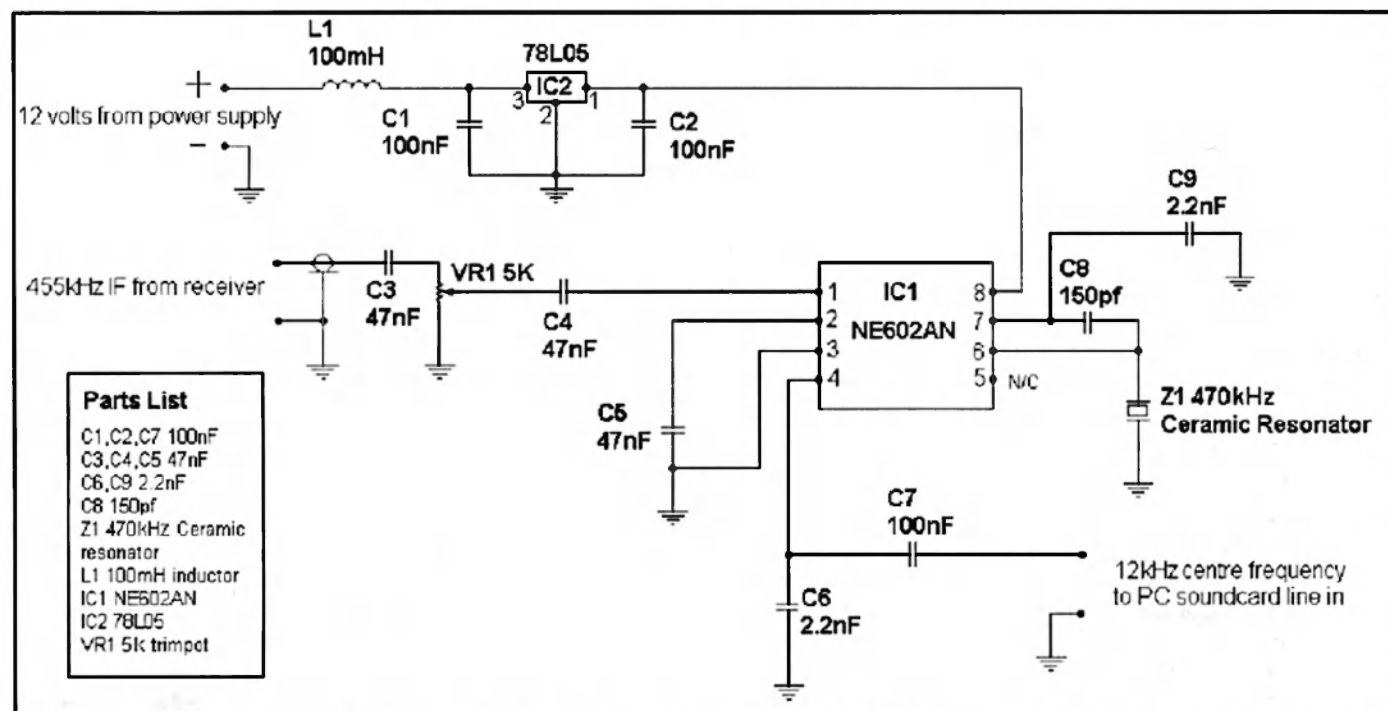


Fig 1 - Circuit of the DRM down-converter for 455 kHz IF receivers

short wave transmission. A few devices were available from Europe for decoding the digital signals, but the price was high. I decided to modify an existing circuit, using a stable purpose-built 470 kHz ceramic resonator as the oscillator, instead of the original unstable L/C circuit.

How it works

The 455 kHz IF signal is fed into the input (pin 1) of IC1 through a variable resistor VR1. The output to a PC sound card is taken from pin 4 of IC1 through a DC isolating capacitor C7. With C8 set to 150 pF, the oscillator frequency should be around 467.5 kHz. You can check if the oscillator is working by putting it near a receiver tuned to 467 kHz. You should hear a beat frequency.

The IF signal of 455 kHz is mixed with 467 kHz, giving an output of 467 - 455 = 12 kHz centre frequency. Since the DRM signal is 10 kHz wide, the sound

card should have no trouble sampling this frequency. I have found a number of software defined radio applications also work well with this converter. All the demodulation for SSB, AM, and FM, is done in software, as well as providing DSP functions.

If all is well, connect your 455 kHz IF to the input, and your computer sound card to the output. Run the Dream software, and tune to 6,095 kHz (RNZI), or 1,440 kHz (SBS). You should see the Dream software lock onto the DRM transmission, and audio should start playing from the computer speakers.

The NE602AN oscillator/mixer and 470 kHz resonator are available from me at a cost of \$12.50. You can pay via Paypal, or email me for payment information at jwittimus@bigpond.com. I can also supply a CD with various software defined receivers, as well as the latest Dream software decoder.

ar

Silent keys

Raymond Nelson Fry VK2FRY

Raymond Nelson Fry VK2FRY, became a silent key on Friday, 19 January, 2007.

Ray leaves behind his wife, Marjorie, children Alex, Ian, and Megan, and lots of grand-children.

He was born on 21 October, 1917 at Crows Nest, Sydney. That day was Trafalgar Day - thence the name Nelson, which he hated!

Ray served in WW11 as an electrical fitter. He tried to enlist, but was knocked back because his was an essential service. Later he became an electrical contractor.

He became an amateur in 1983, firstly as a novice, VK2NOI, upgrading to VK2YRF (the reverse of FRY) and finally VK2FRY. All these upgrades happened in 1983.

Apart from amateur radio (which means Homsby and Gladesville Clubs now are

missing a quiet, gentlemanly member), he was involved in boats (home-made speedboats), cars (restoration), coins (through the Metropolitan Coin Club), firearms (the Antique Arms Society and St Ives Pistol Club), flying (Ultralight Flying Club), Models (Miniature Modellers' Club), spearfishing (NSW Spearfishing Association) and the local Probus and Rotary Clubs.

Don't ask me how he managed to fit all those into his less than 90 years!

My memories of Ray go like this - the phone rings - "Hey Bob, I got at a junk sale. If I bring it round, can you show me how it works?" After consultation - "It could be handy, but I got half a dozen of them - would you like a couple?"

Vale Ray - VK2FRY

Submitted by Bob Yorston VK2CAN, with assistance from Jo Harris VK2KAA.

Dick Crawley ZL2AQR

Dick (Richard) Crawley ZL2AQR fell silent at 11.30 AM New Zealand time on 26 February 2007, after a brief struggle with cancer.

Dick had been an amateur radio operator for over fifty years in New Zealand, with many contacts into Australia and to the rest of the world.

A SMIRK member, number 4666, Dick

was very active on the six and eighty metre bands in particular.

Dick is to be cremated and his ashes interred in the family plot in Hastings on a date to be confirmed.

Condolences can be sent to Jean, c/o Judy Albrey, 43 Ruahina Road, Te Kauwhata. New Zealand.

Submitted by Peter Crawley.

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160 metre noise cancelling

Mick Hort VK2BZE
vk2bze@exemail.com.au

Having played with various noise-cancelling circuits published in Amateur Radio and other media, it became obvious that most of them were of the "it worked for me" kind but repeatable results were very hard to obtain. In my experience, some results on some nights were very good, but the next night they were very poor.

I had mainly been mixing my noise at the antenna socket of the rig using potentiometers to trim the levels, and amplifying my noise signal with a two-stage FET amplifier and a parallel tuned LC resonant circuit for phase shifting. But using these techniques, impedances varied greatly, making balancing difficult.

Noise antennas with good all-round performance also proved very difficult to find. After much experimenting, a few things became obvious. I needed an antenna that would accurately reproduce the noise source as seen by the main antenna. A length of wire thrown over the fence was next to useless, as cancelling needs to be done under constant conditions to be repeatable. All the basic concepts I had been following were valid but the implementation needed refining. The result described here is not so much a cancelling box but a cancelling system.

Loop antenna

My noise antenna (Figure 2) is a two-turn shielded loop made of 75 ohm TV-type RG6 coax, and resonated with 40 to 80 pF of capacity. It is very similar to the single-turn loop published widely but the 75 ohm coax has lower capacity and needs two turns. This antenna is used to feed a long length of 75 ohm coax, so I have included a toroidal step-up transformer to avoid loading the loop. A FET preamp would probably be better but I have sufficient gain in the noise-cancelling box to make up for feeder losses. The loop is on the shed roof and can be rotated remotely as described later. Once resonant, it should give a broad lobe in line with the loop sides, and a sharp null side-on to the loop; so it can be used to pick up a noise for cancelling, or to null a noise if needed.

Noise cancelling box

The cancelling circuit (Figure 1) starts at the noise antenna end with an impedance step-up from the coax to a high impedance to feed into the phasing resonant circuits. The input winding to the toroid has a grounded centre-tap to give a 180 degrees phase reversal facility. The phasing circuit gives about 45 degrees of phase shift, which can be reversed with the phasing switch. The two parallel-tuned circuits are coupled together mainly by stray capacitance, which I estimate to be about 20 pF, and the

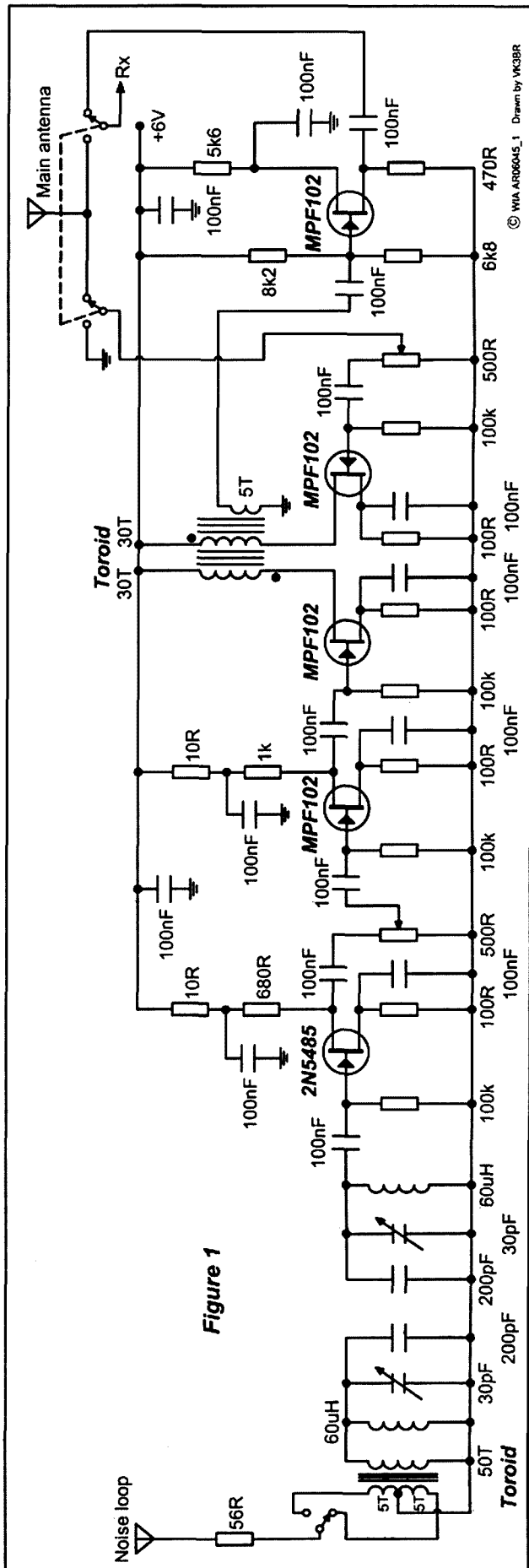


Fig 1 – Circuit of the noise cancelling system.

© VIA AR8045_1 Drawn by VK3BR

receiver should be reducible to a very low level (optimum cancellation).

Construction

The layout for the PCB was drawn with a permanent marker pen, using a straight-line layout just like the schematic circuit, and then etched with ammonium persulphate. To keep the etchant hot, put it in the microwave for 25 seconds or so. As it cools take it out and agitate it again. Repeat the process until the PCB is etched. Prior to etching, allow the pen ink to dry overnight for best results.

The unit was made from my junk box, the only parts purchased being the FETs. So it is not overly critical to get going. The two toroids are darkish green, about 25 mm in diameter and were recovered from old power supplies; using a signal generator and CRO to test their suitability. They are not critical and any toroid suitable for transformer service at 1.8 MHz will do.

Transmit/receive switching is done by a relay (in the noise-cancelling box) driven from the main PTT circuit, via another relay supplying 12 volts from the rig. This will vary from rig to rig so you will need to work out what suits your radio. The box runs from a 6 volt NiCad battery using a plug-pack to charge it, so that it can be removed from the mains if noise is coming in via the earth. Running on more than 6 volts causes a rapid rise in amplifier noise for not much extra output.

Loop antenna construction

The loop (Figure 2) is two turns of RG6 TV coax, approximately 1.5 metres per side, with a short break (about 13 mm) in the braid at mid point. At the feed-point, the two inner conductors are bridged by a capacitor. I initially used a 450 pF variable capacitor to find the resonant point then measured it and then replaced it with a ceramic capacitor of the correct value. The braids are connected together and to one side of the 40 turn toroid winding. The other side is connected to one of the coax inner conductors. The toroid is the same as that used in the noise amplifier in the box.

If you want to rotate the antenna remotely, you will need to either install limit switches to avoid tangling the feeder or, as I did, use an inductive coupling. There is more than enough signal coupled across this link to operate the noise

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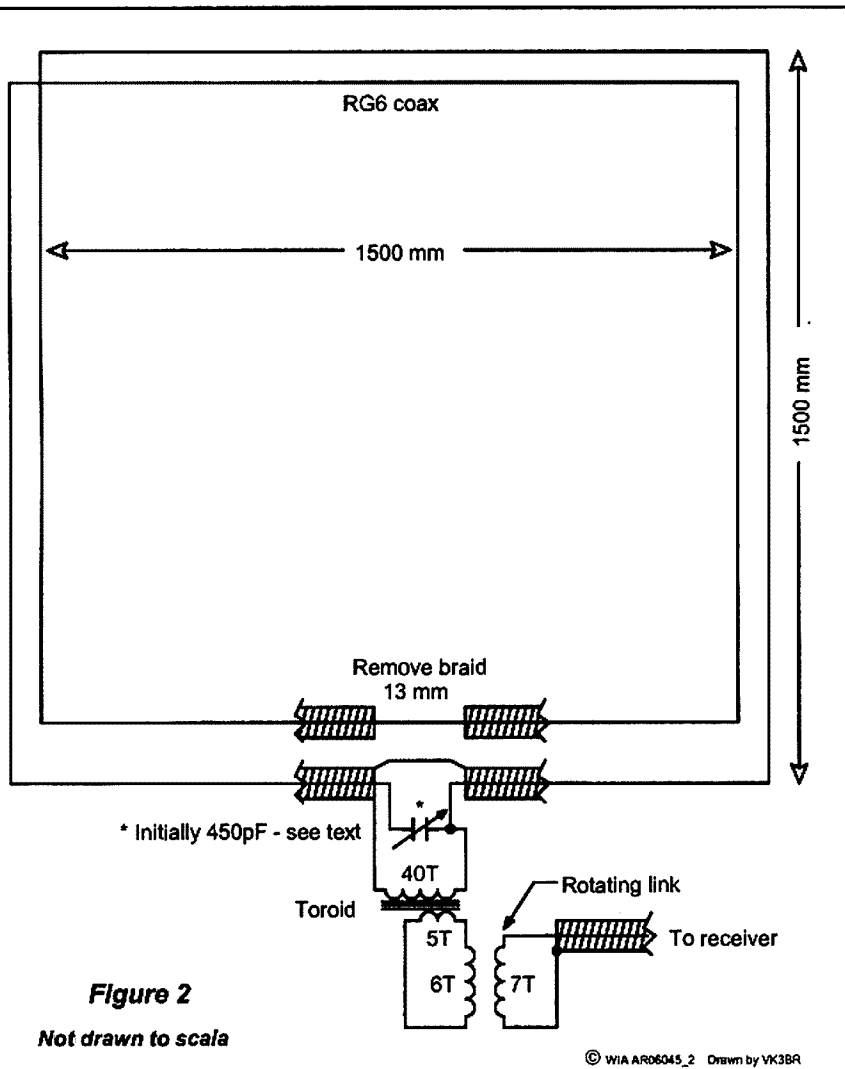


Fig 2 – Schematic of the noise pick-up loop.

resultant selectivity is very sharp.

Next, two stages of FET amplification, with gain control, prepare the noise signal for application to the balancing amplifier. The latter consists of two FETs whose drain loads are two equal windings on a toroid. These windings are connected in anti-phase, so that if the same signal is applied to both FETs no output is produced. The second input to the balancing amplifier is from the main antenna, applied through a potentiometer to control its level.

The toroid transformer in the balancing amplifier circuit has a third winding to couple any unbalanced signal forward to the emitter follower, which provides a low-impedance feed to the main receiver. The noise-cancelling box can be bypassed with the switch shown in Figure 1. Not shown, but also in the box, is the transmit/receive relay. This has good-sized, well-spaced contacts and works up to 300 watts or so with no problems.

Setting up

To set up and test the unit, I used a signal generator to put a low level 1.8 MHz signal into the noise antenna socket and tuned for resonance. One trace of my CRO displayed the input signal and the other trace the emitter follower output (to the receiver), and these two levels were adjusted with the potentiometers to be equal. I then used the input signal as the time base to display the output signal on the CRO. This gave a Lissajous pattern which will vary from a near circle to a 45 degree line as you tune through resonance. The two extra trimming capacitors can now be fine-tuned to give the greatest angle and flattest trace, where the two sides merge into one (zero or 180 degrees phase difference).

Finally, I applied the same test signal to both the noise antenna and the main antenna inputs. By adjusting the two level potentiometers, the output signal to the

amplifier, and the loop antenna can now be rotated without fouling up the coax.

The primary winding of my coupling system consists of 6 turns wound on a former about 60 mm in diameter, which is fitted over the rotating support pole. It is fed by the toroid output (5 turns). The secondary comprises a 7-turn winding with a diameter which gives a little clearance over the primary when they are mounted one over the other. The secondary is connected to the coax feeder going to the noise antenna input on the box back at the shack.

I covered the primary winding with a protective layer of PET bottle plastic and smeared it with Vaseline. The outside coil (secondary) is wound with 2 mm ECW using no former, and is held in shape with hot-melt glue. I mounted it, self-supported by the wires, off the side of a post comprising about 450 mm of 13 mm plastic conduit. This arrangement is flexible enough to accommodate any eccentric movement of the mast.

Operation

In use at my location, I point the end of the loop to the noise source and peak on resonance. I then adjust the noise level from the main antenna (a helical vertical) to about S5 and turn up the noise antenna gain slowly, looking for a dip on the S meter. Depending upon which end of the loop you pointed to the noise source, you may need to flip the reversing switch. Now adjust the phasing capacitor and noise potentiometer for minimum noise by ear or meter. Using fast AGC is best. The noise and main antenna potentiometers give you a mixer type operation so you can use either antenna in several combinations. With a bit of practice, you will find it quite easy and repeatable. If you move frequency, only slight readjustment will be needed.

In operation, it reduces my noise level by up to six S-points. Signals that are in the noise and unreadable become Q5. It is also good for removing birdies. Once

the noise-canceller is working, I find DSP reduces the noise to a comfortable level to listen to, whereas before cancelling it is next to useless.

Results

The need for all this came about because of an S9 noise on 160 metres caused by problems related to local commercial radio transmissions, which are yet to be ascertained, and hopefully, fixed. I could not work amateur stations through this noise unless they had S9+ signals.

However, with my noise cancelling system in use, I am now working ZL and I even worked a VK5 running 7 watts QRP. I was also able, with the aid of the MFJ DSP box, to work a Melbourne station running only 2 watts. The system does not give me access to the really weak stations but it has improved things a great deal.

If you have any queries, please email me.

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A function generator

Dale Hughes VK2DSH

Along with various power supplies, an oscilloscope and a DVM, the next most useful item of test equipment is a signal generator. This design generates sine, triangle and square waves between 0.3 Hz and 50 kHz in five overlapping ranges, which is useful for testing amplifiers, data acquisition systems, transducers, and so on.

The design is quite simple and can be built in a few hours. This circuit is based upon a design that was first published many years ago in the Radio Handbook by Orr (1), and it has been modified to suit my particular needs and the components I had available. The function generator chip can run as fast as 300 kHz if required, and the circuit components can be altered to achieve this higher frequency. The Intersil application note (2) describing the ICL8038 should be consulted in this case.

Circuit description and construction

The circuit is built around a function generator IC, the Intersil ICL8038. This chip provides sine, triangle and square wave outputs. The chip is now quite old, but appears to be still readily available; and there are probably quite a few of them lurking in 'junk boxes' around the place!

Sine and triangle wave outputs are switched, then amplified and buffered by an LM627 operational amplifier and LH0002 buffer. This combination provides a low impedance output of up to 10 V peak-to-peak with a maximum continuous output current rating of 100 mA. A separate 100:1 voltage divider is used to generate an attenuated output signal for testing low level circuits. The square wave output is level shifted by means of Q1, and the output is approximately at TTL levels (0 to 5 volts). Almost any PNP small signal transistor will work in this position.

As I needed the device to be portable, the unit is powered by two 6 volt gel-cells and charging terminals are provided so that the cells can be charged in series from a 13.6 volt charging supply. If portability is not required then a suitable 240 VAC mains supply can be easily constructed.

My unit was constructed on 'Vero' board and housed inside a 222 mm x 146 mm x 55 mm die-cast box (Jaycar HB-5050). The usual 'Vero' board construction technique was modified by using self-adhesive copper tape (the sort

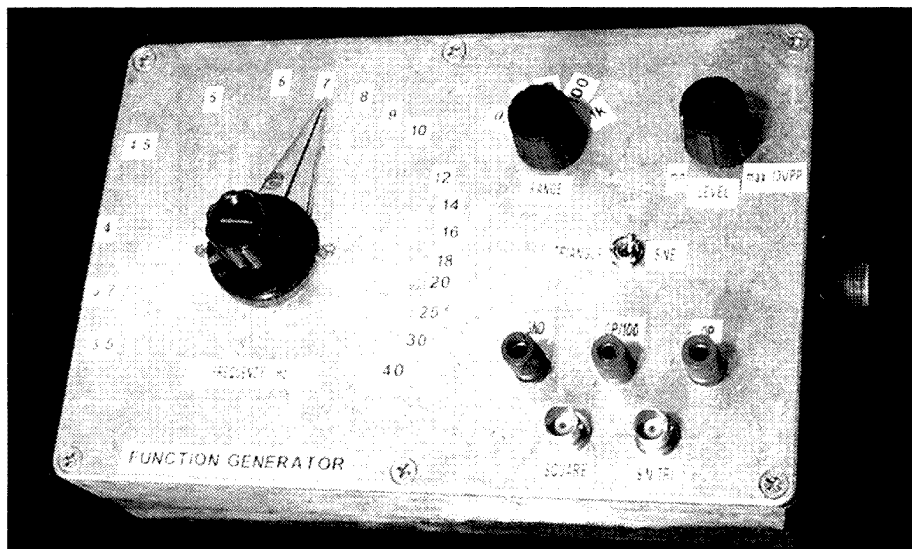


Fig 2 - The completed unit.

used in glass lead-lighting) to make a ground-plane on the component side of the board. All ground connections were made to the tape.

To make setting the output frequency easier, I fitted a 6:1 reduction drive on the potentiometer shaft. For convenience, output signals are made available on both BNC connectors and terminal posts.

Adjustments

A number of adjustments are required before using the function generator:

- Set VR1, VR2 and VR3 to mid scale and the range switch to the x100 position. Observe the triangle wave output on an oscilloscope and adjust VR2 for the most symmetrical waveform.
- Switch to the sine wave output and adjust VR3 for minimum distortion on the sine wave signal.
- Adjust VR4 and VR5 to match the sine and triangle wave amplitudes, so that the amplitudes are the same for both outputs.

Following the above adjustments, the frequency scale should be calibrated using a suitable frequency meter. The output level control can also be calibrated if required.

Parts availability

The integrated circuits used in this design are (at July 2006) available from Futurlec Electronics, see www.futurlec.com for details.

Operational amplifier IC2 could be replaced by different types of devices, for example an OP27 or even a 741 type if all else fails.

If the final buffer (IC3) is unobtainable, it can be replaced by an Intersil HA3-5002-5 (3) (Farnell part number 406-170) which is marketed as an enhanced LH0002 type buffer. Note, however, that the pin-out of this device is different to the LH0002. If a low impedance output capability is not required, the buffer can be deleted and the output taken directly from IC2. In this case, the output current would be much less.

References

- (1) Radio Handbook, 21st ed. W. I. Orr, W6SAI. Editors and Engineers, 1978.
- (2) AN013.1 Everything You Always Wanted to Know About the ICL8038. November 1996. <http://www.intersil.com/data/an/an013.pdf>
- (3) Intersil HA-5002 Data Sheet, document FN2921.11. March 2006. <http://www.intersil.com/data/fn/fn2921.pdf>

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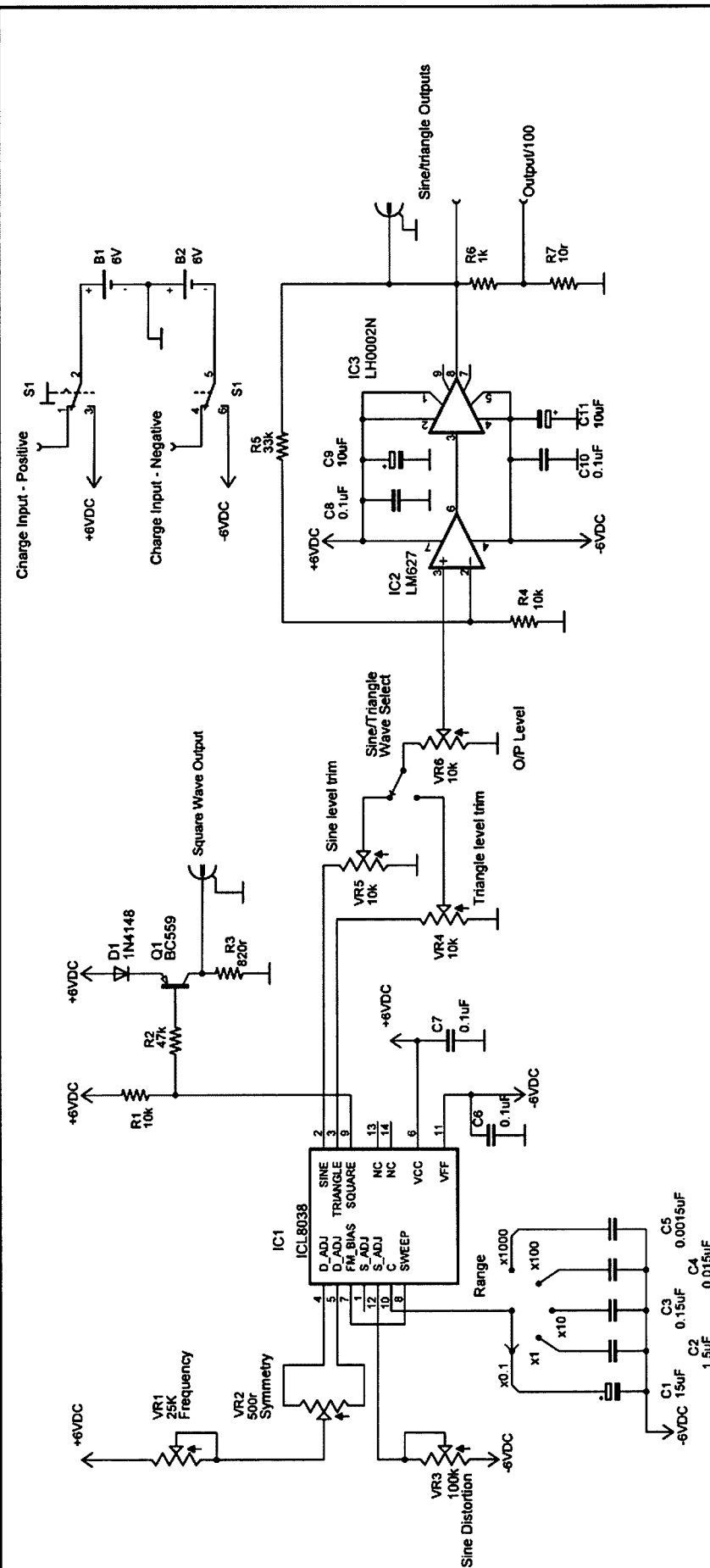
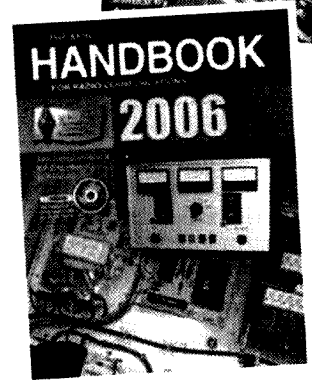
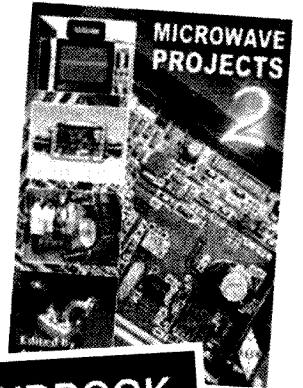


Fig 1 – Schematic of the function generator.

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Sexy Socks – amateur radio retail style

Michael Ampt VK3CH

Retail trading has always involved long hours with often quiet times during the day. I found myself back in the retail game after one of the Sock Stands to which my wife supplied stock became available for sale in a quick way. As my wife is busy with her own work, the task of running the stand fell to yours truly.

The shopping centre is smaller than a city one, being a local plaza strip, and located 23 km north of the city.

After a while, and some planning, it was decided that some 'company' was needed to help pass the long retail hours in between customers. Amateur radio to the rescue!

After a few days, I was ready to do some 'covert' installation of some gear. I settled on 2 and 70 cm FM and 23 cm FM as the easiest to get going.

An IC-2720H (2 m and 70 cm) and TM 541A (23 cm) with power supply were installed into a space inside the stand, and coax run underneath the mat on the floor. For an antenna I tried a ground independent mobile mounted on top of a stock display unit. Soldering connectors to the coax was a risky job – as right smack above me was a smoke detector! Not to mention a security camera! I was soldering the connection while blowing air over it, almost cooling the solder as I joined it all up – all while attending to customers as they peered into the stand wondering what I was up to!

The alarms never sounded and no fire trucks turned up!

Signals received with the mobile antenna were disappointing so it was time to get a bit more adventurous. I changed the mobile whip for a Diamond X-300. Most repeaters came up 3 – 5 "S" points better on the X-300 vertical compared to the mobile whip.

A Diamond U-5000 was used solely for the 23 cm transceiver. That way each radio has its own antenna, so no coaxial switching was required.

Photo 1 shows the X-300 antenna mounted on top of the display stand. No UV, wind damage or water ingress to worry about for that antenna! No pager hassles out here either.

As you can see, each section of the corridor has these "A" frames that help 'hide' the antenna from the whole length

of the corridor, so it's not in view until you are at the stand. Also, with all the stock, it's not really noticeable unless you are looking up at the roof line.

Some school kids saw me on the microphone and said "are you on CB?"

I could have a chat to a 'local' – or have a chat to my Dad at Horsham, via the Ben Nevis repeater at Ararat on IRLP as well – no one seems to notice the antennas – but I hung a few footy scarves on them to hide them a bit more!

Over the first few days, I had QSOs on 2 m to many Western & Northern Suburbs Amateur Radio Club (WANSARC) club members, including Bob VK3EL (S2), Max VK3ZCW (S2), Bob VK3BU (S7), Ralph VK3FRNB (S4), Mark VK3PI (S9), Harry VK3KBA (S5), and Graeme VK3NE (S4) as some of my first local contacts with this setup, but at times the signals will 'flutter' quite a bit.

On 23cm, the Melbourne City repeater will not key up. In fact, nothing was heard anywhere on this band at first, but that was fixed up later.

Photo 2 shows the radio installation. The radio is in the cupboard, together with the 40 A power supply, with the green digital screen and an extension speaker for a smooth sound. All locks up out of sight at night. Just the radio "heads" are mounted to see frequency display with the units deep inside the cabinet. The antenna coax runs underneath the mat inside the stand area, about a five metre



Photo 1 - The X-300 antenna mounted on top of the display stand.

run in all, with the antenna 2 m above the floor level.

So, in between customers, I can QSO simplex to at least 50% of club members from their homes and with other stations via IRLP during "work".

I even heard Grant VK3HFS tell the amateur community via the Vic Link broadcast on Sunday 2nd April about "Sexy Socks on the Air".

One day, as 2 metres was in operation, a person stopped at the stand and asked, "Is that 2 metres? What's your callsign?" After a chat we both realised we had met previously. It was Graeme VK3FTTG, whom I had assessed for the Foundation licence practical at Box Hill many weeks ago and he was now on air. I told him

about our club meeting on Friday. He said he knew and was already going – small world or what! He used to buy his socks from the previous operator of the sock stand!

On Friday, Graeme visited and WANSARC had another new member!

Improving VHF and UHF and adding HF

After dissatisfaction with scratchy signals, it was decided to go the full inside length available, 5 metres. The IC-2720H was kept with the current X-300 and an IC-706 MKIIG brought in as the main rig.

A Diamond X-7000 giving 2 m/70 cm/23 cm at 8.3/11.7/13.7dB gain at 5 metres long was my choice to try out.

That meant the antenna would “sit” above the floor and nearly touched the ceiling inside (only three inches to spare!).

For HF, the AH-4 Automatic Computer Microchip Controlled Tuner was coupled up and feeds a wire under the mat to a chrome tube 4.4 metres high with stock hung off it. The “spinner displays” give a ‘capacitance hat’ effect and increase the available lower bandwidth.

With the ATU, we are supposed to get 1.8 MHz – 54 MHz with a perfect, proper length, antenna – which I certainly did not have, but I did have a good RF ground available in use.

After installation, the results on VHF and UHF were not as good as expected. They were a bit improved but only marginally, with a lot of variation as I walked about near the antenna.

HF was different – just for fun I tried 160 metres and YES it was there.

In fact, any frequency from 1.8 MHz to 54 MHz was received pretty much interference free, except for a bit of AC buzz most likely coming from the centre lighting. 7.07 MHz received well with interstate contacts coming in S4. But 23cm was still no good.

With VHF and UHF not as good as I hoped; there was only one quest left – get the aerials onto the roof!

Mid April - going ‘all the way’

After chatting with centre staff, it was discovered that only three weeks earlier, with new Occupational Health and Safety regulations, they had installed fixed ladders to all sections of the centre roof. A quick walk on the shopping centre roof

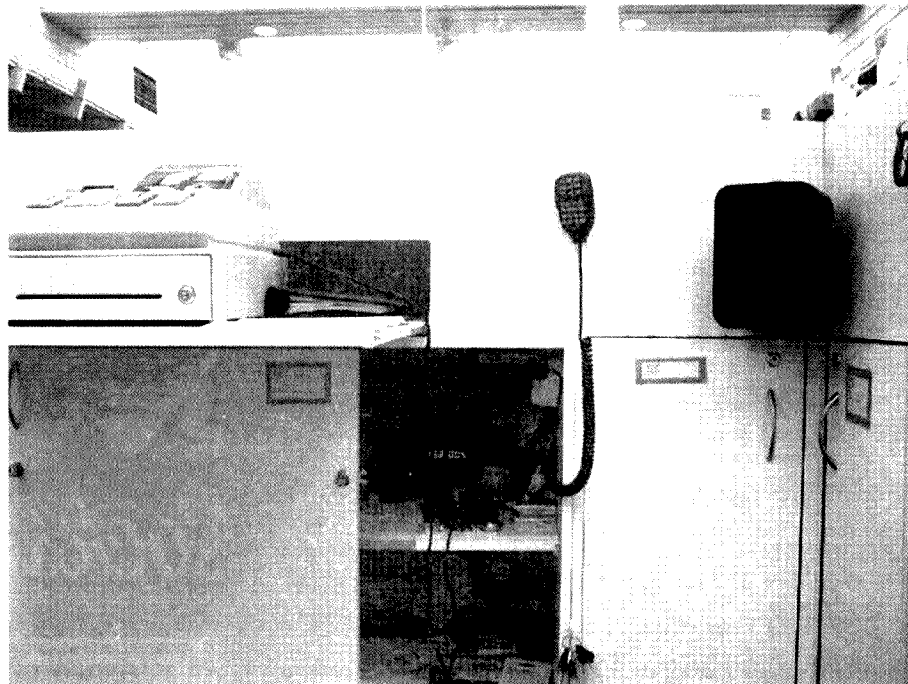


Photo 2 - Semi-concealed radio installation.

found that cables would fit neatly through the air ventilation along the glass roof top where it met the steel roof top. All this with a wall top edge only six metres away, just perfect for mounting antennas, with no obstructions to the city CBD direction.

I was tempted to create another antenna farm, like at home, but I decided I had better not push my luck. I settled on moving the X-7000 to the roof and using a coax switch to go between 23 cm and the IC-706. I also figured I may as well take away the IC-2720H and its indoor antenna. At least this way there would be no EMR concerns and much better signals.

So, arriving early before the shoppers, the X-7000 was mounted on top of the dividing wall securely, with an uninterrupted view of the city in the distance, 23 km away. This task was completed in only 18 minutes! (If you have seen my roof at home, you know I've had a bit of practice!)

The 9913 coax slipped through the gap, with only just enough room for the “N” connector to pass through. It was a 16 metre run, with the antenna about

11 metres high from the ground and four metres above the roof line.

The final results

After running the coax back to the radio, it was time to see the results. Repeater VK3RBY was received at S2; VK3REG at S 7; and Ballarat VK3RBA at S 7, all with NO pager interference heard.

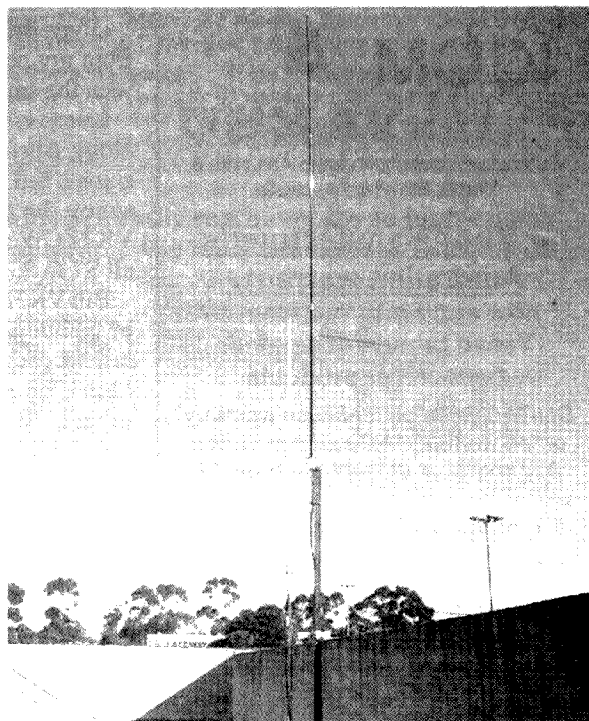


Photo 3 - The antennas on the roof of the plaza.

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Repeaters received at signals of either S9, or many dB over, are: on 2 metres, VK3RML, VK3RLV, VK3RMN, VK3RSR, VK3RGL, VK3RCR, VK3RSG, VK3REC, VK3RWG and VK3RMM.

70 cm saw VK3RMU, VK3RMH, VK3RAD, VK3RSE and VK3RGL, all at S9 or well over.

Putting out a call on 146.450 got me Bob VK3EL returning to say "... aren't you meant to be at work, your audio sounds different, but your signal strength is similar."

Given the fact that Bob lives only 2 km from my normal QTH, you should have seen the smile on my face!

Later, I copied Ralph VK3FRNB mobile along Springvale Road, with varying signals but workable and NO pagers to annoy the QSO. In the afternoon, Max VK3ZCW and his regular group were all S7 to 9.

Bill VK3KBL received me full strength by pointing his beam at the city buildings, instead of due north where we are located. Mark VK3PI thought I was at home saying, "your signals are stronger than your own QTH."

A sad state of affairs when you have to go to 'work' to put out better signals! Wonder if this work QTH qualifies as a "portable" JMFD setup!

23 cm joins the 'party'

After installing the coax switch, Melbourne repeater VK3RCC on 1273.1 MHz boomed in 'over the 9' and VK3RHF on 1273.4 MHz was heard well 'over the 9' as well.

Full 'Dual Watch' setup

In the end, another run of coax to the roof was completed, with the X-300 installed about three meters away from the X-7000. This feeds to the IC-2720H. About 50 meters of wire was strung across the roof about 1 meter height for HF – not really a great antenna, but 'practical' considerations do not allow anything better. HF signals are there, but marginal due to noise. Now it's possible to continuously monitor the IRLP link of VK3RMH, a spot on HF (or another VHF or UHF spot), and the 23 cm VK3RCC repeater, as well as the club frequency of 146.450MHz.

Photo 3 shows the antennas on the roof of the plaza. The X-300 gives about 2-3 S points less than the X-7000, which is expected, but fine for my requirements.

The future

Bob VK3EL paid a visit and seemed very bemused with the setup, especially the antics on the roof, shaking his head, saying "...I don't know how you get away with it!" I had a chat to Chris VK3FY on his way to work with good signals both on 70 cm and the club 2 m frequency with him mobile.

After informing Chris of what I had been up to, he suggested a full mast of stacked Omnis and trying to work some 'trotto' on 6 metres. I don't know about that, but a discone and a scanner might be fun.

I hope I find time to look after the customers between QSOs! But I had better sell some more stock to make some room for the mini bar!

Last month some electricians were on the shopping centre roof on unrelated works when they came across the two antennas. A quick phone call to centre management came back with the reply, "What antennas!" So it was time to play 'follow the coax', with only 6 metres of it going to "guess where", smack right underneath!

After explaining what they were, and what it did, with an emphasis on the ability to summon help in an emergency and the non-commercial aspect, there appeared to be little fuss!

So now, 'Sexy Socks' err, umm, VK3CH can operate safely in the knowledge that all is approved.

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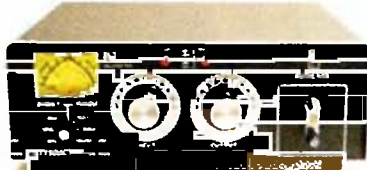
dual-roller balanced L antenna tuner that fills the void for a matching network up to 1500 watts pep for balanced line antennas. For ease of use the BT1500 utilizes only 2 controls to operate for tuning with two direct-coupled precision ceramic roller inductors. As on all Palstar tuners the front panel and top cover are powdercoated.

So why buy a balanced tuner?

Joel Hallas wrote in September 2004 QST "unfortunately, the typical random sized center-fed antenna with random length ladder line feed has an impedance at the feed point that varies dramatically with frequency. The result can be heating and loss (and occasional damage) at the balun, the classic solution has been the use of an inherently balanced tuner." Joel reviewed the Palstar AT1500BAL as a high-power solution for amateur enthusiasts looking for a balanced tuner. The engineers at Palstar took the AT1500BAL and reengineered the entire tuner inside and out reintroducing it as the BT1500A balanced antenna tuner.

PALSTAR AT1500CV 1500 Watt Antenna Tuner

An antenna tuner that can handle up to 1500 watts (1500 watt PEP). Low profile construction and bullet proof operation. Super smooth control of both capacitors and the inductor. The build quality is excellent using heavy gauge aluminium for added stability. The AT1500CV uses large input and output dials, it's easy to record band settings.



The AT1500CV matches dipoles, center fed doublets, G5RV's balanced feeders, Verticals, single wire, delta loops, beams, windoms, Inverted V's and includes a built in 4:1 balun for balanced wire feeders. Also featured is a bypass position for quick straight-through antenna connections with SWR/POWER monitoring. The bypass switch output allows for use with an added optional 4:1 balun to feed an all-band ZEPP antenna tuned from the built-in antenna tuner located in most commercial transceivers (optional balun). The AT1500CV features 6 position antenna selector switching and average power meter reading to 3000 Watts. Standing Wave Ratio measurements are displayed with an illuminated crossneedle meter and comes with our classic Vernier dial plates for more accurate settings. The front panel and top cover are powdercoated.

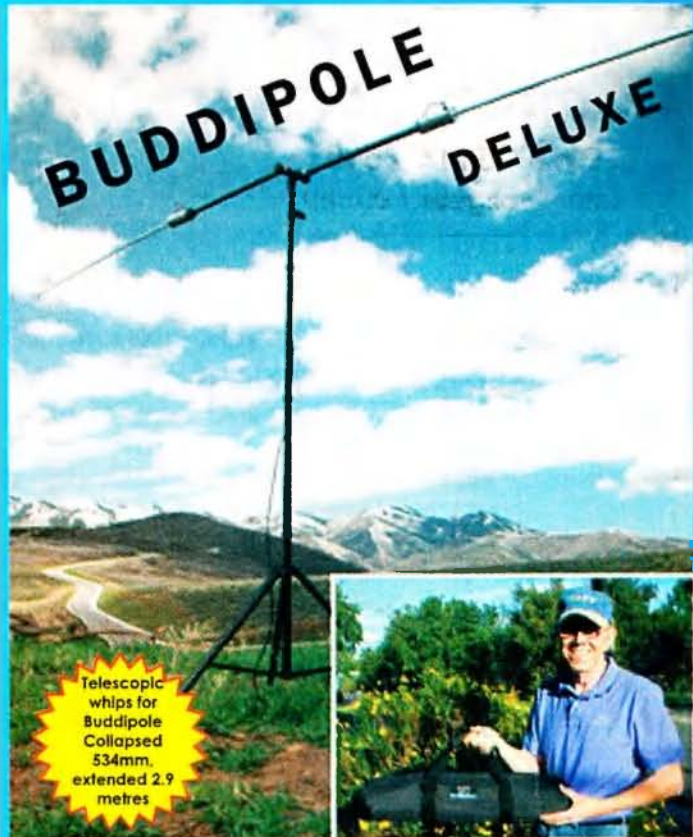
PALSTAR AT1500DT 1500 Watt Differential Antenna Tuner

Building on the success of the very popular AT1KM 1200 Watt differential antenna tuner, the AT1500DT features differential capacitor tuning with 2 stators and 1 rotor. For ease of use the AT1500DT utilizes only 2 controls

to operate for tuning with a precision ceramic body roller inductor and high power balun. NEW! Peak and Peak Hold dual cross-needle metering (\$149.95 value found in our popular PM2000A wattmeter) Powdercoated.

Ready for a quality, high-power tuner? Designed for Hams who desire the ease of tuning with Palstar's innovative differential tuning design and need more power. The AT1500DT is rated up to 1500 watts single tone continuous.

Palstar — Performance — Power — Proper Price
Check the reviews on eham.net



Telescopic whips for Buddipole Collapsed 534mm, extended 2.9 metres

The Buddipole™ Deluxe Package — everything you need for setting up an efficient portable antenna solution anywhere in just a few minutes. The package includes these custom components which all fit into the padded custom-carrying bag:

- The Buddipole Antenna (9 bands, 2 - 40 meters) with 25 foot coax assembly (includes *VersaTeel*)
- Tripod - extendable legs and locking base
- Portable Mast - extends to 8' in height
- Rotating Arm Kit - change configurations
- Antenna System Bag - padded cordura nylon w/shoulder strap
- Stainless Steel Telescopic Whip — Extended Whips available 3 extra Coil Clips Low band (80m) coils available
- Antenna Operating Manual **FREE** - New 10-page modeling report

This complete system is perfect for all situations including field days, DXpeditions, emergency services, etc. Put it in your suitcase when you go on vacation, keep it in your vehicle. Have it ready for anytime you're ready to have a versatile and efficient portable antenna system up and running in minutes. The quality, performance, and versatility of this system is unmatched anywhere at any price.

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Book review

Communications for Survival and Self-Reliance

by Michael Chesbro (KD7KLA)

Paladin Press, Boulder, Colorado

Soft cover. Illustrations, photographs, tables, pp.208, ISBN 1-58160-411-4

Have you ever operated your amateur radio station from a remote location? Or, have you ever considered whether you would be able to operate your station completely under your own control, including an uninterrupted supply of power, when a disaster strikes?

If you are struggling to say "yes" to these questions then Chesbro's latest book -- *Communications for Survival and Self-Reliance* -- will be of interest to you. Although pitched to the newcomer to wireless communications, the author presents a stimulating look at emergency radio communications. It introduces the reader to the notion of what constitutes effective communications -- that is, a sender, receiver and a reliable method. Chesbro uses this simple formula to assess the value of one radio system over another, and under different operating conditions.

He weights the likelihood of successfully making reliable contact in times of need, and although he doesn't advocate a particular system (for example, HF or UHF CB) he leads the reader, through many examples, to the clear conclusion that Amateur Radio is THE method of choice. To this end, Chesbro concludes with a large appendix containing a pool of US Technician licensing questions as a means of encouraging those unlicensed to take up the hobby.

In this regard, the amateur who has operated on field days or as a member of the Wireless Institute Civil Emergency Network (WICEN) may find Chesbro's book somewhat basic. However, it nevertheless raises serious questions about how well the amateur community would cope in the case of a massive infrastructure failure. Recently we had a taste of this in VK4 with Cyclone Larry. In VK5, the thought of a large earthquake comes immediately to mind as Adelaide sits on a fault line. The likelihood of a terrorist attack is also not out of the question for anyone living in a capital city or near critical infrastructure. Floods,

bush fires and numerous man-caused emergencies can be added to the list of potential threats that each one of us faces regardless of where we live.

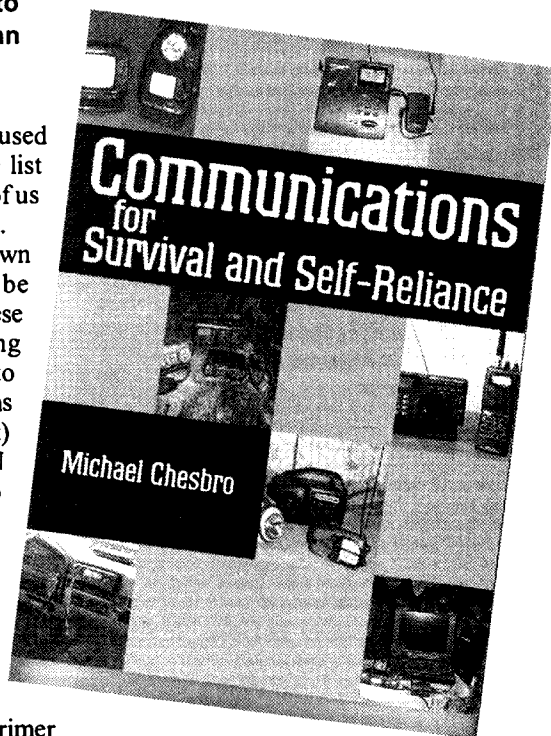
In such cases, experience has shown that mobile telephony cannot be counted on -- the load placed on these networks by subscribers dialling loved-ones has the potential to cause them to fail. Landline systems (including email and the Internet) are also likely to suffer. As WICEN has long recognised, it may fall to amateur radio operators to provide continuity of communications until infrastructure is restored. (Packet radio may be the only alternative to the email, so hang onto that TNC...)

Communications for Survival and Self-Reliance is an excellent primer on the topic of emergency radio and will be enjoyed by new VK foundation licensees. It also serves as a refresher for those that who have operated stations for years.

It is published in the large 8" x 10" (200 mm x 250 mm) format with text running in newspaper-style columns. It is very readable with illustrations, photographs and tables of information interspersed.

The only drawback is that it is a bit US-centric (for example, the Technician licence questions at the back of the book). But in fairness, the book's main audience is North America. Nevertheless, Chesbro does point out the differences between US systems and operating procedures in many different countries. For instance, one of his main premises is that a disaster in one part of the world will affect the entire world. He underscores this point in his discussion about the importance

Dr Hank Prunckun VK5JAZ



of using GMT/UTC as well as other issues when operating during emergencies.

Chesbro says, "In an increasingly uncertain world, the ability to have 100% control over your communications is critical to maintaining personal security." I agree! And, it is critical for maintaining the security for civil society. The book deserves consideration by all radio operators, but particularly those interested in lending a hand when disaster strikes.

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**Centre Victoria
RadioFest
Kyneton
Sunday 22 April
see page 34**

The bhi ANEM (amplified noise eliminating module)

Bill Roper VK3BR

As well as the inclusion of DSP noise reduction in several modern transceivers, there has been a number of outboard DSP noise reduction units available over recent years. Some have been included with speakers and some have been stand-alone units to connect between your receiver or transceiver and your speaker or headphones.

The performance of these DSP noise reduction units has also improved noticeably over the years as new digital chips and software have come along.

The unit under review is of the latest generation of DSP noise reduction modules and appears to perform better than anything that I have come across before.

Outboard DSP units

First of all, let me make something clear to those of you who have not had any experience with DSP noise reduction devices. They will not take the place of a good noise blanker. They will not effectively remove electrical impulse noises.

What DSP noise reduction units will do is distinguish unwanted noise from the wanted speech component of the incoming signal and attenuate the noise, sometimes quite dramatically. In other words, they improve the signal to noise ratio quite significantly and provide greater listening comfort and less fatigue.

They are not for CW use as they do attenuate heterodyne tones.

However, in the process, many of the earlier generation noise reduction units "colour" the signal in that they tend to attenuate the high frequency components of the desired speech, produce a somewhat hollow sound, and also sometimes add digital "waterfall" noises to the audio. In addition, they introduce a delay in the received audio, which is generally irrelevant except that, after switching into circuit, they could take up to a second or so before effectively operating.

Ron Fisher VK3OM, whom readers will know has written many excellent technical reviews of equipment for Amateur Radio, was to provide a technical assessment of this DSP unit for this review, while I was to write about its operation and use.



Photo 1 – The bhi ANEM outboard DSP noise reduction unit.

However, Ron, like Eric Buggee VK3AX in his excellent review of the bhi NES10-2 commencing on page 26 of the October 2005 issue of Amateur Radio, found it virtually impossible to measure with instruments the noise attenuation and distortion products of this ANEM unit. Therefore, this unit is being reviewed solely on experienced judgement in actual use in real life situations.

In my noisy suburban home location I use outboard noise reduction units all the time with both HF transceivers in the shack, and with the HF transceiver in the vehicle. I would not be without them. Even though it is difficult to say that I have ever been able to read an SSB signal with the noise reduction unit in circuit that I could not read otherwise, the improvement in comfortable copy,

particularly over a period of time, has to be experienced to be believed.

The bhi ANEM unit

The bhi ANEM is a small DSP unit which is intended to be connected between your receiver or transceiver and your own speaker or headphones. Unlike many other units, it does not come with its own speaker.

It is supplied with four stick-on rubber feet if you want to sit it on the bench or on top of your speaker case, and also with a strip of Velcro fastener if you want to attach it firmly to your transceiver or receiver speaker.

The ANEM is compact, measuring only 60 mm wide, by 40 mm high, by 100 mm deep. Controls are simple. A power on/off bypass button, a DSP function button, and



Photo 2 – A close-up of the front panel of the ANEM

a DSP tri-colour LED (see photo) are on the front panel. A power connector (12-15 Vdc 300 mA), and audio in and audio out jacks are on the back panel.

Operation

If the power is switched on with a single press of the power button, but the DSP is switched off, the audio passes through the DSP unit audio amplifier with the noise reduction bypassed.

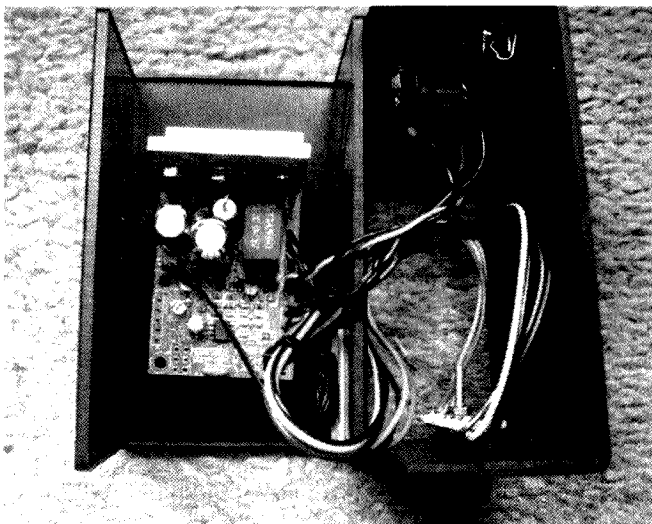


Photo 3 – A look inside the ANEM.

The DSP function button is used to switch the DSP processing on and off and, by holding the button in, the processor steps through each of the eight levels of processing. Each level is indicated audibly by the internal sounder, one beep for level one, four beeps for level four, etc. The LED changes colour from green to orange to red to indicate

the DSP status.

Like most of these multi-level DSP noise reduction units, it will be unlikely that you will be changing levels after your initial "play" with the unit. Most users will probably settle for either level five or level six for their operating situations (the range of noise reduction claimed by the manufacturer is from 9 dB at level one to 35 dB at level 8).

Setting your preferred DSP level sounds complicated, but it is really quite simple. And once you have picked your desired level of noise reduction there is nothing to adjust when using this DSP unit.

In use

I found this unit to be very effective and it seemed, under exhaustive "ear" tests, to produce a better result than my other three, but still marketed, earlier generation, DSP units.

The noise reduction, when set at level six (which seems to give the best compromise between noise reduction and adding artefacts to the audio), was excellent with virtually no noticeable "colouration" of the audio. It appears that this setting probably provides about 20 dB of noise attenuation. No distortion products were noticed, even when driving the unit rather hard, which means that it has a rather effective inbuilt AGC system.

Although the ANEM is not specifically designed to attenuate heterodynes, it does provide about 20 dB or so of attenuation.

Summary

Would I recommend the ANEM? If you want what appears to be the best performing of the outboard DSP noise reduction units, and you want a "set and forget", then definitely yes!

Would I like one? Yes, even though they are a relatively expensive unit.

One of my home station transceivers, a TS-2000, has inbuilt DSP noise reduction facilities. The ANEM out-performs it. The two in use together are quite remarkable.

A similar situation exists with the IC-706MkIIIG I use in my mobile station.

If you want to look at the installation and operating manual for the ANEM, you can download it in PDF format (it is only a 236 kbyte download) from the web at www.bhi-ltd.co.uk

The unit reviewed was supplied by Amateur Radio advertiser Lee Andrews from Andrews Communications.

The price of the ANEM is listed as \$349.00 on Andrews Communications web page at www.andrewscom.com.au

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Centre Victoria RadioFest

Kyneton, Sunday 22 April

Less than an hour from Melbourne, Ballarat and Bendigo

Major traders, second-hand market, club corner, come n' try activities and interesting mini-lectures.

For sales tables & car-boot spaces contact Nick Angelo VK3UCK 0448 653 201 or vk3uck@hotmail.com

It will be a family friendly event with a children's playground and shaded areas for a picnic at the picturesque Kyneton Racecourse.

More details on this new event, organised by Amateur Radio Victoria, Central Goldfields ARC and Midland ARC, can be found at the website: <http://radiofest.amateurradio.com.au/>

See the large advertisement on page 34 of this April edition of Amateur Radio magazine.

Wyong Icom Lucky Draw Winners

\$300 rebate

Mr Nicholas Perrott

\$200 rebate

Mr Phillip Angilley

\$100 rebate

Mr Graeme Dowse VK4CAG

Publicity for ALARA at the Hamfests

As usual, Dot VK2DB and OM John VK2ZOI have been busy going to hamfests on the east Coast. Also as usual Dot sends us very interesting reports.

For Coffs Harbour:

Sunday 21st January 2007, I attended the Coffs Harbour Field Day with the ALARA table. My table was just inside the front door next to the WICEN table with John Alcorn VK2JWA at the helm. His name crops up on the WIA broadcasts regularly, so I was keen to meet the man who does so much for WICEN. We had a stream of visitors passing and stopping at the table all day.

From Wyong:

On February 18th, we were up early and off to the Central Coast Field Day at Wyong. Very soon after the table was set up the visitors arrived. There is a visitor's book for people to sign and 43 people signed it and had a chat. There were 12 ladies visit the table and 6 of them were ALARA members: Rose VK2ANG who also belongs to HADARC; Karen VK2AKB who belongs to the CCARC and could only chat a moment as she had to go back and work; Leonie VK2FLRK who I was pleased to meet in person for the first time; Lia VK3FLIA who joined on the spot and is hoping to see an ALARA table at the Field Day in Bendigo; Nancy Karas who is hoping that Foundation Licence exams can be held there next year; and Beryl VK2BBM who is always fun to chat to. Five ladies took application forms to read at home, they being Karen VK2NYL, Ros VK2FROS, Sharni VK2FGKC, Janette, who hopes to sit for her licence soon, and Deanna, whose OM Gary VK2NOV was keen for her to join now, but she is waiting until her licence comes through.

I printed off a pile of pages about Tasmania ALARAMEET and naturally when I got home they were still sitting on the printer so I emailed them a copy. All the ladies are interested in going to ALARAMEET and my OM John VK2ZOI impressed on the men that they should go too.

I gave out leaflets of the rules of last year's ALARA contest (explaining it's the last full weekend in August) and although

the ladies were a bit hesitant about a contest, their OMs were keen for them to have a go.

Also from Dot:

Nancy and OM John VK2EEH moved to Bowral and even before the boxes were unpacked she had won a trip to Italy. How exciting. They didn't bother to finish unpacking boxes but planned and took the trip.

Nancy and John also went to the 10 Tenors concert at Bowral. Everyone parked in the fields of the Centennial Vineyard. No recent rain so the cars had dust clouds following them! Luckily this dry state of affairs was soon to be corrected. Unluckily this was to take the form of a veritable downpour, which began while the big crowd was waiting under the open skies for the main event to begin. At 6.30 pm it began to rain steadily and continued until the concert ended at 9.15 pm. Everyone under their ponchos or raincoats as umbrellas had been banned by the organisers.

This rain was certainly a mixed blessing for the concert-goers!

Jenny VK5ANW is representing ALARA at Kyneton (Centre Victoria Radiofest) this year, so keep an eye out for her. Jenny is one of the earliest members of ALARA, joining before she had a licence in about 1980. She has held a number of different committee positions including President but she has been unable to participate in most ALARA activities in more recent years. We are glad to welcome her back. Look for her at Kyneton.

The ALARAMEET in Tasmania in 2007

Plans are going ahead for our entertainment in Ulverstone in Northern Tasmania, next year in September (13th and 14th). At this stage we are just looking for expressions of interest so we have an idea of numbers. If you send a form to say you are interested but eventually cannot come it is no problem. If you don't send a message now but later discover that you can come, that is also not a problem.

We would just like you to come along and enjoy yourself meeting some of the faces you may have heard on air. OMs and families have fun, too, so bring

them along. In case you do not know, Susan, the co-ordinator of the Ulverstone ALARAMEET, has three children who are sure to be part of the action!

Susan will help you make bookings for caravans or cabins, and recommend motel or hotel accommodation near to the venue. Please think about joining us.

An International YL Meet In 2008

Following is an invitation from the South African YLs for YLs (and their OMs if they wish) to attend the next International YL Meet in 2008. Dates are not definite yet but the Meet should take place towards the end of September, beginning of October, starting off in Johannesburg.

Optional tours will be included in the 2-week programme. A special Yahoo Group has been set up so you can obtain further details as they become available and so you can make suggestions and discuss plans with other intending participants.

To join this group, e-mail Janet, ZS5JAN, accsol@thenet.co.za with your name and e-mail address, and Janet will contact you with details as to how to join the Group.

Gwen VL3DYL had passed on this official invitation to everyone.

International YL Meet South Africa 2008

Sawubona,
A big warm South African welcome to you!*

The 2008 International YL Meet will be taking place in South Africa and will be organised by Vee ZS6ZEN and Janet ZS5JAN. We invite you to join us on our special SA Yahoo Group so that you can be part of the developments as and when they happen.

The YL Meet and Convention will take place over a few days and will be an exciting and unforgettable experience of the diverse and vibrant cultures of our Rainbow Nation. Thereafter you are invited to join us on various tours through our beautiful country.

And some of the things you will experience

You will go on a bush safari to view our wild animals in their natural environment and will discover why the African

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Pager Notch Filter:

A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of being by the use of coaxial relays linked to the PTT switch.

Contact us if you need a special filter, we manufacture here in  Australia rather than overseas.

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ALARA continued

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You will be awed by our endless green rolling hills where there are sudden sheer drops into deep valleys which often rise into majestic mountains.

You will visit famous places that make up the rich, exciting and often sad history of our country which will touch your heart and maybe move you to tears.

And you will have the opportunity of enjoying different cuisines at our many

continued on page 30



Dot VK2DB, Dawn VK4HER and Val VK4VR



John Alcorn VK2JWA



Carolyn VK2FCSR

FEATURE TECH



AT3000

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**Raise and lower your array safely and easily for adjustment
WITH BOTH FEET ON THE GROUND!**



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Maxi towers are also available in Deluxe version with DC motorised winch.

All towers fully hot dip galvanised after manufacture to ensure long lasting protection from the elements.

(Trailer mounted models available on special order.)

AEI also carries the fantastic “OzSpid” rotators.

RAK – medium/heavy duty Azimuth and RAEL – medium/heavy duty Elevation.

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In addition. We also offer a very competitively priced Australian made 5:1 braking winch.
(it is not only stupid to lift with an ordinary boat winch – it is illegal)

And. We now manufacture a range of Delta Loop, Quad and Yagi antennae.

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Over to you

The best of both worlds for 'F' licence holders

With all the new "F" Calls, both old and young, coming up on VHF, namely 2 m FM, I discovered that many of these F calls did not realize or even know that 2 m SSB existed! Many had passed the practical of their AOCIP with a couple of contacts on 2 m FM.

In their enthusiasm, they had gone out and bought FM only Transceivers. Some had bought all band multi-mode transceivers. I managed to explain to some of the keener F calls that they could use 2 m SSB and to give it a try.

The first obstacle was that they only had vertically polarised antennas, usually a "J", a "Slim Jim" or just a mobile whip mounted on the shack roof. First problem fixed, we would use vertical polarization.

The 2 m SSB F calls were amazed by the signals. The next problem was frequency accuracy, "I can hear you but can not understand you"! OK, treat it like HF SSB, switch on the RIT and resolve each station with the RIT control. Problem solved. Most F calls were impressed by the readability of the signals for their

strength. "You are only 1 to 3 on the "S" meter but perfectly readable".

We now have a Friday Night Net on 144.150 MHz SSB USB at 8:00 local, we go for about an hour. The best is 10 stations.

I am now trying to convince the keener ones to try a 2 m Yagi. Make or buy something like a 4 to 8 element antenna and see the difference.

Some of them who only bought 2 m FM transceivers have gone out and bought second hand 2 m multimode Transceivers in mint condition, even with the original packing, with comments from the sellers like, "I bought it years ago and have only had a couple of QSO's with it!"

With some of the F calls that bought multi band all mode units, I have convinced them to also try 70 cm SSB on 432.150 MHz.

So far we have had about 4 to 5 stations on this new 70 cm group usually after the 2 m Net. Again antennas are vertically polarised as that's what they have for 70 cm FM Repeaters. Many of them have never had a "Simplex" QSO, on either band, only on repeaters.

If we get enough to have Yagis for both 2 and 70, the next idea is to suggest that we switch to the conventional horizontal polarization for better SSB DX! This raises another problem! Do we all have two sets of antennas, one vertical and one horizontal? I believe a pair of Yagis that can be rotated from vertical to horizontal could be easier. It would not be difficult if you had a pivoting cross arm with a 2 m beam on one side and a 70 cm Yagi on the other. It's been done before. If the cross arm was biased/weighted so that it moved to one polarization of its own, only a light rope would be necessary to pull the cross arm to the other polarization. You may have trouble with a rotatable system but that could be solved with a little bit of ingenuity.

So there you are, the best of both worlds, SSB or FM, horizontal or vertical polarization.

Think about it, new "F" Calls, and give it a try! Hear you on 2/70 SSB in VK5!!

Steve VK5AIM

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ALARA continued

restaurants; and shop till you drop at our many varied shopping emporiums

It will be a memorable experience of people, places and landscapes. Yes, we would certainly love you to share in this African adventure while you catch up with old friends, make new friends and enjoy our hobby of Amateur Radio.

Because, of course a radio station with a special call sign will be set up for the duration of the convention and the possibility of radio stations being available on the tours is being investigated.

So a warm welcome from South Africa. If you and your OM are interested in attending the 2008 International YL Meet and Tour, please acknowledge this mail so that you can join the SA Yahoo Group.

73

Janet Musto ZS5JAN

Moderator of the Yahoo Group

PS.

*"Sawubona", means "Hullo" in Zulu (used here to address one person)

"Sanbonani" means "Hullo" in Zulu to a group of people.

For more information on South Africa and in particular, travelling in SA, you can check out these two wonderful websites: www.southafrica.net and www.southafrica-travel.net

This all sounds most exciting. Thanks Gwen for passing it on to us.

ALARA luncheons in VK5 going from strength to strength

We are fortunate in VK5 to live in a relatively small city so that it is not difficult for us to get together once a month.

We meet in the restaurant attached to the Museum in the heart of Adelaide.

As all the trains terminate in the city and most of the buses pass through the city Adelaide is an easy city to reach without the worry of car parking.

If you are visiting Adelaide or have recently passed your foundation licence and have not yet been approached by a keen ALARA member to join us for lunch, come along anyway, on the second Friday of the month at 12 noon. Ask at the counter if you can't find us.

At the luncheon in February, Jenny VK5ANW joined us for the first time for a number of years and Mary VK5AMD and her OM Murray, up for the day from Bordertown, were welcome additions to the group. Several of the regulars were missing but there were still 8 or 9 at the table (Meg was held up but came late, anyway which is why the number varied).

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VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

A hectic month

The results of six months planning will be seen when the new event on the amateur radio calendar, the Centre Victoria RadioFest, occurs at the Kyneton racecourse on Sunday 22 April.

The event that lots of people are talking about is a joint venture of Amateur Radio Victoria, Central Goldfields ARC and Midland ARC.

An advertisement in this edition of Amateur Radio magazine announces the latest information or check out the website radiofest.amateurradio.com.au

Please make an effort to attend the RadioFest and give it your support. It promises to be a great social occasion for radio amateurs.

While preparation for the RadioFest has occupied many volunteer hours over the past six months, its finalisation comes at a time when some of those volunteers are also busy with financial, corporate and reporting matters for the annual general meeting.

The Secretary, Peter Mill VK3APO, announced in January that the AGM will be held on Wednesday 23 May, at St Michael's Hall, corner Victory Boulevard and High Street, Ashburton, commencing at 8 pm.

As previously the practice, the annual reports will be available to members electronically for those who have recorded their email addresses and mailed out to others. A printed copy will be provided on request to any member.

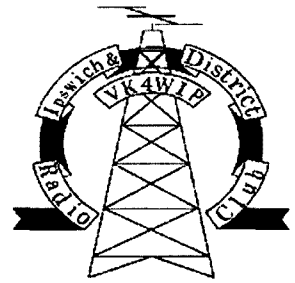
New logo and website

A new logo for Amateur Radio Victoria has been well accepted by those who have seen it.

As foreshadowed in this column last month, a graphic designer was asked to create a logo that incorporates our traditional wings and lightning bolt, and a map of Victoria.

The new logo does just that in a clean, simple, modern and readily recognisable new brand mark. It will progressively be used on stationery and other items bearing the logo.

VK4



Ipswich & District Radio Club

Michael J. Charteris VK4QS
President

Ipswich and District Radio Club celebrates its 45th birthday

1962 ~ 2007

On Sunday, March 11th 2007, members of the Ipswich & District Radio Club celebrated what could only be described as a momentous event. This being the Dual Birthdays of 45 years since the Radio Club was established in the year 1962, as well as 40 years since the "Old Boy" Members of the Club built our Clubhouse. Prior to the opening of the Clubhouse, the first meeting was held at the Scout Hall on Milford Street in Ipswich on August 28th 1962.

I would also like to make reference to the excellent book by Mr. Alan Shawsmith "Halcyon Days", that states, "1924: Ipswich Radio Club affiliates with the RSQ (Radio Society of Queensland), and installs its station at the BOYS' GRAMMAR SCHOOL."

So we have indeed had a very long association with Radio in this city of ours, stretching back more than 83 years. Might I also note that the RSQ was also only formed in 1924, with its general Meeting being held in the Trades Hall Brisbane with a membership of just 24.

To mark these celebrations, a BBQ was organised for past and present members at the Clubhouse, located at 10 Deebing Street, Denmark Hill, Ipswich. It was a fine sunny day, which reached a top temperature of 38.5 degrees Celsius by late morning. The cooking of the BBQ for the day was kindly undertaken by Mrs Lorie Charteris, wife of Mike Charteris

At the same time a new-look website design was launched at the beginning of this month, which also uses the new logo. While retaining the content of the old website, the new one is quite smart looking, functional and includes a few additions.

Volunteers wanted

We are in immediate need of at least three volunteers to be rostered at the office, 40g Victory Boulevard, Ashburton on Tuesdays.

This is an ideal role for those retired or semi-retired who have some basic computer skills. Training in office procedures will be provided.

A specific task of 'Membership Secretary' appears essential now that the organisation is responsible for its own membership records, new memberships and renewals.

If you are able to be involved, please visit the office on a Tuesday between 10 am to 2.30 pm and indicate your interest in becoming a volunteer, or send an expression of interest via email to arv@amateurradio.com.au

Licence classes

The next Foundation Licence training and assessment weekends at Box Hill will be on 14 & 15 April, and May 19 & 20.

If you know someone who could be interested, please let them know these dates and to contact our Education Team Leader, Barry Robinson VK3JBR on 0428 516 001 or arv@amateurradio.com.au

Waffle Award Errata

Congratulations to Paul Brown VK3HJV on qualifying for the Welcome Aussie Foundation Licensees award. Sorry we mistyped Paul's callsign when listing award winners last month.

A list of those who submitted entries appears on the Amateur Radio Victoria website.

Thanks also to Terry Murphy VK3UP, who has taken on the task of completing the award design so they may be issued.

Ipswich & District *continued*

VK4QS, Club President. This was greatly appreciated by all those present and a hearty lunch was enjoyed by one and all, with the club putting on free soft drinks for the day. To cap off the celebrations, a Black Forest Torte Cake was produced for desert, with coffee and tea served accordingly.

Those who attended the Clubhouse on the day were: Warren Heaton VK4GT, Bob Linsket VK4ALI, John Edwards VK4IE (Treasurer), Gary Neilsen VK4KNE, Trevor Burow, Brent Scriven, Bob Cole, David & Hilary Ambler VK4KPM, Sandro Bertoloni VK4II, Glen Woodrow VK4FARR, Mr & Mrs Wayne Bryce VK4AB, Rob Bryce VK4HW, Lorie & Mike Charteris VK4QS (President) and his sons Zack & Xzavier. To highlight public awareness, we contacted the Queensland Times who were kind enough to come and take our group photo and conduct an interview as to our club history and activities these past 45 years. We now look to the future, when in five years time our club will turn a Half Century... in 2012, if in fact we are all still here.

As President of the Ipswich & District Radio Club, I, Mike Charteris VK4QS, would like to take this opportunity to extend an invitation and the hand of friendship to all Amateurs in the Ipswich area to visit our Clubhouse on either the 2nd Monday and/or 4th Monday of every month at 7:30 pm. For there is a wind of change in the air and we are moving forward with a wonderfully motivated and dedicated team of Amateur Radio Operators. We have been very fortunate to have some great guest speakers and look forward to such highlights throughout the year to come and beyond. A light Supper with Tea and Coffee is also provided for all those attending, and often bringing a little plate adds to the joy of such occasions. This combined with regular Club BBQ's has seen a renewal of the Radio spirit at our Radio Club. We would look forward to seeing you, no matter what aspect of Radio you enjoy, be it Short-wave Listening, Satellites, DXing, or gaining an "F" Call Ticket. Should you wish to contact me personally, my phone number is (07) 3282 9539.

Best wishes, Mike Charteris VK4QS (President)

VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

Congratulations to Rex Moncur VK7MO who convincingly won Section C of the 2006/07 Ross Hull Memorial VHF-UHF Contest. Rex used mainly 23 cm and some 2 m contacts to compile a massive 23,774 points.

A recent look at the ACMA Radiocommunications database of amateur licence holders reveals there are currently 71 Foundation licence holders in VK7. Considering there are 579 licensed amateurs currently in VK7, once you remove the 22 beacons and repeaters, our Foundation licensees account for a little over 12% of our VK7 amateur population. This is a real credit to all trainers, assessors, invigilators and the many people who volunteer their time around the state.

VK7 BPL Noise Floor Report released

A lightning strike in February resulted in a loss of power in the Mt Nelson BPL area. With power and BPL systems non-operational, background noise level measurements were taken around the QTH of VK7HCK and VK7HK. The measurements were taken using Owen Duffy VK1OD's Field Strength Measurement (FSM) software. Comparisons between the previous noise floor measurements taken in January, March and July 2006 and measurements taken with no power and no BPL, show a noise floor that is between 10.9 dB (12 times lower) and 12.6 dB (18 times) lower than the previous noise floor measurements taken outside the BPL trial area. The key conclusion from this report is that the initial impacts of BPL emission levels are understated. The report can be found at: <http://reast.asn.au/vk7bplwatch.php>

Rescue Radio

Charles VK7PP and Stu VK7NXX demonstrated how amateur radio assisted a stranded yacht off Tasmania during late February. Charles assists Roy VK6BO, with the Traveller's Net (14.116 MHz)

between 1.00 and 2.15 pm (EDST) each day. Jure S52YS, a non-stop lone round the world yachtsman, was several hundred kilometres off the Tasmanian coast and was only making 2-3 knots with a broken forestay. Location information was relayed when possible with the assistance of Roy and Ross VK5KMH in Adelaide. Stu was involved both as an amateur and as a Coast Radio Hobart operator and notified Customs and the Rescue Co-ordination Centre in Canberra about Jure's progress. Marine VHF was utilised when Jure was closer to the coast. Eventually, Jure's yacht was towed into Hobart on Sunday (25/2/2007). The boat's name was "LUNA" and a big tick, HIHI.

North West Tasmanian Amateur Radio Interest Group

Congratulations to Wayne VK7WAY, Daniel VK7FDWB and Bob VK7FROG for successfully passing their practical and theory assessments. We look forward to hearing them on air soon and welcome them to Amateur Radio. A reminder that VK7 has two main BBS and Packet gateway systems operational. Both stations provide a broad range of packet radio services – in the NW, VK7AX-8 Gateway and VK7NW BBS are on 147.6 MHz and in the South, VK7HDM-6 Gateway and VK7HDM-9 BBS on 147.575 in the South. Both use 1200 baud.

Northern Tasmania Amateur Radio Club

The NTARC AGM was held on 14 February with the following office holders being elected: President: Allen Burke VK7AN, Vice President: Jason Reilly VK7ZJA, Secretary: David Potter VK7YUM and Treasurer: Robert Richards VK7KRR.

IRLP Node 7400 has been relocated and is now back up and running thanks to Tony VK7YBG and Tony VK7AX. The

VK5

Christine Taylor VK5CTY

Adelaide Hills Amateur Radio Society

It was the AGM for AHARS in February. There was only one change to the committee. David VK5AMK who had been acting-Secretary for part of the previous year was nominated into that position. All the other committee members accepted re-nomination and there were no other nominations so there was no need for an election.

At the conclusion of the AGM Graham VK5ZFZ was named the Denis Grieg Member of the year in recognition of the very good construction nights he sets up for AHARS each year. Congratulations Graham.

President Jim VK5NB thanked the committee members, and the AGM closed for a general meeting. This was addressed by Barry VK5ZBQ who gave everyone a run down of the new repeater he has installed at Crafers. He had one of the units opened up so members could understand how it operates.

Barry and Brian VK5VI from NERC have worked very hard to upgrade the repeater system for VK5RAD since it was passed into the care of AHARS on the disbanding of the WIA(SANT Div).

It is a credit to them and should continue to be an asset to VK5 and to the WIA under their care. They have also been fortunate enough to obtain matching units and some spares for use in some of the other repeaters in VK5 so the future looks good.

After Barry's presentation a short talk was given by Christine VK5CTY outlining the history of AHARS and of the Blackwood Radio Club that preceded them, in the 1920s.

This material was all gathered by Lloyd VK5BR during his time as Historian and can be read through a link from the VK5BAR website.

We have a proud heritage and we even have one member, Gordon Raglass who was a member of the Blackwood radio club as a young man, is a member of AHARS and was made an Honorary Life member of AHARS some years ago.

**"Hey, Old
Timer..."**



**if you
have been
licensed for more
than 25 years you
are invited to join
the
Radio Amateurs
Old Timers Club
Australia**

or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a \$5.00 joining fee plus \$8.00 for one year or \$15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to
RAOTC,
PO Box 107
Mentone VIC 3194
or call Arthur VK3VQ on 03 9598 4262
or Bill VK3BR on 03 9584 9512,
or email to raotc@raotc.org.au
for an application form.

6 m repeater on VK7RAA is also back in operation thanks to Joe VK7JG.

Anyone wishing to upgrade their licence or wishing to sit the Foundation licence in the North/North East please contact Al on 0417 354 410.

Radio and Electronics Association of Southern Tasmania

The REAST AGM & BBQ was held on Sunday 11 February. 40 people attended and the following office holders were elected: President: Justin Giles-Clark VK7TW, Vice President: Clayton Reading VK7ZCR, Secretary/Public Officer: Danny Moss VK7HDM, Treasurer: Scott Thomson VK7FREK, and committee members: Gavin O'Shea VK7HGO and Ken Sulman VK7DY. We then headed into a BBQ and most people stayed and enjoyed a snag and the social aspect of the hobby.

A quick reminder of the new Echolink node, which is number 331193, and is available for use on Southern repeaters VK7RAD and VK7RHT via the EchoIRLP service.

We congratulate Fernando VK7FJOK and Mark VK7FMDF who successfully passed their Foundation assessments. We also congratulate Andrew VK7CAV, John VK7VQR and Ben VK7HAH, who all passed their Advanced assessments. John and Ben are awaiting their Advanced callsigns. If you are interested in a Foundation training and/or assessment session then please contact Reg VK7KK on 0417 391 607.

RAAF SIGNALS & RADAR ASSOCIATION OF SA

The annual luncheon will be held on

Thursday 19 April 2007

(12 noon for 12.30 lunch)

(Please bring your Seniors Card)

**Venue: Marion Hotel, Marion Road, Mitchell Park
Public Transport Bus 243, Stop 24**

RSVP to one of following committee members before 15/4/07

Secretary: Ray Deane (VK5RK) Ph 82715401

Assistant Secretary: Ron Coat (VK5RV) Phone 8296 6681

**Ray Deane
Honorary Secretary**

Centre Victoria RadioFest

Amateur Radio Victoria / Central Goldfields ARC / Midland ARC

The exciting family friendly radio event that everyone's talking about!

Less than an hour from Melbourne, Ballarat and Bendigo.

Find a bargain, socialise, learn something new or even take home one of the door prizes.

**Sunday, 22
April 2007
Kyneton
Racecourse**

Top door prize

**Yaesu FT-857D
from
Vertex
Standard**

- The most commercial traders of radio gear
- Second-hand radios, equipment, bits & pieces
- WICEN emergency communications display
- Interesting mini-lectures - ask the experts
- Historical display of radio equipment
- Club Corner - APRS, ATV, GippsTech, WIA & more
- Come n' try sniffer foxhunts - Jack Braham VK3WWW
- Hear the latest on the BPL threat to HF radio
- IOTA DXpedition video and photographic display
- Terry Murphy VK3UP's antenna factory - DIY dipoles
- F-Troop Net live with new licensee photo call
- Advice on how to get a Foundation Licence

Entry: Admission price is \$10. Children aged 12 and under are free. Tickets go on sale from 9am and so does a hot breakfast. Gates open 10am.

Venue: Kyneton Racecourse, Campaspe Place Kyneton, off Beauchamp Street.

Refreshments: A nice spot for a picnic. Hot food goes on sale before the gates open and through the day. Sandwiches and other food also for sale. Free tea and coffee.

Second-hand market: Trestles and carboot spaces available. Contact Nick Angelo VK3UCK 0448 653 201 or email vk3uck@hotmail.com

Plus: A children's playground and free face painting. Mini-bus visit to local tourist attractions.

An information service - Mt Macedon 2m repeater Saturday afternoon & Sunday morning.

For more details including a car-pooling online noticeboard visit the website:
radiofest.amateurradio.com.au

Organising Committee:

radiofest@amateurradio.com.au

Box 2354, Bendigo Mail Centre 3554

Fax: (03) 5442 8025 Ph: (03) 5442 8022

VK5

Fleurieu Peninsular Luncheon

Another successful luncheon at the Goolwa Hotel was held in early March. The number attending seems to increase each time, a satisfactory situation for those who started the group.

Many of those who attend speak to each other regularly. Someone usually has a new 'toy' to show off, this time it was John VK5BJE, with an antenna tuner suitable for mobile operation.

As usual most people went around to the QTH of Garry VK5ZK and his XYL Cecily to enjoy coffee and a spectacular view while they talked together.

Some of the old and some of the new faces can be seen in the photos.

Of some interest is the continuing health of the fern given to Garry and Cecily last year. It seems to like the new enclosed area. May it continue to give them pleasure and to remind them that their guests appreciate their hospitality.



John VK5BJE showing off his new toy



The fern



John VK5EMI and Robin VK5KEY take in the view

**SOUTH EAST RADIO GROUP
Radio Convention**
June 9th and 10th
 Margaret Street Scout Hall
 Mount Gambier
 Doors open 12 noon Saturday.
 Information — Wayne Kilpatrick
 0407718908 or email
 serg@internode.on.net

NEW!!

VERTICAL ANTENNA

MODEL NUMBER: VA-71

Primarily designed for those with limited space this light but sturdy antenna is another fantastic alternative for users with small backyards.

SPECIFICATIONS

- FREQUENCY RANGE :** 1.8 to 30MHz* (160 to 10m)
- HEIGHT / ANTENNA LENGTH:** 7.1m
- RADIATING ELEMENT:** Aluminium
- MOUNTING:** off a building OR a few metres off the ground

\$145.20
inc. GST

OPTIONAL EXTRAS

- 4:1 Balun
- 300 Ohm Ribbon
- Z-100 LDG Autotuner

see website for details on the optional extras!!

* depends on tuner & connection



\$275.00
inc. GST

"MAKE IT YOURSELF KIT"

MODEL NUMBER: SWCS-KIT

Perfect for those who like to get their hands dirty as it allows you to be involved in the construction of your antenna with very easy step-by-step instructions.

SPECIFICATIONS

- FREQUENCY RANGE:** 3.5 - 30MHz
- ANTENNA LENGTH:** 34m
- POWER INPUT:** 100 Watt AM (250 Watts PEP)
- INPUT IMPEDANCE:** 50 OHM
- NO TUNER REQUIRED!!**

PH: (08) 9296 0496
Info@bushcomm.com
www.bushcomm.com

Bushcomm HF ANTENNA MANUFACTURER

VK2

Tim Mills VK2ZTM.

Via vk2wi@ozemail.com.au

APOLOGY : *Last month it was incorrectly reported that Lawrence Kennedy was a SK. He is alive and well. Apologies for any discomfort caused.*

Clubs

The annual Central Coast Wyong Field Day was another great day. The weather was kind, but the air conditioned grandstand was nicer. The growing trend to arrive early, leave early, was noted during the day.

While visitors were kept out of the Trader area until 8.30 am, the early arrivals descended upon the flea market area or the bistro for breakfast. Some thought the attendance was down on previous years, didn't seem so for those who had to walk in from the far side of the car park. This event is a major undertaking for the Central Coast ARC and their members and helpers have to be thanked for their time and effort for the enjoyment of the attendees. The change of venue from the jockey's room for the lectures enhanced their presentation and the enjoyment of the audience. They will do it all again next February.

The Waverley ARS, who meet in the Scout Hall at Rose Bay in Sydney's eastern suburbs, will conduct their annual auction on Saturday 23rd June. The club was founded in 1919 and the callsign VK2BV, issued in 1920, is still assigned to them.

Amateurs in the southern suburbs of Sydney are served by the St. George ARS, who meet on the first Wednesday evening at the 1st Kyle Bay Scout Hall.

This month, the Urunga Convention is being held over Easter, an annual event started in 1948. Oxley Region ARC at Port Macquarie has their annual field day over the June long weekend. The Blue Mountains ARC will most likely have their annual event in August. About the same time should be the annual south west field day in the Riverina area of VK2. This event was started in the early 1950's by the late Jim Edge VK2AJO and was held on the October long weekend. These were two day events, held in a different town each year. There were many field events, centred on fox hunting. A dinner was held

on the Saturday night. There were often displays by the traders of the day and the usual range of disposals. Most towns in the region had their turn, some more than once. Some of the towns and locations included Deniliquin, Griffith, Narrandera, Grong Grong, Young, Coolamon, Wagga Wagga, Albury, Tumbarumba, Tumut and Canberra. Who did I miss? Nowadays the event alternates between Albury and Wagga. This is a piece of history that should be recorded before it is all forgotten. Anyone with snippets about the past events might like to send them to me via the ARNSW email address. Thank you.

In February, the Tamworth RC provided a weekend of Amateur Radio to over 200 local scouts. Hopefully many will have left with an interest sparked in the hobby. The request last month for details of club conducted exams is also being sought by Ted VK2ARA for inclusion on the WIA web site. Please include both the WIA and ARNSW when you send in details, we need to let as many as possible know of these examination facilities.

ARNSW

The AGM of ARNSW will be held this month on Saturday 14th April. When nominations for the council closed at noon on 3rd March, no ballot was required. There were nine nominations for the nine positions. Also, no notice of motions had been received, so it may be a quick, quiet meeting. Hopefully, members will still turn up in time to achieve the required quorum. The annual report should now have reached ARNSW members by either email or snail mail. If not, members should contact the office by email vk2wi@ozemail.com.au; telephone 02 9689 2417 or mail via P.O. Box 9432 Harris Park NSW 2150. A report about the meeting will appear in these notes in the June issue.

In last months VK3 notes, Jim VK3PC reported on the production of a new logo for ARV. ARNSW developed their logo soon after the



changeover which mainly features on the official correspondence.

The next round of exams conducted by ARNSW will be on the weekend of 28/29 April. Applications close on April 17. Forms can be found on the web site at www.arnsw.org.au. There are three months left for the construction of the 80 metre AM transmitter promoted by the Homebrew and Experimenters Group of ARNSW. This group meets on the first Tuesday evening each month at McDonalds, North Parramatta. They have a net on VK2RWI 7000 on the third Tuesday evening. They have a practical day at VK2WI Dural on the afternoon of the bimonthly Trash and Treasure event. The next will be on May 27th. The Home Brew group also has a technical newsletter, which is available in both electronic and printed format. The Home Brew Group mounted a stand and display at the recent Wyong field day. They were kept busy with both sales and inquiries. While they are Sydney based, they encourage membership from throughout VK2. Details about them and many of their projects are to be found on the ARNSW web site. Follow the links.

The changing Sydney CBD city scene

For some years the strip of York Street opposite the Queen Victoria building was an electronic alley of stores for Dick Smith, Tandy, Jaycar and David Reed, who was an agent for Altronics. The line up is shrinking. The latest to leave is David Reed. Oxford Street used to be 'Disposal Alley'. Like the comments made above about the south west zone conventions, history should record the various electronic sources that have existed both in the city and throughout the country. What do you remember?

Next month, the WIA AGM will be held at Parkes. This is most likely the first time a WIA AGM has been held outside a capital city venue and will be an opportunity for country members to be easily involved. This area is represented by the Parkes and District ARC.

73 - Tim VK2ZTM.

Latest update on KiwiSat progress

The KiwiSat section of the AMSAT-ZL web site was updated in February 2007. There have been some important milestones passed and everything is on track. Visit the AMSAT-ZL web site and follow the KiwiSat links to read the latest detailed information on this exciting project.

Generous donations to speed up completion of P3E

Following a meeting between representatives of AMSAT-NA, AMSAT-UK, and AMSAT-DL, a decision has been made to donate a total of 40,000 Euros to AMSAT-DL for the purpose of funding the continued operation of the Central Development Lab - "The ZEL". The ZEL was established over 20 years ago at the University of Marburg by AMSAT-DL for the purpose of satellite construction. It is in this suite of workshops that several amateur space frames have been constructed, integrated and tested, including the famous OSCAR 13. The ZEL is staffed by approximately 10 engineers, technicians, administrators and others, who are a mixture of University employees and AMSAT-DL volunteers.

The major current project in the ZEL is the construction of P3E. Although construction is centred at Marburg many of the components come from other parts of the world, including the Integrated Housekeeping Unit (IHU-3), the CAN-Do buss interface modules, the STAR camera from AMSAT-NA and the U/V SDX transponder module from AMSAT-UK. P3E is considered vital to the amateur radio space community for a variety of reasons.

Currently there is no high orbit satellite carrying analogue transponders allowing DX multiple simultaneous contacts. There are amateur radio satellites in low earth orbit but these, because of their low orbit, only support relatively short range contacts and are only visible for short periods of time (eg. 10 - 15 minutes). The proposed orbit of P3E will cause it to be visible from amateur radio stations

on earth for several hours at a time, allowing increased periods of operation and experimentation. P3E is considered a 'low risk' approach based on many of the design parameters of the hugely successful OSCAR 13. In order to keep costs low, it is based on a spare flight chassis left over from the OSCAR 13 development program.

There will however be several innovations. For example, the Mode U/V transponder, with a planned 80 kHz bandwidth, will be based on DSP technology using software developed in the UK and SDR HELAPS jointly developed with AMSAT-NA. The IHU-3 will be a new development based on a unit successfully tested on OSCAR-40.

There will be several other experiments which will test techniques needed for the proposed flight of an amateur radio spacecraft to Mars (Phase 5A). Among those will be a low power beacon simulating the weak signals that the Phase 5A satellite will send back to earth on its journey to Mars. This will allow radio amateurs to test their stations in readiness for P5A.

The optimal years for launching a Mars bound spacecraft are 2009 or 2011, so it is important that P3E is launched as soon as possible. This is currently planned to be at the end of 2008. It is realised that the next important step is to obtain an agreement with a suitable launch agency to undertake to fly the satellite.

Photographs of the ZEL at Marburg can be found at <http://n4hy.smugmug.com/gallery/383989/> and http://www.uk.amsat.org/index.php?option=com_wrapper&Itemid=94

Now Hear This!

Bob Bruninga is well known to the satellite community. He works at the US Naval Academy and is in charge of their Satellite Lab. Bob has been responsible for the PCsat series of satellites and before that he was well known as author-developer of the APRS software package. Bob is never one to shrink from a challenge. His response to a question on the AMSAT-NA bulletin board recently is witness to that. From time to time questions appear on the BB asking "Why can't we get something or other?", or "Why can't

they do something or other?". It may appear simple enough to have another radio or an ancillary bit of apparatus sent up to the ISS or included on a Shuttle mission. But ISS and the Space Shuttle are manned missions. People's lives are at stake. Read on! The question "Why can't we just simply switch it off if there's a problem?" was in regard to switching off a transmitter should a conflict arise. Over to Bob:

A 2 W transmitter on shuttle or ISS is considered a catastrophic safety hazard due to potential for loss of life due to interference or reset of a space suit (during an EVA), or shuttle/ISS control systems or anything else. Not only must we then design a system with FOUR independent ground commandable OFF switches in series (or three that have positive feedback), they all must be proven to be man safe to NASA man safe criteria. This means, not a \$2 on/off

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park SA. 5034

Graham's e-mail address is:
vk5agr@amsat.org

switch, but a \$5,000 on/off switch that has been built from raw materials that have a paper work history all the way back to the manufacturer certifying the materials, assembly procedures, and all testing, and all handling of each such switch.

Now that is just a switch. You have to have this for every component involved in the on/off of a man-safe circuit, or that an astronaut touches. Then you have to present this material and plans 4 times to the 30 or so engineers on the NASA Safety Review board. Each meeting involves flying people from all over the country to participate. Meetings usually take 2 days to review every detail of the design. At \$200 per man day plus travel, that is \$6000 times 4 or \$24,000 just for the meetings, not counting the days of preps and reviews of everyone leading up to it.

Then the documentation, and reviews, and presentations... And testing, and travel to observe testing, and paper work over 3 years, all because a 2 W transmitter is considered to be a catastrophic hazard.

Then you fly. Now you say, we "simply agree to turn it off". But this involves a week of planning for each "turn off". NASA must have a plan at least a week in advance, not only showing when we are going to turn it off, but what backup systems we have in place to assure that it will be off. And the exact time is planned, but is not known for sure, it changes up to the day of the EVA or whatever evolution. Hence we are constantly revising this plan all week long. We have to coordinate the schedules of all our ground stations, find who can be awake at the right time, and still have 2 more chances to turn it off after that. Each change of 5 minutes to the evolution completely changes the ground station we need and all our planning.

Meantime, NASA has to man the consoles, and DOD has to provide a 24 hour operator at their console to talk to NASA to talk to me. Then we send the commands, and have to report it to all concerned. Meanwhile NASA has to plan contingencies in case we fail to get the switch turned off from the ground. They have to include the plan in their Astronauts procedures to take time out of their EVA preparations (getting their suits ready) to include them going over to the HAM radio and going through 74 steps in a 5 page procedure to send the OFF command themselves.

Yes, 74 steps... Just to send the DTMF code 123456, because you have to have

a procedure for the crew to turn on the radio, set the channels, tune the radio, set the controls, verify operation, etc, etc... This requires 15 minutes or more and has to be done before they get into their space suits. Which takes 3 hours. This means we had to have exhausted all three of our ground opportunities prior to that 3 hours, so we have to attempt to send the command 6 hours prior to EVA. Many times that is in the middle of the night over the ground station of choice, and since we had to do this for every EVA, every docking and every use of the robot arm, you can see why no-one is going to let us do that again. It wore everyone out.

DOD had at least 6 people probably 1/4 time on this project over 3 years, that is about \$500,000. And that had nothing to do with actually building the hardware. That is just "oversight and management" overhead. Presumably if we didn't have all the man-safety issues due to the 2 W transmitter, this effort would have been much less involved.

But it all makes sense. NASA must assure the safety of the Shuttle ISS system, and these procedures all make sure that the material, plans, procedures and operations are thoroughly reviewed and are as safe as possible".

Bob with his PCsats is not alone in having to satisfy such safety requirements. The ARISS team too will have had to confront such issues from day-1. Interestingly there were no further questions on this topic!

AMSAT pioneer becomes a silent key

The history of AMSAT doesn't go back much further than Oscar-1. Launched on December-12, 1961, we will never see its like again. Oscar-1 was built and tested in real amateur radio basement workshops, its battery lasted for just 3 weeks but it proved a concept that is still unfolding today, nearly half a century later. One of the amateurs who played a role in Oscar-1 was Harley Gabrielson K6DS. Harley passed away on Sunday January 14, 2007. He was 83. He maintained a close association with AMSAT for many years passing on his skills and knowledge to others. Harley built the keyer in Oscar-1 which produced its characteristic "hi, hi, hi" as it orbited in the footsteps of Sputnik. Those of us who have followed can only guess at the level of excitement in those amateur workshops as Oscar-1 and the other early phase-1 amateur radio

satellites took shape. Visit the AMSAT-NA web site for a fascinating overview of the early days of the Oscar program. Thank you Harley, hi, hi.

Pehuensat-1 given an Oscar number

Bill Tynan W3XO, AMSAT OSCAR coordinator, announced in mid-February that Pehuensat-1 will hence-forth be known as Pehuensat-OSCAR-63, or PO-63. Pehuensat OSCAR-63 has been welcomed into the family of Amateur Radio Satellites and it is hoped that it will fulfil its intended mission of furthering education and increasing interest in the Amateur Radio space program. AMSAT Argentina is to be congratulated for building, testing, launching and commissioning this new Amateur Radio satellite.

Falconsat series show promise for the future

Falconsat-3 (FS-3) is the latest in the series of satellites built at the US Air Force Academy. It is presently scheduled to be launched on March 8 from Cape Canaveral. USAFA Space Systems Research Centre satellites are science oriented and university class. FS-3 carries two space weather plasma detection experiments along with a micro pulse plasma thruster attitude control experiment.

The objectives of the program are to do real science and educate USAFA cadets about space systems design, construction, testing, and operations. About 40 senior cadets are in the program each year. Falconsats are operated from the ground station at the US Air Force Academy near Colorado Springs. Once in orbit, FS-3's mission is to collect data from its experiments and provide cadets in the Space Operations major an actual space ops experience. Astronautics major cadets will analyse telemetry and make operations decisions.

Now we come to the really good bit. Additionally FS-3 carries an Amateur Radio transmitter and receiver with a downlink at 435.100 MHz. Modulation is GMSK at 9k6 with faster bit rates available. The Amateur uplink is in the VHF band and the frequency will be made available when FS-3 reverts to Amateur radio mode. After the primary science mission is completed, the satellite will be transferred to the USAFA Amateur

Spotlight on SWLing

Robin L. Harwood VK7RH

Radio Club and operated as an Amateur Radio satellite. It can function much like AO-51 in either FM voice or digital store and forward configurations. During the first few weeks in orbit FS-3 will be commissioned, which includes uploading software and testing all functions. During that time the Amateur payload will also be exercised. The primary avionics in FS-3 are from SpaceQuest with additional modules built by cadets and faculty at USAFA and contractors. Software modules are from BekTek, SSTL, and Colorado Satellite Services, with additional software by cadets and faculty at USAFA.

The basic structure is a 60 cm cube. There is a 3 metre long gravity gradient boom that will be extended from the 'top' of the satellite when it is safely in orbit. That will make it look similar in general shape to the highly acclaimed UoSat series from the University of Surrey. On the 'bottom' are the pulse plasma thrusters and various antennas including an array of S band patch antennas provided by S&L Technologies of Orlando along with omni antennas for S, V and U bands.

The USAFA ground station consists of two complete units with individual masts on the roof of the classroom annex building. Antennas include 1.8 m and 3 m dishes and Yagis. Rotators are the heavy duty MT-3000 and MT-1000 from M2. You may recall that the first USAFA satellite, Falcon Gold, went into geostationary transfer orbit and measured the strength of GPS signals from well above the constellation. The results showed signal levels were adequate to warrant further experiments and in part lead to the GPS experiment on AO-40 and other satellites. Falconsat 4 and 5 are in the design stages now. Each is expected to carry an Amateur Radio transmitter and receiver in addition to their primary payloads.

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In late February and early March, I had problems with my hearing, when my Eustachian tubes blocked my eardrums. This distorted my hearing and was extremely frustrating because I could not listen online or on my receivers. All I could do was read and just recuperate. It has almost returned to normal as the anti-inflammatory medication has slowly done its work. It appears that somehow I developed fluid behind the eardrums.

Before my hearing temporarily packed it in, I did manage to hear an unidentified station on a channel normally occupied by transatlantic aero communications. Yes, I was using a remotely controlled receiver via the dxtuners website and was not really looking for anything. Another user had punched up the channel and I was intrigued to hear this station, broadcasting unusual music, probably from around the Horn of Africa (Somalia, Middle-Eastern). There was an absence of announcements and the signal went dark about 5 minutes after I tuned in, that is from 0440 to 0445 Z. I also think that it was on LSB, because I could hear the aero traffic on the other sideband. It probably was an error by a bored technician and speculation was that it was a clandestine station broadcasting to this troubled region. There have been frequent reports of a few clandestine stations operating between 5 and 5.5 MHz. Naturally I tuned in the next day

at the same time yet the channel was dominated by the usual standard USB transatlantic HF aero traffic.

Propagation slowly seems to be improving and now signals are starting to appear during our daytime hours. It is going to be interesting with the marked reduction in shortwave broadcasting output, particularly to North and South America. Africa and the Middle East will continue to be targeted, whilst audiences in the developed world are shrinking. I did see a report that the BBC was even considering dropping broadcasts in Chinese. It was unclear if this was economic or because of the constant jamming from the so-called "Firedrake" signals. The Firedrake signals seem to be everywhere.

The Americans caught us out when they brought in daylight saving three weeks earlier than they normally do, on the 11th of March. This was enacted in legislation in 2005 but was largely ignored by the American public and they were caught off-guard by its implementation. The legislation states that daylight saving will revert to standard time on the first week in November. Canada also aligned itself with the alterations except in VE5.

Don't forget you can forward me news and loggings at vk7rh@wia.org.au or snail mail to 20/177 Penquite Road, Norwood, Tasmania 7250.

ar

Silent key

Helmut Neumann VK3CHN

Helmut Neumann VK3CHN became a Silent Key on 7 September 2006, after a long illness

Helmut first gained his licence in 1968 in Germany with the call sign DC8IP. After migrating to Australia, he obtained an Australian Amateur Limited Licence with the call sign VK3XIP, then in 1985, he was upgraded to the full call of VK3CHN.

He had worked three years with Lufthansa, and then for nineteen years with Ansett Australia Airlines maintaining aircraft simulators, before retiring in March 1992.

Active on the VHF and HF bands, his real passion was for those HF bands that would allow him to maintain regular contacts with amateurs in his country of birth.

As a founding member of the Sunbury Amateur Radio Group (S.A.R.G.), Helmut greatly enjoyed the company of his local fellow amateurs, and was keen to learn about any new aspects of his hobby.

Submitted by
Noel VK3YNW

MRDC

HAMFEST 2007

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QSLs from the WIA National QSL collection

Ken Matchett VK3TL, Hon. Curator
(03) 9728 5350, wiaqslcollection@wia.org.au
4 Sunrise Hill Road, Montrose Vic 3765

Two Old Timers open a treasure chest

Pre-war QSLs and those sent in the late 1940s when radio transmissions resumed after the war are becoming ever rarer. So we are particularly grateful to Old Timers for their contributions of QSL cards.

Old Timer L. F. ('Poly') Clark VK7CK was very active in pre-war days. Nearly 3000 valuable QSLs were kindly donated by his son, Frank, who now uses the same callsign. How interesting to look at some of the names on these old QSLs! Names such as really big DX-ers like Alan Brown VK3CX and Jack Anderson VK3JA, the QSL manager Ray Jones VK3RJ and the famous radio pioneer Max Howden VK3BQ who, in 1924, was the first VK to make a two-way QSO with the USA. There was also a card from Len Moncur VK3LN, who was an early TV experimenter.

The QSL VK3HM (November 1932) was there too. This is the QSL of what is most probably the earliest Australian XYL, Mrs E.L. Hutchings. Poly had also received her daughter's QSL. Marjorie Hutchings VK3HQ is featured on one of the world's earliest QSLs showing a photograph of the operator. This, incidentally, is a photo of a most attractive young lady, and at the time drew the attention of American radio magazines.

In addition to VK contacts there were several DX cards such as HAF8D from Hungary. (This prefix later gave way to HA but was again used fairly recently for special issue QSLs of that country.) The now deleted countries such as Danzig (YM4ZO) and Newfoundland VO (counting as Canada after April 1949) as well as J (later to become JA after the war) were there with many others.

Bill Hall VK2XT is another Old Timer who has contributed QSLs to our Collection over many years. Although 94 years young, Bill is still active on the bands. He gained his licence in July 1930. His stack of some 2000 QSLs contained hundreds of QSLs from the late 1940s. As well as pre-war QSLs sent by licensees (and sometimes by 'pirates') Bill included dozens of early SWL reports. In those days SWL reports from overseas were keenly sought by DX hunters. These might have station



This QSL drew the attention of American radio magazines

calls such as VK2QSL, VK4TRBB (the SWL's initials) and VK3AFS (a callsign no different in appearance to one sent by a licensed operator). Many listeners were registered and became 'official listeners'. The callsign ZL253 was, for example, registered by the NZART. Many of these QSLs give valuable historic information about receivers and antennae.

Reading the information on the QSLs sent to these two Old Timers can make us appreciate the level of sophistication that we enjoy today. Interesting, for example, are the signal reports of those far off days when Q signals were used much more frequently than they are today. Many have either fallen out of use or are used very rarely, such as QSA (readability), QRI (tone), QRG (frequency) and even QRL as in the expression: 'Jack is very QRL (busy) of late'. Since nearly all equipment in the early 1930s was 'home brew', operators of their 'experimental stations' used abbreviations such as 1V2 (receiver with one stage of RF, a detector and two stages of AF amplification) or even O-V-1, a set that lacks RF amplification and which would be suitable for headphone reception only.

Many receivers were powered with dry cells but occasionally one boasted that he had a '3 tube AC'. The transmitter was invariably a three or four stage CC (crystal controlled). Sometimes a TPTG (tuned plate, tuned grid) took

the place of a crystal. Many operators ground their own crystals to the required frequency and used frequency doublers for higher frequencies. Equipment to check the frequency of one's transmitter was a compulsory condition of gaining a transmitting licence and we all had great respect for the RI (Radio Inspector).

Receivers were often a three tube TRF (tuned radio frequency) and, like transmitters, were described by naming the valves used in the various stages of amplification or rectification. For example, we might read on a QSL card: 58-57-56 or perhaps 47 CO, 47FD, 46PP (47 valve crystal oscillator, 47 frequency detector, 46 PP push-pull amplification).

The antennas of the early 1930s were frequently half-wave Hertz (as distinct from the Marconi antennas with a 'grounded antenna' configuration) or a 'zepp' (a long-wire type whose name is derived from the fact that a trailing wire was used as an antenna in the German zeppelins). Although Yagi invented his antenna in 1948, rotatable types like this did not gain popularity until the 1950s.

Mention, too, should be made of the fact that considerable attention was given in those days to the 'counterpoise' or earthing of the circuit by a series of copper radials radiating from the base of the antenna or by suspending a length of wire parallel and beneath the radiator.

continued on page 43

Contest Calendar April 2007 - June 2007

April	7/8	Marconi Contest	(CW/SSB/RTTY)
	7/8	SP DX Contest	(CW/SSB)
	7/8	EA WW RTTY Contest	(RTTY)
	8	QRP Hours	(CW/PSK31/RTTY/SSB)
	14/15	Japan Intl. DX Contest	(CW)
	14/15	Yuri Gagarin Intl. Contest	(CW)
	21	Holyland DX Contest	(CW/SSB)
	21	TARA Skirmish Digital Prefix Contest	(PSK)
	21/22	YU DX Contest	(CW/SSB)
	28	Harry Angel Sprint	(CW/SSB)
	28/29	Helvetia Contest	(CW/SSB)
28/29	SP DX RTTY Contest	(RTTY)	
May	5/6	ARI Intl. DX Contest	(CW/SSB/RTTY)
	13	VK/trans-Tasman 80 metre Phone Contest	
	12/13	CQ-M Contest	(CW/SSB)
	19/20	Baltic Contest	(CW/SSB)
	26/27	CQ WW WPX Contest	(CW)
	27	VK/trans-Tasman 80 m CW Contest	
June	9/10	ANARTS WW RTTY Contest	(Digital)
	9	Portugal Day DX Contest	(SSB)
	9	Asia-Pacific Sprint Contest	(SSB)
	16/17	All Asian DX Contest	(CW)
	23/24	Marconi Memorial HF Contest	(CW)

Welcome to this month's Contesting Column.

A (Woeful) Tale of Twin Cities (with apologies to Charlie Dickens....)

Last year's CQWW CW contest in November went much better in VK6 than my first contesting attempt from these fair shores in Albury-Wodonga (also known as the Twin Cities) during CQWW CW in 2004. I operated in CQWW CW 2006 as VK2BAA/6 from the shack of the Perth Northern Corridor Radio Group VK6ANC. Thank you again, Gentlemen for your hospitality and generosity to allow me to participate in the contest from Zone 29 – I had a great time. This kind act came out from my request posted to the VK Contest Club email reflector, which serves to bring contesters together from around Australia. The VKCC goes from strength to strength and is to be recommended for all contesters in VK. Go to www.vkcc.com

For the first effort in 2004, assembling the station involved an Icom IC-735 along with a laptop. I'd been kindly lent

a suitable table for the shack by a work colleague and a next door neighbour had given me an old dining table set along with four chairs – one of which got commandeered for the shack. A trip to a local retailer secured some wire, connectors and coax, so I was almost ready to get on the air with a few days breathing space prior to the start of the contest.

The IC-735 refused to operate properly upon powering it up. I could only get 10 watts out of it on 10 m and 80 m – sometimes it would work perfectly well whilst at other times the rig refused to transmit regardless of how hard I tried to persuade it. The rig then decided not to bother at all and failed completely. I had very few tools available and no circuit diagram so fault finding was limited to 'having a look and prodding internal bits within the rig' in the hope that it might spring back into life after suffering from a dry joint induced by the recent travelling. With my somewhat rusty fault finding skills having been expired with little glory, at the eleventh hour I managed to borrow a TS-530 from my local Twin

Cities Radio and Electronics Club in Albury. The rig produced about 40 watts of output, so reining it back to 5 watts for QRP use was not a problem. Trouble was, as the rig had a valve final it required grid block keying for CW (which my simple passive single transistor interface couldn't manage), so I scratched around for enough bits to build an active two-transistor interface to get me away.

I had ordered a Hustler 5BTV vertical antenna a few weeks prior to the contest and this arrived with two days to spare. The antenna was soon assembled and mounted at ground level with a small number of radials per band. I acquired two ratchet straps (similar to those utilised to secure loads on trucks) and attached the vertical onto a handy sturdy wooden pole in the back garden. The coax was terminated and run back to the shack. After a few journeys up and down the garden to make adjustments to the antenna and to take physical measurements of each antenna section (as it is a multi-band antennae with traps), I regretted not having an antenna analyser – would've saved a lot of time and effort!

Next, after getting my contest software to run happily on the laptop and key the rig properly, my IC-735 required some repairs to get it to work reasonably (albeit intermittently) as I might need a back-up rig. An hour with the soldering iron solved the problem, as a couple of dry joints were the cause of the strife.

With the IC-735 now working to a fashion, the laptop set up with logging software and a resonant antenna, I was ready to contest. Or so I thought....

Fifteen minutes into the contest, the bands went quiet. The VSWR was checked and found to be healthy earlier that day, but a short while later it was evidently very high indeed. After much searching, it transpired that next door's cat had chewed the coax, damaging the braid and some of the centre insulation! Making a mental note to buy a large carnivorous canine of some sort, a hasty repair was made to the coax and I'm back on the air with an hour of contest time lost.

With all the contesting excitement going on, the kitchen fridge had evidently decided that it wasn't getting enough attention and decided to put on a show by tripping the house power. It was a simple enough job to get the power back on, but the smell of burnt electrical components from the fridge was horrendous, so it needed to be put outside the house! More time lost.

Back to the rig to check the coax repair

– still no signals to be heard – in fact no audio at all! After a bit of head scratching, the volume control on the TS530 was found to be suspect. I ripped open the rig and found a dry-joint on a wire connected to the volume pot, so at least it was an easy and quick repair.

I finally got onto 20 m but the antenna really showed its limitations as many stations are reasonably audible but QRP power could not do the job of getting heard over the noise floor of the band under the busier than usual CQWW band occupancy conditions. Timing and pure guile were the only tools that got the QSOs.....

Murphy struck again. The rig refused to change-over from receive to transmit. After much fault finding, it transpired that the connector that combines the computer interface lead and the keyer interface lead into the rig had failed open circuit. It was brand new – not two days old. Hence, the external keyer was removed and the computer plugged-in directly. The rig went over to transmit just fine, but flexibility was lost as manual keying was not now available.

I was indulging in a bit of 'search and pounce' (S&P) on 20 m when the XYL came into the shack. The evaporative air conditioning unit on the roof had not only failed (but it wasn't switched on!) but had also decided to cascade water all over the roof at an alarming rate. More time was lost while repairing the water

feed pipe with a bit of garden hose and two hose clips.

I struggled for a while to make any headway at all after that, but the trials of the contest still weren't over as the TS-530 died on 10 m completely with no Rx or Tx at all. Wobbling the band change switch in an effort to encourage the rig into action brought no beneficial results, so I worked my way down the bands until I found one which the rig worked and one that people could (just about) hear me. Unfortunately, the rig audio then failed so I turned the whole lot off and went to bed as the backup IC-735 had also decided to be mischievous again.

I had made a total of some 50 or so QSOs over 48 hours, which was somewhat less than I had hoped. I had planned plenty of time for pre-contest checks, but sometimes things seemingly conspire against you! The IC-735 has now been fully serviced (and relegated to a stand-by rig) and the TS-530 has been repaired (a series of dry joints resoldered) then returned to the Club with my thanks.

I fared better in the 2005 contest (with a replacement rig!) gaining a reasonable position in the Oceania QRP listings. However, for me, this learning curve is really what contesting is all about – making improvements, setting goals and trying to better your own performance.

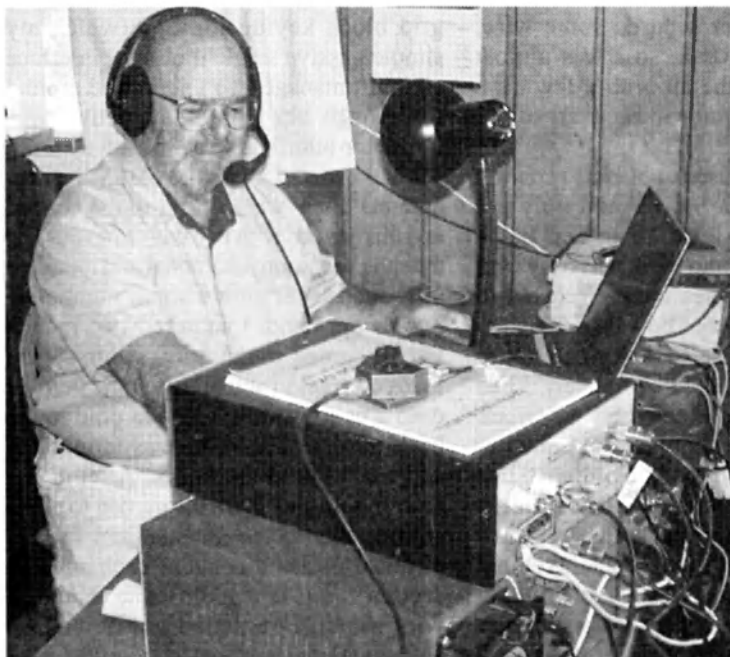


Photo 1. Eddie De Young VK4AN operating VI9NI. Photo: VK5PO



Photo 2. Vince VK7VH is rightly delighted with his trophy! Photo: VK2BPL

Some people see contesting as a somewhat undesirable side of amateur radio activities, usually due to band occupancy making rag-chewing difficult. But why not try it for a weekend – you might just like it and you'll find out why it is that many of us keep coming back for more. If you do give contesting a try, thanks for being open-minded and willing to see what all the noise is about on the bands.

Don't take my experience of yesteryear as a 'usual' contesting occurrence, as it is certainly not typical of what can be expected. Prepare yourself and your station extensively if your intention is a serious entry and do a bit of homework to get the correct information exchange and then set yourself some goals – maybe 50 QSOs or even 100 QSOs, or possibly try to work 50 countries - whatever you feel comfortable with – and try to achieve that during the contest. When was the last time you had 50 QSOs or worked 50 countries in a weekend? Next contest, raise the goal a little more and test your skills and your station again to maximise your score – I would be delighted to know how you got on. Murphy may strike as in my case, but I learnt a lot from the experience and have planned my contesting differently as

a result. There's not much I can do about the household appliances though!

On the subject of contest planning, the VI9NI team had their trials and tribulations during the visit to Norfolk Island, but the true Aussie spirit shone through to make repairs and return to the battle with gusto when faced with any problems that arose. Photo 1 shows VI9NI team member Eddie De Young VK4AN working one of the many pile-ups from Norfolk Island.

The VI9NI trip was my first meeting with Eddie and I couldn't help but be impressed with Eddie's fortitude towards problem analysis, formulating a plan for remedial action and his dedication to a job well done. Eddie was a major part of the planning team for the trip and had made allowances and contingency for all manner of 'typical' problems that may occur. I have no doubt that without Eddie's evident experience and approach we'd have been limited as a team as regards our performance. Eddie certainly got his planning right, as we made many thousands of QSOs during our time on the island.

Paul Linsley VK2BPL writes with information from the Westlakes Club. Photo 2 shows Vince VK7VH holding

the Westlakes Cup for 2006 for winning the Advanced/Standard Level and he is rightly pleased with the result! Well done Vince! The Westlakes Cup deserves support as a home-grown and interesting contest, so how about writing the date in your diary and getting on-air for the event on the 22nd of September 2007. The rules will be published in AR prior to the event, but can also be found on the Westlakes Club website. Vince will be one of the bonus stations this year as will Jess VK2FJES, featured recently in this column as showing the elders how to do contesting. The Westlakes Club have an enviable record in providing the next generation of radio amateurs access to facilities and training, in addition to a myriad of Club activities to introduce and tempt newcomers to the broad church of Amateur Radio – including an active and successful contesting group with an enthusiastic selection of 'Elmers' for guidance and reference.

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

Results CQ WPX CW Contest 2006

World Top Scores - Tribander Single Element

World No 1	7 MHz	VK6DXI	1,638,524
World No 9	All	VK6AA (VK2IA)	3,233,572

Single Operator – Australia

VK6AA (VK2IA)	All	3,233,572
VK7GN	All	177,030
VK4ADF (HA3LN)	All	96,064
VK6DXI	7 MHz	1,638,524

Low Power

VK8AV	All	468,568
VK4TT	All	80,703
VK3KE	All	51,062
VK3FM	All	2,407
VK4BUI	14 MHz	283,529

QRP

VK2NU	All	2640
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Multi Op, Two TX Oceania, 2nd place

VI9NI	All	3,063,995
(Ops VK4AN, VK2BAA, ZL2IFB, VK4FW)		

QSLs Collection *continued*

Miniaturisation was an unknown term: components were bulky, especially the large variable capacitors, the long screen grid voltage divider and the aluminium electrolytic condensers.

Gradually more and more commercial gear came on to the market, which offered the constructor a superbly designed and economically priced piece of equipment that he could not possibly compete with. Equipment such as the Geloso 'Front End' of the early 1950s virtually took over one's task of building an r.f. amplifier. The great popularity of superhets and the beam tetrode revolutionised amateur radio and gave rise to receiver selectivity and transmitter power output undreamt of in the early 1930s. But it is great, isn't it, to be able to look back at the past with our old QSL cards and to be thankful to those experimenters who made it all happen.

More acknowledgements next month. A warm 'thank you' to all our contributors.

73 Ken
ar

Results of the 2006 Jack Files Memorial Contest.

73 John Spooner VK4AJS
Contest Manager
Email - vk4ajs@wia.org.au

A good response was shown to the new contest format in 2006. Changes were made to try and encourage more people to participate and to bring the contest to more of a national level and not just a VK4 based contest. With this in mind, it is good to see that the 2006 overall winner

is a VK2 station. All feedback received was positive, so hopefully word will spread and we will see even more stations joining in 2007.

The delay in releasing the results was due to having to recalculate the final scores for quite a few stations. I have done

so this year because the scoring was new and several operators had not calculated their totals correctly. Next year, I will try to have an example log placed in AR so as to give all operators a better idea.

The results for the Jack Files 2006 are as follows.

Overall Winner

VK2LCD Chris Meagher with 12702 points

State winners

VK2	SSB S/O	VK2LCD Chris Meagher	12702 points
VK2	CW S/O	VK2CTN Chris Thompson	80 points
VK3	SSB S/O	VK3AAK Michael Coleman	9900 points
VK3	ALL MODE S/O	VK3TNS Stjepan Nikolic	2312 points
VK3	CW S/O	VK3JS Ian Godsil	1980 points
VK4	SSB S/O	VK4HFO Tim Wright	10203 points
VK4	ALL MODE S/O	VK4TJ John Kirk	4300 points
VK4	CLUB STATION	VK4BAR	5859 points
VK5	CW S/O	VK5BUG David Westcombe-Down	20 points
VK6	SSB S/O	VK6NU John Coleman	3360 points
VK7	SSB S/O	VK7VH Vince Henderson	2160 points.

Congratulations to the winners and a big thank you to all who participated and submitted logs for the 2006 contest. Certificates will be sent to the winners promptly.

There were a lot of stations who did not submit a log for 2006. I hope that a few of these stations will enter this year. There were a lot of close finishes so to all who sent in logs please try again this year and maybe you will be rewarded for your efforts.

The logging software by VK3AAV is a great freeware product and I would encourage all to use this product in the future. Also extra congratulations to the Foundation Licence operators who participated.

A date for the 2007 Jack Files Memorial Contest will be confirmed very shortly.

2007 VK/trans-Tasman Contests

The VK/trans-Tasman Contests are on again, this year!

There are four Contests to choose from, between May and July:

- 12th May, 80 m Phone
- 26th May, 80 m CW
- 7th July, 160 m Phone
- 21st July, 160 m CW

The Phone Contests run for up to 6 hours, and the CW Contests up to 5 hours, commencing 6 pm EAST (0800 UTC).

Everything you need to know about these Contests can be found on the website at:

<http://home.iprimus.com.au/vktasman>
This includes Rules, auto-logging programs specifically written for these Contests, downloadable hand log sheets, results and analysis of 2006 Contests with photos of winners.

Prizes include a bronze trophy for the Winner on both bands, and laminated certificates for Winners and place-getters in all categories.

Scoring is structured to provide a level playing field for all, regardless of your QTH and time-zone.

Bruce Renn VK3JWZ

So, note the dates in your diary, get your equipment ready in advance, and give it a go!

These Contests are run for YOUR benefit and enjoyment, and their future continuation will depend on the level of participation.

Note: The Contest Manager will be unavailable until 1st June, so results for the 80 m Contests will not be published until about the end of June.

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Barcfest 2007

Saturday May 12 1000 hrs

Mt Gravatt Showgrounds (QLD)

www.qsl.net/vk4ba select Barcfest

or ring 3343 7247 for all information

MRDC HAMFEST 2007

1000 Saturday 12 May

Brentwood College

Watsons Road Glen Waverley (VIC)

Info and booking

9705 1051

9702 1199

www.mdrc.org.au

Undoubtedly the BS7H operation will provide a large number of DXers with the opportunity to 'tick off' one more wanted entity. See the article on next page. Although this DXpedition has been promoted as the "most wanted", undoubtedly that position has now been replaced by KH8 Swains Island, which had not been declared a new entity at the time of the last survey. Having said that there will be plenty of people who will be trying to get a QSO with both!

The old saying "you have to be able to hear them to work them" is as true as ever. There has recently been a two-part article in the National Contest Journal (published by ARRL) on this very point. The essence of the articles has been to reduce the extraneous noise level relative to the signal that you are trying to copy. To oversimplify the article, one suggestion detailed is to insert headphone speakers into a pair of commercial ear-muffs. I can say that it does appear to work and I would recommend anyone interested in VERY weak signal reception to read the articles.

FR. Gildas TU5KG (ex FT5WL and FT5XP), is heading back south to the southern Indian Ocean on a new work assignment. He has received new calls to be used for 2007. He has been issued FT5XQ (for Kerguelen Island) and FT5WM (for Crozet Island) and can use either of those calls while Maritime Mobile as FT5XQ/MM or FT5WM/MM. Gwenael F4EFI, says Gil is also expected to be on from Reunion Island as FR/TU5KG from April 15 and then returning to France. QSL via F4EFI, either direct or via the bureau.

6W and J5. Peter HA3AUI is heading back to Africa at the end of the month. Activity began around February 25th until about April 30th or possibly longer. He will be operating very close to the Senegal/Guinea boarder as 6W2SC and J5UAP, depending on which side of the line. Peter will be on all bands, mostly digital with some SSB. He will soon have a Web page at <http://cqafrika.net/>. QSL via HA3AUI.

3B7. FSDXA St. Brandon DXpedition – Bulletin No 3. Two members of FSDXA recently visited Mauritius to set up logistics for the September operation from

St. Brandon. They are pleased to say that all the necessary permits and licences are in hand, and a suitable ship has been located to take the team members and something like six tonnes of equipment to the island. There is still a lot to be done, but they are all looking forward to putting another rare one on the air.

3B6 Newsletter. The 2007 DXpedition to Agalega Islands by Witek Onacyszyn SP9MRO. On February 21, 2007, the decision to suspend the (Polish) expedition to 3B6 Agalega was taken. They will decide on March 15 whether it is only postponed or cancelled. The decision is due to the enormous costs of the expedition that have considerably exceeded the estimated budget.

The expedition was supported by PZK, SP-DX-C, G DX Foundation, EU DX Foundation and institutional sponsors as well as other hams from a few countries. They would like to thank all of those. Their main sponsors have decided that the period between receiving the licences and the time set by Mauritius' government to start the ham's activity is too short.

Due to all of that the expedition's members are checking the possibility to postpone it until later in 2007 unless it coincides with the FSDXA expedition to St. Brandon in September.

All of the donations will be immediately returned in the same format that they were paid. They hope that, if the expedition to Agalega is on again at the end of this year, their kind donors will be able to support us once again. They would like to thank those who supported their actions, especially those from Mauritius. Simultaneously, they apologize to all of those who counted on a QSO in March 2007. Team leader Witek SP9MRO sp9mro@godx.eu or wonacz@box.zag.pl

FK. Tony 3D2AG is currently operating from Noumea, New Caledonia, as FK/FO5RK until end of April. He can be found mostly on 20 and 40 metres CW. In May/June he plans to go to Rotuma Island and operate as 3D2AG/p. There is a shortage of fuel on the island and the solar panels he used in the past (1992-2001) apparently no longer work. Tony is looking for someone or a DX club who might be able to help him obtain a

few solar panels (12 volts) to charge his battery. He is also looking for a small beam. If you can help please contact Tony via his email address on QRZ.COM.

A2. Frosty K5LBU is arranging a DXpedition to Botswana for July of this year. So far he has one CW operator and one SSB operator and is looking for another two to four more operators. They will be arriving in Johannesburg, South Africa on July 4th and hope to be operating from July 5-20. For more information, you can contact Frosty at Visalia or via email to frosty1@pdq.net

XV. Rolf SM5MX has acquired an old callsign of his, XV9SW, to use from Hanoi, Vietnam, until April 30th. He plans to be on 20 and 15 m CW but says noise levels in the city make operating barely possible. QSL to his home call. He returns to Sweden in August.

YK1BA. Saad N5FF will be arriving in Damascus, Syria, April 9th and should be QRV as YK1BA again from April 10-27, returning to Texas on the 28th. Saad says that as usual the purpose of the trip is not a DXpedition, so his operating will be spotty. Still, he hopes to be on the air at least three to four hours a day. Saad says, "With the current band conditions and my typical operating times, I suspect that I will spend most of my radio time on 30, 40 and 80 metres. However, I will operate on whatever band (10 - 80) and mode that has the best propagation at the time. Most probable operating times are between 2000-2300 UTC or between 0200 - 0500 UTC, and possibly some occasional activities between 1200 - 1400 UTC. I will be active on SSB, CW and RTTY." QSL via N5FF.

V51AS. Frank has had a very difficult time with his mail. In an attempt to make it easier, he has established an alternative route in Germany. From March 10th 2007 you can send your direct QSL request to: Frank Steinhauser, Schlossstr, Nr 68A, 82 140 Olching, GERMANY.

Happy Dxing.

Special thanks to the authors of *The Daily DX* (W3UR), 425 Dx News (11JQJ) and QRZ DX for information appearing in this months DX News & Views.

For interested readers you can obtain from W3UR a free two week trial from www.dailydx.com/order.htm

Scarborough Reef

The expedition to the rarest DX entity

April 2007

Kan Mizoguchi JA1BK

Scarborough Reef has been at the Top of the "Most Wanted" list for many DXers around the world. There have, to date, been three operations since it was designated a separate entity.

The first took place at the end of June 1994 when the team, consisting of BZ1HAM – DL5VJ – DU1RAA – DU1OG – JF11ST – KJ4VH – OH2BH and OH2MAK, operated for 13 hours, making 2000 QSO's, all of which were on SSB.

The second operation by BZ1HAM – BZ1OK – KC6KOU – KJ4VH – OH0XX and OH2BH was in mid April 1995, when they were on the air for 80 hours logging 12000 QSOs.

1997 saw the third operation taking place between April 30th and May 3rd, netting a total of 13,154 QSO's. The following details were taken from the BS7H web page and give an idea of what is involved with this type of DXpedition and the difficulties facing the operators.

BS7H 1997

We arrived at Scarborough Reef on the night of April 30th, approximately 36 hours after our departure from the mainland.

At 0600 (2200 Z), right after first light, the patrol boat took off from the mother ship looking for the Rocks from which we were to operate.

According to a rough map that we had, there was supposed to be an open waterway, near a submerged ship wreck, which leads inside the coral reef. However, we could not find this waterway and ended up spending a considerable time going up

and down the reef, occasionally rubbing the bottom of the small boat against the coral. We finally decided to enter the coral reef from the east. From there we went west and then south and found Rock #2, the place that was to become our main communication site.

Once a Rock was discovered, somebody had to remain at the spot with a huge sunshade umbrella so that it could be identified from a distance. Having found Rock #2, N7NG decided to stay behind. The rest of us went on to look for Rock #1, which we found quickly. This time JA1RJU remained behind.

We were lucky to find the open waterway into the reef, thanks to a Filipino fishing boat we sighted using it. Having found it, the reef was now easily accessible regardless of the tide.

Every member of the team worked hard with one common goal in mind: To start transmitting as soon as possible. Antennas, rigs, power supply units and so on were quickly carried onto the platform and by 0449 Z, W6RGG called the first CQ, six hours since we located the reef! At the end of the day, we were transmitting from two Rocks. Fortunately the weather remained good (except for some wind) and we decided to continue activity through the night.

For safety reasons, the following rules had been agreed:

1. Rocks were to remain lighted at all times during the night,
2. Rocks to communicate with the mother ship on 144 MHz FM, every hour.
3. That there would always be two members on a shift.

These precautions were taken since there had been reports of pirates in the region, and boats could not approach the Rocks during the night.

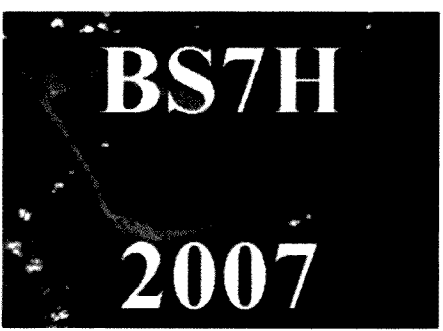
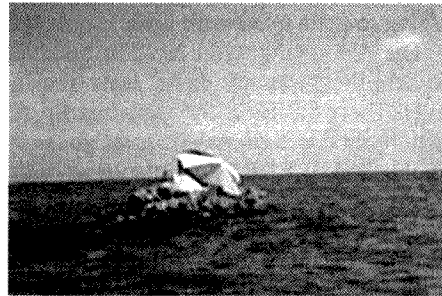
Shifts were as follows:

Morning 0600 – 1200, afternoon 1200 – 1800 and night 1800 -0600.

The next day preparations began to transmit from Rock #3. Activity began at 0233 Z, May 1st on 7 MHz SSB.

We now had 3 stations active simultaneously though Rock #3 was not active during the night.

We had planned Low Band and RTTY activity during the last 2 days. However, after two days operating, we received a



message from Beijing on the evening of May 3rd, requesting us to QRT.

The equipment we used was:

Rock #1	Yaesu FT-920 Icom IC-706 Diamond HB9CV 50 MHz and R5Antennas, Suzuki SV- 1400L (power supply)
Rock #2	Yaesu FT-1000MP FL-7000 R7000 Suzuki SV-2500L (power supply)
Rock #3	Yaesu FT-900 R7000 Suzuki SX750 (power supply)
Mother ship	Yaesu FT-1000MP GO-2KW R5

Evacuation started at 1400, two hours earlier than our initial expectation. Everything went smoothly and we were out of the region by 1600.

Our first QSO was at 0449 Z on April 30th with BA4CH, by W6RGG/Bob on Rock #2, and closed down at 0646 Z, May 3rd. The final QSO was from Rock #1, JA1RJU and JA2DDN on 21 MHz SSB.

Total operating time was 73 hours 57 minutes with the QSO totals:

Rock #1	4,584
Rock #2	6,111
Rock #3	2,459
Total	13,154

After years of waiting and with short limited DXpeditions in the past, the Chinese Sports Federation has won approval to authorize another assault on Scarborough Reef.

A multinational team of Amateur Radio Operators from Asia, Europe, and the United States is poised and prepared to ensure that every DXer gets a chance to make a QSO with this rarest of entities. We wish them luck and safe travels.

The 2007 Team

China, Representing the CRSA:

Chen Peng BA1HAM, Fan Bin BA1RB, David Chen BA4RF, Chen Fang BA4RC, Terry Liang BA7NQ

Representing the CTARL:

Ko Chih-Ta BV6HJ.

United States of America

Bob Vallio W6RGG, Tom Berson ND2T, Joe Blackwell AA4NN, Paul Pescitelli K4UJ, San Hutson K5YY, Mike Mraz N6MZ, Wayne Mills N7NG.

Singapore

James Brooks 9V1YC.

Italy

Max Mucci I8NHJ.

Germany

Christian Entsfellner DL3MBG.

Philippines

Eddie Valdez DU1EV

The Off Island Support Team

Paul Pai BV4FH, Tom Harrell N4XP, Don Greenbaum N1DG, Paul Hansen W6XA, Johnson Wong BV4DP, Christine Chiang BM4HSG (XYL of BV4FH).

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Silent key

Rick Warnett VK4KRW/P29KFS

Rick Warnett VK4KRW/P29KFS was drowned in a tragic accident in the Barron River near Cairns on Sunday 14 January 2007, doing what he liked, bushwalking with his good friends Nigel (VK4ZNQ/P29ZSQ) and Trish Quayle and their dogs.

Rick is well known throughout the amateur radio fraternity in PNG, Australia and overseas.

Rick went to Papua New Guinea in early 1975 and worked with the then Department of Civil Aviation later to be known as Civil Aviation Authority CAA. as a radio tech.

After many years with DCA he left and commenced work with Daltron, an Electronics and Information Technology Company based in Port Moresby. Rick worked in the service division which involved servicing and repairing a wide range of electronic equipment.

He then moved to a company called Pacom Communications where he worked as the national radio service manager.

A few years ago he survived a helicopter

crash on Mt Wilhelm in the highlands of PNG. The pilot was killed but Rick miraculously survived. Yes, he was working on radio sites at the time.

In the ham world Rick was one of the main players in PNG. His first call in PNG was P29ZFS, then to allow him to work on HF, mainly on the PNG 80 metre net; he sat his CW and acquired P29KFS

He became involved with the PNG Amateur Radio Society; in fact he was the backbone of the society, and also was very active in WIA matters He was also involved with the ITU and IARU.

He was one of the main organisers in setting up many of the PNG repeaters including one on Mt Albert Edward at 14,000 feet.

He was very active on the VHF bands and had a friendly rivalry with Paul Linsley, P29PL now VK2BPL as to the number of countries worked on 6 metres. Rick also had an interest in MF and VLF bands along with satellite communications and radio astronomy. Rick, Trish and

Nigel lived at the same QTH and spent countless hours building and raising a host of antennae from loops to dishes. Altogether a truly dedicated operator.

Many overseas hams first contact into P29 on VHF were with Rick.

Rick moved back to Australia and settled in Cairns where he worked in the Avionics Industry.

Rick's other interests included many aspects of science, photography and bushwalking. He has walked along the Kokoda and many other tracks. Rick and his lifelong friends, Nigel and Trish returned to Australia in 2005 and started to explore Far North Queensland by 4WD. Rick along with Nigel and Trish also showed Doberman Pinschers on the dog show circuits.

RIP Rick – One of the good guys.

Submitted by Dale McCarthy VK4DMC / VK4SIX (ex P29MI)

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VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

Propagation conditions for the last month have been relatively quiet, so there's not a lot to report.

There have been a few openings in the south-east of the country, between VK3, VK5 and VK7, but not a lot has been reported from further afield. This season, in general, there seems to have been more VK7 to VK5 activity than I can recall in the recent past. Whether this is due to unusual propagation conditions, perhaps enhanced by the general drought in the area, or whether this is simply because a number of very capable weak-signal stations have set up at each end of the path, is the question.

The VK6 Albany beacons on 2 m and 70 cm have been heard several times in Adelaide, but have not reached much past the VK3 border. On the evening of March 6, the Albany beacons were audible in Adelaide and Wally VK6WG had some success. He worked Phil VK5AKK on 2 m (5x9+), 70 cm (5x9) and 23 cm (5x2); Steve VK5RU on 2 m (5x9), 70 cm (5x7) and 23 cm (5x6); and Peter VK5ZLX to the east of Adelaide for the first time on 2 m (5x5) – a distance of 1935 km.

Digital DX Modes

Rex Moncur – VK7MO

WSJT, with the JT65 mode, is a useful tool for studying tropospheric scatter propagation as it averages the highly variable signals over 46 seconds for each reception period. Even so, tropospheric scatter can vary by 10 dB and more from one receive period to the next. To achieve a more representative figure, it is best to determine the median value over a number of receive periods. The median value has the benefit that it is not significantly affected by the occasional odd result due to meteors and is also consistent with the approach used internationally to measure tropospheric scatter propagation.

It has been found that a median value determined over 10 receive periods gives results that are consistent to within 2 dB. The median can be determined by listing 10 signal-to-noise readings measured by WSJT such as in the following example.

VK-VHF Reflector

Last month saw the 10th birthday of the VK-VHF Reflector, another very valuable resource for the VHF/UHF weak signal operator. To quote from the NSW VHF DX Group web site:

The original idea for this email reflector came from Rod VK4KZR.

Guy VK2KU, acting for the NSW VHF DX Group, set up the first reflector on 20 February 1997 at Macquarie University, where it remained for three years.

Early in 2000 the VK-VHF Reflector moved to its present home at the University of New England in Armidale, NSW, with Gordon VK2DJG as administrator.

The focus of the VK-VHF Reflector is weak-signal work on VHF and above, using appropriate modes such as SSB and CW. The reflector caters primarily for the bands 144MHz and up.

The membership of VK-VHF includes most of the active VHF, UHF and Microwave stations in Australia, as well as other VKs who are interested but not active in this area, and also a number of overseas stations. Anyone can join - there is no cost.

To become a subscriber to the VK-VHF Reflector, visit the following webpage:

<https://mail.une.edu.au/lists/cgi-bin/listinfo/vk-vhf>

and follow the instructions there.

As with most discussion reflectors, the SNR can, at times, fall to very low levels. Nevertheless, there is a wealth of valuable experience available. Thanks to Gordon VK2DJG for running it so smoothly and for so long.

EME

After much success on 5.7 GHz, Charlie VK3NX has successfully adapted his dish to 10 GHz and made his first EME contact on that band. Charlie writes:

After more optimising/tweaking of the system, today (27/02/2007) I heard my echoes for the first time and this evening I switched my feed to vertical polarisation and tried a receive test with Alex RW1AW on 10 GHz. This went well and soon after, at 1230Z, a very easy QSO took place between VK3NX and RW1AW. CW signals were 559 / 559 both ways on 10368 MHz.

Equipment is a 3.7 m Sat TV dish with 0.7 dB LNA and 26 W at the feed using linear polarisation (adjustable V or H).

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

-19, -24, -12, -18, -14, -20, -18, -19, -18, -25

Then cross off the highest and lowest readings successively until there are only two readings left as follows:

-19, ~~24~~, ~~12~~, -18, ~~14~~, ~~20~~, ~~18~~, ~~19~~, ~~18~~, 25

In this case the final two readings are -18 and -19 dB, which should be split to give a median of -18.5 dB. If the final two readings are the same then this gives the median.

The normal reporting systems provided with WSJT can be expanded to allow the reporting of the Best, Worst and Median level using the following approach, which is based on the above example.

B12 W25 M18.5

The minus sign is deleted to allow the full report to be sent in the 13-character limit of text provided by WSJT. B is the best signal, W is the worst signal and M is

the median signal. Once one has received the report from the other station, change the report to:

B12 W25 R18.5

where the R indicates that you have received the report from the other station.

It should be noted that as WSJT measures signal-to-noise ratio, it cannot be used to directly calculate the propagation loss unless one has a means of measuring the noise floor and knows all other system parameters. Still, at VHF and above, it provides a very useful relative measurement and one can learn a lot about the variability of tropospheric scatter from such measurements.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

This month, I am overseas. So, I have asked John VK4FNQ to write a few notes for the column:

This sporadic 'E' season is the best I've heard for a few years. The band started to open up around October 22 with short openings into VK2, 3 & 5. It seemed to have a small footprint at times with a few QSO's made into VK3 with no beacons or 46 MHz TV heard.

One of the highlights was working the Jamboree Station at Elmore on Jan 3 and 10.

Following is a summary of my activity on six metres from Charters Towers from October 2006 to early March 2007.

QSOs with VK Stations.

	VK1	VK2	VK3	VK4	VK5	VK6	VK7	VK8
October	-	4	3	-	4	-	-	
November	2	23	13	3	5	-	-	
December	19	113	54	17	43	-	3	6
January	12	66	25	15	27	2	3	7
February	1	12	4	8	5	-	1	
Total	34	219	95	43	84	2	6	13

ZL Stations Worked/Heard

	ZL1	ZL2	ZL3	ZL4
November	-	-	1/0	1/0
December	2/0	4/0	8/10	1/5
January	3/1	0/1	4/4	2/3
Total	5/1	4/1	13/14	4/8

The following beacons were heard:

ZL2MHF - 19 times in December, 27 times in January and once in February

ZL3SIX - 24 times in December and 33 times in January

VK6RPH - Dec 6, Jan 1. VK6RBU - Dec 3, Jan 4, and Feb 3.

VK7RAE - Dec 25, Jan 26, Feb 5, and VK7RST Beacon Dec 24, Jan 13, and Feb 4.

VK8RAS - Dec 25, Jan 31, Feb 4, Mar3 and VK8VF - Nov 1, Dec 8, and Jan 21.

Apart from the many ZL openings, the only other international activity was hearing the New Caledonia FK8SIX beacon on Nov 1, Dec 26, Jan 24, and Feb 9.

Please remember to send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

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TET-EMTRON

Antenna Manufacturers

New

Tet-Emtron Vertical Range

TEV-4

TEV-3

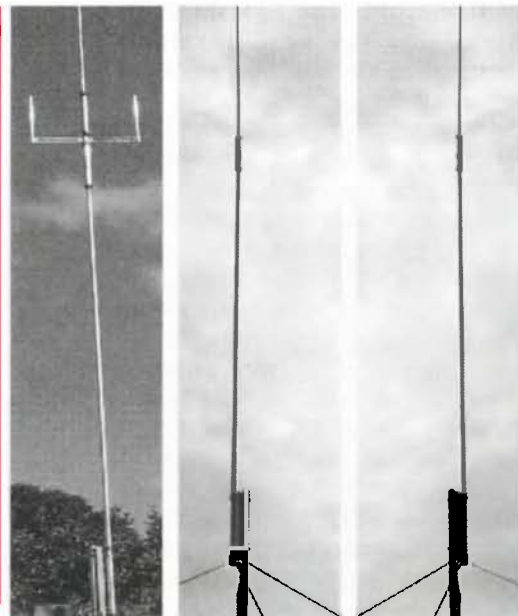
TEV-3Warc

New Tet-Emtron Vertical Range Features

- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
- Light.
- Free standing—no intrusive guy wires.
- 1 kW PEP power rating.
- Can be ground mounted or elevated.

The new Tet-Emtron Vertical range is designed with ease of use in mind. Tuning is done by the radials when the antenna is in its final position (where possible). The radials can either lay on the ground, be buried or hang from the elevated antenna. The antenna comes with a set of radials that has a resonant radial for each band. Further sets can be ordered from TET-Emtron if desired.

See the web site for more info and a complete dealer list.



40 Blackburn Street
STRATFORD

Victoria 3862 AUSTRALIA

www.tet-emtron.com

Email: rawmar@hotmail.net.au

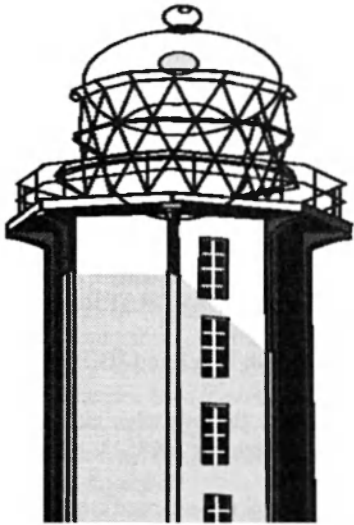
Ph: 61 3 5145 6179

Fax: 61 3 5145 6821

ABN: 87404541761

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

International Lighthouse/ Lightship Weekend



**0001 UTC 18th AUGUST TO
2359 UTC 19th AUGUST 2007**

The International Lighthouse/
Lightship weekend has become one of
the highlights of the year for amateur
radio operators across the globe.

The event helps promote awareness
of lighthouses and lightships. It
highlights the need for their
preservation and raises the profile of
amateur radio.

This year's activity starts 0001 UTC
on Saturday the 18th and finishes 2359
UTC Sunday the 19th August.

Lighthouse space is limited so
activity does not have to take place
within the lighthouse itself. The
guidelines are that the amateur station
should be set up at or adjacent to the
chosen lighthouse, say in an adjoining
field, in which case permission should
be sought from the relevant land
owners.

The event is NOT a contest, and the
emphasis for participants has always
been to have fun, without the pressure
to make a large numbers of contacts.

For further details and to register for
the event, visit <http://illw.net/>

The ILLW is an annual amateur radio
event, sponsored by the Ayr Amateur
Radio Group, Scotland
www.gm0ayr.org

Faces behind some of the voices at the Kellevie Fire Control Centre (see story on facing page)



Scott VK7FREK

Chris VK7FCDW



Thomas VK7FTAA

"Jamie" VK7KEG



Danny VK7HDM

WICEN Tasmania (south) activated for bushfires

Roger Nichols VK7ARN
WICEN Coordinator Tasmania (South)

The southern Tasmania WICEN group was activated at the request of the Tasmania Fire Service to provide operators for the Kellevie fire control centre at Cambridge.

The contact resulted from WICEN's work on the Tasmanian Safari Rally which shared communications management with the Tasmanian Fire Service and provided an opportunity to showcase WICEN capability.

The Kellevie fire was the first of the two (at time of writing) major bushfires on Tasmania's East Coast and included the Wielangta forest, familiar to the WICEN group through its work on equine endurance ride safety checkpoints over the past two years.

The fire involved 15,000 hectares, mainly forest in rugged terrain and stretching to the coast in the east. Tasmania Fire, Forestry and Parks networks were used on three mid band VHF frequencies and included airborne operations. Three radios were provided at the control.

The control centre radio room was manned by WICEN from Thursday 14 December through Friday 22 December, initially from 0700 to 2200, reduced to 0800 to 2000 for the last six days.

Two or three operators covered each shift. A long day shift took advantage of the relatively few people available during normal working hours with a shorter afternoon shift starting at 1700. A total of 235 operator hours was worked.

After the first day, the roster was organised to provide at least one operator per crew who had worked a previous shift. This minimised the briefing required from the Tasmania Fire Service personnel (and the initial trauma suffered by first timers!)

A few lessons have been learned from the activation which will be incorporated into the WICEN program.

Maybe it will be easier to get across the need for some of the more formal aspects of radio network operation – not a popular training topic! Fortunately, the WICEN group includes a strong

core with emergency communications experience; and immersion in the deep end brings about rapid learning from attentive learners!

(In case you hadn't noticed – check the call sign hierarchy in this list of public service volunteers! Where would we be without the Foundation Licence?)

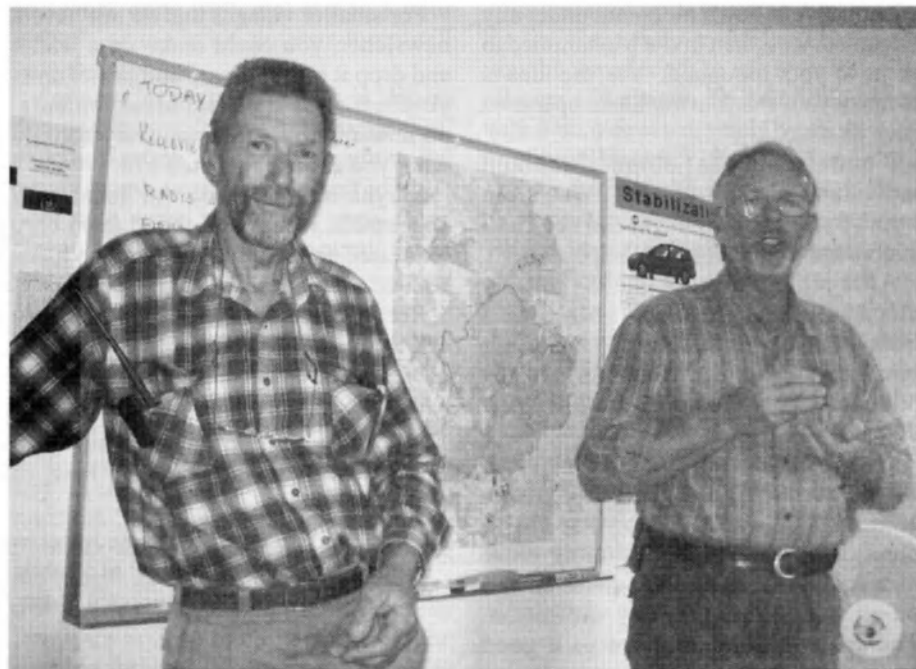
A job very well done by the following operators:

Allan VK7FAAE, Chris VK7FCDW, Denise VK7FDKM, Damien VK7FDNA, "Essie" VK7FMEL, Samantha VK7FSAM, Thomas VK7FTAA, Ben VK7HAH, Danny VK7HDM, Bruce VK7MBD, "Jamie" VK7KEG, Rod VK7TRF, Clayton VK7ZCR, Murray VK7ZMS, Dale VK7DG, Martin VK7GN, Ian VK7IR and Charles VK7PP.

Special recognition is due to Peter VK7TPE, Steve VK7FAME, Scott VK7FREK and Danny VK7HDM who, between them, covered almost half of the total hours worked.



Kellevie



Peter VK7TPE and Steve VK7FAME at the map board

Wanted – A Magic Wand

David Bell VK3FGE,
Box 348,
Porepunkah. Vic. 3740.

If only I had a magic wand! Just think:

**Sun spots to order;
DX stations that pick me out of the pile-up;
Perfect CW from VK3FGE (perhaps not - even magic wands have their limits).
Ah! The mind boggles!**

My latest need for a magic wand was during a long chat recently with Alan VK4EAB in Gympie, during the Sunday morning CW net. Alan is having to move into a retirement village soon, and is dreading it as (among other reasons) he will not be allowed to use his rig there.

If only I had a magic wand!

I said to my good lady (no, she is not always good!):

'Elayna, precious, they should 'do something to help operators in Alan's position'.

She raised her eyebrows and said 'They?'

I took the hint. 'OK, we should do something to help them'.

It was Elayna's turn to take the hint, so showing her usual interest in all I do she broke off her baking (despite my protests) and for the next two hours we taxed our brains searching for the best solution and how to make it work.

It seemed to us that, if Mohammed cannot have his own mountain under any circumstances, then invite Mohammed to come to your mountain. Yes, the idea is to make your shack available to operators such as Alan.

I understand that some clubs and individuals already do this. What I am trying to do is to highlight the need and encourage more people to help.

After all, our average age is probably around retiring age, so many of us could benefit in the near future (including you, good reader and yours truly) to say nothing of brownie points from Him up there...

Giving of yourself to help others can be very rewarding and generate a greater sense of self worth. Also, it seems to me that our hobby is becoming more of a social one than a technical one, if on-air conversation is any indication. The proposed system gives us a good

opportunity for 'hands-on' social contact and friendship.

So! How do we reach these 'retired' operators?

For those who receive *AR*, or listen to the broadcasts it's easy. A regular advertisement placed in *AR*, and an occasional mention on the broadcasts.

For those with no contact with ham radio and already living in retirement villages there is likely to be at least a notice board and possibly a regular newsletter.

You need to visit the management personally and put your proposals to them. Remember something that will make any of their residents happier and more content to be there is surely in their own interests. Furthermore, having an outlet for his/her radio interest means a retired operator is less likely to cause problems for fellow residents or management by operating from his unit 'secretly'.

For smaller villages that do not have a newsletter, you could make up a leaflet and drop it into self-care and hostel units yourself. But do seek managements' permission first, explaining very politely what you are trying to achieve.

Elayna and I visited our local, and very small, village and found them very interested and helpful, although no hams resided there.

Retired operators who live with relatives or other carers are perhaps the hardest to reach, but the following are among the avenues of approach:

1. Write a short article for your local paper. They are often in need of material.
2. Try and persuade the same paper to print a free advertisement as a public service. Once a week or once a year, it would help.

3. Some health authorities issue a newsletter, seek their help.

4. Bring up the subject on air, you never know who is listening and it may direct you to someone in need, or be the catalyst for the other fellow to take action.

5. Local radio.

6. Walk up and down the main street wearing a sandwich board. No, I am not serious; I am trying to open up your imagination.

I intend to contact specialist interest magazines such as 'Seniors' and 'Mufti', the RSL magazine.

The degree of interaction between you, 'the helper' and the retired operator will depend on his/her needs and your own priorities. For example, if the retiree has trouble arranging transport do you offer to pick them up and return?

Do you give them free rein in your shack while you cut the lawn, or do you hover within arms length?

Questions such as the above can only be answered on an individual basis. Your first conversation together will guide you. I would offer this advice (though I have no 'official' qualifications for doing so) do not overcommit yourself, or you will not be a helper for long.

A fantastic idea mentioned to me recently was the concept of a retirement village aimed primarily at retired operators. Are there any sufficiently cashed up home brewers out there? (Sorry, I could not resist the pun).

I will be very pleased to talk to others on the subject, on air or by landline. (No E-mail, I'm a dinosaur).

Remember, there are no magic wands. It's up to us.

ar

Quick HF antennas

Trevor Quick VK5ATQ

The most important thing to have for anyone able to operate on HF, is some form of antenna.

First, read all the antenna books and spend a year or two getting across the correct methods. Well, we do not have that much time. We wish to get on the air in a few hours. What antennas have you seen in use? What was your first antenna on VHF? A quarter-wave, maybe. Try one on 80 metres. Got a spare 20 metre pole handy? Well, you may be able to find a tree, and don't worry about a few bends.

Hold it!

Let us sit back for a moment and think about what we really want. HF around Australia at night? HF around our state in the daytime? Or are you interested in overseas DX work? For the moment, forget 160 metres. A great band, but not for now.

If you wish to chat around the Australian east coast at night, as well as with some local VK5 stations, and VK6 a little later when the sun has moved further west, choose 80 metres.

The simplest antenna is possibly the dipole. A little long for some back yards at 40 plus metres, but just use a single pole in the middle, and droop the ends towards the ground. A couple of bends won't be noticed. A loaded vertical antenna is smaller but can be a little noisy on receive. Still, if that is all we have room for, then let's try it. If you do find it noisy then transmit on the vertical and receive on a random piece of wire for now. But try the vertical, you may get away with it, and they do work.

For daytime activities, 40 metres is great. Most SSB signals will be found between 7.050 and 7.100 MHz. If we want to form a net, it is time we moved to between 7.100 and 7.200 MHz. A dipole for 40 metres is easier to fit in the backyard, as it is only 20 metres long. That's right, the old half wavelength. Once again, the loaded vertical is available and it may be better for short distances.

Want to work some DX? Twenty metres is great, or even 15, especially into Japan, or around Australia in the daytime. You may find America in our mornings on 15 or 10 metres.

Remember the propagation theory. You know: F layers and the sun, all

that ionisation in the upper atmosphere. Now, does it occur in the daytime or at night-time? Where is the sun when we are operating?

Don't forget the old CB antennas, like the Station Master. It is great for 15 and 10 metres. An end-fed half-wave on 15 or 10 can work the world. Experiment by moving the tap to the top of the coil, or disconnect the coil. With a ground-plane or some radials at the base, it makes a fine quarter-wave vertical for 20 metres.

If you have enough trees or other skyhooks you can simply connect all of the dipoles for 80, 40 and 20 at the one coax feed point. Give it a go! Yes, you will get some interaction but this is where the fun really starts. Once you have the dipoles resonant by building them one at a time, connect all the feed points together. If you have some interaction with them, change the angles between the dipoles.

Down the track you will find that 'traps' can work quite well to reduce the number of wires in the sky. Traps made from coaxial cable scraps can be the next experiment. An SWR of less than 1.2 to 1 is nice, but try for that across the whole band! If you're under 1.5 to 1 your radio will work quite well, and at 2 to 1 your in-built, or in-circuit, antenna tuner will hide the problem.

For now, let's just get on the air. Where do I find the wire? Any old 240 volt wire, solid or 7 strand, will do. Just remove the tough sheath near the ends and join the wire with some twist joints and solder. It won't break, well not for many years, and we are experimenting. You will need an insulator in the centre where the coax connects. A piece of plastic works fine. Hold up the antenna ends with plastic cord, preferably black.

Remember the dipole ends will be high voltage points, so no little fingers anywhere near the ends when you transmit. Try to keep them 2 metres or more above ground. When you are tuning the length of the antenna, you will find that as you raise the antenna the resonant frequency will go lower. The greater the antenna height, the lower will be the resonant frequency. That ultimate all-

band, high gain antenna is somewhere down the track!

Coax is the most popular feed method. Ordinary RG58 is quite suitable for HF operations. If you have RG59 or 70 ohm coax, you can try it. It often works very well. Remember the half-wave dipole is about 70 ohms, depending on height above ground. Don't forget the open-wire feed. It is not only the cheapest, it also causes the least loss, and will allow you to use a separate antenna tuner to give you multi-band operation.

If you decide to use open wire and an ATU, you may find it better to use a dipole length that is not resonant on an amateur band. For example an 80 metre dipole will be two half wavelengths when used on 40 metres, and exhibit a very high impedance. This may be far too high for the ATU to match. If we are using a quarter-wave radiator, we will need an earth, a ground plane, or we can use a quarter-wave radial or two. But the dipole is balanced, so the earth at the radio end is for safety.

To get started, choose a band or maybe two, just get on the air and have fun. When cutting the wire for your dipole do your measurements by using 300 divided by the frequency in MHz. That gives you the wavelength in metres with some tolerance in length. To be a little closer with wire, you can multiply by about 0.97; ie. shorten by about 3%. Then divide by 2 or 4 for the half or quarter wavelengths. I never use the imperial measurements now. We talk in metres for the band names, why use feet and inches and convert back and forth? That practise is so confusing! Try doing the sums and you will be intrigued by the half wavelength figures when the correction factor is applied. Especially for 2 metres, if you use 300 divided by 2 and multiplied by 0.96.

At least you are on the air. That is the whole aim of this exercise. Have fun and work everyone with a proud feeling of mateship and respect.

Welcome to HF.

ar

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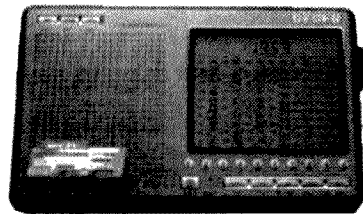
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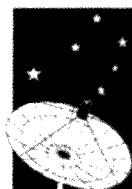
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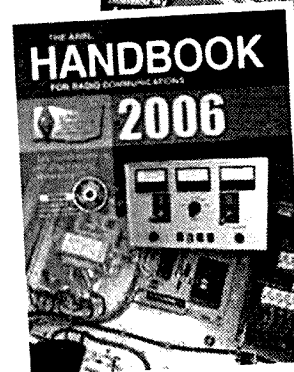
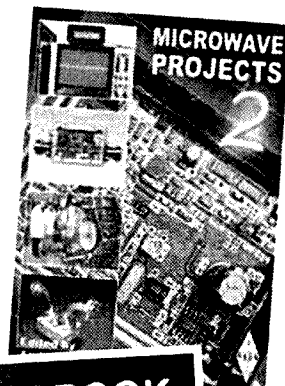
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VK1WIA, Sunday 9.0am via HF and major VHF/UHF rpters

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Notes

1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

An eye on the sky

Photos by Emil Lenc.



Owned and operated by CSIRO, the Parkes Radio Telescope is a working scientific instrument and as such is closed to the public. The Parkes Radio Telescope is located 20 km north of Parkes on the Newell Highway in NSW. Normally, visitors can walk around near the facility and explore the Visitor's Centre.

The highlight of the WIA Annual General Meeting weekend will be a series of detailed "technical" tours through the Parkes Radio Telescope Facility made available for WIA members. This will be a once in a lifetime opportunity for most members to step inside one of the world's most active and powerful Radio Telescopes and to be able to ask technical questions of the site engineers.



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Amateur Radio

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Our Cover this month

Reports indicate that the FT-2000 transceiver has been selling well since its release in december 2006. Read the review of this transceiver by VK3OM and VK3BR, commencing on page 21. Images courtesy of Vertex Standard Australia. Background photo of the centre of the Milky Way courtesy NASA/JPL-Caltech

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

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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.

Wireless Institute of Australia

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Founded 1910

Representing

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Member of the

International Amateur Radio Union

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Editorial Comment

Peter Freeman VK3KAI

WIA – structure and response times

A few instances in recent weeks prompt me to write about the structure of the WIA and its operations.

Unlike our counterparts, the Radio Society of Great Britain (RSGB) in the UK and the American Radio Relay League (ARRL) in the US, the WIA is largely run by volunteers. We have a very small paid staff manning the Institute office, who are supported by several part-time volunteers. All the other work is done by volunteers.

In the case of the paid office staff members, there is a limit to the amount of work that can be completed in their paid working week. The office volunteers assist in the volume of work that can be completed in any given week. The entire office operation does very well, in my opinion, in addressing the demands placed upon it. There may be occasional delays or hiccups, but all concerned are striving to do their best with the systems that are currently in place. I am aware that the WIA Board is striving to improve all operational systems of the Institute, but such changes take planning and time to ensure smooth implementation.

Almost all other tasks conducted “by the WIA” are undertaken by volunteers, including the Board members. Some of these volunteers may be retired, but many are still engaged in full or part time paid employment. Regardless of their employment status, members cannot expect an unlimited amount of time to be made available to undertake WIA tasks, be they planning of the next “big thing”, or answering a question received via email.

Yes, we often may be able to give a very rapid response to a query received via email. If the timing is right, a rapid response gives an answer quickly. Many now expect that the rapid response is the norm – is this acceptable? I do not think so.

I am aware, via a second hand but reliable source, that one member sent a query to our President on Good Friday. By Easter Monday, he had not received a reply, so sent an email complaining about the “slow response” to the WIA office. Of course, the office staff members were not at work on the Friday, Monday or

Tuesday, as those days were Public Holidays for them.

I really think that members should think carefully about their expectations. I trust that most would agree with me that the above instance was far from reasonable. Even volunteers cannot be expected to be available to respond at all times, and will need to have some time away from this organisation.

Membership and benefits

We are hearing news of the preparations that many IARU societies are making for the next World Radio Conference. This WRC in November this year is particularly important because the agenda includes matters that directly impact on the amateur radio service. And there is always the risk of loss of spectrum. Many national amateur societies have very good relations with their national administration and are fortunate to be able to nominate a knowledgeable amateur as part of the formal government team at these conferences, if they bear the cost of that amateur's participation.

Australia is such a country.

In between these important international meetings, our national society – yes, the WIA – constantly interacts with the ACMA. Interactions include issues such as the balance of the amendments to the Amateur LCD, Australian participation in the CEPT visitor licence arrangements, two-letter callsigns, representing amateurs impacted by the deployment of BPL systems, amongst other issues. There is an ongoing requirement for a reasonable, technically sound voice to represent the interests of amateurs to the regulator and to government.

One could easily compare the WIA to a union, in many respects. Yes, I know that our current industrial relations regime tries to minimise the impact of unions, but many workers still rely on the power of collective bargaining in many aspects of their relationship between themselves and their employer. When a collective agreement can be reached,

continued on page 27

The WIA Learning Facilitator

Since October 2005, the WIA has managed the amateur qualification examinations based on the assessment of competency by assessors holding a nationally recognised qualification based on the Australian Qualifications Framework, with WIA Assessors formally trained by a Registered Training Organisation (RTO), and accredited and registered by the WIA. Prior to this time, amateur radio examinations for several years were managed by the WIA and conducted by Invigilators. Invigilators were people who were registered by the WIA on the recommendation of their clubs. Many of the former Invigilators are now Assessors, and we have continued to register new Invigilators at the request of the various clubs. Basically, their role today is assisting in the administration of assessments.

The basic document published by the WIA setting out the methods and requirements of its assessment system, the "Assessment Instructions", recognises the Invigilators as an essential part of the system: for example, it is required that an Assessor should only conduct assessments in the presence of another Assessor or an Invigilator.

We have wanted for some time to bring the Invigilators into the assessment system in a better way. We wanted them to have demonstrated knowledge of the assessment process. We wanted them to be fit and proper persons, as by now more states and territories are following Queensland in requiring some sort of clearance before working with children.

So now we are introducing the WIA Learning Facilitator to replace the Invigilator.

We have prepared a basic document setting out the methods and requirements for Learning Facilitators, the "WIA Learning Facilitator Instructions", and that is available on the WIA website.

We are using the term WIA Learning Facilitator because that is descriptive of what they are doing and, frankly, we couldn't think of anything better.

The Learning Facilitator will be a person qualified by our RTO, and subject to complying with state laws where

they exist, for example a Blue Card in Queensland or a Working with Children Card in Victoria, or otherwise a national police check.

We are asking the existing active Invigilators to complete an application for qualification and registration as a Learning Facilitator. The application form is also downloadable from the WIA website.

We say that the WIA Learning Facilitator should fit certain criteria, such as:

- hold either an Australian Standard or Advanced Licence;
- have access to the Internet;
- use email and have a public email address;
- be nominated by a club or other group of radio amateurs, and
- be a member of the WIA.

Membership of the WIA is required because the WIA Learning Facilitator is representing the WIA and also to protect the individual, as the WIA's public liability insurance will provide cover in the terms of the policy.

The qualification should not be a barrier to existing Invigilators or others. To be qualified by the RTO, the potential Learning Facilitator must demonstrate knowledge of the WIA assessment system, as set out in the Assessment Instructions, as well as knowledge of the process for always seeking to improve quality.

How is that to happen? Let me quote from the WIA Learning Facilitator Instructions:

The WIA Nominated RTO will send to the Learning Facilitator candidate a web site address and a password to access the Learning Facilitator training program. The candidate will access the website and follow the instructions to complete the training program. This will include the check of understanding, reading and other documentation. The check of understanding will be submitted by the candidate to the RTO, and feedback will be provided by the RTO to the candidate.

When the RTO is satisfied that the candidate is competent, the RTO will

inform the WIA office accordingly, and then, subject to the candidate having provided either an appropriate card or a national police check and otherwise complying with the requirements, the WIA will register the candidate as a WIA Learning Facilitator.

Like the WIA Assessor, the WIA Learning Facilitator will be subject to audit, and re-registration every 5 years.

We hope to have the whole system in place by the end of this year.

Because of the obvious advantages of qualification, knowledge of the assessment system and compliance with the various working with children requirements, we intend to replace the current club or group nominated Group Leaders with a club nominated Learning Organisers, each of whom must be an accredited and registered WIA Assessor or WIA Learning Facilitator, prepared to have their contact details published and prepared to act as the first point of contact with a club or group for the WIA in relation to assessment and training matters and the first point of contact for someone wanting to know "how to become a radio amateur" or seeking assessment.

It is important that the respective roles of the Assessors and the Learning Facilitators/Learning Organisers are not confused.

In the Learning Facilitator Instructions this is hopefully made clear as follows:

It is fundamental to the WIA amateur assessment system that all assessments are to the same standard, and so WIA Learning Facilitators must ensure that they do not do anything that could, or could be seen to, assist a candidate.

Responsibility for assessments lies with the WIA Assessor(s) responsible, and Learning Organisers must take care not to interfere with that responsibility.

Over the next months, we will be approaching the clubs and seeking their support to ensure that those seeking training or assessment are always helped appropriately.

We hope that these changes will further enhance the credibility of what the WIA is doing with our partners, the clubs.

Results of 2007

Election of Directors

The WIA Returning Officer David Wardlaw VK3ADW announced the results of the 2007 WIA Election for four Directors as follows:

Robert Mark Broomhead	761
Roger Edward Cordukes	334
Edward William De Young	433
Ewan McLeod	775
Michael John Owen	828
Peter Richard Young	554

Therefore the four positions will be filled by Michael Owen, Ewan McLeod, Robert Broomhead and Peter Young.

Because of the long period between the finalisation of the election and the Annual General Meeting, the WIA Board has amended the Postal Ballot for the Election of Directors Regulations to enable the Returning Officer to announce the result of the election for directors before the Annual General Meeting.

WIA announces Chris Jones Award

WIA President Michael Owen VK3KI has announced that the WIA had decided to honour the memory of the late Chris Jones VK2ZDD by a new award, to be called the *Chris Jones Award*.

The award will not necessarily be made every year, but will be awarded to radio amateurs who have made an exceptional contribution to amateur radio and the Wireless Institute of Australia.

It will be a handsome glass trophy, inscribed, *The Chris Jones Award honours the memory of a man who was dedicated to the advancement of amateur radio and whose commitment and vision led to a new WIA and whose unfailing courtesy and genuine friendliness is fondly remembered by all who knew him.*

The first award will be given this year and has been decided by the WIA Board. The recipient will be announced at the Open Forum following the Annual General Meeting in Parkes, New South Wales, on 5 May 2007.

Two-letter Callsigns

The WIA knows that many amateurs are very interested in the issue of two letter callsigns since ACMA ceased issuing them more than 2 years ago.

The WIA has on a number of occasions sought clarification of ACMA's position.

In its most recent formal letter to WIA President, Michael Owen VK3KI, Alan Jordan of ACMA explained the steps that had been taken and the present position as follows:

On 19 October 2005, ACMA implemented new arrangements that included the introduction of three new licensing options under the Amateur licence type.

Under the new licensing arrangements, callsigns previously allocated under Unrestricted, Limited and Intermediate licences were carried across to the replacement Advanced licences. Under this arrangement, one of the blocks of callsigns that became available to ex Intermediate and Limited licensees under the Advanced licence was the block of callsigns having two-letter suffixes. Historically these callsigns have been highly valued amongst Amateurs. However, with the exception of Tasmania, the Northern Territory and the Australian Capital Territory, the anticipated demand for these callsigns would have exceeded the supply.

For this reason ACMA temporarily ceased the issue of two-letter callsigns while an equitable arrangement for their allocation was being developed.

Unfortunately, since October 2005, while some progress has been made on this project, ACMA has not had the resources to finalise this body of work. As you would be aware, ACMA is currently, in accordance with the 'Outcomes of the Review of Amateur Service Regulation', working to amend the Radiocommunications Licence Conditions (Amateur Licence) Determination No.1 of 1997 (the Amateur LCD) and introduce a Class Licence that will allow visiting overseas Amateurs to operate in Australia without having to take out an individual licence.

However, work on the Amateur LCD and the Class Licence is now coming to the point where resources can again be focused on the two-letter callsign project. It is therefore anticipated that procedures to resolve this issue will be in place by the end of June 2007.

The WIA President commented as follows: "I know that many have been

very concerned at the inordinate delay, and in asking for formal advice, I had hoped that ACMA would at least explain the "equitable arrangement" they contemplate. However, at least a deadline has been set as to when the matter will be finalised."

Successful EMDRC White Elephant Sale

The Eastern and Mountain District Radio Club (EMDRC) conducted its annual White Elephant Sale (Hamfest) on 25 March 2007 at Heathmont, an outer eastern suburb of Melbourne.

WIA President Michael Owen VK3KI and WIA Director Robert Broomhead VK3KRB manned the WIA stand and were pleased to welcome 14 people who joined as new members of the WIA. The WIA stand also sold quite a number of books and merchandise, with popular items being the 2007 Callbook, Polo Shirts and Foundation Licence Manuals.

EMDRC club President Bryan Pliatsios VK3HXR reported the day to be a huge success, with attendance significantly up from previous years and a healthy participation from folk recently having obtained their Foundation Licence and their partners. "There was a lot of positive feedback from sellers and commercial traders who also reported the day to be a very successful and worthwhile event" Bryan said.

New BPL Trials in Queanbeyan, NSW

Full details have now emerged about the latest BPL trial in Queanbeyan, NSW. The trial was announced by Country Energy on the 15th March and is expected to be operational for at least 6 months from May this year.

The BPL trial plans to pass 300 households in the Queanbeyan CBD and Jerrabomberra areas, and will provide both access broadband and electricity network management information.

Freshtel will provide an Internet Telephony service to participating customers who, in addition to receiving a modem and access to the broadband service, will receive a free Binatone

continued on page 27

What, yet another ATV record attempt?

Dan VK2GG and Jack VK2TRF

Ho hum, how boring. Do you say? But wait a minute, what about an Australian ATV record using stock standard AV sender/receivers sold by Jaycar, utilizing 15 mW over 175 km?

Remember, these units are designed to show Video from Foxtel set-top boxes from room to room, say up to 100 m. This is really a story about how you, the amateur, can get on 5.7 GHz ATV with minimal equipment. The authors' 5.7 GHz units are displayed in the photo. I purchased my set on eBay Australia for \$150. Jaycar's will set you back about \$250. An SMA socket was substituted for the original patch antenna. These are in the Amateur 6 cm band.

We are indebted to Peter VK2TPK and the boys from Hornsby and District ARC for allowing us to share the top of Mt Warralong (Watagan Forest) with them during the recent John Moyle Field Day contest.

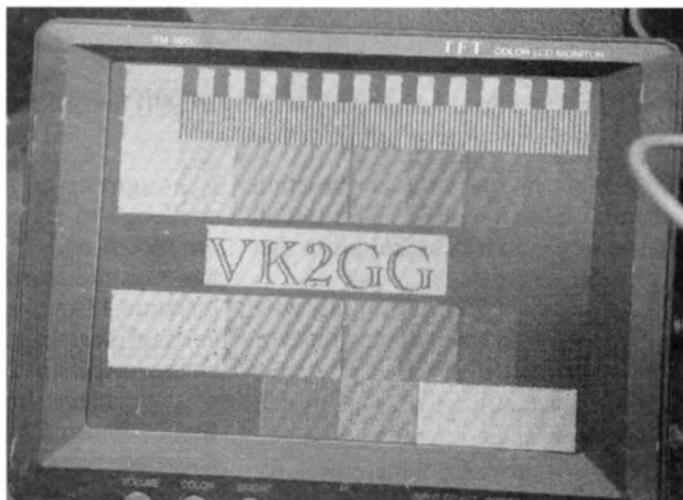
Dan VK2GG and Graham VK2DWL found a spot looking through the aperture between some trees, having a southerly aspect. Jack VK2TRF travelled to Mt Gibraltar, some 175 km away. As usual, Jack brought the rain with him. Now Mt Gibraltar is a very busy site, having all kinds of nasty RF installations which could hamper the record attempt, or swamp the puny 15 mW from the transmitter. On the other hand, Mt Warralong is a Forestry Fire tower site, with mainly forestry UHF Yagis on it. It has a steep (possibly) 4X4 entry track, but first one has to gain entry past the locked gate. As the HADARC had already made the necessary application on the variety of forms, O.H. & S requirements, etc, all we had to do was to approach HADARC with cap in hand.

We have been "playing" with 6 cm ATV for several months. 76 km was quite a thrill, but of course 175 km was really exceptional. It seems that 5.7 GHz is a remarkable band. Dan had constructed a pair of 15 dBi horns (HDLANT from ARRL web site) out of copper sheet, and these proved reasonably effective over 10-25 km paths. For this attempt, Dan made a "tuppenny" feed out of WR137 waveguide, which he attached to his 1.2 m dish. Jack used a "Golden Dish" for improved gain over the original, a "Grid-Pack" style dish designed for use at 2.4 GHz. The brass mesh covering prevents excessive loss due to the wide spacing between the elements of the original dish at the higher frequency.

The rain came down quite heavily at Mt Gibraltar towards the end of the record attempt session, but not before P5 pictures were received at each end of the link. How's that for minimizing spurious RF emissions, using QRP for a record attempt? As usual, the hot sun melted the Tim-Tams at the Warralong end. Further successful ATV transmissions on 10 GHz and 2.4 GHz were made along the link for the purpose of the John Moyle event.

Equipment:

12-15 mW exciters (described above). Receivers as also described above. 1.2 metre dish with 'penny' feed (G4ALN). Modified Gridpack dish with 'golden mesh'.



The picture received by VK2TRF



The picture received by VK2GG



The 5.7 GHz audiovisual transmit and receive units

See more pictures inside back cover

ar

The VK5BUG 'BlackBelter'

A 160/80 m hybrid vertical aerial for suburbia

David 'Doc' Wescombe-Down VK5BUG

After reading aerial articles by McCoy (1960) and Diamond (2004, 2005), I decided to do something about operating on the lower amateur bands.

This project involves the construction and erection of a hybrid aerial for 160/80 m operation, and it is hybrid given that it features:

1. A combination of sloping wire and vertical alloy tubing radiator construction.
2. A physically large capacity-hat (top-hat) incorporating guys.
3. Above ground counterpoises for both bands.
4. Ground mounting.

The top hat is a combination of hard-drawn copper wires which also act as guys, four aluminium tubes in a horizontal cross arrangement and a metre-long alloy whip at the top.

Aluminium tubing has been used for the 10 m ground-mounted vertical radiator element because it happened to be in the workshop overhead storage rack and I wanted to employ it more usefully. The aerial is not excessively tall for an inner-city house block and the four guys terminate around 2.1 m above ground on boundary fencing or a dividing trellis so that they do not interfere with the other backyard activities.

Not being an advocate of coaxial cable as aerial feeder for QRP installations, I used pre-loved open-wire TV ladder-line (ex-Hills TV) of which I had almost a full roll. Initial trials as a balanced feeder were not encouraging so I simply joined the conductors at each end and used it as a single wire component element of the radiator, thus providing an effective LOA of approximately 27 m. A very short Zepp feeder of the same open-wire line connects it to the aerial tuner. Should I wish to use the long balanced feed-line for subsequent aerial experiments, it is already in position and tidily taped to its polyethylene cord catenary.

After more than three decades of QRP CW activity on 20 and 40 m,

I thought it might be a challenge to try the same on 160 m and 80 m, and that sent me searching the literature. I like constructing vertical aerials and have encountered no definable noise problems from them when compared to various horizontal types, contrary to what some literature might state. From this research process it soon became apparent that there are more myths and misconceptions surrounding vertical aerials and related matters than perhaps any other aspect of wireless communication, and amateur radio in particular.

Some manufacturers have made certain claims; others have stated alternative perspectives; yet others claim that their vertical aerials require no radials, counterpoises or any form of grounding; and many amateurs have chimed in with various opinions based on something they had read or were told in good faith. One only has to listen on air to hear the various proponents and supporters of the different theories and claims, all putting their hands up as being correct. Certain advocates of particular aerial theories have been given almost revered, and therefore apparently unchallengeable, status over the years, so a couple of generations of amateurs may have been following their

theories through osmosis, convenience, necessity of circumstances or simply without question. It has long bemused



Photo 1: David VK5BUG holding the capacity top hat alloy tubes and their mounting boss.

me that some of the most vocal armchair experts have not actually built large MF/HF verticals and tested the theories themselves, especially using QRP which is the great leveller of amateur station installations. I tend to take an alternative approach, and whilst not disregarding the theories, build aerials and make them work to the standard I require with low power. Sometimes their success has flown in the face of theories, and maybe that is what keeps me doing it.

I am not sure where or when all of the myths about feed-lines, counterpoises and radials began, but perhaps it was when amateurs (and, later on, CB operators) started linking SWR readings to power being reflected back into their transmitter or transceiver final stages to be dissipated as heat. Others simply saw reflected power as lost power.

As former ARRL technical coordinator Haerle (1994a) explained in detail, neither of those notions is a fact:

Since a 10:1 SWR on 100 feet of RG8U at 4 MHz increases loss by less than 1 dB, don't worry about the fact that the SWR rises above 2:1 at the band edges.....the station at the other end won't be able to tell the difference. (p. 20)

Since the end of World War II, with the introduction of coaxial cable and SWR meters, too much misleading information has been circulating to the point where the myth has become fact in the mind of many. A chain of fallacy perpetuation has evolved, leading to categorical statements such as:

1. Subtract your reflected power percentage from 100 to calculate the usable transmitted power output (commercial nomographs have even been printed for this erroneous claim!).
2. Prune your vertical to exact resonance and feed it with an equally exact multiple of half a wavelength of RG58CU, RG8U or RG213 coaxial cable.
3. You must always have a perfect aerial-to-feeder match.
4. The efficiency of your aerial is based on its SWR: the lower the better.
5. Install earth stakes/ground rods to make your vertical work better.

The long-term result of this type of propaganda is paranoia to avoid any mismatch and system reflection at all costs. What this SWR hang-up has

done is cause us to focus our impedance matching efforts at the wrong end of our aerial feeders.

If antenna impedance issues are keeping you awake at night, install an antenna tuner using air-dielectric capacitors and silver-plated coils which will minimise power loss from your tuner, allowing it to show close-to-50 ohm impedance for your transceiver. Don't fret over non-resonant aerials because you can use your tuner to provide a resonant system: aerial, feeder and tuner.

Probert (1988) presented an informative article which included the statement:

However, there are still amateurs who use balanced feeder for a variety of reasons. There are probably many more who would use them if they were better understood. (p. 27)

I prefer to use balanced feeders instead of coax because they are much less lossy, handle higher voltages and provide a greater range of aerial tuning to advantage operational bandwidth without retuning. Quite handy in contests, for example. They are easier to connect to anything at either end and not at all difficult to route and secure despite some claims to the contrary: it only requires a simple paradigm shift. That is why I have used them extensively over the years, including with the recent VK5BUG 'Blackstick' and 'BlackBelter' ground-mounted verticals at my present QTH that allow me to operate effectively from 160 to 10 m inclusive.

Don't let anyone try to tell you that you will 'lose a heap of power in your tuner'. If it has a transmatch configuration, it will probably contain a silver-plated roller inductor and two hefty, wide-spaced variable capacitors: none of them consume much power BUT toroidal baluns and accumulated resistances will!! Toroidal baluns also have saturation issues which are really



Photo 2: VK5BUG holding the top tubing section and capacity hat 'cross' for the 160/80 m "BlackBelter".

worth researching, irrespective of what the glossy sales pitches might claim. You will have no problem if you use balanced feeders with a good balun. If you are coax-bound without a tuner and have a balun at your aerial, you could also be fine with modest power and an SWR less than 2:1. However, if you cut your aerial for mid-band resonance and are rewarded with the corresponding low SWR, then find it is way up over 5:1 at the band edges, you may immediately think 'Balun'! After installing a 1:1 ferrite-core balun at the aerial feed-point, you then note that the SWR drops to about 1.5:1 at those band edges, and

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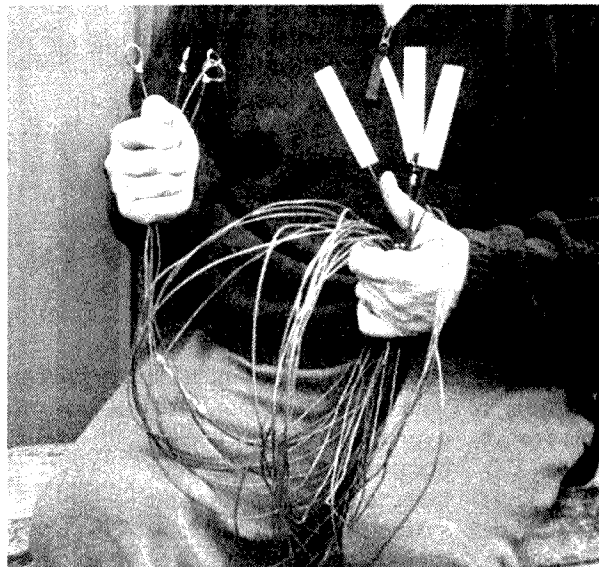


Photo 3: Capacity hat wires showing loops for guy ropes and the zinc plated "solder tugs".

so you naturally think that all is now well: the balun has fixed the mismatch problem. Not so.

You would actually be better off without the balun because your aerial has not changed at all. The SWR is as high as it ever was and you have been duped by a meter reading. As Haerle (1994b) continued to advise us:

The meter is reading less reflected power, all right, because the high reactance currents on both sides of the resonance are being absorbed in the balun's ferrite core. That means that both radiated and reflected power are down, making the meter read lower forward and reflected power. (p. 14)

To operate across several bands with their great variations in impedance and SWR, you will need the balun effect offered by a really good transmatch or a coaxial balun. For balanced feeders, install a 4:1 balun (or higher ratio) and this can be a simple coil of coaxial cable (choke balun) just before it connects to the balanced feeders, or it can be a solenoid type wound on a short length of 100 to 200 mm plastic water pipe (Rollema, 1992; White, 2000). In addition, many editions of the ARRL Antenna Handbook will give details of choke baluns for the various amateur bands.

Worth noting at this point too, is Maxwell's (1973) comment:

High SWR in an open wire line at HF caused by a severe mismatch will not produce antenna currents on the

line, nor cause the line to radiate, if the feedline currents in each wire are balanced and if the spacing between wires making up the feeder are small at the wavelength of operation. (p. 22)

With all this happening, we also need to tune our aerial at the operational end, so we have to impedance match at the feed-line input. That will create enormous benefit to operating flexibility because it provides the correct load impedance for the transmitter at whatever frequency we choose in any entire band. Broad-banding the aerial

will only help to a limited degree and is not a preferred method for most situations. Another win for the pi-tank output circuit of valve finals that many amateurs still prefer!

With that information under the belt, it is time to turn to the aerial construction for this project. My requirements were simple by most standards:

1. Provide belting performance, given the geography and low power used.
2. The final form and physical siting of the aerial had to be successfully negotiated with my dearly-beloved Ingrid. Hint: we took a six metre length of 65 mm OD aluminium tubing which was at hand, painted it black and then simply propped it up in several backyard positions each for a few days so we could get an idea of any visual or physical impact that the planned aerial might have. Looking at it, having to walk by or around it to garden, tend to chooks and birds daily, and just seeing it in context really helped us make the site choice.
3. Local Council regulations needed to guide the construction and location.
4. Minimal cost and use of materials at hand as much as possible.
5. Tunable with effective impedance matching across each entire band.
6. No coils, traps, linear-loading or lossy baluns.
7. Capable of installation by a husband

and wife team given appropriate weather conditions.

8. Be black in colour! Aesthetically quite appealing among the established trees and tennis court surrounds of the area, and multi-neighbour input verifies that black drastically reduces the visual impact from their perspectives.

Well, we have achieved all of the above, and here is how it went together.

Ground-mounting

A 3.7 m length of 38 x 25 mm galvanised RHS which was pre-drilled to later accept a 2.5 m piece of 75 x 40 mm radiata pine mounting board, and then set in 60 kg of fast-setting concrete mix poured into a 700 mm x 300 mm x 300 mm hole. This initial part of the proceedings was then left for about 16 hours to set, after which I painted the RHS and board in our best Aerial Black paint. The exposed open end of the RHS was plugged with scrap

poly foam and covered with silicone sealant to keep the weather out.

Capacity hat

The top hat is made from a 100 mm x 44 mm thick-wall aluminium tube boss, drilled to accept two 280 mm x 18 mm thin-walled tubes positioned at right-angles to each other through the boss, one 50 mm above the other to minimise weakening of the alloy boss in windy conditions. Both 280 mm tubes were installed and locked in place by stainless steel 10 x 6 mm hex head bolts. Two slots were cut in the open ends of both tubes (8 slots altogether) and a 20 mm stainless steel hose clamp fitted to each slotted end: these would soon secure the four 1.8 m alloy tubes of the capacity hat system (see Photo 1).

Those four 15 mm diameter tubes were then polished with emery cloth for about 150 mm and smeared with "Alimox" conductive paste before being inserted

into the tubes and the hose clamps tightened (see Photo 2).

Four 5.2 m lengths of hard-drawn copper wire each had a small loop formed in one end to accept the guy ropes and a zinc-plated giant solder lug soldered to their other end (see Photo 3). These wires, plus the four alloy tubes, plus a 1 m alloy whip top-piece, all form the capacity hat of this project aerial (see Photo 4).

Radiator

The monopole was assembled from four sections of telescoping aluminium tubing with 300 mm insertions each polished with emery paper and liberally coated with conductive paste. Four 150 mm long slots were cut with an angle grinder (cutting blade of course!) and two stainless steel hose clamps were cinched up at each telescoped junction. I have not specified the lengths and diameters of the pieces of tubing that I

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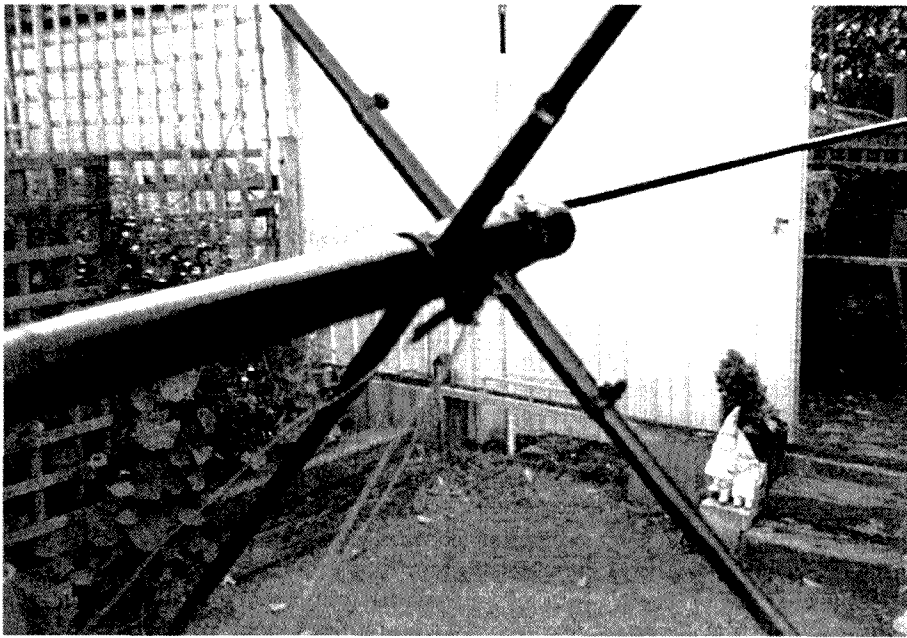


Photo 4: The capacity hat with the four 5.2 m wires, the four 1.8 m alloy tubes and the 1 m alloy whip.

used because they were simply at-hand, and anyone contemplating building something similar will choose what is available to them. I conducted tests with overall vertical monopole lengths of 10 m, 11 m and 14.4 m just to see what differences I could detect, and there being nothing of note to report in that regard, I reverted back to the shortest length (10 m) and then simply attached the TV ladder-line, giving the LOA of 27 m for Zepp feeding into the aerial tuner as previously stated.

Installation

Not surprisingly, this proved to be the biggest challenge of the project and was delayed for three weekends due to weather conditions. When a breeze-free Sunday morning finally arrived, Ingrid and I collaborated to attach double 5 mm black poly guy ropes to each copper wire loop and then stand the vertical monopole up on its bottom end. That activity went reasonably smoothly, but it was not physically possible to construct the aerial adjacent to its concreted base mount, and so we had to walk the very wobbly (because of the capacity hat influence on centres of mass and gravity) device some 15 metres across the lawn, around a clothesline, avoiding a tall almond tree which seemed to be reaching out to grasp the aerial and guy ropes, and over one of our above-ground garden railway tracks. After much huffing and puffing we had it in place. We initially tried a glass wine

flagon but then opted for a ceramic tile as the stand-off insulator beneath the alloy tubing base and this was silicon-glued in place. All four guys were tied off and then re-tensioned sequentially so that they not only provided the necessary movement restraint, but also formed some acceptable angles to the vertical element. A poly cord catenary was routed from the wooden mounting board to the workshop fascia where two ceramic feed-through insulators were already waiting. The ends of these, inside the workshop fascia, carry the Zepp feed. The sloping wire formed from the TV ladder line outside was connected to one of the feed-through insulator's outer terminals. The open-wire feeder was routed from the workshop fascia to the mounting board, and taped to the catenary cord every 300 mm or so. Attachment to the aerial base was then made.

The aerial has two 20 metre long above-ground counter-poles for the 80 m band and two of 42 m for 160 m. The dual rails of our brass 45 mm gauge garden railway track serve more than one purpose in life, as do the three neighbours' tennis court fences when counterpoises and radials are required!

The aerial tunes very responsively on both bands with no retuning required across the entire CW section of each. The first 80 m call on 31 October 2005 with 5 watts input CW from an Icom IC-731S resulted in a 229 report from a DJ4: not wonderful, but we did beat

the European noise level on flea power and, with CW of course, he could hear me, so he could work me! Next stop, 160 m to see how much of VK and ZL we can belt into with 5 watts!

Acknowledgments

It would be very remiss of me not to express my appreciation to Ingrid for her acceptance and assistance throughout the project; George VK5ALS for his idea of adding the one metre whip to the capacity hat and his collaborative discussions-in-general; and Drew VK3XU for giving me the initial idea and some constructional hints via his two-part 160 m aerial article as referenced below. Thank you all.

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A beam position indicator project

John Drew VK5DJ

<http://vk5dj.mountgambier.org/>

This project describes a complete azimuth and elevation readout system that outputs to array driving motors. Motor movement may be initiated by either front panel switches, internal calculations of moon or sun positions, or by external computer control.

The shack unit may find use as a replacement for lost or broken rotator controllers.

The traditional method of determining the direction of a beam is to use a linear potentiometer driven by a gearing system to convert 360 degrees to the 270 degree motion of the potentiometer. A bridge circuit with a calibrated meter enables the direction to be read out. The potentiometer method has the advantage of providing an 'absolute' reading. That is, on power up it will immediately provide a beam heading without calibration. If you are lucky, you might achieve four or five degree accuracy.

This paper will not discuss 'incremental' indicators which is a method based on synchronisation. Some readers will be familiar with the old 'kerchunk' TV rotators that pulsed their way around and kept an indicator in step - well, more or less. Other incremental indicators may now be more sophisticated but usually require re-synchronisation whenever they are powered up.

A common method, used by those who require greater precision than that provided with a potentiometer system is to use a Gray coded wheel. The Gray code is a binary code that, unlike the standard binary count, changes just one binary digit at a time. For example, in standard binary, a count proceeds like this: 0000, 0001, 0010, 0011, 1000, 1001, 1010, 1011 and so on.

In Gray code the count proceeds like this: 0000, 0001, 0011, 0010, 0110, 0111, 0101, 0100 and so on.

A Gray coded wheel may have any number of bits - in practice <16 and in practical terms for amateurs <13 bits. The lines on the perimeter need to be very fine once 12 bits is reached, and for amateur constructors may require a fairly large diameter wheel (for example 150-300 mm). A Gray coded wheel has LEDs and photosensitive detectors to read out the active bits. The light source

and detectors must be well aligned and use a fine slot to overcome ambiguous readings (hence the use of Gray code to overcome ambiguities). They are not a trivial device to make.

This article describes a new approach using an absolute position 10 bit encoder chip, by austriamicrosystems. The AS5040 uses 1024 Hall effect sensors to determine the location of a magnetic field and thereby provides a 10 bit output that equates to 0.34 degree definition. A special diametral (2 * 2 poles) magnet produced by Swiss Company Bomatec AG is the rotary component of the system.

The AS5040 has been produced to provide the radial location of steering wheels, accelerator pedals and so on in fly-by-wire applications. The chip is capable of providing accurate readouts without missing a location on a shaft rotating at 600 rpm. It is not anticipated that the capabilities of the chip will be stressed by beam rotation speeds! The chip samples each location at 12 kHz.

Position is determined by a rotating, small diametral magnet (6 mm * 2.5 mm) using NdFeB alloy. It is nickel, coated as the material is quite brittle. The magnet is placed 1-3 mm above/below the AS5040 chip with an alignment better than 0.25 mm. Fortunately, the chip supports a calibrate mode to allow fine adjustment. The AS5040 is a small surface mount device and measures about 6 mm*5 mm. The chip manufacturer's website is <http://www.austriamicrosystems.com/04segments/industry/AS5040.htm>

This project was designed to use the AS5040 encoder and describes an electronic solution to beam indicators. How the masthead unit physically interfaces to the antenna system is for your own ingenuity, as every system is different. Note that this project was first developed when only the AS5040 (10 bits or 1024 positions) was available. Since then, the AS5045 with 12 bits or 4096 positions has become available providing 0.1 degree readout. The project description is the same for both chips but

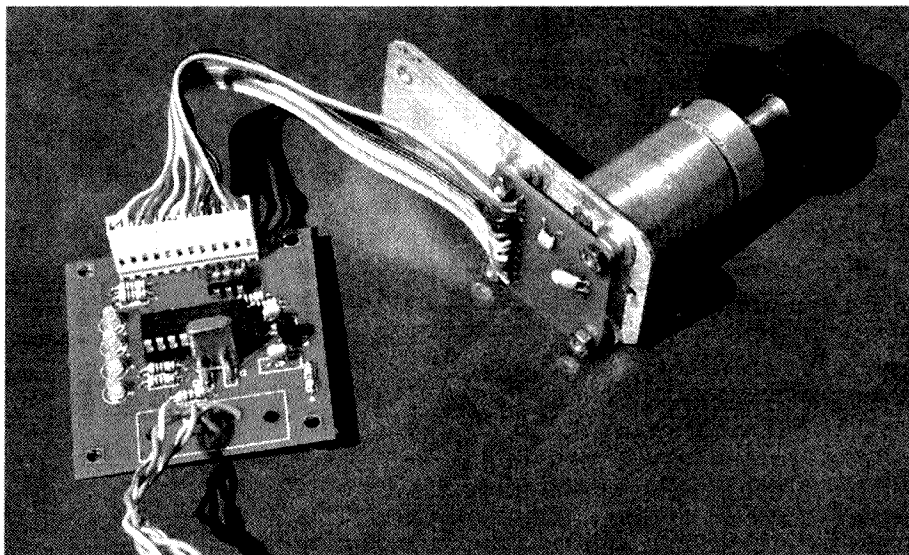


Photo 1: Antenna Unit

on accuracy are urged to read my website for further detail.

On receiving a request from the shack unit, the masthead unit sends its data to the control unit in 9600 baud ASCII. If elevation measurements are required, a separate elevation unit sends serial data to the shack unit upon reception of a controller poll.

The shack located control unit has a PIC controller chip that receives the serial input from the masthead units and displays the azimuth and elevation positions. The control unit can operate in either manual (local control) or auto (computer control) mode as determined by a front panel switch. Further switches determine if the position calculated is that of the sun or moon and if it is calculated internally or externally. External calculations would enable satellite tracking. The control unit may be set to delay antenna movement when the direction reverses to avoid undue stress on antenna elements and the rotator itself.

The output of the PIC18F4620 drives five transistors (four directions and a brake) which in turn drive five relays that provide power and direction control.

In addition to receiving signals from a serial source, the project is designed to accept input from a potentiometer like those in most rotators. The variable voltage from a potentiometer wiper is directed to A/D converters that may be translated to a beam heading. Some rotators use a rheostat so some modification may be required to produce the voltage divider effect. A reference of ground and regulated +5 V is available on each DB9 for potentiometers.

The unit may be set up to allow for readings below the horizon, whether there are one or two sensors, presence of a brake, variable delay before direction change, input type (serial or pot), or whether the pot sensors cover more than 180 or 360 degrees and crossover points. After initial programming the operational conditions can be varied by accessing setup mode from the front panel switches.

The masthead unit

The masthead unit uses a 16F628 PIC to query 10 bit data from the AS5040 (12 bit from an AS5045), which it then assembles into a packet of information and sends to the shack unit serially

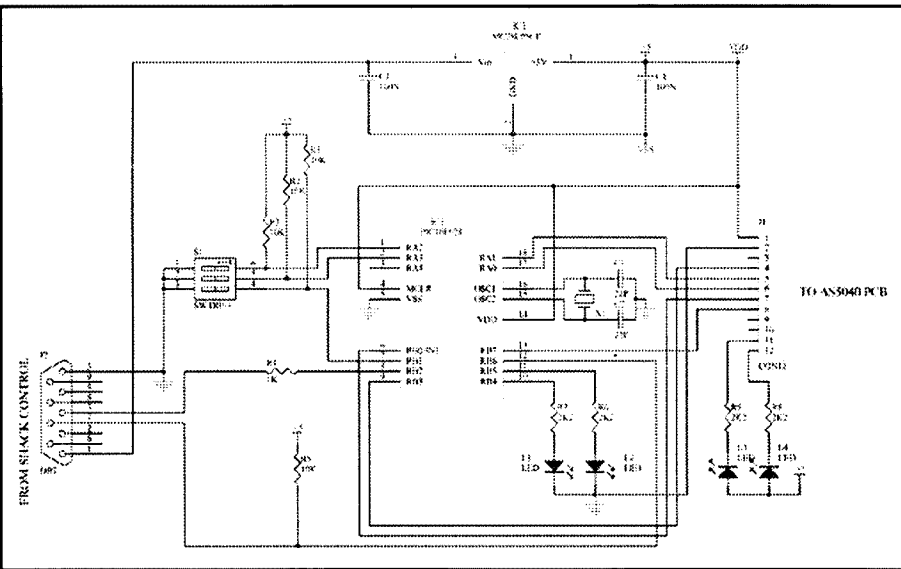


Fig 1: Azimuth and elevation units schematic
Drawn by R Lemke VK3ZQB

slightly different programs are required for the AZ/EL unit and the shack unit. These are available from my website.

Although primarily designed as a moderately high definition system, as the project developed it became obvious that a little extra effort would also create a replacement control unit for those amateurs who have a rotator without a control unit.

So what is it and how does it work?

The beam indicator system displays azimuth and elevation headings for an antenna system. It calculates the position of the sun for antenna calibration and the

moon for EME experiments. The system can either auto track from internally developed data or from a computer with appropriate interface software. Tracking may also be manually controlled from front panel switches. The tracking accuracy is better than 0.5 degree using the described encoder chips. With the aid of software averaging, the readout in the shack unit is 0.1 degree increments for the AS5040 but if an AS5045 is used the readout provides 0.1 degree increments without the need for averaging.

The unit has a control box located in the shack and one or two masthead boxes.

The unit(s) at the masthead measure(s) the position of the antenna to an accuracy of 1:1024 or about 1/3rd of a degree for an AS5040, or 1:4096 or about 0.1 of a degree for the AS5045. The reading is 'absolute' meaning that the antenna does not have to be sent back to a starting point in order to recalibrate if the power disappears. Readers who want more information

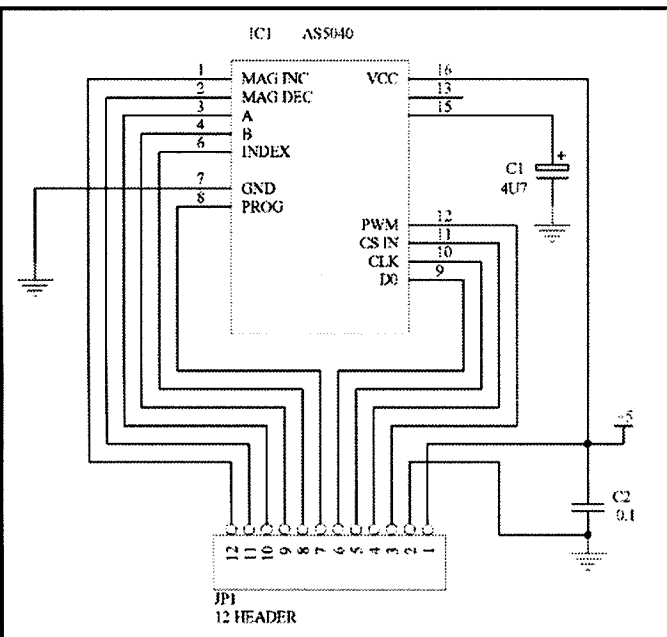
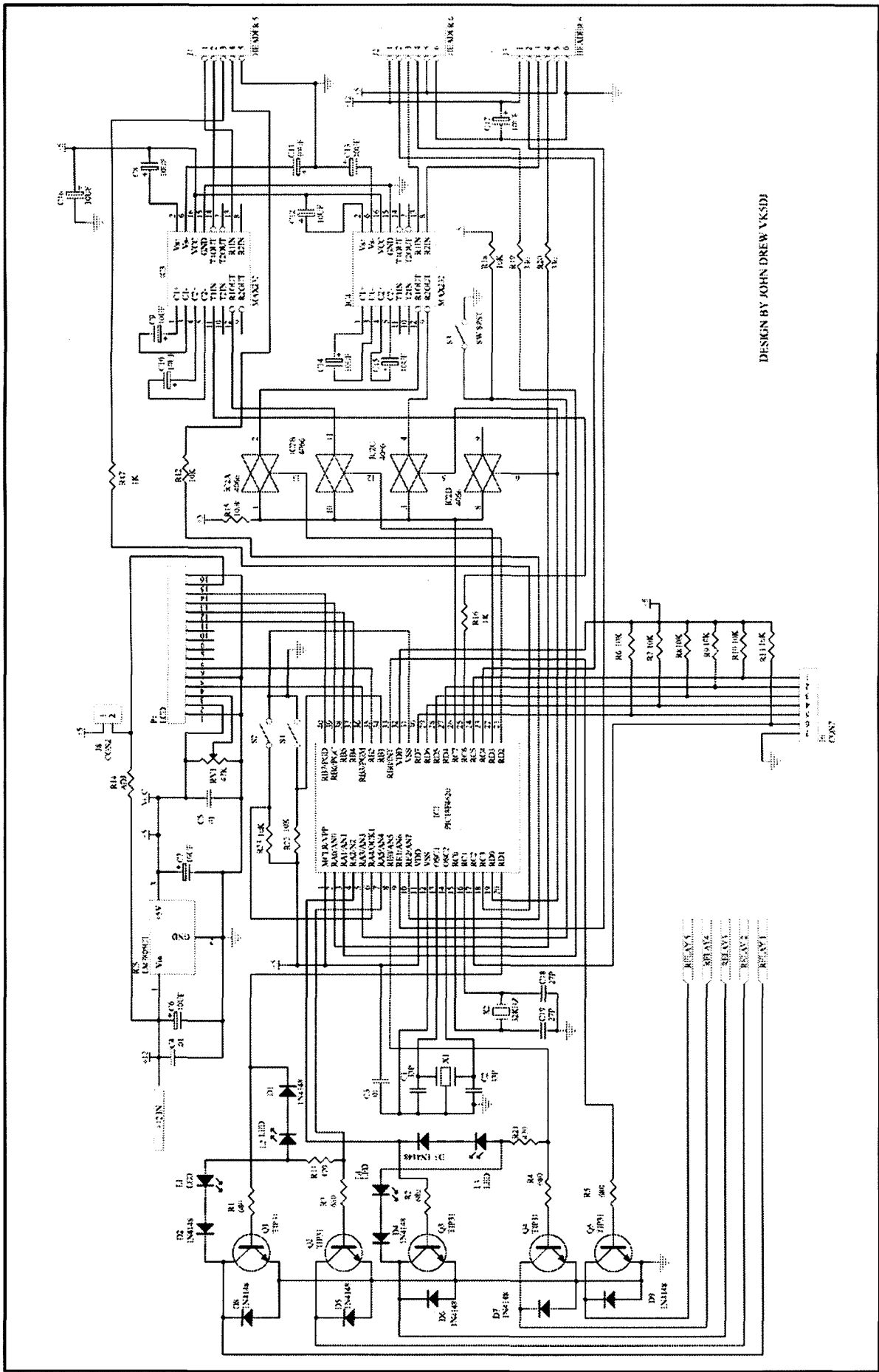


Fig 2: Rotary encoder schematic.
Drawn by R Lemke VK3ZQB



DESIGN BY JOHN DREW VK3DI

Fig 3: Antenna controller schematic.
 Drawn by R Lemke VK3ZQB

using 9600 baud, 8 data bits, 1 stop bit ASCII.

The antenna azimuth and elevation units are identical.

Two circuit boards support each direction sensor at the masthead. The first board is deliberately made as small as possible to allow for different mounting methods of the AS5040 and its rotating magnet. The board contains a socket, the encoder chip and two capacitors. The magnet spins above the chip and is the only moving part. The construction makes for a device that has little to wear and is highly resistant to dust and other pollutants. Note the accompanying photos for construction details. This board should be mounted so that its

position beneath the magnet can be adjusted in the X, Y, and Z planes.

The masthead unit contains a PIC16F628 and an LM78L05 provides the 5 V regulated power. An original plan to include a MAX232 chip to convert TTL levels to those more suited for serial data transfer was found unnecessary. Experiments using a 100 m length of CAT 5 twisted pair cable showed TTL worked fine at the data rate chosen. Remember that if you choose to add an external MAX232 at the antenna end you will need to use another at the controller end (see later).

The Azimuth and Elevation programs for the 16F628s are the same.

The masthead units may be placed

into calibrate mode (SW1 momentarily on, then off when using AS5040 but SW1 left on for AS5045). In this mode the AS5040 outputs a number that may be used to position the board under the magnet. The controller unit in the shack will display "Magnet =" followed by a number. As the magnet revolves the displayed number should vary by less than 30 for a 360 degree rotation. Fortunately this seems to be less critical than the datasheet suggests but could be an important determinant of tracking accuracy. Only J2, the azimuth DB9, is coded for use in calibration mode. The AZ/EL mode should be set to 5.

The masthead unit has another switch SW2 supporting a 'terminal' mode. If you want to make an early test of your antenna unit place SW2 in the on position and connect the serial output to a computer running Hyperterminal at 9600 baud, 8 data bits, one stop bit and no parity. The unit will display "Azimuth = XX degrees" where XX is the bearing. I used this feature to provide a demonstration at GippsTech in July 2005 before the construction of the controller unit.

SW3 on the masthead unit allows the count to be reversed to suit different mounting methods resulting in clockwise or anti-clockwise movement.

Power consumption of the antenna unit is a few milliamps. The antenna unit has four connections: Ground, 9600 baud ASCII out, handshake in, and 12 V power in. The recommended cable is CAT5 network cable. CAT5 has three pairs. Pair each active lead with an earth wire.

The Controller

This shack based unit utilises 12 V at up to 400 mA to power relays and the board. The board has:

- LM7805 derived 5 V regulated supply
- PIC 18F4620 (a 40 pin device with 32 k of program memory, RAM for variables and long term data storage in EEDATA memory)
- 4066B CMOS switch to steer the incoming serial data from three sources to the USART input port on the PIC
- 1 or 2 MAX232 chips depending upon whether you require the second for the antenna units. Each MAX232 can support two inputs

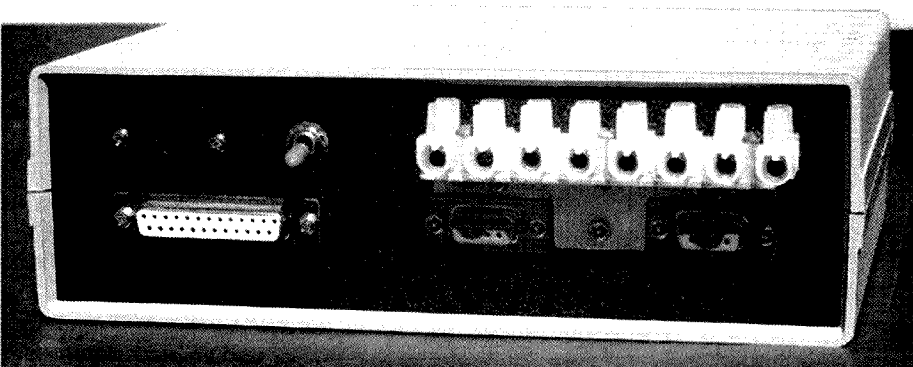


Photo 2: Rear view of completed prototype

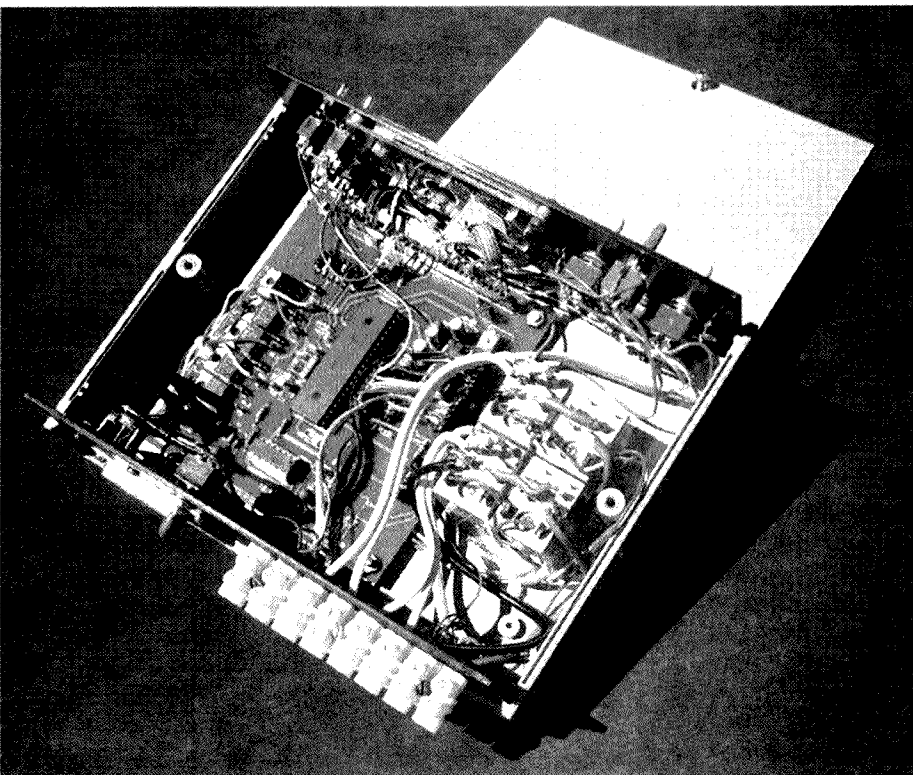


Photo 3: Internal construction of prototype

and outputs. One for the computer interface is mandatory to ensure reliable communications and correct data sense.

- 5 TIP31C NPN power transistors to switch the relays.
- 5 relays with 12 V coils, DPDT 10 A contacts to provide the heavy duty switching. For each of azimuth and elevation, one relay switches the windings to determine direction while the second switches power. The power relay closes 50 ms after the direction relay.

General description of the controller operation

The PIC operates at a frequency of 32 MHz determined by the 8 MHz crystal using a 4* multiply mode. This frequency is used for internal timing and must not be substituted.

The PIC sends a low active handshake signal to the masthead unit, clears its receive buffer, switches on the appropriate gate of the 4066B to transfer the data from pin 3 of the DB9 and checks the data stream for an "A" or an "M", and then loads the value from the masthead unit and the checksum. If the checksum confirms the data is correct, the value is converted to degrees with one decimal place and displayed on the LCD.

In the process of conversion of the elevation raw number, the controller will allow for any below horizon measurements. This is a setup option that may be altered at any time. However, most of us won't be in that wonderful position of living on hill tops!

Assuming that both azimuth and elevation sensors are present or activated in setup, the PIC will next check the elevation sensor in a similar manner to the azimuth process.

If the front panel switch is in Auto position, the device automatically tracks the antenna, switching data as appropriate through the 4066B. If external calculations are requested then computer data becomes available after raising the CTS line to signal the computer to send.

A simple check sum is used for all data inputs and, if confirmed, sends the information to the decode section for triggering the relays.

If the front panel switch is in the manual position the relay operation is controlled by the four spring loaded front

panel switches – up/down, left/right. The switches do not directly control the relays but are used to inform the PIC of required moves. This enables the use of a delay function to prevent too rapid a changeover of direction motors in the interests of beam survival. The delay is configurable from 0 to 6 seconds. Hysteresis may be added in 'Auto' mode to minimise hunting.

The two line LCD display usually displays the azimuth and elevation on the top lines while tracking information appears at the bottom. A star is appended when the controller is waiting for the beam to come to rest.

The LCD is also used to display the configuration states. These are accessed by putting the device in 'Update mode' by putting the Auto/Manual switch in 'Auto' position and holding the 'UP' button. Once 'Sec =' shows, the various options may be accessed using the UP/DOWN buttons, while LEFT/RIGHT increases or decreases values. The memory is updated ONLY if data is changed and ONLY when the menu moves to the next item with the 'Up' or 'Down' buttons. Returning the 'Auto/Manual' switch to manual leaves the menu and returns to normal operation.

The order of display is: Seconds, Minutes, Hours, Day, Month, Year, Degrees below horizon, Brake/limit, Delay, AZ/EL mode, AZ spread, EL spread, AZ offset, EL offset, AZ hysteresis, EL hysteresis, HT ASL, Longitude, Latitude, Park AZ, Park EL.

Seconds, Minutes, Hours, Day, Month, Year

These continue to count on the display until the reading is changed with a 'left' or 'right' key at which point you can adjust the number at leisure. Moving on with the 'Up' or 'Down' key updates the memory and the clock again starts. To avoid a transition of minutes happening while you are adjusting, I recommend changing the menu 'seconds' to 5, then when your external clock seconds read 5 press the 'Up' key. You now have 55 seconds left to adjust the minutes readout to the correct value and so on. Once menu mode is closed, time is displayed if the internal/external switch is placed in the external position.

Degrees below horizon (antenna)

Set this number to suit your antenna's capacity to move below the horizon. The auto system will not drive your antenna beyond this. Your encoder settings will need to be set to allow readings below the horizon. This works for both serial and potentiometer devices in elevation mode.

Brake/Limit

- 0 = no brake, north stop
- 1 = brake, north stop
- 2 = no brake, south stop
- 3 = brake, south stop

Delay

Delay in seconds before swapping directions to protect the mechanisms.

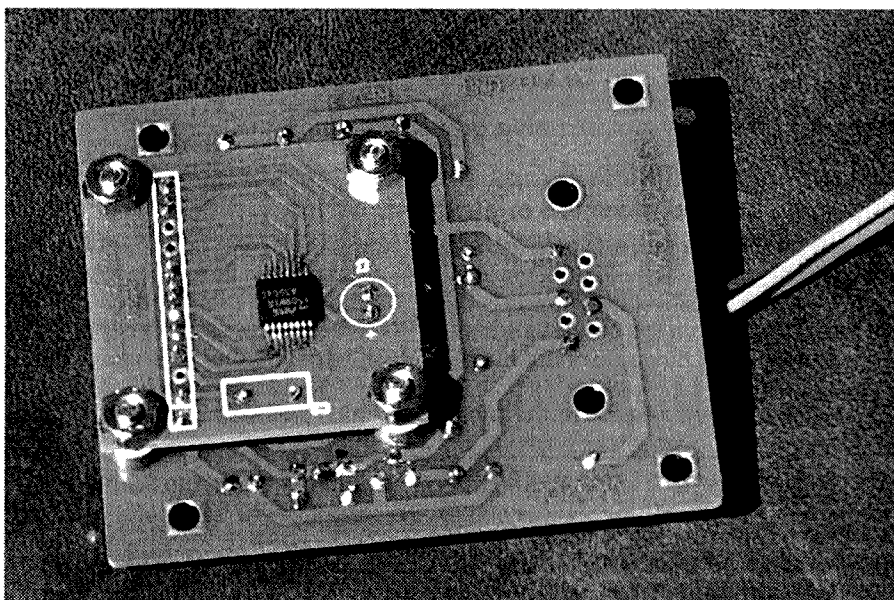


Photo 4: Double mount sensor unit

AZ/EL mode

Modes are determined by using the number in the table below.

Used for potentiometers only. It's the number of degrees +180 represented by the extremes of pot movement. This enables scaling to determine the range covered by the pot. NOTE that the program adds 180 degrees to the numbers shown, so entering a 0 sets a 180 degree spread, while adding 200 would set a 380 degree spread. This addition of 180 was necessary to save PIC memory.

AZ spread has a default of 180 (360 coverage) while EL spread has a default of 0 (180 degree coverage).

Value	Az	Az mode	El	El mode
0	-	-	-	-
1	yes	pot	-	-
2	-	-	yes	pot
3	yes	pot	yes	pot
5	yes	serial	-	-
7	yes	serial	yes	pot
10	-	-	yes	serial
11	yes	pot	yes	serial
15	yes	serial	yes	serial

AZ (and EL) spread

Azimuth Offset

Used for potentiometer input only due to their capacity to work beyond 360 degrees (see AZ and EL spread above). This offset establishes limits beyond the normal bounds. Azimuth offset will cater for rotators that have no end stop or will move perhaps 10 degrees beyond north or south.

Elevation Offset

Used for potentiometer and serial input systems. The offset enables negative or beyond 180/360 readouts. The default value is 90 degrees so a 360 degree AS5040/45 will provide readings from -90 through 0 to 180 finishing at 270 degrees.

With a potentiometer you may choose to set 'Elevation Spread' (see above) to 200 degrees thereby slightly improving accuracy then set 'Elevation Offset' to 10 degrees resulting in a cover of

-10...0...180...210. Don't forget to set 'Degrees Below Horizon' to 5 degrees if your antenna will go below zero.

For auto tracking reasons it is critical that your antenna sensor reads further below zero than your 'Degrees Below Horizon' setting to avoid an antenna being driven beyond a limit and causing mechanical damage.

Azimuth/Elevation hysteresis

The mechanical realities of moving antennas require hysteresis to be built into the system to avoid hunting in auto tracking mode. Numbers in this item represent 0.1 degree increments so a value of 10 will cause the auto function to switch off when it is within 1 degree of the computed position.

Height above sea level

In metres, used by the sun and moon routines.

Longitude in degrees

Use positive for degrees east of Greenwich, negative for west.

TET-EMTRON

Antenna Manufacturers

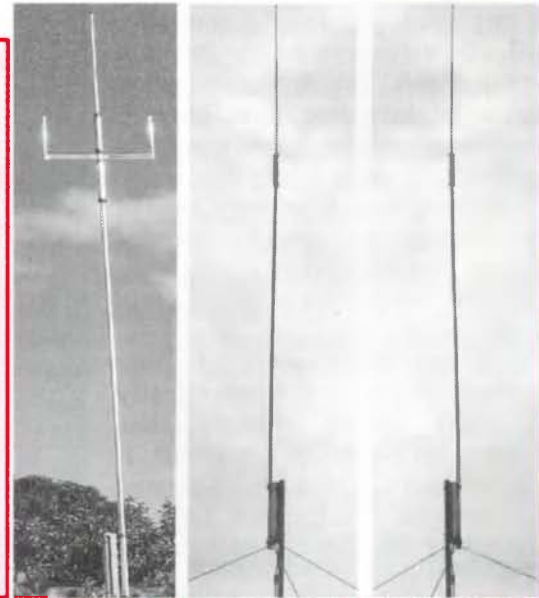
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See the web site for more info and a complete dealer list.

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 STRATFORD
 Victoria 3862 AUSTRALIA
 www.tet-emtron.com
 Email: rawmar@hotmail.net.au

Ph: 61 3 5145 6179
 Fax: 61 3 5145 6821
 ABN: 87404541761

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

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The PM2000A Watt meter

measures and displays forward power, reflected power, and SWR simultaneously on its dual movement meter system in the frequency range. Accuracy is assured because the WM150 has a true shielded directional coupler. The backlit meter can display either peak or average power readings, and has 300 and 3000 watt range settings.

QST found that the Palstar WM150 is the only wattmeter that has true Active Peak Reading. The PM2000A is the next generation of watt meters from Palstar.



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Palstar has produced a SWL receiver that performs in the real world with no overloading



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The US made DL2K 2000 Watt dummy load



is fan-cooled and capable of handling 2000 watts. It was born out of the need for more time to tune your amp. Most dummy loads can't handle the real world power load needed by Ham operators. Palstar came up with the DL2K which can handle 2000W for 1.5 minutes. Aware of over-heating problems found in other dummy loads, the DL2K is fan-cooled to prevent burn-out. One eHam.net user wrote: "Best high power dummy load on the market today. No other company comes close to building a reliable, safe, high power dummy load."

The AT1KM Tuner

features differential capacitor tuning with 2 stators and 1 rotor. For ease of use, the AT1K series utilize only 2 controls to operate for tuning with a precision ceramic body roller inductor and high power balun. As on all Palstar tuners the front panel and top cover are powdercoated.



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TEN-TEC

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Orion II

First independent test data on ORION II, released 16 April 2006: "Noted receiver guru Rob Sherwood NC0B of Sherwood



Engineering now ranks the ORION II as #1 of all HF amateur radio transceivers ever tested for close-in dynamic range, dating back to the 1970's. The original ORION is now listed as #2 overall to the ORION II."

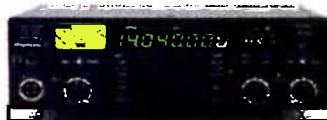
JUPITER

"I have had TenTec radios for years and not one has been back to the factory. Never had to replace finals. (unlike many other brands named). I have had my Jupiter now for over four years and it works flawlessly. Incredible DSP and filters, firmware is easily updated. Transmitter is clean and it is great to use on all digital modes.



ARGONAUT

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Latitude in degrees

Negative for south, positive for north

Park AZ and EL

The parking positions for the antenna. The 'Park' switch parks the antenna to this position when in 'Auto' mode.

Switching of the rotator motor(s)

The direction relays operate in pairs. One relay swaps the motor leads (or perhaps the field windings in some cases) to achieve change in direction, while the other applies power. In the case of 'Down' and 'Right' power comes on 50 ms after the first relay fires to enable the first relay contacts to settle. A characteristic 'kerchunk' is heard for these directions due to the double relay action.

Choice of components

The interfaces use DB25 (computer I/O J1), DB9 (Azimuth J2), and DB9 (elevation J3), chosen to avoid accidental confusion of sockets. The LCD is a HD44780 compatible, character based LCD. I used a two line backlit device purchased on VK-Ham, the Plotech 194V-0. Most are 14 or 16 pin devices. Rockby Electronics often have suitable

displays. I suggest the following sites for further information regarding LCDs.

<http://home.iae.nl/users/pouweha/lcd/lcd.shtml>

http://www.repairfaq.org/filipg/LINK/F_Tech_LCD.html

The rear box photo shows the eight connectors for rotator power/ground and motor leads. Two are unused and were a 'just in case' for the prototype. By mounting the connector strip on a small L shaped bracket I was able to provide a convenient feed-through from the inside and solid connections for the motor leads.

You may choose to use fuse holders for the motor power and for the main 12 V power supply. Next time, I probably will. Not shown in the circuit diagram is a diode wired in series between the +12 V and the switch to guard against accidental reversal of power.

The prototype's front panel direction switches are spring loaded SPST push buttons. All other switches need only be SPST.

The choice of a 16F628 or a 16F628A in the AZ/EL board doesn't matter; just remember that the programmer for the PIC must be set accordingly as the two varieties use slightly different

programmer timings. The crystals in all cases determine critical timings, no substitution of frequency is allowed.

General construction

I have a stock of boards. Check my website for details. All boards are of a double sided, plated through holes, silk screened design. Someone else might like to convert this to a single sided design if they have the 'know-how' and the time. The project design is copyright and no portion may be commercially manufactured without my permission.

The photos illustrate major construction methods but there is nothing very critical in layout terms. Just use sound amateur design, avoid overheating components and socket your chips. Note that, if required, the encoder board and AZ/EL board will fasten together in 'piggy back' fashion provided that appropriate connectors and standoffs are used. The connector, if used, mounts on the back of the encoder board.

Depending on the LCD choice, you may need to run the backlight from +12 V via a resistor R14; adjust for best results around 100 ohms. Some backlit LCDs have resistors on board that enable 5 volt operation from the normal +5 V to the unit, in which case omit R14. Use J8 if the backlight needs +5 V on pins 15/16. If you choose to run the backlight from the +5 V voltage regulator, you will need to heat sink the LM7805 or even mount it externally. If necessary, adjust your LCD connections to match those in the circuit diagram.

All switches are active when earthed, so a common earth lead can be run to these. The active sides of S1, S2 on the board are nearest the LCD plug. The active side of S3 is away from RV1. DO NOT use the second S3 pin nearest RV1, it mistakenly goes to +5 V instead of 0V - take the S3 earth from another switch.

Relay 2 is the power switching relay for Up/Down while Relay 1 is the direction relay for Up/Down.

Relay 4 is the power switching relay for Left/Right and Relay 3 is the direction relay for Left/Right.

Relay 5 is the brake relay.

LEDs

L1 LED indicates down (cathode nearest board corner)

L2 LED indicates up (anode nearest board corner)

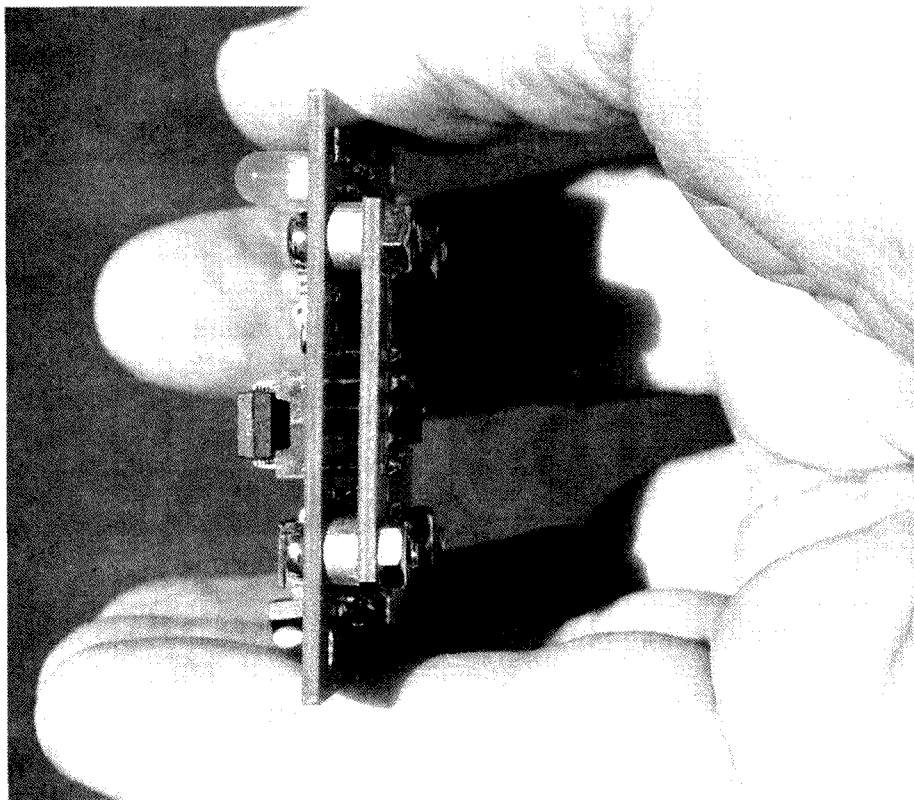


Photo 5: Edge view of double sensor

L3 LED indicates left (anode nearest board corner)

L4 LED indicates right (cathode nearest board corner)

The MAX232 (IC3) is mandatory. However the second MAX232 (IC4) was designed into the board as a precaution. It has been found that 9600 baud works quite well over 100 metres of CAT 5 cable to the antenna units, but in the unlikely event there are problems, there is provision to use -10 V to +10 V levels by installing the second MAX232 chip. Note that if this chip is used, it will be necessary to create another board at the antenna unit for a matching MAX232. Probably one board could service both AZ and El sender units, as the MAX232 is a dual channel device. The MAX232 chips must always work in pairs or the data direction will be inverted and communication will not be possible.

Most users will not install IC4 and should therefore install two bridges joining pins 12/13 of IC4 and pins 8/9 of IC4. Capacitors C12, C13, C14, and C15 should be omitted.

Adjusting the encoder unit and magnet distances

The encoder board has a small hole in the centre. Before soldering the AS5040/45 into position, the location of the encoder board may be determined initially by sighting through the hole to a centre mark on the magnet. This hole is also at the physical centre of the board as referenced to the four mounting holes. Once the board has been centred using the sighting hole, the mounting holes can be marked and drilled slightly oversize to allow for some final adjustment.

When the unit is complete and power applied, the distance between the AS5040 and the magnet should be adjusted in the centre of the range where LEDs L3 and L4 are NOT on. The LEDs are out when the magnetic flux is within tolerance. In my case this is about 1.5 to 2.0 mm with the recommended magnet.

Once the AZ/EL unit is plugged into the Azimuth DB9 on the shack unit and providing a reading, put SW3 into the ON position and rotate the magnet. It should be possible to adjust the position of the AS5040 by moving the board to a point where the maximum difference in

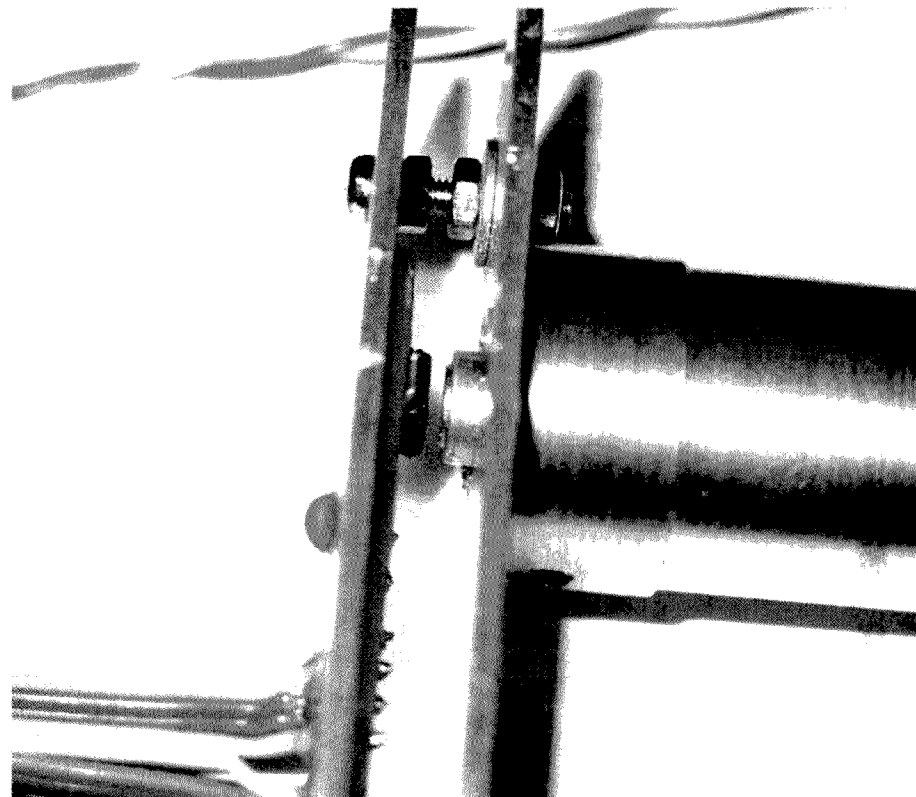


Photo 6: Magnet mounted on shaft

the readings is 30 or better. This indicates optimum positioning. LEDs 3 and 4 will also light for 360 degrees at this point. If you cannot achieve the less than 30 degree difference, just make it as good as you can. There seems to be a reasonable tolerance to misalignment but there will be some nonlinearity across the 360 degree rotation.

Programming the PICs

The HEX files are available from my website. Note that the hex files differ depending on whether an AS5040 or an AS5045 is used.

Initial test setup

Step 1:

Initially install two 10 k pots (ideally linear but for the test it doesn't matter) on flying leads to DB9 plugs for the azimuth and elevation ports. Pin 4 (+5 V) and 5 (earth) to the outer connections of the pot and Pin 8 to the wiper.

Step 2:

Ensure the auto/manual switch is on 'Auto'. Hold the 'UP' switch on until the 'sees' display appears. You are now in the configuration menu.

Step 3:

Use the 'Up' or 'Down' buttons to locate the item 'AZ/EL mode'. Use the 'Right' or 'Left' button to increase or decrease the value to 3. Press the 'Up' button and a message 'Memory updated' appears, you may now reset the auto/manual switch to the manual position to exit the menu system.

Step 4:

Adjustment of the pots will result in changed readings on the LCD.

Step 5:

If you have an AS5040/45 unit ready you could repeat steps (1), (2) and (3) but this time set AZ/EL mode to 7. Now plug the serial device into the azimuth port and again you should have readout, but this time azimuth will be driven by the AS5040/45 system and elevation by the potentiometer.

If you are using a rotator and a pre-existing resistive element some experimentation will be necessary to find the right solution. For example, if your rotator uses a rheostat rather than a potentiometer you will need to convert it to the latter by earthing the open end; alternatively install a potentiometer.

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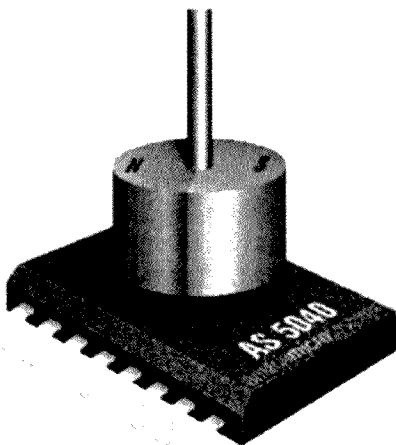


Photo 7: The AS5040 encoder chip

Socket connections

Pin of J1

- 1 9600 baud IN from comp
- 2 9600 baud OUT to comp
- 3 CTS to computer
- 4 DTR from computer
- 5 Earth

Pin of DB25 to computer

- 2
- 3
- 5
- 20
- 7

Pin of J2 (Azimuth) and J3 (Elevation)

- 1 +12 V to antenna unit VR
- 2 Handshake out to ant unit
- 3 9600 baud data IN
- 4 Wiper of pot in
- 5 +5 V to top of pot
- 6 Earth

Pin of AZ DB9 and EL DB9

- 1
- 7
- 3
- 8 if used
- 4 if used
- 5

J6 switches (earth to activate)

- 1 manual/auto operation (near pin 26 of PIC)
- 2 right direction
- 3 left direction
- 4 up direction
- 5 down direction
- 6 brake
- 7 earth (near pin 32 of PIC)

SI Moon off/Sun on

S2 Calculations internal on/external off

S3 Calibrate function to be added

J8 5 volt back light

Install jumper if running back light from +5 V, do not install R14.

Omit jumper if running from +12 V via R14.

A word on accuracy

Tracking programs for the moon involve many variables and are quite complex.

There are, for example, over fifty orbital corrections considered in calculating the longitude of the moon and a similar number for the right ascension. Don't expect a guaranteed accuracy much better than +/-0.1 degree for the moon from most programs, including the one in this project. The number of digits displayed after the decimal place by a program is often no indication of accuracy. I use AA.EXE as my standard for checking moon/sun calculations - it is available from <http://www.moshier.net/aadoc.html> and claims an accuracy of 0.5 arc second as checked against the Astronomical Almanac.

The position of the sun is relatively easily calculated. The program in this project is accurate to better than 0.1 degree and so should be used for the alignment of antennas.

Encoders, whether magnetic or optical, all have errors and are susceptible to temperature and/or transition point issues. The topic of measurements and mechanical limitations of pointing large antenna systems warrants another article in itself. This project won't put Parkes in your backyard but, hopefully, will aid many in improving their tracking to better than 0.5 degree at reasonable cost.

Summary

The construction allows various sensors to be used. US Digital manufacture an encoder in a pot style case (MA2-A) that should work directly in the pot mode but I haven't had a sample to try. I plan to modify the antenna unit to interface the PWM model MA2-P when I get a sample. Both US Digital solutions provide a 'pot like' mounting solution.

I would like to thank Russell Lemke VK3ZQB for his work in turning my pencil drawings into professional looking circuit diagrams yet again and also developing the board layouts. Without him it would not have been the same quality project. Also thanks to Doug VK3UM, who is in the process of linking the project to his well respected EME tracking software.

I am happy to answer any questions via email but firstly please check my website for any documentation updates.

ar

Yaesu FT-2000 HF – 6 m transceiver

Ron Fisher VK3OM and Bill Roper VK3BR

The much anticipated FT-2000 is the replacement for the FT-1000 series of transceivers. The FT-1000 and the FT-1000 MP have previously been reviewed in *Amateur Radio*. This transceiver is a worthy successor.

Over the seventeen years that the FT-1000 series was in production, significant changes have taken place in the design of the transceivers, not only in weight and size, but also in the change in technology from analogue (FT-1000) to digital (FT-1000 MP with audio Digital Signal Processing progressing on to the FT-1000 MP Mark-V with many more digital features including enhanced DSP).

As readers will appreciate, in the space available in *Amateur Radio* for this review, we are not able to fully review this complex transceiver, complete with measurements of all its technical capabilities. We have found from past experience that modern transceivers from the major manufacturers easily meet, if not exceed, their published specifications. Therefore, this review is a brief overview of the capabilities of the FT-2000 when used at a typical amateur location. We also thought it was beneficial for readers to have the review done by two active radio amateurs with somewhat different points of view. Although the reviewers mainly looked at the SSB capabilities of this transceiver, we have no doubt that the CW (built-in electronic keyer, full break-in, etc), AM, FM, RTTY and packet capabilities of the FT-2000 live up to specifications. If any readers buy, or have bought, an FT-2000, and have any differing views to those expressed here by the reviewers, we would be very pleased to hear from you.

What does it do?

The FT 2000 is a very capable HF and 6 metre 100 watt output transceiver. It includes two general coverage receivers, a built-in switched-mode power supply, IF DSP for receiver bandwidth selection in the main receiver and analogue filters in the second receiver. Also, DSP filtering provides noise reduction and automatic notch filtering. All amateur bands are



Photo 1- Front panel of the FT-2000 transceiver

provided from 160 m to 6 m, and the receivers cover from 30 kHz to 60 MHz. This is the first time that 6 m has been included in the FT-1000/2000 series of transceivers. The 6 m transmit power is 100 W.

The default SSB bandwidth is 300-2700 Hz, adjustable up to 3000 Hz. As well, there is a three band transmit audio equaliser, with a multiplicity of settings, and different settings for when using the speech processor. As usual, there is an automatic antenna tuner with its own memory system which compensates for an SWR of up to 3:1. You can select two antenna connections, for example one for HF and one for 6 m, plus a receive antenna input which could be used, say, as a separate receive antenna input for 160 m or simply for short-wave broadcast listening.

For the CW operator there is semi or full break-in and a built-in memory keyer, plus a different set of DSP receive filters. However, in the second receiver, a 1000 Hz analogue filter is standard for narrow CW with an option to fit a 500 Hz or 300 Hz Collins mechanical filter.

Infrequently needed adjustments and configuration settings are handled by the 147 menus which make it easy to set up the parameters you want for a particular operating mode. The menus for each function are grouped together to make for easier access.

A feature of the FT-2000 configuration is that, while it has a built-in ac power supply, it can be unplugged from a connector on the rear and 13.8 V dc can be connected directly to allow operation in the field when ac is not available. It is noted that Yaesu have changed the dc input connector from a standard 6-pin plug to a new 4-pin plug. No dc connector is offered as an option. Perhaps Yaesu may consider providing a 4-pin plug with the transceiver.

First impressions

Both reviewers of the FT-2000 are happy owners of the original FT-1000D, and have used, at one time or another, all of the subsequent FT-1000 series of transceivers.

The first thing noticed when removing the FT-2000 from its strong packing carton is that it only weighs 15 kg, the same as the FT-1000 MP but 10.5 kg lighter than the FT-1000. This is due mainly to the change to the inherently lighter-weight, switched-mode power supply.

The FT-2000 is similar in size to the FT-1000 MP Mark-V at 410 mm wide by 135 mm high and 350 mm deep. First impressions are the large, multi-coloured, analogue S meter; the large heavily weighted main receiver tuning knob (2 cm larger diameter than the knob on the FT-1000); and the bright, multi-

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| IC-T90A Triband h/held w/HM-46A | \$399 |
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| DR-135T Mk3I 2 m Mobile | \$299 |
| DR-435E UHF Mobile | \$349 |
| DJ-V17 5 W, 2 m H/H with DTMF etc | \$199 |
| DJ-V47 5W UHF H/H w/DTMF etc | \$219 |
| DX-70TH HF-6 m Transceiver | \$1199 |
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| DJ-X3 Tiny Handheld Scanner | \$229 |
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| TM-G707A Dual band Mobile | \$499 |
| TS-480HX HF+ 200 W 6 m+100 W | \$1999 |
| TS-480SAT HF-6 m 100 W+ATU | \$1899 |
| TS-570SG HF-6 m 100 W+ATU | \$1799 |
| TS-2000 HF-70 cm | \$ 2799 |
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Photo 3 – Rear panel of the FT-2000.

coloured main display which includes a “block diagram” of the receiver front end, showing the antenna, attenuator, pre-selector, pre-amp, roofing filter and AGC settings in use. The display also shows the settings for DSP contour, notch, IF width and IF shift. These features of the main display give a quick and clear visual indication of receive parameters.

It is noted that one of the major features of the FT-1000 MP series, the shuttle-jog tuning control, which was concentric with the main tuning control and provided rapid up and down tuning, is missing. The ring at the rear of the main tuning control now adjusts the knob tension.

The multiplicity of knobs (26) and switches (77) on the front panel are all well spaced and easily operated, even with large clumsy fingers. It is noticed that, unlike the FT-1000 MP Mark-V, many of the controls are not illuminated when in use. Also, unlike all of the previous transceivers in the series which used white lettering, the labelling of the controls on the FT-2000 is in a silvery grey lettering which makes the labels harder to read.

The FT-2000 on the air

As would be expected for such a complex transceiver, when the FT-2000 is first switched on and about to be used, it can appear rather daunting to the newcomer.

Because the reviewers are familiar with the FT-1000 series of transceivers, both were able to get the FT-2000 up and running and have initial contacts on-air without recourse to the manual.

However, it is from here that the fun starts. The reviewers both had entirely different first impressions of the FT-2000. One reviewer transmitted using the transceiver’s default settings on the transmit audio equaliser and the other reviewer was not very complimentary about the received muffled audio. So the battle began with the audio equaliser and the transmit settings. There are literally thousands of possible combinations. The reviewers’ experience indicates that it could take weeks of experimentation to arrive at the best possible settings to suit your voice and microphone. However, do not be deterred.

After much reading of the manual, and much on air and off air testing, the first reviewer finally achieved an acceptable result. However, when the positions were reversed, much more adjustment was required. Using an MD-1 Yaesu desk microphone (the eight-pin connector is compatible with earlier Yaesu microphones), the settings we finally arrived at with the speech processor not activated were as follows: menu 123, 100 Hz; 124, 10 dB; 125, 1 bandwidth; 126, 1000 Hz; 127, 0 dB; 128, 6 bandwidth; 129, 2400 Hz; 130, 10 dB; and 131, 1 bandwidth. With

TVI High Pass Filter with Braid Breaker.



An inline TVI filter with Braid Breaker.

A large amount of TVI can travel down the outer braid of Coax as well as the centre conductor. The braid breaker isolates the centre conductor and braid from the TV/VCR/DVD. The High Pass filter cuts in at 50MHz. This filter has -80dBm attenuation at 40, 80 and 160 Metres.

Pager Notch Filter:

A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

Contact us if you need a special filter, we manufacture here in  Australia rather than overseas.

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Photo 2 - The main receiver part of the bright, multi-coloured main display which includes a “block diagram” of the receiver front end, showing the antenna, attenuator, pre-selector, pre-amp, roofing filter and AGC settings in use.

the speech processor on, we found the following settings worked for us: menu 132, 200 Hz; 133, -10 dB; 134, 2 bandwidth; 135, 800 Hz; 136, -3 dB; 137, 1 bandwidth; 138, 1800 Hz; 139, 0 dB; and 140, 1 bandwidth.

The setting of the transmit audio can certainly be complex. The settings we arrived at are very much a matter of personal opinion and depend upon many variables, including your voice, the microphone and the listener's receiver, hearing and expectations. You can, of course, do much of the adjustment running the FT-2000 into a dummy load and listening on another receiver, or by listening on the FT-2000's transmit monitor facility, in which case a pair of good quality headphones with good acoustic isolation are essential.

After some thought, we decided to do a frequency response test by feeding an audio oscillator into the microphone input and measuring the transmit power output. This is a simple procedure that requires equipment found in many amateur shacks. We decided to check at the final settings that we had set the equaliser to, and then at the transceiver's default setting. The difference is quite amazing. In both cases, 1000 Hz was taken as the reference.

At our final settings we measured: at 80 Hz, -2.5 dB; 120 Hz, +6 dB; 200 Hz, +2 dB; 300 Hz, -2.5 dB; 500 Hz, -2.5dB; 1000 Hz, 0 dB; 1.5 kHz, +6 dB; 2 kHz, +8 dB; 2.5 kHz, +12 dB; 3 kHz, -2dB; and at 3.5k Hz, -25 dB.

At the default settings, which you will note are much narrower, we measured: at 150 Hz, -25 dB; 200 Hz, -20 dB; 250 Hz, -12 dB; 300 Hz, -7 dB; 400 Hz, -1 dB; 500 Hz, 0 dB; 1 kHz, 0 dB; 2 kHz, +2 dB; 2.5 kHz, 0 dB; and at 3 kHz, -25dB.

Who says that "black box" operation obviates the user from experimentation and testing? When properly adjusted, the speech processor (whose level is adjustable from the front panel) gives a worthwhile boost to the signal. Reports on the transmitted signal indicate that the suppressed sideband was well down (the specification is for at least 60 dB below peak output), further than with many other signals on the band.

The VOX works smoothly and all controls are on the front panel.

Both reviewers agreed that it was great to see a return of an analogue meter, although the S meter for the second

receiver is an LED bar graph. As well as acting as an S meter for the main receiver the analogue meter allows monitoring of power out, speech compressor level, ALC level, SWR, final amplifier voltage and final amplifier current.

Incidentally, the FT-2000 uses a pair of MOSFETs in push-pull in the final amplifier running from 13.8 volts. The power output is adjustable from 5 W to 100 W (2 W to 50 W using AM). The thermostatically-controlled cooling fan features five speeds and is very quiet in operation.

The inbuilt antenna tuning unit uses a stepper motor and has 100 memories. It is quite fast in operation.

The FT-2000 also includes a handy 15 second Digital Voice Recorder facility to record incoming signals. There is also a four-channel message memory of 20 seconds per channel for recording repetitive voice messages.

Receiving

Let us now look at the main receiver of the FT-2000, and its many facilities to improve reception. First of all, note that one reviewer was not all that impressed with the quality of audio recovery of SSB and AM signals, whilst the other reviewer was quite pleased.

The first reviewer believes that, although the transmitted SSB signal is capable of producing relatively high quality audio, the receiver audio quality seems very restricted regardless of bandwidth settings. His tests with a signal generator fed with an audio oscillator showed that the top receive response for both SSB and AM was very little in excess of 2 kHz. He would have preferred a wider audio bandwidth. The second reviewer was quite satisfied with the SSB response.

The main receiver is triple conversion with a first IF at 69.450 MHz; the second receiver is double conversion with

the first IF at 40.455 MHz. The final IF frequency of the main receiver is at 30 kHz utilising 32-bit floating point DSP.

General sensitivity (SSB rated at 0.2 μ V on HF and 0.125 μ V on 6 m) and signal-to-noise ratio of the main receiver are excellent. Image rejection is quoted at 70 dB or better from 160 to 10 m, and 60 dB or better on 6 m.

Amateur band frequency changing is accomplished by pressing the required button on the group just to the right of the main tuning knob. In addition to a 100 memory capability, plus handy and colourful Quick Memory Bank buttons (five quick memories) close to the main tuning knob, a useful feature is the triple band stacking register. This means that each amateur band frequency selection button can select the last three frequencies when repeatedly pressed.

One interesting effect we noticed, that is as yet unexplained, is that when you change from upper sideband to lower sideband, or vice versa, the frequency display will change by 1.4 kHz. Thinking that there was a fault, or perhaps an incorrectly set menu item, we asked Vertex Standard about this effect. They replied that this was normal. However, they could give no reason. It seems the



Photo 4 – MD-200 microphone.

Yaesu top-of-the-line FTDX9000 family of transceivers do a similar thing except that the frequency change is 900 Hz. If we can find out why, we will let you know.

The SSB receive bandwidth is adjustable using the WIDTH control from 200 Hz to 4 kHz. On SSB the narrow (NAR) button brings in a default 1.8 kHz (menu settable from 200 Hz to 2200 Hz) bandwidth which disables the WIDTH control, but not the SHIFT or CONTOUR controls. A similar effect to the NAR button can be obtained by counter-clockwise rotating the WIDTH control.

When using the WIDTH control, it is almost essential to follow it with the SHIFT control to keep the audio response balanced.

The FT-2000 has a manual notch filter that provides a depth of more than 60 dB and is very effective in all modes. The digital notch filter (DNF) automatically notches out multiple interfering tones in the passband, but its effectiveness is reduced with noise or signals in the passband.

The CONTOUR control alters the shape of the IF filter passband to either enhance or suppress particular frequencies to improve the sound of a received signal.

The DNR (Digital Noise Reduction) control works well and really helps to read signals through the noise. The further clockwise you turn the control the more noise reduction takes place. However, it can take a substantial part of a second before the new setting acts, so don't think it is not working. Just be patient as you search for the optimum setting.

The FT-2000 includes three selectable roofing filters at 3, 6 and 15 kHz bandwidth allowing early bandwidth selection and help in reducing adjacent signal interference when receiving in a crowded band.

The NB (Noise Blanker) control is quite effective on impulse noise, and the level of blanking can be set via a NB potentiometer which is concentric with the SQUELCH control.

Three levels of AGC (Fast, Medium and Slow) are front panel selectable, and the delay and hold characteristics are menu selectable over a wide range. Again the reviewers differed on the settings.

Another useful receiver feature is VRF (variable RF pre-selector) which shifts the front end selectivity to reject strong off-frequency signals. This is quite effective in use.

The IPO feature enables either selecting bypassing the RF pre-amplifier to feed the received signal direct to the first mixer, or adding 10 dB or 17 dB low distortion pre-amplifiers. The ATT (attenuator) control is either off, or provides 6, 12 or 18 dB attenuation (what a pity that modern transceivers do not go the extra step and provide a 24 dB level of attenuation as well).

The second receiver, unlike the main receiver, is not DSP but analogue. In operation, the reviewers found it much easier and better to operate than the second receiver on any of the previous FT-1000 models, particularly because it has its own separate RF and AF gain controls. Using headphones you can have the audio from each receiver in separate ears.

No doubt because of the inclusion of 6 m capability, the FT-2000 has provision for full FM operation, including CTCSS tone generation and decode capabilities, as well as automatic receiver offset for 6 and 10 m FM operation. The FT-2000 also has an output at 10 dBm for transverter operation on the higher bands.

As with the previous FT-1000 series transceivers, the FT-2000 has a 4-pin DIN socket on the rear panel for RTTY/FSK operation. Also, there is a 5-pin DIN socket on the rear panel to accept AFSK packet input.

Operating Manual

The 128-page manual that comes with the FT-2000 is well presented, and is quite suitable for the newcomer or the experienced radio amateur. It has a solid cover which should survive much handling.

As always with such a complex radio, we strongly suggest that the new owner settle down to reading the manual from cover to cover before first switching on the FT-2000. Even for the very experienced operator, the manual is a 'must read' if you want to get the best out of this transceiver.

MD-200a8x microphone

The reviewers were also supplied with this desk-top deluxe microphone. This

very expensive unit has provision for two inserts but comes with one. This means that you can, for instance, add your favourite Heil DX microphone insert at a later date.

The frequency response of the insert is adjustable from flat to accentuation of the high frequencies over a 180 degree turn of the adjustment wheel.

It is a large microphone with a retro appearance reminiscent of a 1940's style broadcast studio microphone. Both reviewers used this microphone for a time with the FT-2000 with good results.

Conclusion

Both reviewers agree that this FT-2000 transceiver is a worthy successor to the FT-1000 series of transceivers, and fully and successfully makes use of current DSP technology.

Vertex Standard Australia stated that updated firmware for the transceiver is not available for download from the web and user installation. A search of the web would seem to indicate that some amateurs in other countries have downloaded and installed new firmware. Let's hope that as Yaesu updates the firmware for the FT-2000, and no doubt this will happen as the transceiver continues to be developed, they find a way for users to download and install the new firmware themselves.

The list price for the FT-2000 is \$3,988, but is available from some dealers at a considerably lower price. If you are going to buy one, shop around! The MD-200 is listed at \$622.

Optional extras for the FT-2000, some of which are not yet available in Australia, include the SB-2000 external speaker with audio filters; the DMU-2000 data management unit to generate video displays (requires external computer monitor and keyboard, and provides audio scope, oscilloscope, spectrum scope, logging and rotator control capabilities); and the μ -tuning high-Q narrow bandwidth pre-selectors (the average Australian user of the FT-2000 most likely will not require these expensive options).

The review transceiver and microphone were kindly made available by Vertex Standard Australia Pty Ltd. Our thanks to Yoshi and his team.

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International Lighthouse/Lightship Weekend

Kevin Mulcahy VK2CE

It all started in 1994 during a wet wintry evening when two members of the Ayr Amateur Radio Group in Scotland, John GM40OU and Mike GM4SUC (now SK), after a club meeting were talking about creating an event in the summer when club members could get out on a sunny weekend and play radio. Various themes were considered; ports, airports, historic Scotland sites, the Firths of Scotland, castles, etc., but it was finally decided that lighthouses of Scotland would be ideal.

Following research, it was discovered that the lighthouses of Scotland were controlled by the Northern Lighthouse Board in Edinburgh, who were not only responsible for the lighthouses of Scotland, but also around the Isle of Man. Approval was sought and obtained from the Northern Lighthouse Board to establish amateur radio stations adjacent to their property. In February 1995, an invitation was sent to all Scottish clubs and the Isle of Man club to join in the fun of a weekend, to be called the Northern Lighthouse Activity Weekend, by establishing an amateur radio station at a lighthouse during the third weekend in August. This first year's event saw 11 stations established at lighthouses, operating primarily on the HF bands, with each station making approximately 750 QSOs over the weekend.

The following year, the Scottish clubs were involved in a weekend activity with the theme of Scottish Firths (river estuaries), so two years elapsed before the next Northern Lighthouse Activity Weekend. During this period, Anne-Grete OZ3AE enquired through a letter to Practical Wireless if there was any lighthouse activity on amateur radio. Following discussions with her, it was decided that Danish stations could join in the fun of the weekend. Quickly Germany, South Africa and France asked to join, so the name of the weekend was changed to The International Lighthouse/Lightship Weekend in 1999. It was at this time that John GM40OU, due to pressure of work, had to cease his connections with the event.

The weekend became an annual event taking place over the third full weekend in August. The event has slowly grown in popularity. In 1999, there were 204 lighthouse/lightship stations in 36 countries. By 2006 there were 377 stations in 48 countries that took part. Full statistics and guidelines

for participation can be found on the ILLW web site at <http://illw.net/> which is funded and maintained by the author.

The main reason the event has become so popular is because it is NOT a contest. It is a relaxed fun weekend without the pressure of a contest. The guidelines are simple and the onus is on the operators to act within the spirit of the weekend which is simply to expose amateur radio and the plight of lighthouses to the public. This is why it is important for the ham station to be as close to the lighthouse/lightship as possible and with the controlling body's approval.

In Australia, it can be very difficult to obtain permission, as it is not an easy matter to find out who actually controls and maintains the lighthouse. The Australian Maritime Safety Authority used to control all lighthouses but they have relinquished most to the Parks and Wildlife Services in each State. Some lights are managed by local councils, some by Port Authorities and some are totally off limits.

A few years ago the International Association of Lighthouse Keepers decided to have an annual open day for lighthouses all around the world to encourage visitors to look at their lighthouses. They decided that no better day could be decided upon other than the Sunday of the ILLW. This move has been highly successful, as the media have become involved in quite a few areas on our East coast as well as in other countries.

I first entered the event in 1999 and was one of only four Australian entrants. This seemed to me to be ridiculous considering the number of lighthouses in this country, so I decided to do something about it and asked Mike Dalrymple GM4SUC, the organiser, if I could organise some PR here and in New Zealand. He appointed me the Oceania co-ordinator for the event

and last year we had 30 entries from VK. In 2001, I took over the entrants list from Jim Weidner, the President of the Amateur Radio Lighthouse Society, based in USA, and set up the web site as it is today. Last year the entrants list clocked up over 12,000 hits.

This year's event takes place on 18-19 August 2007, so if you haven't done so already, find a lighthouse nearby and get a group together or do it solo and fire up a lighthouse station. In most cases, if you don't intend operating from within the lighthouse itself or one of its cottages, you really don't need to get any approval. The Parks and Wildlife people used to be quite difficult but word has now circulated that we are fairly harmless and the PR generated is good for them as well. At Green Cape, they have even provided a caravan as a radio shack and they even tow it from Merimbula, some 60 km away.

Everyone I know who has participated in the event for the first time has come back year after year. A report from the Burlington ARC, Canada, summed their first participation in these few words:

"The greatest delight of the day was the active participation of the visiting children who showed a remarkable interest in the whole idea of amateur radio, especially the use of Morse Code. It was an honour and a delight to participate in this adventure and we look forward with increased enthusiasm to next year's participation."

As you can see from the website, Mike Dalrymple passed away in December 2005. He was the Treasurer of the Ayr ARG and one of their members has taken on Mike's roll as the PR man and main co-ordinator. The event is now dedicated to Mike's memory.

I am happy to answer any questions anyone might have about the event. My email address is vk2ce@vk2ce.com

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The way we were

Steve VK5AIM

Thinking back on the day of my 73rd birthday I thought of all the changes that have occurred in Wireless, as it was called in my youth.

I can just remember the little mantel wireless that my parents had. I probably became aware of it by about 1936/37. Later in life I was told that it was purchased from Ersmith and Co's shop in Adelaide. The sales person was to become a well known Adelaide radio announcer.

The set must have been a regenerative circuit as I can remember my mother being annoyed when my father returned the set and made it howl! My parents and visitors would sit around listening to radio serials and plays. The music and sounds fascinated me more than the stories. I was a little bit frightened by the "creepy" music and disturbed by the "sad" sounding music. The declaration of WWII was heard in silence, with a lot of talking afterwards. We heard good, bad and other news of WWII and later of VP and VE Day on the little wireless

It was not until 1945, as a teenager, that I became interested in wireless and built my first crystal set. By now I was allowed to tune the little wireless. From reading the popular *Radio and Hobbies* magazine, I learned that the set would receive better with an external aerial and earth. A long aerial was strung from a post at the bottom of the backyard to a mast mounted on the chimney. We earthed it to the water pipe mindful of the warnings about not using the gas pipe.

The improved reception was amazing. I will never know how much interference I generated when I let the set go into regeneration! As many of the Broadcast stations closed down at midnight, Friday and Saturday were good nights to do some BC DX listening. Stations from all over Australia and even further could be heard with careful tuning and adjustment. With station locations and call signs obtained from lists in *Radio and Hobbies*, it became quite a challenge listening and logging.

Once I was an apprentice and had skills with tools and money of my own, I was keen to build my own wireless. An electric soldering iron and a VOM, the predecessor of the multimeter, were the first pieces of equipment I bought. My start in "home brew" radio.

From reading *Radio and Hobbies*, I learned of short waves and amateur radio! I persuaded my Mum, who was the one who encouraged me with my electrical and wireless studies and activities, to buy a floor standing wireless from a local radio and electrical shop. It had broadcast and two short wave band coverage, pickup terminals and a large loudspeaker. It was, of course, a superhet receiver. With the long aerial and the earth attached, it opened up a new world to me. I was then allowed to dismantle the little old mantle set for bits and pieces

to build my own radio. It was indeed a regenerative circuit, known as Two and a Rect. An RF pentode, a 57 valve as a detector, a 45 OP pentode and an 80 rectifier. I salvaged the tuning condenser along with the little reaction condenser. The speaker was of the electrodynamic type with the field coil being the filter choke of the DC power section and of no use to me. I decided to build a basic battery powered set from the *Radio and Hobbies* magazine. It was called "Little Jim", a one valve regenerative set using the 19 twin triode. The name "Little Jim" appealed to me as my second name is Jim! One section served as a regenerative detector, the other half as an audio output stage. Thus began a life long interest in radio and hobbies that became my profession and hobby started.

Parts were bought from the Gerard and Goodmans shop on Rundle Street Adelaide. With high school wood and metal working skills, a wooden cabinet and an aluminium chassis was made. The result was a neat little radio.

A few minor problems were soon sorted out, unwanted feedback with the regenerative circuit and I had my own radio that I had proudly built myself.

Thinking back it seems a long time ago!

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WIA news continued

cordless phone and \$30 per month of Freshtel call credit.

Country Energy have been "trailing" BPL in Queanbeyan for several years using the older generation 45Mb/s DS2 chipset based Mitsubitishi equipment, producing emission levels measured up to 55 dB above the expected ambient noise levels on the 7 MHz amateur band. This new trial will use Schneider Electric (Ilevo) equipment using the later generation 200 Mb/s chipset, as used in the Mt Beauty BPL trial.

Richard Fidler interviews Ken McCracken VK2CAX

On 26 March 2007 on ABC 702 Sydney, Richard Fidler interviewed Ken McCracken VK2CAX about his involvement in the early space program. Ken mentioned amateur radio several times, and how it contributed to his career.

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Editorial continued

the outcomes are usually better for all (as opposed to some) in the workplace. If a collective agreement can be achieved, the beneficial outcomes apply to all at the workplace. The same applies in this hobby – the benefits of the negotiations between the WIA and the ACMA apply to all amateurs. However, it is only the members that contribute to the costs of achieving those outcomes. This is hardly equitable, in the Australian sense of sharing and mateship. Are you a member and contributing YOUR share? Or are you on the outside, often sniping about "what should be done" and not contributing in any constructive manner? For most readers, the answer to the first question will be "yes". What about your amateur friends? Remember, there is strength in numbers – the larger the proportion of Australian amateurs that are members of the WIA, the more powerful is its voice.

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YL Meet in India

Gwen Tilson VK3DYL

I recently returned from India after attending the 8th International YL Meeting, held in Mumbai. The meeting went off very well under the direction of Sarla VU2SWS, and I am now trying to sort out my impressions of the trip.

Shortly after arriving in Mumbai, I joined my Norwegian YL friends, Unni and Ingrid, on the back seat (actually only meant for 2 people) of a tuk-tuk to go shopping. Everyone should have the experience at least once in their lifetime of riding in a tuk-tuk, best described as a 3-wheeled vehicle with a loud (and I mean loud) horn driven by a madman who thinks he owns the road. There must be thousands of tuk-tuks in India, all converging at the same spot at the same time. Alternatively you can travel by rickshaw pulled by man or beast, though personally I preferred hiring a car and a driver with good reflexes, a loud horn and a heavy foot on the brake.

Beggars – very persistent in trying to sell you things you don't want. Some even employed monkeys to cling to a car window in the hope passengers would open it so the monkeys could reach inside and help themselves to cameras or purses.

Street stalls selling everything from fruit and vegetables to blocks of marble. Pharmacies and doctors operating from "hole in the wall" shops. Slum areas worse than I'd seen in Bangkok or anywhere. In Mumbai, we saw a Dhobi Ghat, a square ½ kilometre of cement stalls where washermen pound garments to what seems like pulp to get them clean, employing about 10,000 people to wash, dry, iron and deliver the cleaned clothes – what a sight looking down from an overhead bridge on all this activity as rows of racks flutter with drying laundry.

Lots of temples and ruins of once-great palaces. All with many steps to climb in the heat! The first sight of the Taj Mahal, described as the most extravagant monument ever built for love and which has become India's de facto tourist emblem, was all I wanted it to be – well, except for those innumerable steps and the fact that I had decided, in advance, to see it at sunset when the inside was so dark that one couldn't see all the beautiful intricate

marble carving! However, next day I was taken to a marble workshop where I saw how the marble was quarried, cut and inlaid with precious stones from all round the world. How I would have loved to buy one of those tabletops but, having bought a carpet in Varanasi (and which I had to carry home!), I decided "no way!".

Varanasi – I had seen many pictures of people



A dancer at a function at the YL Meet.



Gwen dressed up for festivities

bathing in the Ganges and wanted to see it for myself, so early one morning a YL guide collected me and we travelled by boat up and down the river past the Ghats where literally hundreds of people were already congregating to bathe in the river. I only saw one dead body being prepared for cremation – that was enough for me so I lit a little candle and floated it in the river with many others for good luck, then back up those numerous steps, past the numerous beggars and back to my hotel for breakfast. Then off to buy my carpet!

I used various means of transport during the trip, including planes, cars, buses, a train, a tuk-tuk, bicycle-rickshaw and wheelchair (I'd twisted my knee before leaving home!), the latter involving a forklift truck to get me up into a plane! I refused rides on camels and elephants, having "been there, done that" in other countries.

My most memorable trip was when Sarla arranged for us to visit Elephanta

Island in Mumbai Harbour. This involved an hour's ride in a launch and then a short ride in a miniature train to the foot of the stairway leading up to the caves to view the stone carvings dating back to between AD 450 and 750. For someone like me who didn't feel capable of climbing those steps lined with handicraft stalls and patrolled by pesky monkeys, it was decided I should travel upwards in a palanquin (like a sedan chair), a seat balanced on 2 long poles of wood resting on the shoulders of 4 stalwart Indians. Oh dear! I resisted the impulse to give a Queenly wave as I by-passed people toiling their way up/down the steps. Coming down backwards was a trifle frightening and I wondered how many passengers had been dropped!

Sarla also took us to see Mahatma Gandhi's house (with a wonderful diorama of his life – and later I was to see the beautiful garden where his ashes are buried); a meal in a revolving restaurant (with a view of the cricket ground!). Sarla dressed up all the YLs in saris; and provided evening entertainment of two first-class dance troupes. A radio room was provided, plus a special QSL card, but I didn't get time to operate. And a special postage stamp was printed to commemorate our visit.

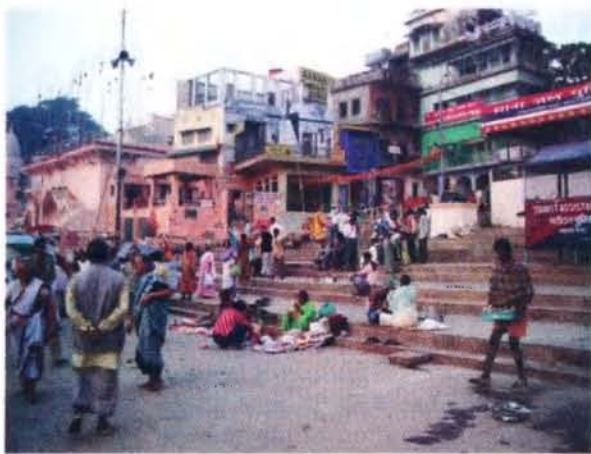
Weatherwise it did not rain, was hot and muggy but bearable with lots of air-conditioned buildings. Good to reasonable hotels; too much spicy food for my stomach; lots of kindness shown me by local guides who had to help me up those steps, and not one harsh word to me on the day Aussie beat India at the one-day cricket match while I was there (grin!).



A tuk-tuk & other traffic.



Washing.



Beside the Ganges, early morning.

My thanks go to Sarla for inviting us to India for the Meeting, and to my travel agent for arranging the rest of my trip. Where next?

Editor's Note: My apologies to Gwen – this contribution somehow was missed. It has been sitting lost in my Inbox for far too long. Better late than never!

ar

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Falconsat-3 latest

Reports have been received that the Atlas launch carrying Falconsat-3 into orbit was successful on March 8, 2007. When Falconsat-3 completes its primary mission, an amateur radio payload is planned to be activated. More details on this feature will become available at that time. It is anticipated that it will feature a digital store and forward facility similar to the UOSATs and an SSB voice transponder.

Miles Mann WF1F reports on the April 2007 ISS crew change

The existing Expedition 14 crew currently consists of:

Commander Michael Lopez-Alegria
Flight Engineer and Soyuz commander Mikhail Tyurin
Flight Engineer Sunita Williams.

Ms. Williams arrived via the Shuttle STS-116 mission. She will also stay on ISS after the crew change in April and become part of the Crew #15.

The new crew #15 due in April 2007 will consist of:

Spaceflight participant Charles Simonyi, an American flying under contract with the Russian Federal Space Agency. Charles will return to Earth with Expedition 14 on April 20th.

Commander Fyodor Yurchikhin
Flight Engineer Oleg Kotov

Amateur Radio Status

Voice and Packet: The Kenwood D700 celebrated its 3-years of service last December. However after three years, 24/7 usage has taken its toll. Last August the memory channels became too corrupted to be reliable. The procedures given to the crew to configure a channel combination did not always match the instructions and there were a few times when I heard the ISS crew calling for a school and ISS was on the wrong uplink frequency.

The D700 was removed from general access last August and is only being

used for pre-arranged school schedules, etc. The good news is that we may get an opportunity to reload the OS on the D700 during the upcoming crew change. The D700 on ISS is running a special OS and channels setup, created just for the ISS. If time allows, the D700 will get a fresh OS reload to set it back to the launch configuration. The OS reload also includes a very complex channel configuration and other unique settings. The OS reload requires the removal of the covers and the installation of a special ribbon cable.

The Ericsson HT systems are not currently being used because of an intermittent cable issue. No date on when replacement parts will be flown at this time. The PacCom modems attached to the Ericssons have not been activated in 3+ years and the memory batteries are probably not functional. The Marex Slow Scan TV project, SpaceCam1 was activated for a few weeks last August using a borrowed laptop. The amateur radio projects still do not have a dedicated laptop for the projects and there are no laptops scheduled for flight to be used for amateur radio on ISS in the foreseeable future.

More details on the Eagle Communications Package

It was reported last year that the design stage of AMSAT-NA's Eagle High Orbiting Satellite had come to an unexpected halt due to uncertainties about the state of the most used amateur radio satellite bands by the time it was launched. The position has since been reviewed and the AMSAT-NA Board of Directors approved the general design and some details at a meeting late last year. Here is the latest update released in early April.

- A SSB/CW (etc.) transponder with uplink on U-band and downlink on V-band. System design has a goal that it be usable over 75% of the orbit by an AO-13 or AO-40 capable ground station.
- A SSB/CW (etc.) transponder with uplink on L-band and downlink on

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR.

Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members, AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net. The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October), the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March), the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK
9 Homer Rd
Clarence Park SA 5034

Graham's e-mail address is:
vk5agr@amsat.org

S1-band (2.4 GHz). An AO-13 or AO-40 capable ground station will be able to use this payload.

- A low rate text message system, like SMS. It will operate on U/V-bands and be usable over 75% of the orbit by a small terminal on the ground.
- These transponders will be implemented using Software Defined Transponders (SDX). Eagle will also carry an advanced communications payload (ACP). Using advanced signal processing and RF techniques, the ACP will allow:
 - Voice communications on S2-band (3.4 GHz) uplink and C-band (5.8 GHz) downlink using a single 60 cm dish. The satellite antennas will be electrically steered to reduce spin modulation and allow use over 75% of the orbit.
 - An additional, fix-pointed, uplink will be available at L-band. This L-band uplink will require a separate uplink antenna at the ground station.

Advisory Committees Call for Nominations

The L-band uplink is intended to allow users in region 1, where 3.4 GHz is not currently allocated to the Amateur Satellite service, to use the ACP legally, by transmitting on L-band.

- High rate data communications, such as streaming video, using a 2 m dish on S2/C bands.
- AMSAT will develop and make available an affordable ground segment for the ACP System.

Full details are available on the AMSAT-NA web site.

Eagle 70 cm receiver completes design review

The web site also contained news of some progress in hardware development. Jim Sanford WB4GCS has authorized the expenditure of funds for purchase of components and construction of four prototypes of the UHF receiver designed by John Stephenson KD6OZH.

Is your station ready for P3E?

I mentioned this issue a couple of months ago but another reminder won't go astray. A check of the AMSAT-DL web site will show that P3E is very much on the horizon. It's not too soon to start either building your HEO station or revamping your old AO-10/AO-13/AO-40 equipment. I recently lowered my tracking antennas for the first time in years and found one or two problems which have been corrected. Don't get caught with P3E in the sky and lots of work to do. The time to get moving is now.

ar

Correction

AR April 2007

It has been noted that there is an error in the drawing Figure 4 on page 7, in the article by Lloyd Butler.

In the top right hand corner of the drawing, the legend reads "Two 5 cm plates, each 90 mm long and spaced 10 cm apart".

It should have read "Two 5 cm plates, each 90 cm long and spaced 10 cm apart".

Pursuant to clause 18.12 (e) of the Constitution the WIA Board has made Regulations providing for an Advisory Committee for each State of the Commonwealth, the Australian Capital Territory and the Northern Territory, each comprised of three elected members (the Members) and one member appointed by the Board (the Nominated Member). The full Advisory Committee Regulations may be found on the WIA website <http://www.wia.org.au/>

The function of each Advisory Committee is defined in the Regulations as follows:

- (a) To provide advice and information to the Board or to any person authorised by the Board to seek advice or information in relation to any matter identified by the Board or by a person so authorised;
- (b) To promote amateur radio, the WIA and membership of the WIA by means including but not limited to:
 - (i) Maintaining such stock of forms, brochures and other material as is determined from time to time by the Board and in such numbers and subject to such procedures as the Board shall define from time to time;
 - (ii) Establishing and manning or causing to be manned stands and stalls at appropriate gatherings of radio amateurs or at functions or events promoting amateur radio generally;
 - (iii) Promoting and selling and causing to be promoted and sold WIA membership, WIA books and products at stands and stalls and otherwise;
- (c) Making available and encouraging others to make available local news for WIA broadcasts and releases;
- (d) Liaising with affiliated clubs as requested by the Board and at the request of and for the Board arrange and organise conferences of affiliated clubs from such part of such Areas as is identified by the Board, and
- (e) Undertake such other tasks and

functions as are agreed from time to time.

The new Advisory Committees take office on 1 October this year, replacing the existing Advisory Committees comprising the members of the previous Divisional Councils prepared to serve on the Advisory Committees. Advisory Committees are appointed for three years.

Nominations are called for from WIA Members seeking election as a Member of an Advisory Committee. A Member of an Advisory Committee must be a voting member of the WIA, must reside in the Area of the Advisory Committee and must hold an Australian amateur radio licence.

Any person wishing to nominate as a candidate for election as Member of an Advisory Committee of the WIA must deliver or cause to be delivered to the Returning Officer by not later than 22nd June 2007:

- A statement signed by the candidate signifying his or her willingness to be a candidate for election as a Member of an Advisory Committee, stating which, and also signifying his or her willingness to perform and carry out the functions identified above together with;
- the full residential address, name, age, occupation and callsign of the candidate, and such other biographical details or other information as the candidate wishes to accompany the ballot papers, but in all not exceeding 250 words.

Delivery to the Returning Officer may be made by hand when the WIA national office is open at:

Suite 10, 229 Balaclava Road,
Caulfield North, Victoria 3161

or by mail to:
PO Box 2175,
Caulfield Junction
Victoria 3161

Nominations received by facsimile or by electronic means cannot be accepted.

David Wardlaw VK3ADW
Returning Officer

Clubs

The north coast of VK2 has a new Radio Group. Formed in March, they are the Mid North Coast Amateur Radio Group, based in the Coffs Harbour region. They plan monthly meetings and currently gather at noon on a Sunday at the Coffs Harbour Hotel Bistro Bar. The Group can be found on 3.660 MHz, UHF CB channel 4 and VMF04 CB repeater. Contact point is PO Box 505 Bellingen NSW 2454, email radiosupply@hotmail.net. au and a web site www.qsl.net/mm0ax/mncarg/. Also in the region is Urunga and they have just held their convention over Easter, an annual event since 1948.

Next month will be the annual auction of the Waverley ARS in Sydney's eastern suburbs: Saturday 23rd June. Also the annual field day weekend of the Oxley Region ARC at Port Macquarie on June 9 and 10. Contact with them via PO Box 712 Port Macquarie NSW 2444. The Hornsby and District ARC meeting attendance has outgrown the small meeting room at Mt. Colah. They have taken over the large hall for the fourth Tuesday evening monthly general meeting. They also meet on the second Tuesday with an informal night. Westlakes ARC have RTTY / SSTV activity on Tuesday evening, on their repeater on 146.775. Ian VK2ZIO is still adding to the display at his 'Kurrajong Radio Museum' in the lower Blue Mountains. Do a Google search, email to vk2zio@yahoo.com.au or telephone 02 4573 0601. Ian is able to offer a home to most military and similar electronics of yesteryear. As Ian says – when doing a clean out – don't tip it – preserve it. Give him a call.

At the end of March, the Hunter Radio Group held an education day at the Luskintyre Aviation Flying Museum in the Hunter Valley. In a packed day of activity, the 25 plus in attendance were introduced to simple beam antenna construction, how various transmission modes look when displayed on a spectrum analyzer, constructing a simple J pole antenna and easy to build test gear from the Drew Diamond publications. Then there was lunch and a tour of the various hangers with the operational 'Tiger

Moths', the workshop and the Museum. Then it was back to instruction with tips on 'fox hunting', with some practice in locating a hidden transmitter and the day ended with a look at the operation of the 'screwdriver antenna'. It was a great day and another is being planned for the spring. Thanks to all who attended, as well as the lecturers. The day was arranged by Grahame VK2FA and hosted by Jamie VK2YCJ. It is days like these that assist the newcomers, as well as the old hands. What is your club or group doing in education? Please let us know.

ARNSW

Details of the recent AGM will be given next month. About half the ARNSW membership took the option this year to receive the annual report by email. Continuing on Council this year are Brian Keegan VK2TOX, Brian Kelly VK2WBK, Noel May VK2YXM, Norm Partridge VK2TOP, Terry Ryeland VK2UX and Barry White VK2AAB. Retiring this year are Mark Blackmore VK2XOF, Owen Holmwood VK2AEJ and Peter Tolmie VK2ZPT. Joining this year are Michael Corbin VK2YC, Erik Houseman VK2MAN and Beth Langley VK2AO. There was the right number and an election was not required.

One of the membership services provided by ARNSW is a post box address for those who wish a non residential address for their callbook entry. There is a small annual charge for the service. If interested, contact the office for details – telephone 02 9689 2417; FAX 02 9633 1525; Freecall 1 800 817 644, email vk2wi@ozemail.com.au; web www.arnsw.org.au or postal PO Box 9432, Harris Park NSW 2150.

The next exam session provided by ARNSW will be the weekend 23rd and 24th June.

There are only two months left for the entries in the 80 metre AM transmitter construction, sponsored by the Home Brew Experimenters Group. They meet on the first Tuesday evening, have a 2 metre net on the third Tuesday and gather at VK2WI Dural after the bimonthly T&T, this month on Sunday 27th.

VK2WI

On 19th May, it will be 50 years since the official opening of the VK2WI building. The incoming Council may observe the anniversary as part of the Trash and Treasure and Homebrew gathering on Sunday the 27th May. The evening coverage provided on 40 metres – 7146 kHz – is again being co-channelled by an overseas DRM transmission. There had been a break during summer. Regions surrounding Sydney have the advantage of automatic relays made through local repeaters. More distant evening coverage will have to rely solely on the 80 metre signal, on 3595 kHz.

Some of the morning regional coverage for VK2WI News is provided by the efforts of clubs and individuals who source an input from one of the HF channels and retransmit over local VHF / UHF repeaters. With the bottom of the sunspot cycle, both the relayers and our HF listeners are having a hard time in the morning with the 80 and 40 signals. To assist with alternate signal sources, VK2WI has applied for and obtained a commercial –fixed-service frequency in the 5 MHz spectrum. This will provide a more consistent link signal to the valued relay stations. This transmission, in the USB mode, will commence as soon as crystals and equipment are obtained. Listen to VK2WI for the details. The 10 metre transmission on 28.320 MHz is currently using a horizontal dipole. It is planned to change back to the vertical antenna, used outside broadcast time by the beacon on 28.2615, which was the former arrangement. This should improve the local ground wave. VK2WI News with its statewide coverage is available to clubs and groups wishing to provide publicity of their activities. Send in your items by email to vk2wi@ozemail.com.au with 'VK2WI News' in the subject header. Deadline for all news is noon on the Friday before the Sunday session. Would clubs and groups please check the meeting dates given on your behalf in the VK2WI news and on the ARNSW web site and update the details, if needed.

Amateur Radio Victoria NewsJim Linton **VK3PC****Website:** www.amateurradio.com.au **Email:** arv@amateurradio.com.au

By the time this column is printed the Centre Victoria RadioFest will have taken place. A report and photographs can be found on the Amateur Radio Victoria website and elsewhere.

These types of events enable us to window shop or snap up a bargain. The support of commercial traders and second-hand sellers is the key to a successful event. But to think of them only as consumer opportunities ignores their importance to the amateur radio community.

Old mates catch up, new friends are made and they are a great social occasion. Check the Amateur Radio Victoria event calendars for details of the Moorabbin & District Radio Club Hamfest on 12 May, the specialised GippsTech on 7 & 8 July and the Gippsland Gate Radio & Electronics Club's White Elephant/Hamfest on 21 July.

The Amateur Radio Victoria (WIA Victoria) AGM will be held on Wednesday,

23 May, at St Michael's Hall, corner Victory Boulevard and High Street, Ashburton, commencing at 8pm.

Members should have received the notice of meeting and annual reports. Those registered for the Members Only section of the website were sent this material via email, while others get it through the post.

Looking back, 2006 saw an even stronger state-wide organisation achieving greater recognition and being able to make worthy contributions to the activity of amateur radio. New initiatives have been and are being developed and it is also pleasing to see that many Foundation Licensees are becoming financial members. The finances remained on track with the organisation ending 2006 with a surplus.

The council, in response to comments made in the 'member forum' session after the last AGM, embarked on an office refurbishment program.

While there are matters still needing to be done, the top priority items such as upgrading the office equipment and computers systems have been completed.

The AGM is a time to reflect on what has been achieved and recognise the contributions of individuals or groups.

Licence classes

The next weekend Foundation Licence training and assessment weekends at Box Hill, will be on May 19 & 20 and 23 & 24 June. For enquiries, to enrol or obtain the Foundation licence manual for \$19.50, contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

The latest Standard Bridging Course held in April attracted seven Foundation licensees eager to upgrade. These courses run by Kevin Luxford VK3DAP are getting excellent results. Work has begun to develop an Advanced Bridging Course, more news about that later.

GippsTech2007

The WIA Eastern Zone Amateur Radio Club (Inc) is pleased to announce GippsTech2007.

This year the main program will be held on Saturday July 7 and Sunday July 8. This event has a well-recognised reputation as the premier technical conference in VK, considering techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts. In addition to the Conference, a Partner's Tour will be conducted, together with an informal social gathering for dinner on Friday and a Conference Dinner on Saturday.

Copies of the Conference Proceedings document from 2006 will be on sale

during this year's event. Previous years' Proceedings are also available.

Call for papers

Amateurs (& others with material to contribute) are invited to submit titles and outlines for topics to be presented at GippsTech2007. Presentation slots can be brief (5 - 10 Minutes) through to 1 hour. Anything longer - you will need to justify!

Presentations can be formal or informal, or display. We use a lecture theatre for the formal (& semi-formal) presentations.

Displays are open during coffee/tea breaks and after lunch. Potential presenters are welcome to contact me direct for further information or to suggest a topic.

The conference is held in Churchill about 170 km east of Melbourne.

Further details can be found at the Eastern Zone Amateur Radio Club web site at:

<http://www.qls.net/vk3bez/>

Peter VK3KAI

Chair, Organising Committee
vk3kai@wia.org.au

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The March meeting of AHARS was a members' Buy and Sell meeting. As usual, there was a wide variety of odds and ends on offer and money changed hands fairly freely. We all know that one man's trash is another man's treasure.

AHARS was again involved in the John Moyle Memorial Field Day at Swan Reach, with a certain amount of success.

There were only eight people there but everyone worked very hard at the radios and some good scores were achieved. The success or otherwise will be proved when the results are published.

There is no doubt that a good time was had by all and our skill in operating under field conditions was again demonstrated.

As amateurs we need to be able to operate our radios when there is no

mains power because we never know when we might be called upon to provide emergency communication. The ability to be of help in a crisis is a proud tradition we amateurs carry and weekends like the various Field Days help to keep us in practice.

Thanks to those who worked so hard that weekend. Hope to see you again next year.

A regular series of interesting meetings has been planned for AHARS for the rest of the year. Any amateur visiting Adelaide is cordially invited to attend our meetings. They are held on the third Thursday of each month in the Blackwood Community Hall at the top of the old Belair Road.

Meetings start at 7.30 pm, with the business meeting afterwards. Come along and enjoy the friendship.



Karsten VK5ZKT at his 80 metre rig with his bed in the background

Riverland Radio Club

Doug Tamblyn VK5GA

The Riverland Radio Club held a successful John Moyle Memorial Field Day activity.

Members of the Riverland Radio Club held their first John Moyle Memorial Field Day contest on the 17th and 18th March, setting up a portable station using the club call sign VK5BRL at Myrta, 20 km south west of Loxton, next to the "malleesky" observatory at the QTH of Adrian VK5AJR and Beth Reimann.

A shipping container was to be the home of the portable station for the duration of the contest. Using an Icom IC-745 with an offset dipole for 40 metres proved to work very well.

All HF bands were very active over the weekend, but 40 m was very popular, contacts were made on 2 metres also.

Andrew Williss VK5LA, Malcolm Gardner VK5MJ, Andrew Pope VK5FAJP and Robert Pope VK5FRJP

were well prepared for a night of activity with sleeping bags and camping gear, prepared to make the most of the good band conditions until about 2400 UTC.

The success of the weekend shows in the number of contacts: 82 contacts were made on 80 metres with 135 on 40 metres, 33 on 20 m and 14 on 2 metres, a total of 264 contacts for the weekend. The President Andrew VK5LA said it was a great effort by the club.



Shipping container next to the "malleesky" observatory used for the John Moyle Field Day



Andrew Williss VK5LA and Malcolm Gardner VK5MJ operating during the contest.

News from...

VK5

VK5 ham gathering at Crystal Brook

Paul Meier VK5MAP

On behalf of the Moonta Amateur Radio Club, Ian VK5XE organised a gathering for 29th October 2006, to be held at Bowmans Park Reserve, 5 km north east of Crystal Brook.

Amateur operators of all ages arrived with wives and families from the Mid North and as far as Mount Barker, Robertstown and Cowell. The main object of the gathering was to put faces to the voices with whom we talk.

The weather was good to all and by lunchtime most had met the operator on the other microphone. With 32 Amateurs and one SWL, all grades of call signs were present. Most sat under the shade from the large eucalyptus trees for lunch with hardly any flies to annoy us.

Ian VK5XE welcomed all, and spoke about the local repeaters in the mid north of SA.

Graham VK5GH spoke of the possibility of adding IRLP to VK5RMN at Port Pirie. Jim VK5AJW spoke about his concerns of maintenance and up keep to VK5RMN, and the distance involved he would have to travel to do the maintenance.

Paul VK5MAP spoke about a possible school for upgrading to Advanced Licence and mentioned that the Southern Flinders Appreciation Group are holding their net on 3.620 at 8:30 pm local time on Saturday evenings.

After some more chin wagging, vehicles started to depart for home, and by all comments it appears the day was enjoyed by all. Hopefully another get together can be organised in the future and it could even become a yearly event.

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Back row L-R: Bill VK5FWMA, Hugh VK5NHG, Richard VK5ZRI, Andy VK5NTT, Pat VK5HAE, Max VK5SMR, Rob VK5FAAF, Paul VK5MAP.

Centre row L-R: Austin VK5WO, Arny VK5NEX, Ron VK5KRA, Brett VK5ZII, Frank VK5HFH, Mark VK5FMRP, Damien SWL, Peter VK5FPJL, Mike VK5MCB, Brian VK5CO, Bob VK5RI, Larry VK5HBG.

Front row L-R: Gordon VK5GWY, Rod VK5UV, John VK5FJOA, Roger VK5NWE, Neville VK5WG, David VK5HDP, Noel VK5NL, Graham VK5GH, Jim VK5AJW, Ian VK5XE, Mick VK5KDD. Absent: Carol VK5ZCH and Ian VK5IS.

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VK4

At a recent QAC meeting, it was agreed that Ross Anderson VK4AQ would compile VK4 notes for *Amateur Radio* magazine. Clubs are invited to send material for inclusion to Ross in a timely manner.

Contact details for Ross are:

Ross Anderson VK4AQ

PO Box 1511

Innisfail QLD 4860

Tel 07 4061 7236

Email vk4aq@bigpond.net.au

Ross requests that all items arrive by 6th of each month for inclusion in the following month's edition of AR.

It is preferred that all copy be supplied as Word document and photos as separate files (jpg format).

It is anticipated that the first consolidated VK4 notes will appear in the June issue of AR.

VK7

Justin Giles-Clark, VK7TW
Email: vk7tw@wia.org.au, Regional Web Site: reast.asn.au

Meet the Voice BBQ

The "Meet the Voice" gathering was an outstanding success socially and thanks to all for attending. The day started with registration, a short group discussion on BPL and a BBQ. The theme of the day was of course "MEET THE VOICE" and it was all about putting faces to names and meeting the person behind the callsign. Seven mainlanders were welcomed with representation from VK1, VK3 and VK6. The Sewing Circle Net is YOUR Net from 5 pm to 6 pm daily on 3.590 MHz.



All attendees at the "Meet the Voice" gathering at Ross.

VK7 BPL Virtual Tour Videos Released

There are eight and four minute virtual tour videos of the Mt Nelson and North Hobart BPL trial areas which have been released on DVD and streaming video. This tour shows a visual and audible representation of the interference potential of the BPL technology deployed in VK7. The video contains commentary about the trial, technology, issues and background information on BPL. Take a look at: <http://reast.asn.au/vk7bplwatch.php#bpl tours>

North West Tasmanian Amateur Radio Interest Group

The club is currently converting RT85 Low Band units for use on 6 metres and is looking to place an order for commercial half wave 6 m antennas. Members wishing to order one please contact Tony VK7AX on 6425 2923.

The VK7RAE North West propagation beacons were installed and commissioned at their new home, the SEA/FM Transmitter Site located at Don Heads near Devonport in late November 2006. The 144.474 MHz beacon is working well and receives regular reports. The 50.057 MHz beacon should be back on the air by print time, thanks to Joe

VK7JG. The 432.474 MHz beacon is not on the air due to interference to an LIPD operated garage door and alternatives are being explored. The status of all the beacons is available through APRS. Look for the object "VK7RAE BN" and check the comment field. Thanks to the Macquarie Network Broadcaster, Joe VK7JG, Andrew VK7XR, Ivan VK7XL, Tony VK7AX and Mark VK7KMA. Any reception reports or questions can be directed to NWTARIG email: nwtarig@spamex.com or phone: 03 6425 2923.

Northern Tasmania Amateur Radio Club

Wednesday 14 March was the Lilydale Falls BBQ and what a night! 40 people plus 8 dogs attended for a great social get-together. From all reports it was a perfect spot with great weather and a wonderful time was had by all. It was great to see several non-locals and mainlanders from VK4 and VK8 attending.

Congratulations to Joe VK7JG, Paul VK7KPG and Stuart VK7BBB on



REAST Inc. stand at the Model Makers and Collectors Exhibition 2007 in Hobart

receiving their accreditation from the WIA as invigilators.

Radio and Electronics Association of Southern Tasmania

Congratulations to Ben VK7BEN and John VK7JBY on passing and receiving their Advanced licences.

Wednesday 14 March was a very entertaining talk by Mike Hawkins VK7DMH who gave an illustrated presentation on the history of radio control. Mike is a passionate radio controlled aircraft builder and brought

along a range of historic and modern RC equipment including one of his latest model aircraft. Mike took the groups from the late 1800s through to the modern spread spectrum systems along with demonstrations. Thanks Mike.

REAST had a stand at the biennial Model Makers and Collectors Exhibition on 24-25 March 2007. The stand was only 4 metres square but we managed to fit – working APRS, SSTV, IRLP, Echolink, HF and VHF portable stations, promo videos, Morse code, optical communications, ATV, construction and a BPL DVD. An extreme amateur radio

colour and movement experience for the public showing them what AR is all about. Thanks to all involved.

Our presentation on 4 April was by Rex VK7MO on his OM Len VK3LN (SK) and his amateur TV experiments from the 1930s through to 1950. Rex also brought along a number of historical ATV items including a 45 line interlaced Sanabria disk. Len was awarded the WIA Mercury Award in 1950 for his achievements. Rex then outlined his optical cloud bounce experiments with Justin VK7TW. Thanks Rex for a very entertaining presentation.

VK3

Geelong Radio and Electronics Society (GRES)

Since formal meetings started in late January, we have been very active, starting the year with a practical evening.

John VK3TKH taught members how to make their own 'iron-on' printed circuit boards. The pattern is printed onto photographic paper, this is ironed onto clean printed circuit board material and etched in the usual manner. Members were amazed how easily good quality boards could be produced. Many are now constructing battery desulphating boards and CTCSS tone encoding boards which are necessary to enable older FM transceivers to be used on FM repeaters requiring tone access.

On another evening Keith VK3AFI, a retired electronics teacher from the local TAFE College, gave instruction on how to solder correctly. Evenings such as this benefit those who are just starting to build their own projects and experienced constructors who have their memory refreshed.

A new competition, to design and construct a crystal set, has generated a lot of member interest and discussion.

There are two divisions, novice for unlicensed and "F" calls, and an open division for all others. All indications point to it being fiercely competitive. It is pleasing to see first time constructors

are planning on taking part. Final judging will take place on May 10th.

Members also visited the newly reopened military radio museum at Watsonia. As we have a number of military radios surplus to our needs our Wednesday group sorted out items at our secure store (Old Geelong Gaol), and these were donated to the museum. The old saying is true about trash and treasure. We created a bit of storage space and helped another museum.

Club membership is steadily increasing, attributable in part to the new Foundation Licence.

Weekend classes have been held by John VK3TKH and Keith VK3AFI and have proved popular and a number of people have gained their "F" call.

This new class of licence has attracted not only younger people but mature adults as well. Some adults who lacked the confidence to tackle exams under the old system have, under instruction, been able to become amateur operators.

Now that they can enjoy the pleasure of our hobby, they may find in time they are able to upgrade their class of licence.

Visitors to Geelong are reminded to go and have a look at our museum in the Old Geelong Gaol, open Thursday

to Sunday and school holidays. If they are staying in Geelong, they might like to visit our clubrooms at 237A High St. Belmont. Meetings are held at 8:00 pm every Thursday evening. The Wednesday group meet most Wednesday mornings from about 9:30 am.

ar

Correction 160 metre noise cancelling

by Mick Hort VK2BZE
(AR, April 2007, pp 14-16).

The author has advised of an error in the circuit diagram (Figure 1) of the noise cancelling circuit. He advises: "The 2 x 200 pF caps to the left of the drawing should have curved lower bars to indicate a tuning cap and I should have put a dashed line between them to indicate coupling. Readers should also note that the connection from the electronics part of the system to the loop antenna is a coaxial cable connection."

Annual General Meeting

Don't forget the AGM, on the first Monday in May, i.e. 7th May. It will be at the normal Net time of 1030 Zulu and it will be on 3.580 +/- . Hopefully the band will be quiet and the propagation good.

We usually have a very good turnout for our AGM (and possibly a number of eavesdroppers!), so let us keep up our reputation.

It will be sad to say farewell to one of our longest serving committee members. Bron VK3DYF has decided to 'hang up her committee hat' after many years as Editor and currently as Minute Secretary. She will be missed and so will her meticulously written minutes, but we hope she will continue to come on the Monday Nets and to participate in the Contests and Birthday Nets.

The list of your representatives will be in the next copy of AR. If you have anything you would like discussed just get in touch with someone on the committee and they will try to follow it through. So far the F-calls are not well represented on the committee but that will surely change as time goes by and they discover that the longer licensees are keen to encourage the newer ones.

If, at any time, you would like to offer your services as a committee member, please do not hesitate to let someone know. New blood and new ideas are always welcome.

Do you know about ALARA's birthday?

ALARA's birthday is at the end of July, so we have a Birthday Net on the Saturday closest to 26th July. The Net runs for about two hours on 80 metres. The full details will be in the Newsletter, but a little early warning helps.

In VK5, a Birthday Luncheon is held on a Sunday at the end of July. In VK6, the regular third Friday luncheon in July is a special birthday occasion. Maybe, with some early warning, the other states could arrange a special luncheon at the end of July, too.

If so, please let me, as Publicity Officer for this magazine, and Dot VK2DB as Editor of the ALARA Newsletter, know

all about it so that we can let everyone else know as well – with pictures, of course. Aren't digital cameras wonderful!

International YL meeting in South Africa next year

The next International YL meet will be in South Africa, in September 2008. Unfortunately it will be a little difficult to attend both the ALARAMEET in Tasmania and the International Meet in South Africa but I suspect a couple of people will try to do so.

Here is the official invitation from the organisers:

International YL Meet South Africa 2008

Sawubona,
A big warm South African welcome to you!*

The 2008 International YL Meet will be taking place in South Africa and will be organised by Vee ZS6ZEN and Janet ZS5JAN. We invite you to join us on our special SA Yahoo Group so that you can be part of the developments as and when they happen.

The YL Meet and Convention will take place over a few days and will be an exciting and unforgettable experience of the diverse and vibrant cultures of our Rainbow Nation. Thereafter you are invited to join us on various tours through our beautiful country.

And some of the things you will experience.....

You will go on a bush safari to view our wild animals in their natural environment and will discover why the African Bush is such a special experience.

You will experience first-hand some of the different lifestyles of our people, enjoy their traditional meals as well as their dancing and crafts.

You will be delighted with our endless coastline of waves against sand and rocks; plus you will have the opportunity to have some fun in the sun.

You will be awed by our endless green rolling hills where there are sudden sheer drops into deep valleys which often rise into majestic mountains.

You will visit famous places that make

up the rich, exciting and often sad history of our country which will touch your heart and maybe move you to tears.

And you will have the opportunity of enjoying different cuisines at our many restaurants; and shop till you drop at our many varied shopping emporiums.

It will be a memorable experience of people, places and landscapes. Yes, we would certainly love you to share in this African adventure while you catch up with old friends, make new friends and enjoy our hobby of Amateur Radio.

Because, of course a radio station with a special call sign will be set for the duration of the convention and the possibility of radio stations being available on the tours is being investigated.

So a warm welcome from South Africa. If you and your OM are interested in attending the 2008 International YL Meet and Tour, please acknowledge this mail so that you can join the SA Yahoo Group.

73 Janet Musto ZS5JAN

Moderator of the Yahoo Group

* "Sawubona", means "Hullo" in Zulu (used here to address one person)
"Sanbonani" means "Hullo" in Zulu to a group of people.

For more information on South Africa and in particular, travelling in SA, you can check out these two wonderful websites: www.southafrica.net and www.southafrica-travel.net

Thanks to Gwen for passing this on to us.

Some interesting insights into other YLs' activities

Maria VK5BMT was a volunteer for the Police and Fire Games recently held in Adelaide. She has her name permanently on the list for various Games and thoroughly enjoys it. For the Seniors Games she was in the communications office but she wasn't sure where they were going to use her for the Police and Fire Games.

Jean VK5TSX and her OM Rod VK5SX spent 8 days in their caravan helping with the rifle shooting. In the course of the event there, Jean took a

young Spaniard under her wing, despite not having a common language. When the Spaniard won the Best Overall Gold medal he insisted on taking the ribbon from his own neck and hanging it around the neck of his Aussie Mum! Jean does not have a copy of the photo just yet, but it will appear in a future ALARA Column in AR.

Australia runs on volunteers and amateurs are part of that group. Recently, Jenny VK4FJAY was a St John volunteer at the Australian Grand Prix in Melbourne (note her petrolhead callsign?). One of her duties was to drive an electric buggy.

However, she was not driving it when it broke down quite near to her St. John post, so she went to investigate, with everyone else. It wouldn't go.

Jenny: "Have you checked the fuse?"

A slightly odd look from the chappie peering into the bowels of the machine before he said that was the first thing he had looked at.

Jenny asked, "How about using a multimeter to check?"

This time they all looked at her in amazement. BUT they went and found a multimeter (an hour or more later) they discovered that the batteries were completely flat. The buggy must have been plugged into the recharger incorrectly. Now you all know why you studied for your amateur exam!!

The St John Grand Prix people will have a slightly higher opinion of YLs, and Jenny in particular from now on.

Altogether, Jennie gave about 800

hours of volunteering to St John in a month! I guess it is someone else's turn!

PLEASE SEND ANY ITEMS OF NEWS AFTER BEGINNING OF MAY TO: Marilyn VK3DMS at gsyme@ncable.com.au

ar



Jenny VK5FJAY with her head in the electric buggy



ALARA and Glasnost! Jenny with a Russian fireman

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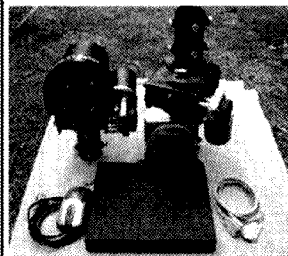
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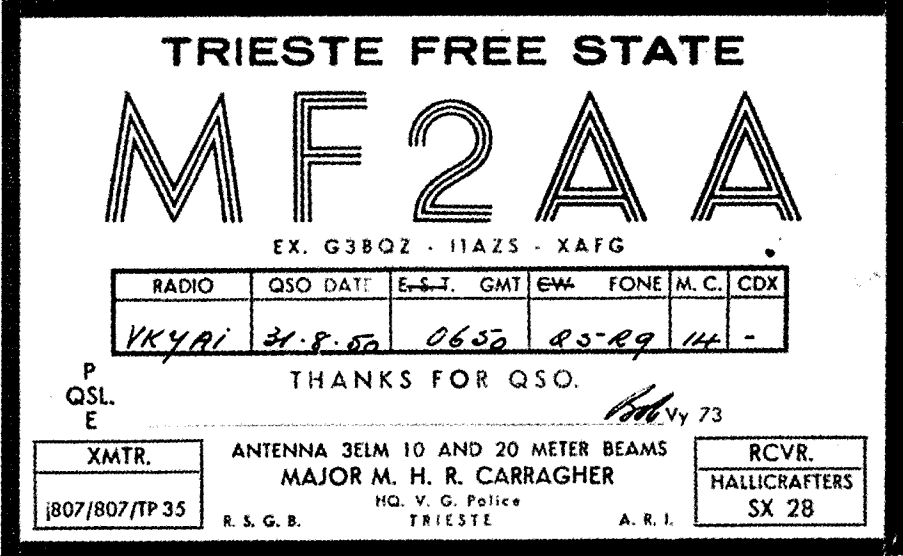
QSL cards from the WIA National QSL Collection

Ken Matchett VK3TL
 Hon. Curator
 (03) 9728 5350
 4 Sunrise Hill Road, Montrose Vic 3765
 wiaqslcollection@wia.org.au

How callsigns have changed!

The WIA is pleased to acknowledge the donations of the following readers to the Collection:

Years ago Ken Saxon VK7AI (SK) of Somerset, Tasmania operated on the DX-bands and used a home-built 18 valve receiver. Things have changed! His QSLs were donated by his brother, Eric, and mostly dated from the period just after World War Two. This was a very dramatic time in amateur radio as far as DX was concerned; (the ARRL's post-war DXCC was announced in QST in February 1947). There were great changes in the status of countries, which were reflected in changes of call-signs. Amongst the QSLs donated were FA8, FA9 Algeria as a French Colony, a VK1 from Macquarie Island before it was



A QSL dated August 1950 from Trieste under military occupation. (QSLs dated from 31 May 1957 counted as Italy.)

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allocated a VK0 prefix, the QSL VK5PL from the NT before the Territory gained a VK8 prefix, VK2TV and VK2PI from the ACT and AP5 when it was East Pakistan before becoming Bangladesh. This was a period also of military occupation, as indicated by the M prefix. (This was not an ITU allocation. That body had already allocated the prefix M to Great Britain.) Qatar MP4Q and Trieste MF2 were examples. There was even an EI when that country was commonly known as Eire.

Doug VK7DK sent in a small packet of quite old QSL cards, mostly from the period 1924-1930. As Doug explained in his letter to me, a friend of his gave him some QSLs that he had found glued to the wall of a shack he was demolishing. Many, despite being fragile and discoloured by age, gave the Collection cards that were still of considerable archival value. The Old Timer was **Len Crooke A7BQ**. There was quite a variety of station prefixes, several with no indication of country e.g. 9CVY from Missouri, 3CKJ (Penn.), 8AWQ (Michigan), 5FT (Texas) etc, the numbers shared amongst the American States indicating the location. In the early 1920s there was felt to be no

need to indicate the country of origin, since signals in the amateur bands never reached Europe until 1924. Intermediates were introduced in February 1927. These replaced existing prefixes that simply had a letter to indicate to country of origin, e.g. U (USA), G (Great Britain), C (Canada), A (Australia) and so on. The intermediates, precursors of our present day prefixes (introduced on 1 January 1929) indicated both the Continent and the country of origin. The QSLs that Doug sent included QSLs such as NU2CC (Continent N, North America and country U, USA), OA5XG from Australia (Oceania, Australia) and HU6BDL from Honolulu. (Was preference given to belonging to the USA over being in the Oceania region?) One QSL, OZ1AC, came from NZ.

In closing, let me remind readers that although old QSL cards are of considerable archival value they are becoming few in number. Recent QSLs serve to enhance the importance of the Collection; QSLs such as the recent Russian QSLs, IOTA, rare DX and pictorial QSLs being particularly sought by the WIA.

Good DX.

Contest Calendar May – June 2007

May	5/6	ARI Intl. DX Contest	CW/SSB/RTTY
	13	VK/trans-Tasman 80 Metres Phone Contest	SSB
	12/13	CQ-M Contest	CW/SSB
	19/20	Baltic Contest	CW/SSB
	26/27	CQ WW WPX Contest	CW
	27	VK/trans-Tasman 80 m CW Contest	CW
June	9/10	ANARTS WW RTTY Contest	Digital
	9	Portugal Day DX Contest	SSB
	9	Asia-Pacific Sprint Contest	SSB
	16/17	All Asian DX Contest	CW
	23/24	Marconi Memorial HF Contest	CW

Welcome to this month's Contesting Column

To be Contesting, or not to be Contesting: that is the question

(with apologies to Billy Shakespeare).

Whether 'tis nobler in the mind to suffer the slings and arrows of outrageous QRM..... etc.

Contesting is loved by some, hated by others and sometimes tolerated by Net Controllers. Contesters fill the once quiet bands with stations CQing, hunting/pouncing, exchanging seemingly bizarre information and generally having a good time. So what drives these people to want to do this and how do they squeeze the activity into their home life schedule?

Man has always competed with his fellow man since time began. Regardless of the pursuit, if people are engaged in a given activity, there will come a time that they will compete to see who can be the 'best' in that given subject.

Radio enthusiasts are no different in this respect and are often found on the non-WARC bands competing against fellow Hams - but often against themselves as well, possibly trying to beat last year's score.

Most, but probably not all, weekends feature a contest of some description. Complaints of frequency occupancy are the most frequent cry, but to expect empty bands is rather like paying for

your car registration and then expecting zero traffic congestion!

Most people who engage in a hobby utilise spare time to enjoy their pastime. Family and work pressures on available time are always an issue, but probably never more before than now, as we seem to wish that the 24 hour day could be extended by a few hours in order to get everything done that is required of us.

Making Time for Contesting

So where does this leave enjoying radio as a hobby?

Striking a fine balance between desired and required activities is likely to be the key to success. Enhanced attention to one aspect may leave a void in the other - although there are life's priorities to observe of course! Contest durations play a large part in the balance, as a 48 hour contest is quite a commitment to make in its entirety, but having the facility within a contest for a section of reduced duration for example, allows participants to have some contesting fun and satisfy their competitive side whilst catering for family and/or work commitments too.

Newcomers to the hobby might balk at the multi-operator contest stations and consider that this is out of their reach. These stations did not 'appear' overnight, but took considerable effort and dedication to assemble over time. Stations such as VK6ANC in Perth WA, VK2ATZ in Teralba NSW and

ZL6QH in Wellington all fall into this category, as they are the result of planning and considerable motivation by their respective Team members. Such set-ups, if financed by an individual, would cost a small fortune but a gathering of like-minded operators can soon amass an impressive array of equipment to be gathered together for a weekend.

For old hands and newcomers alike, a good way to gain knowledge and be part of a multi-operator team is to go along to a radio club meeting and make yourself known to the members. Then, volunteer to help set-up the station prior to the contest and learn how it all goes together, the problems encountered and the fixes for those problems.

Watch what goes on and hopefully gain some time in the operating chair to experience contesting in a way that might not be possible from home. I remember my first time contesting as part of a team, as I happily sat for hours on the key populating the written log and the paper 'dupe' sheets (maybe I'm showing my age a little here...) but struggling with some stations as they were a bit weak.

Someone had been watching me struggle and with a big broad grin on his face, rotated the beam..... I'd not used anything other than a dipole from home before that day and forgotten that a directional antenna was in use which would require moving from time to time!

Contesting is unlikely to be loved

by all. It's entirely up to the contesting populations to publicise anything and everything that makes contesting worthwhile: the self-training and technical development; the pleasure of doing something difficult and doing it well and the strong world-wide sense of community.

I believe that contesting is good for other aspects, including areas such as encouraging newcomers to the hobby and often the population of rare DX locations otherwise bereft of activity. Contesting can certainly utilise the bands to their fullest extent at times and this is usually where the perceived problems start as frequencies considered to be hallowed ground for a given purpose are often found to be occupied during an international contest. Tolerance and adherence to the relevant band plan can often save the day!

Contesting Basics 101

I thought that a bit of background to contesting in general might enlighten some – but possibly at the risk of boring those already enlightened! I'm not saying that this is definitive, but it should serve to offer some background into why contesting came about and the 'mechanism' behind the process.

Contests tend to be sponsored by amateur radio societies, radio clubs, or radio enthusiast magazines. The organisers publish the rules for the event, collect the logs from all stations that submit an entry, cross-check the logs to generate a score for each station and then publish the results. Awards granted by the sponsors are typically paper certificates, plaques or trophies.

During a contest, each station attempts to establish two-way contact with other stations and exchange information

specific to that contest. The information exchanged could include a signal report (often just '59' or '599' on CW and not a 'real' report as such), the operator's name, the geographic zone in which the station is located, or an incrementing serial number.

For each contact, the radio operator must correctly receive the call sign of the other station as well as the information in the exchange, and record this data along with the time of the contact and the band or frequency that was used to make the contact, in a log. Stations can only make contacts during the time period defined for the contest, on the radio bands specified in the rules for the contest.

A contest score is calculated based on a formula defined for that contest. A typical formula assigns some number of points for each contact, and a "multiplier" based on some aspect of the exchanged information. Many HF contests reward stations with a new multiplier for contacts with stations in each country. The points scheme needs to be examined closely by the operator, to allow an operational methodology to be considered that will be likely to maximise the potential for a high score.

For example, if the scheme requires specific call areas or countries to be contacted, points will not be gained for contacts other than those specifically mentioned within the rules. Hence, making plans for contacting overseas stations by studying propagation forecasts and such during an inter-VK/ZL contest, is unlikely to raise a winning score.

After the logs are received by the contest organiser, logs are checked for accuracy. Points can be deducted or multipliers lost if there are errors in the

log data for a given QSO. Most contests offer multiple entry categories, and declare winners in each category. Some contests also declare regional winners for specific geographic subdivisions, such as continents or countries.

Probably the most popular section for participation is the single operator category, in which only one individual operates a station for the duration of the contest. Multi-operator categories allow for teams of individuals to operate from a single station, and may either allow for a single transmitter or several to be in use simultaneously on different amateur radio bands. Many contests also offer team or club competitions in which the scores of multiple radio stations are combined and ranked.

A (Potted) History of Contesting

The origin of contesting stems from the Trans-Atlantic Tests of the 1920s, when radio operators first attempted to establish radio communications across the Atlantic Ocean on short wave frequencies. In 1927, the American Radio Relay League, which had been heavily involved in organising these tests, proposed a format for the annual event, encouraging stations to make as many two-way contacts with stations in other countries as possible.

The 1928 International Relay Party, as the event was named, was the first organised amateur radio contest. The International Relay Party was deemed a success and was sponsored by the ARRL from 1927 through 1935. In 1936, the contest name changed to the ARRL International DX Contest, the name by which it is known today.

Another important innovation in early



Photo 1: Westiakes Radio Club during John Moyle Field Day 2007. Photo: VK2BPL

contesting was the development of 'field day' operating events. The earliest known organised field day activity was held in Great Britain in 1930, and was soon emulated by similar events in Europe and North America. Field Day events were promoted as an opportunity for radio amateurs to operate from portable locations in environments that simulate what might be encountered during emergency or disaster relief situations. The concept is still alive today, with Field Day operations being the basis for a number of domestic contests in Australia.

The Westlakes Radio Club enjoy this format, as can be seen in Photo 1 during the recent John Moyle Memorial Field Day this year, operating as VK2ATZ/P.

Logs and Log Checking

Most competitive operators log their contest QSOs using contest logging software on a personal computer. There are many different software logging programs written specifically for radio contesting, with quite a number of excellent packages now available for VK domestic contests in addition to the international contests.

The logging programs are also able to perform additional duties besides simply recording the log data; keeping a running score total based upon the scoring system decreed for the contest, display which multipliers have been worked (or not!) and provide the operator with data about propagation.

At the end of the contest, each participant submits the log to the contest sponsor for adjudication. Once the contest organiser receives the logs from the competitors, the logs undergo a process known as cross-checking. In cross-checking, the QSOs and information recorded in the logs will be examined for errors or omissions by comparing the data within the logs for each QSO. This task is often performed by an automated checking system, usually based upon software running on a PC.

Anomalies are highlighted to the adjudicator for examination, reducing the amount of work for the adjudicator. Most contest organisers enforce penalties for inaccuracies in the log, which means that the need for speed in operation must be balanced against the requirement for accuracy.

Results and Awards

Most contests are sponsored by organisations that either publish a membership journal, or sell a radio enthusiast magazine. The results of radio contest events are printed in these publications, and often include an article describing the event and photographs of radio stations and operators in the contest in addition to a detailed listing of the scores of every participating station. Winners in radio contests often receive paper certificates, wooden plaques or trophies in recognition of their achievements.

I'll include a little bit more in 'Contesting Basics 101' next month, taking a look at a few of the contesting aspects in a bit more detail.

RD Contest 2007 Rules

Peter Harding VK4OD, the contest manager for the RD Contest advises that no rules changes will take place for the contest, so if you're the author of logging software for RD, that has got to be good news! However, Peter reserves the right to make a few tweaks next year....!

Commonwealth Contest – Claimed Scores for VK Team

The Commonwealth Contest (aka Beru) in March was more of a battle than ever before, with the added twist of Teams being introduced this year encouraging a healthy increase in participation from VK stations. Personal circumstances forced me off the air unfortunately but my impact upon the prowess of the VK Team was negligible and the Team produced a very competitive score indeed. No final results in yet as it's a little early for them, but I'll report them when they are.

The new format generated an impressive revitalisation for the contest, with the bands abuzz with CW from around the planet. The contest is not dependant upon 'rate' as such, as the point scoring call areas are somewhat limited and the real methodology for boosting your score is frequency agility and propagation knowledge.

Knowing when to change band for a given call area to pick-up those all important bonus points is the key to success. Being able to monitor a second band whilst working another aids

productivity and maximises returns in relation to time spent on a given band.

Moving a station from one band to another can often put more bonus points into the log, as openings can often be short and sweet! Unfortunately, 20 m proved to be not its usual self during the contest, with propagation not being particularly favourable, but 40 m produced some excellent chances to boost scores as it opened from VK2 to the UK and VE early on the Sunday morning.

For Saturday night, 40 m and 80 m are the bands of choice in this contest to bolster bonus points. Even 15 m was patchy but 10 m didn't seem to do the job at all and it may be a year or two before any significant improvement, for the needs of this contest at least, is seen on this band.

Claimed scores by the VK Team are as follows:

VK4BUI	2810
VK2NU	2935
VK4EMM	5020
VK6BN	3370
VK2BJ	5090
VK6HD	3280
VK4XA	2655
VK6LW	5505
VK4TT	2945
VK4XY	2895
VK6VZ	3645

Congratulations to all for a superb and highly competitive effort! A huge vote of thanks to Steve Ireland VK6VZ is highly appropriate, for his sterling work to bring the VK Team together and offer guidance on operating strategies. Well done Steve!

ANARTS & Contest History

The Australian National Amateur Radio Teleprinter Society (ANARTS) was founded in 1977 by a group of enthusiasts, in particular VK2SG and VK2EG, who saw the potential of and were keen to experiment with Digital Communications for Amateur Radio.

The Society became very active, had a membership into the hundreds and provided a RTTY Broadcast each week. The Society's magazine was issued each month and had excellent content, helping many operators get started and improve their station.

ANARTS has managed to maintain its weekly RTTY Broadcast, which has

existed since the inception of the Society, and also its worldwide RTTY Contest.

The ANARTS contest has something of a chequered history. Due to personal circumstances, the contest manager, Colin Davies, has relinquished the role to ANARTS Secretary/Broadcast Officer Pat Leeper VK2JPA. Pat can be contacted on patleeper@optusnet.com.au for further information, but Pat does not have any contest history to hand as this is her first tentative step into the world of contest management – so be kind!

I believe that ANARTS is the only Australian RTTY contest, so why not

give it some support in June and see how you go....?

Sad News?

Recent news (Washington Post) on the 1st of April states that CQ Magazine is to suspend its sponsorship of all contests that it has been associated with. The situation will be reviewed in a few years time, but this action is reported to be the result of perceived negative association with recent poor band conditions and has suffered from detrimental magazine circulation as a result. It would appear that CQ has recently been the recipient

of an increasing volume of complaints about conditions, sometimes virile, and occasionally abusive.

Is this sad news for contesting? Well, I'd suggest that it would be prudent to take note of the date of the issue!

If you have any contest related material for inclusion within the column, topics that you'd like covered or some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

ANARTS WW RTTY Contest Rules 2007

Australian National Amateur Radio Teleprinter Society

P.O. Box 93 Toongabbie NSW 2146

CONTEST PERIOD: The contest takes place on the second full weekend of June each year. Contest starts 0000 UTC Saturday and ends 2400 UTC Sunday. For 2007 the contest dates are Saturday 9th and Sunday 10th June 2007.

Not more than 30 hours of operating is permitted for Single Operator Stations. Non operating periods can be taken at any time during the contest. Multi Operator Stations may operate the entire contest period.

A summary of operating times is required with each single operator log.

BANDS: Use Amateur bands 80, 40, 20, 15, and 10 metres.

MODES: All digital modes except CW are permitted including all "Sound Card Modes" such as PSK etc.

NOTE: No satellite operation is permitted.

CLASSIFICATIONS:

(A) Single operator (One transmitter)

(B) Multi operator (One transmitter)

(C) Short wave listeners

MESSAGES: To consist of RST, Time UTC, and CQ Zone.

SCORING: For each band - Use the "Exchange Points Table (Marked 1994)" to obtain QSO points for each QSO. Any contact with VK2SG earns double the table points for that QSO. Count Countries/Multipliers worked (see

definition). Total all bands used to obtain: (1) Total QSO Points, (2) Total Countries/Multipliers.

World stations calculate "VK BONUS", as follows: 100 points for each VK worked on 14 MHz, 200 points for each VK worked on 21 MHz, 300 points for each VK worked on 28 MHz, 400 points for each VK worked on 7 MHz, and 500 points for each VK worked on 3.5 MHz.

CLAIMED SCORE:

For World Stations is calculated by multiplying: (1) total QSO points by (2) total countries/multipliers then that total by (3) the number of continents worked during the contest. Each continent counts once only to a maximum of 6. To calculate the total points obtained ADD the "VK Bonus" to show Grand Total Claimed Score.

Example for World Station: 720 QSO points calculated from points table (1) x 29 countries/multipliers (2) x 5 continents (3) = 104,400 points, plus (+) 6 vk stations worked on 14 MHz (that is 600 VK bonus points), giving a grand total of 105,000 points.

CLAIMED SCORE: For Australian Stations (VK1-VK8) is calculated by multiplying (1) total QSO points by (2) total countries/multipliers and then that total by (3) the number of continents worked during the contest with a maximum of six as

stated above. This calculation gives the Grand Total Claimed Score.

IN ALL CASES: A station may only be worked once per band, but may be worked on other bands for QSO points and multipliers.

COUNTRIES/MULTIPLIERS: Are counted as per ARRL DXCC list of countries, except that Australia (Areas 1-8), Canada, Japan, and U.S.A. mainland do not count as separate countries. However, each call areas VK1-VK8, and each call area in Canada, Japan and mainland U.S.A. do count as separate multipliers.

CONTACT with one's own country/multipliers counts for QSO points and as a Multiplier. (Remember that call areas VK1-VK8, and call areas in Canada, Japan, and U.S.A. mainland are Multipliers).

LOGS: Log can be in either .TXT or Cabrillo format. If submitting a Postal log in .TXT format, a copy on a floppy disc would be appreciated. This will allow conversion to Cabrillo format to help with log checking.

Logs submitted in Cabrillo format should be in the prescribed ANARTS Cabrillo Template or Format.

Logs submitted in .TXT must be formatted in this order:

1. DATE
2. TIME UTC
3. CALLSIGN OF STATION WORKED/HEARD.

4. MESSAGE INFORMATION SENT/RECEIVED (RST/TIME/ZONE)

5. POINTS CLAIMED.

Summary report for .txt logs:

1. Summary sheet must be submitted for logs in .TXT format, and must show: Callsign of station, bands used, the points claimed for each band, the number of Countries/Multipliers worked on each band, the number of Continents worked and details of VK BONUS calculations for World Stations.
2. If submitting the log by Mail, include the operators name and address.
3. A summary of the calculations made to obtain the GRAND TOTAL CLAIMED SCORE as per the "Scoring" instruction will assist checking.
4. The general certification regarding compliance with Rules is required, but signatures are no longer necessary if submitting by E-mail. However, name and callsign of the operator is still required.
5. Multi-operator logs must contain the Name and Callsign of each operator.
6. Dupe sheets will be appreciated for any band log over 75 QSOs, but are not required if the log is in Cabrillo format.

AWARDS: A Plaque is awarded to first in World in Classification A. Certificates will be awarded to: 1st to 5th, places in the World, 1st to 3rd places in each of six Continents, 1st to 3rd in each Country/Multiplier in each Classification.

THE JUDGES decision will be final and no correspondence will be entered into. We reserve the right to list multiple awards on any Certificate and/or vary the numbers of awards given without notice. Logs become the property of A.N.A.R.T.S.

CLOSING DATE: Logs must be received by the Contest Manager A.N.A.R.T.S., P.O. Box 93, Toongabbie, NSW, 2146, Australia or by E-mail to patleeper@optusnet.

com.au by 1st September of the year of the contest.

POSTAGE AND HANDLING FEE: A postal fee is applicable with the following options:

1. Contesters submitting their logs by E-mail will have the Contest results, Managers report, Contesters comments, and the next year's rules, sent to them via the E-mail address used to submit their log. No Awards will be posted. Undelivered E-mails due to Contesters changing their server will not be pursued. Contesters changing E-mail address are responsible for advising the Contest Manager.
2. Contesters submitting their logs by E-mail and wishing to receive all the above items, plus a points table, and/or any award they may have won, Plaque or Certificate, must submit a separate Postal Communication to ANARTS: Post Office Box 93 Toongabbie, N.S.W. 2146, with a remittance to the value of 5 (Five) United States dollars.
3. Contesters submitting their logs by Post and requiring ANARTS to send them the information mentioned above, must include a remittance to the value of 5 (Five) United States Dollars.
4. Postal logs received without the required remittance will be accepted and processed in the normal way. No awards or other information will be posted in return.
5. The fee for Australian and New Zealand Contesters is now 5 (Five) Australian Dollars for 2 consecutive contests.

Notes on submitting logs by E-mail

A.N.A.R.T.S. can now accept your log in Cabrillo format, however please make sure you submit your log in the correct Cabrillo format. Going Cabrillo has required slight changes to the rules for 2007. Example, contact with one's own Country/Multiple now counts as a Multiple for band. This brings the rules in line with other Contests. Please make sure you read the rules to see other slight changes.

Please check your log has the following before transmitting: Your Callsign, Name

and Postal Address, also the names and Callsigns of the other operators if you are submitting a log for Category B, Multiple Operator. Include Your E-mail address, allowing us to send you the results. Check all the items required in the Summary Sheet are correct, that is you have included per band: number of QSOs, number of QSO Points, number of Multipliers, number of Continents worked and number of VK Bonus Points per band. Your log cannot be processed if these items are not shown, unless it is in the correct Cabrillo format. Please advise ANARTS of any change in email address.

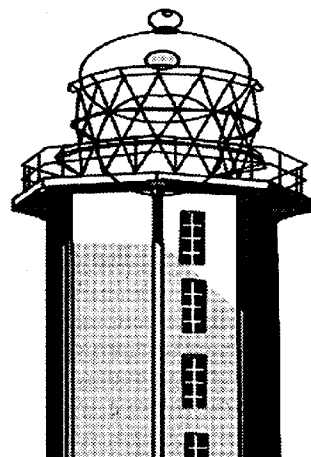
Do not name your log ANARTS.

Use your own callsign or other name of your choice. Example VK2CTD.LOG. Many stations have used ANARTS for their log title, example ANARTS.LOG. Each of these logs has to be renamed, the Computer puts a little window on the screen saying "There is already a file of that name, do you want to overwrite." All such logs have to be re-titled, so your cooperation please.

A list of logs received is sent on to the RTTY Reflector rtty@contesting.com as time permits and is also sent to contest@ww and rtty@ww on Packet Radio.

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International Lighthouse/ Lightship Weekend



0001 UTC 18th AUGUST TO
2359 UTC 19th AUGUST 2007

DX - News & Views

John VK4OQ

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.

Email: john.bazley@bigpond.com

It's hard to believe that it is nearly 12 months since Neil VK6NE last produced his 'most wanted' list from a VK point of view. Has it changed much during the past 12 months? Incredibly - 'NO'. It is exactly the same as before. I must admit I find it hard to believe, for during the period between the surveys there has been a lot of activity from VP8 South Shetland Islands, YA Afghanistan and 9Q The Congo and also a DXpedition to 1A0 S.M.O. of Malta. Neil in his latest list has compared the 'wanted' entities with other parts of the world and included some comments from a VK point of view.

The first: 'That North America has been well catered for over the years.' We both agree that that is inevitable on two counts - the number of amateurs in North America and that the bulk of the funding generally comes from that area.

The second: 'Is it safe to say that past DXpeditions have not favoured VK'. We have a difference of opinion here! I personally have not found this so, but from the comments from a number of well known VK6 DXers, they obviously disagree with me on this point. I do agree that it is VERY difficult at times to get the point across to some DX stations that if the band is open to VK6, that does not mean the whole of VK, but I do think that most DXpeditions are aware of this. Most DXpeditions require a major commitment from the participants with months of planning. Their main object is to work as many stations as possible in as many countries as possible. Things will undoubtedly improve when conditions start to open up the other HF bands for consistent DX and then we will probably not have such a "great Divide" between VK6 and VK4!

Neil's 2007 list is:

Equal 1st	3Y/B, PY0/T, VP8/O
Equal 4th	VP8/S, VP8/G
Equal 6th	P5, PY0/P, FR7/J
Equal 9th	KP1, SV0/A, 3C/O, BS7, CY0, VU7
Equal 14th	HK0/M, PY0/F, VP8/S - Shetlands, 7O
Equal 18th	CE0/SF, S0, TY, YA
Equal 22nd	EP, FO/C, 1A0, TT
Equal 25th	4U1/TU, 9Q, KP5, CE0/JF
Equal 29th	VP6/D, 3Y/P

Many thanks, Neil for compiling this list annually for us.

Interestingly results of the 2007 Oceania Most Wanted List are in, compiled by Mark Sullivan ZL3AB.

Equal 1st	KP1, 7O
3rd	3C0
4th	BS7
5th	FT8Z
Equal 6th	FR/J, KP5
Equal 8th	FR/G, PY0/P, TN, VP8/S - Shetlands
12th	P5
Equal 13th	3C, HK0/M, ZS8

That leads to - 'The U.S. Department of Commerce, NOAA, Space Environment Centre has released their Predicted Sunspot Numbers and Radio Flux Report at <http://www.sec.noaa.gov/ftpdir/weekly/Predict.txt>. The predicted solar minimum is still 6 months away. The new updated predicted minimum is now expected in September, with a predicted solar flux average of 74.3. The prediction values are based on ISES cycle 23 forecast of 13-month running smoothed values. Just a few months away!

DXCC: All YU6AO QSOs on or after June 28, 2006, are now valid for the DXCC award. If you submitted cards for these dates earlier and received no credit please contact dxcc@arrl.org via e-mail.

The following QSLs may also now be submitted:

ZL9BSJ/p Auckland & Campbell (Sep 12, 2006)

5A7A Libya (Nov 15-20, 2006)

VU7LD Laccadives (Dec 1-30, 2006)

VU7RG Laccadives (Jan 14-26, 2007)

DX0JP Spratly Islands

9M4SDX Spratly Islands

9U9Z Burundi

YWØDX Aves Island

IA4A Sovereign Military Order Of Malta

BS7 - Scarborough Reef, I am sure that the majority of readers will not require reminding that an international team plans to activate Scarborough Reef at the end of

April. You can find the operator list, maps and more information about how to contribute to this expensive DXpedition on their website: <http://www.bs7h.com>

BS7 is certainly wanted by a lot of DXers, for only 24,989 QSOs have been made so far from the only two approved expeditions that took place in April 1995 and April/May 1997.

A2 - Botswana Frosty K5LBU plans a new trip to Botswana and is still looking for two people to join him from July 4 - 24, 2007. Daniel ZS6JR, who is another member, has already found a suitable QTH six hours north of Johannesburg. The whole of the equipment is already in Johannesburg, so interested amateurs only have to bring their laptops for the logbook and clothing. If you are interested please contact Frosty via e-mail to: frosty1@pdq.net

J5 - Guinea-Bissau and 6W - Senegal.

Peter HA3AUI, who was active as J5UAP earlier, will be in Western Africa again between Feb 25 and Apr 30 (or longer). He will reactivate his old callsign J5UAP and use the call 6W2SC from Senegal. He prefers working in digital modes but also in SSB on all bands.

QSL via HA3AUI, via bureau, direct, LoTW or eQSL.

TF7/SM5ELV Kent will be on Heimaey Island, Iceland, EU-071, June 10-13. He will get on as many bands and modes as he can using 100 watts and a vertical antenna, with a dipole possible as a second antenna. QSL to his home call.

OX Greenland. A Special Event station, OX60AD, marks the 60th Birthday of the U.S. Air Force, 56th anniversary of Operation Blue Jay and the 1951 Defence Agreement between Denmark and the United States and Greenland Home Rule, which established the Thule Defence Area, for the protection of Greenland and North America. Operations will start April

1 until April 30, 2007.

The base itself was built under the secret code name "Operation Blue Jay". The original construction was completed in only 104 days. Thule is now a combined effort of U.S., Canadian, Danish and Greenlandic personnel, working together to ensure the safety and security of North America and Greenland.

Thule Air Base is located on the northwest coast of Greenland, 700 miles north of the Arctic Circle and approximately 946 miles from the North Pole.

Operations: 6 m (50.145 +/-), 10 m, 15 m, 17 m, 20 m, 40/80 m. Modes: CW, PSK, RTTY, HELL, SSB. Operators: Dennis OX3UR (QSL manager, Co-Director), Dwayne OX3PG/KD4POJ (Co-Director), Johnny OX3WM, Max OX3PJ and various guest Operators.

3B9 Agalega. The Polish team with plans for a DXpedition to Agalega are now looking into a time frame from June 6th to 18th. They are hoping to get permission, licence and most important to reserve the right ship. The team has a Web page at <http://3b6.godx.eu/>

3B8 Mauritius. Mart DL6UAA will be active again as 3B8MM from Mauritius (AF-049), starting on 5 April for a few weeks. He will operate mostly CW, but will also give SSTV a try (14230 kHz). QSL via home call, direct or bureau. His web site is at <http://www.dl6uaa.de/indexa.html>

ER Moldova. Andrei Fyodorov RW3AH (9X0A, KL1A, 4O8AA, etc.) is heading back to the Republic of Moldova, where he will be QRV as ER/RW3AH from March 23rd to April 12th. Andy will be QRO with a special emphasis on 80 and 160 metres, along with 20 metres SSB and CW. QSL via QRZ.COM.

Happy DXing.

Special thanks to the authors of *The Daily DX* (W3UR) – 425 DX News (IIJQJ) and QRZ DX for information appearing in this month's *DX News & Views*.

For interested readers you can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

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Spotlight on SWLing

Robin Harwood VK7RH

Winter disturbances and dropouts

Winter has come and propagation has altered, with the higher frequencies becoming dead as soon as it gets dark. In daylight hours, the lower frequencies are practically open for 24 hours. I am hearing signals from Europe and Asia as early as 0200 UTC. I believe that we have indeed passed the Solar Minimum and I expect that we will observe a slow rise in the Sunspot numbers. However, there will be a sharp increase in the number of disturbances and dropouts. On one recent day I could not detect any shortwave signals for several hours, even using remote receivers via the Internet.

Major broadcasters such as the BBC World Service have decreased their HF output as from 25th March and this trend will sadly continue at the end of October. Fortunately I do have access to one of the streams on my subscription TV as well as being able to access all the services on the Internet. The 'Beeb' has even reduced their DRM output.

As I have reported earlier, Deutsche Welle now comes from senders outside of Germany, whilst Poland has shut down its senders and has hired senders in Germany and Finland. The Voice of Russia hires airtime from the senders of the Vatican Radio and the latter is relayed from senders in Siberia to reach audiences in Asia.

Both Iran and Vietnam utilise the shortwave resources of senders in the Baltic republics of Latvia and Lithuania. Libya broadcasts from senders in France. Algeria is broadcasting from senders in the UK. No wonder it has become so confusing.

I note also that Libya has been trying to buy the Gabonese station known as Africa No. 1. Recently their senders have been heard with Arabic programming yet they are deliberately selecting channels that are used by anti-Gaddafi clandestine stations. It is very much a cat and mouse operation between 17635 and 17660 from 0500Z.

Also the disappearance of the more powerful senders from HF has made it possible to hear the smaller domestic shortwave outlets, which have been long buried.

Monitors report that many Brazilians are now being regularly heard on the 25 and 31 metre broadcasting allocations. There were also hundreds of Peruvian stations, often only operating less than 500 watts, but a recent crackdown by licensing authorities have seen many of these unofficial broadcasters permanently disappear off shortwave.

The Chinese seem to be rapidly filling shortwave channels and it is so easy to hear them almost round the clock. I am hearing either the external service, China Radio International, or one of the domestic networks, occupying practically the entire broadcasting spectrum.

This brings back memories of the Soviet era when that administration outlaid a huge expenditure on shortwave broadcasting. These days Russia is not as easy to hear as it was once.

Well that is all for this month. You can email your comments and suggestions to vk7rh@wia.org.au or via snail mail to 20/177 Penquite Road, Norwood, Tasmania 7250.

73 de VK7RH

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Are you managing the estate of a 'Silent key'?

Please save any QSLs for the National QSL collection, but first contact:

The Hon. Curator,
Ken Matchett VK3TL
on (03) 9728 5350
or email: jeandawson@iinet.net.au

Rare DX, special call-signs prefixes and suffixes, pictorials and pre-war QSLs are needed.

Let us save something for the history of amateur radio.

Silent Keys

Peter van Gemert VK2ALL

1934 - 2007

Long-time WIA member Peter van Gemert VK2ALL of Bathurst died in the early hours of Monday April 2nd 2007, in hospital, at age 73, after a brave fight against cancer. He is survived by sons Tony VK2BYB and Guy, daughter Lisa and their families; also brothers Henk and Hans from Holland, who were with Peter as he passed away. Orange Amateur Radio Club and the Bathurst group were well represented at Peter's grave-side ceremony on April 4th.

Amateur radio was Peter's major long-term interest and he was the quintessential 'true amateur' in that he designed and built as many pieces of his own equipment as possible and always with excellent results. In his hands the technical hobby became a science and even an art, thanks to his inventive mind and deep knowledge, love and understanding of electronics.

Peter's well-equipped workshop-cum-ham shack, with his home-brewed 50' tower alongside, carrying his antennas, is a visible memorial to his passion for electronic devices and equipment. Many a Bathurst club meeting was held in that workshop, where he was proud that technical discussion usually took precedence over formalities.

Bathurst residents remember Peter van Gemert as the reliable, friendly TV repairer; or as the gifted part-time TAFE teacher of electronics. Earlier in his career Peter worked for Harmor and Heath in Sydney, commuting daily from Woy Woy. A regular visitor for decades to the Gosford/Wyong Field Days and those at Wagga, collecting interesting and useful items, his last such trip was with friends from Orange to last February's Wyong event, while in failing health.

Peter had a genius for designing and building extremely high quality audio amplifiers for music reproduction, using a 'minimum component count' philosophy. For performance, his amplifiers must rank among the world's best. Many are in regular use in homes of serious music-lovers around the district - fitting reminders of his wonderful skills in electronic circuit design and his neat methods of building equipment whose looks matched their performance.

Friends remember how Peter loved to tell a joke or three at barbecues or club meetings and it was well-known that if he didn't have something good to say about someone, he'd rather say nothing. Among all those to miss Peter's cheerful



presence, the amateur radio fraternities of Bathurst and Orange especially, know they have lost a dear friend, proficient experimenter and capable technical lecturer.

Peter's memory will linger 5 and 9 (loud and clear) in the minds of all his friends. He was simply that sort of person. Vale Peter VK2ALL, Silent Key.

Submitted by Peter Carter VK2ETK

The accompanying photograph of Peter VK2ALL in Wagga, 2005, was taken by Bruce Carroll VK2DEQ.

Noel Walker VK7WN

It is with deep regret that we announce the passing of North West Tasmania amateur, Noel Walker VK7WN. Noel passed away peacefully at home on Saturday 17th March following a short illness.

Noel's main interest in amateur radio was in the field of amateur television and he was very involved with the installation and maintenance of Tasmania's first amateur television repeater (Callsign at that time VK7RTV later changed to VK7RMD) on Mt. Duncan in the early to mid 1970's.

This repeater was one of the first solar powered repeaters to be installed in VK7 and as such brought with it many challenges, not the least being the

carting by hand of VERY heavy lead acid batteries to the summit of the mountain. Noel was very active in this area and provided assistance where required. Many hours were spent designing, and trialling various antennae for use on the ATV repeater.

Noel's contributions to the hobby overall were successful on a lot of occasions and his friendly advice and attitude to all in and outside the hobby will be sadly missed.

Our condolences to Merle, Tania, Tracey and family from all Noel's amateur friends.

Vale Noel Walker VK7WN.

Submitted by Tony VK7AX

Over to You

160 metres antenna

I am planning to do some experiments with a rectangular loop of close to 500 feet (approximately 150 metres) on 160 metres. I would be interested to hear from any operator who has had experience with large loop antennas - especially on 160metres.

Scotty VK2KE QTHR.

Email: gsco8077@bigpond.net.au

Weak Signal

David Smith VK3HZ

Barry VK3BJM at Redesdale Junction (near Kyneton) sent in a belated report on some good contacts he achieved in February:

Others will have noted the fine tropo conditions present on the morning of Saturday 3/2/07. I hadn't turned on any radios the night before, so I was unaware of how things had been building up. I got into the shack just after 2000 Z, and found that with the 144 MHz array pointed at Adelaide I was receiving VK7RAE at 539. With the array pointing at VK7, the beacon was 579. This is the strongest I've seen VK7RAE since moving inland (and the beacon being returned to service, of course).

VK7AC was on 144.1, and we worked each other at 59 at 2010 Z. 70 cm wasn't so strong; Norm was 51, while I received a very generous 55. Norm also had 23 cm, and I was very pleased at the signals there; Norm was 54, and he gave me a 57. This was a new grid locator for me – my first VK7 on 23 cm, too.

Also worked on 2 m were Paul VK7BBW (again 59 both ways) and Karl VK7HDX (56 - 57).

All very nice, considering that I'm now on the northern side of the Great Divide, and Mt Macedon threatens the view towards VK7. VK7AC is a bit over 500 km from my QTH (which is 5 km WNW of Kyneton).

JMFD

The recent John Moyle Field Day saw plenty of activity from field stations on the VHF/UHF bands. Andrew VK1DA operated portable near Canberra and reports:

A general thanks to all the operators with whom I made contacts over the weekend of the national field day contest.

The log has 115 contacts on VHF/UHF. About half of those are on 2 metres. Best DX was from Mt Ginini QF44JL to VK3LY/p QF03SV. – according to GCGC this is 647 km. A good contact on 2 m and I was delighted to get through on 432 as well. Some other contacts were over 500

km, which is also gratifying (because you get more points for those contacts).

On a previous event I had big troubles erecting the mast with two large VHF antennas on it, so this time I decided to keep it simple and I took only a short 8-element antenna for 2 m and only a short mast (about 4 m). For 50 MHz, I had a half wave vertical (the type sold in DSE a few years back, purchased second hand, I suspect unused). On 432 it was a 22-el Yagi.

In the odd-contacts-made category, I include a contact with the Wagga boys on Mt Flakeney south of Wagga, on six metres, using my 40 m dipole fed through a RAK balun by 15 m of old RG58 coax. Their signal was stronger on this antenna than on my "real" 6 m antenna.

Power used on all bands was about 100 watts output. Cable runs on 144 and 432 were about 8 m of RG213 or RG214. Power supply was a 950 W GMC alternator that audibly sagged when transmitting on 432 through the TE systems amp, with the compression turned on.

The weather generally cooperated with a sunny, still afternoon on Saturday, and thick fog on Sunday until around 1:30 pm.

The signal from the VK3RGL 2 m beacon on Sunday morning was up to S5 on the 271 meter – this is a substantial signal. More operational beacons would provide extra assistance and indicate band conditions. Beacon operators – your beacons are missed.

New VK1 Records

Colin VK5DK writes that he, Russell VK3ZQB and Neil VK2EI have established some new VK1 distance records on 2.4 GHz, 5.7 GHz & 10 GHz.

On the morning of 27 March, Russell and I set up on Mt Canobolas near Orange and Neil on Mt Ginini near Canberra – a distance of 249.3 km.

The first contact was on 10.3681 GHz at 2234 UTC with 5/9 reports being exchanged both ways on SSB. Then an attempt was made on 24 GHz, but conditions had deteriorated on 10 GHz, meaning that the possibility of a success on 24 GHz was remote. When moving the 24 GHz equipment, a malfunction occurred causing a relay to fail, which resulted in a blown receive mixer on my 24 GHz unit. So, any hopes of a contact between Neil and ourselves on that band were dashed.



Colin VK5DK and Russell VK3ZQB

We then set up our 5.760 GHz unit and successfully had a contact on SSB. We were running 15 watts to a 600 mm prime-focus dish using a can feed. Neil was only running 100 mW to a 600 mm dish, but signals were very strong even with such low power. Neil's report to us was 5/8 and our report to Neil was 5/9.

2.4031 GHz was then set up and a 5/9 SSB contact was made both ways. I was running approx 5 watts to a 25-element Yagi and Neil was running 1.5 watts.

23 cm in "G" Land

Doug VK4OE has recently been operating portable in the UK on 23 cm. After an initial hiccup when a wire became detached in a connector, requiring a visit to a friendly local, Doug set up on a local hilltop to see who he could work.

It was a beautiful morning, ending

several days of cold wind, and I had a heap of fun, working six stations on 1296.2 MHz in about forty minutes operating on a weekday morning. I must admit that posting to the ukmicrowaves e-mail list did help!

Calls worked were GW8AWM, (he was using a 2 m beam for a 23 cm antenna), G0UPU, G4DDK, G3VKV, G4BEL and M0ELS. Signals across the country were good for distances of around 300 km but I'm sure that the altitude of Blorenge was to my advantage. There was a well-defined temperature inversion visible at about the same altitude as I was (smog coloured - urk!) and I was wondering if I might even have been too high for propagation further than line-of-sight. The results demonstrate that it wasn't. 23 cm is a great band, isn't it?!

Beacons

Several months ago, it was reported that Alan VK3XPD had established a new beacon - VK3RXX - on 2.4 GHz in the Melbourne area. Alan now reports that it has been heard from afar:

With today's somewhat unexpected lift in propagation, the VK3RXX Melbourne Beacon on 2403.530 MHz has been heard by Colin VK5DK in Mt Gambier - a distance of 380 km.

Colin reports: 11 April at 2300 UTC, signal 5x5, clean signal initially then it went raspy, estimated to be 1 kHz low.

Colin's station is a VK5EME Transverter with a 25-Element Yagi.

I'm probably just as pleased as he obviously was about this event! Oh, and I now owe Colin the "promissory" bribe of 5 low-noise HEMPT FET's.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur - VK7MO

For a change, this month's report covers the optical application of WSJT.

On 9 April 2007, Justin VK7TW, and Rex VK7MO extended the 474 THz national digital record to 51.3 km using WSJT and the JT65a mode with 3 watt input red Light Emitting Diodes (LEDs) and large 400 x 400 mm narrow beamwidth (approx 0.5 degree) Fresnel lenses.

These lenses produce around 50 dB gain. While the signal levels one way were only around -20 dB, due to a transmitter problem, they were saturation in the other direction indicating there is plenty of system performance to spare.

Justin and Rex have also been experimenting with optical cloud-bounce. Because of the difficulty of aligning two narrow beams on a non-descript moving cloud, it is necessary to use a relatively wide beamwidth of around 10 degrees and use higher power to compensate for the wider beamwidth.

They first tried a 250 watt projection lamp which was mechanically chopped by an 8 hole aluminium disc, driven by a synchronous motor, to produce an audio tone. The intention was to use this system to transmit slow speed VFSKCW.

This system produced signals up to 35 dB above the noise in 0.1 Hz bandwidth.

While this system demonstrated that cloud-bounce is possible, it was found that the slip on a synchronous motor is too great to achieve adequate frequency stability and thus they moved to an 18 x 1 watt Luxeon Flood LED unit through a Fresnel lens.

While this overcame the problem of frequency stability, and allowed the detection of tones in 0.05 Hz bandwidth, the signal levels were too low to allow the exchange of information with WSJT.

A problem with this approach is that it produces 18 narrow beamwidth spots over a beamwidth of 10 degrees rather than a uniform radiation pattern. It was thought that the process of scattering from the clouds would fill in the gaps and produce a uniform radiation pattern at the receiver.

However, this seems not to be the case as later tests with a single LED with high gain Fresnel lenses for both TX and RX showed the beamwidth, even after scattering from clouds, was maintained at the same order of the beamwidth of the lenses; with perhaps an increase of only a factor of two.

In order to produce a uniform radiation pattern with relatively high power, a 30 x 3 watt input LED array was constructed with the individual LEDs working

through small plastic lenses of the type used for LED torches (Jaycar Part No HP-1290).

Each torch-type lens should produce a beamwidth of around 10 degrees so that the total adds together to maintain a reasonably uniform radiation pattern. While it was found that the array produced a reasonably uniform radiation pattern, the beamwidth was not symmetrical and was spread over an oval of 10 x 20 degrees.

It was found that the reason for the non-symmetrical beamwidth is that cheaper 3 watt Star LEDs (Jaycar Part No ZD-0520) achieve the 3 watt power level with two separate chips which produce two spots when used with a lens. Thus the more expensive single chip Luxeon Star LEDs (Jaycar Part No ZD-0432) would have achieved a tighter beam and a 3 dB improvement.

Still the cheaper units produced good results over a short non-line of sight path of 1.2 km, with clouds at around 1200 meters altitude. On the first attempt the clouds were rather patchy resulting in rapid QSB with signals varying from undetectable to -5 dB on the WSJT scale.

A second attempt with more extensive cloud cover produced continuous signals and perfect decodes although the peak

signal level was still no more than the -5 dB achieved earlier. For this second test, the number of LEDs was reduced to see how far down it was possible to go and still decode JT65a signals.

It was found that occasional copy could be achieved with just two LEDs. After careful alignment with six LEDs, 50% copy was achieved with a single LED at signal levels around -28 dB.

Following the above results, Rex and Justin did a check with a carefully aligned single LED focussed with a 400 x 400 mm Fresnel lens and measured signal levels at around -16 dB.

However, it was only possible to align this system after the signal had been found on the broader beamwidth 30 x 3 watt array which means it is not that practical for cloud-bounce. In summary the results in terms of signal levels were as follows:

30 x 3 watt "cheap" LED array with
10 x 20 degree beamwidth: - 5 dB

1x 3 watt Luxeon with 400 x 400 mm Fresnel lens around 0.5 deg beamwidth: -16 dB

1 x 3 watt "cheap" LED through torch type lens beamwidth 10 x 20 deg: -28 dB

Options to improve performance appear to be narrower 5 degree beamwidth torch lenses (available from the USA) and use Luxeons in the array, which should provide a 6 to 9 dB improvement in performance. It is expected that a 6 LED array of Luxeons with 5 degree beamwidth would provide a very effective transmitter at the expense of a small increase in the difficulty of alignment.

The present 30 x 3 watt LED array is pulse modulated with square waves using MOSFET switches. Little is to be gained by going to linear modulation and sine waves as the LEDs would then have to be restricted to a narrow pseudo-linear range with a significant reduction

in effective power.

A French amateur advises that it should be practical to work cloud-bounce over longer paths with the array transmitter that Justin and Rex are using, as scattering efficiency from clouds increases with distance and this tends to compensate for the increased attenuation over longer paths. Thus plans are underway to explore optical cloud bounce over longer distances.

While the feasibility of optical cloud-bounce has been demonstrated, at this stage only one of the new LED array transmitters has been constructed and thus a two way contact is still to be achieved.

For more information on Optical activity in Australia, join the Optical DX group at http://groups.yahoo.com/group/Optical_DX/

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

After a very good summer sporadic E season, the band was very quiet during March. I have not received any reports of contacts being made with only the odd report of a beacon or TV signal being heard. There have been a few openings from northern Queensland to JA.

I received a note from Kevin VK4BKP in Mackay who reports the following:

I've only been active on 6 m for a few months after a 20 year break. I'm using a rotatable horizontal dipole at 30 feet, IC-706 and 100 watts. I haven't worked any JA pileups - just one or so each opening. From my log:

March 06 2007 0620 UT worked JR6EXN Hide 59/59 50.140 (100 watts dipole).

March 06 2007 0640 UT partially worked JH4BTI 5x7 50.150.

March 13 2007 0500 UT JG3LEB Hiro (often on the logger) 57/55 50.110.

March 14 2007 0510 UT JH7XRZ Norifumi Takahashi 58/59 50.110.

March 14 2007 JA2IGY (Beacon) 50.010.

March 14 2007 JA6YBR (Beacon) 50.017.

March 14 2007 JA1ZYK (Beacon) 50.023.

March 28 2007 0505 UT JR0ETA 57/57 50.110.

I have also heard some JAs working other VK4s etc.

I've heard 49.750 just about every second day but have noticed it has to be S9+ to work into Japan.

From the 6 m loggers, on the 29th March, Ray VK4BLK at Yeppoon worked several JAs including JL8GFB, JF2LFG & JR2HCB. On the same day, Kevin VK4BKP at Mackay also worked JA7WSZ and JA7WSW reported hearing VK8RAS, VK4RTL and FK8SIX beacons.

In some late news, the band has opened between VK6 and VK5 late in the afternoon on the 9th, 10th and 11th April. On the 9th, Peter VK6KXW reported hearing the VK5VF and VK5RBV beacons and worked Brian VK5BC. Peter has now moved to the country 120 km east of Perth (grid OF87jr). On the 10th and 11th Geoff VK6HOG reported hearing both the VK5 beacons as well as the VK6RSX Dampier beacon very strongly but unfortunately no contacts were made.

Please remember to send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

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Early Notice Hamfests

Cranbourne

22 July

Perth

6th August

Shepparton

10th September

Ballarat

5th November

Club Secretaries: Please advise us of your Hamfest schedule well in advance and we will include it in the magazine.

g.nieman@bigpond.com

The art of QSLing

Eddie DeYoung VK4AN
Volunteer Facilitator
VK4-Inwards QSL-Bureau

QSLing can be an expensive activity, but it doesn't need to be if you follow all or some of the following tips and strategies:

Sponsor

Contact your local tourist bureau and explain to them what a QSL card is. Indicate that you post them all over Australia and the world to other amateurs that you talk to. Ask them about footing the bill for the printing of a few hundred QSLs, promoting the reason for more people to visit your region. Another possible source of sponsorship is a local business that distributes their product(s) nationally/internationally.

Printing

If there are no cooperative sponsors, or you prefer to pay for them yourself, then you should seriously consider ordering them from one of a number of specialist QSL card printers that will supply cards to you at a price that is usually much cheaper than your local printer can. Remember the standard size for QSL cards handled by the Bureaux is 9 x 14 cm.

International posting

For those 'rare' or important overseas QSL requests, it is always best to send your card to them directly. Instead of paying 'top dollar' for regular international airmail, print "CARD ONLY" on the envelope, and pay a worldwide flat-rate of \$1.25 per envelope.

You can include the QSL and an IRC in the envelope, but do not put a return-envelope inside. To 'compensate' the recipient for not sending an envelope, you might want to include some cancelled Aussie stamps and make a note on your QSL card why you included the stamps. Most recipients will accept your 'gift' as compensation for the cost of an envelope. Strictly speaking, you are only supposed to have one card only in an envelope that is marked CARD ONLY. But, hey, how much does an IRC and a few cancelled stamps add to the weight!

IRCs vs Green Stamps

Many stations indicate that they prefer '2 x green-stamps' with your card to get a direct reply (as they make a small profit on every card!). For those of you new to QSLing, a 'green-stamp' is a \$US1.00 note. It is cheaper to send 1x IRC rather than 2 x \$US1.00, unless you have a good source of cheap \$US1.00 notes!

A number of Australian and overseas QSL Managers will on-sell IRCs to you at prices cheaper than Australia Post. This usually works out the cheapest way of getting them, even though you will be paying for the postage to get them to you. By purchasing 20 to 50 at a time, the postage cost would be a small percentage.

Posting cards to a VK bureau

The most cost-effective way of sending cards to a VK-Outwards QSL bureau is to use prepaid C5 envelopes which cost \$1.20 each and you can stuff up to 500-grams of cards into them (as long as the thickness is 20 mm or less)! I use them regularly, and can easily get 400-grams of cards in two side-by-side piles into one C5-envelope without going over the 20 mm thickness.

A set of callipers will be handy to check that you haven't exceeded the 20 mm thickness. For a cheap source of a pair of plastic callipers, try your local "\$2 shop" (mine cost \$2.49 at "Flash Harry's").

Posting cards to overseas bureaux

By posting cards direct to overseas QSL bureaux, you will save several months of processing time. Posting them to your state/territory Outward QSL bureau is cheaper, but adds approximately one to four months delay in them getting to their destination. This is due to the normal processing time by State/territory

Outward QSL bureaux that usually sort and on-forward them to the National Outward QSL bureau, where they are consolidated and posted overseas when there are enough cards to be economical.

If you are a financial WIA member, the use of the VK QSL bureaux is free, so your only cost is the postage/envelope to get them there. If these delivery delays are acceptable, then just post them to the VK bureaux; but, if you want to speed up the process, then you should post them to the overseas bureaux yourself.

The cheapest way to post QSLs to overseas bureaux is via Sea Mail. Delivery delays can range from several weeks to several months. In most cases, this is acceptable.

To get them to the bureaux faster; you will have to spend additional funds for air posting. Sometimes this is a good idea, as it results in replies that much quicker. If you are chasing awards, this may be a worthwhile expense, and still cheaper than individual postings. If you chose this faster method, the most economical way is to purchase DL and C5 prepaid international air-post envelopes. You can send up to 50 grams of cards in a DL envelope for \$2.20 and 125 grams in a C5 envelope for \$4.50. Typical weight of a QSL card is 3.5 to 3.8 grams, plus 5 grams for the envelope. This means you can post around 12 cards in a DL prepaid envelope and 30 cards in a C5 prepaid envelope.

For the cheapskate

The cheapest way of confirming received QSLs is to just stamp or write on the card, "QSO(s) ARE CONFIRMED", sign or initial the card, and return it to the sender via the bureau system! That way you do not even have to have cards printed! This method is valid for most awards in most countries (the ARRL accepts these cards). Your only cost is to get them to the outward bureau. A 'bonus' for doing this is that you do not

end up with hundreds of unwanted QSLs to dispose of, although the recipient will probably think of you as a real 'cheapskate!'

Inwards or Outwards bureaux?

Some members have been posting OUTWARD cards to the INWARDS bureau managers. This is a waste of resources and time, as the parcel/envelopes must be redirected.

To clarify: the OUTWARD bureaux process cards sent TO them by members to local and overseas bureaux; and the INWARD bureaux process cards FROM stations TO members (and in some cases, non-members).

VK Outward QSL bureaux

I have been personally informed that the WIA National Outward QSL bureau will only process QSL cards for WIA members. Non-members must use an alternative.

VK Inward QSL bureaux

Each state/territory INWARD QSL bureau has a slightly different method of processing cards. Contact your local Bureau for details.

Member obligation

Keep the Inward bureau updated on any changes to your posting instructions or WIA membership status. If you do NOT

want to receive cards from the bureau, then let them know so any cards received for you can be immediately put in a box for the WIA QSL Curator instead of taking up filing space for several years.

If you change your callsign, or move to another call-area or overseas, please let the Inward bureau know so that a note can be placed on your file. Cards will be forwarded free to any Australian address, but, if moving overseas, you will need to open a postage account if you want cards forwarded.

Club obligation

All affiliated clubs should keep the bureau up-to-date as to their members who want cards sent via the club. Make it a part of your secretary's regular duties.

ar

What would you have said?

Jinkin (Jay) Frame

An interesting and different sort of meeting at the club tonight. Four of our members 'volunteered' to be the experts (well, not exactly volunteered!), with the members asking questions. I don't think that the experts were stumped for an answer but there were some good points made. Maybe it is something that your club could try if you're stuck for a speaker one night. The questions ranged from 'what is SWR and is it really important to get it down to 1 to 1?' 'How do you easily measure the sensitivity of

a receiver? Another interesting one was 'how does a Yagi work?' but the question that caused the most discussion was 'what is DX?'

It became clear that it was virtually impossible to define, for it means totally different things to different people. The dedicated QRP'er running no more than 5 watts into a very basic antenna considered anything over 3000 miles away that he could contact as REAL DX. Someone whose speciality is Moon bounce considered a 'QSO' as

DX. Could we assume a DX'er (and that raised another discussion that we terminated!) as someone working the HF bands that contacts a rare station in the antipodes over a Polar Path?

So did we come to any conclusions? Well Yes, but not unanimous by any means!! Dx is what is perceived by each individual to be DX and the term DX'er must be created by each individual who considers himself a DX'er and defend it to any person querying it.

So -What would you have said?

ar

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Club Secretaries: Please advise us of your Hamfest or special event schedule well in advance and we will include it in the magazine.

g.nieman@bigpond.com

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Brand new 70 cm band FM hand held TS-5118, S/N 80917430. (Includes wall battery charger). Asking \$65, the price includes free delivery to anywhere in Australia.

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For sale or exchange for ham communication equipment. Two Williamson main amplifiers. Redline output transformers Ferguson power transformers KT66 output share 3 x KT66, 2 x 6SN7, 1 x SV4G Ken VK2ZAN (02) 6331 3335.

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WWII Murphy B40 Communications receiver working or not, and in reasonable condition. Barry VK3AK QTHR 03 9363 5628 or barryjw@optusnet.com.au

Tone generator for Yaesu FT-290R11, type FTS-7 phone Brewster VK3YBW 03 9527 2661 QTHR after 6pm

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WANTED SA

Good power transformer to suit FTDX- 400 HF Trcvr. or information where to have mine rewound. Adrian VK5AJR QTHR phone 08 8587 6242 email: reimbai@riverland.net.au

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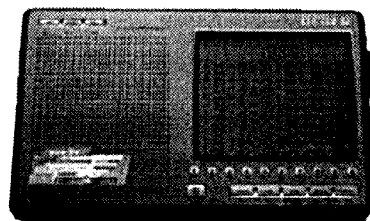
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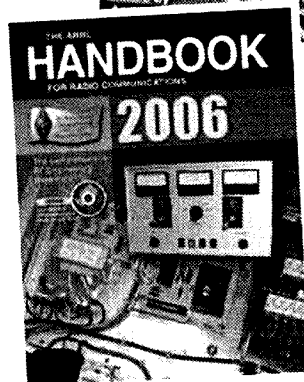
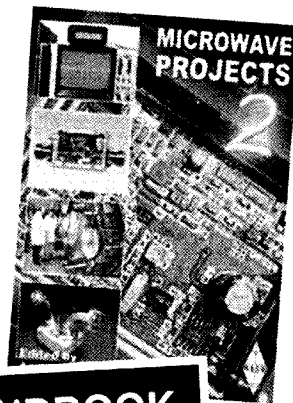
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The WIA offers one year and 5 year membership for all categories except Concession Student. The fees for each category are Full members \$75 (\$365), Overseas members \$85 (\$403), Concession members (pensioner) \$70 (\$332), Concession members (student) \$70, Full members no magazine \$50 (\$237), Family members \$40 (\$190)

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VK1 Australian Capital Territory
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VK1ZPL Phil Longworth
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vk1advisory@wia.org.au

Sundays at 11.00 am
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VK4ZZ Gavin Reibelt
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VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900, 147.000, 147.200, 147.250 and 147.350 MHz..Also in "Realaudio" format from the VK6 WIA website

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vk7dg@wia.org.au
regemm@ozemail.com.au

VK1WIA Sunday 9am on VK7WI network: 3.570MHz LSB, 146.700 MHz FM (VK7RHT South), 53.825MHz FM (VK7RAD South), 147.000MHz FM (VK7RAA North), 146.750 FM & 53.825MHz (VK7RNW North West), 146.625 MHz FM (VK7RMD North West), UHF CB Channel 15 (Hobart) and 27MHz CB - 27.225MHz LSB (Hobart). Followed at 9:30am with VK7 Regional News Broadcast also on 7.090MHz LSB & 14.130MHz USB

Notes

1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

What, yet another **ATV** record attempt?

Dan VK2GG and Jack VK2TRF

What, yet another ATV record attempt? Ho hum! But wait a minute, what about an Australian ATV record using stock standard A/V sender/receivers sold by Jaycar, utilizing 15 mW over 175 km? This is really a story about how you, the amateur, can get on 5.7 GHz ATV with minimal equipment. Thanks to the Hornsby and District ARC (HADARC) for sharing the top of Mt Warrawalang (Watagan Forest) with us during the John Moyle Field Day contest.

Dan VK2GG and Graham VK2DWL found a spot looking south through some trees. Jack VK2TRF travelled to Mt Gibraltar, 175 km away. Mt Gibraltar is a very busy site, with all kinds of nasty RF installations which could hamper our record attempt, or swamp the puny 15 mW from the transmitter. But Mt Warrawalang is a Forestry Fire tower site, with mainly forestry UHF Yagis on it. It has a steep entry track, and a locked gate. As the HADARC had already made the necessary application on the variety of forms, safety requirements, etc, all we had to do was to approach HADARC with our request to share.

Read the full details of our attempt on page 5.

Below: The home brew horn antennas



Left: The view from Mount Warrawalang



Below: The VK2TRF 'Golden' dish



Above: The VK2GG 1.2 m dish

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Our Cover this month

Delegates to the WIA 2007 AGM visit "the Dish" in Parkes. See more pictures on pages 28 and 29. Cover photo by Chris Morley VK3CJK.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA National Office (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 an additional \$2 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.

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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Editorial Comment

Peter Freeman VK3KAI

Delivery of AR

Well, I guess that this may be telling – how many of you read my Editorial? An issue of which the Publications Committee (PubComm) has been aware for some time is the apparent delays in our distribution system to some areas. Some members are reporting that they see the magazine on the news stands before their “subscription” copy arrives via the mail. The factors are many, not the least of which is the very efficient system used for newsagent delivery. To allow all involved in the publication and distribution chain to gain a better, fact-based understanding of the realities, I ask all with access to email to send us a brief message (via email):

Send your email to:

ar_delivery@wia.org.au

Subject: June AR delivery

Keep the body of the message simple:

Your callsign, postcode and date of delivery via the mail (e.g. VK3KAI, 3842, 9 May – the details for arrival here of the May issue – but use the date for THIS issue!).

We will collate the data to assist us in future planning of production schedules.

Software revisions

One of the “joys” of life (and often the source of great frustration) is the updating of computer software and/or hardware! Most who have purchased a new “PC” computer recently find the latest version of the Windows® operating system installed. Past experience has made many wary of being an “early adopter” of new software, including (or especially) OS software!

The change brought a new version of the “standard” office “productivity” suite. This may be fine for some, but the latest version of Office® brings with it a completely new document format. Those with an older version cannot read a file created with the new software without the appropriate converter file.

I ask that all contributors, until advised otherwise, save any document created with the new MS Office 2007 suite in the MS Office 2003 format. This is a simple task – do not just hit Save when you have finished the document. Instead (or in addition), use the File Save As

command, and choose the Office 2003 (e.g. Word 2003) format to save the file, using a different file name if necessary.

On this broad subject, it was interesting to note at the Parkes AGM weekend that several functions at the Radio Telescope, notably including the antenna pointing software, is still running on a PDP-11 computer with largely the original software: reliable hardware and software combinations are far more important in some applications than upgrading to the “latest and greatest”!

AGM weekend

What a terrific (unofficial) long weekend – I have just returned from Parkes. It was a long weekend in many senses. Within an hour of commencing my journey, I struck a cold front that was moving into eastern Victoria. The drive suddenly required a significantly higher level of concentration! In due course, Robert VK3KRB and I commenced the long road journey, via Shepparton, Tocumwal, Narrandera, West Wyalong (with a few hours sleep) and finally on to Parkes.

On arrival, Robert checked that all arrangements were in train, including those at the Radio Telescope. This “check” had an unexpected benefit – Robert and I had a personalised tour as a “preview” of the planned tours on Sunday. On the Friday afternoon, several Directors, partners and a few others, were taken on the tour, so increasing the total number of members that could participate in Sunday’s tour.

The rest of the weekend proceeded well. An excellent crowd attended the AGM and provided a range of questions and valuable feedback during the Open Forum. The Dinner included an excellent presentation by Mike VK3UBM on amateur rocketry and ATV, and was followed by a screening of the movie “The Dish”. The former generated much interest, the latter much mirth on several occasions! On Sunday, approximately 120 people participated in the technical tours – a rare privilege! Our thanks must go to Brett, John, John and all others from the facility involved. Special thanks must go to Robert VK3KRB for coordinating the program for the weekend. My perception was that all who attended had a great time.

ar

Playing with numbers

In the statutory Report of the Directors to the WIA 2007 Annual General Meeting at Parkes on 5 May 2007 and in my Report to the Open Forum held immediately after the Annual General Meeting, there are some interesting statistics.

Let us first of all look at the WIA Examination Service.

By May 2006, 7 months after the new WIA Assessment system commenced, there were 93 accredited and registered WIA Assessors and some 15 Nominated Assessors. A year later, in April 2007, there were 154 WIA Assessors and still 15 Nominated Assessors, from right across Australia.

Now look at what has happened since 19th October 2005, the day the Radio-communications Licence Conditions (Amateur Licence) Amendment Determination 2005 (No. 1) came into effect, the first day on which a Foundation Licence could be issued.

Since then, the WIA office has prepared some 2,302 Foundation Assessment Packs, of which 1,478 have been returned.

In other words, 1,478 Foundation licence assessments have been attempted since the introduction of the Foundation licence. It also means that on that day there were 824 Packs in the hands of Assessors or on their way back to the office.

In the November 2006 *AR* I was able to report that on 29 September 2006, just three weeks short of a year from the coming into force of the new licence structure, the WIA issued the 1,000th certification of qualification for an Amateur Operator Certificate of Proficiency (Foundation).

As stated in the Report of Directors, during the 2006 calendar year 1,150 Foundation assessments were processed with 1,065 candidates successful in obtaining the Foundation qualification.

So, we seem to be running, in the first 18 months or so, at the rate of 1,000 new Foundation licensees a year.

As at 1 April 2007, there were 1,186 current Foundation licences on issue.

The following table sets out the distribution of Foundation licensees by state/territory on 1 April 2007, with the figures a year earlier shown in brackets:

VK1	VK2	VK3
30 (20)	338 (138)	398 (161)
VK4	VK5	VK6
129 (57)	141 (63)	67 (24)
VK7	VK8	VK9
75 (38)	7 (1)	1

But what about the other classes of licence?

The introduction of Assessment Packs for Standard and Advanced Theory and Standard/Advanced Regulation was delayed until about March 2006. Since then, to mid May 2007, the WIA has prepared 574 Standard Theory Packs, of which 193 have been returned, 406 Advanced Theory Packs of which 99 have been returned and 613 Standard/Advanced Regulation Packs of which 237 have been returned.

In the 2006 calendar year, 85 separate practical assessments (apart from practical assessments part of the Foundation qualification) were processed, 171 Standard Theory assessments were processed, 87 Advanced Theory assessments were processed and 208 Regulations were processed, in all 1,701 assessments being processed during the period.

As at 1 April 2007, the ACMA records show that there were 11,648 Advanced Licences current, 1,923 Standard licences current, 1,186 Foundation licences current, 370 Repeater and 34 Beacon licences current in Australia.

We are still working on extracting more precise figures on the number of people who have taken advantage of the Foundation Licence as their point of entry into amateur radio, but at least anecdotally it seems that many are embarking on up-grading. Even in the very short period since the change of licence structure, it seems that perhaps something close to 20% of people qualifying as Foundation licensees are starting to upgrade, and indeed, many have achieved their goal.

Again anecdotally, one hears people saying that they had lost interest in amateur radio when they found the Novice too hard, and work and family commitments were more important, but the Foundation licence led them back into amateur radio, often leading them to up-grade very soon after qualifying

at the entry level.

All of this is confirmed when one looks at the ACMA licence figures.

ACMA reports the total number of amateur apparatus licences in force on 30 June each year, and we can count the total as at the date of the licence data CD supplied by ACMA.

It should be stressed that these figures are all licences, and so include repeater and beacon licences, licences such as the "WI" and "WIA" licences held by the Institute as well as the multiple licences held by some people.

But the figures certainly do tell a story.

30 June 2001	15,017
30 June 2002	14,536
30 June 2003	14,363
30 June 2004	14,047
30 June 2005	14,041
30 June 2006	14,475
1 April 2007	15,161

I am sure that earlier figures would have shown that the continuing decline started some years earlier, but it is obvious that the number fell each year until June last year, and by April this year there were more amateur licences on issue than there were at the end of June 2001.

So, what about WIA membership?

We know that one of the drivers for the structural change of the WIA was the inexorable decline of membership for very many years up to the first half of 2004.

The WIA has generally reported membership figures as at its balance date of 31 December each year, and over the last 3 years we have reported membership in May each year at the time of the AGM and Open Forum.

I believe that in mid 2005 there were about 3,494 members. That figure was very difficult to measure, as membership was in transition from membership of a Division to membership of the single national entity.

But after that we have membership figures as follows:

31 December 2005	3,851
May 2006	3,870
31 December 2006	4,114
May 2007	4,246

continued on page 19

WIA News

WIA announces nominated members of Advisory Committees

The WIA Board has adopted Regulations to govern the Advisory Committees that will be created this year. This is described in detail in the "Comment" in April *Amateur Radio*, and a notice calling for nominations was published in last month's AR.

There will be an Advisory Committee for each State and the Northern Territory, and each Advisory Committee will consist of four people, three elected by the WIA members in the area of the Committee and one nominated by the WIA, called the Nominated Member.

The WIA Board is very pleased that the following people have agreed to be Nominated Members:

New South Wales, Owen Holmwood VK2AEJ

Victoria, Bryan Pliatsios VK3HXR

Queensland, Don Wilschefski VK4BY

South Australia, David Box VK5OV

Western Australia, Neil Husk VK6BDO

Tasmania, David Potter VK7YUM

Northern Territory, Garry Woods VK8GW

2007 AGM

The WIA's Annual General Meeting was held at the Leagues Club, Parkes, New South Wales, on Saturday 5 May 2007.

Before the meeting, many of those attending participated in a barbeque in a nearby park.

Highlight of the Annual General Meeting, which is conducted very much as a formality, was the submission of audited accounts showing a surplus of \$8,000. Glenn Dunstan VK4DU who had been a Director since the restructure of the WIA to a national body in May 2004 retired, receiving warm tributes for his contribution. Peter Young VK3MV, who had been elected by the postal ballot of members, was welcomed as a Director.

It was followed immediately by the Open Forum, where reports covering all aspects of the WIA's activities were submitted and discussed. Topics covered included examinations, awards, the bookshop, BPL, clubs, contests, emergency communications, history,

the ITU and WRC 07, IARU, the news service, the National Technical Advisory Committee, publications, QSLs, repeaters and standards.

Secretary Ken Fuller VK4FU had organised the written reports into a handsome book. A copy was given to each participant on registration.

In presenting a report on behalf of the Board, the President Michael Owen VK3KI stressed the growth in total amateur licence numbers, which had been slowly declining each year since at least 2001. The "Comment" in this month's AR looks at these figures in detail.

A highlight of the Open forum was the presentation of awards to members.

The first award to a Foundation licensee was the award of a President's Commendation to Haydon McManus, VK3FRST, the Scouts Australia Coordinator of V13JAM at the 21st Australian Jamboree, so successfully promoting amateur radio.

Justin Giles-Clark VK7TW, President of the Radio and Electronics Association of Southern Tasmania, was awarded the Ron Wilkinson Award for all he has done in response to the major BPL trials in Hobart.

WIA makes first Chris Jones Award

WIA President Michael Owen VK3KI announced the first Chris Jones Award at the 2007 Open Forum at Parkes NSW on 5 May 2007.

The Award is a handsome glass trophy and features a picture of the late Chris Jones VK2ZDD and the following wording:

"The Chris Jones Award honours the memory of a man who was dedicated to the advancement of amateur radio and whose unfailing commitment and vision led to a new Wireless Institute of Australia and whose unfailing courtesy and genuine friendliness is fondly remembered by all who knew him.

It is awarded to radio amateurs who have made an exceptional contribution to amateur radio and the Wireless Institute of Australia."

The Award was presented to Mal Johnson VK6LC in recognition of his great contribution to amateur radio as

The first Chris Jones Award was presented to Mal Johnson, VK6LC, the WIA Awards Manager since 2001. A separate item below deals with this important award.

Around 130 people attended the dinner on Saturday night, watching the Australian film *The Dish* afterwards.

Sunday was time for visiting the CSIRO radio telescope at the Parkes Observatory, "the Dish", the highlight of the weekend's activities, and the subject of a separate report in this month's AR.

The WIA wishes to thank John Reynolds, OIC of the Facility, John Smith, Visitors Centre Manager, John Sarkissian Operations Scientist and in particular Brett Dawson VK2CBD, second in charge of the Facility, who helped in so many ways with the planning of the weekend.

In total, 139 people were registered for various activities.

The weather was perfect, and the weekend was undoubtedly a success.

WIA Board's 2007 appointments

At its meeting immediately following the Annual General Meeting and Open Forum at Parkes, NSW, on 5 May 2007, the WIA Board reappointed Michael

continued on page 9

the WIA Awards Manager.

The only other national society to conduct a DX Century Club award program is the ARRL, which commenced in November 1945. The WIA Program commenced in 1947.

Mal has been Awards Manager since 2001, and has computerized the program, and over the last few years managed the transition from a federal to a national program, also introducing a number of new and innovative and very attractive awards.

In presenting the Award, Michael Owen read from a letter from David Rankin 9V1RH/VK3QV, a long time resident of Singapore, acknowledging Mal's work in streamlining the award submission procedures and commenting that "with Mal as Awards Manager the WIA is, in my opinion, fulfilling a need and want in the DX world."

see also inside back cover

More mysterious manifestations of the “Rusty Bolt Effect”

Felix Scerri VK4FUQ

I'm starting to wonder if I've been cursed to suffer an endless life of experiencing bizarre manifestations of the “rusty bolt effect”, in all its guises! I've previously described the strange fault that involved apparent loss and non linearity in my 2 m antenna transmission line system. Well, I've just had another strange incident although, thankfully, it was identified very quickly and remedied. However, this latest experience has left me with the indelible impression that “non linear” junctions are waiting to attack at the slightest provocation!

One of my books on RF interference has numerous documented examples of mysterious rectification and interference caused by “unpowered” devices containing solid state devices. Well, I can now add one more to the list! One of my other passions is wideband AM reception and, as a consequence of this, I have designed and built a number of novel AM detector arrangements, using bipolar transistors or field effect transistors.

One of these detectors, when “unpowered”, produced an intermod on the 2 m band in conjunction with another signal. This was discovered after I recently noticed a number of new “intermods” on the 2 m band. I was able to hear some very distorted audio in the intermod which was identified as a local AM radio station. Thus alerted, I began to think about the possibilities and I

realized that my crystal set front end (with a “long wire” antenna attached), was connected to my FET based “infinite impedance detector”, and that it was tuned to the station that I had identified in the distorted intermod audio. This “infinite impedance detector” was powered by its own 12 volt battery supply and the circuit was switched “off”. I waited for the intermod on 2 m to reappear and, when it did, I switched the power supply to the module “on”, and the intermod instantly disappeared! Got it in one!

What was particularly interesting about this case was the fact that the detector module only caused a problem when completely “unpowered”. As the intermod noticed was not continuously evident, only intermittent, it would seem that another intermittent signal was

part of this “mix” as well! It was also likely that harmonics of the original frequencies (possibly produced through further incidental rectification), were heavily involved in the process!

The possibilities were complex and quite bewildering! As indicated on the S meter of my 2 m rig, these intermods were quite strong (around an indicated S7 or so) showing that quite respectably strong signal levels were involved. It also showed that one single “unpowered” MPF102 junction FET made a nice RF mixer.

There are many other similar non linear devices lurking in the background waiting to pounce, given some RF energy to “mix”. Technically, this is all very interesting, but it is “painful”.

Please, no more!

ar

2007 WIA Grants scheme launched

Ken Fuller VK4KF Secretary WIA

Monday 16th July is the closing date for applications for the WIA Club Grants Scheme for 2007. Full details of the rules for the scheme can be obtained from the WIA Web site, together with a template setting out the suggested application headings for an executive summary, identifying how the club seeks to meet the objectives of the scheme and guidance regarding supporting documentation.

WIA President Michael Owen said that the Board was pleased with the results of the 2006 scheme and believed that there was overall support from members for a continuation of the grant scheme. In 2006, some 18 project proposals were received and 5 received financial support from the scheme. The Board had decided to maintain the rules unchanged from those that applied last year.

The WIA Board has again allocated \$5,000 for distribution to qualifying

Affiliated Clubs. The object of the scheme is to promote and advance amateur radio, the WIA and its Affiliated Clubs by supporting useful and/or innovative projects undertaken or to be undertaken by Affiliated Clubs. Affiliated Clubs with a membership including at least 50% WIA members qualify to participate, though the Board has discretion to allow a lesser percentage in special circumstances.

Michael said that the 2007 Grant Committee would be Don Wilchefski VK4BY, Deane Blackman VK3TX and Wally Howse VK6KZ. The Committee would recommend to the Board the projects that should be supported and the amount to be allocated to each supported project. “I urge affiliated clubs to participate in this opportunity” Michael said; “however, it is most important that clubs read the rules very carefully”.

ar

The 'IH-Vert-tenna'

Paul Stampton VK3IH
stampton@dcsi.net.au

Build the 'IH-Vert-tenna': an easily constructed, adaptable antenna for lightweight portable SSB or FM VHF/UHF use. Parts are easy to find and total cost is less than \$30 with all new parts.

An imminent overseas trip saw the need for a versatile antenna system for HF and VHF/UHF. A quick look back through Amateur Radio saw the construction of a QRP L Match tuner for HF and a 'Versatenna', a design by Peter Parker VK3YE (AR Feb 2003). This antenna was a two element beam on 2 m and a $\frac{3}{4}$ wave dipole on 70 cm constructed from 'rabbit ears' antennas that plug into the rear of television sets. This antenna was tested on backpacking type camping trips and proved to be quite a good system. However, further thought regarding the operating requirements on the overseas trip that would see use in a motor-home, and borrowed houses as well as commercial apartments, led to the design of the 'IH-Vert-tenna'.

This design is stable on a small flat surface such as a table, veranda rail, or metal motor-home roof. It can utilise commercial multi-band antennas (such as the one supplied with the Yaesu FT-817, or most handhelds) or higher gain antennas such as telescopic $\frac{5}{8}$ th wave antennas. Part of this article details some homebrew whips that will easily outperform antennas supplied with most radios. The IH-Vert-tenna can quickly be switched from vertical polarisation, for use with FM repeaters and the like, to horizontal polarisation (common with SSB operation) in an instant.

Construction is easy, using only the simplest of tools and cheap materials, and the finished product is an excellent performer.

Parts

You will need:

- a TV antenna, the type with the two telescopic whips each over 60 cm long on a large plastic base with feet, and a 75Ω lead. Dick Smith Electronics (DSE) L4015 or similar (I have found some low cost examples in supermarkets.)
- a BNC panel socket (the round style is easier to work with than the square base style) DSE P2220



Figure 1: The set up in the field for FM or SSB use on 2 m. This antenna has been used in three states and 15 countries (as G3ZDR/p) with great results.

- a BNC or PL259 plug depending on the antenna connection on your radio.
- approximately 3 m of RG-58 50 Ω coaxial cable (or, for a low budget option, you can use the 75Ω TV coax supplied already fitted - it will make little difference in this application)
- a vertical antenna for the band in use such as the three band antenna supplied with the FT-817 or any hand held antenna. (I will also show you how to make a low cost one yourself).
- a DPDT (double pole – double throw) switch that can handle the

power output of the transceiver. A DSE P7670 should be fine up to 20 W or so.

Construction

Figure 3 shows the simple construction technique.

Unscrew the base of the TV antenna and remove the balun if there is one (it is the little thing with wire wrapped around it). You should also remove the 75 Ω coax now if you want to replace it with 50 Ω RG-58.

Drill two holes in the top of the plastic base, one sized for the BNC socket in the middle of the plastic top of the antenna and the other for the DPDT switch in a convenient location nearby.

Mount the switch and BNC socket and then connect with short pieces of stiff wire (enamelled wire with the enamel scraped off the ends is ideal) as per the picture of the IH-Vert-tenna in Figure 2, and the internal wiring in Figure 3. At this time you should also connect the coaxial cable and the BNC or PL259 plug to your radio.

This completes the basic construction!

Operation

You should now have the IH-Vert-tenna sitting on the table beside you and a whip of your choice mounted on the BNC socket you fitted in the lid of the plastic base. Extend the telescopic whips out to be a ¼ wave on the 2 m band each side (i.e. around 49 cm). Flip the DPDT switch to the position that connects only the horizontal TV rabbit ears to the coax. You can now transmit a low power carrier and adjust the length for minimum SWR.

You are now on the air with horizontally polarised SSB! Simply adjust the length for 70 cm band use (ie around 16 cm each side) or fully extend the whips and add a little extra length with insulated wire on a crocodile clip to resonate on the 6 m band (total length each side of around 132 cm) if the whips on your IH-Vert-tenna aren't long enough. The insulated wire can dangle down - it won't affect your signal noticeably.

To change to FM vertically polarised transmission, simply flip the switch and the two rabbit ears now become the 'ground plane' for the vertical whip attached to the BNC socket, then adjust the whips to around ¼ wave each and

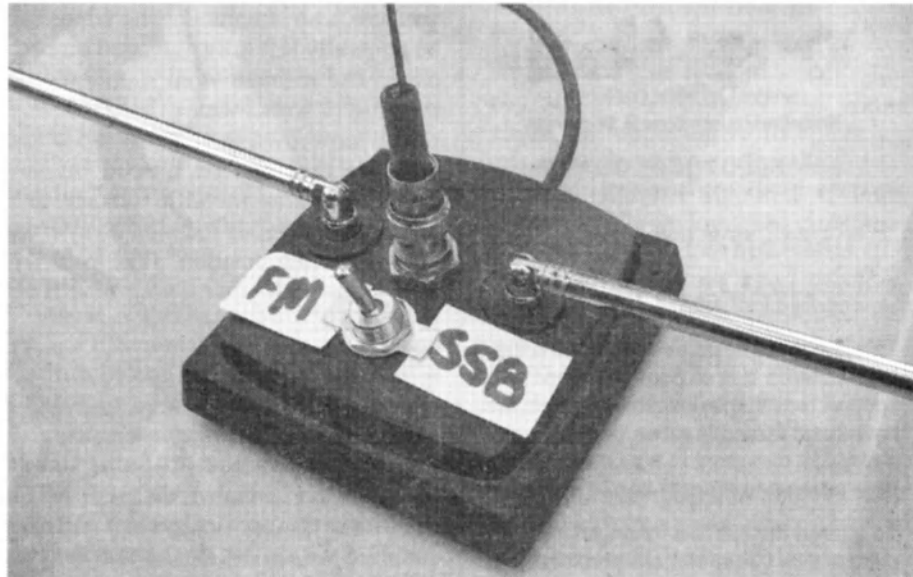


Figure 2: The IH-Vert-tenna showing the switch for converting from a dipole for SSB use to a vertical 'ground plane' antenna for FM use.

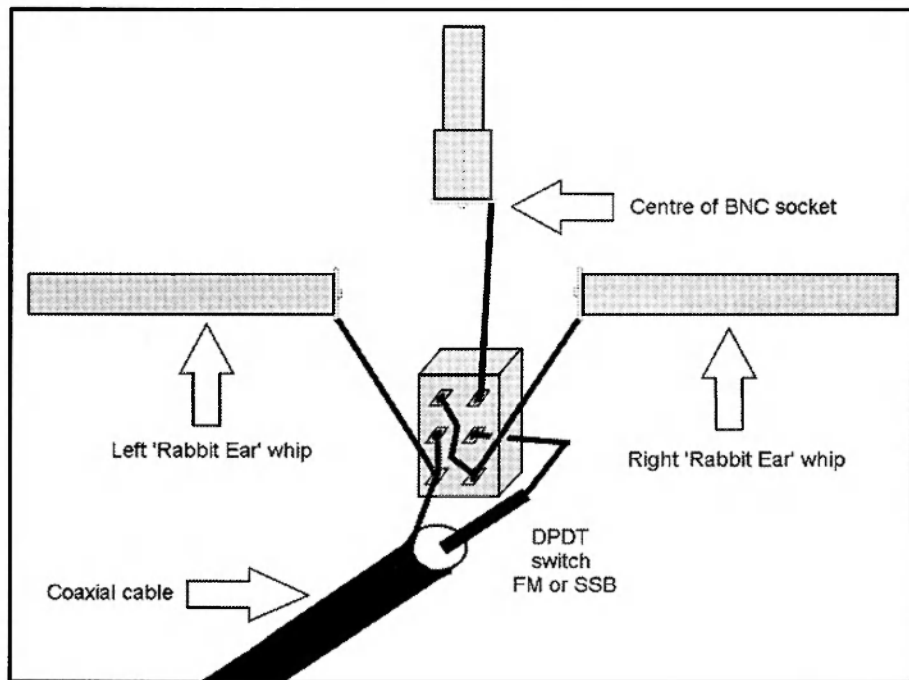


Figure 3: Construction technique and internal wiring to the DPDT switch.

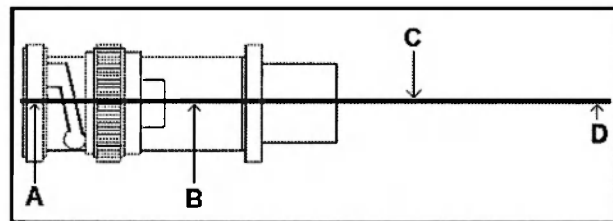
Figure 4: Quarter wave whip construction.

A – The brazing rod comes right through the assembly taking the place of the pin that is usually in this position. Round the end with a file (rubbing the end on a concrete path does the same job!).

B – Insulate the rod through the body of the BNC and pack it out so that it doesn't move and lose contact with the antenna socket. A bit of round ball-point pen works well.

C – ¼ wave long on 6 m is approximately 1321 mm. ¼ wave long on 2 m is approximately 489 mm. And ¼ wave long on 70 cm is approximately 164 mm.

D – Loop the end over for safety or create a tip with a small piece of heat shrink tubing.



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OzGear is now 'internet only'

This is not the news we wanted to bring to you... but... due to poor customer support resulting in low sales figures, we have been forced to move from being in a physical shopfront to become a part-time internet-shop-only-based operation.

To a large degree this "change" has occurred by virtue of more and more people purchasing internationally via the internet, coupled with the market forces generated by the "grey-market-ers" and eBay and the people who buy from them. With people continually purchasing from such 'non-authorized sources', the death knell has sounded for the Australian "physical" radio and electronics shopfronts, OzGear's included.

The outcome :

- We cannot be contacted by phone – the 07 31142506 number is an "email us" advice message only.
- We have left the Acacia Ridge shop address and become home-based.
- No more personal pickups. Everything is either couriered or mailed.
- Email is the only way to reach us – and it will be answered as time permits.
- "Advice request / Help Desk" facilities are no longer available.

Products :

- We have minimised product lines and stock levels.
- Primary product lines are Icom, Yaesu, Sangean and Tigertronics. *We remain an authorised Australian dealer with manufacturer's Aussie warranties !*
- Some other products are available – only as listed on the web site.
- Many products are now supplied on a back-order basis only.

For those who already deal with us by email/web/mail order, the only real change is the reduced product lines.

Visit OzGear.com.au for continuing up-to-date details on product lines and pricing

you are on air! In practice the whips can be generally left fully extended on each band. The tri-band whip supplied with the FT-817 works well.

You now own a versatile SSB/FM antenna that can be placed on any metallic or non metallic surface in a more advantageous location away from your operating position. Take your IH-Vert-enna with you on your next BBQ in the park!

Enhancing your IH-Vert-enna

Figure 4 shows how to build simple quarter wave antennas that will be far superior to the electrically short antennas supplied with most rigs. I use the cast off BNC 50 Ω terminations from old Ethernet computer systems, but a new BNC plug will work just as well.

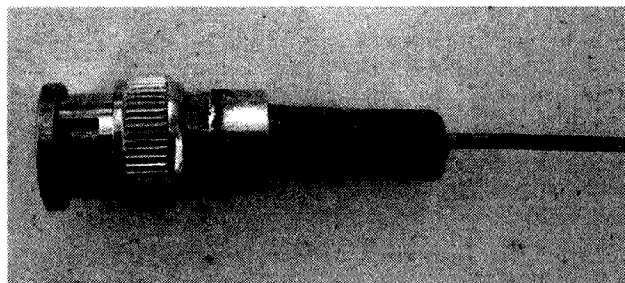


Figure 5: A close up of the quarter wave whip.



Figure 6: The author using the IH-Vert-enna with an FT-897. (EMR considerations would suggest that the antenna be placed at a greater distance from the operator and any other persons, especially if used with other than low power. Ed.)

Brass 'brazing/welding' rods are sold in many tool shops - they are stiff, conductive and cheap! A 6 m whip will require you to solder some together if the rods you find are too short. Any *ARRL Antenna Handbook* from the 1980s onwards has a 2 m $5/8$ wave antenna described that you can make which will work well on 2 m FM. (Editor's note: The 2 m $5/8$ wave whip will also work as a loaded $1/4$ wave whip on 6 m – just be sure to check VSWR first.)

Forgotten your vertical? Simply mark the rabbit ear connected to the centre of the coax and swing it up vertically, the other whip will give you a reasonable 'ground plane' with the switch in the SSB position.

The model depicted has travelled to many locations and countries including portable operation in VK2/3/4/7,G, GM, EI, GW, F, HV, I, LX, DA, ON, OE, T7, EA, PA, VE, and 3A. I hope you, too, get some enjoyment, and a little more 'on air' time with this project.

ar

WIA News continued

Owen VK3KI President of the WIA and Ewan McLeod VK4ERM Vice President of the WIA for a further year.

The Board also made the following appointments and reappointments:

Neil Penfold VK6NE National QSL Bureau Coordinator, Ken Matchett VK3TL National QSL Card Curator, Tony Hutchison VK5ZAI National ARISS Coordinator, David Wardlaw VK3ADW Standards Group Coordinator, with members John Bishop and Gilbert Hughes, Will McGhie VK6UU Historian, Chris Flak VK2QV National Bookshop Manager, Graham Ratcliffe VK5AGR National AMSAT Coordinator, Jack Bramham VK3WWW National ARDF Coordinator, Mal Johnson VK6LC National Awards Manager, Karl Hennig VK6XW National Intruder Watch Coordinator, Ewan McLeod VK4ERM National WICEN Coordinator, Ted Thrift VK2ARA National Club Coordinator and Phil Wait VK2DKN National BPL Taskforce Coordinator, with the BPL team comprising Keith Malcolm, Gilbert

Hughes, Peter Young, Barry White, David Wardlaw, Justin Giles-Clarke and Owen Duffy (as an advisor).

Because of the terms of their existing appointments, the following appointments continued without further action by the Board:

Phil Smeaton VK2BAA National Contest Coordinator, Peter Mill VK3ZPP National Repeater and Beacon Coordinator, John Martin VK3KWA Chairman of the National Technical Advisory Committee, and the members of the NTAC Advisory Panel.

Other positions, such as the Editor of AR, are not made annually and those appointments are continuing.

ARISS Coordinator now also a WIA appointment

ARISS (Amateur Radio on the International Space Station) is a program sponsored by NASA, the ARRL, AMSAT

Corporation and Verizon-MCI. The program gives students and young people the opportunity to speak via amateur radio to the crew on board the International Space Station as it circles the earth at 27,000 kph, 370 kilometres above the earth.

Tony Hutchison VK5ZAI has been the Australian coordinator for ARISS for some time, and after consultation with Tony, the WIA Board at its meeting immediately following the Annual General Meeting and Open Forum on 5 May 2007 at Parkes NSW, also made it a WIA appointment, appointing Tony WIA National ARISS Coordinator.

Already this year, following the highly successful contact with the Australian Jamboree at Elmore in January 2007, ARISS contacts have been made with schools in Sydney, Glenden in Queensland and Salt Creek in South Australia.

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TET-EMTRON

Antenna Manufacturers

New Tet-Emtron Vertical Range

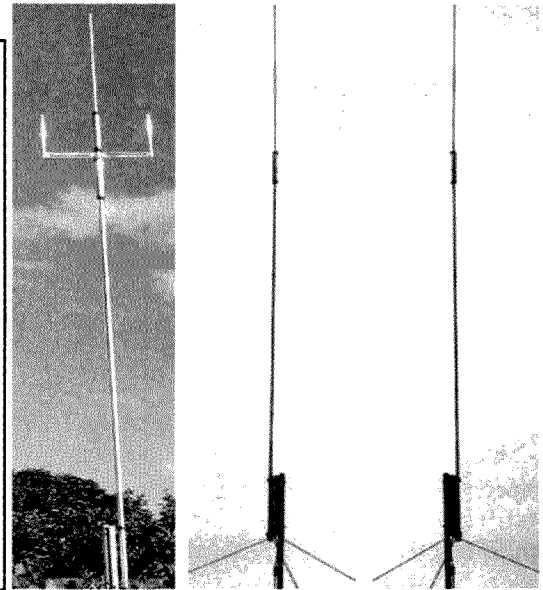
TEV-4 TEV-3 TEV-3Warc

New Tet-Emtron Vertical Range

- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
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- Free standing—no intrusive guy wires.
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- Can be ground mounted or elevated.

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See the web site for more info and a complete dealer list.



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 Victoria 3862 AUSTRALIA
 www.tet-emtron.com
 Email: rawmar@hotmail.net.au

Ph: 61 3 5145 6179
 Fax: 61 3 5145 6821
 ABN: 87404541761

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

Class-E AM/CW transmitter for 1.8 MHz

Drew Diamond VK3XU

The past few years have seen a marked increase in the use and popularity of "Top-Band" - 160 metres. Certainly, the long-running Melbourne "Coffee-Break" 11 am amplitude modulation (AM) session continues to grow. As a fraternity, AM fans are a friendly, technically-minded, "build-it-yourself" sort of crowd who also enjoy a good "chin-wag".

An AM transmitter may be constructed cheaply, using mainly re-cycled parts, by any reasonably handy amateur, yet produce an "on-air" signal that is as good as, perhaps better than, a commercial rig, and thus earn enormous personal and technical satisfaction from a job well done.

Unfortunately, for valve type transmitters, some components are becoming increasingly scarce - things like modulation transformers (although ordinary "mains" transformers can be pressed into service) and high-voltage transformers for instance.

My aim here was to build, using readily available components, an AM transmitter that produces an on-air signal of more than acceptable quality. For inspiration I trawled the "Class-E" web sites for data, and soon found the seminal QEX article (Reference 1) where Nathan Sokal outlined his findings.

For the prototype, AM and CW RF output power is nominally 25 to about 35 W. Best PA efficiency (93%) is obtained at 29 W output (for 31 W dc input power). All harmonics are at least 45 dB down on fundamental. The -6 dB modulation frequency response is 150 Hz and 4 kHz, rolling-off above about 5 kHz. The PA is not damaged by accidental short or open load, nor by operating into a high SWR for reasonable periods (eg during antenna coupler adjustments).

Class-E Amplifier

Experimenters have achieved acceptable results using ordinary switching MOSFETs as class A, B, C and D RF power amplifiers (Reference 2). The limiting factor with these devices is the effect of their rather high input and output capacitances as the operating frequency is raised. Efficiency decreases as a function of the time period that the drain voltage/current wave-forms

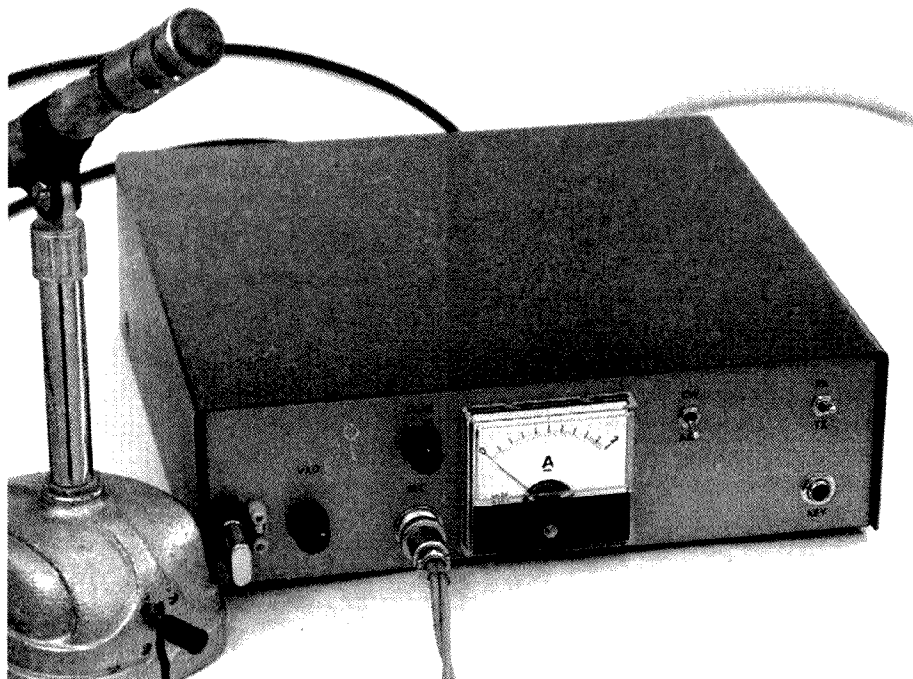


Photo 1 - The completed transmitter.

overlap, their instantaneous product being dissipated (wasted) power.

In a class-E amplifier, the FET operates essentially as an on/off switch. The L/C output network shapes, and times, the voltage and current wave-forms such that high voltage/high current values do not occur simultaneously, thus significantly reducing device power dissipation. Efficiencies in excess of 90% are easily achievable.

A typical class-E amplifier is shown schematically in Fig 1. Let's have a look at what (I think) happens during one complete radio-frequency cycle.

The FET gate is driven with a square-wave of sufficient amplitude to cause the drain-source resistance to alternate at signal frequency between a very low value (typically less than 2 ohms) and a very high value.

A current source is provided through

drain choke coil L1. Its value is not critical, but should have a reactance of about 20 or 30 times the load resistance (Reference 1).

Capacitance C1 is comprised of the intrinsic drain-source capacitance of the FET and an additional fixed capacitor. The cycle begins as the FET is switched off. Energy stored in the magnetic field of L1 sources current into C1, which begins to charge. As the voltage across C1 rises, current flows into series tank L2-C2, loading capacitor C3 and the parallel load RL. After one half-cycle, C1 is discharged.

As the FET is switched on, energy stored in the tank L2-C2 now causes a current to flow in the opposite direction, through the load and the low "on" resistance of the FET, at the same time drawing current from the voltage supply through L1, which stores a new charge

in its magnetic field, thus completing the second half-cycle.

It should be noted that L2-C2 is not an exactly resonant tank. It functions as a "fly-back" circuit to generate a correctly timed voltage of about four times V_{cc} at the drain. Photo 2 shows the drain voltage wave-form coincident with gate input signal.

Interestingly, the voltage wave-form at the load is almost sinusoidal. However, the second harmonic is only about 20 dB down, so additional filtering is required for an amateur transmitting amplifier application.

A class-E amplifier is only suitable for use as a modulated stage in an AM transmitter (for which it is excellent), amplification of CW (telegraphy), and FM signals. For a complete graphical and mathematical analysis, the curious are pointed to References 1 and 3.

Circuit

1.843 MHz is a very popular frequency for daytime AM operation around Melbourne, and is also a favourite spot for night-time inter-state working. Fortunately, 1.8432 MHz crystals are cheap and readily obtainable. Therefore, our circuit may be greatly simplified in this instance by employing crystal control.

A classic oscillator-buffer-driver-PA is employed. Beginning at the top-left in Fig 2, a sure-fire Colpitts circuit excites the crystal using a 2N5484 FET. Some frequency adjustment is afforded by the 300 pF variable capacitor in series with the crystal.

The oscillator signal is presented to one input of a 74HC04 hex inverter chip, the remaining five inverters are parallel-connected (to increase drive capability), and thence to the gate of the class-E output amplifier. A small amount of forward bias (about 3.5 V dc) is applied to the MOSFET gate to improve sensitivity, such that a 6 V p-p signal (from the 74HC04) fully drives the PA.

Much experimental effort was spent in finding the most suitable, economical power MOSFET. A collection of various likely-looking devices were tried. Some parameters were found by study - others by trial and error. The selected device must have low input, output and transfer capacitances, reasonably fast switching speed, a voltage rating at least eight times V_{cc} , drain current twice expected

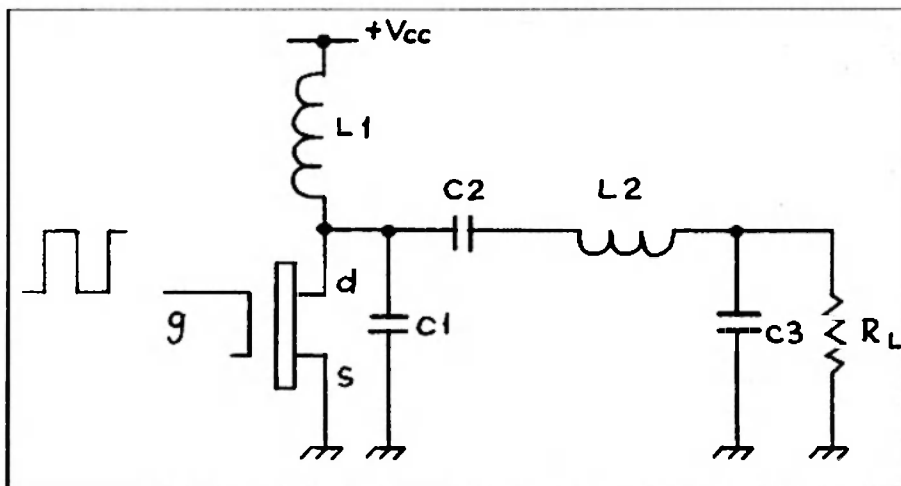


Fig 1 - A typical class-E amplifier.

(2 x 1 A), and low turn-on resistance (less than 2 ohms). The Siemens type BUZ90A device was found to work very well indeed. Salient specifications are: - V_{ds} : 600 V; I_d : 4 A; $R_{ds(on)}$ 2 ohms; power dissipation: 75 W; cost: about \$2.

Values of L and C in the amplifier output network were first calculated, and then varied empirically for best efficiency. Tuning capacitor C2 and loading capacitor C3 are adjustable compression mica types. An efficient, effective low-pass filter (Reference 4) follows the amplifier output to reduce

harmonics to an acceptable level.

High-level amplitude modulation is applied to the drain of the PA. A well tried and tested Silicon Chip modular audio amplifier (available in kit form) provides the large signal necessary to "swing" the PA supply voltage between 0 and twice V_{cc} (about 60 V p-p). The 30 V ac "secondary" of an ordinary power transformer T2 is used as an auto transformer to affect a good match (using the 27.5 V tap) between the modulator and PA, these being coupled through a 2200 μ F capacitor.

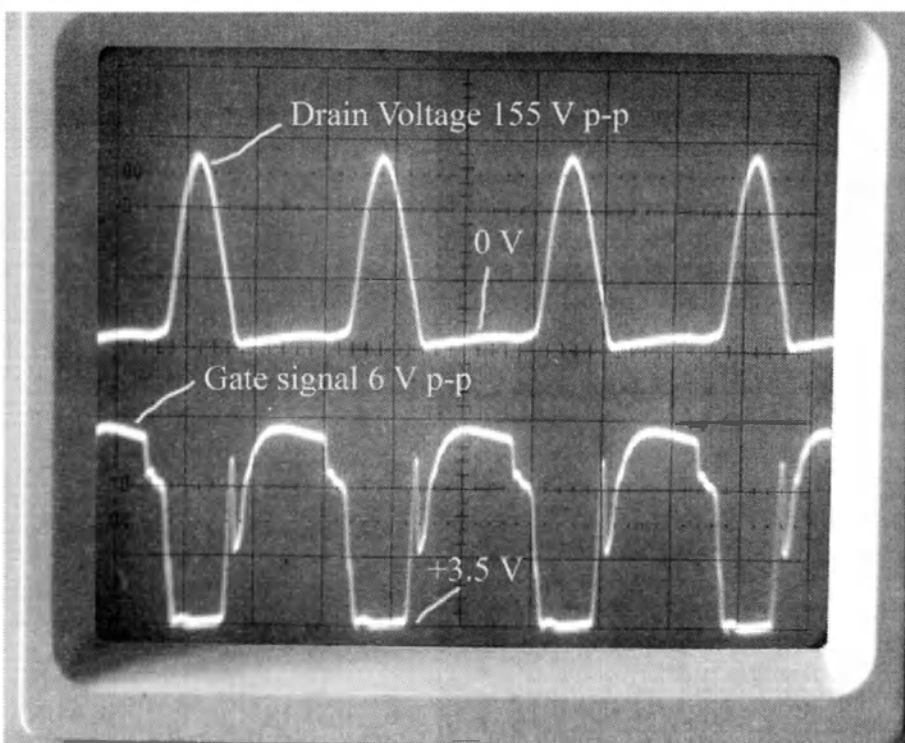
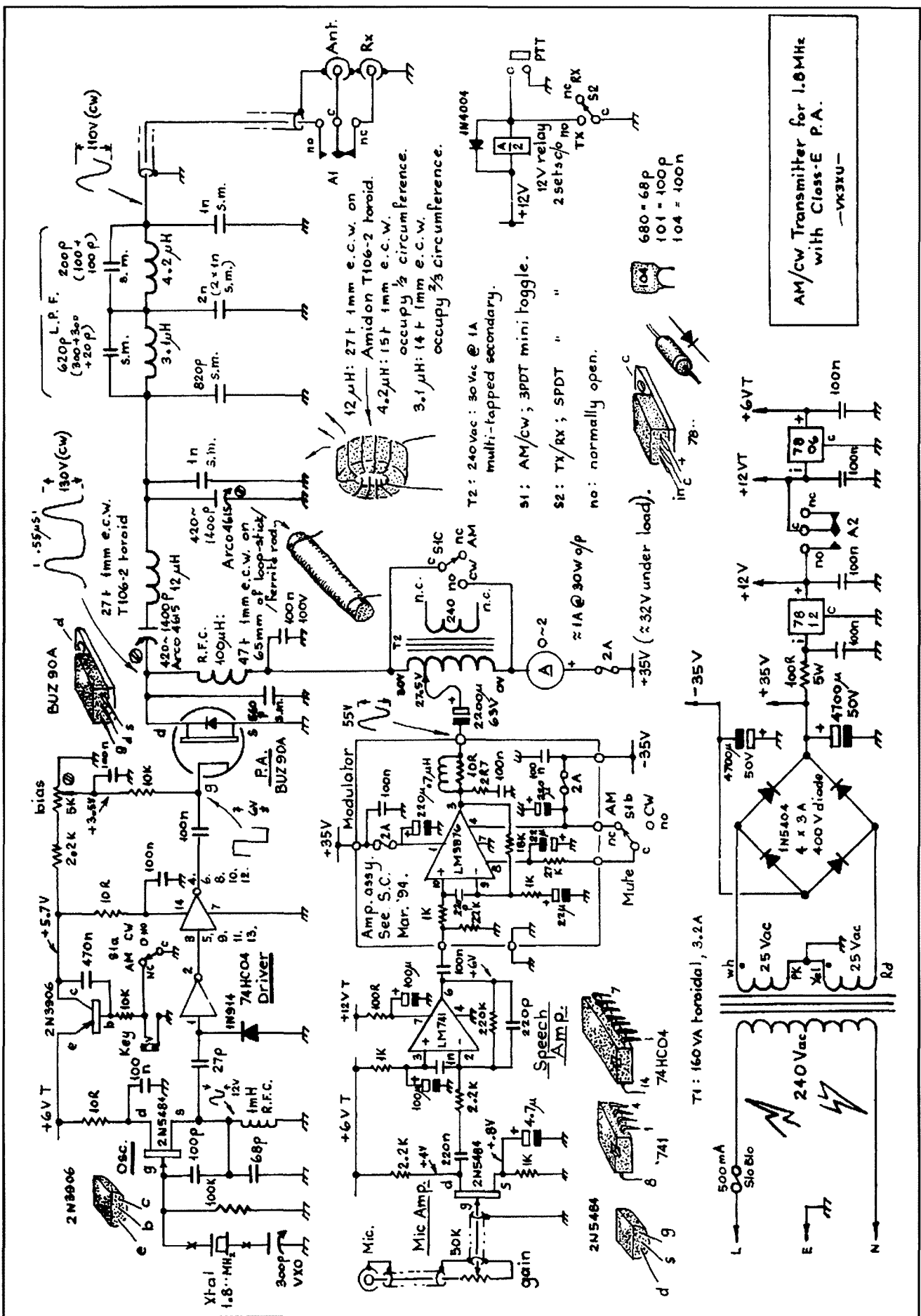


Photo 2 - The drain voltage wave-form coincident with gate input signal with the CRO set a sweep speed of 0.2 μ S per division.



AM/CW Transmitter for 1.8MHz with Class-E P.A. —VK3XU—

Fig 2 — Schematic of the AM/CW transmitter for 1.8 MHz with a Class-E PA.

In CW Morse mode, the modulator is muted, and the +6 V dc driver/bias supply is ramped up and down in response to the key through a series 2N3906 PNP transistor. Rise and fall times are about 5 ms for crisp click-free keying.

Unregulated +35 and -35 V dc rails for the modulator are provided by a conventional bridge rectifier and filter capacitor circuit, powered by a centre-tapped 50 V ac (25-0-25) winding on transformer T1. Regulated +12 and +6 V dc are operated from the +35 V dc supply, which also powers the PA (when delivering 30 W RF, the +35 rail falls to about +32 V dc under load).

Construction

The home-made aluminium box/chassis pictured in Photo 1 measures 75 x 260 x 225 mm HWD. The bottom chassis panel functions as a heat-sink for the LM3876 modulator chip and the BUZ90A MOSFET (both devices run very cool).

The RF circuit, microphone/speech amplifier and power supply are each accommodated upon "paddyboard" style (Reference 5) circuit boards. Suggested layouts are shown in Fig 3. However, any preferred construction style will serve, provided that signal carrying component leads (eg coupling and bypass capacitors, etc) are reasonably short, and that the general plan illustrated in Photo 3 is followed.

A rectangular hole of 12 x 18 mm should be provided in the RF board so that the BUZ90A may be attached directly to the bottom panel. Include a silicone washer and the usual hardware. A solder tag is mounted under the 3 mm hex fixing nut for the drain connection.

The LM3876 is similarly attached (silicone washer again) to the bottom panel as shown in Photo 3. Build the audio power amplifier (modulator) in accordance with the instructions provided with the kit.

The LM741 for the speech amp, and the 74HC04 chip, may be fitted into appropriate IC sockets which, in turn, are soldered to suitably sized pieces of Veroboard. Remember to first cut a shallow slot (junior hack-saw) along their length to separate the pins each side of the Vero "substrate". Avoid poking the socket pins right through (so as not to short to the board foil). These are super-glued (sparingly - no glue must get on the items that take solder!) to their respective

circuit boards as shown.

The drain choke coil is 47 turns of 1 mm (#18 B&S) ecw wound upon a 65 mm (approx) length of ordinary 9 mm diameter ferrite rod/loop-stick material. The start and finish of the winding may be secured with a cable-tie fitted over the winding at each end.

All wiring on the 240 V ac mains side of transformer T1 MUST be suitably covered to prevent accidental contact. Include a 500 mA "slow-blow" fuse as shown.

Operation

Carefully inspect your wiring and soldering for quality and accuracy. Double check for correct polarity of all polarised devices such as ICs, electros, diodes, regulators, transistor, and FETs, etc.

It would be prudent to first verify the supply rails. Remove the 2 A fuses from the modulator amplifier board and the 2 A PA fuse from the power supply board. Apply mains power and check that you have (about) +35, -35 and +12 V dc where indicated. Close the PTT line and

note that the antenna change-over relay A pulls in, whereupon you can measure the +6 V dc supply.

Install a crystal. If an oscilloscope is available, select AM mode, close the PTT line and observe the signal at the gate of the BUZ90. You should see a raggedy square-wave of about 6 V p-p (lower trace - see Photo 2). Adjust the bias pot (initially) for about +3.5 V on the slider. Some salient signal and dc voltages are shown on the circuit to aid in any necessary trouble-shooting.

Replace the fuses. Connect a suitably rated 50 ohm dummy load/power meter to the output. Also hook your probe/oscilloscope to the output connector. Remove the crystal, and then close the PTT line. Adjust the bias pot for just a few mA standing PA current. Re-install the crystal, thus driving the PA. Current should rise to 1 or 1.4 A, and some power output should be indicated. Adjust the series tuning and load compression capacitors for maximum indicated output, which should be 30 to 35 W. If you want maximum efficiency, increase the capacity (clockwise) of the series

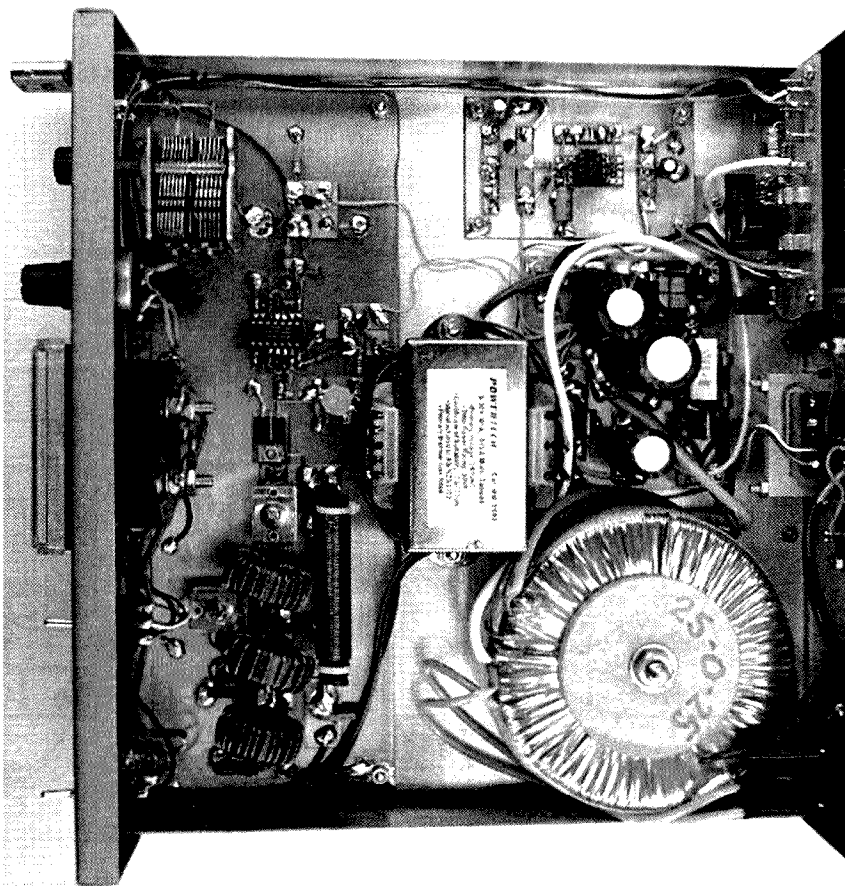


Photo 3 – A top view of the transmitter with the case removed.

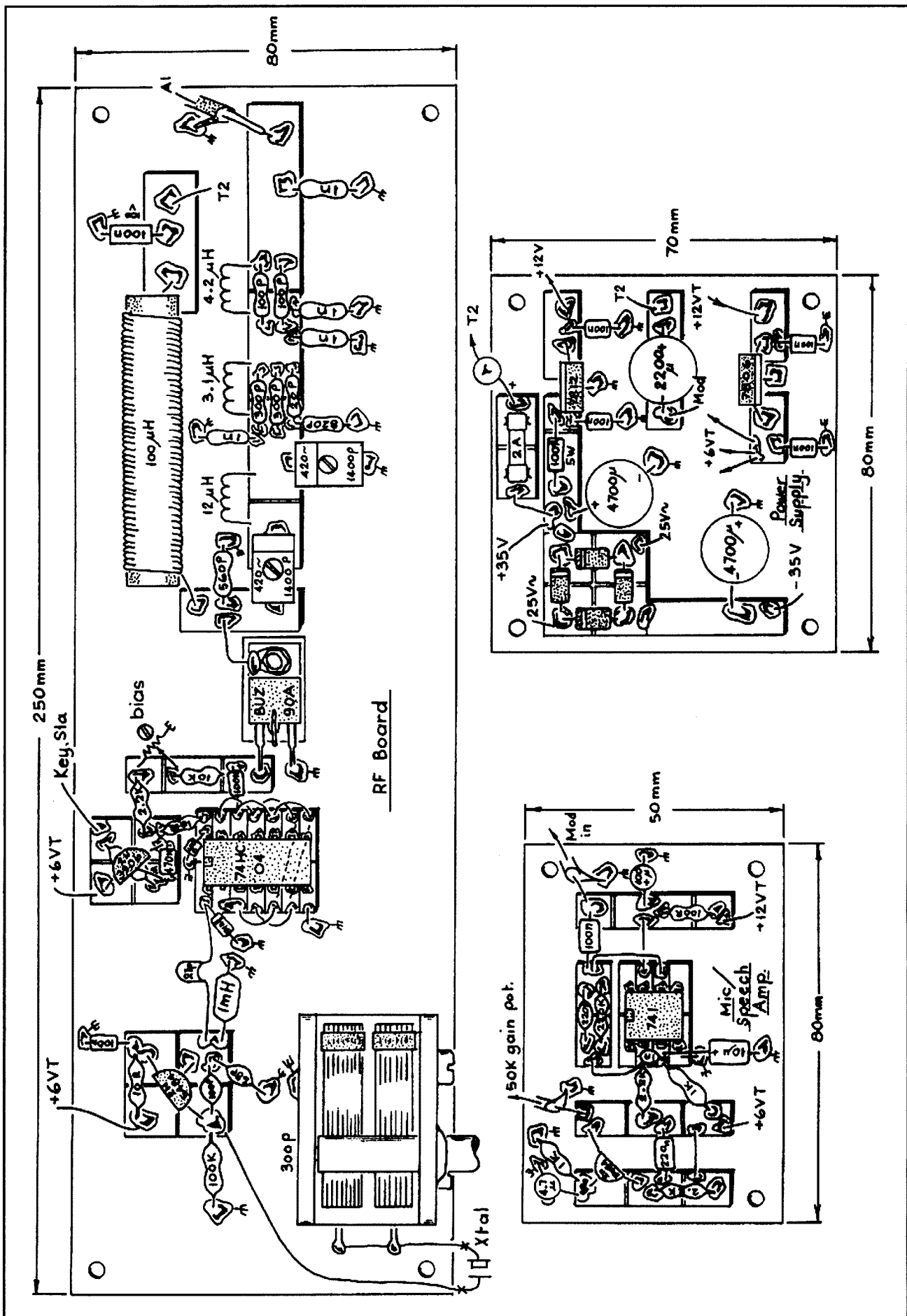


Fig 3 – Layout of the circuit boards and components for the AM/CW transmitter for 1.8 MHz with a Class-E PA.

tuning capacitor for about 1 A drain current, or about 29 W output.

With the 'scope time-base at (say) 0.2 μ S/division, observe a clean sine-wave output signal.

Connect a suitable microphone. Advance the microphone gain and observe a typical AM modulation envelope upon the 'scope. A percentage modulation meter is not essential, as it will be found in practice that 100% modulation is indicated by a slight downward flick of the PA drain current meter.

Verify CW mode by keying the transmitter. You should see a nicely ramped keyed wave-shape on the 'scope (in CW mode, you may notice a smidgen of 100 Hz ripple, which is quite acceptable). In AM mode, the compliance/low impedance of the modulator amplifier acts like a shunt regulator, so there is very little ripple on AM.

Parts

All of the ordinary components are available from our usual electronics suppliers, including Altronics, Electronic World and Jaycar. The toroidal mains transformer may be a Jaycar MT 2114. The "modulation" transformer is an MM 2008, although any generic, multi-tapped 30 V ac/1 A transformer should serve.

The Silicon Chip audio amplifier for the modulator may be a Jaycar kit KC 5150, or an Altronics K 5114. To effectively increase "talk-power", a suggested worthwhile later addition to the transmitter is a "Microphone Audio Compressor Kit", a Silicon Chip project available as an Altronics K 5525.

Capacitors marked "100 n" (outside the modulator) are 50 V monolithic types, except that at the +35 (32) V dc end of the 100 μ H choke, which should be a 100 n/100 V MKT polyester RM 7125.

For best efficiency, the fixed capacitors in the output L/C network and filter should be 500 V silver mica types. These, and the 420-1400 pF compression trimmers (P/N TC-4615), were mail-ordered from Ocean State Electronics (<http://www.oselectronics.com>). Antique Electronic Supply can also deliver silver micas (www.tubesandmore.com).

My Siemens BUZ90A MOSFETs were purchased from Rockby Electronics (<http://www.rockby.com.au>). Their part

number is 12329 and they cost about \$2 each (plus freight, etc).

Crystals for 1.8432 MHz (flying leads) may be obtained from Electronic World (03 9723 3860), Rockby, or mail ordered from Surplus Sales of Nebraska (<http://www.surplussales.com>) with a part number CRY-001843200.

The three Amidon T106-2 toroids may be ordered from any of the suppliers regularly listed in the Hamads section of Amateur Radio.

References and Further Reading

1. "Class-E RF Power Amplifiers"; N Sokal, WA1HQC, QEX, Jan - Feb 2001.
2. Experimental Methods in RF Design; W Hayward et al.; ARRL, pp 2.31, 2.32.
3. "High Efficiency Class-E Power Amplifiers"; D Rutledge et al.; QST, May - June 1997.
4. "Low-pass filters for solid-state linear amplifiers"; K Shubert WA0JYK, Ham Radio, March 1974.
5. "'Paddyboard' Circuit Construction - Revised"; Amateur Radio, May 2005.

Photos: Andrew Diamond (www.andrew-diamond.net).

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SOUTH EAST RADIO GROUP

Radio Convention

June 9th and 10th

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A visit to the shack of Glenn VK4TZL

Ray Elliott VK4BLK

The photos provide a glimpse of the shack, and antenna farm, of Glenn McNeil VK4TZL, who resides in the coastal town of Torquay, south of Bundaberg, in Queensland.

Glenn is a builder and assembler of equipment, and the photos give some support to the view that he is rather better than most at these endeavours.

First, the shack (see Photo 1).

On the top shelf, far left, is a 3.5 kV power supply that provides EHT to the 2 amplifier decks to its right. The first of the decks is a GS35B on 144 MHz, and the second the same tube on 432 MHz.

Below the amplifiers is an old 400 MHz Pentium computer that is used for the Internet, and also runs various other programs, all over serial connections, hence the age of the machine.

On the desk, partly hidden by the desk microphone, are 2 Elecraft K2's, one a 100 W unit for HF, and the other a 10 W unit that is used solely as an IF for the 50/144/432/1296 MHz bands.

Above the K2 transceivers are 3 Elecraft transverters, for 50/144/432 MHz, and a Kuhne TR1296 transverter, for 1296 MHz.

In the rack on the right, from the top, is a fixed channel FM 2 meter transceiver, the EHT

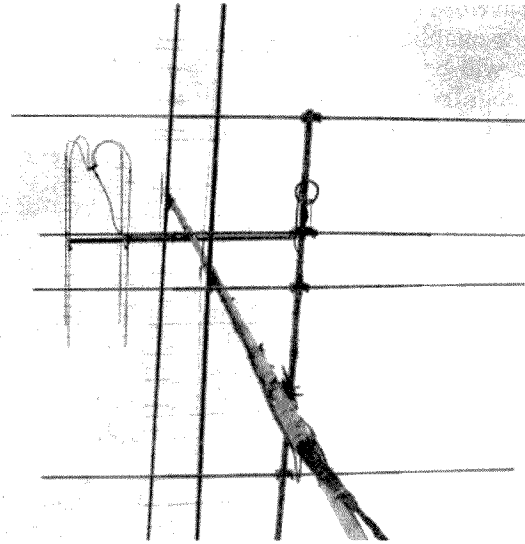


Photo 2: The antennas viewed from below.

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Photo 1: Glenn in his well organised shack.

supply for the 1296 MHz amplifier, and HP 13.8 V power supply that powers all of the solid state gear, and under it is a GS15B water-cooled 1296 MHz amplifier, with its water cooling system sitting on the desktop.

Various other pieces of equipment complement this equipment, rounding off a very impressive, home built/assembled station.

Outside, the antenna set-up is also impressive.

There are 4 by 20 elements on 1296 MHz, 37 elements on 432 MHz, 17 elements on 144 MHz, and shortly 5 elements on 50 MHz. A small 4 element vertical Yagi is used on 144 MHz FM. And all of that sits somewhere on a 10 metre tilt-over mast. Finally, a 3 m dish awaits completion for 1296 MHz.

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An inline TVI filter with Braid Breaker.

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Photo 3: A work in progress – the dish for 23 cm (keeping one of the locals happy).

Plan ahead

**Up-coming Hamfests – Cranbourne, 22 July;
 Perth, 6th August; Shepparton, 10th September;
 Ballarat, 4th November**

A high power 4:1 HF balun

Ron Sanders VK2WB

This article describes a 4:1 (200:50 ohm) balun using a single balun core covering frequencies from 1.8 – 30 MHz at 600 W. There are two configurations which are based on data published by Chris Trask N7ZWY (Ref.1). He used a small balun core which is probably useful for power levels of 20 W, but it was decided to try a larger core to see what power could be achieved.

Construction

The core is Amidon type BN-43-7051 (Ref.2), which has the dimensions shown in Figure 1.

Two circuits from Trask were constructed to see if there were any differences in operation. Circuit A in Figure 2 is said to be suitable for a 4:1 balun where there is a balanced load (no ground reference) such as a dipole, while Circuit B in Figure 3 is suitable for any type of load whether balanced or not.

The windings consist of two transmission lines (T_1 and T_2). Dots indicate the start of each winding to enable correct phasing when connecting the windings. Transmission line theory says that the characteristic impedance (Z_0) of the line used in a transformer should be close to $\sqrt{Z_{in} \cdot Z_{out}}$. In our case this is $\sqrt{(50 \cdot 200)}$, which is 100 ohms.

Since I wanted to operate the balun at high power, it was necessary to choose suitable insulation for the wire forming the transmission lines. When operating at 1000 W, a 200:50 transformer can have 1250 V p-p across the high impedance winding. From previous experiments, I knew that some 18 g copper with PTFE insulation had a $Z_0 = 95$ ohms when formed into a twin transmission line, so it was decided to use a pair of these wires for each transmission line (Ref 3).

Trask used two turns for each transmission line, which meant that eight individual wires passed through each hole in the core. This proved to be the maximum allowable in a 6.35 mm diameter hole. The input and output are at the same end of the core, which reduces the amount of wire outside the core when the windings are connected. This is good for the high frequency response of the balun. The wound balun is shown in Photo 1.

Tests

Initial tests were carried out at low level (0 dBm) with a Ten-Tec Vector Network Analyzer. The VNA requires

50 ohm ports, so two baluns of each circuit (Circuit A in Figure 2 and Circuit B in Figure 3) were connected back – see the results in Figure 3a and Figure 3b. It was assumed that each balun contributed half of the total loss, and each balun had an SWR better than the combination. HF band limits are indicated by the arrow markers.

The above tests show that from 1 - 35 MHz, the combined baluns have very little loss and have an SWR less than 1.5. Figure 3a shows that Circuit A in Figure 2 has a lower SWR at the low frequency end, but a peak near the high end, whereas Circuit B in Figure 3b falls fairly consistently from the low end to the high end. Don't forget that these plots are for two baluns in combination rather than a single balun.

To complete the tests it was necessary to try the baluns with high power at 3.5 and 29 MHz. The idea is to see how warm the baluns get after 30 seconds of continuous output at various power levels. Since I could only operate at 100 W, I contacted a ham who lives locally and can operate all bands from 3.5 to

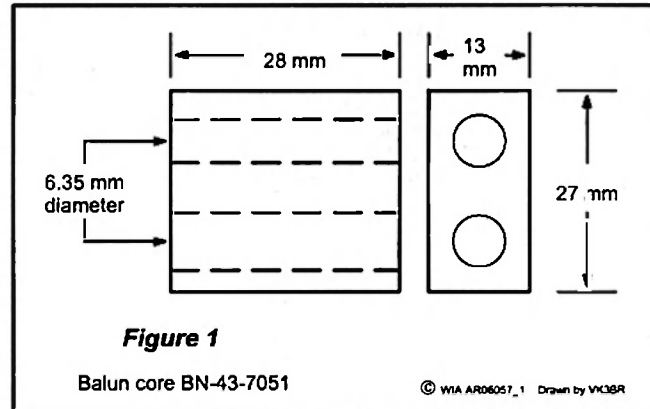


Figure 1

Balun core BN-43-7051

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Figure 1: Balun core BN-43-7051.

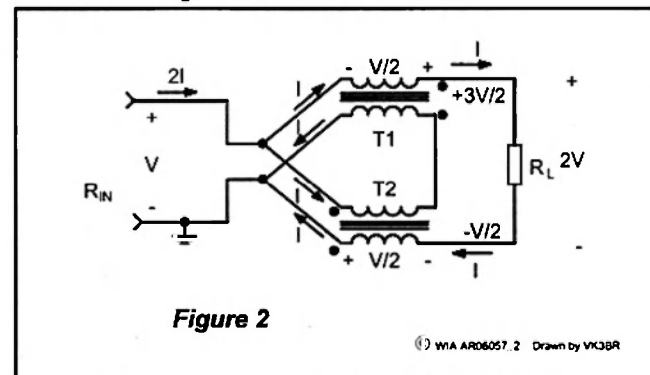


Figure 2

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Figure 2: Circuit A.

29.7 MHz at any power up to 1000 W. His linear amplifier has instrumentation showing RF power and SWR and has complete protection from adverse

Circuit	Frequency MHz	Power W	Results
A	3.5	100	no warmth detected
		500	just noticeable warmth
		800	quite warm
	29	100	no warmth detected
		500	just noticeable warmth
		800	very warm but touchable
B	3.5	100	no warmth detected
		500	just noticeable warmth
		800	quite warm
	29	100	no warmth detected
		500	just noticeable warmth
		800	very warm but touchable

Table 1

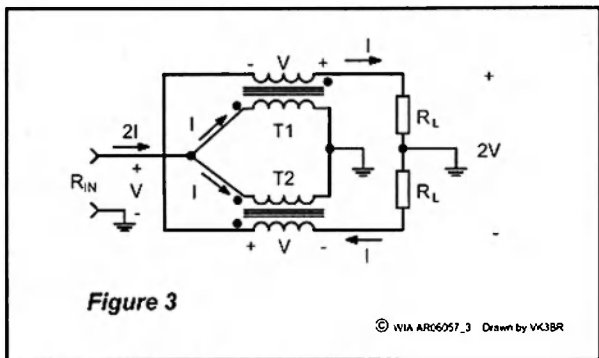


Figure 3: Circuit B.

with the same power. There were no signs of voltage breakdown in the windings.

Conclusion

There is always considerable discussion on the internet about feeding various balanced antennae and what type of balun is required. The “off centre fed” (OCF)

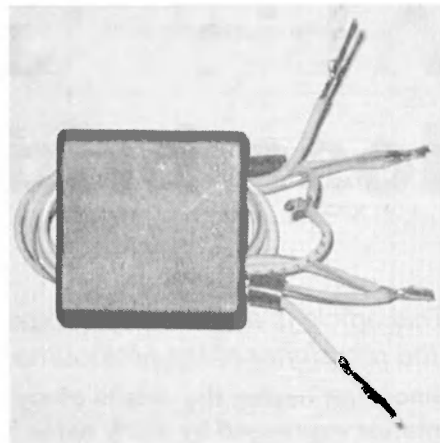


Photo 1: The wound balun.

arrangement, although either circuit is acceptable with the load restrictions listed.

References

- 1 www.home.earthlink.net/~chrstrask
- 2 www.catchnet.com.au/~rjandusimports
- 3 www.magcore.com.au

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operating conditions. The baluns were connected back to back (as used in the low level tests) so that they could be easily inserted in the 50 ohm coax output from the linear amplifier. The results are shown in Table 1 and the two baluns in each combination produced the same results as listed.

The results indicate that 800 W is too high, as high temperature can change the ferrite characteristics and cause complete failure, so it was decided that 600 W would be a safe level for operation. It has been assumed that operation at 1.8 MHz would not cause a problem

dipole is a multiband HF antenna and the general conclusion has been that a 50:200 ohm balun is the best choice. There are other HF antennae which also require a 200 ohm balanced feed and this balun can provide a compact high power solution.

The low level tests provided real (measurable) data on loss and SWR which were reflected in my unsophisticated ‘feel’ temperature tests at high power.

The arrangement of Circuit B is referred to as an ‘improved balun’ by Trask due to its unrestricted type of load. From my tests it is also the preferred

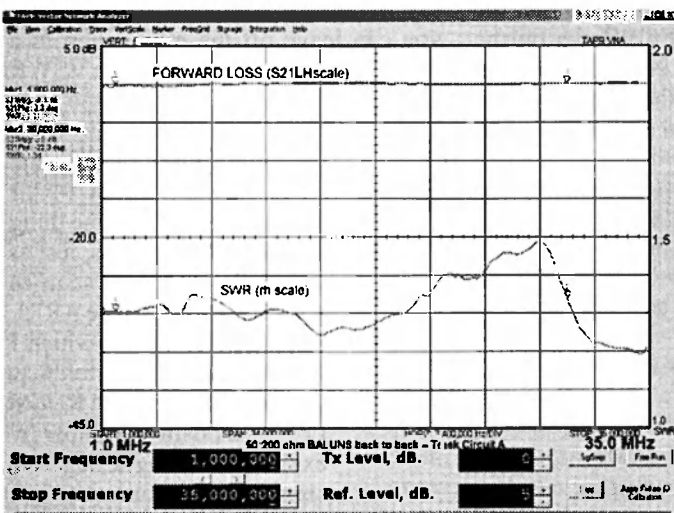


Figure 3a: Circuit A, showing a lower SWR at the low frequency end, and a peak near the high frequency end.

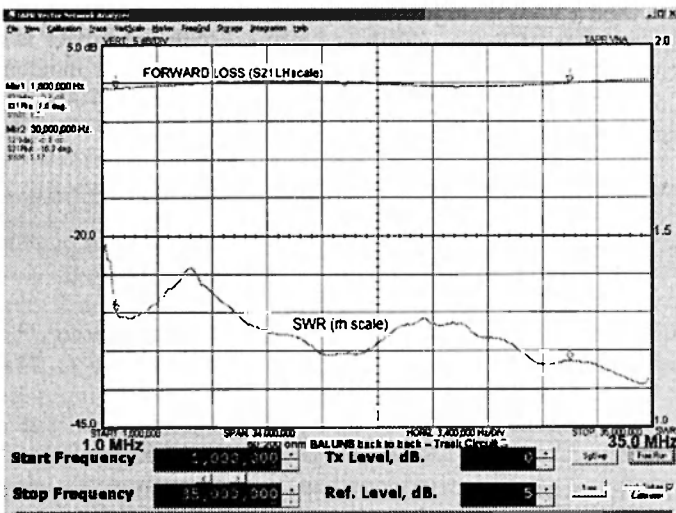


Figure 3b: Circuit B, showing the SWR falling fairly consistently from the low frequency end to the high frequency end.

WIA Comment continued

So, what can we conclude from all of this?

I suggest the evidence is very strong that the new entry level licence is doing what it was meant to do, that is attracting new entrants to amateur radio.

There is some evidence that an acceptable number of these new entrants are seeking to upgrade their licence.

So far as WIA membership is concerned, I think it is obvious that

the increased amateur population has assisted membership growth, but I would like to think there are other factors also affecting the growth in membership.

I hope that one reason is that the WIA is seen as an organisation that is open and active, providing information on what it is doing and providing a friendly and helpful service, particularly through the office.

But I also hope that more and more

amateurs are recognising the importance of the WIA’s advocacy role, for example providing a reasoned and effective voice on issues such as BPL, and as an ongoing advocate on regulatory matters, both nationally and, in this year of an ITU World Radiocommunication Conference, internationally as a serious participant in the ongoing process of international spectrum allocation and regulation.

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A simple wideband return loss bridge revisited

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This article is a revised and expanded version of a shorter article originally published in NERG News, (the newsletter of the Melbourne North East Radio Group), December 2005.

Since first having the details of my Return Loss Bridge published in NERG News, I have had quite a bit of interest expressed by many hams for more information and/or some follow up on the uses for such a device.

I know for some people including too much of the theory can be a turn off, however some people really want to see these sorts of things (and I am one of them), so if you just want to get down to the construction bits I suggest you skip ahead a couple of sections.

What is Return Loss and what has it got to do with a Bridge?

While most hams have heard of VSWR, and used a VSWR (or just SWR) meter, the number of hams who know what Return Loss is or have used a Return Loss Bridge (or RLB for short) is surprisingly small. Surprising, because a

RLB is a very simple but powerful tool that can be at least as useful as a VSWR meter. Do not be confused by the bridge bit of the name, a VSWR meter is also often referred to as a VSWR Bridge, a Return Loss Bridge is just a tool for measuring Return Loss.

Put very simply, Return Loss gives a relative measure of the amount of power returned (or reflected and "lost") from a load, to that power offered forward to, or incident on, that load. Return Loss is usually measured in dB and for example a Return Loss of 20 dB means that the reflected power is 20 dB down on the total power incident, i.e. if the forward power was 100 Watts, the reflected power would be 1 Watt. So a return loss of 20

dB indicates a reasonably good match. For those that want to think in terms of VSWR, a 20 dB return loss is equivalent to about a 1.2:1 VSWR., suffice to say the bigger the value of the Return Loss, the better is the match, and the less power is being "lost" to reflections.

Note there is some potential confusion about the use of a sign on the Return Loss: some say it should always be negative because the reflected power is always less than the forward power and so you should show the sign, and others say because it is always negative that you can leave off the minus sign in a similar way that the ratio bit of a VSWR is often neglected. Others define it as being positive. It is always, however,

the same absolute value, that is, in common use a 14 dB Return Loss is the same thing as -14dB Return Loss, just as a VSWR of 1.5 is the same as a VSWR of 1.5:1. The ARRL Antenna Handbook, which I take as a standard reference, goes so far as to force Return Loss as a positive number by explicitly putting a negative sign in the equation for it, just so that it will cancel out. They do at least mention that some people define it as a negative. As an example of this, the Belden Company, of coax cable fame, subscribes to the "show the negative" school. The important thing to remember is no matter who is saying it, that the reflected wave is always less than the forward wave by an amount equal to the number part of the Return Loss.

For the purposes of this article, I will stick with the

Ref Coeff	Return Loss (dB)	VSWR	Equiv Resistive Load (50 Ohm system)		Ref Coeff	Return Loss (dB)	VSWR	Equiv Resistive Load (50 Ohm system)	
1.00	0	Infinity	Open	Short	0.09	21	1.20	59.79	41.82
0.89	1	17.39	869.55	2.88	0.08	22	1.17	58.63	42.64
0.79	2	8.72	436.21	5.73	0.07	23	1.15	57.62	43.39
0.71	3	5.85	292.40	8.55	0.06	24	1.14	56.73	44.07
0.63	4	4.42	220.97	11.31	0.06	25	1.12	55.96	44.68
0.56	5	3.57	178.49	14.01	0.05	26	1.11	55.28	45.23
0.50	6	3.01	150.48	16.61	0.05	27	1.09	54.68	45.72
0.45	7	2.62	130.73	19.12	0.04	28	1.08	54.15	46.17
0.40	8	2.32	116.14	21.53	0.04	29	1.07	53.68	46.57
0.36	9	2.10	104.99	23.81	0.03	30	1.07	53.27	46.94
0.32	10	1.93	96.25	25.98	0.03	31	1.06	52.90	47.26
0.28	11	1.79	89.24	28.01	0.03	32	1.05	52.58	47.55
0.25	12	1.67	83.55	29.92	0.02	33	1.05	52.29	47.81
0.22	13	1.58	78.85	31.71	0.02	34	1.04	52.04	48.04
0.20	14	1.50	74.93	33.37	0.02	35	1.04	51.81	48.25
0.18	15	1.43	71.63	34.90	0.02	36	1.03	51.61	48.44
0.16	16	1.38	68.83	36.32	0.01	37	1.03	51.43	48.61
0.14	17	1.33	66.45	37.62	0.01	38	1.03	51.28	48.76
0.13	18	1.29	64.40	38.82	0.01	39	1.02	51.14	48.89
0.11	19	1.25	62.64	39.91	0.01	40	1.02	51.01	49.01
0.10	20	1.22	61.11	40.91	0.00	Infinity	1.00	50.00	50.00

Table 1: Reflection Coefficient, Return Loss, VSWR, and Resistive load Equivalences

ARRL version, which has a minus sign in the Return Loss equation, but not in the numbers it produces.

Table 1 illustrates the relationship between Return Loss and VSWR. I have also included the reflection co-efficient and the equivalent load pure resistance values that would apply.

All the relevant formulae for calculating these quantities can be readily found either on the web or in places like references 2 and 3. The only important ones we need here now are the simple ones:

$$RL = -20 \times \text{Log}|\rho|$$

and

$$|\rho| = \frac{|Z_o - Z_u|}{|Z_o + Z_u|}$$

Where

ρ = Reflection co-efficient, and

$|\rho|$ = the magnitude of the reflection co-efficient

RL = Return Loss in dB

Z_o = The reference impedance, or that of the transmission line, in ohms typically 50 Ω .

Z_u = The unknown impedance in ohms

The straight line brackets in the above indicate that the reflection co-efficient and the various impedance terms are actually vector or complex quantities that have both a magnitude and a phase. For our purposes, because Return Loss is not a vector quantity, we only need to worry about the magnitudes, which is just as well as they are the simplest to understand and measure. From here in this article, unless otherwise stated, assume that when I mention the reflection co-efficient, it refers to the magnitude only.

Return Loss bridge basics and the importance of being balanced

The Return Loss bridge presented here is based on the classic bridge circuit shown in Figure 1. If you look at Figure 1a, the ideal case, it is relatively easy to see that if the top two impedances marked Z_o are equal, then the voltage V_r will equal zero or null when Z_u is equal to Z_o . Usually the impedances Z_o are all equal to the characteristic impedance of your transmission line (typically 50 Ω in

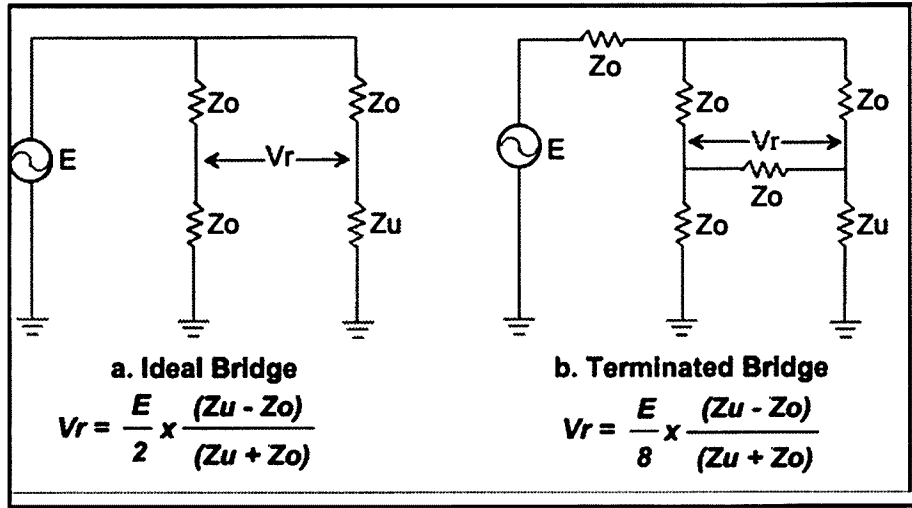


Figure 1: Basic bridge circuits

the ham coax case), and Z_u is connected by a bit of transmission line. You can see that this null will occur when the load, say an antenna, is also equal in impedance to this value. A bit of maths can take this further still and show that in fact in this case, that the voltage V_r is equal to the reflection co-efficient multiplied by a constant value. If we measure this voltage in a logarithmic way (that is, in dB), then the difference between this value, with a particular value of Z_u , and the value with a known reflection co-efficient (typically open or short where reflection co-efficient is one), the constants will cancel out and the resultant will be the value of Return Loss in dB for that Z_u .

Many simple SWR meter and RLB designs are based on this ideal Figure 1a circuit, often using a diode detector to measure V_r . The problem with this ideal circuit is that it is very difficult to provide the ideal required add-ons, that is, the detector measuring V_r must be both perfectly balanced and have infinite impedance, and the signal source must have zero output impedance. While a simple diode detector can have reasonably high impedance, at least at some frequencies it is not infinite, and making it balanced and sensitive at low levels is also difficult. For these reasons many of these simple bridges only give reasonable results when used at significant power drive levels, this in turn causes problems with resistor wattages. A clear indication of problems with this simple design is seen when comparing measurements made relative to a short and an open. Both short and open should ideally give a reflection co-efficient of 1, that is, an equal result, however

with some simple designs there can be considerable differences between the two measurements and usually neither is correct.

An alternative slightly more complicated approach is used in the design here based on Figure 1b, the so called terminated bridge. Here you can see that the source has a real output impedance, and the detector has a real input impedance. This arrangement is more complex to analyse but it can be shown (Reference 4, for example) that, so long as all the impedances Z_o are equal, the equivalent results for V_r being a measure of the reflection co-efficient, all-be-it with a different (smaller) constant multiplier, can be obtained.

The requirements for the Figure 1b case are much easier to satisfy. Most signal generators have a 50 Ω unbalanced output, and getting some sort of sensitive 50 Ω unbalanced receiver or detector is not hard. The only problem left is the connection of the unbalanced detector to the balanced bridge. It cannot be directly connected without unbalancing the bridge and losing accuracy, so some sort of balun is required. Note that the Z_o resistor across V_r , and the one in series with the voltage source, are not physically present in the RLB circuit: they are the signal generator's output impedance and the detector's input impedance, in this case as reflected through a balun. The only thing we need then is a good 1:1 balun and to ensure that what is on one side of the bridge is exactly duplicated on the other, i.e. it is symmetrical. Put another way, great care needs to be taken that the only difference between the reference termination and the unknown side of the bridge is the



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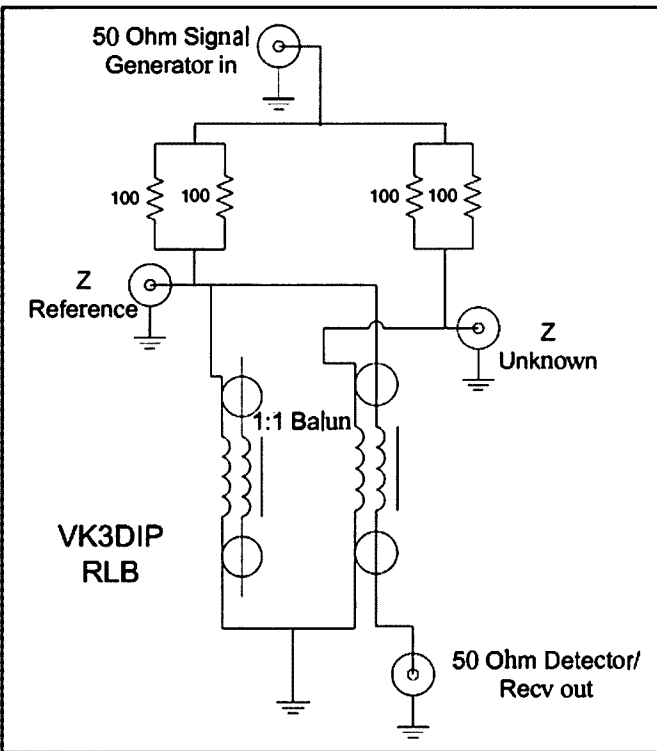


Figure 2: The RLB circuit.

being detected by the diode rather than the actual test signal.

Circuit Details

There are many designs for RLBs available in places like Reference 2 and 3, and on the web and the only claim to any sort of originality here is the combination of components, the layout, and perhaps the construction of the balun used. The RLB presented here is relatively simple to build, costs very little, helps to prevent interference on the bands, and the

unknown, or what you want to measure, itself. For example, many RLB designs terminate the reference side of the bridge directly with a soldered in 50 Ω resistor. While at lower frequencies this doesn't make much difference, as the frequency goes up the differences in impedance between that soldered in resistor and say an exactly equal value resistor, but connected via a BNC plug and socket, starts to make a difference. The purist may say that the bridge is only telling the truth that the connector is not perfect and you should measure it, usually however you only want to measure what is connected by the connector, so by balancing it out it can be removed from the measurement. The design here for this reason uses connectors to bring out both the reference and unknown ports. This also gives increased flexibility to the uses for the bridge. Similarly many designs get over the need for a balanced detector by just using a simple diode arrangement directly across the bridge and even neglecting the inaccuracies caused by the small voltage drop across the reference. The design here instead uses a 1:1 balun, this means we can use a normal unbalanced tuned receiver as the detector, which means measurements can be made at much lower power levels, and there is much less likelihood of getting misleading results caused by the signals of say the local broadcast station

prototype gives good results measured on all the ham bands up to at least 70 cm. The RLB here consists of four resistors, a homemade balun, some connectors, a few bits of PCB, some short lengths of coax, and a box.

The circuit of the RLB is shown in Figure 2.

As can be seen, the four 100 Ω resistors are used in two parallel pairs to give 50 Ω each. I used 1% surface mount resistors to minimise lead inductances and the like. This will however limit the maximum power that can be applied to this RLB but as I intend it only for use with a signal generator, probably via an external attenuator, this is not a problem.

The signal source is connected at the top, and the calibrated receiver or similar detector is connected at the bottom. The two ports in the middle are interchangeably the unknown and reference ports. The 1:1 balun used as indicated in the circuit is a little bit different from what you would normally see and needs a bit more explanation.

Caution, as you will see from Figure 2 in this RLB, the particular design of balun used here means that there is a DC short across all ports save the Signal generator one. A DC only short across the receiver/detector might cause some problems if you are using a transceiver as the receiver which had, say, a DC feed on

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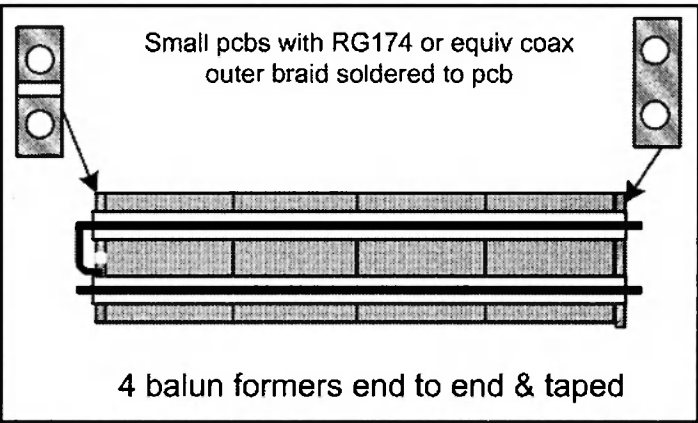


Figure 3: Balun construction.

normal one-to-one transformer balun. This arrangement gives the best of both worlds leading to a balun that is usable over a number of frequency decades. It is this balun frequency response which is the biggest contributor to the bandwidth

make the leads in this case the better.

In my case I fitted the RLB into a small diecast aluminium box, which I understand may not still be available in this size. See "getting the bits" later. If you don't have one of these exact boxes the next size up is still available and you won't have quite as much trouble as I had squeezing the RLB in. At worst you may have to use slightly larger pieces of PCB.

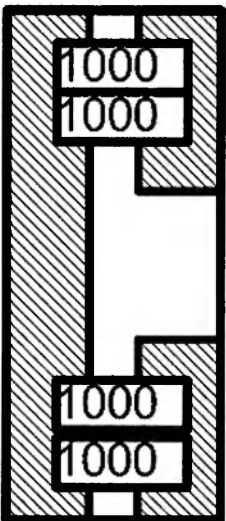


Figure 4: Resistor board.

the antenna connector or some switching voltage present. Similarly if you want to measure an unknown which may have a DC level on it, say the input stage of a pre-amplifier you will need to ensure DC isolation. This will not be a problem for most people but it is worth checking your receiver manual, for instance, before taking any risks.

The Bridge balanced to unbalanced transformer (balun)

Amateurs commonly use two types of baluns; choke/current baluns or transformer/voltage baluns. I won't go into the relative merits of each, as there are lots of opinions on this in the amateur literature, suffice to say here I have used a configuration that is a bit of both. If you just look at the right hand half of the balun it can be seen to be a conventional ferrite choke type, that is, a short length of coax with ferrite beads along its length. The problem with just this alone is that while the impedance of the current path on the coax outer surrounded by ferrite back to earth is quite high it is not infinite and it is only across one side of the bridge. Thus to balance this high impedance we have on the other side of the bridge an identical high impedance to earth formed by an identical piece of coax and ferrite. Note only the outer is actually used on this second piece of coax. This extra balance item also makes the balun equivalent to a voltage or transformer action balun. This can be more easily seen if we forget about the fact that we are using coax and as I am using standard two hole (ie figure 8 style) ferrite balun formers think of it as simply three (one turn) windings on a transformer connected as per a

of this particular RLB.

Construction

Construction starts with making the single most complex piece of the RLB, the balun. The balun is made using four, two hole, ferrite formers taped together into one bigger former, with short lengths of thin coax through the holes soldered onto small bits of PCB at each end as shown in Figure 3 to make the "windings". This can also be seen in Photos 1, 2, 3 and 4 which show the balun in various stages of construction.

The rest of the construction uses another small bit of PCB to hold the resistors as per Figure 4. I used a small hand drill with a milling bit to make it. You could also have a version with slightly poorer upper frequency performance, but better power handling, by not using this board and just soldering pairs of 100 Ω 0.25/0.5 W resistors directly between the various terminals. Obviously the shorter you can

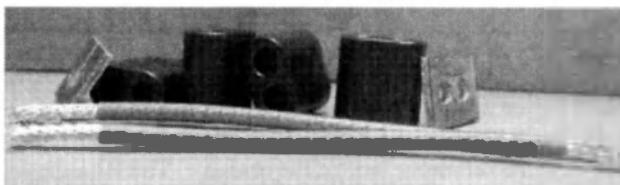


Photo 1: The pieces to make the balun. Note I used small lengths of teflon coax to prevent problems with the inner melting while soldering. Normal RG174 should work also but be careful when soldering.



Photo 2: Partially assembled. Note outer braid of coax is taut, and holds the formers together.



Photo 3: Formers wrapped in tape, I used clear tape just so you could see the formers, but other should work just as well. Also note I had to trim down the end pieces of PCB a bit to fit. The end shown is the end that goes to the resistors so that one centre conductor is bent over to connect to the other side and the other centre conductor is cut off flush.



Photo 4: Close up of resistor end of balun. Note I also had to cut a couple of notches in the PCB to fit the ends of the BNC connectors. You won't need to do this if you use a bigger box.

I cannot however comment on what might be the effect on performance, as I haven't had any feedback from people who have gone down this path to date.

The final assembly is as per Figure 5, and Photos 5, 6 and 7.

Testing it out

The prototype was tested for directivity, which here is simply a measure of the difference between the balanced and maximally unbalanced states of an open and/or a short on the unknown port. This effectively is the maximum Return Loss that can be measured with the RLB. The result should be infinite but in practice a result over 40 db is good enough enabling measurements down to an equivalent VSWR of 1.02 : 1 as shown in Table 1.. The results obtained from the test setup shown in Figure 6 are shown in Graph 1. For interest these results were obtained using two identical cheap coax ethernet terminators. The two curves on Graph 1 show the measurement relative to an open circuit and a short circuit.

The results show the RLB is quite useable with a greater than 40 dB value obtained over the full range of ham bands up to and including 70 cm. The RLB is particularly good over the VHF 28 to 144 MHz bands where directivities in the very high fifties, were obtained. This compares very well to equivalent commercial models of RLBs.

The very good agreement between the open and short cases demonstrates that as well as the RLB being well balanced that the impedances seen at the source and receiver ports are close to 50 Ω. This is in part due to judicious use of the fixed attenuators. I placed the 12 dB at the receiver end because I was less sure of its input impedance, whereas the signal generator I used is known to be a reasonable 50 Ω source.

Note: The testing done here was with my own far from laboratory standard equipment at a relatively small number of discrete frequencies. A sweep using a spectrum analyser or network analyser might find some dips and bumps that I didn't happen to spot.

Some Return Loss bridge accessories

In Photo 8 you will see the RLB along with some of the various accessories I use with it.

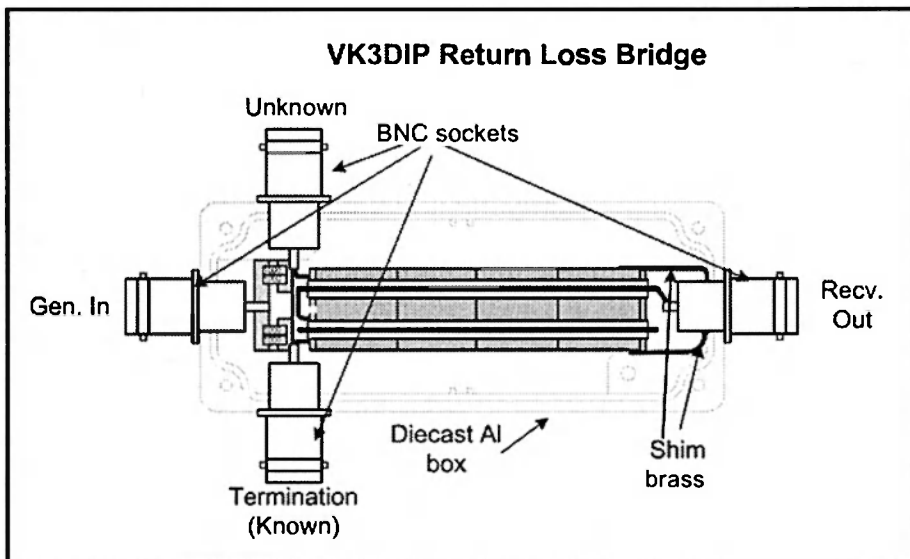


Figure 5: Fitting it together.

1. Attenuators, fixed and switched variable.

Photo 8 item 1 shows a number of fixed attenuators. I use this set for many things, it is made up of 1, 2, 3, 6, 12 dB values. This combination ensures I can make up any value from 1 to 24 dB in 1dB steps. Some of these came from surplus, but the others can now be purchased for quite reasonable prices from Jaycar. As well as these fixed attenuators I also use some switched (not shown) ones as the case requires. These are either home made or ratted from dead signal generators.

2. Terminators - matched, open, and short

Shown in Photo 8 item 2 is a set of special BNC terminators, one each of open, short, and terminated (that is, 50 Ω), also shown here is how two 50 Ω

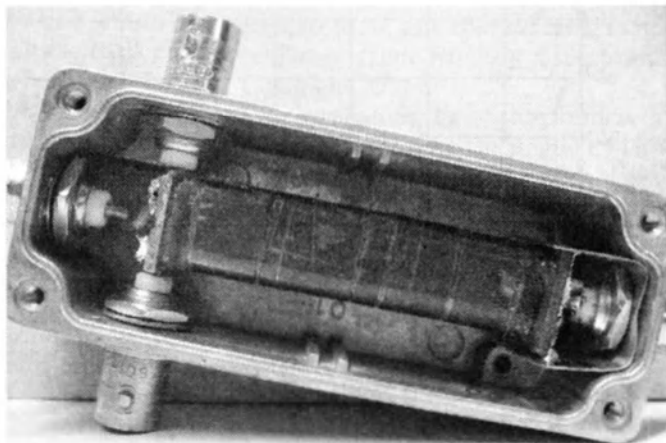


Photo 5: Balun inserted in box. BNC connectors were put in first then the balun soldered at the reference/unknown end first. The balun then hinges at this point and can be swung down to mate with the brass shim and the receiver BNC.



Photo 6: Close up of the reference/unknown end.

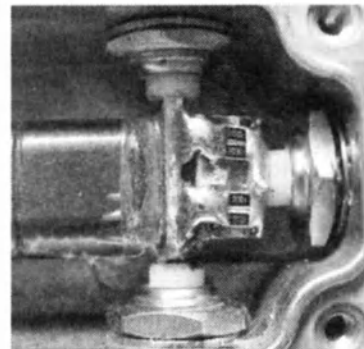


Photo 7: The resistance board added.

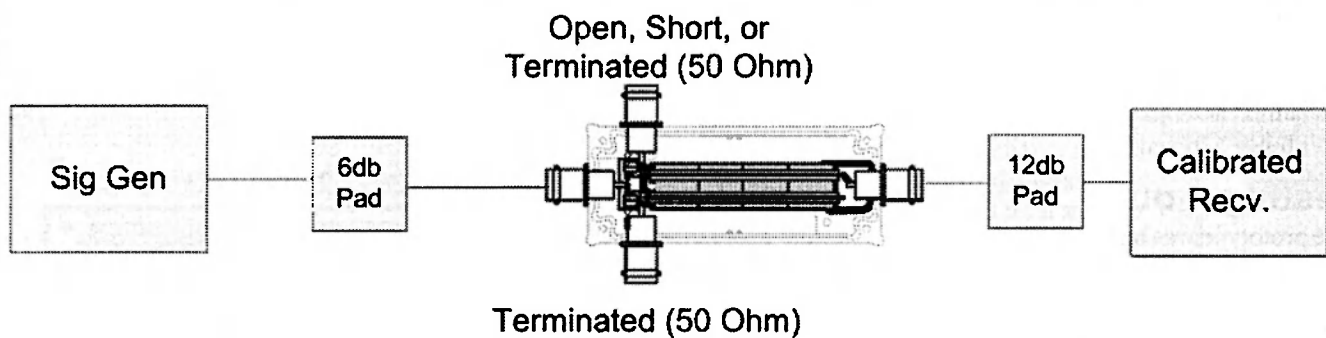
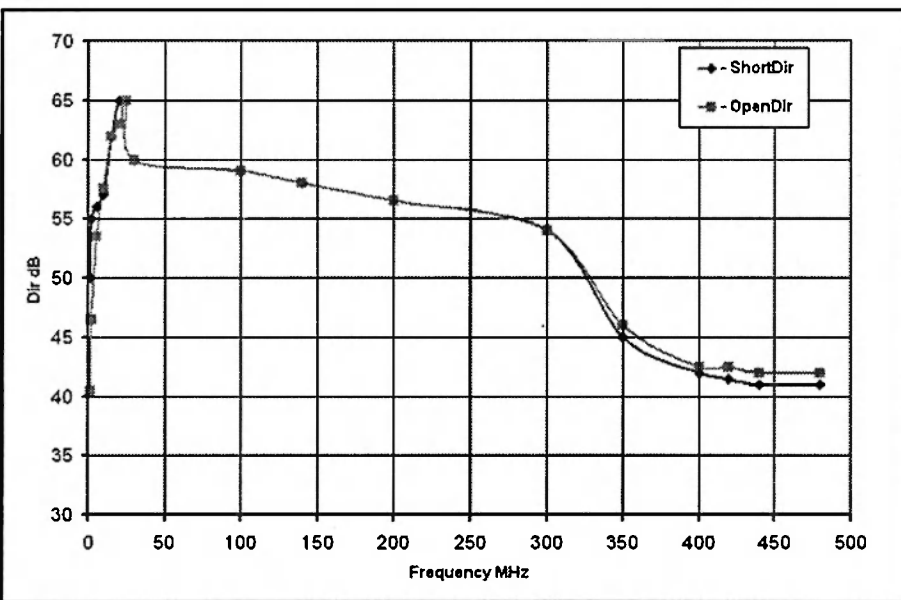


Figure 6: The test setup, the pads are to minimise effects of varying loading and frequency changes of the impedances of the signal generator and the receiver.



Graph 1: Measured directivity of the prototype showing usable directivity up to at least 70 cm.

terminators can also be combined with an ex-LAN BNC tee connector to produce a known 25Ω load or 2:1 VSWR, which is about 9.5 dB Return Loss. I tried various versions of these and if you don't have access to commercial ones, the best I found was to get some surplus ethernet (that is, computer networking) 50Ω terminators and use those as the basis. There was considerable variation between the many different "brands" of terminators, so test what you find before you rely on them. The best ones I found were those shown which have a green plastic top on basically a standard crimp BNC connector with what looks like a 1 watt 50Ω metal film resistor in the body. The green cap can easily be removed to get access to the resistor. To produce the open circuit, just snip off or otherwise disconnect the end of the resistor lead connected to the outer of the connector, and the short circuit is made by removing

the resistor entirely and replacing it with a bit of wire connected to a bit of brass shim across the body of the connector. I got my versions of these terminators from Rocky Electronics, who had them for 30 cents each.

3. Broadband Detector

Photo 8 item 3 is a home-made broadband diode detector. This was made yet again utilising one of the cheap Ethernet terminators mentioned above by removing the resistor and replacing it with a hot carrier diode. One end of the diode goes to the centre pin and the other to a feed-through capacitor attached to the connector body by a small extension made out of brass shim. A digital, or otherwise, multimeter is connected to the end. The BNC tee piece is used as shown to make it either a 50Ω (or other) terminated style detector or by itself as a high impedance detector. I could

calibrate this but as I mainly use it for relative measurements I haven't needed to as yet.

A much better solution for this would be something like an AD8307 integrated circuit logarithmic detector from Analog Devices which gives a 93 dB range at greater than 500 MHz. An even better one would be one based on the AD8302 which adds phase detection as well and works up to 2.7 GHz, even though it does have a slightly lower dynamic range. It's a pity it is so difficult to get these bits in one offs in Australia, as with the one IC AD8302 and this RLB you could basically have the main parts of a vector impedance meter/ network analyser.

4. Variable R/X widget

This RLB isn't only useful for measuring return loss. By just connecting a variable impedance to the reference port, the RLB can be used as a simple impedance bridge. I just tweak a couple of components on the BNC is then just removed from the RLB and placed on a RLC meter or equivalent for measurement at a few kiloHertz or other more manageable frequency. Of course if just using a resistor, your multimeter will do fine. Photo 8 item 4 shows a case of a 500Ω pot, and a 100Ω trim pot in series with a trim capacitor.

5. Broadband Amplifier.

One of the problems with a broadband diode detector is correctly detecting deep nulls. Or more correctly, differentiating deep nulls from small dips. As the diode output tends to drop off rapidly at the low end, this can be a problem. You can of course use more power but if you want to do measurements over a broad range of frequencies you may not have suitable

transmitters for this, you also run into power dissipation problems. To help with this, I have made up a small box with basically a hybrid IC as used in TV antenna masthead/distribution amplifiers which basically gives me some 16 dB gain fairly flat from a nominal 30 to 870 MHz, with usable gain either side extending its usefulness (Photo 8 item 5). The impedance is a nominal 75 Ω but the datasheet (and my tests) show it working fine at 50 Ω using some of the fixed attenuators to give a clean 50 Ω to the RLB.

This is a good example of where using Return Loss to work out what happens is easier than VSWR. If we just connected say the 75 Ω directly to the 50 Ω system, then from Table 1 looking up the equivalent load resistance column, we could see that this would be a 14 dB Return Loss (also a 1.5:1 VSWR as expected). If we added now a 6 dB fixed attenuator then this would simply add 12 dB (twice the attenuation because the forward wave passes through it once, and once again for the reflected wave on the way back) to the Return Loss giving 26 dB which again Table 1 shows as an equivalent load resistance of 55 Ω and a VSWR of 1.1:1. A 12 dB attenuator adds 24 dB to the Return Loss and leads to a 51 Ω equivalent impedance and a 1.025:1 VSWR. In practice, it works even better than this as the nominal 75 Ω of the amplifier was actually lower than this value. How do I know? Simple: I measured it with my RLB!

6. Known Coax Lengths and Connectors.

Photo 8 item 6 is just one example of the miscellaneous bits of coax and connectors that can be used with the RLB. The item shown is useful for connecting to items under test at lower test frequencies. One of the very useful items in this class is a bit of coax a multiple of half waves long at the measurement frequency. This comes in handy when measuring impedances as it saves having to calculate the actual value at the load or antenna using a Smith chart or equivalent computer program.

7. Other Bits not shown.

As well as the above, there are a number of items of test equipment that fit in well or are required with the RLB.

A low power transmitter or one with a power attenuator on its output can be used as a signal source but a good

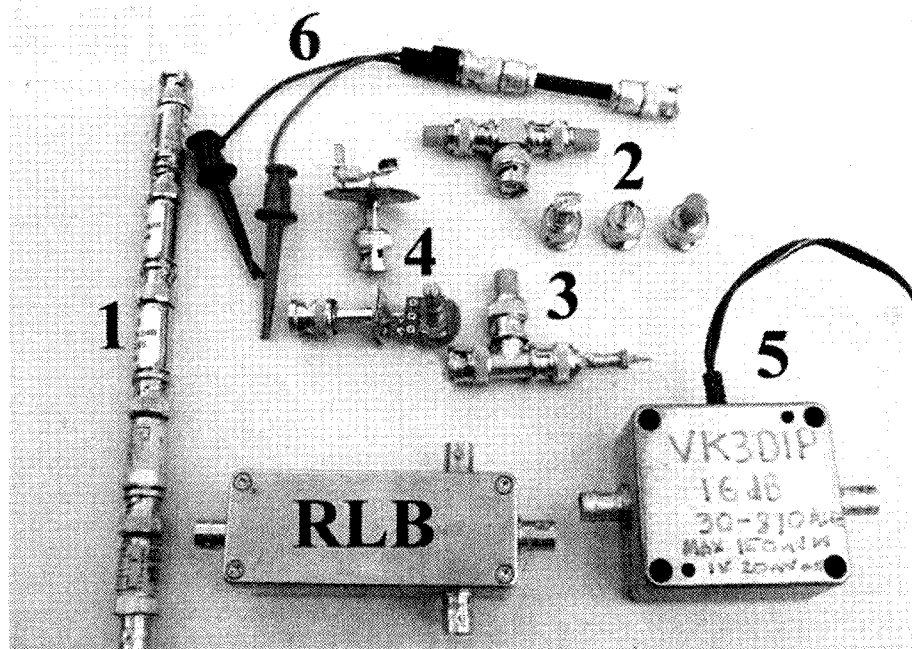


Photo 8: RLB and accessories

signal generator is much more friendly, with simple control of levels and usually well known output impedance characteristics.

The diode detector and amplifier above can be used with the RLB but a tuned receiver will work much better at exploring deep nulls while rejecting the local broadcast band station. Any receiver with a good S meter can be used, but few ham band models have a true 50 Ω input impedance, so here again the fixed attenuators come in handy. A calibrated receiver, a frequency selective voltmeter, or even a spectrum analyser, would be better still each having better known impedance characteristics, built in attenuators, and higher dynamic range, but few hams can run to these.

Something that a number of hams have is an oscilloscope. The oscilloscope, (with either attenuators, or a parallel 50 Ω load using a BNC tee piece for impedance matching) makes a very nice detector when used within its frequency range. It can also show if you are getting any distortion or unwanted signals coming in.

Finally the holy grail of RLB use is the network analyser, or vector network analyser, this does it all, being the signal generator and the detector giving both magnitude and phase of the reflection co-efficient. While there are some home made versions of these out there they are still very complicated beasts. Maybe if AD8302's and equivalent DDS IC's

get more readily available to the ham community here, this will change.

Getting the bits

Resistors: I got the surface mount resistors from Rockby Electronics, Catalogue 27556.

Ferrite baluns: Two balun formers in a packet from Jaycar, Catalogue LF1220.

Box: The 36 x 90 x 30 box I used originally came from Dick Smith, Catalogue H2230, and you may be able to find the same thing at other suppliers. Some people may have difficulty with this small size, so using the next size up diecast box, such as the Jaycar Catalogue HB5062 will make things a bit more roomy to work in and is a bit more commonly available.

PCB, and BNC Connectors: Places such as Dick Smith, Jaycar and Rockby have these.

Coax: In my case, from the junk box. You might have to get creative if you decide to use teflon coax, as the only commonly available type I can find would be either the local club hamvention for surplus/second hand, or cutting up the Wi-Fi extension cable sold by Jaycar, Catalogue WC7802.

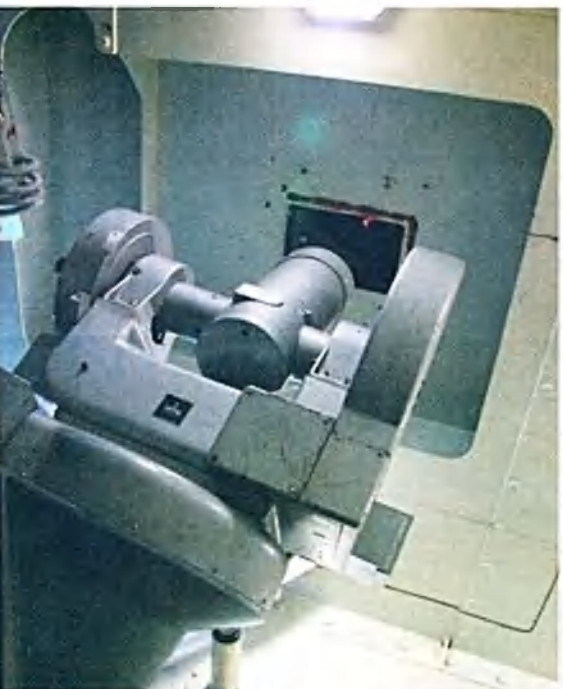
Fixed Attenuators: Make them yourself or see Jaycar, Catalogue LT3053 and similar.

Ethernet Terminators: Most computer swap meets, or Rockby, Catalogue 12984.

continued on page 30

Postcards from Parkes — A selective photo essay of the AGM weekend

Photographs by Robert Broomhead VK3KRB, Peter Freeman VK3KAI and Chris Morley VK3CJX. Text by VK3KAI



The Master Equatorial (ME): the heart of the pointing system for the radio telescope. Precisely aligned with the South Celestial Pole and the axis of rotation of the dish structure, the ME is moved by the guidance computers to the desired direction. Servo mechanisms plus laser optics then move the dish and its support structure (at 1000 tonnes), until all is in alignment. VK3KRB



As we were inspecting this original component of the system, a large repositioning occurred. It was strange having to then see the entire dish structure starting to move to the new position (VK3KAI)



One of the well shielded PCs in the administration building. All leads to and from the PCs are filtered. VK3KAI



A tour group about to enter the radio telescope building, with the now unused 18 m "small dish" in the background. VK3CJX



Hayden McKeanus VK3JFRT with his President's Commendation Award, received from WVA President Michael Owen VK3KI. VK3KRB



A tour group examines the rotating drive mechanisms of the radio telescope — essentially an oversized battleship gun turret drive mechanism! The people on the gallery give scale to the immense size of the dish. VK3KRB



Brett Davison VK3CDBD repairing the hanging cable network, which allows the dish to rotate 540 degrees before needing to unwind. Brett, the Receiver Engineer and second in charge at the facility, explains that the cable run is 150 metres from the analogue receiver units on the third level of the building up to the Focus Box. VK3KRB



John Sarkisian, Operations Scientist, explains how the Receiver modules are assembled. VK3CJX



Staff at "The Dish Café" were kept busy on Friday evening, with approximately 130 amateurs and family in attendance in addition to the members of the Central West Astronomical Society. VK3CJX



An animated Rex VKZMO receives the Ron Wilkinson Achievement Award on behalf of Justin Giles-Clark VK7TW. VK3KRB

A simple wideband return loss bridge revisited *continued*

What can you do with this Return Loss bridge?

1. Measure Return Loss, magnitude of the reflection coefficient, and VSWR.

Measuring Return Loss is straight forward with two basic techniques that can be used. Which is easiest will depend in part on the actual signal generator and/or receiver you use.

The first method I find simplest if you have a reasonable signal generator with good variable output level/attenuation, but are perhaps using a normal ham receiver or un-calibrated diode detector. In this method the first thing you do is set the equipment up more or less as per Figure 6 and with a short or open connected to the unknown port, and the reference terminated with the 50 Ω load, set the output level of the signal generator such that it is on the frequency of interest and there is a well recognisable level indication on the receiver, say S 9 on the meter. The absolute level doesn't really matter, just that you can tell easily when you are there, and that you have noted both this level and the setting on the signal generator that produces this. The open or short termination is now replaced with the unknown you wish to measure, and the output from the signal generator increased (assuming here that the unknown is better than an open or short) until the reading on the receiver is back to the original say S 9. The difference in level of the signal generator before and after is the Return Loss, which, if as usual the signal generator output level is calibrated in dBs, will be in dBs.

The second method is similar to the first but here instead of starting with the open or short we start with the unknown connected and set the value, then connect the open or short, and increase the attenuation between the RLB and the detector until we are back where we started. I find this works best if your detector is a bit deaf as you set the first level which is the lowest such that you know you can detect it.

Obviously any combination of these two extremes also works. Basically you are simply getting a measure of the difference between the open or short and the unknown case. Remember however bigger number means better match.

Given the Return Loss, getting the magnitude of the reflection co-efficient, or VSWR is either a case of just looking up Table 1, or calculating them using some computer program or equivalent.

Remember this works whether you are using an antenna on the end of a transmission line, or the input of a gee-whiz pre-amplifier you are building. This is something that would be impossible in the normal VSWR case due to the power levels you would have to be using.

Sometimes you don't need to measure the actual value of Return Loss, just to maximise the value (that is, minimise VSWR, minimise reflected power, get the best match, and so on). As an example of this, say you are trying to optimise the input to an amplifier stage, you can just connect it to the RLB and tweak its input matching until you get a minimum (null) on the receiver.

2. Measure coax losses

Given a length of coax that you want to measure the losses of, the line loss is found by connecting it to the RLB with the reference port terminated in 50 Ω, and the line open circuited at the end. The Return Loss is then measured as per 1 above. With no losses in the coax, there will be no difference between the open circuited coax connected to the RLB and the open circuit terminator connected. For practical cable with losses, we have the case similar to the impedance matching using attenuators mentioned earlier, i.e. the coax losses will be half of the measured improvement in Return Loss. Remember the factor of two is because of the power having to travel once along the line from the RLB to the open circuit at the end of the coax and once as the reflection all the way back.

3. Measure coax, physical and electrical length

Connect a shorted termination to the reference port, so we are not really measuring return loss but more using the bridge aspect, and short the end of the piece of coax to be measured and connect it to the unknown port. Now as you sweep the frequency from your signal source you should notice that the output on the receiver/detector (that is, amplitude,) goes from peaks to nulls. The nulls will correspond to frequencies where the electrical length of line is a multiple of a half wave at that frequency, and the peaks will be when the line is

an odd multiple of a quarter wave at that frequency. At the half waves, the short at the end is being repeated at the unknown port and balancing the short at the reference port. At the odd quarter waves, the short is transformed to an open at the unknown port and this maximally unbalances the bridge. If we want to find the physical length and we know the cable velocity factor then you measure the frequency difference between two adjacent nulls (or two adjacent peaks if that is easier to see) and then cable physical length (ignoring losses) will be given by:

$$L = 150 \times \frac{Vf}{\Delta F}$$

Where:

L = physical length in metres,

Vf is the coax velocity factor as a fraction, and

ΔF = frequency difference in MHz of adjacent nulls.

Note the nulls must be adjacent for this to work, that is, next to each other frequency wise with no other null in between, this ensures that the difference in the multiples of half waves is one.

For example, if you measure nulls to be at exactly 10 MHz, and the next at 20 MHz then the frequency difference will be 10 MHz. If the cable velocity factor is 0.67 then the physical length is:

$$150 \times 0.67/10 = 10.05 \text{ metres.}$$

You can work back the other way if you know the physical length to get the velocity factor of a piece of cable from:

$$Vf = \frac{L \times \Delta F}{150}$$

For example, you measure your cable to be physically exactly 10 metres long and the nulls are exactly 10 MHz apart then the velocity factor will be $10 \times 10/150 = 2/3 = 0.66667$.

The accuracy of these values can be improved by using an average value for the frequency difference, that is, if you find three nulls and the differences are 10.1 MHz and 9.9 MHz then the average value of 10 MHz will give a better result.

For short pieces of coax it is probably simpler to use the same set up with shorted cable and short reference and just find a single null and use:

$$L = N \times 150 \times \frac{Vf}{F}$$

Where:

N = the whole number multiple of half wavelengths in the cable,

F = the frequency of a null in MHz.

You need to first estimate what multiple N is of course but you can usually get a reasonably good idea of this whole number by using typical cable velocity factors and measured length.

This approach also works for cutting a length of coax to a specific electrical length. In this case it is simpler to have the coax open circuited where the nulls will correspond to odd multiples of quarter waves and the peaks be half waves.

For example, if you wanted a piece of coax exactly one quarter wavelength electrically long at a particular frequency, then you roughly calculate the length based on published coax data, add a bit just in case and connect it to the unknown port with the other end open. The signal generator is set to the frequency of interest and with the reference port shorted, you cut bits off the coax until you get a null on the receiver/detector. If you never get a null then the safety margin you added at the start must not have been enough and/or the cable is not as per the published specifications for velocity factor.

4. Measure the impedance of an antenna/load/component

There are several methods for calculating impedance using a RLB. The simplest is if you can measure both magnitude and phase of the reflection co-efficient, but as that requires more complex test equipment than most hams have access to (or one of those elusive AD8302s), other more complicated methods have been found to get around this. All of these methods rely on doing a second measurement using either an added known resistor in series with the unknown, or changing the effective system impedance series. These all require quite complex calculations or playing with Smith charts to get a result, often when you are done you still do not get the sign of the reactance. Further method descriptions are well beyond the scope of this article, but have a look at references 5 and 6 if you are interested.

A simpler method uses the RLB as a normal bridge by replacing the reference terminator with a variable component such as shown in Photo 8 item 4. Using this method, the unknown is connected up and the reference is replaced with

one of these R-X widgets and the values adjusted until a null is achieved, ie at the frequency under test the impedance of the test item will be exactly the same as the tweaked value of the reference.

This is basically using the RLB as a classic impedance measurement bridge. In the classic bridge case, a lot of the work required to build one is spent in calibrating the scales on the variable components and trying to get the range of values required. In my case, it may take a little longer to take a measurement, and may occasionally require a soldering iron to add some more C or to replace the variable C with some variable L, but no up front calibration is required. Instead once the null has been achieved, I simply disconnect the BNC connector with the widget from the RLB and connect it to either a multimeter if I was using a single resistor, or some form of audio or other RLC measuring device.

One I find works particularly well in this case is a PC soundcard version (Reference 7). The only tricks are (1) that you need to get your LCR meter to measure in ohms for resistances, farads for capacitors, and henries for inductors, then you can convert them into reactances at the particular frequency of interest if you need them, and (2) that if you want to measure an impedance at the other end of a bit of coax, you can either use a Smith chart or a computer program substitute like the ARRL TLW program, or again as I have mentioned before, use a piece of coax that is an electrical multiple of a half wave at the frequency of interest.

This later technique can also be used to work out the impedance of a bit of unknown coax by measuring off an electrical quarter wavelength as per 3 above and then terminating it with a known resistance, and measuring the effective impedance at the bridge.

The coax impedance can then be found from:

$$Z_o = \sqrt{Rk \times Rm}$$

Where:

Z_o = coax characteristic impedance,

Rk = the known test terminator value at the end of the coax,

Rm = the measured value at the port, all in Ohms.

5. Use it as a hybrid combiner

The RLB described is identical to a hybrid combiner. These are used to combine the signals from two signal

generators (connected to the source and receiver ports of the RLB) to one signal at the unknown port. The circuit here is such that neither signal generator output will affect the other one, and the output impedance will be a clean 50 Ω one. This setup is common when doing two tone inter-modulation testing of receivers.

6. Do network analysis

If you happen to have a network analyser or a spectrum analyser, then you probably already know the sorts of things you can do with them and a RLB.

Conclusion

Hopefully, you are motivated to build one of these, and are asking how did I ever survive without one. Perhaps more realistically, you will keep this in mind as a possible cheap and simple construction project that you could try out one rainy weekend. While I have described a lot of things you can do with this bridge, I am sure that hams out there can think up many more useful things it can do. Not bad for something with no active components and just a couple of resistors and a balun.

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4. "A Bridge Method of Sweep-Frequency Impedance Measurement" - Ken Simons W3UB
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5. "Measuring Complex Impedance with an SWR bridge" Randy Rhea WB4KSS
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6. "Impedance measurements using an SWR meter" Ben Lowe K4QF
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QEX, September/ October 2005, p 41-47

VK2

Tim Mills VK2ZTM

Via vk2wi@ozemail.com.au

Clubs

On Saturday morning 23rd June, the Waverley ARS will have their annual auction in their club rooms at Rose Bay. The Oxley Region ARC has its annual Field Day at Port Macquarie over the June long weekend 9/10th. The new, Mid North Coast Amateur Radio Group is getting in early advising their 2008 Field Day, scheduled for Sunday 20th January at St. Johns Church Hall in Coffs Harbour. Summerland ARC have their SARCFEST on Sunday 12th August. The Kurrajong Radio Museum, developed by Ian VK2ZIO, was featured in the May 2007 edition of *Silicon Chip*.

WICEN (NSW) Inc is involved in the Nav Shield exercise over July 7 and 8, the annual Shahzada Horse Enduro for a week at the end of August, and the Hawkesbury Canoe Classic at the end of October. These events require a lot of personal input and they are also fun. Another active WICEN region is up north with the Summerland ARC. Contact with WICEN is by post to P. O. Box 126 Gosford NSW 2250. Telephone to the Duty Operator 0408 397 217. Email to operations@nsw.wicen.org.au or visit www.nsw.wicen.org.au

Many repeater groups across the country have trouble obtaining and keeping an economic site. Access is no longer cheap. The problem confronts the Sydney based St. George ARS who provide the Mt. Bindo VK2RDX 6650 repeater on the western edge of the Blue Mountains. Installed in the early 1970s, the site has had a colourful history. Soon after it was installed, persons unknown cut the tower down, twice. The site is a fire watch location. In the early days of country television, an off-air reception point was established there to source Sydney programs for the Orange commercial. The television equipment was housed in a purpose built solar-powered installation. When linking of television services improved, the installation became vacant and St. George was able to take over the lease and building. The full price of the lease is several thousand a year and until recently St. George was able to obtain a substantial discount, which made it an

attractive system to provide for amateurs west of the mountains. Now the discount has been reduced and the new rent is a quarter of the annual site fee. This year St. George is able to fund the rent but they have to consider the future. A lease condition is that the installation be totally removed and restored to its natural beauty once the site is no longer required, an expensive exercise. St. George are considering their options.

ARNSW

The AGM for ARNSW was held on 14th April with a good attendance. There was the required number of candidates to fill the Council positions, so an election was not required. A few matters were raised by members with the reports and accounts, which will be addressed by the incoming Council. The main office bearers determined after the AGM were President – Norm Partridge VK2TOP; Vice President – Barry White VK2AAB; Secretary – Brian Keegan VK2TOX and Treasurer – Beth Langley VK2AO. Other positions were to be determined at the first committee meeting in May.

At the formation of the new WIA structure in 2005, the VK2 QSL Bureau, operated by Westlakes ARC, became a national service. ARNSW arranged a two year service of forwarding cards to VK2 members. This arrangement will terminate at the end of June this year. VK2 amateurs will have to make direct contact with the QSL Bureau to arrange delivery of QSL cards from the 1st July. Contact can be made via Westlakes voice mail box on 02 4958 1588.

The installation of a shed at Dural was again delayed in April when the local council decided it had to be set further from the side boundary. This has put possible approval and construction back a few more months. It had been expected that the office facility would have by now been at Dural. When the Wigram Street property was sold, the telephone number was redirected to the temporary office. This redirection may end this month and a new number may be required for ARNSW. Details will be given in VK2WI News and this column once determined.

The next exam provided by ARNSW has been changed to the weekend of June 30 and July 1. Applications will close on Tuesday 19th June. The next T&T will be Sunday 29th July. The Veterans Group of ARNSW meets on the third Thursday of the month at 11 am at the Ryde Eastwood club at West Ryde, the location of the recent AGM.

VK2WI

The transmission from VK2WI at 10 am is provided on a range of frequencies from 160 metres to 23 cm. Regional repeaters are important, providing local area coverage. Those close to Sydney are linked to VK2WI. Those further afield rely on local amateurs taking a signal from one or more of our HF frequencies and feeding it into their local repeaters. Band conditions often make this difficult, with the 80 metre ground wave dropping out before the 40 metre skip comes back to earth. To overcome this, VK2WI has been licensed by ACMA for a 5 MHz fixed service frequency to provide a link function. The service will be introduced as soon as the installation is carried out. It will operate on the frequency of 5423.5 kHz with 100 watts in the USB mode. It will be identified as VK2RWI and will transmit only – defined as a single to multipoint service. It is a different frequency from those allocated to WICEN. A morning only transmission, it is not yet available for evening.

The evening VK2WI news service at 7.30 pm to the country regions has to rely primarily on 80 metres, as the previously mentioned overseas DRM transmission has returned to co-channel the 40 metre -7146 kHz signal. Australia is off the side of the DRM antenna and it is reported that the DRM signal does not venture across the Great Divide. Reports on the level of interaction between the transmissions would be welcomed. If you want to check out DRM signals, see the article in the April issue of *AR*. A broadcast band DRM transmission commenced in Sydney at the end of April on 1701 kHz.

May 19th was the 50th anniversary of the opening of the VK2WI building. Celebrations were to be included in the regular T&T event at the end of May.

VK3

Amateur Radio Victoria News

Jim Linton VK3PC

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Recognition overdue

A recent review of amateur radio activity in Victoria identified a number of achievements that while being 'mentioned in dispatches' have not received due formal recognition.

The Amateur Radio Victoria Council considers that four individuals and two organisations have done worthy things this decade, well deserving of an award.

In recognition of their efforts each will be named on a perpetual trophy and join others who have won this award dating back to the 1950s.

Full details and the award recipients were due to be announced at the Annual General Meeting held late last month.

Mentor Hall of Fame

An increasingly important aspect of amateur radio is experienced and knowledgeable individuals encouraging new licensees or less experienced radio amateurs.

A Mentor (or Elmer) is one who does much more than just teach amateur radio licence classes, although that activity is very honourable. In fact not all inductees into the Mentor Hall of Fame are instructors.

They are individuals, who in the tradition of amateur radio, give of their time and knowledge over a considerable period of time to help others increase their awareness and develop skills in various aspects of the hobby, including its traditions.

Many of today's radio amateurs can attribute their involvement in and continued enjoyment of amateur radio to a Mentor.

Amateur Radio Victoria encourages Mentoring and through its Mentor Hall of Fame pays tribute to Mentors, both past and present.

Nominations stating why a person should be considered for induction can be emailed to arv@amateurradio.com.au and please put 'Mentor' in the subject line.

Promoting amateur radio

Members from a non-English speaking background (NESB) are being encouraged to register for a new publicity effort aimed at raising awareness of amateur radio among their communities.

Similar to the campaign in suburban and selected regional newspapers we are now looking for 'ambassadors' willing to be interviewed and photographed by

ethnic newspapers.

These publications are widely read and can be an effective way of communicating the message about amateur radio and especially the Foundation Licence.

Registration for the NESB initiative can be easily done online via the Amateur Radio Victoria website.

RadioFest

Thank you to those who supported the Centre Victoria RadioFest at Kyneton on Sunday 22 April, particularly the 'event team' volunteers who made it all happen on the day.

Undoubtedly radio enthusiasts in Victoria were long overdue to have this type of event and it showed by the smiles on the faces of the more than 550 who attended and enjoyed the great social atmosphere.

The commercial traders expressed the opinion that it was "Australia's best organised event", efficiently and professionally run.

The cooperative effort of Amateur Radio Victoria, Central Goldfields ARC and the Midland Amateur Radio Club was a key to its success, plus all of the participants who gave their support through talks, displays and events.



Gippsland Gate Radio & Electronics Club

'AN INVITATION TO STALLHOLDERS

On 21st July 2007, the Club shall be conducting its annual **HAMFEST SALE** for the sale of new and used electronics and radio equipment. As per last year, the venue will be at the Cranbourne Community Hall on the corner of Clarendon and High Streets, Cranbourne. High Street is part of the Sth Gippsland Highway. Melway 133 K4.

40 tables will be available for stall holders, but demand will be high as usual. Please book early to avoid disappointment. Table hire will be \$20 per table, and must be paid in full before the event. To make a booking, contact Dianne Jackson on (03) 5625 2545 or

email hamfest@ggrec.org.au for further details.

The doors will open for buyers at 10 am with a \$6.00 entry fee.

Each year, this sale is a great success with many hundreds of people through the door of our large Cranbourne venue

making it a premier event for radio markets in this state.

Proceeds from the sale will help us to continue with the upgrading of facilities at our new GGREC Club Radio Shack and help promote amateur radio in the region.

News from...

VK7

Justin Giles-Clark, VK7TW
Email: vk7tw@wia.org.au Regional Web
Site: reast.asn.au

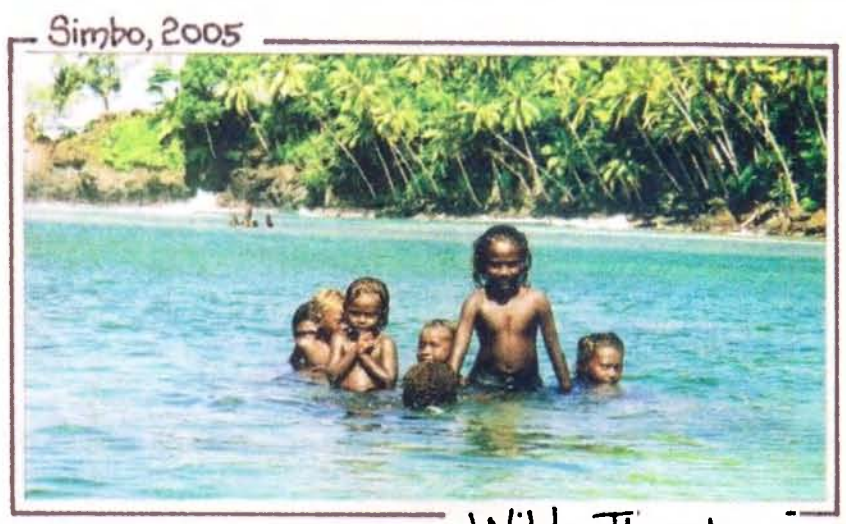
Solomon Islands Tsunami Appeal

Steve VK3JY mentioned the plight of the Simbo people following the tsunami on the Sewing Circle net (3.59 MHz 5 – 6 pm) and Don VK7AY, the net coordinator, took up the challenge and started an appeal to help these people. Steve's daughter is married to a Solomon Islander from Simbo whose family was seriously affected by this disaster. Of the three villages on the island, Tapurai was totally demolished and many people killed. Many VK3s, VK7s and others donated and \$820.00 was transferred to Simbo to help them rebuild. Don was overwhelmed by the generosity of the radio amateur fraternity.

The feedback received is that the funds are being used to help re-build the local communities, re-establish their subsistence gardens and provide essential items like knives, water containers, lanterns and building tools. Don even received a thank you postcard.

VK7 – Third in the VK Callback Stakes

In the wrap-up of WIA National broadcast statistics, VK7 has come third behind VK4 and VK2 on a state-by-state basis. For the National broadcast year, VK7 recorded almost 5900 callbacks between 7 May 2006 and 29 April 2007. Thanks to all involved in bringing the WIA National and VK7 Regional News



Simbo, 2005

With Thanks...

broadcasts to listeners in VK7. This is a great result for the WIA and VK7.

Further BPL trials in VK7

Trial BPL infrastructure is appearing around the South Hobart area including upper Davey and Macquarie Sts. These installations are using fibre back haul and BPL to the consumer. The South Hobart installation appears to be using the higher end of the HF bands with BPL emissions detected in the 13-32 MHz range. The amateur bands appear at this stage to

be notched. More info can be found at: <http://reast.asn.au/vk7bplwatch.php>

North West Tasmanian Amateur Radio Interest Group

The VK7RAE NW propagation beacons are back in service at Don Heads. Beacons are available on 144.474 MHz and 50.057 MHz with the 70 cm beacon not operating at the moment. Any reception reports or questions can be directed via email: nwtarig@spamex.com or phone: 03 6425 2923. The ISSTV gateway at VK7AX has been reactivated with RF linking to the 6 m Repeater VK7RNW. The last 3 pictures received on the ISSTV Gate can be found at: <http://www.vk7ax.tassie.net.au/sstv/>



Northern Tasmania Amateur Radio Club

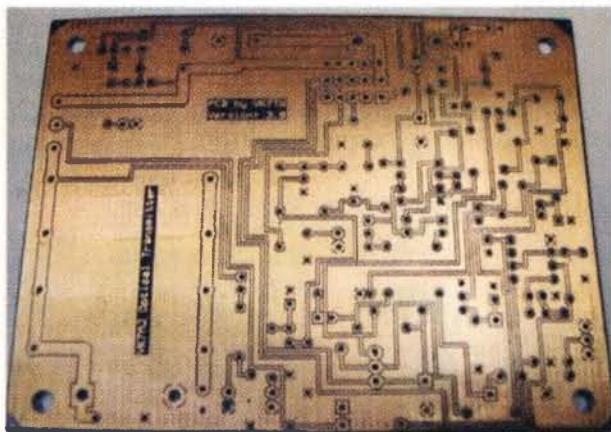
On the 17 April, Roger VK7ARN gave a great presentation on WICEN activities which stirred up some interest in WICEN in the North. The link between VK7RAA and VK7RWC has been installed via Companion Hill and is working well. Thanks to Dion VK7YBI, Graeme VK7AQ, Dick VK7DIK, Shane VK7ABB, Paul VK7KPG and Joe VK7JG.

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News from...

Radio and Electronics Association of Southern Tasmania

We have had a great response to the Introduction to the Standard Licence sessions on Saturday afternoons from 1:00 to 4:00 pm in the Domain clubrooms. These sessions attempt to de-mystify the upgrading process. The REAST presentation on 2 May was given by the author and included practical sessions about PCBs from "Design to Drilling" using the ExpressPCB program and Press-n-Peel PCB transfer film.



One of the PCBs manufactured at the sessions.

VK5

South Coast Amateur Radio Club – Latest News

Stef Daniels VK5HSX

Publicity Officer, Email: secretary@scarc.org.au

The South Coast Amateur Radio Club Inc. is coming up to 12 months since the move to its new home at the Hackham Scout Hall, which turned out to be a worthy exercise. We are in the process of finishing the radio and committee room, with cleaning, construction and further work still to be done. We are

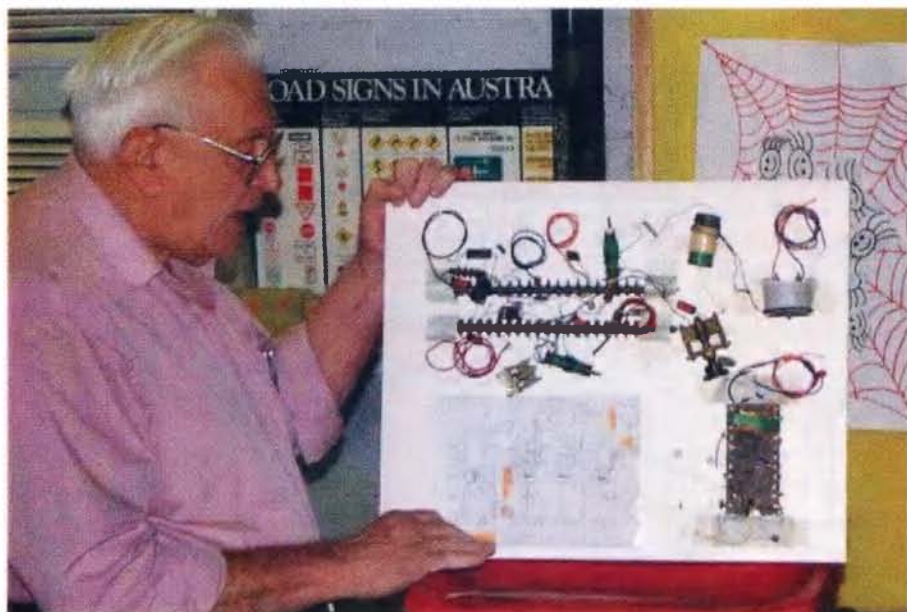
hoping to have things finalised by July, all going well.

Since the club took over the distribution of the VK5JST Antenna Analyser kits from the Elizabeth ARC, we have been receiving numerous orders for the kits through emails to kits@scarc.org.au or by visiting the SCARC website at www.scarc.org.au.

The setup of payments via PayPal and by direct debit, has made things easier for purchasers.

The joint SCARC and Air-Stream wireless Wide Area Network (WAN) installation took place in March, which commenced the long awaited backbone over O'Halloran Hill, linking the City to the Southern Suburbs. We managed to place the WiFi antennas halfway up the mast, which was not the ideal place; however, current observations of the link seems to be better than expected. Special mention should go to Robert Hart and Paul Hoffman VK5PH and the other members of Air-stream, Steve Fraser VK5ASF, Arno Attema VK5ZAR (SAPUG), along with Barry Bates VK5KBJ, Geoff Madden VK5KMG, Peter Clarke VK5HPC and Stef Daniels VK5HSX from SCARC for their contributions in getting the system finally operational. For more information on the wireless system, you can visit the Air-Stream Website at www.air-stream.org which shows the full details of the network.

The March General Meeting saw a presentation by Dennis Avard VK5OF / G3IEY, who celebrated his 55th year



Dennis Avard VK5OF/G3IEY with his "rat's nest" transmitter

KVK Antenna Systems

The

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News from....

VK5 continued

in amateur radio with the club. Dennis gave a brief talk, showing a time-line of some technological advances and where they fit in during his life. He also brought in his personal construction of a 'rats-nest' transistorized transmitter which he created in his early years of AR, in fact approximately 7 years after

the transistor was first developed at the Bell Telephone Laboratory, which was mounted on board that travelled from the UK. The club congratulates Dennis on his achievements and the night ended with pizzas and social chit-chat.

SCARC regularly hosts assessment events. Those interested in sitting

for Foundation or licence upgrades, please contact Barry VK5KBJ by email vk5kbj@internode.on.net

Next SCARC Meetings: Wednesday 27th June and 25th July, commencing at 8:00 pm at 16 Roberts Road, Hackham.

Adelaide Hills Amateur Radio Society

As is often the case, the Members' Show and Tell night this year was a particularly interesting one. The range and quality of the items shown varied from the simple to the very complex.

The aluminium sheet metal bender designed and built by Jim VK5JST was extraordinary. He had made the machine out of layers of common chipboard with steel plate hinges and cutting edges. The chipboard was used because it can be worked easily and takes screws in the "end grain" without damage. He modified the slot arrangement used to accommodate the size aluminium sheet being bent so that all lengths from 25mm to 420mm can be bent. As always with the work Jim does, it was finished beautifully. The bender will form an article in this magazine before long. The cost using new materials was \$35 – considerably less than a commercial bender.

The next item was the linear amplifier on which Barry VK5ZBQ has been working for some time. He has used it seriously now and found it to be an instant start and absolutely linear amplifier. With less than 100 watts input, he gets a solid 400 watts PEP out. It is a credit to him.

Daryl VK5JDS also had an amplifier to show. This was an audio amplifier with which he has been experimenting for some time. It used one of several Drew Diamond circuits. He reports that it works very well.

Daryl was followed by Rob VK5GR with more of his junk box/recycled items. This time he showed an old but special valve that had stopped working. After carefully taking it to pieces he found several dry joints in the base. It now is available for use again. He had a Collins ceramic filter around which he built a filter stage for a receiver. He tested

it out in a receiver built so that different sections can be replaced so it is not necessary to start from scratch when a new unit is to be tested. Over the years this receiver has had a number of configurations.

Keith VK5OQ faced a common problem in his shack when he retired. He had a mass of wires from transceivers to antennas twisted together. He has now built an antenna tuner into which several different antennas and several different transmitters can be connected and used. The mess of wire is considerably reduced. Keith used an interesting technique to make up his front panel. He designed it on the computer, printed it on pale blue card and after it was laminated, glued the panel to the aluminium. He will never have the markings rubbing off under greasy fingers!

Steve VK5AIM had two items to show and tell. He had made up a dipole for mobile use, out of figure 8 flex, 'unzipped' and wound into two matching sized coils. You can unwind the length of wire to match the frequency you want to use and with a small balun and ladder

Christine Taylor VK5CTY

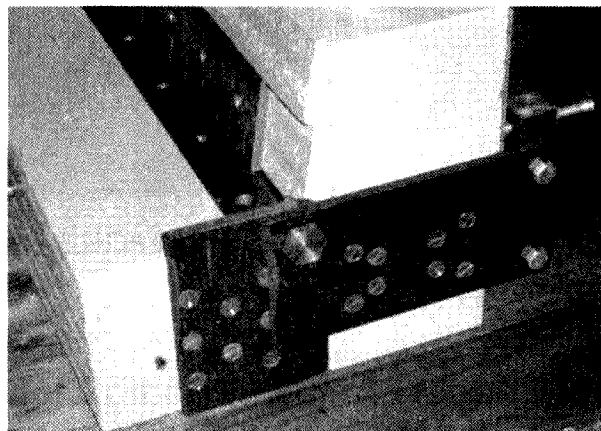


Photo 1: Aluminium sheet metal bender designed and built by Jim VK5JST

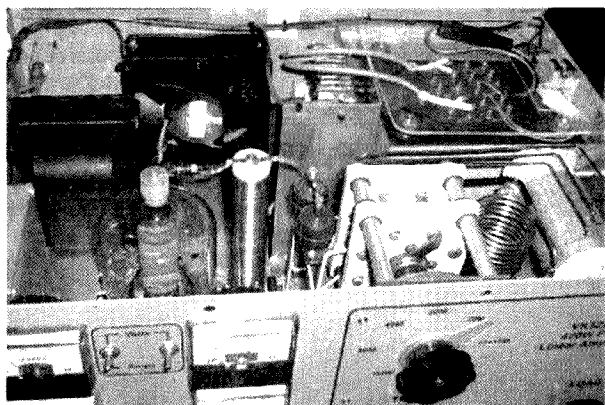


Photo 2: Barry VK5ZBQ constructed this linear amplifier

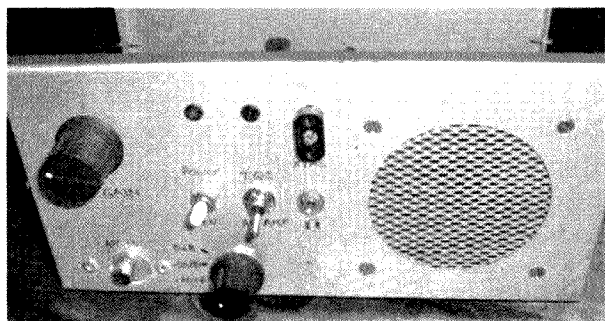


Photo 3: Audio amplifier by Daryl VK5JDS

line you are quickly set up for operating in the field. The other item was a simple transmitter made up as a demonstration piece for AOC P classes. Each stage was set up on its own piece of printed circuit board. The stages were connected together by clearly visible lengths of wire. Instead of having just a row of block diagrams to represent the stages of a transmitter, the students could see each stage separately. A clever and simple idea.

Horst VK5ZLW had made up an audible SWR bridge. This was a Drew Diamond circuit and, while it is not as accurate as a metered SWR bridge it is suitable for a visually impaired operator and can help to make them independent. Horst installed a LED indicator a day or so before the meeting when he realised the battery was flat. For a visually able operator this is definitely considered to be a good idea.

The last two members have different problems and have addressed them to suit their needs. Lyall VK5ZNB has an XYL who does not want any antennas to be visible, so Lyall has a 20 metre aerial inside his roof space and an 80 metre one mounted along the ridgepole of the house. Black wires, black tiled roof and short black stand-up insulators to support the wire make it almost invisible. However, Lyall wanted to try something more efficient on 80-meters, so he made up one of the cross-linked designs of Lloyd VK5BR. On first attempt it didn't work well when it was mounted on a galvanised iron fence, but

for the next attempt it will be mounted on the house (secretly at night), away from the fence.

Dean VK5LB has acreage so has no problem with erecting beams etc. However he has built the Z match to

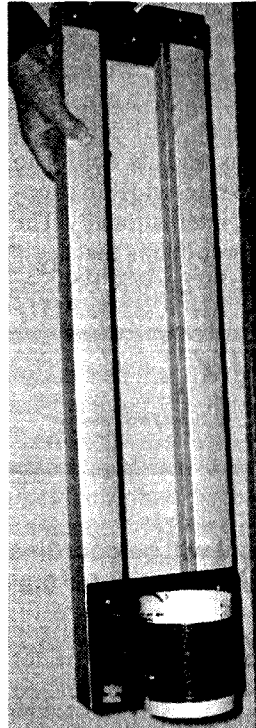


Photo 8: Compact "hidden" antenna for 20 metres by Lyall VK5ZNB

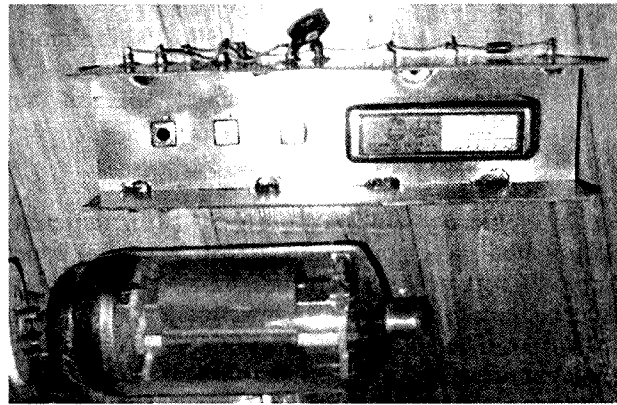


Photo 4: Junk box/recycled items from Rob VK5GR

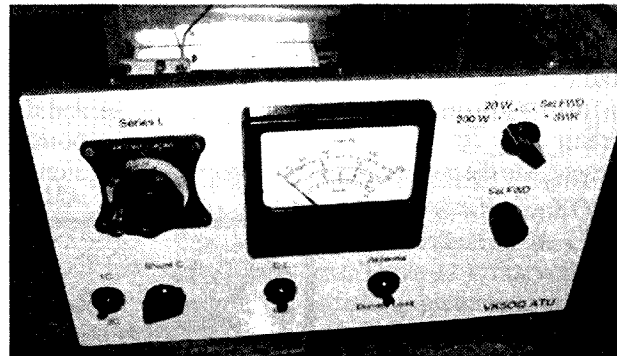


Photo 5: An antenna tuner built by Keith VK5OQ

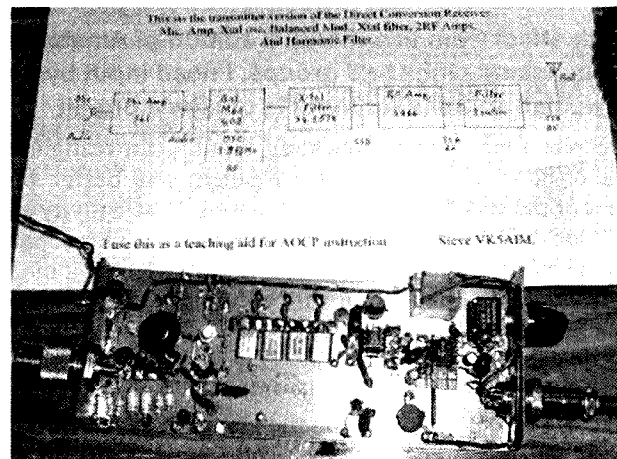


Photo 6: A simple demonstration transmitter for AOC P classes by Steve VK5AIM

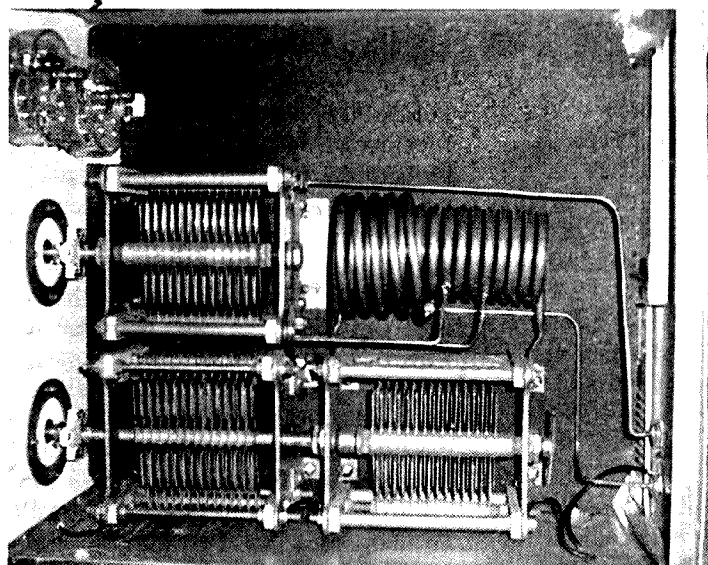


Photo 9: Z match "ATU" by Dean VK5LB

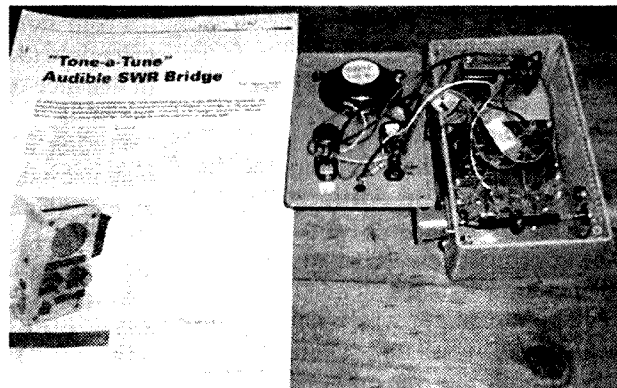


Photo 7: An audible SWR bridge by Horst VK5ZLW

News from...

end all Z matches. It is a Lloyd VK5BR designed single coil type but the coils are wound out of the largest diameter copper

VK5 WICEN News

On 28 February 2007 WICEN-SA participated in a workshop on radio communications in the wake of a catastrophic event, such as a major earthquake. The South Australian State Response Advisory Group convened the workshop of all emergency and functional services, police, and ambulance service at the State Emergency Centre in Adelaide. A presentation of the Government Radio Network (GRN) and the state's Information and Communications Technology (ICT) infrastructure was presented to the participants as the context

tubing most of us will ever see. Dean has mounted it in a computer case with space at the top for several switching

units. The front panel has just a meter and two tuning knobs.

Altogether a most interesting and versatile display.

Dr Hank Prunckun VK5JAZ

for the ensuing panel discussion. The central issue to emerge was the pivotal role wireless communications would play in such an event. The WICEN-SA representatives at the workshop, Director Ian Clayton VK5AIC and Dr Hank Prunckun VK5JAZ, then briefed the assembly on WICEN-SA's capability to establish emergency VHF/UHF and HF communications and its ability to handle messages state-wide, nationwide, and if needed, internationally. The main point to emerge from the day's discussion, specifically for WICEN-SA,

was that the scale and magnitude of such a disaster would require WICEN-SA to be able to mount a sustained field operation and have its message handling practices and procedures well honed. These issues were reported back to the WICEN-SA's Executive Committee for future planning. There may be some merit in other VK-WICEN associations noting these outcomes as the impact of a catastrophic event might have similar consequences for a WICEN activation/deployment in their jurisdiction.



J R "Rossco" Anderson VK4AQ

With effect from this month's edition of Amateur Radio, I will be coordinating the VK4 column on behalf of Queensland clubs and groups. I need input by 6th of each month for the subsequent monthly edition of AR. My email address for input is qtc@wia.org.au

Despite four emails requesting input, the response from clubs in the southern part of the state has been disappointing. Maybe the dissemination of information in the more built up regions is sufficient not to rate a mention in this column but remember folks, we have a good percentage of amateurs who now consider themselves to be grey nomads and who like to be kept up to date on the goings on in the areas in which they travel.

I hope to receive a much larger input from groups in the central and southern parts of the state for next month.

VK4RBK repeater recommissioned

Jeff Cochran, VK4BOF reports that on Wednesday 26 April 2007, the Tablelands Radio and Electronics Club 70 cm repeater, which had been out of operation for an extended refit and frequency change, was put back into service.

With both the transmitter and units having been sent to Tait in Brisbane

for realignment, the VK4RBK repeater is better than ever, with increased sensitivity and better power output.

The repeater is located at Bones Knob, a hill overlooking the townships of Atherton and Tolga in Tropical North Queensland. Please note that the new frequency is now 439.900 MHz with a -5 MHz split. (Previously VK4RBK was on 439.500 MHz)

Current reliable mobile coverage includes the Atherton, Tolga, Kairi, Malanda and Mareeba districts.

From home stations, the coverage extends to the northern beaches of Cairns (a distance of over 60 km) and south to Innisfail.

Further updates for the repeater are planned with a new 6 dB gain vertical antenna (already purchased from Mobile One) and 15 metres of LDF4-50 Heliac arriving soon.

Once the Heliac arrives, the new antenna will be installed at the very top of the tower and the new cable will be run. VK4RBK will then be changed to

the new antenna and we expect coverage to be improved by a considerable amount.

The repeater was recommissioned by John VK4TL and Jeff VK4BOF with assistance from John Stevens at Tait Brisbane.

Darling Downs Radio Club

Darling Downs Radio Club will be conducting their Annual General Meeting at 1900 on 23 July at the SES Headquarters. It is time to be putting your hand up for positions on the club committee especially given the very strong calendar of events programmed for the year. A good roll up of members is requested to this most important of yearly events.

The Club also reports that the BBS Packet run by Martin VK4HMD has died an "unnatural death" due to lack of interest in the Toowoomba area.

Congratulations to Graham Hassall! Graham took the Foundation exam just a few months ago and has now

successfully passed the Standard exam. He now proudly boasts the callsign VK4HZX. Well done Graham!

Everyone in the club extends a hearty get well to Secretary Theo VK4ESK and to Eric VK4ECT, both of whom underwent surgery recently.

Tablelands Radio Group

Mike VK4MIK reports that preparations for the International Lighthouse and Lightship Weekend at Cooktown in August are well advanced and all necessary approvals have been received. The callsign VK4GHL (Grassy Hill Lighthouse, where the Cooktown light is situated) has been granted and will be much sought after again this year. A monster breakfast, organised by Dennis VK4JDJ and Rossco VK4AQ is being arranged for the Sunday morning.

The number of operators responding to the club's Invitation to Participate has just about reached capacity for this year Mike says.

Townsville Amateur Radio Club Inc

The Far North and North Queensland Amateur Radio Get Together (FNNQARG) will be conducted from 8th through 11th June at the Cardwell Village Beachcomber Motel and Tourist Park.

Demonstrations of ARDF, World Championship Antenna Wrestling, NAVCOM Electronics display of Icom, Yaesu and Diamond equipment, the famous Sunday morning cricket match and much more has been scheduled for this very relaxing and fun-filled weekend. Not to forget the Monster Trailer Auction Sale so eagerly awaited each year.

Amongst those attending will be Mr Aoki, Managing Director of Icom Australia, and Mr Yoshi, Managing Director of Standard Vertex Australia (Yaesu). Rumour has it that they are already in training for the cricket match again this year. Mr Aoki's prowess as a baseballer shone through in last year's event.

Accommodation can be arranged by calling Toni or Bruce at the Beachcomber

Motel on 1800 005 633. This will be a very good opportunity for those of you in the cooler climes to visit the Far North for some good old hospitality, amateur radio camaraderie and warm weather.

North Queensland Amateur Radio Convention

This very important two-yearly event has been convened for 21st through 23rd September in the twin cities of Thuringowa and Townsville. For an electronic copy of the Venue and Events program, please send a message to vk4wit@wia.org.au

Central Highlands Amateur Radio Club

President Mark Robinson VK4KMR has advised that the new IRLP node has just been activated in Dysart, Central Queensland.

Node 6037 will shortly give IRLP users complete access to the central highlands VHF solar powered linked

repeater system sites near Clermont, Blackdown and Springsure, as well as UHF repeaters at Rockhampton and Sarina.

Mark would like to thank Steven VK4SMW and Rob VK4HW for their help in building the Linux IRLP 6037 server and setting up control programs and scripts.

Mark is confident this additional access will bring members of CHARC closer together, as well as the wider community of amateurs, with events that happen during the year.

Learn more about CHARC at <http://au.groups.yahoo.com/group/charc/>

For the keen angler

Those amateurs with a keen bent for fishing would be well advised to visit the site run by Lyn VK4SWE, who, with OM Tex, lives on Sweers Island in the Gulf of Carpentaria. There is a marvellous assortment of fishing pictures available and a number of recipes for download that pass the taste test hands down. Lyn's website is at www.sweers.com.au

ar

Silent key

CJ "Ron" Petrich MBE VK4ACZ

It is with deep regret that I report the very sad passing of C. J. "Ron" Petrich MBE VK4ACZ on Monday, 23 April 2007. His funeral took place in the Mossman, NQ, lawn cemetery on Monday 30 April, following a service at St David's Anglican Church.

Ron was born in Gundagai, NSW, in 1922 and did his schooling at his birthplace and in Tumut. He was trained in radio prior to joining the RAAF in 1941 as soon as he met the age requirement. Ron served in New Guinea and was "demobbed" as a Pilot Officer in 1945.

Flying and radio were in Ron's blood. For a number of years he was a Radio Operator with QANTAS in converted Lancastrians, DC4s, Sunderlands and Constellations on the Sydney/London and Sydney/Tokyo routes.

Ron was posted to Singapore in 1953, where, after the then world's worst airline disaster, he was awarded an MBE for bravery during rescue operations.

Following his return to Australia in 1957, Ron continued with QANTAS for another 20 years and reached senior executive positions. Ron represented Australia on the two major international aviation bodies of IATA and ICAO for a number of years until, at age 54, decided it was time to retire to God's own country — Queensland.

Ron's first wife, Gwen, also an amateur, passed away in 1992 and he is survived by his present wife of 13 years, Winsome and children Jim, Jennifer and Lesley and four grandchildren.

Ron's commitment to community, his preparedness to lead when necessary and to do that by example, is legendary in the Far North Queensland region. His legacy of fairness, trust, loyalty and honour combined with his steadfast belief in a supreme being is a shining light for those who have had the honour to call him "my friend."

Ron epitomized all that is decent in a human being.

J R "Rossco" Anderson VK4AQ

QSL Cards from the WIA National QSL Collection

Ken Matchett VK3TL, Hon. Curator:
wiaqslcollection@wia.org.au

An SOS out of the night

A nice batch of choice DX QSLs from one of our top DX-ers and contributors, Jeff VK6AJ. Jeff uses Yaesu equipment and a 6 element log periodic, which he says is useful for moving from band to band. He also has a 40 metre inverted V antenna. One of the QSLs sent included 9N7DX by an Israeli DXpedition to Nepal. Before listing some of the f.b. QSLs let me digress a moment to tell you a little story about Nepal.

It was in the 1960s when I came home from an evening out, and although it was after midnight, I switched on the rig just to see if something rare might be on the bands. (I was a very keen DX-er in those days, and, with my cubical quad up 70 ft. (approx 21 m) on high ground in Templestowe, I was ever so keen to add just a few more remaining countries in order to reach the magical DXCC 300.) Well I didn't have long to wait before I heard a Morse signal from Nepal. At that time there was virtually only one amateur radio station in that country and that was 9N1MM (9N1 'mickey mouse') operated by the late Father Moran, principal of the High School in Kathmandu. He was a very well-liked person,

KATHMANDU, NEPAL

9N1MM

MARSHALL D. MORAN

To: VK3TL
confirming our QSO on FEB. 9 1961 on 14 M.
At 1145 GMT. Ur A3 sigs were 5-7
QSL via W3KVVQ TNX es 73 M.D. Moran

One of Father Moran's QSL cards sent to Ken in the early 1960s. and his call was widely known throughout the world of DX. (Even the expeditionist Gus Browning W4BPD couldn't keep out of the limelight and borrowed his call-sign during his 1963 DXpedition to Asia.) But the

continued on page 44

NEW!!

VERTICAL ANTENNA

MODEL NUMBER: VA-71

Primarily designed for those with limited space this light but sturdy antenna is another fantastic alternative for users with small backyards.

SPECIFICATIONS

FREQUENCY RANGE : 1.8 to 30MHz* (160 to 10m)
HEIGHT / ANTENNA LENGTH: 7.1m
RADIATING ELEMENT: Aluminium
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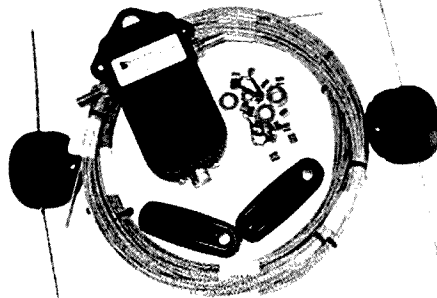
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OPTIONAL EXTRAS

4:1 Balun
300 Ohm Ribbon
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see website for details
on the optional extras!!

* depends on tuner & connection



\$275.00
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MODEL NUMBER: SWCS-KIT

Perfect for those who like to get their hands dirty as it allows you to be involved in the construction of your antenna with very easy step-by-step instructions.

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FREQUENCY RANGE: 3.5 - 30MHz
ANTENNA LENGTH: 34m
POWER INPUT: 100 Watt AM (250 Watts PEP)
INPUT IMPEDANCE: 50 OHM
NO TUNER REQUIRED!!

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Bushcomm HF ANTENNA MANUFACTURER

Contest Calendar June - August 2007

June	9/10	ANARTS WW RTTY Contest	Digital
	9	Portugal Day DX Contest	SSB
	9	Asia-Pacific Sprint Contest	SSB
	16/17	All Asian DX Contest	CW
	23/24	Marconi Memorial HF Contest	CW
July	1	Canada Day Contest	CW/SSB
	7	VK/trans-Tasman 160 Metres Phone Contest	SSB
	14/15	IARU HF World Championship	CW/SSB
	21/22	CQWW VHF Contest	All modes
	14	Jack Files Memorial Contest	CW/SSB
	21	VK/trans-Tasman 160 Metres CW Contest	CW
	28	Waitakere (NZART) Sprint	SSB
Aug	4	QRP Day Contest	CW/SSB/FM/PSK31
	4	TARA Grid Dip	PSK/RTTY
	4	Waitakere (NZART) Sprint	CW
	4/5	10-10 Intl QSO Party	SSB
	11/12	Remembrance Day Contest	CW/SSB/FM
	25/26	Keymen's Club of Japan Contest	CW
	25/26	ALARA Contest	CW/SSB

Welcome to this month's Contesting Column. A somewhat diminished offering this month due to pressures of life....

Contesting – Manx Style

I thought that it might be interesting to look at how contesting on the Isle of Man is done. The Isle of Man is in the Irish Sea between the UK and Ireland and is generally more famous for being the host of the annual TT motorcycle races.

It is home to about 70,000 people. The prefix for the island is 'GD' or 'MD', the sub-prefix of 'D' denoting the island.

There are a few contesters on the island with a myriad of interests including HF and VHF contesting, with EME (earth-moon-earth or moonbounce) also featuring but more likely on 6 m nowadays as the only large 2 m array for EME that I'm aware of on the island is currently undergoing repairs. The salt air and the ravages of the weather take their toll on even the hardiest of structures.

Probably one of the more active groups entering contests from the island is the Manx Kippers (also known as The Northern Lights) consisting of a mixture of islanders and enthusiastic amateurs from the UK. Callsigns used

include MD4K, GD0EMG and MD6V. Members of the group currently consist of: Andy GD0TEP, Robert GD4GNH, Don G1GEY, Martin G4XUM, Dave G3NKC, Peter G4MJS, Tim M0BEW and me as my UK call G0HSS. Other operators such as Ian G0AFH and Chris G0FDZ join the group for the European UHF (and up) contest every year, at the beginning of May.

Some of the equipment is stored permanently on the island but each trip from the UK requires various items from the owner's home station, such as rigs, ATUs, power supplies, amplifiers, computers and the like, to be transported to the island for contest. This equipment is too heavy for transportation by air (unless someone with a generous nature and a blank cheque book is available), so sea travel from Heysham on the UK northwest coast to the port of Douglas is required to get all of the gear in the right place. The trip takes around 4 or 5 hours in good weather (which does occasionally happen on the Irish Sea) and allows operators to gain some much needed sleep as the majority of time spent on the island will be utilised in setting up, operating and then stripping-down and storing the station equipment again. Not much time for tourist activities!

Setting-up requires the antennae supports and antennae themselves to

be removed from the barn of Robert GD4GNH and assembled. All HF antennae are erected specifically for the relevant contests and are dismantled again afterwards, with only the 23 cm and 70 cm antennae being a permanent feature at Robert's station for VHF/UHF activities. Chris G0FDZ supplies the 'wok' and tripod for 10 GHz, along with his homebrew transverter from 2 m to 3 cm. For VHF, I supplied the homebrew 2 m amplifier (featuring a single GS35b triode) and for UHF I supplied the whole station comprising an FT1000MP transceiver, homebrew 70 cm transverter and homebrew 70 cm amplifier, also featuring a single GS35b triode. Masts include two mobile trailer towers and a mind boggling array of scaffold pipe and rope. Masthead preamplifiers and change-over relays were also supplied by team members and are essential for weak signal working. The change-over relays are of specific importance, as they provide isolation from transmit and receive coax, in order to protect the preamp active device from damage due to high levels of RF.

The group usually assembles for a selection of contests throughout the year, including: CQWW (as a Multi-Multi entry), CQWPX (as a Multi 2 entry), May UHF, Region 1 Field day, ARRL 160 and CQ160.

A similar array of equipment is used when the group goes 'portable' for a contest, which makes for a large amount of work for a generally small group (usually only a hardy few for the HF portable contests).

So, what can be expected when operating from GD? Band conditions tend to be just as variable as in the antipodes, but the proximity to mainland Europe generally makes for QSOs on HF but not necessarily always on VHF/UHF. Dependent upon sunspot activity of course, openings to Japan on 15 m and 10 m occur, but the openings tend to be of a fairly short duration around the time of Region 1 Field Day in early September, so frequency agility and frequent visits to the bands are required throughout the contest – remembering that the beam headings are different from GD to those from VK! This sounds obvious, but can easily be forgotten at 2 am when tiredness creeps in.

VHU/UHF openings are not to be underestimated on occasions, as ducting can occur between the island and mainland Europe, producing some spectacular signals into nearby countries

Contesting Basics 101 – Part 2

Following on from last month's general overview of contesting, this month we take a look at scoring and entry categories.

What makes a Winner?

The winner in each category of the contest is determined by the highest scoring station within a given category. Points are scored for each QSO, generally if the station has not been contacted before on that band. I say generally, as some VK domestic contests permit 'repeat' QSOs after a given period since the previous QSO.

Each contest has its own scoring system, so the exact number of points will vary from contest to contest. It is worth studying the rules for the contest that you wish to enter prior to commencement, to familiarise yourself with the scoring system and make a plan for maximising your score.

The points awarded for a given QSO might depend upon the location of the station as, for example, during CQWW DX contest the points awarded depend upon the station's location as regards continent – 1 point for a QSO with a station in the same continent as yourself and 3 points for a QSO with a station

Band	Antenna	Comments
10 m	5 ele Monobander (Vine 105)	
15 m	5 ele Monobander (Force 12 EF515X)	
20 m	4 ele Monobander (Force 12 EF420)	
40 m	2 ele Monobander (Cushcraft 402CD)	
	4 Square	
	Butternut HF2V	
80 m	Dipole	Vertical also used
	Butternut HF2V	K9AY also used
160 m	Dipole	K9AY also used
	Inverted 'L'	Beverages also used
	Balloon Supported Vertical	

Table 1 Antennae used by the Isle of Man Contest Group MD4K

but also Spain, Italy, Portugal and Russia on 144 MHz and upwards. I've been operating on 70 cm and have gone outside of the shack to see if someone was winding me up with a local rig as the signals have been so strong!

MD4K and GD0EMG have been successful in all manner of HF, VHF and UHF contests, with an array of awards to their name. The prefix certainly adds a few dB to the signal at times as stations from GD are not so common on the bands. The team goes from strength to

strength, so if you hear them on HF (it would take quite a lift to hear them on VHF that's for sure – unless on EME) give them a shout. They are active on 6 m EME too, mainly via Andy GD0TEP. Andy has an interesting selection of QSL cards available so it's worth a QSO just for that!

Due to space limitations in *AR*, take a visit to the MD4K website at www.md4k.com or www.gd0tep.com for pictures of equipment used.

located within a different continent from your own. Stations located within the USA work each other for 2 points per QSO.

Other contests have scoring that promote QSOs with particular stations, such as Foundation licensees or even for a given mode.

Multipliers

As well as getting points for each QSO, most contests allow you to get multipliers from certain QSOs. For example, you might get a multiplier for every different country you work on each band during the contest. Your final score for the contact will then be calculated by multiplying the total of all your QSO points by the number of multipliers you worked. A few examples:

In the CQ Worldwide DX contest, countries (DXCC entities) and CQ zones both count as multipliers. So if you work 100 countries in 20 zones, you would have a total of $100 + 20 = 120$ multipliers. In the IARU HF World Championships, ITU zones and IARU member society headquarter stations and IARU officials worked count as multipliers. In the ARRL International DX Contest, for stations in North America each country

worked is a multiplier. For stations located outside North America, every American or Canadian state worked is a multiplier.

DXCC Entities correspond roughly to countries and territories, but they also may be islands and even reefs if they meet criteria set by the ARRL, which administers the DX Century Club (DXCC) award and decides what qualifies as an "entity" or the RSGB IOTA (Islands On The Air) Committee which administers the IOTA Contest.

The world is divided into 40 "CQ Zones" which are used as multipliers for some contests. Get further information and a map showing the different zones at www.cq-amateur-radio.com/wazmain.html.

Next month, the final part of Contesting Basics 101 takes a look at who can be worked in a contest and how often.

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

Jack Files Contest Rules 2007

This contest is in honour of the late Jack Files, a long-serving VK4 WIA councillor. It is coordinated by the Queensland Advisory Committee and is sponsored by the WIA.

Since the formation of a National WIA, it has been decided to make this contest a national remembrance of an amateur who gave long service not only to benefit Queensland amateurs but to have been an asset to all amateurs within Australia. The object is to work as many different stations in different Queensland shires and towns for the purpose of multipliers but in addition to this all participants will be able to count the first of each VK state or territory worked in each one hour block of the contest as a multiplier. Also provision will be made for the working of the same station within the same one hour block if one or both of the stations are mobile and are passing through different shires, towns, states or territories (simplified if you wish to operate as a mobile or portable station and you cross over to another shire you may work any station that you have already worked in that one hour block again). It is very important that VK4 stations give their shire codes with the report and number given. An example is an amateur in Livingstone shire would give out 59001LV. Shire Codes will be published and are available from the contest manager.

Object is for amateurs to work as many other amateur stations, and particularly as many different VK4 shires, towns and as many different states and territories as possible within each one hour block of the contest.

Date: Saturday, 14th of July, 2007

Time: 0800 UTC – 1400 UTC in six one-hour blocks for the purpose of duplicate contacts.

Band: 80 metres only. Use 3.5 MHz – 3.7 MHz to put all licence grades on an equal footing.

Modes: Either CW, SSB or All Modes

Categories: Single Operator; Club Station (each category can be a mobile or portable station)

Exchange: Non-VK4 stations will send RS(T) plus serial number starting

from John Spooner K4AJS,
Contest Manager

at 001 and incrementing by one for each contact. VK4 stations will send RS(T), serial number and two-letter shire or town code for purposes of multipliers.

Score: One point per contact

Multipliers: Each VK4 Shire or Town counts as a multiplier only once over the entire duration of the contest. All participants may also count the first contact in each state or territory as a multiplier and these may be counted within each hour block during the contest.

Final Score is total QSO points X total number of multipliers.

Repeat Contacts: In order to make best use of the band, stations may be contacted once in each hour on each mode. Repeat contacts with stations may be counted within the same one hour block only if the station is mobile and crosses from different shires, towns, states or territories to another. All repeat contacts must not be consecutive.

Logs must show full details of all QSOs and must be accompanied by a Summary Sheet showing operator's name; address; callsign; category and mode entered; claimed score and a declaration that the rules and spirit of the contest were observed.

Send logs by mail to Jack Files Contest Manager, 26 Kerr St. Park Avenue Nth. Rockhampton QLD 4701. Logs may be sent by e-mail in text format to: vk4ajs@wia.org.au

Closing date for all entries is 31st of August, 2007

Certificates will be awarded to the top scorers in each mode in each VK State, ZL, P29 and any DX country (i.e. country outside VK, ZL or P29). As well there will be a certificate awarded to the overall highest scorer who will be declared overall contest winner. The only stipulation is that the overall winning operator must be a VK amateur.

Please feel free to email me and request an example log to assist in working out your final score.

JIDX 2006 Phone Result

Australia

Many congratulations to the following stations for a superb effort in the contest and for flying the flag for VK!

VK4BUI	AB	19264
VK3AVV	AB	1976
VK4NEF	ABL	39312
VK4FJ	ABL	1044
VK6ANC	Mop	38016

AEI

Australian Industrial Enterprise's uniquely designed one man tower is Australian made and exported world wide.

Comes in sizes 7.5 metres to 15 metres, all built to spec, not just stretched.

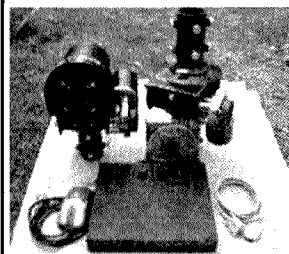
Safely raise and lower your array, by yourself, with both feet on the ground.

The tower is hot dipped galvanised AFTER manufacture and optionally equipped with a legal, heavy duty braking winch.

We can do a trailer mounted version to order.

We also supply Ozspid Rotators.

RAK medium/heavy duty Azimuth and RAEL medium/heavy duty Elevation give far more versatility.



Talk to me, Kev VK4KKD, about your particular needs.

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We now manufacture a range of Delta loop, Quad and Yagi antennae.

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VK4 City/town/shire

Codes

AC Aramac; AN Arakun (R); AT Atherton;
BA Banana; BB Badu Island; BC Barcaldine; BD Bendemere; BE Burnett; BF Boigu Island; BG Biggenden; BH Bauhinia; BI Bungil; BJ Bamaga; BK Burdekin; BL Balonne; BN Brisbane; BO Barcoo; BP Bulloo; BQ Booringa; BR Burke; BS Broadsound; BT Beaudesert; BU Bundaberg; BV Boonah; BW Bowen; BX Blackall; BY Belyando; BZ Boulia.
CA Caloundra; CB Caboolture; CD Cardwell; CF Clifton; CG Cherbourg; CH Chinchilla;
CK Cook; CL Calliope; CM Cambooya; CN Crows Nest; CO Cooloola CP Carpentaria; CR Croyden; CS Cairns; CT Charters Towers; CY Cloncurry;
DA Dauan Island; DG Douglas; DI Diamantina; DL Dalrymple; DO Doomagee; DU Duringa; DY Dalby;

EA Eacham; ED Eidsvold; EK Esk; EM Emerald; ER Erub Island; ET Etheridge.
FL Flinders; FZ Fitzroy.
GA Gatton; GC Gold Coast; GD Gladstone GH Gayndah; GI Goondiwindi
HA Hammond Island; HB Hervey Bay; HK Hinchinbrook; HT Herberton; HV Hope Vale.
IA Iama; IC Infracombe; IF Isisford; IJ Injinoo; IN Inglewood; IP Ipswich; IS Isis
JE Jericho; JO Johnstone; JY Jondaryan.
KC Kilcoy; KG Kingaroy; KK Kilkivan; KO Kolan; KU Kubin Island; KY Kowanyama Island.
LA Laidley; LC Logan; LH Lockhart River; LO Longreach; LV Livingstone.
MA Mareeba; MB Maryborough; MC Mackay; MD Mabuiag Island; ME Mer Island; MG Mornington; MH Murweh; MI Mt. Isa; MK McKinlay;
ML Milmerran; MM Mt. Morgan;

MN Mirani; MO Mapoon; MR Maroochy; MT Monto;
MU Mundubbera; MV Miriam Vale; MX Murilla; MY Murgon.
NA Napranum; NE Nebo; NN Nanango; NO Noosa; NP New Mapoon.
PA Paroo; PD Peak Downs; PL Palm Island; PO Pormpuraaw; PR Pine River; PT Pittsworth; PU Poruma; PY Perry.
QL Quilpie.
RC Redcliffe; RD Redland; RH Rockhampton; RI Richmond; RM Roma; RO Rosalie.
SA Sarina; SB Saibai Island; SE Seisia Island; SP St. Pauls Island; ST Stanhope.
TA Tara; TB Tambo; TE Torres; TG Thuringowa; TI Tiaro; TM Taroom; TY Townsville; TW Toowoomba.
UG Ugar Island; UM Umagico.
WA Warwick; WB Warraber; WC Woocoo; WD Wondai; WG Waggamba; WH Whitsunday;
WI Winton; WO Wambo; WR Warroo; WU wujal Wujal.
YA Yarrabah; YO Yolke Island.

ar

QSL Cards from the WIA National QSL Collection *continued*

signal I was hearing was not coming from Father Moran. It was a distress call from Mount Everest. The story was that one of the native porters at a staging camp up the mountain had been severely burnt and needed hospitalisation. The operator, due to the vagaries of 'skip', could get his signal through to Melbourne but not to Kathmandu. But what could I do? It was one o'clock in the middle of the night. I reached for the telephone book to check the number of the Nepalese Embassy or Consulate in Melbourne, but there was not one listed.

Canberra was not much help either. Suddenly one word came to mind: Reuter's communication throughout the world. I contacted them in Sydney and told them of the misfortune of the expedition, and that was the end of the matter as far as I was concerned.

Well, not quite. About a couple of months later I was sitting down to my evening meal when my wife came hurrying into the dining room with the news that a woman was on the phone, wanting to know whether I was the owner of an amateur radio station called VK3TL. Well I was, wasn't I? What was the problem? Perhaps TVI, but no, it couldn't be. But I had no need to worry.

I was speaking to a lady who had been in communication with her daughter who was working overseas. Actually she was a nurse at the Kathmandu General Hospital. (What a small world it is!) She was aware of the hospitalisation of the injured porter and had read details of an amateur radio transmission between the expedition and Melbourne from a bulletin board at the hospital. She thought that her mother might be able to contact me. She was able to find out my contact number and to relay the good news from Kathmandu. So when I am sorting through incoming QSLs and come across an 9NIMM QSL card my mind goes back to that lonely night so long ago when, through our wonderful hobby of amateur radio, the distance to Mount Everest from Melbourne didn't seem so far after all.

And now for comment on some of Jeff's other interesting QSLs. Poland HF1EU (commemorates Poland's entry into the EU) and HF7IARU (75 years of the PZK). ZL70AGY, South Africa ZS75 (75 years of Pretoria ARC). Maldives 8Q7VR. Japanese Antarctic Station 8J1RL (46th expedition 2005). Croatia 9A80AAA (80th Anniversary Zagreb ARC). Vietnam 3W8A and XV2G

(IOTA AS130). Cambodia XU7GAX. Iraq YI9LZ (rare and a f.b. pictorial). Bulgaria LZ1195IR (St John of Rila in the year 1195). Poland SPOTPAX (TPAX was the earliest Polish amateur call dated 1925) and SR25JP (Pope John Paul II Silver Jubilee). HE3RSI (the prefix might indicate a station in Lichtenstein or perhaps a Swiss SWL but it is a special Swiss prefix celebrating Swiss Radio International).

Footnote:

Father Moran was born in Chicago. Much of his work was carried out in India as well as in Nepal and he was a great friend of both Gandhi and Nehru. A very fine radio operator, he assisted with radio links for Sir Edmund Hillary during the Mount Everest expedition of 1955. He passed away on 14 April 1992 at the age of 85 years. Although he died in New Delhi after a brief illness, his ashes were returned to Kathmandu. A radio museum containing his equipment and QSL cards has, I believe, been set up in Kathmandu to commemorate his contribution to amateur radio.

More acknowledgements next month. Keep those QSLs coming in.

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Some reminders

Keep recording those YL contacts towards the CLARA 40th anniversary. Certificates will be sent out for 40 YL contacts. All modes, all frequencies. Names, callsigns and dates. Enjoy!

Make plans for next year. The ALARAMEET in Tasmania and the International YL Meet in South Africa both in September make the choice difficult.

The ALARA Contest follows hard on the heels of the RD Contest. Try them if you have never tried a Contest before.

A Mini Hamfest over Easter in VK5

There were seventeen people at the shack called Womberoo, somewhere near Swan Reach in South Australia, at some time over Easter this year. All bar one were radio amateurs. Is this a record?

There were ten OMs and seven YLs altogether, though not all at the same time.

A great time was had by all. Some amateur radio was discussed and practised with a Vee-beam connected up at last. Four contacts were made on 20-metres on Sunday and on Monday afternoon two YLs joined the 14.220 Net.

Those regular Nets

There are always some ZLs and sometimes DX YLs from further away, on the Monday 14.222 MHz net from 0530 Zulu to about 0630 Zulu— with some call-ins earlier than that. Have a listen out and join in if you can.

On Monday nights, from 1030 Zulu there is a regular 80 metre Net for those in the Eastern States and a slightly later Net in VK6. Propagation does not often allow us all to be on the one net.

There are 2-metre nets in both VK4 and VK6. Check with your State Reps for times. VK5 has just started a 2-metre net on alternate Wednesdays at 8.00 local time on 147.000 repeater.

These 2-metre nets are good for some of the Foundation call people who do not have any HF rigs or are shy of being heard Australia wide. My spies tell me that there are eavesdroppers sometimes, cheering because the 'newbies' are having a go.

The Traveller's Net

This is not a YL net, but is an important lifeline for those travelling around Australia. It is certainly worth a listen. You hear about interesting places and you hear a very efficiently run net. The main net is on 20-metres starting at 1200 EST, but there is another net on 10 metres which was set up when those with a Novice licence were not allowed on 20 metres.

If you are travelling yourself, call in and let someone know where you are and where you are going. One day you may need help, which can only be available if someone knows where you are.

You could also find that there are other amateurs heading in the same direction as you are and this could allow you to meet. It could be the beginning of another long distance amateur friendship.

Amateur radio is a great hobby and one that allows us to meet on air or occasionally for an eyeball, and gives us friends for life.

ALARA sponsorship

ALARA has a system of sponsorship that gives us friends all round the world. Almost from the beginning of ALARA we have had reciprocal sponsorship with YL groups in other countries. We sponsor someone into ALARA and we are sponsored into their YL organisation in return. We receive newsletters from overseas and our sponsors receive the ALARA Newsletter. We exchange letters and gifts at Christmas or exchange emails all the year. How seriously you keep in contact is up to you.

I hope to have an 'eyeball' with several YLs this year. You will hear all about it when it happens! For the technically minded, I hope to send emails from my mobile phone.

The Adelaide Luncheons

The numbers attending the luncheons in the Museum are growing. It is great that our city is small enough that most people can come to Town once a month. When there is a reason (or even when there is no reason) we have a special theme to the luncheon.

We have Red Hat days every now and then and may have yellow hat days



soon (after all the ALARA colours are black and yellow) and when the second Friday falls on Friday 13th, we have a black cat day.

We all made pink roses one day when someone brought along some pink ribbon and showed us how to make roses. Do join us if you have not done so, up to now. The second Friday of the month at the Museum café at 12.00.

The YLs in Perth also have regular luncheons on the third Friday of the month, but unless they tell me about them and send me photos, I can't tell everyone else!

Hint! Hint! Please. If you do anything interesting tell me and tell Dot VK2DB so others can know.

New ALARA office bearers

President:	VK3DMS Marilyn Syme
Vice President 1	VK5TMS Tina Clogg
Vice President 2	VK5JSH Shirley Tregellas VK7LUV Susan Brain
Secretary/ Treasurer	
Souvenir Custodian	VK4AOE Margaret Schwerin
Minute Secretary	VK5ANW Jenny Wardrop
Publicity Officer	VK5CTY Christine Taylor VK3XBA Kathy Gluyas
Award Custodian	
Historian/ Librarian	VK5JSH Shirley Tregellas
Contest Manager	VK3DMS Marilyn Syme
Sponsorship Sec.	VK5BMT Maria McLeod
Editor	VK2DB Dot Bishop
VK1/2 State Rep.	VK2DB Dot Bishop
VK3 State Rep.	VK3OZ Pat Pavey
VK4 State Rep.	VK4PTO Pam Benner
VK5/8 State Rep.	VK5TSX Jean Kopp
VK6 State Rep.	VK6DE Bev Hebiton
VK7 State Rep.	VK7NAW Roasanne Webb
Public Officer	VK3WX Robyn Gladwin

Packet Radio Satgate System to close

On April 26, Roy Welch W0SL reported that after many years of packet message forwarding via UO-22, GO-32 and AO-51, the Satgate System will close due to a lack of traffic being handled. The total of thirty five worldwide stations in the system a few years ago has dwindled to a mere handful due to this lack of traffic. Maintenance problems, changes of QTH and Silent Keys also took their toll.

Roy went on to say, "The system was begun long enough ago that I have lost track of the date. It was given birth by David Medley KI6QE, who was in California at the time. The chief Guru and driving force over the past partial decade has been Andrew Sellers G8TZJ, who gets credit for developing the software which permitted the Satgate stations to operate in fully automated mode. Traffic was accepted from the terrestrial packet network using BBS programs like the F6FBB program and routed to the satellites via the WiSP software program. It was also downloaded from the satellite and routed into the terrestrial packet network untouched by human hands, all thanks to Andrew. My appreciation goes to David for establishing the Satgate System and to Andrew for his effort in keeping this Network going. Thanks also to the remaining few of the Satgates who will be shutting down".

In these times when the internet and its WWW are all pervasive, it may be difficult for newcomers to imagine how important the packet radio networks were in exchanging vital information for satellite users in the early years. Before packet, EQXs and Keps were labourously read out over HF nets and copied by hand onto note paper or circulated in local newsletters. The packet radio system speeded this up greatly and of course accuracy was also improved out of sight.

At a time when only some Universities, a few big businesses and the Military had access to the internet, the problem remained of getting amateur radio related news from country to country and continent to continent. HF radio running at 300 baud filled the gap until the Satgate network was born. It did much

to alleviate the situation and at one point it was a major carrier of international packet radio news and private mail. The UoSats and their derivatives and the ubiquitous WiSP software as mentioned above by Roy contributed enormously to the success of the Satgate venture as a whole.

Although it all seems "old-hat" compared to today's communication techniques, packet radio and the Satgate network were right up there with the best of amateur radio practice not all that many years ago. It served us well and stalwarts like Roy, David, Andrew and dozens of others, including VK Satgate operators like VK4CJO and VK2XGJ, are to be congratulated on their massive contribution to amateur radio. The selfless commitment of time, equipment and effort required to keep a Satgate station on the air 24 hours a day, 7 days a week for many years is worthy of hero status. Modern transceivers, full AZ/EL auto-tracking of antenna arrays, dedicated computing software and hardware, constant attention to updating Keplerian elements and the normal day to day maintenance issues associated with such a station meant total dedication from those 40-odd souls who put in the hard yards over those years. Together they brought vital information to one and all in the wider satellite and packet radio community. Congratulations to them all and a thousand thanks for a job well done.

SSETI-ESEO launch date delayed

AMSAT News Service reports that the launch date for SSETI-ESEO, the ESA led student satellite project intended for Geostationary Transfer Orbit (GTO), has been delayed by approximately one year.

It had originally been hoped that this satellite would be a secondary payload on an Ariespace launch from Kourou in late November 2008, but it now seems that the expected secondary payload opportunity will not be available. Although this delay is regrettable it will give the various teams much needed extra time to finalise and test their systems. A BBM - "Breadboard model"

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members, AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October), the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March), the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:
AMSAT-VK
9 Homer Rd
Clarence Park SA 5034
Graham's e-mail address is:
vk5agr@amsat.org

of the satellite systems and payloads is being produced at the ESTEC facility in the Netherlands for testing purposes. This will commence operations during this summer.

Work continues to develop the AMSAT-UK communications package that is planned to provide a 435 to 2400 MHz (Mode U/S) linear transponder using both analogue and DSP based systems. It will additionally downlink telemetry at 400 bps and provide command and ranging facilities. Full details of the project are available at <http://www.uk.amsat.org/> click on "News Archive" and then "SSETI".

It's been some months now since I first mentioned ESEO, so I'll refresh your memory and hopefully spur you on to complete that HEO ground station. ESEO is to be a high earth orbiting satellite that

will carry an amateur radio payload into GTO, that is Geostationary Transfer Orbit. The average GTO is highly elliptical, having a perigee of about 300 km and an apogee of about 40000 km. Its inclination and final shape will depend to a large degree on the planned orbit of the parent payload. Thus its orbit will have many of the characteristics of an AO-10/13/40. The spacecraft itself though is a micro-satellite. It will not have the power or facilities of a HEO designed for amateur radio service. You will need to gird up your loins and build a first class ground station to cope. Do not expect to make do with a hand-held radio and hand pointed short Yagi, except for very brief periods around perigee. If you have a HEO ground station or are putting one together in anticipation of P3E, that should do nicely.

The SSETI spacecraft ESEO, European Student Earth Orbiter, is built on a micro-satellite platform some 60 x 60 x 70 cm in size, designed, built and operated as the first SSETI mission by the European students working in a network of participating universities. In addition to the satellite platform, the whole system consists of the payload carried by the spacecraft and the associated ground segment. The primary system will use transmit and receive frequencies in the commercial space allocation at 2.2 GHz band. This will use PSK at 9600 bps or 2400 bps. The secondary system, provided by AMSAT-UK, will have a 50 kHz wide mode U/S transponder with an AO-40 format 400 bps BPSK beacon. The frequencies have not been applied for yet but AMSAT-UK is working on 436 and 2401 as 'nominal frequencies'. The beacon will normally send telemetry on the spacecraft's general health but can be configured to send data from the various experiments on board.

Amateur satellite beginners article

Making that first move into any new area of amateur radio is likely to be daunting. Nowhere is that more true than the deep well of amateur radio satellites.

A number of "Getting Started" articles are available from a variety of sources. The March 2007 issue of the RSGB magazine RadCom features such an article entitled "Getting Started on Amateur Radio Satellites" by John Heath G7HIA. It is an excellent introduction to the exciting world of amateur satellite

communications. The Radio Society of Great Britain and the author have generously agreed to allow AMSAT-UK to put a PDF file of the article on their web site. It can be seen at <http://www.uk.amsat.org/> Click on "How Do I Start" on the left hand side of the home page then click on "Getting Started on Amateur Satellites (RSGB article)".

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Telemetry collection – an old art revived.

It may not be for everyone but the activity of telemetry collection is one that fascinates many satellite users. Now is a good time to sharpen up your skills, perhaps for greater things to come.

Back when intercontinental DX was an everyday happening on the HEOs one of my favourite activities was to keep in contact with friends in Scandinavia, where the old family was deeply rooted.

My very next favourite activity, usually when that part of northern Europe wasn't in the footprint was to collect and decode telemetry. Many other VKs shared this passion and we would sit for ages glued to our computer screens watching the 400 baud beacons flooding our systems with data. There are many today who would cast doubts on the validity in this modern technological age of baud rates as low as 400 but it is well to note that for deep space probes, NASA uses very low baud rates when

signals are extremely weak, even to their large antenna arrays.

It is good to know that AMSAT has stuck to that telemetry format for its HEOs and – guess what – all the old gear will be coming out of storage again as soon as P3E hits our skies.

In the meantime, what to do if your interests turn to telemetry? The current batch of tiny Cubesats that are being launched afford the telemetry buff a great opportunity to sharpen their skills and do the satellite builders a favour at the same time. Messages often appear on the BB asking for help in telemetry collection. The files can be of vital concern to the people, many of them University students who were involved in these projects from the planning stages.

So, what is required in the way of gear? Fortunately, not all that much. It is the sort of thing that should be within the grasp of just about any satellite user. Bob Bruninga's PCsat series use AX-25 protocol, so your old packet radio TNCs can come out of storage for those satellites. The Cubesats pretty well all use 1200 baud AFSK for their telemetry. These days, sound card software is available if you don't have a hardware decoder. The Cubesats have a relatively short life and things change almost from day to day, with new launches happening regularly.

Have a look at the AMSAT-NA web site to get the latest information on how to do your TLM collection and where to send files. It is great fun and your few bits of digital information may just be the missing link in solving some problem for the designers or proving a new aspect of operations.

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Plan ahead

**The 18th North Queensland
Amateur Radio Convention
September 21st, 22nd &
23rd 2007
JAMES COOK UNIVERSITY
DOUGLAS CAMPUS**

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

The weather conditions over the weekend of May 9th to 11th produced some unusually good conditions for the time of year. A slow-moving high-pressure cell passed across southern VK5 and seemed to squeeze itself between Victoria and Tasmania before heading up through VK2 and across the Tasman. This produced several days of very good tropo conditions across the southeast of the country.

The first sign of good conditions was noticed by Brian VK5BC, who was hearing 2 m beacons all around, including the recently revived VK7RAE on the north coast of Tasmania. Brian, Phil VK5AKK and Garry VK5ZK (Goolwa) were holding up the Adelaide end and worked a number of stations in Melbourne including Jim VK3II, Mike VK3AAK and Ron VK3AFW. Brian was also able to work up to Leigh VK2KRR at The Rock, near Wagga Wagga, with very good strength. The opening moved east so that the Melbourne – Mt Gambier path was extremely good with Colin VK5DK easily working VK3AAK on 23 cm. The path across to northern Tasmania was also lifted, with Brian working Norm VK7AC. At one stage, Dave VK3HZ worked Norm with S7-9 reports with both of them beaming towards Adelaide. Karl VK7HDX and Peter VK7LCW were also in on the action. As the high-pressure cell continued east, Brian VK5BC worked Rob VK1ZQR in Canberra over a very difficult path. Rob attempted a contact with Karl VK7HDX, but although Karl could hear some of Rob (4/1), Rob heard nothing over his local noise. On the evening of May 11th, Mike VK3AAK managed to work Phil VK5AKK on 23 cm – a 665 km path. The enhancement then moved out over the Tasman with the Hepburn Prediction page showing possible good conditions to ZL. However, there were no reports of any VK-ZL contacts.

Meteor Scatter

The Eta Aquarids meteor shower peaked on May 6th-7th. Reports from the regular weekend Meteor Scatter operations showed that the meteor rate was not

much above the norm, but there seemed to be a lot more long burns, indicating much bigger rocks. However, the morning Aircraft Enhancement net saw some interesting contacts. Jim VK3II reports:

The time was 0825 EAST on Monday May 7th. I was just finishing an AE contact on 144.2 MHz with Don VK2RS. His signal was becoming weak when I heard someone coming in over the top of Don calling John VK1CJ. It turned out to be Rod VK4ARN. He called John twice with no apparent response, then Russell VK3VZP called Rod and exchanged signal reports. Next I called Rod and exchanged 5/5 signal reports.

Rod's signal was in for a minute or so - one very long meteor bum, or perhaps a string of meteors close together?

Via the VK Logger, I found that Wayne VK4WS had, on Tuesday morning, heard me for several seconds. On Wednesday, he copied the complete callsign of Rob VK1ZQR.

John VK1CJ adds: I thought I was talking to Trevor VK4AFL as I clearly heard the callsign at S4. However, apparently Trevor was not on at the time. That was Monday and I heard several bums that morning that lasted 20 seconds or so. The morning before, Sunday, I heard 2 VK4's talking to each other for about 15 - 20 seconds but could not call them at the time due to heavy VK3 traffic coming in the back door. On Tuesday morning I heard fainter signals from VK4 but not Q5. Wednesday morning nothing heard. On Thursday morning, Col VK2KOL told me that VK4ARN and another were clearly hearing me again. I heard very weak signals from VK4 but not good enough to work.

WIA AGM

Barry VK3BJM and I recently did the long trip from Melbourne to Parkes for the WIA AGM and visit to The Dish at Parkes. Barry takes up the story:

My mobile station had a long-overdue workout on the run up the Newell Highway to Parkes and back. We departed very near to the scheduled time of 0800 AEST on Friday morning, and

heard bits of contacts for the first hour. Heard and worked were Jim VK3II and Ron VK3AFW; heard but not worked were John VK1CJ and Rob VK3XQ. After our last contact with Jim (at about 1000 AEST), things fell quiet.

We met with Leigh VK2KRR at his place at The Rock, and, whilst parked outside, the VK3RGL 2 m beacon was quite audible (via AE). Using Leigh's station, a quick chat was had with Alan VK3XPD and Trevor VK3VG, who were alerted to be on the hear-out for us once we got mobile again. However, once we left The Rock and got close to Wagga, we lost the VK3RGL beacon signal, and nothing more was heard from down south, despite many CQ's. We arrived in Parkes at 1930 AEST without any further contacts.

Parkes is an excellent location for Aircraft Enhancement. It lies directly under the Brisbane-Melbourne flight path and is also crossed by large internationals heading out of Sydney to the northwest. The skies over the weekend were clear and blue, and criss-crossed with vapour trails from passing flights. On Friday evening, we were even treated to the spectacular sight of the Dish with the moon rising behind it, Jupiter nearby, and an aircraft passing overhead with vapour trail glowing in the moonlight.

So, on Sunday morning we shot up onto Bushman's Hill at the North end of Parkes (QF46cv), keen to "work the aircraft" on 2 m. We started calling at about 0815 AEST and in the following 45 minutes worked the following: Rob VK1ZQR, John VK1CJ, Trevor VK3VG, Ted VK1BL, Mike VK3AAK, Mike VK2FLR, Adrian VK2FZ, Colin VK2KOL, Jim VK3II, Leigh VK2KRR, and Russell VK3VZP. Heard and very nearly worked was Brian VK3BBB – his 5x1 signal sank quickly into the noise before I could get a report back. Heard but not worked were VK2FABV and VK2KGX on voice, and VK3HY and VK2GKA on CW (if my reading of the CW was 100%). Oh, and Rex VK7MO/m2 with Peter VK3KAI at the microphone was also worked – 5x9+ mobile below us in Parkes!

Jim VK3II won the prize for the most distant station worked, at 640 km, narrowly beating Mike VK3AAK at about 633 km.

Those 45 minutes restored my faith in my system, although the VK3RGL 2 m beacon was still not being heard at all, which I found a little strange.

Mike VK3UBM joined Dave VK3HZ and me for the trip home and we left Parkes at about 1300 AEST. We were nearly at the VK2/3 border before the VK3RGL beacon was heard again - strange conditions. On the way back, via the Newell and Goulbourn Valley highways, we had a couple of brief contacts with Rex VK7MO/m2, who was travelling virtually a parallel route down the Olympic Way from Wagga to Albury, then down the Hume. Contact #1 with Rex at the Rock, as we arrived at West Wyalong; #2 with Rex 70km from Albury, when we were 60 km from Jerilderie; #3 with Rex on the outskirts of Albury, when we were 15 km out of Jerilderie (we'd stopped to take some photos; Rex wasn't flying...); and lastly with Rex in Bell St in Melbourne, as I pulled into my driveway in Kyneton. None of these contacts were very long in duration, or of a strength to threaten hearing, but were pleasing as mobile-to-mobile contacts at distances of between 100 and 150 km.

We also worked Leigh VK2KRR as we approached Jerilderie, and again as we arrived at my QTH.

All contacts were made using the Big Wheel antenna, 3 m of FSJ4-50, 150 W from a Mirage B5016 amplifier and an Icom IC-706MkIIIG.

Holding the WIA AGM at Parkes, and incorporating an inside visit to the Parkes Radio Telescope, was a stroke of genius. Praise to Robert VK3KRB and those who assisted him in organising the weekend. They could only have topped it by gaining operational use of the dish for the day. We had to settle for a very close look and brilliant weather. Maybe next time?

EME

Charlie VK3NX has been busy building equipment and feeds for new bands for EME. After much success on 5.7 GHz and 10 GHz, he is now aiming for 3.4 GHz - a band that is sparsely populated, both for terrestrial and EME operations. Charlie reports:

I've had only a couple of contacts and



Barry VK3BJM at Parkes

new initials on 10 GHz. After extensive tests with F5VKQ, I seemed to be about 2 dB down due to feed "overmoding" problems. I have remade it in smaller diameter pipe and have achieved 34dB return loss - a huge improvement and I hope now to get more of that "precious" 10 GHz energy out and onto the dish.

I have fully set up the station now for 3.4 GHz. I have approx 90 W at the feed thanks to some surplus 50 W PA units and a homebrew splitter / combiner arrangement. The feed is a scaled replica of my 5.7 GHz "screw polariser" and with circular polarisation, it should make it easier to have contacts with both North America and Europe without having to manually switch feed polarity as I do on 10 GHz. I have noticed that heavy cloud cover attenuates the 3.4 GHz signal by as much as 1.5 dB, as evidenced whilst I was doing sun noise measurements.

I should have some skeds very soon, and an "activity" weekend is planned for June, with the 9 (!) stations currently QRV worldwide on 3.4 GHz EME. As with 2.4 GHz, there is a discrepancy between the world-wide band allocations, and I've had to build a 2nd LO and switching arrangement, to be able to receive the NA stations on 3456 ...hopefully!

Doug VK3UM has released updates to his popular suite of EME and EMR programs. The software is available for download from a number of sites including: www.velalq.com/downloads/software/vk3um.htm

The release includes:

- Transmission Line Calculator Ver 1.08
- EMR Calculator Ver 6.02
- EME Calculator Ver 3.05

Doug also mentions that John VK5DJ has undergone extensive heart surgery and is making a rapid recovery. The interfacing between John's Tracking System and EME planner is complete. More details at: www.corprit.net/~jdrew/Beam/Beam.html

VK-VHF Email Reflector

The VK-VHF email reflector has been moved to a new host. The address has changed to: lists.vk2djg.net/mailman/listinfo/vk-vhf. Otherwise, it's business as usual.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Plan Ahead

**The Mid North Coast
Radio Expo 2008**

When: Sunday Jan 20th

**Where: St Johns Church Hall,
Mc Lean Street, Coffs Harbour**

Time: 8.30am start

**Trade Displays, disposals, club
displays, home brew and more**

**Info at www.mncarg.org or call
Gary VK2ZKT on 02 66552990**

Digital DX Modes

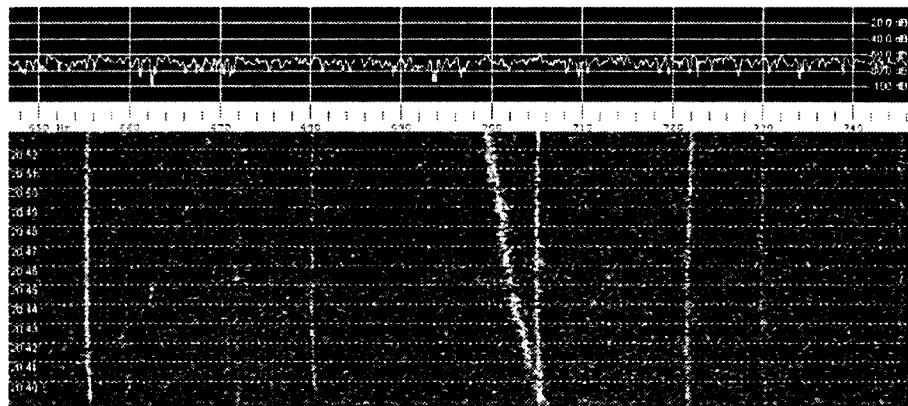
Rex Moncur – VK7MO

Rex is currently having a long break on the mainland, so David VK2AWD has penned something for this month.

With weak signal VHF work, it is useful to have more than one way of assessing the performance of your receive system. A distant TV signal received via Earth-Moon-Earth (EME) can provide a repeatable way of doing this. In my case, I periodically check the Channel 5A TV vision carrier signal on 138.250209 MHz from Mawson in Western Australia via EME.

While the signal is inaudible, it is often visible as a single fuzzy line trace on my computer monitor using the Spectrum Lab program with a FFT bin width of around 170 milliHertz. This program needs to be run on a reasonably fast PC with a suitable soundcard connected to the low level audio output from the radio. To receive these signals, you will also need to run a suitable moon-prediction program (e.g. Ztrack) that will give you the moon azimuth and elevation along with the Doppler shift for various times at both the transmitting and receiving sites.

A 10-element Yagi for the 2 metre band, which will work at 138 MHz (albeit with slightly reduced performance) should be sufficient for the antenna. I use 2 x 13 element Yagis and an FT-847 radio (with no external preamp) at my station in QF56ng. Some vertical elevation



Channel 5A Mawson WA via EME

capability for the antenna system is necessary, as the maximum ERP from the TV station antenna is in the low elevation range (e.g. 0 to 4 degrees), when the moon elevation at the receiving end is reasonably high (e.g. greater than 25 degrees elevation). The higher elevation at the receiving end also helps to provide a quieter receive environment.

I use the stable vision carrier signal from Channel 5A at Newcastle on 138.276025 MHz as a reference to manually correct for any receiver frequency readout error or drift. I normally place the EME signal at around 700 Hz offset. Both the Newcastle TV dial reading and Doppler shift are entered into a simple spreadsheet program, which calculates the dial frequency needed for receiving the EME signal.

The screen dump shows the 8 September 2006 traces from Channel 5A TV Mawson EME signal (single sloping fuzzy line due to changing Doppler shift over time) and the Newcastle terrestrial signal side bands (multiple and almost vertical traces).

The technique might also be used for other TV transmitting and receiving locations providing the relative moon elevation range is satisfactory, the TV signal is stable and the ERP from the transmitting site is sufficiently high.

Please contact Dave VK2AWD at QTHR if you would like more information.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

April was an interesting month on 6 m with several openings to Japan, mainly from northern Queensland, as well as some sporadic E openings within Australia.

April 13th proved to be a good day with Trevor VK3VG at Cobram and Paul VK2YVG at Broken Hill working several JA stations. At the same time, Jeff VK4BOF in Atherton was copying Paul and the JA stations. JA1VOK reported working VK2YVG, VK3VG and VK4's ABW, BEG, FNQ & SIX all in northern Queensland. JA2HCB reported hearing the Alice Springs beacon VK8RAS and later the same day Brian VK5BC reported hearing the Townsville beacon VK4RTL.

Then on April 14th, both the Dampier VK6RSX and Townsville VK4RTL beacons were heard in Japan with several northern VK4's again working JA's. During this opening Jeff VK4BOF at Atherton made his first contact into Japan with JQ6RUP - well done Jeff.

Good openings to Japan again occurred on April 18th and 19th from the Mackay area with Andru VK4KAY and Kevin VK4BKP working into Japan on both days. On the 19th, Andru worked several JH1 stations whilst mobile.

On April 23rd, a good sporadic E opening between VK4, VK2 & VK5 occurred. Several stations were active in each state and the band was open

for several hours. From VK5, stations from north of Brisbane to as far south as Wollongong were worked and the FK8 beacon was audible for some time. VK4s from as far north as Mackay worked into VK2 and VK1.

An unexpected opening lasting half an hour from VK5 to southern Japan occurred on Sunday 29th April at around 0800 UTC. Brian VK5BC worked JA6RJK, JA6TEW and JA6EXN, all with signals up to 5/9.

I received a note from John VK4TL near Atherton who reports:

On Wednesday 2nd May, the band opened to China and I was able to work BG4CZM and BG5HAR just

Sunspots or global warming?

Well it is midwinter and although it is much cooler, it is also one of the mildest winters I have known. Maybe it is global warming. Has it affected shortwave propagation? Not as far as I can tell because propagation has been poor particularly above 10 MHz. It could also be the dramatic decline in frequency occupancy from the major international broadcasters on HF. The sunspot numbers are very slowly climbing up and it will probably be spring or summer before we experience any noticeable improvement.

The major news this month was the unexpected closure of the remote controlled receiving cluster known as Dxtuners. These have been operating since 1997 and over 1500 joined up as subscribers over that 10-year period. I found the facility invaluable as I am confined to a retirement village where I am not permitted to erect any outside antennas. No reason was given other than the webmaster wanted to pursue other interests and he said he could not find anybody to take it over. I can only find two web-based receivers online but they are using a different system from the Java based operation that was employed by Dxtuners. Both of them are based in the US and basically they take a 30-second snapshot of a particular channel and send it out as a WAV file. It is not

a continuous operation like Java. I do hope that a successor to Dxtuners will quickly emerge.

Africa continues to be a target for international and clandestine broadcasts. As I previously reported, the Libyans have apparently taken over the Africa Numero Uno shortwave facility in Gabon. They are mainly operating between 17600 and 17650 in a crude jamming effort against clandestine broadcasters targeting North Africa, particularly Libya. There are also quite a few clandestine stations focusing on Sudan, Eritrea, Ethiopia and Somalia. Most seem to be transmitting from Europe and the former Soviet Union and programming is in various dialects and local languages.

Zimbabwe continues to be another target of clandestine and international broadcasters. Radio South West Africa emanates from London and originally commenced from senders in Botswana but lately has added sites in England as well as Eastern Europe. Reports indicate that the Zimbabwean Government, led by Robert Mugabe, has been actively jamming the broadcasts with assistance from China. As well, the Iranians are reported to be assisting with the construction of an external service to counteract the popularity of the opposition-based station.

The Canadian Time station CHU in Toronto apparently received authorisation to continue using 7335 in addition to 14670 but American religious broadcasters have registered the frequency and CHU has been suffering severe interference. Remember the 41 metre broadcasting allocation was extended to 7500 kHz and CHU seems out of place but CHU has been operating on this channel for many decades. It seems that the Canadian and American frequency planners are not communicating with each other.

I have recently heard China Radio International in English from 1300 to 1355 on 9760, 9730 and 5955. I do not know from what sites they are broadcasting as their audio is not synchronised. 9760 and 5955 were the best as far as signal strength are concerned and the other 9 MHz channel was down quite a bit. Radio Pyongyang in the Korean Democratic Republic must be experiencing problems acquiring replacement parts for their senders because they are particularly unstable. They appear to be on a different channel each day and the senders drift about wildly. Just listen on 7200 and you will hear it yourself.

Well that is all for June and don't forget you can forward news to me at vk7rh@wia.org.au.

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VHF-UHF: an expanding world *continued*

after 0815 Z. Then VK4BEG worked another Chinese station. T88KL was then contacted at 0839. He was working one JA station after another and it was very difficult to pick out the call. I got the last two letters and looked up on the loggers. I then called him and he came straight back. I also heard a JD1 Volcano Island, but don't know which one. The band has been a bit quiet since then.

On May 7th, Scott VK4CZ in Brisbane reports hearing both the VK7RAE

northern Tasmanian beacon and VK7RST Hobart beacon and working Joe VK7JG in Launceston. On the 8th, Norm VK3DUT worked Rod ZL3NW near Christchurch. At the time, ZL TV audio was also audible in VK5.

Remember to keep listening on the band during June for the usual mid winter sporadic E openings.

Please send any 6 m information to Brian VK5BC at beleland@picknowl.com.au.

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DX - News & Views

VK40Q,

P.O. Box 7665, Toowoomba Mall Centre, QLD 4352.

E-Mail: john.bazley@bigpond.com

As I am writing this column, Swains Island KH8/S DXpedition has taken place with over 115,000 QSOs in the log. Scarborough Reef has just finished with nearly 45,000 QSOs. When you consider the circumstances under which they were operating it is a superb achievement. They really have had to put up with the fiercest criticism I have ever seen on the DX cluster aimed at a DXpedition. The following is a message received from the BS7 boys on the third day of the operation:

It is now day 3 on Scarborough with operations going for 48 hours.

All 4 operating positions are built and the team has gone from survival en-route, to survival while building, to survival while in QSO mode.

(Have another look at the photographs in last month's magazine!)

Everyone on the team has cuts from the coral. The closest access to any of the rocks is over coral and no one has been spared coral scrapes and cuts. Add to that over 100 degree heat and sunburn and you have a dangerous environment for all.

During the day each shift is 6 hours in heat and a dry wind under a small umbrella. If you are lucky enough you get to operate at night. You are left on a rock for 13 hours barely 4 feet above the water in pitch black sitting in a folding chair, nowhere to walk and stretch and getting a constant salt spray. You cannot see the other rocks nor the ship and if something goes wrong there is no chance of rescue.

The SteppIR verticals and one Yagi are up. Two stations will stay on 20 m while the other two will search 15, 17, 30 and 40 for openings.

So as you sit there in your comfy shack complaining on the cluster and sending us emails about your lack of a QSO and the do's and don'ts, think what our team is going through to bring you "the chance of a QSO".

That really says it all!

We have since last month a further update on the predicted future of the current Solar Cycle. The U.S. Department of Commerce, NOAA,

Space Environment Centre has released the new updated predicted minimum. The good news is they are now saying July instead of September, with a predicted solar flux average of 75.0. The complete chart can be seen at <http://www.sec.noaa.gov/ftplib/weekly/Predict.txt>. The prediction values are based on ISES cycle 23 forecast of 13-month running smoothed values. We are getting close to the bottom of the cycle. Start working on those improved antennas for 10 and 6 metres! For those of us that cannot get beams up for whatever reason, do not be too disheartened, when particularly 10 metres opens up again. A half wave vertical with the bottom 3 to 4 feet above ground is an excellent antenna. From personal experience, it is extremely competitive as the band is opening and closing for long haul DX. Okay, you will struggle against the beams when the band is wide open but the opportunities will be there.

Following my comments last month regarding VKs and DXpeditions, I have received the following email from Roger - G3SXW - who I know needs no introduction!

It is clear that DXers in VK, ZL, KL7 are often disadvantaged by DXpeditions. DXpeditioners face a range of decisions during their operation: bands, modes and especially times. I think we all know the core problem: the big majority of DXers are in the northern hemisphere, so that is where there is most demand. But I do have a couple of suggestions to ponder.

Firstly, I have noticed that the nationality of DXpedition operators influences their choice of operating times & frequencies, so that they can work back home. I certainly prioritise openings to UK and am not ashamed to say so. We have also noticed that American operators prioritise USA openings. This is quite natural human psychology. So, maybe more Australians should go on DXpeditions to countries that are Needed by VK DXers?!

Secondly, DXpedition operators need to do their homework about difficult paths and then also to have the ability

to take advantage of them when those openings occur. If I hear a VK or a KL7 in the pile-up I should immediately think: "The band is open in that direction, I should now try to work them". It's not easy to keep your wits about you when the pile-up is howling and you're struggling to keep control and to log them as fast as possible. VK DXers should not hesitate to e-mail DXpedition operators before the trip to alert them to potential openings. But be brief - just pick one or two prime openings to suggest! I very seldom receive such e-mails before a trip, and I do welcome them. It's not being pushy.

Yes, the difference in propagation between VK6 and VK4 is huge. The trouble is that there are so few callers from these areas that DXpedition operators have trouble building experience about the openings. In CQWW CW, for example, we (TZ5A last year) study this very carefully. But it's not easy. The openings are not predictable and if stopping the pile-up with "QRZ VK ONLY" there is often no other VK calling, so that's just wasted time.

The main issue is that most DXpeditions are too brief to be able to unearth all the unusual openings, and do justice to all the areas and bands and modes. Only the huge projects, like Five Star DX trips with up to 40 operators, have that luxury. This is my reason for not usually doing 160 metres these days; it is just too time-consuming and detracts too much from the mainstream bands. But it also helps to explain why smaller populations are not prioritised.

There is some good news though: any time I work a rare country I get a quick adrenalin rush. This happens every time I work a VK, from anywhere, on any band! Thanks to all VK DXers for being there. I look forward to working you all on all of my future trips!

73 de Roger G3SXW.

Some very interesting points from Roger - any comments from the VK DX fraternity? My email address is at the top of the page.

As I write this, Vladimir UA4WHX is back on the mainland of Tanzania in the

The VK5BUG "Blackbelter"

I've just read VK5BUG's "Blackbelter" antenna article in the May edition of AR magazine. While it is an interesting article, I'd like to comment on a few things. Firstly, I was amused to read the comments in regard to vertical antennas about "no definable noise problems from them when compared to various horizontal types, contrary to what some literature might state". Sadly, my own experience is the opposite. All of my vertical antennas have shown a very high degree of (mainly power line) noise pickup compared to other antenna types such as full wave loops and inverted V dipoles. I think VK5BUG should consider himself exceedingly fortunate to be living in a QTH free of noise!

Secondly, his use of 'above ground counterpoises' made me smile, as some years ago a space saving 'sloper' design I presented in AR magazine also used an 'elevated radial'. In fact in that article from August 1996, I recall mentioning that, "In conclusion, I must say that the elevated radial is the key to good performance with this antenna". I suspect that the same thing applies with VK5BUG's antenna design.

Thirdly, the comments relating to transmission lines and balun performance are refreshing, however when it comes to baluns, they definitely have their uses. I share VK5BUG's suspicions and concerns about 'toroidal' baluns. All of my various baluns are wound on ferrite 'rods' for precisely the same reasons of potential loss and other deficiencies possible with toroidal construction. On baluns generally, I have used 4:1 voltage mode baluns wound on ferrite rods, as designed by Les Moxon G6XN (SK) with excellent results, and also in more recent years, simple rod wound 1:1 current mode baluns (essentially a bifilar wound common mode RF choke), also with excellent results. These 1:1 current mode baluns have some quasi-magical properties, such as apparently being able to effectively compensate for incidental (current) asymmetry in a nominally balanced antenna load. Indeed, they are useful for feeding a dipole with balanced feeder for reasons of reduced noise pickup. So baluns are not all bad, after all!

Felix Scerri VK4FUQ.

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from the local government to operate as OD5/CT1EFS. He has mounted doublet antennas for 15, 17 and 20 meters and soon for 40 metres. Plans are to operate both CW and SSB daily around 1730Z. He also has 6 metres. QSL route to be announced later.

XF4 Carlos XE1YK, The President of Mexico's FMRE, has announced the dates for an XF4, Revillagigedo, expedition to celebrate the 75th anniversary of FMRE. It is a full month long: November 15-December 15. Paperwork for the permission will be initiated this week with a request for the call signs 6E4LM and XF4YK. The operators will focus on 160 m and 6 m, where they feel XF4 is most needed, but will be on the other HF bands as well, with a goal of 25,000 QSOs. They plan a hundred-watt radio and simple antennas. An FMRE Board meeting April 24th will start the operator selection process. XE1YK operated as XF4YK in 1973.

9V1 QRZ DX reports that 9V1AP is the new call for Irwin KD3TB, who is now living in Singapore until July 31st. He'll be mostly on PSK31 with some SSB activity. QSL via KD3TB.

6W Dani EA4ATI is returning to Dakar, Senegal, and will remain there until April 2008. He expects to be active as 6W/EA4ATI and 6W1EA, probably with a beam for 10, 15 and 20 metres, and dipoles for the other bands. QSL direct via homecall.

9A Gianfranco I6GFX and Luca I6QIZ will be active as 9A/I6GFX from Croatia on 23-28 June. Their main QTH will be on Murter Island (not IOTA, IOCA CI-074), and they plan to go and operate from a few EU-170 counters: Arta Vela (CI-004), Kornat (CI-042), Murvenjak (CI-075), Radelj (CI-097), Vela Smokvica (CI-107), Vrgada (CI-143) and Prisnjak Mali (CI-488). QSL via home call, direct or bureau. Logs at <http://www.gianfrancogervasi.it/search.html>

Happy DXing.

Special thanks to the authors of *The Daily DX (W3UR)*, *425 Dx News (IIJQJ)* and *QRZ DX* for information appearing in this month's DX News & Views.

For interested readers, you can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

capital Dar es Salaam. As always he's not sure how long he will remain at this stop and is not revealing his next stop. It appears that Vladimir plans to continue the African junket for another couple of months. So hold off on all of your QSLs to UA4WHX until he gets back home. In the mean time here is a preliminary listing of Vladimir's current Trip:

May 2005 to date - Middle East, Africa and Indian Ocean

May 2005 - OD5/UA4WHX, ST2KSS

June 2005 - ST2VB, J20VB

August 2005 - J20VB

September 2005 - 5Z4/UA4WHX

October 2005 - 5Z4/UA4WHX

November 2005 - 5X1VB, 5H3VMB

December 2005 - 5H3VMB, 7Q7VB, Z2/UA4WHX

January 2006 - 7Q7VB, Z2/UA4WHX, 4K0VB, 4L0B

February 2006 - 7Q7VB

March 2006 - C91VB, 5Z4BU, 3DA0VB

April 2006 - 3DA0VB

May 2006 - 7P8VB

June 2006 - 5Z4BU, 7P8VB, Z2/UA4WHX

July 2006 - Z2/UA4WHX, 9J2VB, V51VV

August 2006 - V51VV, A25VB, V51VV/P

September 2006 - 9J2VB, A25VB

October 2006 - V51VV, D20VB

November 2006 - 9J2VB

December 2006 - C91VB/4, C91VB/6, 5H3VMB/5

January 2007 - 5H3VMB/5, 5H3VMB, 5H3VMB/3,

February 2007 - 5H3VMB, D60VB, 5R8VB

March 2007 - 5R8VB, D60VB, 7Q7VB

April 2007 - 7Q7VB, 5H3VMB/3, 5H3VMB

All of Vladimir's operations from trip 1 and 2 have been approved by the ARRL DXCC Desk and most have received their QSLs for those first two trips. Again the above will be updated and resent once Vladimir is back home in Russia later this year.

OD5 Pablo CT1EFS is currently in Shama near Tyre in southern Lebanon, where he will be staying until June 2007. He is waiting for authorization

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•An old HALLICRAFTERS HT-37 AM/CW/SSB TX, either complete and operational or with some parts, incl. valves, missing? Missing valves would not be a problem, as I could attempt to source them elsewhere, if necessary. I am after this item specifically and accepting no substitutes because the HT-37 had exceptional transmit audio quality. Please be reasonable with the price. John L Wickham VK3ZK QTHR jlwickham@aapt.net.au Thanks for looking.

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•VK5JST Antenna Analyser kits(see AR article May 2006). Increased component and postage costs mean prices of this great kit will rise from July 1 2007. Buy now and beat the increase!

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WANTED SA

•I am looking for a schematic for the 1963 vintage HEATHKIT Jr "Transistor Diode Radio Kit," or better still, the radio itself. The radio was marketed as the Model R-110. I'd be interested in the kit's instructions, assembly notes, or any other diagram that accompanied the kit. Phone Hank on mobile: 0403 285 940 or email vk5jaz@hotmail.com

•Service manual (or photocopy of) for CONN SERENADE 633 or 634 electronic organ. Will reimburse all costs. Ivan VK5QV QTHR (08) 8322 3668 vk5qv@esc.net.au

FOR SALE WA

•KENWOOD TS-450S AT-HF radio with mobile mounting bracket and manuals in original packaging \$750. YAESU FT-757GX HF radio with mobile mounting bracket, operating manual and technical supplement \$500. KENWOOD TR-9130 2 m all mode transceiver with mobile mounting bracket and manual \$300. KENWOOD TR-2500 2 m hand held FM transceiver with mobile DC charger & bracket, AC charger and manual \$150. 240 V AC to 12 V DC power supply \$100. Multi tap HF mobile antenna \$30. KENWOOD set of mobile HF antennas \$30. 2 m mobile antenna \$10. All reasonable offers will be considered. Contact: Alastair or Louise on (08) 9586 4244 answering service picks up after 10 rings. Unit 144 Erskine Grove Estate 19 Oakleigh Drive Erskine WA 6210.

MISCELLANEOUS

•AMATEUR RADIO MAGAZINE. I have a collection from December 1964 to the present and no longer have room to store them. Would be pleased to pass them on free, to any interested amateur. Brian Cook VK6BX QTHR, Email: rosbrian@iinet.net.au, Tel: 08 9339 2933, Skype: rosbrian

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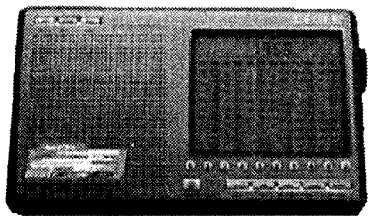
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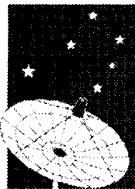
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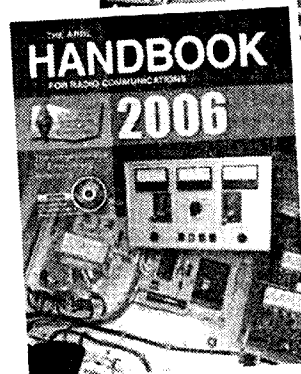
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VK2 New South Wales VK2QV Chris Flak VK2XCD Chris Devery VK2BFN Adrian Clout	Phone 02 9689 2417 vk2wi@ozemail.com.au vk2advisory@wia.org.au	VK2WI - Sunday 1000 and 1930 hours local.1.845; 3.595; 7.146; 10.125; 14.170; 28.320, 52.525; 145.600; 147.000; 438.525; 1273.500 megahertz. Plus regional relays. VK1WIA news included in the morning
VK3 Victoria VK3JJB John Brown VK3PC Jim Linton VK3APO Peter Mill	Phone 03 9885 9261 arv@amateurradio.com.au	VK1WIA, Sunday 11am and 8pm, 3.615 and 7.085 (LSB), 10.130 (USB), VK3RML 146.700, VK3RMM 147.250, VK3RMU 438.075.
VK4 Queensland VK4BY Don Wilchefski VK4ZZ Gavin Reibelt VK4KF Ken Fuller	vk4advisory@wia.org.au	VK1WIA, Sunday 9.0am via HF and major VHF/UHF rpters
VK5 South Australia and Northern Territory VK5OV David Box VK5APR Peter Reichelt VK5ATQ Trevor Quick	Phone 08 8294 2992 boxednrm@lm.net.au peter.reichelt@bigpond.com vk5advisory@wia.org.au	VK5 South Australia VK5WI: 0900 am local time. 1.843 LSB, 3.550 LSB, 7.140 LSB, 28.470 USB, 53.1 AM, 147.000 FM Adelaide, 146.900 FM South East, 146.925 FM Central North, 439.975 FM Adelaide North. VK8 Northern Territory 0900 local time 3.555 LSB, 7.050 LSB, 10.130 USB, 146.900 FM.
VK6 Western Australia VK6NE Neil Penfold VK6XV Roy Watkins VK6QO Bruce Hedland-Thomas	Phone 08 9351 8873 http://www.vk6.net/ vk6advisory@wia.org.au vk6ne@upnaway.com vk6xv@bigpond.net.au	VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury),147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Realaudio" format from the VK6 WIA website
VK7 Tasmania VK7ZAX Phil Corby VK7DG Dale Barnes VK7KK Reg Emmett	Phone 03 6234 3553 vk7advisory@wia.org.au phil.corby@tassie.net.au vk7dg@wia.org.au regemm@ozemail.com.au	VK1WIA Sunday 9am on VK7WI network: 1.840 AM, 3.570 MHz LSB, 146.700 FM (VK7RHT South), 53.825 FM (VK7RAD South), 147.000 FM (VK7RAA North), 146.750 FM & 53.825 (VK7RNW North West), 146.625 FM (VK7RMD North West), UHF CB Channel 15 (Hobart) and 27 MHz CB - 27.225LSB (Hobart). Followed at 9:30am with VK7 Regional News Broadcast also on 7.090 LSB & 14.130 USB

Notes

1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

WIA first Chris Jones Award presented to Mai VK6LC



WIA President Michael Owen VK3KI announced the first Chris Jones Award at the 2007 Open Forum at Parkes NSW on 5 May 2007.

The Award was presented to Mai Johnson VK6LC in recognition of his great contribution to amateur radio as the WIA Awards Manager.

Further details can be found on page 4, in the WIA News column.

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Amateur

The magazine for AUSTRALIAN radio amateurs

Volume 75 No 7

July 2007

Amateur Radio



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*Experiments with various
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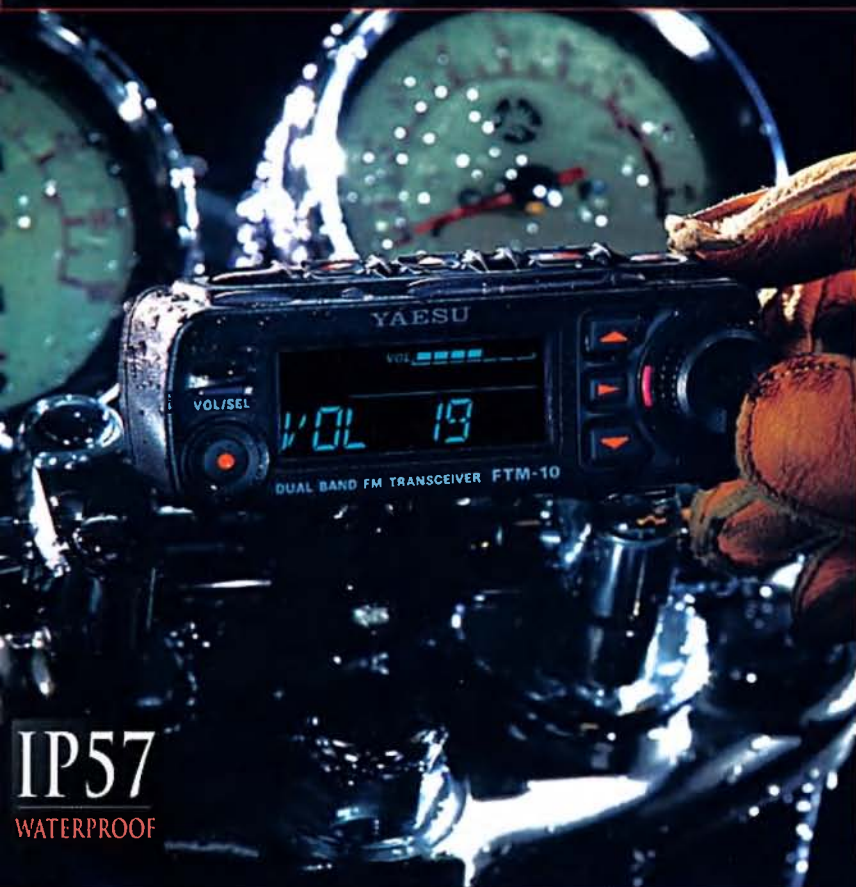
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Our Cover this month

Christina Simon VK3FOX, one of the new breed of YLs, in her shack.
She is also a poet. See "CQ" on page 29.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA National Office (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 an additional \$2 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.

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

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Founded 1910

Representing

The Australian Amateur Radio Service

Member of the

International Amateur Radio Union

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Editorial Comment

Peter Freeman VK3KAI

Women in Radio

For several years, we have had a focus of "Women in Radio" for the July issue. Why have this focus? Simple – July marks the birthday of ALARA (Australian Ladies' Amateur Radio Association). We have taken the liberty of celebrating "new" YL (Young Lady) operators on the cover and Inside Back Cover of this issue. In addition to the usual ALARA column in the "News From" section of the magazine, we try to include additional material with a YL focus in the July issue. So, we have a feature on two prominent ALARA members, together with a poem written by Christina VK3FOX, who appears on our cover.

Delivery survey

All members of the Publications Committee thank members who have replied to our request for information of delivery of AR magazine. The information has proved to be most informative. At the time of writing, we have enough responses to give us an idea of delivery times across the nation.

In order to be even more useful, we ask you to again forward the information for this issue of AR and the next two issues. You will see a reminder on the fly/cover sheet which has your address details for the copies of AR mailed to subscribers.

For the next three (3) issues, please continue to send an email to ar_delivery@wia.org.au with the details of your callsign, your postcode and the date of delivery of AR in the body of the message. "Subject" can be a simple message, such as "July delivery", even just leave the body blank and include the required details as the "Subject".

Contests and activity

It appears that this month has a lot of Contest news. In addition to the usual Contest column, we have the Results from the John Moyle Memorial Field Day Contest, thanks to Denis VK4AIG/VK3ZUX. These results arrived just in time for the last issue of AR, but we would have needed to remove some other

content to include them. Therefore, they appear this month, despite the fact that they have been available via the WIA web site for most of the last month.

We also have the Rules for the Remembrance Day Contest and for the ALARA Contest, both occurring in August. Also, for August, do not forget the International Lighthouse/Lightship Weekend. August is looking like a potentially busy month of activity.

Now that we have gone past the middle of June, the frequency of "ham fest" type activity declines for a couple of months. Whilst we still have the occasional event, it seems that winter is less preferred for this type of activity. We have the GippsTech Technical Conference held in early July at Churchill (without the commercial traders), the Gippsland Gate ARC event two weeks later, and an event in VK6 on the first weekend in August. It is then a gap until such activity resumes at the higher pace seen through the spring to autumn period. I am sure that the major manufacturers appreciate the relative pause in the pace of activity.

I must admit, wearing another hat as the Chair of the GippsTech Organising Committee, the lower frequency of events, and lower level of VHF/UHF and above activity, at this time was part of the reason for holding this event in the middle of winter. Hopefully the event, on July 7 and 8, will be (or will have been) a success.

One of the articles this month reports some interesting results from tests of a variety of mobile antennas for 80 metres. The challenge for us now is to convince the author to inform us all of the details of the winning antenna.

Please continue to make your contributions to the magazine. Just remember that our review and preparation process can be slow, so it may be several months before your technical article appears in print. News items usually appear in the next issue, provided that the material arrives by around the 6th of the month preceding.

73 until next month.

Peter VK3KAI

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Amateur radio's advocates

We argue that every amateur should be a member of the national amateur radio society, the WIA in Australia, as the national radio society represents the amateur service nationally and, ultimately, internationally.

Why does that representation matter? Because there is just more demand for spectrum than can be satisfied, and without a family of frequencies across the radio frequency spectrum, and appropriate regulation, the amateur service would just not exist.

Spectrum allocation and formulation of basic regulation is, necessarily, an international matter, the function of the International Telecommunications Union, the ITU. The ITU does this through World Radiocommunications Conferences, (WRCs), held every 3 or 4 years.

The review of frequency allocation to different services in response to changing needs and conditions is an ongoing process. As one WRC ends the spectrum managers and the services start preparing for the next one. Many technical issues surrounding competing technologies are often referred to various study groups to analyse potential interference problems and report so administrations can form a national or regional position.

As much of those ongoing processes are steps to achieve a result, sometimes not an obvious step, it makes it that much harder to describe in simple terms.

But every few years there is a peak in the process, when there is an ITU WRC. Some WRCs may not be so important for the amateur service, as each WRC has its own agenda which may or may not include items affecting amateurs.

The next ITU WRC is 22nd October to 16th November this year. There are likely to be four proposals of immediate concern to the amateur service.

How do we organise that representation at the different levels?

Each national amateur radio society (including the WIA) is a member of the International Amateur Radio Union, the IARU, and the appropriate IARU regional organisation.

The IARU is a Sector Member of the ITU's Radiocommunications Sector, and

as such has the right to participate in the various study groups and working parties that prepare the technical reports that become a foundation for the ITU member countries to propose changes to the allocation of spectrum or regulation.

A part of the international process is the regional organisations. The ITU divides the world into three regions for frequency allocation purposes. Regional organisations have emerged, where the member countries develop common positions on issues to be considered at a WRC, so forming a voting block.

Currently, the basic responsibility of representation at the regional level is the responsibility of the three IARU regional organisations.

As I write this Comment, Larry Price W4RA, President of the IARU, and Dave Sumner K1ZZ, Secretary of the IARU, are in Geneva, Switzerland, at a meeting of Working Party 8A on behalf of the IARU. That Working Party is preparing an ITU "Handbook" on the Amateur and Amateur Satellite Services, one of the less direct but valuable ways of preserving the amateur position.

The IARU will have observer status during the WRC, its observer team will include several experienced amateurs.

At the same time 'Selva' Selvadural 9V1UV is in Kuala Lumpur, Malaysia, attending the Asia-Pacific Broadcasting Union (ABU) Preparatory Seminar on WRC 07 on behalf of IARU Region 3. His role is to present a paper setting out the amateur service requirements, not only at 7 MHz, but also at 5 MHz.

Shizuo Endo JE1MUI and Peter Lake ZL2AZ will attend the 5th meeting of the Preparatory Group of the Asia-Pacific Telecommunity, 'our' regional organisation, in Busan, Korea, on the 16th to 21st July 2007.

In Australia, David Wardlaw VK3ADW and Keith Malcolm VK1ZKM are gearing up for the next Australian preparatory group meeting early in July. This will finally lead to an Australian position for WRC later this year.

That position is developed through meetings of the various spectrum users, government users such as defence, aviation, and the like, commercial

users such as Telstra and Optus, and the amateur service represented by the nominees of the WIA.

That position becomes the brief for the Australian delegation to the WRC.

Keith will then join the Australian delegation to the WRC, nominated by the WIA and his travel and accommodation expenses are met by the WIA.

The role of the national amateur radio society, that of the amateur regional organisation and the IARU are each a critical part of the matrix of representation.

But why have an amateur delegate on the Australian delegation and not just rely on the IARU? Because the IARU has only observer status and can only provide information and act in a coordinating role. Only countries have votes and only members of delegations have the right to speak.

A WRC may have 3,000 delegates. It meets in plenary session and works through committees that form sub-committees that form working groups that may form sub-working groups. Many meetings are concurrent, giving countries with larger delegations an advantage. But even then, we need an amateur to follow the amateur matters.

The WIA pays a subscription of 71 US cents per transmitting member to IARU Region 3. A tiny part of that, 10%, is passed on to the International Secretariat of the IARU, though almost all the costs of the IARU are directly borne by the ARRL, as the International Secretariat.

The WIA sets aside every year \$2 of each member's subscription to create a provision to meet all these costs, including the costs associated with the preparation for the WRC and participation in the Australian delegation.

The WIA has a unique role as the Australian amateurs' advocate to protect amateur privilege, nationally and internationally. It is able to perform that role effectively because of the expertise and dedication of its volunteers.

That is one of the important reasons why we can argue that all amateurs should belong to the WIA.

WIA News

WIA announces membership and exam cost changes

From 1 July 2007, the cost of Family Membership will drop from \$40 to \$30 per year. A Family Member does not receive *Amateur Radio* and is a second or further person living at the same address as a Member or Concession Member receiving *Amateur Radio*.

The Board hopes that this will encourage more people living at the same address to become WIA members.

Also, from 1 July 2007, the WIA will no longer offer membership without the magazine, *Amateur Radio*, except as a Family Member. Existing Non-AR memberships will continue.

The Board believes that while the WIA communicates with its members in a number of ways, including broadcasts and the WIA website, the non-AR membership is no longer appropriate as the magazine is the only way that the WIA can directly communicate with all members who receive it.

WIA forced to increase the cost of its examination/assessment service

After 30 June 2007, the cost of all assessment packs will be \$35 per pack.

This new rate applies to assessment packs for the Foundation qualification (which includes theory, regulations and a practical assessment), the Standard and Advanced Regulations and the Standard Theory and Advanced Theory.

The practical assessment taken alone will increase from \$20 to \$25.

A detailed review shows that each pack, including return processing, costs more than is recovered and so other WIA income has been subsidising the WIA Examination Service.

The increase is for all assessments conducted from 1 July 2007, irrespective of when the pack was produced.

Karl Hennig VK6XW new Intruder Watch Coordinator

Karl Hennig VK6XW has been appointed Intruder Watch Coordinator by the WIA Board to replace Glenn Dunstan VK4DU, who retired at the recent WIA AGM. Karl is an active supporter of the intruder watch system and brings many years of experience to the task of protecting the amateur HF bands

from interference from non-amateur intruders.

Full details of the WIA Intruder Watch system are available on the WIA Web site.

The success of Intruder Watch in protecting the access of Australian amateurs to the HF spectrum depends on the support of active amateurs willing to submit formal reports about interference.

New National Standard built around Amateur Radio

The Commonwealth Department of Education Science and Technology has endorsed a new competency standard, called "Operate and maintain an amateur radio communication station".

The standard approximates the syllabus for a Standard amateur operators certificate of proficiency.

There is now a nationally recognised standard built around amateur radio. This is a link between amateur radio and education and industry. Competency to this standard can be an element in an electro-technology qualification.

It should make amateur radio activity much more attractive to schools.

However, it is important to note that holding the competency will not qualify the holder for an amateur licence, which still requires WIA certification to ACMA of competency in the theory, regulatory and practical elements of the syllabus.

WIA Open Forum Reports

Following the outstanding success of the Parkes AGM weekend in May and continuing requests for copies of the reports presented at the open forum, WIA Director Robert Broomhead has announced that copies of the bound Open Forum Report Booklet are available to members and affiliated clubs for \$10 per copy, including postage.

Contact the WIA office.

WIA participates in New Zealand Conference

WIA President Michael Owen VK3KI and WIA Director Phil Wait VK2DKN attended the NZART Annual General Meeting and Conference held over the New Zealand Queen's Birthday weekend, this year at Palmerston North.

NZART and WIA have for many years exchanged visits, leading to significant

cooperation and understanding.

Phil Wait gave a presentation on the Australian experience of BPL, and Michael Owen told of the changes in Australia over the last two years since his last visit to a NZART Conference, stressing particularly the increase in the number of amateurs and WIA membership since the restructure of the Australian licences

WIA Director delivers BPL presentation to 2007 IIR FleetMobile Conference

WIA Director Phil Wait VK2DKN delivered a presentation on BPL to the IIR 2007 FleetMobile conference held at Star City in Sydney, over the 28-30th of May.

The conference was attended by about 100 executives and business managers responsible for communications and IT in Government Radio Networks including State, Federal and New Zealand Police, Fire Departments, Defence, Emergency Services, and representatives from ACMA and a number of commercial organizations.

The theme of the conference was the converged future of communications - realizing significant operational benefit by achieving intelligent mobile communications strategies.

This was a valuable opportunity for the WIA to highlight its concerns about the potential for BPL interference to HF radio communications. As Phil stated, "the unique thing about HF radio is that, unlike other newer technologies, it does not require infrastructure which can easily be destroyed in times of disaster or conflict. There will always be a place for HF radio and its utility must be protected".

2007 WIA Club Grants Scheme

Monday 16th July is the closing date for applications for the WIA Club Grants Scheme for 2007. Full details of the rules for the scheme can be obtained from the WIA Web site, together with a template setting out the suggested application headings for an executive summary, identifying how the club seeks to meet the objectives of the scheme and guidance regarding supporting documentation.

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Experiments with various wire antennas

Felix Scerri VK4FUQ

Over the last year or so, several individual antenna evaluations at this QTH have 'morphed' into a wider series of experiments dealing with the general performance parameters of various simple wire antennas, noise pick up and enhanced methods of feeding.

The experiments have been conducted mainly on 20 m, comparing a simple inverted V dipole, against a single full (one) wavelength loop, itself configured as either a delta (equilateral triangle) or a diamond (square) shape. Other more limited experiments involving noise pick-up characteristics have also been conducted on 40 m and 80 m.

General power line (and other noise) has been a long time problem at this QTH, and much of this recent (and ongoing) research has been aimed at finding methods of optimising antenna signal/noise ratio. One obvious conclusion, all other things being equal, is that antennas that are 'nominally' balanced are inherently superior through the effects of 'common mode' noise rejection, although many antennas that appear balanced at first sight are actually only 'quasi-balanced' on closer inspection. I am also satisfied that noise pick up can be reduced further if steps are taken to improve the overall 'balance' of the antenna. This is not surprising as, for example, in the professional audio field, true 'balanced' circuitry is a highly prized characteristic, especially when working in an 'electrically noisy' environment.

I have been rather impressed by the capabilities of 'current mode' or 'choke' baluns in enhancing (current) balance on antennas. A most enlightening article by Roy Lewallen W7EL (Ref 1) details many interesting experiments between different balun types and comparison results. My own recent tests support the general conclusions and findings in that article. My observations also support the notion that current mode baluns can be placed in rather unconventional places in a feedline and still perform well.

Lewallen has shown that simple 1:1 current mode baluns do seem to be able to provide better current balance into a balanced load and my own measurements also indicate that this unique ability results in detectably lower noise pickup,

presumably through enhanced 'common mode' noise rejection. One of the other interesting observations in the Lewallen article was the mention of 'incidental' asymmetry in the test antenna, something more than likely to occur in most (if not all) practical antenna installations, due to such things as antenna tilt, coupling to nearby objects, feedline interaction, and so on.

This real world antenna 'reality' leads to interesting, if slightly unconventional, possibilities and solutions. I have long been an advocate of using high impedance balanced feeder as a 'tuned line' and using conjugate matching (an ATU) in the shack. However, the presence of some inherent asymmetry, even in a nominally balanced antenna system raises the possibility of using a simple 1:1 current mode balun at the feedpoint (or elsewhere) of an antenna even when fed with balanced feeder, as a means of at least partially correcting for this incidental asymmetry. I have tried this and the results have been positive, with a small, but detectable reduction in noise pick up and no adverse effect on general performance. The possibilities are indeed very interesting!

The use of a feed point position 1:1 current mode balun seems highly beneficial regardless of the type of antenna being used. I have even used a 1:1 current mode balun to assist in feedline decoupling in a nominally 'unbalanced' antenna system (a quarter wave vertical with a resonant counterpoise system); however their use with already nominally balanced antenna systems such as dipoles, inverted V's and full wave loop antennas seems particularly advantageous for the reasons already outlined.

Further to this, it would appear that, based on observations made at this QTH, the use of a 1:1 current mode balun gives superlative results when teamed with a full wave loop antenna. Comparisons made on one very noisy (power line

noise) afternoon when a current mode balun was fitted to a fixed wire Quad loop, were rather incredible. With the balun out of circuit the horrible buzz of power line noise was very apparent, however when the balun was placed in circuit, not only was the general level of the noise noticeably reduced, but its 'sound' had also considerably changed. The 'buzz' had been replaced by a much more tolerable 'hiss', sounding much like the so-called 'pink noise'. Why this apparent 'synergy' occurs requires more investigation but the effect is real!

Just further on loops, I have found one other application that might be considered somewhat serendipitous, and that is using the 20 m loop as a separate receive antenna for 80 m! There are times when the power line noise on 80 m is so strong that even 'local' stations are essentially unreadable when listening on the (transmit) dipole, yet listening on the 20 m loop fed into a separate communications receiver, the noise cancellation through the 20 m loop is extremely impressive and copy is very easy as a result! Only my 20 m loop seems to possess this quasi-magical quality!

In concluding, although I concede that my evaluations have not been exhaustive or complete, they have certainly shown that there are interesting new ways to think about old problems. As much as power line noise is painful in the extreme, at least it has led to some interesting research, so maybe it's not all bad! 73.

Reference 1:

Baluns: What They Do And How They Do It Roy Lewallen W7EL. The article is available via <http://www.qrp.pops.net/>, which is also an excellent website for the ham radio constructor.

(If not available on this site, try using Google to search for the above title - Tech Ed).

ar

A magnetic loop antenna

Wil Hillebrand PE1LKT,
 Panneslagerstraat 2,
 6369AS Simpelveld, Netherlands.
 Published in 'Electron', May 2005.
 Translation by John Lauten VK4VK
 tenalu@tpg.com.au

My interest in this type of antenna goes back some years after attending a lecture and demonstration on the subject, which wasn't really a success since the antenna didn't work as planned.

Actually, little is known about this antenna - whilst the principle is quite old, many odd stories did and still do the rounds.

Calculations and construction

At that time I owned a computer programme designed for loop antennae, called 'T-loop'.

Input requirements consisted of such items as size, whether round, square or hexagon.

Based on these details, the programme

works out the size of the capacitor and the plate size and its spacing.

Say you select a loop diameter of three feet (the software calculates in imperial), the circumference calculated is: $3 \times 12 \times 25.4 \times 3.14 = 2871$ mm.

[Where:
 3 is the diameter (in feet)
 12 inches per foot
 25.4 millimetres per inch and
 π is approximately 3.14
 The actual formula is
 $C = \pi D$]

This is the size I chose to make the loop square with the side measuring 800 mm. (Figure 1 and Photo 1)

The selected material consisted of 22 mm copper tubing, with 90 degree solder joints to make a square. It may be better to manufacture the square out of one piece of tubing long enough, but that requires special tools that I did not possess.

Aluminium tubing is an option but that creates soldering problems.

I decided on the size of the loop with the aid of the software, varying the required operating frequencies. This resulted in varying values for the tuning capacitor, in my case from 7 to 400 pF in order to operate from 10 metres to and including 40 metres - more about this later.

The coupling inductor (coil)

is made from 6 mm copper brake line as used on older type automobiles (6 mm soft drawn solid wire would also do the trick). The coupling is provided with an SO239 connector to connect coaxial cable. The length of the coupling inductor should be 1/6th the length of the major loop.

Because these loops on HF appear as coils, and can be considered as such, an impedance transformation results - see Figure 1. The coupling inductor is insulated by means of shrink tube and placed in a corner of the major loop connected in a mechanically stable manner. The major loop has an opening of 80 mm at the bottom and is rigidly connected to a piece of 'trespa' sheeting of about 6 mm thickness. I used plumbing fittings such as those used to connect taps to walls; a plumber would use these to connect 22 mm pipes. The three holes to connect the tap fittings come in handy for use of M3 hardware. The lot is held in place with nylon saddles as used by the same plumber - see Photo 2.

The tuning capacitor

A commercial tuning capacitor may be available but making one to suit is 'nicer'.

A capacitor is defined as two conductors separated by a dielectric. Determining the capacitance is no problem; you would have learnt that in studying for your exams.

In practice, it often works out differently. Theory says it should work and sometimes it doesn't, whereas a practical approach will sometimes.

Circuit board material is covered with a layer of copper and two pieces separated by air (dielectric) form a capacitor.

The required separation was determined by the above computer programme, bearing in mind the voltages across the plates.

Because the capacity needed to be in the order of 400 pF required too great a surface area, I subsequently choose to

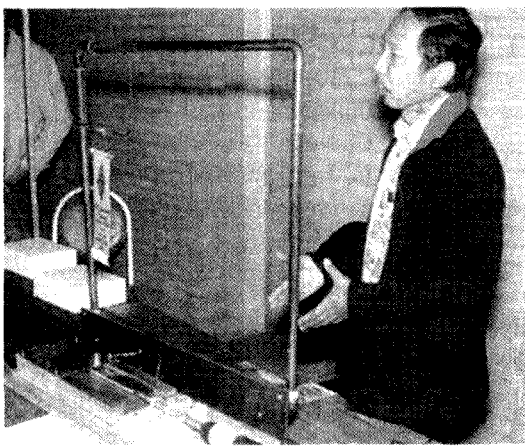


Photo 1 Wil PE1LKT

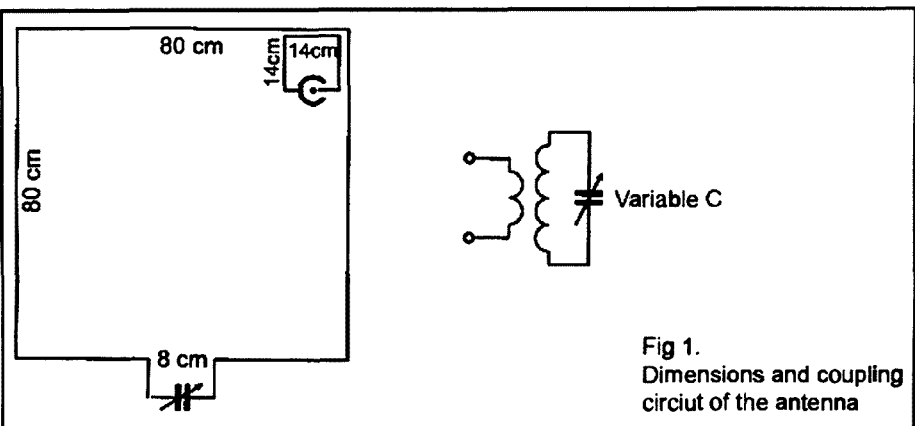


Figure 1

manufacture a 'packet' of circuit board material consisting of five stationary and four movable pieces of double sided material separated by strips of plywood; 20 mm and 30 mm wide respectively. The wider strips are used to separate the stationary plates and the narrow ones to allow the movement of the 'packet' that will move in between the fixed plates (Figure 1 and Photo 2).

The fixed plates measure 210 mm x 170 mm and are provided with holes of 1.5 mm at their extremities. A wire is to be threaded through and soldered to the individual plates after assembly.

The movable plates measure 210 mm x 130 mm and with M3 threaded rod and M3 nuts manufactured in such a way that easy movement results between the plates. When satisfied solder the nuts to the circuit board. Measurement indicated a maximum of 400 pF, sufficient for my purpose.

The capacitor is mounted on a suitable piece of 'trespa' material at right angles to the 'trespa' plate supporting the loop. I made the connection from the capacitor with a flattened piece of co-axial outer cable. Melt some solder at the ends and pierce a hole large enough to allow an M3 bolt and connect to the loop, the fixed plates and the movable plates. An advantage of this type of capacitor over a conventional one is the lack of mechanical noise sometime resulting from dusty bearings.

Initially I connected a strip of Plexiglas to the movable plates to move, by hand, into the fixed portion of the 'packet', with pencil marks to indicate the settings for the various amateur bands. Tuning is simple and quick. Place the Rx somewhere in the middle of the band of choice, move the plates and upon approximate resonance, audible (noise) and noticeable ('S meter') the antenna is then ready to transmit. Fine tune for minimum SWR and 'Bob's your uncle'.

Results

I've made contacts [from the Netherlands] on all bands between 7 MHz and 30MHz with contacts to Argentina, USA and Brazil. European stations are readily contactable. The antenna is quite frequency wise, which has the advantage of suppressing stations close by in frequency. It's a very quiet

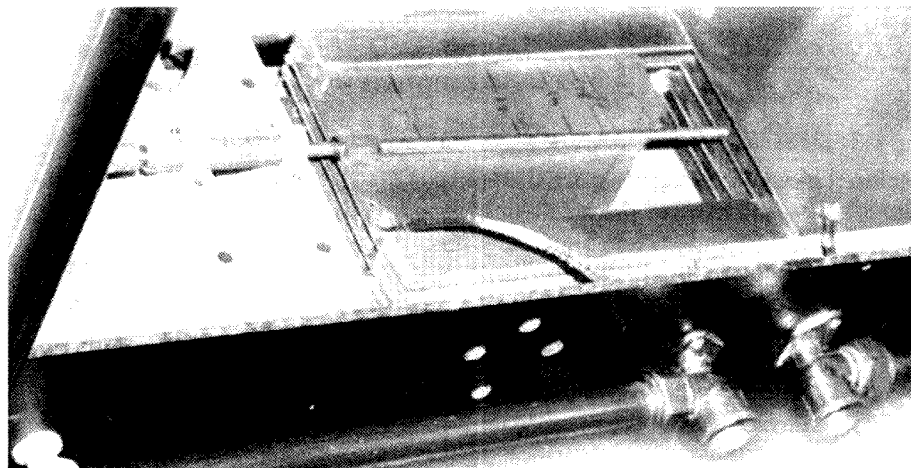


Photo 2: A nice bit of plumbing

antenna, less noise pick-up or QRN, even thunderstorms are hardly audible.

Costs have been kept to a minimum and there's much room for improvement.

In order to adjust the capacitor more easily, I connected a cordless screwdriver with a piece of M8 threaded rod that turns in an M8 nut, fastened to the movable plates with the assistance of a M3 nut. A spacer (washer) will aid in lining up for the correct height.

M8 has a turn ratio of 1.25 mm. ergo; it follows that for every turn the plates will move 1.25mm. A driver at 140 rpm will move the plates 175 mm. To insulate the screwdriver, I connected a piece of flexible hose material of suitable size between the drill and the threaded rod. At first I omitted this resulting in a burnt out cordless drill and its battery pack due to high RF currents. The connecting bit, being flexible assists in lining up the rod. The threaded rod is held in place by a piece of aluminium tube, inside diameter of 8 mm.

It is important to be aware of the high RF currents, and the high magnetic fields should not be ignored.

Other materials could perhaps be used. I used what was at hand; it does not have to appear as if made commercially. The

important thing is that the antenna functions well and that one gets to understand what one does and what one talks about and the satisfaction

(Translator's note: The magnetic fields produced by a Loop antenna when used indoors and close to the operator could/would create problems for those fitted with Pacemakers such as in my case).

Editor's note: John Lauten VK4VK advises the following: "Trespa is a trade name. The material is extremely hard and is the same material used in the type of flooring you may see advertised on the television. It looks for all the world like timber. It's very popular in Europe. I suppose you could substitute hardboard or "burnie board", as long as it isolates and is strong enough to do the job."

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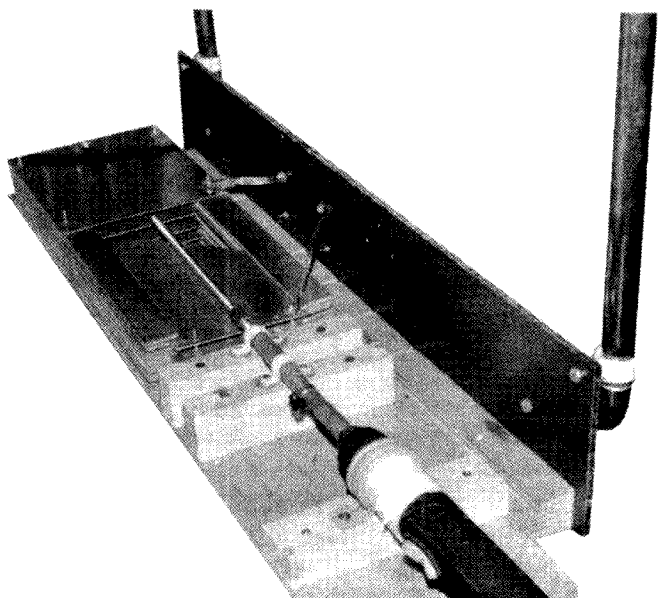


Photo 3: the condenser

Try this!

A noise cancelling graphic equaliser

Ivan Huser VK5QV

Before I moved into the present QTH, I did a HF noise check of the area using my TS-50S in the campervan. The results were very encouraging, with a less than S1 noise level on both 80 and 40 metres. I put this down to the area being serviced by an underground electrical distribution system. However, I must have caught it on a good day, as I have been plagued by a consistent S5 noise level ever since.

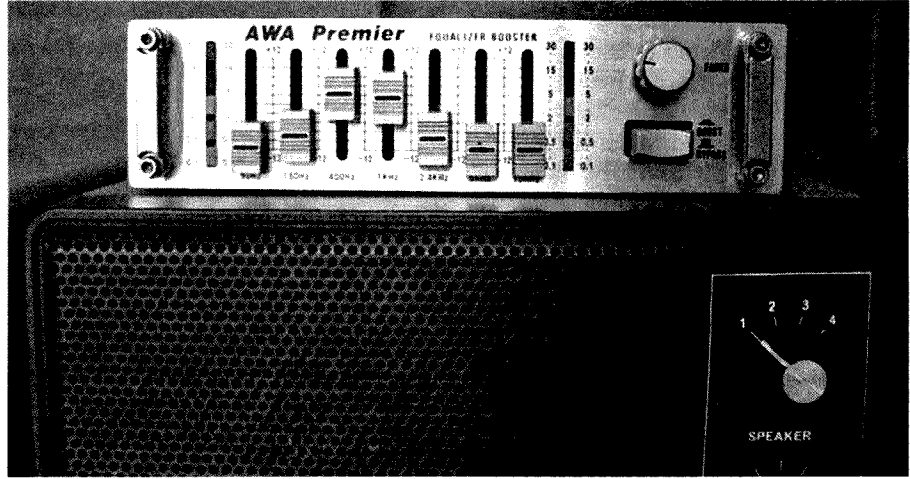
101ZD and 'bingo' what a difference it made. The unit was connected between the transceiver output and the station speaker, and powered from a 12 volt supply. By adjusting the slider controls, most stations can be pulled out of the noise and without the 'watery' distortion of the DSP speaker. All for a dollar.

for SSB. These settings, of course, can be tweaked for individual conditions. Since getting my dollar bargain, I have seen several similar units at garage sales varying in price from \$2 to \$5, so if you too are plagued by noise, get out there and haggle. It's surprising what a little boost and cut can do.

In an effort to counter the noise, I purchased a u-beaut noise cancelling speaker which works well albeit with a lot of distortion when trying to retrieve audio from a signal right down in the noise. I rarely use the device now.

Some months back, I picked up a 'nifty' little graphic equaliser unit with inbuilt amplifier at a garage sale for the bargain price of one dollar. These units were designed to be used with car radios, and have been superseded by the modern 'boom boom' sound systems. I really didn't have a use for it at the time, but at a dollar, I couldn't resist the bargain.

The photograph shows the unit set up



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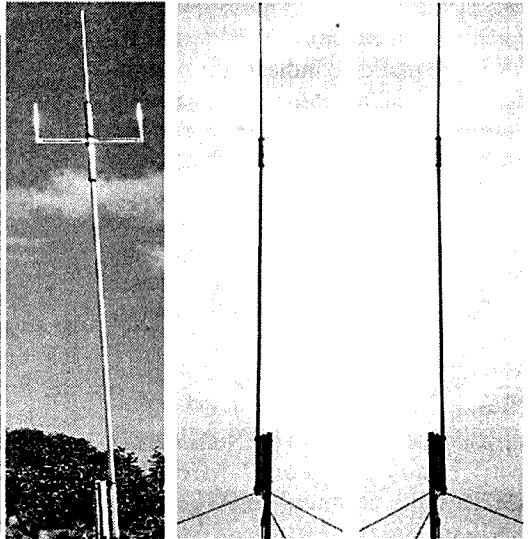
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FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

A look at Norman VK7AC

Norman Deitch VK7AC
vk7ac@ozemail.com.au

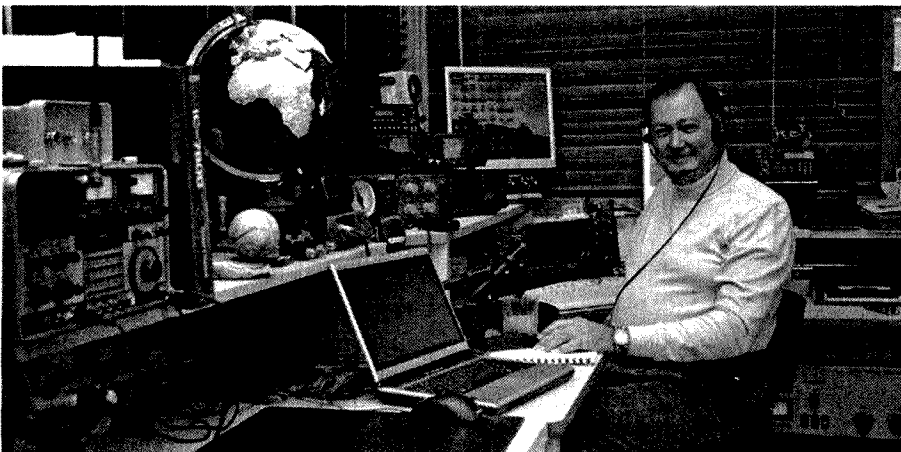


Photo 1: Norman VK7AC in his shack

My name is Norman Deitch VK7AC, ex VK2XC and VK2ZXC.

I am a retired communications technician and rigger. I was first licensed in the early 1960's, when living in the Sydney suburb of Enmore, in the same street as two well known amateurs VK2ABO and VK2AVI.

I soon developed an interest in VHF communication, perhaps because I had an uncle who owned Deitch Bros Army Disposal store in Oxford Street, Sydney, which had plenty of Command and 511 aircraft transceivers available. I primarily operated on 2 metres and 6 metres simplex.

Shortly thereafter, I developed an interest in antenna design and tower erection techniques, leading to the creation of my own company erecting guyed and self supporting towers for government and private interests, to heights of 100 meters. My last job before retiring was the upgrade of the TV channel 9 antenna array at 300 metres – where I worked many stations on a 2 metre hand held.

Moving to Port Kembla in 1987, I erected a 45 metre self supporting tower on my property for commercial reasons, although the top was occupied with large

VHF and UHF Yagis, allowing operation on 6 metres and above, and proving to be an excellent coastal location. I completed more than 1000 6 metre QSOs into the USA, Mexico, the Caribbean and one two way QSO with CX9ABH, for a total country confirmed count on 6 metre terrestrial of 95, with 68 confirmed grids.

In July, 2004, I moved to Tasmania, after the family property was sold to a developer, the existing tower removed and commercial communication equipment relocated. My current location is Grindelwald, a Swiss style village located 260 metres above the Tamar River, 48 km south west of Launceston; hopefully a good location to pursue my interests in VHF and UHF communication.

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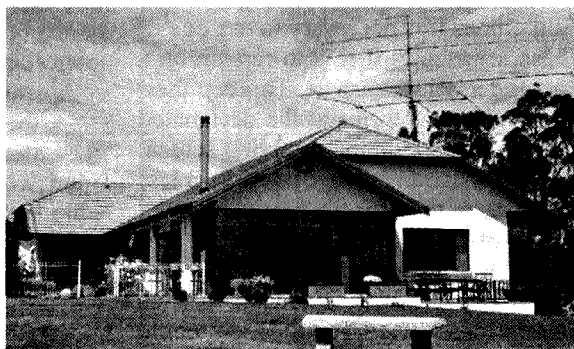


Photo 2: An external view of the VK7AC home and antennas

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Mobile 80 metre antenna tests

Don Jackson VK3DBB.

Opinion is a wonderful thing, except that it does tend to blur the realities quite often.

Recently a gathering of amateurs was discussing the efficiencies and deficiencies of various whip antennas for mobile use, particularly on the 80 metre band, whilst nobody admitted that some were not as good as they were held out to be. So it was decided that one day we would get together and do a basic test, by installing in turn the several antennas owned by the group on the one mobile mounting. The received signal strengths could be measured at a site some distance away, where we had access to some pretty good test equipment. See Table 1.

By doing it this way, we would have the essential basics to produce a not necessarily thorough, but nonetheless

useful guide to the efficiency of the various types. It ensured that all antennas were:

- transmitting with the same power (CW),
- located in exactly the same place, and
- checked by reliable equipment, not just by "S" meter readings.

We do not claim by any means that this was a scientific test. We had eliminated some variables, but we had no reference antenna and we could not compare our results with theoretical answers. All we could assess was the relative received signal strengths in a specific situation. So we stress the subjective and amateur nature of the results we got, for fear of upsetting the theorists and bringing their wrath down upon our heads.

There were 10 antennas tested in all. They ranged from a home-brew hybrid, and included long, medium and short, centre and top-loaded whips, both commercial and home-brew. All were optimised for the test frequency used.

As could be expected, the two worst performers were the short, centre and bottom-loaded types, designed for centre-of-the-roof mounting.

Sometimes it is necessary to use one of these, especially if it is to remain on a car under a low carport. To keep their displayed waveforms at the designated reference mark on the receiving screen, we had to use an average of 10.5 dB less attenuation than for the best performer. Think of the power loss there!

The highest performer was the home-brew hybrid, so we have taken it as our reference (see Table 2). As could

Table 1 - Test set-up

Test frequency	3.640 MHz
Power	50 Watts (CW)
Radio path length	460 metres approximately
Terrain	Essentially line-of-sight Ground very dry
Test equipment	HP8443A Tracking Generator/ Counter HP 8553B Spectrum Analyser HP 141GT Display Section

Table 2 - Test results

Received level (dB)	Antenna type
0.0	Hybrid home-brew: long
-1.1	Top-loaded home-brew: long
-1.6	Centre-loaded commercial: long
-2.2	Helical home-brew: long
-3.1	Commercial: long
-3.3	Centre-loaded commercial: long
-4.1	Commercial top-loaded
-8.1	Helical: short
-10.1	Bottom-loaded commercial: short
-11.3	Commercial: short

be expected, this was followed by the longer centre and top-loaded whips, with comparative results as tabulated.

So, the message is that if you want to get a strong signal out on the 80 metre band when mobile, use the longest whip you can get without shorting out overhead power lines. But we all knew that, didn't we?

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Discovering the delights of the Regenerative Receiver

Grant McDuling VK4JAZ

I decided it was time to burn solder again and rediscover one of the aspects of our hobby that sadly seems to be fading.

I wanted to homebrew a simple regenerator receiver from odds and ends in my tool box. So I hopped onto the internet as one so often tends to do these days and soon came across Peter Parker's fabulous site at <http://home.alphalink.com.au/~parkerp/projects/>

I selected 'AM Broadcast Band Regenerative Receiver just two transistors', downloaded the instructions and I was in business.

The first job was to make sure I had all the relevant components on hand. What I didn't have, I made a short list and made my way to my local DSE store. Initially I had to make do with two plastic variable capacitors until I bucked up enough courage to strip an old antenna tuner I had that was surplus to requirements in the shack. The trouble was, the air variable cap I pulled out looked like it would be up to the task but had no markings on it to indicate what its rating was. I decided to use it anyway and experiment when it came to winding the coil.

Next job was to etch the PCB board. This was a straight forward, if messy, operation, but the result was pleasing enough. My intention, you see, was to construct the radio on a nice piece of timber so that I could admire the 'working parts' while listening.

Then came the fun part; mounting all the components into their places on the board. This took an hour or two and was most enjoyable. A quick check on completion revealed everything to be in the right places.

Next came the job of thinking about how the board and other hardware would be mounted. I had a nice piece of timber, which I cut to size and oiled. Then I selected a piece of aluminium, planned where I wanted to mount the various components that needed holes drilled, and got to work with the drill and reamer. I made mounting brackets for the ferrite rod from L shaped aluminium and drilled

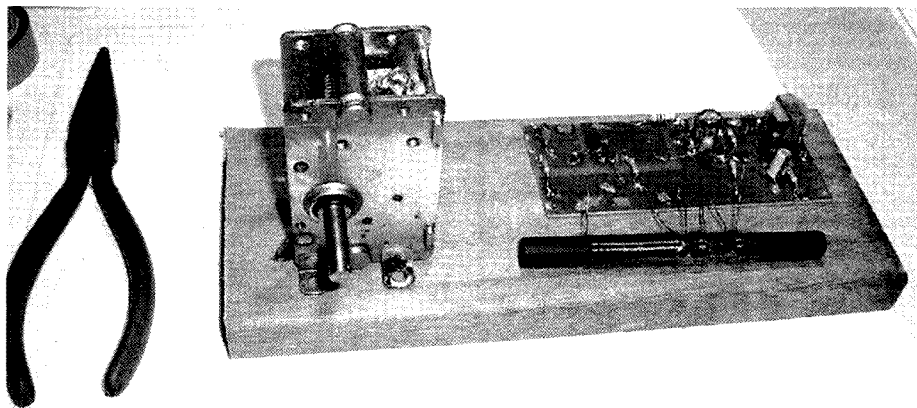


Photo 1: The regenerative receiver under construction.

the holes. The most challenging part here was measuring the distances for the mounting holes for the vernier dial on the tuning capacitor to be drilled.

The winding of the ferrite rod was easier than expected, but baring the ends of the 0.4 mm winding wire proved fiddly. Then it was time to mount the rest of the components. At the last minute I decided to include a switch and LED, with resistor, so that I could see when the 9 V battery was on. The reason I did this

was just for fun, really, and because I had one lying around in my junk box.

Then came the smoke test. I connected up the battery, flipped the switch and held my breath. No smoke but no signals either!

A quick check of the circuit board revealed that one leg of the transformer hadn't been soldered down. I fired up the iron once more and rectified that oversight.

Another flick of the switch produced

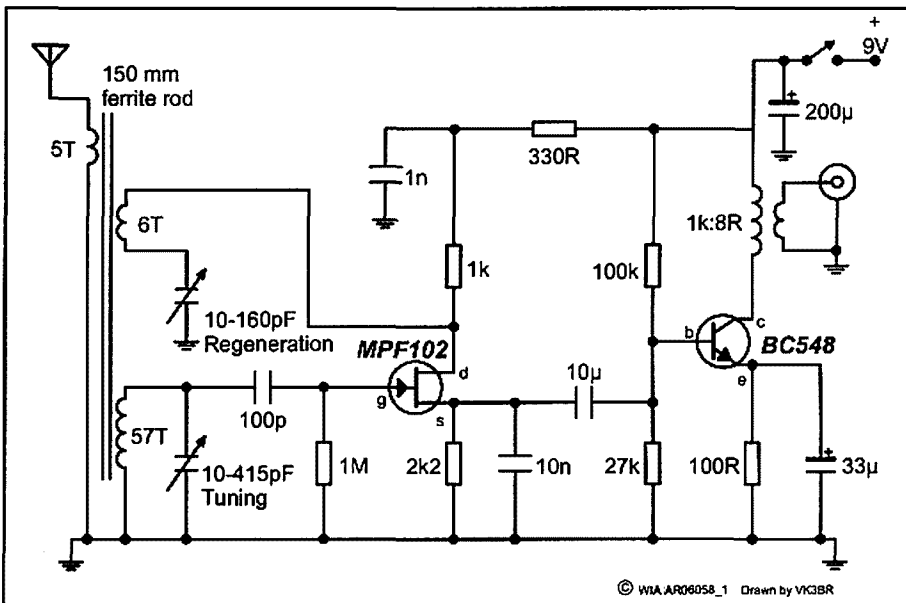


Figure 1: Schematic of the regenerative receiver.

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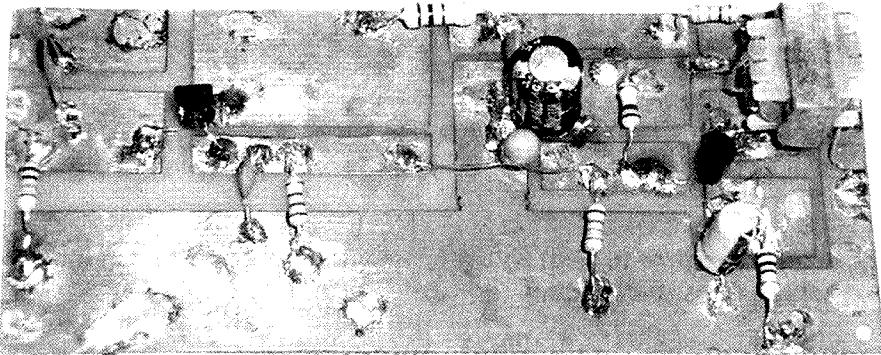


Photo 2: The regenerative receiver under construction

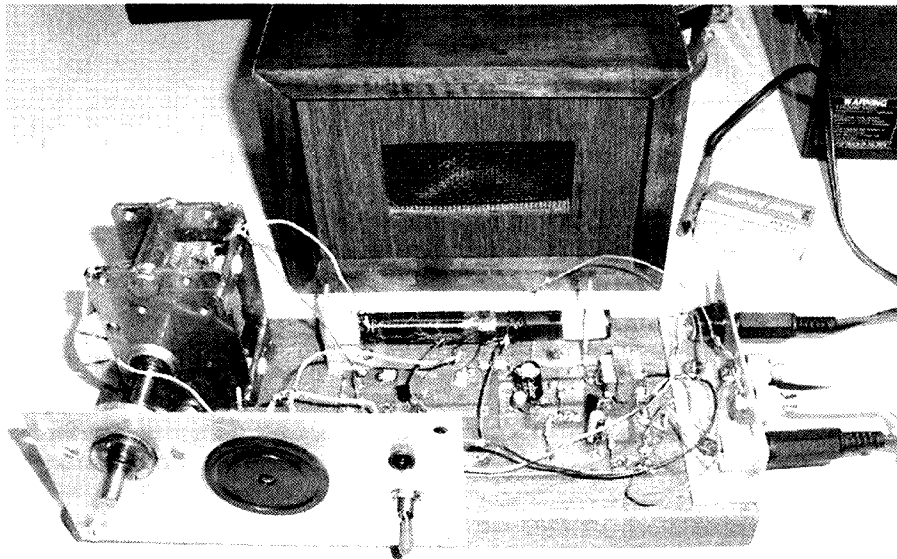


Photo 3: The completed regenerative receiver.

hissing noise. Life! Ah, what a sound.

I swung through the tuning range and the only signal with enough load to drive the 8 Ω speaker was a local ethnic station, but even though I couldn't understand a word, it was still music to my ears.

This was the only station I could hear, and it was sitting at the bottom end of the band. I figured that I needed to reduce the number of windings on the ferrite rod to bring in more stations. Out came the iron again and I unwound fifteen or

twenty turns. Now things were looking, or should I say sounding, better. More stations. I was well pleased. This little receiver was certainly very sensitive.

Since completing the radio, I have already had hours of fun listening to local BC stations.

But now I want more. Some of the interesting stations are so soft I can only really listen to them on headphones. So it's time to think about my next project – a simple audio amplifier.

ar

Remember

Remembrance Day Contest

August 11 and 12

ALARA Contest

25 and 26 August

A VK10D PIC Iambic keyer (PIK) made "Paddyboard" style

Drew Diamond VK3XU.

Way back in 1973, James Garrett WB4VVF outlined his Accu-Keyer (Reference 1). The Accu-keyer introduced many of us to the iambic* method of keying, and became one of the most popular projects for CW enthusiasts world-wide, and the bench-mark for numerous subsequent keyer patterns.

Several of my own examples of the Accu-Keyer have been in use here for at least 30 years, being my preferred auto sending instrument. So, when Owen Duffy kindly sent me a couple of his programmed 12C508A PICs to play with, it was a simple matter to build a "Paddyboard" model to try.

It is thought that the algorithm used in Owen's PIC iteration is identical to that of the Accu-Keyer (but with more accurate timing). The salient PIK features are automatic generation and timing of:

- dits
- dahs
- didahdidah strings
- duration of rest period after a dit or dah, and
- optional auto timing of the duration of inter-character rest period (auto-space).

In operation, the keyer behaves exactly like the Accu-Keyer, and performs faultlessly. My 58 year-old brain needed no re-adjustment whatsoever to produce precise, correctly timed Morse. The keyer suits transmitters where it is required that a low voltage positive level be pulled low to affect an output - which is the case for all known recently published solid-state transmitter patterns and contemporary transceivers. Older style grid-block or cathode keying will require a keying relay or other suitable interface. Speed range is about 10 to 40 w.p.m.

No side-tone oscillator is provided, as this feature is usually standard in current model transceivers. However, a simple, suitable practice oscillator/RF-actuated monitor may be found in Reference 2.

For a detailed description of the design criteria, implementation, software and algorithm, the curious are pointed to Reference 3.

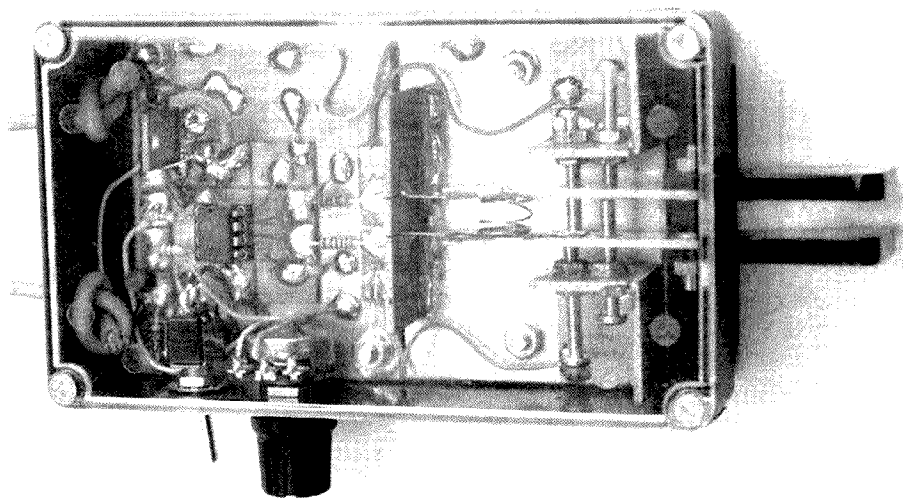


Photo 1: PIK keyer.

Construction

The specified PIC supply voltage range is 3 to 5.5 V dc, so a safe maximum would be 5 V, which may be derived from an ordinary 5.1 V zener diode (see Ref. 3), or a 5 V regulator chip, powered from 12 or 13.8 V (in which case the keyer draws about 5 mA), as illustrated in Fig. 1. Include a 500 mA fuse if the keyer is to be operated from a high-current source.

Or a battery of three 1.5 V AA cells (4.5 V) as shown optionally in Fig. 1 may better suit your set-up. The keyer draws only 1 mA when operating, and a tiny 2 uA when the chip goes into "sleep" mode (a battery switch is therefore not required). Remember to include a diode as indicated for reverse-polarity protection.

My example is neatly housed in a plastic box measuring 120 mm x 70 mm x 30 mm LWH (Photo 1). The assembly alone has insufficient mass to prevent it from "walking" about the operating table. Consider either: mounting the

assembly upon a suitably sized slab of metal (optional fixing lugs are provided with the suggested plastic box assembly) or, operate the keyer from a three-cell battery supply (which adds mass), where the holder may be fixed upon the top lid of the keyer assembly. Additionally, a 120 x 70 mm rectangle of computer mouse pad material may be glued to the underside to provide an improved grip upon the table.

A suggested Paddyboard (Reference 4) layout is pictured in Photo 2 and Figure 2. The PIC chip is accommodated in an 8-pin DIL wire-wrap socket, soldered to a 30 x 25 mm "substrate", which in turn is super-glued (sparingly) copper side upon the circuit board.

If you already have a suitable keyer paddle (independent "squeeze" type paddle contacts), then no additional device is required. One occasionally hears and reads hype about fancy/expensive paddles, when all that is actually required is a pair of opposed paddle operated contacts with sufficient sensitivity to be

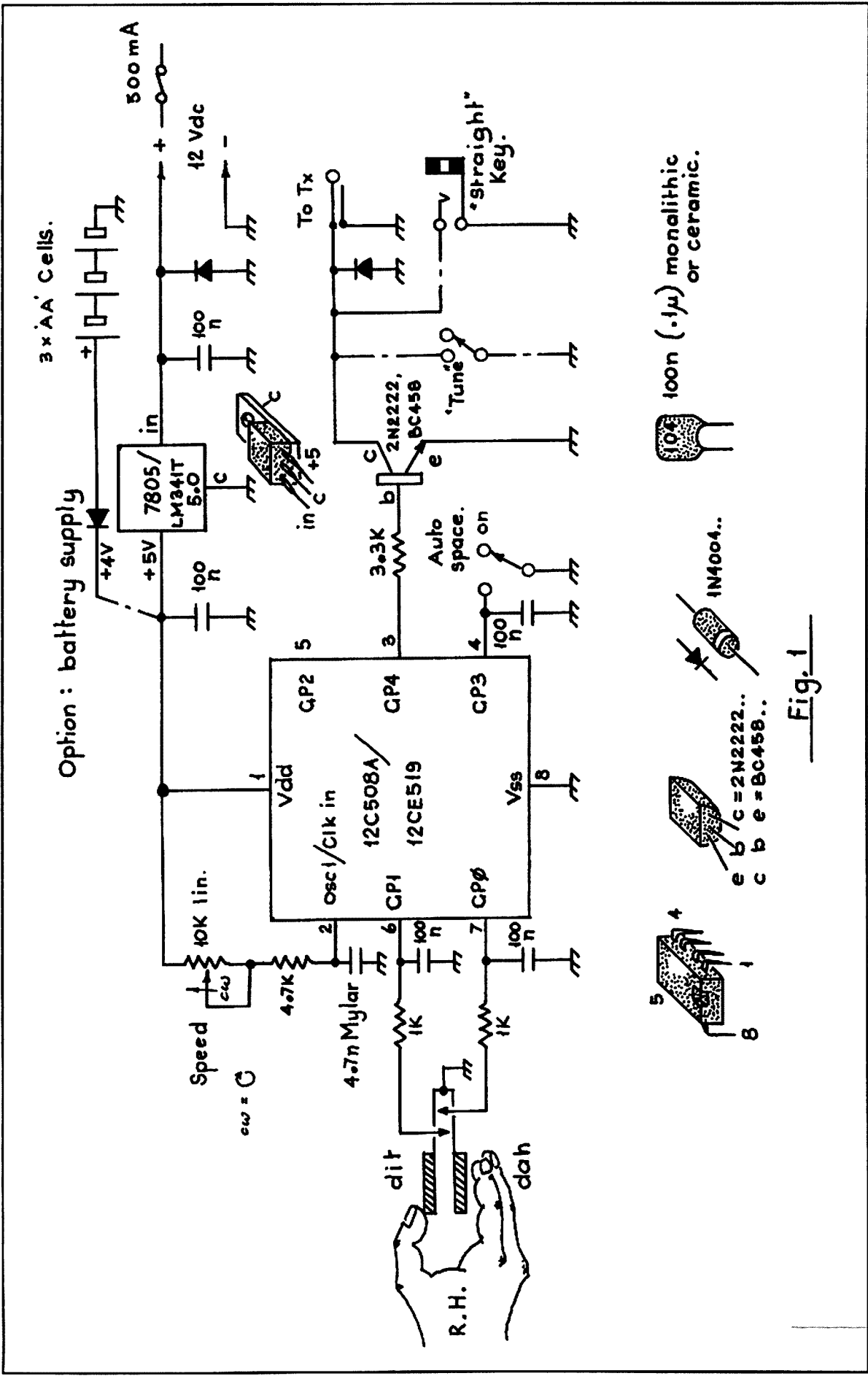


Figure 1: Circuit diagram of the keyer.

accurately manipulated by the fingers of any reasonably dexterous person.

Pictured in Photo 3 is a suggested gadget made from scraps of circuit board material, and is similar to the "scrap-box" paddle described in Reference 5. The circuit board is the same size as the PIC board - 65 x 50 mm. The contact arms are made from 45 x 10 mm lengths of single-sided board, attached to which are suitably sized and shaped paddle knobs made from Perspex, ABS or similar.

For the bendy pivots, I used 20 mm lengths of phosphor-bronze contact strip removed from an ordinary type 610 telephone socket. Dit and dah contacts are made from small pads of the same material, which are soldered upon the contact arms so that they align with their respective adjustable 3 mm nickel plated contact screws.

Dimensions are uncritical, but remember that the paddle assembly must fit snugly inside your chosen box. Individual components are displayed in Photo 4. Note that the dit and dah contact screws must pass through a corresponding clearance hole in the near arm to form a contact gap with the bronze pad on the far arm.

The right-angled pivot bracket may be slotted with a modeller's saw (Reference 4) to receive the two phosphor-bronze strips. Use squares of circuit board material for the adjustable contact/back-stop screw brackets. They are soldered together upon the top side of the horizontal part of the bracket (so as not to short to foil). Solder 3 mm brass hex nuts in four places for the contact/back-stop screws. The brackets are super-glued in position on final assembly.

Those bronze pivots alone may not provide sufficient back-stop tension, so a small compression spring, salvaged from a ball-point pen should be soldered (one end only) so that the arms exert a slight outward pressure against the back-stops.

Operation

Check your soldering for quality and accuracy, and that all components are correctly placed, and polarized items are connected right way round. Connect the keyer to a practice oscillator, or transceiver's key socket (observe polarity). Power up and verify that the auto dots, dahs and iambic "squeeze" functions are working.

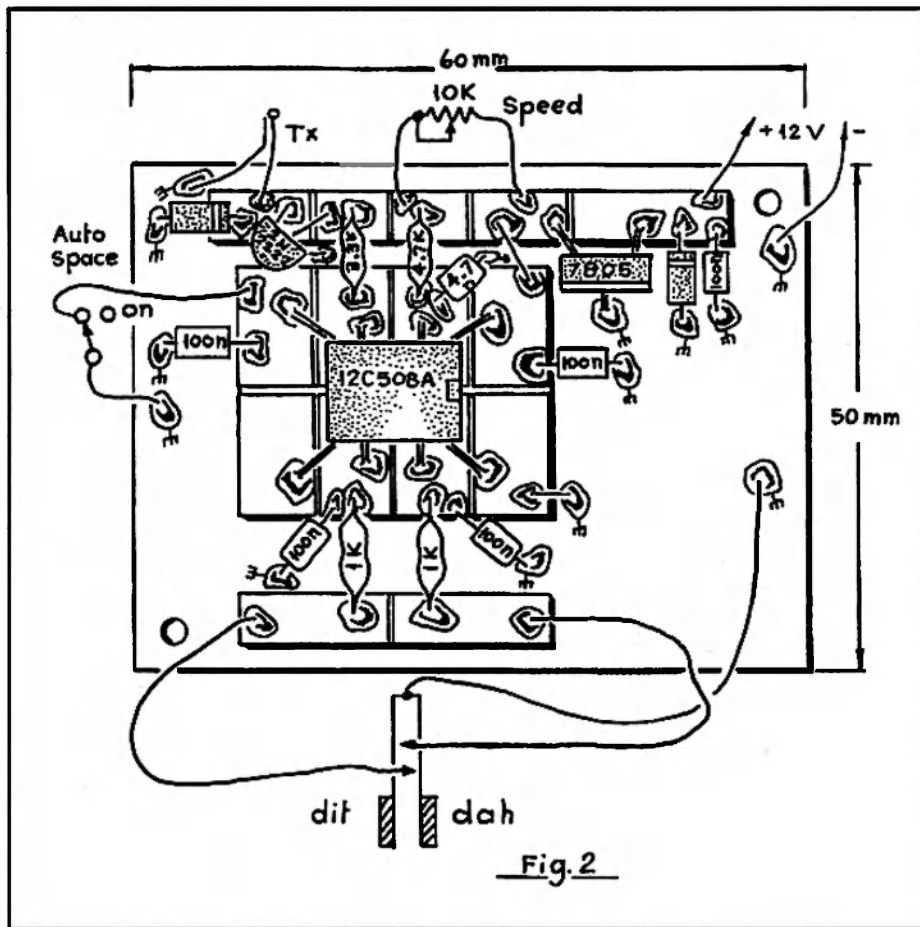


Figure 2: Details of the "Paddyboard" layout.

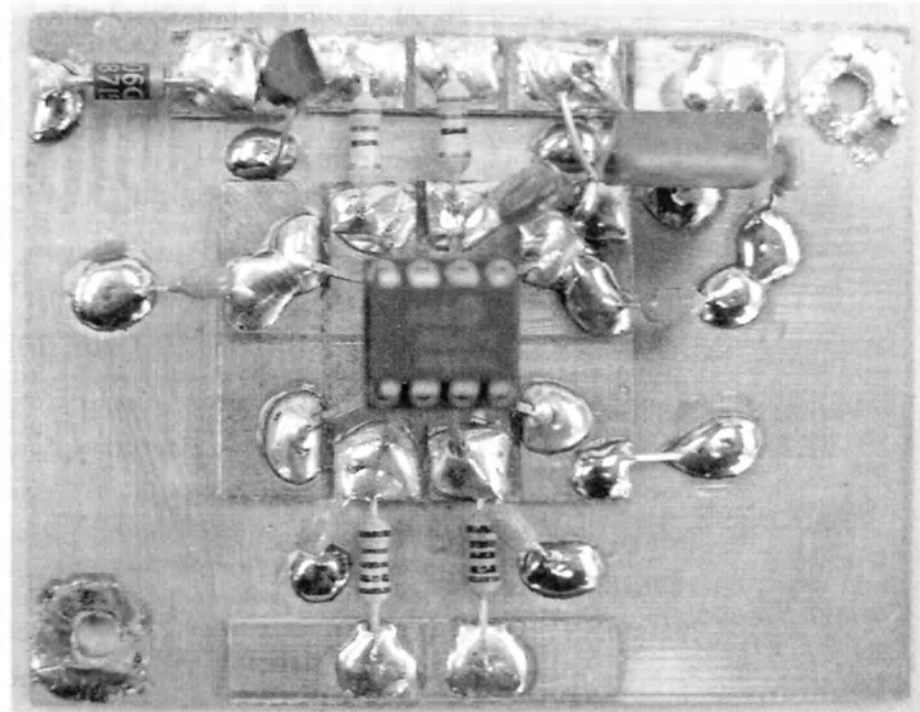


Photo 2: "Paddyboard" layout.

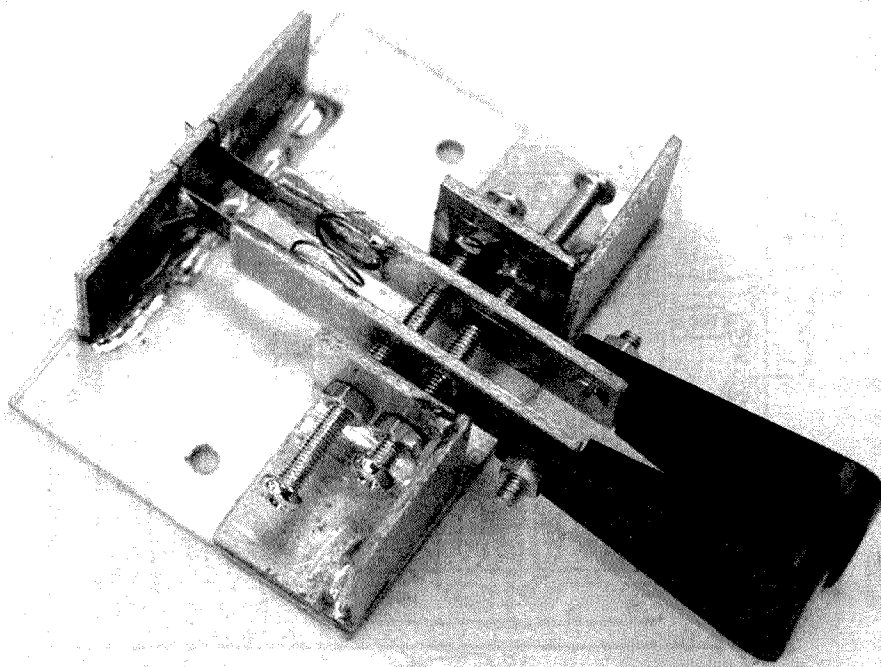


Photo 3: Paddle assembly.

If you are new to auto electronic keying, practice off-air (dummy load) until at least a reasonable proficiency is obtained. Don't worry too much about the iambic mode initially, for you should find that gradually and subconsciously, characters such as C, Q, K, R, message begins (CT), message ends (AR), and full-stop are intuitively produced by a simple squeeze action.

Auto-space is a handy feature, particularly if you are perhaps inclined to crowd characters together (a habit that some operators drift into - especially when rushed). Auto-space ensures a minimum inter-character space whenever any attempt is made to follow through a tad too quickly.

Always remember; the mark of a good Morse operator is sending that is not necessarily fast, but is properly spaced, rhythmic, and contains the correct sequence of dits and dahs for each character.

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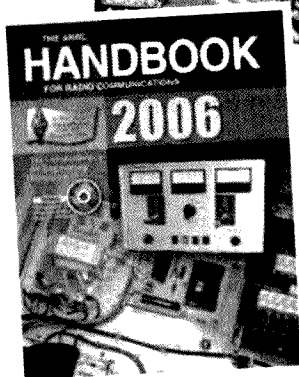
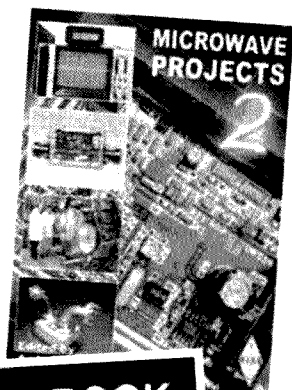
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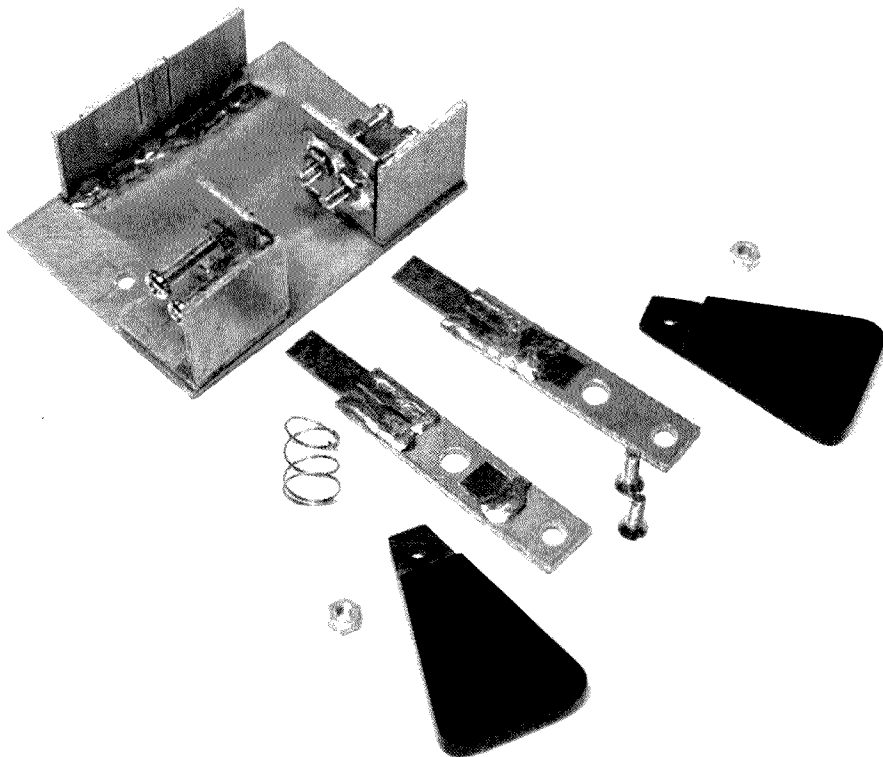


Photo 4: Paddle components.

Please see Reference 5 for further notes on electronic keying, and Reference 7 for hints on contemporary CW/Morse operating customs.

Parts

The keyer is based on the “PIK” keyer chip by Owen Duffy (VK1OD), firmware for which is available for download at no cost from Owen’s PIK web page at <http://www.vk1od.net/pik>. For those without facilities to “burn” a chip from the hex file, programmed chips can be ordered from the web page for a modest cost - see the web page for details.

The ordinary electronic components are obtainable from the well-known suppliers, including Altronics and Jaycar. The suggested plastic box is a Jaycar P/N HB6082, although other similar suitable boxes are available from other vendors.

A 7805 1 A regulator chip is over-kill in this application, but I have used it because the smaller low-power 78L05 are not always obtainable.

10 k Ω speed pot may be a miniature type, which fits nicely just near the PIC chip, visible in Photo 1.

References and further Reading

1. “The WB4VVF Accu-Keyer”; J. Garrett, WB4VVF, QST, Aug. 1973 (also ARRL H’book, 1974).
2. “An RF-Actuated CW Monitor and Practice Oscillator”; Amateur Radio, May 2001.
3. “PIC Iambic Keyer”; <http://www.vk1od.net/pik/pik.htm>
4. “Paddyboard” circuit construction - Revised”; Amateur Radio, May 2005.
5. “An Electronic Keyer Paddle from “Scrap-Box” Parts”; Amateur Radio, July 2001.
6. “VK3XU’s PIK with Integral Iambic Paddles”; <http://www.vk1od.net/pik/vk3xu/index.htm>
7. “Brush-up your Morse and join in the action”; Amateur Radio, Aug. 2003.

*“Iambic” comes from poetry, where the verse has a di-dah-di-dah rhythm, which is what we get when the keyer paddles are skillfully squeezed together to produce characters such as C, K, Q, R and Y, thus requiring fewer wrist movements than for an ordinary electronic keyer.

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Teaching amateur radio classes

Graeme Scott VK2KE

With the advent of the Foundation Licence, there has been an upsurge in amateur operators teaching classes in the theory and practical levels of the new licence and indeed there is also an apparent increase in 'upgrade' classes being taught in many clubs and centres.

VK2KE was a radio and electronics teacher/trainer in the 1980s and '90s and has compiled these tips on how to make the teaching and learning exercise more efficient and enjoyable for all concerned.

Here are some teaching tips for radio clubs, et al, to use when teaching classes:

1. Ice breakers.
2. Communication – one way and two way.
3. Session planning.
4. Sessions - how to conduct effective ones.
5. Varying the activity.
6. Use of teaching aids.
7. Timing.
8. Sequencing.
9. Testing and evaluating.
10. The learning environment.

Ice breakers

When a small group comes together for the first time, it is worthwhile to help everyone get to know each other better. Later on, when the operators have passed the exams, and in a QSO, they will have some rapport already established with each other from the class.

This will also build rapport with members in an area who may belong to, or wish to join, a radio club.

An 'ice breaker' that works well is to get each person to talk to their class neighbour and to obtain basic personal information on the person. After a short time, the role is reversed and they exchange basic personal info with the other person sitting next to them. This is written down and each person then has to report the information on each neighbour so the whole group can hear the details and by this means get to know who is in the class with them.

Communication

Communication in a small group can tend to be one way, especially with a presenter/teacher who has little or no teaching experience.

Often the communication is by speech alone and this is a sure way to bore the listeners quickly. The teacher must be aware that the attention span of the class candidates is relatively short, so talking for long periods is not the best way to go.

Questioning

Because the tendency by many (usually inexperienced) teachers is to talk consistently, the flow of information tends to be one way. It must be remembered that the attention span of most people is typically 10-15 minutes. It's even worse just after lunch, as we all know!

The best way to make the whole session more interesting is to make it as interactive as possible and one really good way to do that is to ask questions. Well framed questions will spark interest and involvement of the class as a whole and will help break down the problem of the attention span waning – which it will always do inevitably, with any class.

The good teacher will ask many questions during a session and the students will contribute inputs that can make the session flow well, besides keeping everyone involved as much as possible.

Probably the best way to ask questions is to ask them of the whole class and not target anyone in particular as it may catch someone on the hop and that can be possibly counterproductive.

The questioning process will help develop the session and, if directed well by the teacher, will move the session along. It keeps everyone involved and opens up some discussion. The retention by the class of the information will be greatly enhanced by this means. You can even use the responses from some students to clear up any misconceptions they might have.

You can't underestimate the value of a

questioning process in making a session go along really well.

Varying the activity

As the attention span of most people is about 10-15 minutes, it's important to vary the activity during a teaching session.

You can present information by a variety of means:

- the whiteboard,
- the data projector or
- overhead projector and
- via handout sheets.
- As well, you can pass around real objects for the class members to see and touch.

In addition, it's a really good idea to give the class a break of, say, 5 minutes every hour. Let them get up, do some gentle exercise, have a loo stop, or a short walk around then back to it again.

You'd be surprised how the attention span is revived by giving short regular breaks. I proved that repeatedly in Melbourne with Morse code classes, where the attention span and concentration waned quite quickly after only a relatively short period. The use of frequent short breaks was the answer. Results came right up after each short break.

Teaching aids

We have a number of teaching aids available to us in radio:

1. a whiteboard or blackboard.
2. the data projector.
3. handout sheets.
4. real objects.
5. a demonstration.
6. a reference to a certain page in a book (e.g. the training manual).

A good teacher will access almost all of the above aids to make the session

more interesting and lively. The name of the game is variation and realism.

Timing

Timing is always an important factor. We need to be able to assess the amount of material we have to cover and the time we have available to cover it in. As well, some key points may need a little more time to get across than others, so allow for that too.

Another issue is that a lot of interaction and discussion may take up time. We may have to curb discussion in the interests of getting through the course in the time we have allocated. An example of this is the experience at the Twin Cities Radio Club, in that we can comfortably cover the whole Foundation Licence course in one day from 0900 to 1700 with short breaks for morning tea, lunch and afternoon tea. The exams are then given on the next day.

Sequencing

The order in which points of theory are covered can vary greatly and with each class you may tend to do it a little differently each time. However, the Foundation Manual is laid out in a pretty logical order and it may be best to stick to it carefully, at least on the first time you conduct the class.

Radio theory is often in 'building block' format and later stuff builds on what you have covered earlier. (A bit like building a house from the foundation up – pun intended!).

Testing and evaluation

All courses usually have a test or exam or some kind of assignment attached to them.

The amateur radio courses have a theory and regulations exam and practical assessment to verify that the student is competent in all aspects of the course. This is to ensure that new operators know what they are doing when it comes to putting a transmitter on air and begin speaking to other operators on our authorised bands.

The test can be daunting to a number of people who do not like exams or who do not perform well in the 'exam' environment. Some people have dyslexia and others have a huge nervous attack or the like when confronted with an exam. We also can possibly expect to meet people with some learning difficulties and some disabilities.

At the Twin Cities Radio Club, we had a class recently where one student expressed some concern about being able to do the theory exam. We reassured him and told him to have a go as the paper only has 25 multiple choice questions and that no-one had failed yet over a number of classes. As it turned out he passed with no problems. But if he had failed (actually given "not yet competent"), we were all set to arrange a Nominated Assessor to give him an individual exam and to give him special consideration.

Evaluation is not to trip up people or to put up 'barriers' but is there to ensure that people have achieved a required standard before they are granted a licence. The system of the 25 question theory paper and the new practical test is an excellent way to assess competence and certainly seems to be working very well indeed. We should be very proud that the system has reached this stage where people do not any longer have the old difficult barriers to enter the hobby.

The learning environment

The classroom can have a number of aspects that can help or hinder learning:

1. The temperature – the teacher needs to ensure that the students are comfortable, so attention to the heating and cooling is essential. The teacher needs to be aware that the students are sitting for a considerable period of time and that while the teacher can move around a lot, the students are stuck in their chairs. So they can become too hot or cold (or numb in the bum) and their comfort needs to be watched.
2. Lighting – the lighting needs to be set up so the whiteboard and other media can be seen clearly by all members of the class. Many teachers place the overhead projector on a table and so the lens sits right in front of the screen and makes it difficult for all effectively to see the screen properly. The remedy is to place the projector on a lower table to drop the lens out of the line of sight to the screen. The lights directly above the screen can often be dimmed or turned off for best visibility for the class - otherwise the image has

poor contrast and is difficult to see by class members.

3. Seating – the seating needs to be arranged so that all can see the teacher, the screen and other media properly. The chairs in some rooms are not very comfortable and the teacher needs to be aware of that and make whatever arrangements he can to ensure comfort for the students as they can be seated for long periods without much relief. The teacher also needs to be aware that the sun moves across the sky and often visibility of the screen is good in the morning but poor in the afternoon and so the blinds or curtains may need some adjustment as the day progresses.
 4. Noise and distractions – the classroom needs to be as free of extraneous noise and distractions as possible, so the teacher needs to be aware of any that might hinder the learning process.
 5. Monotone presentation – if the one teacher does all the presenting, the class can easily be put off to sleep. The same old voice going on for long periods is not good, so if a number of teachers take it in turns to present the sessions, the class attention span will be improved and the learning optimised. The teacher can also concentrate on some voice development so the voice is modulated and sounds more pleasing to the ear. Try listening to some ABC TV and radio presenters and note how they make their voice presentations more interesting and lively.
 6. Good toilet facilities are an essential part of the students comfort.
 7. Tea, coffee or whatever – the kitchen can play an important role in 'creature comfort' too, as breaks with a drink are a vital part of keeping the session flowing with a high attention level from the students.
- I hope all of the above will serve to make the teaching and learning process much more effective for all teachers and classes. They are principles we used to teach to trainee teachers at Hawthorn Institute of Education, originally known as the Technical Teachers College.

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VK2KU	Guy	102
VK3KAI	Peter	84
VK2ZAB	Gordon	78 SSB
VK3HZ	David	76
VK2KU	Guy	69 SSB
VK3PY	Chas	69 SSB
VK2DVZ	Ross	68 SSB
VK3CY	Des	68
VK2TK	John	62
VK3EK	Rob	62 SSB
VK3QM	David	58 SSB
VK7MO	Rex	58
VK2EI	Neil	57
VK3BJM	Barry	55 SSB
VK3BDL	Mike	51 SSB
VK3ZLS	Les	51 SSB
VK3KAI	Peter	50 SSB
VK3WRE	Ralph	50 SSB
VK2KU	Guy	47 Digi
VK3CAT	Tony	46
VK4TZL	Glenn	45
VK5BC	Brian	43 SSB
VK3VG	Trevor	41 SSB
VK4CDI	Phil	40
VK7MO	Rex	39 Digi
VK7MO	Rex	38 SSB
VK3KAI	Peter	38 Digi
VK2TK	John	35 SSB
VK4CDI	Phil	35 SSB
VK4KZR	Rod	35
VK3ZUX	Denis	33 SSB
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VK2TK	John	27 Digi
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VK2TG	Bob	26 SSB
VK3ACC	Gordon	26 SSB
VK5ACY	Bill	26 SSB
VK3BBB	Brian	25
VK5BC/p	Brian	25 SSB
ZL3TY	Bob	24
VK3TLW	Mark	23 SSB
VK3YB	Phil	23
VK4EME	Allan	23
VK3HV	George	21 SSB
VK1WJ	Waldis	20 Digi
VK3BG	Ed	20 SSB
VK6KZ	Wally	20
VK3AL	Alan	18 SSB
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VK4TJ	John	17 SSB
VK2EAH	Andy	16 SSB
VK4CDI	Phil	16 Digi
VK4EME	Allan	16 Digi
VK6KZ/p	Wally	16
VK3ZYC	Jim	14 SSB
VK2EAH	Andy	11 Digi
VK2EI	Neil	11 Digi
VK3VHF	Rhett	11 Digi
VK4EME	Allan	9 SSB
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 SSB
VK1WJ	Waldis	4 CW
VK4JAZ	Grant	2 FM
VK3QM	David	1 Digi

144 MHz EME

VK2KU	Guy	245
VK2KU	Guy	231 Digi
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VK3VHF	Rhett	13 Digi
VK3NX	Charlie	5
VK4EME	Allan	4 Digi
VK2DVZ	Ross	2
VK3AXH	Ian	2 CW
VK3AXH	Ian	1 SSB

432 MHz Terrestrial

VK2ZAB	Gordon	57 SSB
VK3PY	Chas	50 SSB
VK3NX	Charlie	49
VK3QM	David	47 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3HZ	David	36
VK2KU	Guy	34 SSB
VK3EK	Rob	34 SSB
VK3BJM	Barry	33 SSB
VK2DVZ	Ross	32 SSB
VK3CY	Des	32
VK3KAI	Peter	29
VK3BDL	Mike	28 SSB
VK3KAI	Peter	28 SSB
VK3WRE	Ralph	27 SSB
VK5BC	Brian	21 SSB
VK7MO	Rex	20
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2TK	John	17 SSB
VK3CAT	Tony	16
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK3BG	Ed	14 SSB
VK4KZR	Rod	14
VK5BC/p	Brian	14 SSB
VK4TZL	Glenn	13
VK6KZ	Wally	13
VK2KOL	Colin	12 SSB
VK4CDI	Phil	12
VK4CDI	Phil	12 SSB
VK2KRR	Leigh	11 FM
VK3AL	Alan	10
VK3YB	Phil	10
VK2MJS	Mark	9 SSB
VK2TG	Bob	9 SSB
VK3BBB	Brian	9
VK3VHF	Rhett	9 SSB
VK3CJK	Chris	8 SSB
VK4TJ	John	8 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK2FLR	Mike	6
VK6DXI	Mirek	6
VK2KU	Guy	5 Digi
VK3HV	George	5 SSB
VK1WJ	Waldis	4 SSB
VK3KAI	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK3ZYC	Jim	4 SSB
VK4EME	Allan	4 SSB
VK3DMW	Ken	3
VK3VHF	Rhett	3 Digi
VK4CDI	Phil	2 Digi
VK2EAH	Andy	1 SSB
VK2TK	John	1 Digi

432 MHz EME

VK4KAZ	Allan	14 CW
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK2SN	Sean	6 Digi
VK4CDI	Phil	6 Digi
VK3NX	Charlie	5
VK3HZ	David	4
VK2KRR	Leigh	1
VK3AXH	Ian	1 Digi

1296 MHz Terrestrial

VK3QM	David	39 SSB
VK3PY	Chas	37 SSB
VK3NX	Charlie	36
VK2ZAB	Gordon	29 SSB

VK3ZLS	Les	26 SSB
VK2KU	Guy	25
VK2KU	Guy	22 SSB
VK3EK	Rob	20 SSB
VK3KAI	Peter	20
VK3KAI	Peter	19 SSB
VK3KWA	John	19
VK2DVZ	Ross	18 SSB
VK3WRE	Ralph	17 SSB
VK3BDL	Mike	14 SSB
VK3HZ	David	14
VK3BJM	Barry	13 SSB
VK7MO	Rex	11 SSB
VK2TK	John	10 SSB
VK3BG	Ed	10 SSB
VK3UDX	Geoff	10 SSB
VK4KZR	Rod	10
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK4TZL	Glenn	6
VK3HV	George	5 SSB
VK3ZUX	Denis	5 SSB
VK3ZYC	Jim	5
VK4TJ	John	5 SSB
VK6KZ/p	Wally	5
VK2KRR	Leigh	4
VK3BVP	Shane	4
VK3VHF	Rhett	4 SSB
VK3YB	Phil	4
VK3ZYC	Jim	4 SSB
VK4CDI	Phil	4
VK6KZ	Wally	4
VK2KU	Guy	3 Digi
VK3BBB	Brian	3
VK4CDI	Phil	3 SSB
VK6DXI	Mirek	3
VK2FLR	Mike	2
VK3CJK	Chris	2 SSB
VK3CY	Des	2
VK3DMW	Ken	2
VK3KAI	Peter	2 Digi
VK3QM	David	2 Digi
VK3ZYC	Jim	1 Digi
VK4CDI	Phil	1 Digi
VK5BC	Brian	1 SSB
VK7MO	Rex	1 Digi

1296 MHz EME

VK7MO	Rex	25
VK7MO	Rex	22 Digi

2.4 GHz

VK3PY	Chas	14 SSB
VK3QM	David	14 SSB
VK3NX	Charlie	13
VK3WRE	Ralph	10 SSB
VK3KAI	Peter	7 SSB
VK3EK	Rob	5 SSB
VK3HZ	David	5
VK3HV	George	4 SSB
VK6KZ	Wally	4
VK3BJM	Barry	3 SSB
VK3KAI	Peter	2 Digi
VK3VHF	Rhett	2 SSB
VK4KZR	Rod	2
VK2DVZ	Ross	1 SSB
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB

VK3ZUX	Denis	1 SSB
VK4TZL	Glenn	1

3.4 GHz

VK3NX	Charlie	11
VK3QM	David	9 SSB
VK3WRE	Ralph	7 SSB
VK3KAI	Peter	6 SSB
VK3HV	George	4 SSB
VK6KZ	Wally	4
VK3EK	Rob	3 SSB

5.7 GHz Terrestrial

VK3NX	Charlie	12
VK3WRE	Ralph	9 SSB
VK3QM	David	8 SSB
VK3KAI	Peter	7 SSB
VK6KZ	Wally	4
VK3BJM	Barry	2 SSB
VK3EK	Rob	2
VK3HV	George	2 SSB
VK3KAI	Peter	2 Digi
VK6BHT	Nell	2 SSB
VK3ZUX	Denis	1 SSB

5.7 GHz EME

VK3NX	Charlie	8
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10 GHz Terrestrial

VK3NX	Charlie	11
VK3QM	David	11 SSB
VK3KAI	Peter	9 SSB
VK3PY	Chas	9 SSB
VK3WRE	Ralph	9 SSB
VK6BHT	Neil	9 SSB
VK3EK	Rob	5 SSB
VK6KZ	Wally	5
VK3HV	George	4 SSB
VK3HZ	David	4
VK3TLW	Mark	3 SSB
VK3ZYC	Jim	3 SSB
VK5ACY	Bill	3 SSB
VK2EI	Neil	2 SSB
VK3BJM	Barry	2 SSB
VK3DMW	Ken	2
VK3ZUX	Denis	2 SSB
VK7MO	Rex	2
VK3BG	Ed	1 SSB
VK4KZR	Rod	1
VK4TZL	Glenn	1

10 GHz EME

VK3NX	Charlie	10
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24 GHz

VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK3NX	Charlie	2
VK6KZ	Wally	2

474 THz

VK3CJK	Chris	3
VK3HZ	David	2
VK7MO	Rex	2
VK7TW	Justin	2
VK7HAH	Ben	1 Digi
VK7MO	Rex	1 Digi
VK7TW	Justin	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU, vk2ku@clearmail.com.au.

The guidelines (and the latest League Table) are also available on the website of the NSW VHF Dx Group at www.vhfdx.radiocorner.net - click on Gridsquares.

Next update of this table will close on 24 August 2007.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

TVI High Pass Filter with Braid Breaker.



An inline TVI filter with Braid Breaker.

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Pager Notch Filter:

A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

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QSL cards from the WIA National QSL collection

Hon. Curator: Ken Matchett VK3TL
wiaqslcollection@wia.org.au

Amateurs transmitting on the broadcast band

This is not the sort of headline one would like to see at any time, but in pre-war days the heading would not have raised an eyebrow. Warren VK3LX dropped in a few old QSLs that he thought may be of interest, and so they were. The pre-war QSL of VK3RI was amongst them. This was the QSL of the Victorian Railways Institute Wireless Club in the Railways Building, Flinders Street. (The term 'wireless' had not at that time been almost universally replaced by 'radio'.)

The card gave details of the times of transmission during the weekend when amateur stations were permitted access to the lower end of the Broadcast frequencies. These transmissions were very well received by the community, particularly in the absence at that time of full-time transmissions by commercial stations. Listeners made a common practice of sending in their requests for music to be played over the air. We can read from the QSL that there were certain schedules for Saturday and Sunday transmissions.

A note on the reverse side of the card shows that it was received on 2 July 1931. The general set up for VK3RI was a coupled Hartley transmitter, the antenna either a wire cage or, later, a

zepp. long wire. Wave length was usually about 230 metres.

Another well-known transmitting station was 2CM that transmitted in the late 1920s. (The VK prefix did not come in until 1 January 1929.) The call belonged to Chas. Maclurcan of Stratfield, Sydney. He was well known throughout Sydney for his excellent transmissions on the broadcast band. He had set up his antenna (a zepp. long wire) on the top of the Wentworth Hotel in the heart of the city. He must have been lucky to do this, but the fact that his parents owned the hotel might have had something to do with it!

By coincidence, amongst the QSLs was one sent by Bill Sievers VK3CB who operated in the 1920s and was very active on the commercial bands between the two World Wars. He filled the air with what were called 'backyard concerts'. His 'studio' was his Richmond house - a backyard shed and a gramophone player in his lounge. His broadcasts were mostly of popular artists of the day like Tommy Dorsey and Duke Ellington. At the time aluminium was in very short supply, so he used galvanised iron. The aerial coils were wound on cardboard.

Bill was a great CW operator. He



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FT-897D HF-70 cm (bonus TS 5118) \$1299
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used to say that he preferred CW because he couldn't understand all those foreign languages! He used crystal control MOPA (master oscillator, power amplifier) and the antenna was usually an 80 ft. wire cage.

Mark Shaffer's QSL, 3XF, was there too. On his QSL he informs us of the fine DX he had successfully worked. This included 'all Australian States and New Zealand fone and CW'. Nowadays this brings a smile to our faces to read this, but in the 1920s it was quite an accomplishment.

Mike VK6HD, one of our top DXers, received a special award from the WIA as far back as 1991 for his contribution of QSL cards to the WIA Collection, and he continues to donate some excellent rare DX QSLs. Many of these will be of interest to our prefix chasers. To mention a few: Turkey TC3A (celebrating the city of Karacabey); Italy IU3AC (celebration of Antonio Canova); Bulgaria LZ26ZA (death of 26 saints); LZ13ARDF, a multiple prefix and suffix about the World Radio Direction Finding Championship 2006. (Does Australia compete?) Czech Republic OL4HQ; Belgium OT1A; Canada VA7ANTA (a special prefix and suffix about Antarctica). VC30 (discovery of oil). Ukraine EO60G (60 years since World War 2), Serbia YT9X, Poland SN5M (contest call), Japan 8N6 (Nagasaki Walking Tour), and 8NIC50A, a most unusual call sign celebrating 50 years of Chofu City. (Pity the poor CW operators engaged in a Field Day Contest!)

From the **St George ARC**, sent by **Peter VK2JTV**, came QSLs from the estate of Bill Shakespeare, exVK2AGF, in two fine display albums. Most QSLs were dated from the 1970s, including Corsica FC2, OX3, Y31, AH3, 6Y5, 9J2, 9M8, ZE2 (Rhodesia), CR6 etc. Also included was a QSL from Clive VK2DQE aeronautical mobile in a Qantas 747 at 37,000 feet between Sumatra and Singapore.

An interesting QSL from the somewhat rare **Lakshadweep Island**, south west of Sri Lanka, sent by Allan VK2CA. It was a special QSL sent to supporters of this VU7RG DX-pedition.

More acknowledgements next month.

Keep up those QSL contributions.

73 Ken

ar

Silent keys

Howard Douglas Sullivan VK4FLH

Howard Douglas Sullivan, aged 68 years, and a long term sufferer of muscular dystrophy, lost his battle with life on Thursday, 17 May, 2007.

Howard was well known in Mackay ham circles for his wicked wit and doubtful emails.

Whilst he was able Howard enjoyed a good CW session, and later a good ragchew.

Howard will be greatly missed by all who had regular contact with him.

Submitted by **Gavin Reibelt VK4ZZ**, **Brian Coleman VK4LH** and **George Glendinning VK4AJL**.

William J (Bill) Currie VK3AWC

It is with great sorrow that I advise the passing of Bill Currie VK3AWC, who passed away Monday, 28 May, 2007.

Bill was loved, respected and admired by all of us as a great club member, not only of the M. & D. R.C., but also of the CW Operators QRP Club, and the amateur fraternity in general.

It was wonderful what 'Scrooge' could get out of a few 'chips'.

Most know that Bill made our weather

satellite receiver – possibly one of his last projects.

He was always 'on tap' should anyone require help or advice.

He and wife Adrienne fought a great fight with Bill's illness – marvellous how she brought Bill to our morning meetings, then called back to take him home.

The Morning Group stood in respect and remembrance.

Submitted by **Ken Morgan VK3CEK**, on behalf of the M. & D.R.C.

Ray Mcgregor VK5YV

Ray obtained his licence in 1957 and was active on one metre and after 2 metres with his then callsign of VK5ZBM. Using AM and homebrewing all of his equipment, he had many an enjoyable contact using a 6J6 in the final and working many stations in Adelaide and further afield when conditions permitted.

About 1960 he built a 6 metre station using a pair of 807s as the modulator and running 100 watts output of AM from the final, working all states, territories and New Zealand. He was very active up until the early sixties, and then became relatively inactive due to family commitments. In the late sixties, when I was showing a great interest in amateur radio, he built up another 6 metre AM station using a type 3 Mk 2 transmitter, a 6 metre converter feeding into an old short wave broadcast receiver. This was at a time where stations were crystal locked and everyone knew where to look for you on the band.

Shortly after this, he had a stint on

sideband using both IC-202 and IC-502 on 6 and 2. Many a time I would be Dad's second operator. In 1978, dad thought it was about time to upgrade to the then full call, so, not knowing Morse, he learned it himself and obtained VK5YV. He also designed and built a 40 ft 3 legged tower with a huge wind loading which still stands as a monument to him and has withstood quite a few storms.

In the mid seventies, Dad was one of the many tireless workers who donated his time to help out with the conversion of the Burley Griffin Incinerator to a meeting place for the then SA Division of the WIA. Dad had great pleasure building aerials and lately experimenting with ATUs and the 30 metre band. In concluding, I would like to thank Dad for getting me interested in the best hobby in the world and may you have plenty of QSOs in that ham shack in the sky.

73 Ray VK5YV. RIP.

Peter John Mcgregor VK5APA.

William (Bill) Mitton Rice VK3ABP

18th May 1927 – 29th May 2007

Bill Rice commenced as a radio amateur at Murray Bridge in 1947 with the call sign VK5BP. Bill operated on 40 metres with a transmitter consisting of a Franklin VFO using 6AC7 valves, a 6L6 driver, and push pull 807s in the final amplifier, modulated by a further push pull 807 pair.

In 1948, Bill moved his equipment to Adelaide, where he attended university. From the suburb of Prospect, Bill could be regularly heard on 40 metres when he possibly should have been studying for those many examinations!

Following graduation, Bill moved to Melbourne in 1953 and since 1956 he operated from his home in Altona with the call sign VK3ABP. Bill was wont to say that "ABP" stood for "always being pedantic" but less polite people claimed it really meant "always bloody pedantic".

In his earlier days, Bill was very enthusiastic about the engineering design and the subsequent building of his own communications receivers. He was also well known for his VK3ABP 2 m converter, published in *Amateur Radio* magazine in 1962, which is arguably the most popular piece of equipment ever published in the magazine. He followed with an article on the 6 m version of the VK3ABP converter several years later. Unlike today, the amateur operators of those earlier years built almost all their own equipment and Bill was no exception.

In his early years in Melbourne, Bill was also very busy repairing early TV receivers, but his day job was with the Aeronautical Research and Development Unit (ARDU), part of the RAAF, based in Laverton. ARDU tested and evaluated RAAF aircraft and weapons. Bill supported the flight trial work and applied his knowledge of radio when the trials used radio telemetry to acquire data.

When the ARDU moved to South



Australia in 1977, Bill transferred to the Aeronautical Research Laboratories (ARL) in Lorimer Street Fishermans Bend, which was then in the Department of Supply. ARL instrumented the RAAF aircraft and equipment, designed and installed the signal conditioning and recording equipment,

and analysed the data. Bill worked in the Materials Division supporting the applied research for the RAAF and stayed there until his retirement.

Bill said very little to family and friends about his work with ARDU and ARL, and the leading edge technology involved.

Bill was a keen sailor and his expeditions to the rarely filled Lake Eyre in 1974, 1975 and 1976, when the lake uncharacteristically held water, are well known. He was the first radio amateur to operate "marine mobile" from Lake Eyre and circumnavigated the lake on his beloved trailer catamaran, the "Red Baron". One wonders if that feat will ever be achieved again.

Bill also sailed the "Red Baron" numerous times in the Marley Point races in the Gippsland Lakes. He seemed to take pride in always being the last to finish.

In 1972 Bill joined the *Amateur Radio* magazine Publications Committee as the technical editor, became editor in July 1984, and continued in that position until December 1999 to become the longest serving editor ever of *AR*. As *AR* editor, he also served on the WIA Federal Executive for many years.

In 2001 Bill was awarded honorary life membership of the WIA for his long and meritorious service, which he accepted with characteristic humility.

Bill was the perfect recycler and re-user. Much to his family's concern at times, he never threw anything out. For instance, he had tobacco tins full of the

leads that he cut off resistors, capacitors and other components. He even flicked the excess solder from his soldering iron into a tobacco tin and eventually melted it down to make a counter weight for his home brew wind generator.

Bill kept meticulous notes and recorded everything that he did in a form of lab book. When most hams were buying synthesised 2 m rigs, Bill designed one using a VFO and the crystals he had in his collection. The rig had lots of switching and mixing and he spent weeks working out all the mixing products, spuri, and possible birdies, etc, as well as the switching, to get the frequency coverage that he wanted. His aim was to build the transceiver using the crystals he had in his "junk box" without having to get any extra crystals.

I had the privilege of knowing Bill, both personally and as an active radio amateur, for over 45 years. He was a quietly spoken, deliberate but personable man, with a brilliant, always enquiring mind. He was truly one of nature's gentlemen with never an unkind word for anyone. He was one of the most knowledgeable and practical people I have ever met.

Bill's command of language was exceptional, if slightly pedantic at times. His contribution to *Amateur Radio* magazine as a contributor, technical editor and editor over 27 years will be long remembered.

The celebration of life service held for Bill at St Eanswythe's Anglican Church was packed to over-flowing and a major feature of the service was the loving and humorous eulogies delivered by Bill's five children, and by Ron Fisher VK3OM representing Bill's radio amateur friends.

My thanks to VK5BR, VK3ZKK and VK3OM for supplying information for this obituary.

Our sympathies go to Bill's wife Margaret, his five children Jenni, Kathy, Janet, Diana and Peter, and his grandchildren.

Bill Roper VK3BR

ALARA

From Christine VK5CTY

July is the month when you make sure all your equipment is working well, ready for the two biggest Contests of the year. The Remembrance Day Contest is on the weekend of 12th and 13th of August and the ALARA Contest is on 26th and 27th August.

The Remembrance Day Contest runs for 24 hours from 1800 EST Saturday to 1759 EST on Sunday. This contest is run to commemorate the end of WW2 and is always held over the weekend closest to August 15th when peace was declared. Only stations within Australasia are counted in this contest. DX is ignored, except for New Zealand. You will hear

From Jenny VK5ANW

The Centre Victoria Radiofest was held at Kyneton Racecourse on Sunday 22 April. Pam VK3NK agreed to help and, on a fairly chilly morning, we set up the ALARA table with help from Peter VK3RV and Pam's OM Graeme VK3NE.

Although we were safe from any possible rain, being situated under the Grandstand, we were on the outside edge and were very grateful when the OMs put up a windbreak behind us.

Within minutes of our arrival, Michele VK3FEAT came over, introduced herself, and told us she was already an ALARA member. Michele was helping to run the

From Marilyn VK3DMS

As you can see elsewhere in this edition of AR, the ALARA Award has been updated and computerised, thanks to Kathy VK3XBA our Award Custodian. It is one of the most attractive Awards to have on your Brag board in your shack. To qualify you need contacts with 10 YL ALARA members from at least 4 different call areas. It is easy to make the required number and variety of contacts by taking part in the ALARA Contest, as this is a time when many of our members make sure they are on air. If you wish to apply for this updated Award, Kathy will be very happy to hear from you, and will pass on further details if needed. She can be contacted by email: kathyg@spacelink.com.au and logs for

more VK stations on the air at the one time than at any other day of the year.

The ALARA Contest is run over 36 hours to give everyone two bites at the 80-metre band. For OMs only contacts with YLs count, while YLs can count all stations, and club stations 'manned' by YLs are encouraged. It has been found that although there are a few DX YLs keen enough to stay up to join in our contest, most contacts are made in the evenings on 80-metres, with a number of ZL stations eager to work.

Please do participate in both these contests. The Remembrance Day

Amateur Radio Victoria table opposite and we managed several conversations during the day.

Judy VK3AGC spent quite a bit of time with us and it was good to catch up with her again. We also renewed an acquaintanceship with Jenny VK3MDR and her daughter Kate VK3FROG. We all felt a lot older when we realised that we had all met at Dubbo ALARAmeeet in 1990, and Castlemaine ALARAmeeet in 1993, and Kate appeared in the photos as a toddler!

We were pleased to meet new ALARA members Lia VK3FLIA and Selina VK3FLNA. Christina VK3FOX and

weekend is intense because of the many stations participating, while the ALARA Contest is much more 'laid back' with time to have a chat. Both Contests are fun.

HF stations contacted in the Remembrance Day Contest on a particular band cannot be scored again, but in the ALARA Contest, because there are so few YLs in the amateur community, you may contact the same station again after a 1 hour interval on the same band. It is worthwhile staying around a bit longer for that extra contact for both yourself and the other station!

Elly VK3FLEW also spent time with us and took application forms to read. We enjoyed chatting to the many OMs who came over, as well as the YLs. David VK3UR brought greetings from mum, Gwen VK3DYL.

Perhaps the most humorous event of the day was when one OM felt that our stand would be "the ideal place to find a wife"! Presumably he meant one who would be sympathetic to Amateur Radio!

Overall we felt that it had been worthwhile, and the day passed quickly. Many thanks to Pam for her support.



They really keep it in the family – ALARA founder Norma VK2YL has 3 daughters, now all members – Lorraine VK2FICQ, Christine VK2FIZI, & Laura VK2FLKM – seen here studying for their calls.

the Award can be sent by email also. Full details of the Award rules will appear in a later edition of AR.

Travel seems to be in the air for some of our members – currently Pat VK3OZ, Christine VK5CTY and Val VK4VR are all enjoying a trip to England and Europe. We will look forward to hearing about their travels when they return.

There have been some changes on the ALARA Committee, with Bron VK3DYF and Gwen VK3DYL retiring from ‘active service’. I am sure that all our members are grateful for the many years that these ladies have given to ALARA, and hopefully we will still catch up with them from time to time. A very big welcome has been given to Tina VK5TMC, Jenny VK5ANW, Pat VK3OZ, Pam VK4PTO, and Robyn VK3WX who have filled the gaps.



Another family affair – L to R: Amanda VK5FAAJ, Jenny VK5FJAY, Melanie VK5FMEL

From Dot VK2DB

OM John and I had a wonderful weekend at the WIA AGM held in Parkes. We all met on Friday night at the CSIRO Radio Telescope Visitor’s Centre, where we had dinner, and were invited to attend the meeting of the Central West Astronomical Society. With all the WIA visitors, it was the biggest meeting the club had ever had. We heard the speaker, Dr. Geraint Lewis, speak of “The Runaway Universe: the influence of Dark Energy”.

Saturday morning was free, and then lunch was a BBQ in a lovely large park around the famous historical Bushman’s Dam. The very well attended AGM was held Saturday afternoon and the actual AGM part was all over in 19 minutes (still 10 minutes longer than our ALARA AGM!) The open forum after the AGM took a few hours, leaving a short time to prepare for the formal dinner.

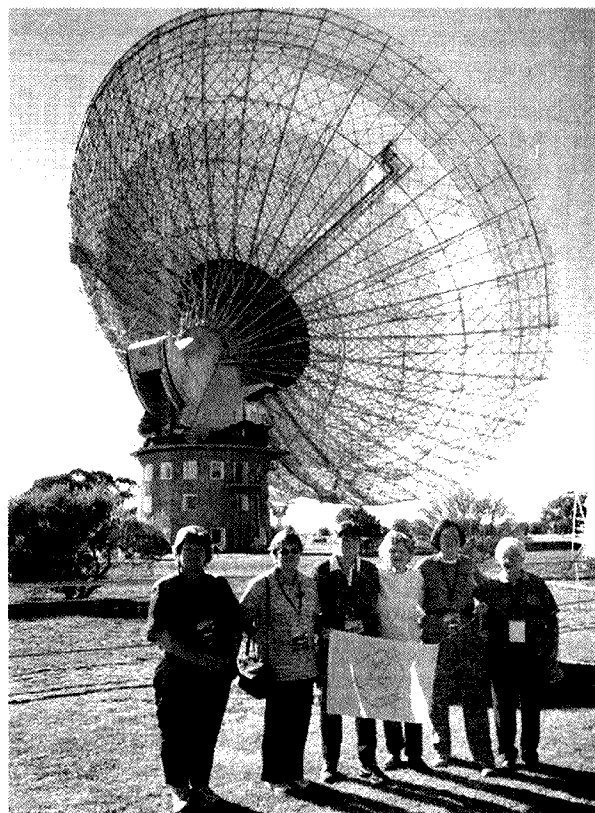
After dinner the speaker was Michael VK3UBM who had dabbled in rocket science since he was a little lad.

On Sunday we were taken on the guided technical tour of the Radio Telescope. As it is always ‘being used’,

it is only open once a year to the public, but this was a special tour planned with the WIA, so we were very lucky.

We tried to gather all the YLs together for a photo shoot, but some were on the tour, some were watching films in the Visitor’s Centre, and some were eating or drinking – never all in one place, although at the end the whole group gathered for one big altogether photo.

The whole weekend was one that none of us will ever forget, and was as well planned and prepared as one of our ALARAmeeets! Of course we now wonder what the WIA committee will decide on for next year’s AGM.



ar Photo 2: YL group at Parkes. L to R – Name not recorded, Dot VK2DB, Jenny VK3MDR, Freda VK2SU, Jeanne VK5JQ, Joscelyn VK4JJ

WOMEN IN RADIO

Christine Taylor VK5CTY

SHIRLEY VK5JSH

Shirley is a relative newcomer to amateur radio and to ALARA as she will tell you, but since she joined ALARA she has pulled her weight. She is currently our second Vice President, and our Historian. She prepares the roster for the Monday night Nets, juggling everyone's commitments. She is involved in various devious schemes to make the ALARAMEETS more fun.

She is on the Monday night nets almost every week and has been since she became an amateur. She is a keen Echolink operator including taking over as net-controller of at least one net she just joined for interest.

Shirley has had her licence since 1998 after joining a radio course run by Geoff VK5TY. Her OM Jim was a VK3 licensee before he moved to VK5, although he didn't operate very often till

Shirley passed her exams.

Shirley is an accomplished bobbin lace maker, always ready to learn a new technique. She has recently taken an interest in patchwork and cross-stitch because other VK5 YLs are involved in these craft activities.

Shirley is a keen gardener and regularly preserves all the fruit she grows or is given, with several special 'secret' orchards at her fingertips.

She is a keen amateur astronomer and loves the part of South Australia where she lives. She was born in Glasgow but came here as a young girl with her parents and siblings. She has twin children, a boy and a girl, and two grandchildren with whom she is



in regular contact via the internet.

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DOT VK2DB

Dot has been a member of ALARA for many years. She has been our very efficient editor of the ALARA Newsletter since 1996, taking us from the days of the Gestetner into the most up-to-date computer technology.

Dot is ready to undertake any task offered to her. She is keenly involved in the Hornsby Radio Club and participates in any new project proposed. She is insistently feminist; as the mother of four sons she has always needed to uphold her rights! When Dot makes an electronic device, it will be housed in a pink rabbit, or a flowery cover to add her personal touch. The device also works properly!

Dot is a keen gardener who is very conscious of the rights of the animals who share her garden area. There are a number of lizards, birds and wallabies that share her garden. She draws the line at snakes unless they stay strictly outside the house.

For a number of years Dot converted the VK2 broadcast from packet to text and posted it on the Hornsby Club website for those without packet. To do this she had to use two or three different computers each time, contending with all the problems we encounter with computers, from time to time (hi, hi).

The many hours spent every three months to produce the ALARA Newsletter must be uncountable – when she has the news to fill the pages. Her problem is that too many people think that what they do is of no interest to



others, so they don't 'get around' to sending stories (and pictures) to her. On her behalf, this is a plea for all YLs to keep Dot informed.

Dot is also very interested in steam trains and for many years participated with her sons in a number of expeditions and working bees involving the old monsters.

With the assistance of her son Peter, Dot has given ALARA a voice on the Web. She keeps it up-to-date and has even redesigned it once or twice as technology has changed.

Dot and her OM John VK2ZOI (and sometimes her two younger sons) have been to most of the ALARAMEETS and represented ALARA at a number of Hamfests on the East Coast.

We appreciate all the works Dot does for ALARA even if we don't always remember to tell her so.

ar

CQ

*An age old process for meeting
a friend*

*A stream of rules and a certain
method*

All criteria must be met

Just to say hello

Waves full of fresh voices

Fill the ancient machines

Regulations are stretched

To meet the next generation

The cobwebs are swept away

The equipment takes on new life

Technology advances

The rise and fall of pitch

Reaching beyond the stars

Empty space is filled

*A sound seeps through the crackle
An answer in the darkness*

A voice within the night

Metal splays the horizon

Black lines writhe on the ground

Keeping the silver monster

Strapped into the earth

A black box

A green screen

Numbers lead the way

Turn the knob

Push the button

Hope a friend is there

An original poem by Christina Simon VK3FOX

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OzGear is now 'internet only'

This is not the news we wanted to bring to you.. but... due to poor customer support resulting in low sales figures, we have been forced to move from being in a physical shopfront to become a part-time internet-shop-only-based operation.

To a large degree this "change" has occurred by virtue of more and more people purchasing internationally via the internet, coupled with the market forces generated by the "grey-market-ers" and eBay and the people who buy from them. With people continually purchasing from such 'non-authorised sources', the death knell has sounded for the Australian "physical" radio and electronics shopfronts, OzGear's included.

The outcome :

- We cannot be contacted by phone – the 07 31142506 number is an "email us" advice message only.
- We have left the Acacia Ridge shop address and become home-based.
- No more personal pickups. Everything is either couriered or mailed.
- Email is the only way to reach us – and it will be answered as time permits.
- "Advice request / Help Desk" facilities are no longer available.

Products :

- We have minimised product lines and stock levels.
- Primary product lines are Icom, Yaesu, Sangean and Tigertronics. We remain an authorised Australian dealer with manufacturer's Aussie warranties!
- Some other products are available – only as listed on the web site.
- Many products are now supplied on a back-order basis only.

For those who already deal with us by email/web/mail order, the only real change is the reduced product lines.

Visit OzGear.com.au for continuing up-to-date details on product lines and pricing

VK2

Tim Mills VK2ZTM

Via vk2wi@ozemail.com.au

Clubs

Last month the **Oxley Region ARC** held their annual Field Day over the Saturday and Sunday of the Queen's Birthday weekend. Attendance was slightly down but understandable with the wild weather conditions in Newcastle, the Central Coast and Sydney, where many visitors come from. There was good weather in Port Macquarie – it usually is for the long weekend – and those present did what amateurs do best – talk, other than at lunch time. Others checked out the bargains provided by the traders or from the surplus tables and trailers. A few still partake in field events and foxes are still hard to catch. Thanks to Oxley for another excellent weekend. Contact with the Club is via P. O. Box 712, Port Macquarie NSW 2444.

The **Orange and District ARC** meet at 7.30 pm on the first Friday of the month at the RAAF Cadets HQ in Warrendine Street, Orange. Further details can be obtained from Vice President, Robert VK2ZRJ on 0407 220 690 or rjalford@optusnet.com.au

Blue Mountains ARC also meet on the first Friday at the 1st Blaxland Scout Hall, Reading Street, Glenbrook at 8 pm. They may be holding their annual field day in a couple of month's time. More details expected next month.

Another first Friday meeting - the **Tamworth Radio Club Inc** have a new venue at the Tamworth / Oxley Scout Hall on the corner of Carthage and Hall Street, Tamworth. Their web site is <http://trci.org.au/> and their Publicity Officer is John VK2HUP.

The **Mid South Coast ARC** will be holding their next quarterly meeting on Saturday 4th August at the regular Little Forest Lodge venue, Little Forest Rd, Milton from 10.30 am. Contact the Secretary at secretary@mscsrc.org

Summerland ARC meet Thursday night at 7.30 pm and Sunday afternoons at 1.30 pm in their club rooms at Richmond Hill, which is a rural suburb, 10 km east of Lismore. They have their SARCFEST coming up on 12 th August. Check out their email vk2src@sarc.org.au

The **Orana Region ARC**, located at Dubbo, meet on the last Saturday afternoon of the odd month. This month, on the 28th.

Fishers Ghost ARC meet on the last Wednesday of the month at 7 pm at the Campbelltown Performing Arts High School.

The **Hunter Radio Group**, in Newcastle, formerly the Hunter Branch of the NSW Division, was formed in 1925. They meet monthly on the second Friday evening at the NBN Television Studio. On Monday evening at 7.30 pm, they conduct a news session via VK2AWX on several frequencies and include extracts from VK2WI News with both National and ARNSW content. They conducted an exam last month and have others at regular intervals. The contact is Grahame VK2FA on 02 4954 8688. This month the Group operated in the Trans Tasman 160 m phone contest from the Luskintyre Tiger Moth Airport and next month will do the same in the RD Contest.

The **Central Coast ARC** held a Foundation exam last month. For future exams contact Leonie VK2LCP on 4329 1674 or email to foundation@ccarc.org.au. The Club meets on the first and third Friday at their club rooms, Dandaloo St, Kariong, near Gosford. Check out their web site on <http://www.ccarc.org.au/>

St. George ARC. Last month these notes reported on their problem with a site rent increase for the Mt. Bindo VK2RDX 6650 repeater in the Western Blue Mountains. To date there has been good support to maintain this service and an operating fund has been established. Many donations have already been received which should cover this year's costs. If you would like to assist - check with Peter VK2EMU at vk2emu@wia.org.au. This repeater provides a link across the mountains from the Sydney coastal strip to the west into locations like Bathurst, Orange and beyond. It is one of the automatic relay systems of VK2WI News.

ARNSW

May 27th last was both a regular T&T day and the low key celebration of 50

years since the formal opening of the VK2WI building at Dural. On 19th May 1957, the opening was performed by [the late] Sir Allan Fairhall VK2KB. At that stage the building had been completed and was waiting to be fitted out with the equipment. Over two hundred came to Dural last May. The fine mild day's activities started mid morning. A marquee tent had been erected to house traders and displays. A sausage sizzle lunch was provided and the T&T department did brisk business. The afternoon was devoted to demonstrations by the Home Brew Group and rag chewing. Many who attended had not been to the site for decades and for some others, it was a first time. The incoming ARNSW Council was pleased with the success of the day and is in the planning stages for another such day, a few months down the track. Unfortunately, it is unlikely that any form of shed will be on site to house such events in the near future. The local council is still being difficult and after many questions and requests for further clarifications as to the need for it, they rejected the application. There is some rethinking going on at the moment. The next regular T&T will be at the end of this month – Sunday 29th.

The new ARNSW Council is getting stuck into its program for this year. The major office bearers as mentioned last month are *President* Norm Partridge VK2TOP; *Vice President* Barry White VK2AAB; *Treasurer* Beth Langley VK2AO and *Secretary* Brian Keegan VK2TOX. Other portfolios decided at the first meeting in May were Brian Keegan VK2TOX who is also the Public Officer and Web Master. Terry Ryeland VK2UX is Junior Vice President and Education. Michael Corbin VK2YC has publicity, Deceased Estates and stage 2 projects. Barry White VK2AAB has the shed project and is the investment manager. Erik Houseman VK2MAN has the broadcast compiling and also the web site. Brian Kelly VK2WBK is the Dural officer and NTAC co-ordinator. Norm Partridge VK2TOP looks after membership and clubs. Noel May VK2YXM has T&T involvement and

Beth Langley VK2AO also has stage 2 involvement.

The redirection on the office phone – 02 9689 2417 – mentioned recently, has been extended for a few more months. One of the former VK2 Division Education Service publications – 100 Projects – has been transferred to CD by the NZART with permission of ARNSW. The exams through ARNSW are currently confined to the Foundation and conducted on the last weekend of the even months. The next will be at the end of August. A reminder that all matters relating to repeater and beacons, should be referred in the first instance to our State NTAC, who is Brian VK2WBK. Under licensing requirements, you cannot operate a repeater or beacon which is not approved by ACMA. VK2WI News, with its wide coverage, is a service available to all VK2 clubs and groups. We do ask however that all news items for VK2WI be submitted in electronic form – vk2wi@ozemail.com.au – to save retyping and to stop it getting lost – must include – VK2WI NEWS – in the subject heading.

VK2WI

The first broadcast from VK2WI was made in 1955 using two mobile equipped vehicles. Michael Corbin VK2YC provided the information that the announcer was Stan Bourke VK2EL, using the 40 metre transmitter of Don Pollard VK2ASW, 5 watts from a 6AQ5 into a ½ wave dipole and on 2 metres, with a transmitter in VK2IC's Austin A40 and a 3 element beam on its roof. Stan had to hold both microphones and read while standing. Michael relates that as a lad in short pants, he was given the task of going down the back of the Dural property with a 40 metre receiver to monitor the transmission and to only return if the transmission stopped. In last month's notes there was a report on the proposed 60 metre transmission to be introduced. If all goes to plan, the transmission will start this month with the morning VK2WI News being relayed on 5.4235 MHz. This is a service for the manual relay stations to source from and anyone else who can listen.

VK2WI News has the benefit on Sunday morning of being relayed through many regional repeaters. This is provided on the Far North Coast by Summerland ARC through VK2RIC 6800 and Byron Bay VK2RBB 6625. In the New England region, there is Tamworth VK2RTM on 6750 and often through the Central West systems – VK2RCC 6800 and VK2RCD 6725.

The Hunter Radio Group provides an Echo Link node for VK2WI News for both the morning and evening sessions. It can be sourced at either VK2RNC-R or # 126 558. This path has transmissions provided on 2 metre simplex in Orange by VK2BLO and in Cobar by VK2JWG. In Adelaide, VK5BUI provides a retransmission of the ARNSW content. If you would like to use this link to retransmit through a local repeater or out on simplex, would you contact Grahame VK2FA, who is in Newcastle. VK2RNC 6975 is one of the automatic relay points. This repeater is linked to the Great Lakes ARC VK2RGL 9775 which is now in the automatic relay circuit.

The Central Coast ARC provides an automatic relay through VK2RAG on 6725 and they take morning callbacks.

To the west of Sydney, the St. George Mt. Bindo VK2RDX 6650 is an automatic relay repeater.

Down south, the Illawarra ARS provides South Coast morning coverage through their Coastlink service down to about Narooma, through VK2RMP 6850 Maddens Plains, VK2RIS 6975 Saddleback and VK2RBT 6675 Mt. Boyce. They conduct callbacks. They have the capacity to link inland towards Wagga but there is some division with Amateurs along this path between those wanting a relay and those who don't.

The automatic relays occur both morning and evening. Most manual are morning only.

Would anyone who does a relay, not mentioned above, please let - VK2WI News - know by an email to vk2wi@ozemail.com.au so the records are up to date. As indicated above, callbacks are taken by most manual and by some automatic relay stations. These are in addition to those taken at

VK2WI. Please forward, by any means, the number of callbacks to VK2WI. We need these for both our own and national records. Anyone who is unable to call in by radio can use the email connection.

Looks like I have really used up this months space allocation!

73 Tim VK2ZTM.

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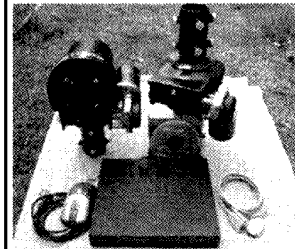
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Revival gains momentum

The number of radio amateurs continues to grow following the restructuring of the licence system which became fully effective in early 2006. The Foundation Licence has been the major attraction resulting in a healthy level of upgrading to the Standard and Advanced licences.

Currently there are well over 400 with the entry level licence in Victoria, more than double that registered 12 months ago. On the VK3 experience, one in six Foundation Licensees has upgraded in the past 18 months.

The availability of training sessions and assessments is the key to why some parts of the state are experiencing growth in people joining amateur radio while other areas are not.

A few who were very keen to get into amateur radio have not been bothered by the need to travel some distance to attend training and licence assessments. One fellow took a cheap flight from interstate to attend the Box Hill North sessions after not being able to find another suitable weekend session.

Another good sign is that there appears to be a little interest emerging in Morse code from the new licensees. A similar trend occurred in Britain after it introduced its Foundation Licence in January 2002, perhaps aided by that country's unique look-up Morse test for the entry level licence.

Well deserved recognition given

In this column brief mention was made last month that a review of amateur radio activity in Victoria had identified a number of achievements, that while being 'mentioned in dispatches' were worthy of more formal recognition.

The Amateur Radio Victoria Council decided to revive the S.W. Gadsden Trophy, created in the memory of our President 1930-31, and in doing so recognise a number of achievements on the trophy that dates back to the 1950s.

The list of recipients of the SW Gadsden Trophy announced on 23 May,

2007 at the WIA Victoria-Amateur Radio Victoria Annual General Meeting were:

Ray Naughton VK3ATN 1964

For the outstanding achievement of world's first Earth-Moon-Earth QSO on the 2 m band with Mike Stahl K6MYC.

Ken McLachlan VK3AH 1974

Coming to the assistance of Darwin after Cyclone Tracy had wreaked devastation, by establishing initial contact with Slim Jones VK8JT and for the next 36 hours having his home become a disaster communications centre.

WICEN (Vic) 1983

Responding to the Ash Wednesday bushfire disaster and then actively engaging in the disaster recovery phase by providing vital inter-agency communications, WICEN gained respect and recognition for itself and amateur radio generally.

Bob Arnold VK3ZBB 1988

For achieving the first QSO made by the crew on the MIR space station with the western world, by chatting to Cosmonaut Mousa Manarov U2MIR on 15/11/1988, as part of the Soviet Union's 'glasnost' or openness policy.

John Kelleher VK3DP 2001

In recognition of sterling service given as the WIA Federal Awards Manager for a decade, that included the efficient management of operating awards for radio amateurs throughout Australia and overseas.

WICEN (Vic) & RECOM 2003

The Bogong fire that burnt uncontrolled for four weeks put members of both dedicated groups to the test which they passed superbly to once again demonstrate the great contribution that radio amateurs can provide in times of emergency.

ARDF Victoria 2003

Acknowledging its leading role in the planning, management and conduct of the

IARU Region 3 ARDF championships, held from 28/11/2003 to 3/12/2003 inclusive at Ballarat.

Brenda Edmonds VK3KT 2004

Brenda Edmonds VK3KT conceived the idea of having an amateur radio stand at the Great Australian Science Show resulting in WIA Victoria and its affiliated clubs mounting effective displays 2001, 2002 & 2003 at this well attended event.

Peter Forbes VK3QI & David McAulay VK3EW 2006

For the exemplary effort as the QSL management team for Australia's acclaimed most successful special event station activity (AX3MCG & AX3GAMES) and their joint operation of AX3MCG.

Repeater report

The Mt St Leonard 70 cm repeater VK3RMU is now on its new frequency of 439.800 MHz.

Amateur Radio Victoria made the change mainly due to persistent interference from a suspected low interference potential device (LIPD).

The VK3RWL Warrnambool repeaters on 2 m 147.050 MHz and 70 cm 439.650 MHz are now on air but still require a little more work that may have to wait until better weather in spring.

Many thanks to Russell Lemke VK3ZQB, who, with others, worked to restore these Amateur Radio Victoria repeaters that were required to meet rigid and costly commercial site requirements. The coverage area includes Ballarat, Horsham, Hamilton and Portland.

Foundation Licence Classes

The next two weekend training class and licence assessments are 21 and 22 July and August 25 and 26. Do you know someone who could be interested in joining one of Australia's fastest growing hobbies?

To obtain more information or enrol contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Eastern Zone Amateur Radio Club (Inc.)

Chris Morley VK3CJK

The Eastern Zone ARC is about to change its home location. Since the late 1990's, we have been able to occupy the former Conference Room in the old SEC headquarters building in Morwell. The building has recently been sold. Given a number of factors, including uncertainty regarding continued tenure, we have negotiated to move the meeting venue to the Hazelwood South Hall, located in Tramway Road, Churchill. This move will also require a change of meeting night to a Thursday, as the Hall is the home of the Churchill Guides, who meet on the Tuesday night. This

move brings with it some work and some uncertainties, but also the scope to develop a worthwhile relationship with the Guide group. Details and a map of the new location should be on the Club website by time that this notice appears in AR.

We recently had three candidates attempting upgrade assessments. Congratulations to Damien VK3HGY, who should by now be on-air as VK3BUG. The other candidates are keen to continue their studies so that they can re-sit the tests.

The weekend of July 7 and 8 will see the running of the tenth annual GippsTech Conference at Monash University Gippsland Campus. It is a must for all interested in all aspects of communications at VHF, UHF and microwave frequencies.

The club now has a new web presence. We have established our own web domain name. For details of club activities, point your browser at <http://www.vk3bez.org/>



WAQ – Worked All Queensland Award

Here is the chance to add another award to your collection.

The Queensland Advisory Committee is pleased to announce the reintroduction of the Worked All Queensland Award. There have been several changes to bring the award rules into line with current Amateur Radio operations. The requirements are basically the same. The objective is to work a minimum of 50 different City and or Shire areas as set out in the awards list of Cities and Shires. The award has three levels of achievement: 50, 75 and 100 cities and or shires.

One important point to note in the award rules is that only contacts made after the 31-12-2005 will be accepted.

The WAQ award will be administered and issued by the Queensland Advisory Committee. There have been a lot of enquires regarding the award, so we hope to see a lot of interest with its reintroduction. So, good luck to all who wish to participate.

I am sure you will find the certificate a great addition to your awards collection.

Worked All Cities and Shires.

Any amateur station may apply for this award. All you have to do is comply with requirements listed below.

1. The award is tiered to 3 levels of achievement. The first level may be applied for after the applicant has worked 50 of the listed cities and shires. The next level is attainable after 75 and the highest level of the award after 100 contacts to different areas have been confirmed. Only one contact in an individual area is required. One certificate will be issued for the first level, after that the award will be updated and confirmed by the Award Manager appointed by the QAC at the time of application.
2. If an Amateur is operating as a fixed (home or club) station, a portable or mobile station in a Queensland Shire or City council area, the operator is entitled to claim the shires and cities and towns they have made contacts from as worked areas.
3. Modes of operation are restricted to Phone, CW and Mixed. All bands may be used but are limited to simplex contacts. Cross band contacts are not accepted.

4. All applications must be accompanied by the operator's log, detailing the other stations worked callsigns, and the date, time, band and mode of the contacts. Both written and electronic logs will be accepted. The logs can be sent to the Award Manager. The issuing of the certificate is done on the honesty of the station applying.
5. All applications must be accompanied by payment for the postage of the certificate to you. For VK amateurs the postage of the certificate will cost \$5.00. For stations applying from outside the VK call area, IRC's for return postage to your address for a C4 size envelope (the certificate is A4 size).
6. Since the rules have changed, only contacts made after the 31-12-2005 will be counted.

A good place to look for contacts would be the 80 m nets, which take place most evenings from many different areas of Queensland. The club call back after the rebroadcast of WIA NEWS on Monday nights on 3.605 MHz and The Jack Files Memorial Contest would also be a good hunting ground for different

News from...

cities, towns and shires. There should be no problem reaching the initial level required to have a certificate issued. So why not give it a go and take the opportunity to add this certificate to your collection.

Award manager- John Spooner VK4AJS

WAQ Cities and Shires

The list of Cities and Shires can be found on page 44 of June AR.

Tablelands Radio and Electronics Club

TREC is working towards reinstating the Hann Tableland repeater which has been off air for some time. The repeater is sited NW of Marseba.

The VK4RBK 70 cm repeater is back on-line with a new antenna and new frequency. 439.900 MHz negative split. It is working very well and the IRLP node 6114 is again linked via this repeater.

Tablelands Radio Group

TRG is planning a weekend at Cooktown again this year to activate the Grassy

Hill Lighthouse site for the International Lighthouse/Lightship weekend event. Callsign VK4GHL.

Around 12 Far Northern amateurs and their XYL's will be in attendance for the weekend. The planned social activities should prove to be very entertaining to say the least.

The Group would like to acknowledge Kenwood Electronics Australia Pty Ltd for their valuable support by way of promotional material for the Lighthouse Weekend.

Look out for a pictorial spread in a future edition of AR, in particular the Cooktown Formal attire. They may even have time to make some radio contacts.

Assessments in FNQ Region.

Foundation Licence activity continues in the region with examiners from the Tablelands Radio and Electronics Club (TREC) and the Tablelands Radio Group (TRG) being kept busy.

Central Highlands Amateur Radio Club

It's the time of the year when we need to bookmark the weekend planned for

the get together and the AGM at Camp Fairbairn near Emerald on the weekend of Friday 28th September, Saturday 29th and recovery on Sunday 30th, so remember to go mark the calendar now. You may also want to mark the weekend before, that is the 22nd and 23rd September for the Townsville Amateur Radio Convention. A wonderful get-together as well. Both these events fall in the school September holidays, so plan ahead now.

Gordon VK4KAL and Dot will look forward to hearing from you via email or on the phone to make a booking for the AGM weekend. Contact them either on telephone 07 49854168 or email donvk4kal@bigpond.com

Also check out the CHARC Yahoo Site at <http://au.groups.yahoo.com/group/charc/> and don't forget to call in on the CHARC Net Friday evenings from 1000 Z on 3618 kHz or on the Central Highlands IRLP Node 6037.

J.R. (Rossco) Anderson VK4AQ

VK5

Riverland Radio Club goes to market

Once a year, the Monash Primary school holds a "Mammoth Monash Market" to raise funds for the school. For several years the Riverland Radio Club has

supported this event by having a stall at the market. This gives members of the club a chance to dispose of some of their unwanted items ranging from CB radios UHF CB radios, valves, printers, fax machines, computers

you name it, including house hold items. Ten percent of the sales are given to the club to help finances.

For the last couple of years the club has promoted the Foundation Licence Manual in the hope of attracting some interest into amateur radio.



Photo 1: Left to Right: Andrew Williss VK5LA, Malcolm Gardner VK5MJ & Adrian Reimann VK5AJR, who were manning the stall along with Doug Tambyn VK5GA



Photo 2: The stall displaying the club banner.

VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

VK7 Licence Analysis

It was interesting to read the WIA President Michael Owen's column in the June AR magazine talking about the increasing numbers of amateurs in Australia. VK7 is a great example of this resurgence. A quick search of the ACMA Radcom database reveals a total of 575 licensed radio amateurs in VK7 split into: 408 Advanced Licensees (71%), 92 Standard Licensees (16%), 75 Foundation Licensees (13%) and 21 repeater and beacons licensed. Between 1 April 2006 and 10 June 2007, we more than doubled the number of Foundation Licensees and this is a real credit to all VK7 trainers, assessors, invigilators and all the people involved in the Foundation licence and upgrade training. This includes a big thank you to our VK7 Radio and Electronics School facilitators who are Tony VK7AX, Reg VK7KK and Peter VK2IY/7.

ACMA Mt Nelson BPL Report Released

In early June the ACMA released their long-awaited report from their January 2007 testing at Mt Nelson and I encourage everyone to take a read. The report presents the findings using three antennas connected to their test receiver (10 kHz BW) at VK7HCK's QTH. Testing was also undertaken outside the notched area and in the underground powered area of Tolmans Hill. The ACMA also included the US FCC Part 15 levels in most charts for reference purposes. An examination of the notches was also performed and at lower bandwidth (300 Hz) it was found that the suppressed carriers from the BPL system were still evident at relatively high levels within the notched area and this has been reported by amateurs within the trial area. The report suggests that the powerline segments either side of the affected amateur should be notched at all applicable amateur bands as this may help reduce the BPL interference that would be detected by amateur receivers. The VK7 BPL Virtual tours available on the

REAST website have proved popular. At the time of writing, the Mt Nelson tour has been viewed 5300 times and the North Hobart tour has been viewed 1800 times with many good comments. There is a high resolution DVD available and if you would like a copy then please contact me.

North West Tasmanian Amateur Radio Interest Group

NWTARIG is now running a different broadcast each night of the week commencing at 7.30 pm on the VK7RNW & VK7RMD and 70 cm ATV. On Monday it's the WIA National News and VK7 Regional News replays, Tuesday – Long Delayed Echos or Sceptical Sunday, Wednesday – TWIAR, Thursday – Solder Smoke and on Friday – Tech Talk Radio. Check the website for details: <http://www.vk7ax.ausport.net/>

Northern Tasmania Amateur Radio Club

May 9 was a great night with Trevor VK7TB who gave an entertaining talk on his 160 m antenna system, how it works, troubles matching it and the experimentation, even down to making his own antenna tuner. All in all a great night, thanks Trevor. June 6 was a great mixed dinner social evening at the Bombay Café, Launceston. A good rollup with much rag-chewing over great food.

Radio and Electronics Association of Southern Tasmania

Congratulations to Damien VK7FDNA who is now VK7LDA and also



VK7 Optical Transceivers abound!



LtoR: Mike VK7MJ, Steve VK7XOR, Martin VK7GN and Mark VK7FMDF with the calibrated optical transmitter and receiver.

congratulations to Thomas Karpiniec, Joe Blume, Antony Cornwall and Roger Hall who all passed their Foundation Licence assessments recently and are eagerly awaiting their Foundation licences. June 6 saw the optical extravaganza night with Mike VK7MJ, our optical guru. The clubrooms were so full of optical transceivers and test equipment there was hardly room for the people attending!

Mike took us through some history, theory then out into the cold night for some calibration. We tested four versions of optical transceivers, four separate transmitters and a separate mirrored dish receiver (thanks to John VK3HW). We now have accurate powers and sensitivities for each of these boxes. The results are available on the REAST website. Thanks to Mike VK7MJ and Rex VK7MO for a great hands-on night.

VK6

Northern Corridor Radio Group

Phil Jamieson

HAMFEST 2007

The NCRG have been organising and running this event for 21 years in WA and this year will feature a number of firsts:

- *The Tesla Society* will be staging impressive demonstrations of coil power and static displays honouring Tesla's memory.
- *The 109 Signals squadron* will attend with some of their *Communications vehicles* on display for interested persons inspections. They will also have a display in the hall. A number of their members wish to sit for the Foundation licence via courses organised by the NCRG and Neil Husk WIA Foundation licence coordinator in VK6. They deploy to the Solomon Islands later this year.
- *VK4KVK* will be presenting lectures on *restricted space antennas and promoting his other books*. His first visit to Western Australia. Welcome Phil.
- The recently honoured *Mal Johnston VK6LC, WIA awards manager*, has been invited to present an outline of the program. Mal was awarded the first Chris Jones Award at the recent Parkes Convention. A full story of that presentation can be found on Page 4 and the inside back cover of AR magazine June issue.
- Finally all of the *regular stalls* and an *impressive line up of dealers* promises to make this event a memorable occasion.

See you all at Cyril Jackson
Recreation Centre in Fisher
Street Ashfield at 9.00 am
Sunday 5 August.

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Spotlight on SWLing

Robin Harwood VK7RH

Dawdling sunspots and other dilemmas

Winter arrived right on cue, on the first day of June and after the mildest and wettest May on record for Launceston. Since then we have been shivering and extra blankets were hurriedly placed on beds. On the radio, propagation has been somewhat poor. The sunspots are positively dawdling with a complete absence of signals at times. Daytime is better and the higher frequencies are revealing some interesting catches. This is due to the drastic reduction in broadcasting and stations that were normally hidden are being heard. However I am hamstrung because my location still does not permit me to erect any outside antennas, which would make it more pleasurable to listen.

This has become harder as well because of the recent demise of the DXtuners website and the 30 to 40 remote operated receivers. There are only two Internet operated receivers, both in the States but they only offer compressed audio feeds and are not in real time. There appears that there is no obvious successor to DXtuners at this juncture.

Yet another external service is scheduled to cease broadcasting as from June 30th. Radio Budapest quietly announced they were not going to continue programming in foreign languages, although some Hungarian programs may continue. Hungary has been on shortwave since 1934.

Contrast this with China. They seem to be everywhere either with relays of their domestic networks or China Radio International (CRI). This reminds me of the days when Radio Moscow was everywhere. Of course, Beijing happens to be hosting the Olympics next year and they have certainly increased in size and output on HF to capitalise on this. Also the shortwave broadcasting explosion from China has another motive being to make it increasingly difficult for International broadcasts to be heard within China. The Chinese government, I believe, is eagerly seeking out sites within Africa to erect HF senders.

Zimbabwe has recently benefited

from Chinese technology to upgrade their ageing senders and infrastructure to combat anti-Mugabe clandestine broadcasts. They may have already commenced an external broadcasting service by now. Recent test signals have been observed on the 49 and 90 metre broadcasting allocations. The Chinese have also installed a major relay base in Cernik, Albania as well as buying airtime over senders in French Guyana and Sackville in Canada.

I also have been informed that Kol Israel in Jerusalem has got into financial difficulties and severe budget cuts may see the temporary closure of English, French and Russian programs relayed from the domestic network via HF.

We have seen comments for many years over the future of this programming, that I will only believe when I no longer can hear it. Anyway the Israeli Defence Forces Network continues to be easily heard here on 6973, best on USB at 2100. Programming naturally is in Hebrew.

Well that is all for July. Please send any comments or news to me at vk7rh@wia.org.au

73 de VK7RH

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GippsTech 2007

will be held on

July 7 and 8 at Churchill.

Further details and registration
available via our new club
website:

<http://www.vk3bez.org/>

New Zealand

New Licence Regulations

Effective 1st July 2007, New Zealand has revised its regulations governing amateur radio. For those of you travelling across the Tasman who would like to operate from the land of the long white cloud, the following are extracts from the new regulations:

4. Terms, conditions and restrictions applying to visiting amateur operators-

(1) Persons visiting New Zealand who hold a current amateur certificate of competency, authorisation or licence issued by another administration, may operate an amateur station in New Zealand for a period not exceeding 90 days, provided the certificate, authorisation or licence meets the requirements of Recommendation ITU-R M.1544 or CEPT T/R 61-01 or CEPT T/R 61-02 and is produced at the request of the chief executive.

(2) The call sign must be the national call-sign allocated by the other administration to that person, in conjunction with the prefix or suffix "ZL" which is to be separated from the national callsign by the character "/" (telegraphy), or the word "stroke" (telephony).

6. General terms, conditions and restrictions-

(2) New Zealand and visiting amateur operator call-signs must be transmitted at least once every 15 minutes during communications.

(3) National and international communication is permitted only between amateur stations, and is limited to matters of a personal nature, or for the purpose of self-training, intercommunication and radio technology investigation, solely with a personal aim and without pecuniary interest. The passing of brief messages of a personal nature on behalf of other persons is also permitted, provided no fees or other consideration is requested or accepted.

(4) Communications must not be encoded for the purpose of

obscuring their meaning, except for control signals by the operators of remotely controlled amateur installations.

(5) Except as provided to the contrary in this notice, transmitter power output must not exceed 500 watts peak envelope power (pX), as defined in ITU Radio Regulation 1.157.

(NZART)

Europe

500 kHz experiments expand in Europe

In other news, word that the German medium wave radio experiment is expanding. Since the beginning of 2005 the German telecommunication authorities have licensed a propagation study on medium wave bands. The first permit for an experimental station on 440 kHz plus/minus 100 Hz was issued to DJ2LF under the callsign DI2AG. In May 2006, DK8KW got the second licence to operate under the call-sign DI2BO at his home location in Peine near Hannover.

Now comes word that early in 2007 the experimental radio licences were extended to a second frequency. Besides 440 kHz, the frequency of 505.1 kHz plus or minus 100 Hz is also now being used. This frequency falls into the frequency range being used by the United States experimental radio group with the call-sign WD2XSH.

Swedish authorities have issued one licence for this frequency range.

(GB2RS News)

Japan

Li-ION batteries for your car

Japan's Mitsubishi Heavy Industries hopes to start mass production of lithium ion batteries for automotive use in 2010. These rechargeable batteries would be sold to auto makers for use in electric and gas-electric hybrid vehicles.

Sanyo Electric, which supplies nickel metal hydride batteries to Honda and Ford, is also developing the technology. Also getting into the act are electronics conglomerate Hitachi, car battery manufacturer Yuasa Corp and electronic

parts maker Murata Manufacturing.

Lithium ion batteries are more compact than nickel metal hydride batteries, contributing to fuel efficiency. But safety concerns such as overheating remain and the technology is still considered too expensive by many.

(arnewsline)

Canada

Ending 136 kHz and 5 MHz operations

In accordance with an agreement between Radio Amateurs of Canada (RAC) and Industry Canada -- that country's telecommunications regulatory agency -- special authorizations allowing some Canadian radio amateurs to conduct experiments at 136 kHz and 5 MHz will terminate June 30. "These experiments have had, as one objective, the provision of data that would support the objectives of RAC and the IARU for possible new allocations to the Amateur Service at these frequencies," the RAC said.

Future special authorizations will depend on the outcomes of World Radiocommunication Conference 2007 (WRC-07), which gets under way October 22, the RAC added. New, worldwide, secondary amateur allocations at 135.7 to 137.8 kHz and in the 5 MHz range are up for possible consideration at WRC-07. RAC Newfoundland-Labrador Section Manager Joe Craig, VO1NA, described some of his LF experiences in "The Transatlantic on 2200 Meters," which appeared in July 2005 QST.

(ARRL N/L)

Space

Piracy

ARISS warns of pirate activity:

Amateur Radio on the International Space Station (ARISS) reports a rumour that the ISS was making direct contacts on the 40 metre band. ARISS stresses this is not happening, as there is no HF radio equipment on board the space station, although the HF antenna is mounted. Sometimes the Goddard Amateur Radio Club, WA3NAN, retransmits shuttle audio.

(ARRL N/L)

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AMSAT

Bill MagnussenVK3JT

Summary of Operational Amateur Radio Satellites

There have been quite a few launches since the last summary. Most of these have been in the "Cubesat" class. These are very small packages, just a few centimetres in size and as such have rather limited power gathering capacity. They are usually injected into orbits that ensure early re-entry. Their lifetime can be expected to be measured in months rather than years. They are designed and built by University or College students and usually focus on some specific area of science. Their presence in the amateur bands is often sponsored by a radio club or an individual college staff member

who is a ham in the hope that the worldwide amateur radio satellite community will provide feedback to the students in the form of telemetry collection or advice. In turn they provide the amateur community with practice in tracking and telemetry gathering techniques that will be valuable, particularly to newcomers and to those wishing to evaluate their ground station performance. Perhaps some of the Cubesats listed here as active, at the time of writing, will have decayed or failed in the meantime. NO-60 RAFT-1 is a case in point. It re-entered and burned up just as this

column was being prepared. It had been in orbit only since December 2006. To save space I will list only those satellites that are known to be operational. A full list is always available on the AMSAT-NA web site, but even at this site small delays in updating can be expected. You will notice that a number of the Cubesats have their status listed as 'in-orbit'. My guess is that means the control stations have confirmed they are operational and presumably transmitting telemetry on demand. No individual web sites are listed for these satellites but the AMSAT site has more information.

AO-7 AMSAT OSCAR 7

Catalog number: 07530

Launch Date: November 15, 1974

Status: Operational depending on amount of sunlight

Current Mode: Listen before transmitting

Uplink: 145.850 to 145.950 MHz CW/USB Mode A

432.125 to 432.175 MHz CW/LSB Mode B

Downlink: 29.400 to 29.500 MHz CW/USB Mode A (1 W PEP)

145.975 to 145.925 MHz CW/USB Mode B (8 W PEP)

145.975 to 145.925 MHz CW/USB Mode C (2 W PEP)

Beacon: 29.502 MHz CW

http://www.amsat.org/amsat-new/satellites/sat_summary/ao7.php

UO-11 OSCAR-11 (for telemetry buffs only)

Catalog number: 14781

Launched: March 1, 1984

Status: Semi-operational.

Current Mode: Telemetry Downlink - 2M

Telemetry Downlink: 145.826 MHz FM 1200 AFSK

Due to solar eclipses which will continue until late August 2007, the beacon will only transmit for about one orbit every 21 days. It

is unlikely to be heard during this period.

<http://www.users.zetnet.co.uk/clivew/>

AO-16 PACSAT

Catalog number: 20439

Launch Date: January 22, 1990

Status: Semi-operational

Current Mode: V/U

Digipeater - Authorized for APRS usage

Uplink: 145.900 MHz FM 1200-baud Manchester FSK

145.920 MHz FM 1200-baud Manchester FSK

145.940 MHz FM 1200-baud Manchester FSK

145.960 MHz FM 1200-baud Manchester FSK

Downlink: 437.026 MHz SSB 1200-baud PSK

Mode-S Beacon: 2401.1428 MHz

Broadcast Callsign: PACSAT-11

BBS: PACSAT-12

<http://www.amsat.org/amsat/sats/n7hpr/ao16.html>

AO-21 AMSAT-OSCAR 21

Catalog Number: 21087

Launch Date: January 29, 1991

Status: Operational

Uplink: 435.041 MHz FM DSP

Downlink: 145.983 MHz FM DSP

GO-32 Gurwin TechSat-1B

Catalog number: 25397

Launch Date: July 10, 1998

Status: Operational

Current Mode: V/U

Downlink: 435.225 MHz FM (9600-baud FSK)

Uplinks: 145.850 FM, 145.890 FM, 145.930 FM, 1269.700 FM, 1269.800 FM, 1269.900 FM

Broadcast Callsign: 4XTECH-11

BBS Callsign: 4XTECH-12

<http://www.iarc.org/techsat/techsat.html>

NO-44 PCSAT

Catalog number: 26931

Launch Date: September 30, 2001

Status: Operational only in Full Sun Light

Current Mode: V

General Usage Uplink/Downlink: 145.827 MHz 1200 Baud

Special Usage Downlink: 144.390 MHz 1200 Baud

<http://pcsat.aprs.org>

Telemetry Decoder program:

<http://www.xciv.org/~iain/aprstlm/v1.2/>

SO-50 SAUDISAT-1C

Catalog number: 27607

Launched: December 20, 2002

Status: Operational.

Current Mode: V/U
Uplink: 145.850 MHz FM - 67.0 Hz
PL tone
Downlink: 436.795 MHz
Mode and Antenna Polarization:
V: Linear
U: Linear
To switch the transmitter on, you
need to send a CTCSS tone of
74.4 Hz.

The order of operation is thus: (allow
for Doppler as necessary):

- 1) Transmit on 145.850 MHz with
a tone of 74.4 Hz to arm the
10 minute timer on board the
spacecraft.
- 2) Now transmit on 145.850 MHz
(FM Voice) using 67.0 Hz to PT
the repeater on and off within the
10 Minute window.
- 3) Sending the 74.4 Hz tone again
within the 10 minute window will
reset the 10 minute timer.

AO-51 ECHO

Catalog number: 28375
Launch date: June 29, 2004
Status: Voice Repeater
Current Mode(s): FM Repeater -
V/U
Analog voice downlink: 435.300 MHz
FM, 435.150 MHz FM, 2401.200
MHz FM
Analog voice uplink: 145.880 MHz
FM, 145.880 MHz USB, 145.920
MHz FM,
1268.700 MHz FM - 67 Hz PL tone
Digital Downlinks: 435.150 MHz FM
38k4 Digital, PBP, 435.150 MHz
FM 9k6 Digital, Pacsat Broadcast
Protocol
2401.200 MHz FM 38k4 bps, AX.25
Digital Uplink: 145.860 MHz FM
9k6 Digital, Pacsat Broadcast
Protocol
1268.700 MHz FM 9k6 PBP Digital
Beacon: 435.150 MHz
Mode and Antenna Polarization:
T: Linear
V: Linear
U: TX A (usually digital)LHCP
TX B (usually analog) RHCP
L: Linear
S: Linear
Broadcast: PECHO-11
BBS: PECHO-12

[http://www.amsat.org/amsat-new/
echo/](http://www.amsat.org/amsat-new/echo/)

VO-52 HAMSAT

Catalog number: 28650
Launch Date: May 05, 2005
Status: Operational
Current Mode: U/V - Indian
Transponder
Indian Transponder:
Uplink: 435.220 to 435.280 MHz
LSB/CW
Downlink: 145.870 to 145.930 MHz
USB/CW
Dutch Transponder:
Uplink: 435.225 to 435.275 MHz
LSB/CW
Downlink: 145.875 to 145.925 MHz
USB/CW
Indian Beacon: 145.859330 MHz
CW
Dutch Beacon: 145.860 MHz 12 wpm
with CW message
Mode and Antenna Polarization:
V: LHCP
U: RHCP
<http://www.amsat.in/hamsat.htm>

CO-56 CUTE-1.7

Catalog number: 28941
Launched: February 21, 2006
Status: Constant Carrier only ...
437.3850 MHz CW
Callsign: JQ1YPC
[http://lss.mes.titech.ac.jp/ssp/
spacerium/cute1blog/](http://lss.mes.titech.ac.jp/ssp/spacerium/cute1blog/)

CO-57 CubeSat

Catalog number: 27848
Launched: June 30, 2003
Status: Operational
Beacon: 436.8475 MHz CW
Telemetry : 437.4900 MHz AFSK
1200 BPS
Callsign: JQ1YGW
[http://www.space.t.u-tokyo.ac.jp/
cubesat/mission/V/](http://www.space.t.u-tokyo.ac.jp/cubesat/mission/V/)

CO-58 CubeSat

Catalog number: 28895
Launch Date: October 27, 2005
Status: Operational - CW Beacon
only ... 437.4250 MHz AFSK
1200 BPS
Callsign: JQ1YGW
[http://www.space.t.u-tokyo.ac.jp/
cubesat/mission/V/](http://www.space.t.u-tokyo.ac.jp/cubesat/mission/V/)

The AMSAT group in Australia

The National Co-ordinator of AMSAT-
VK is Graham Ratcliff VK5AGR.
Contact Graham if you wish to be
placed on a mailing list for breaking
news and net reminders. As a forum
for members AMSAT-VK operates two
monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the
second Sunday of each month.
Anyone with an interest in Amateur
Radio Satellites is welcome to join
the net. Graham VK5AGR acts as
net controller. The net starts at 0500
UTC during summer time periods and
0600 UTC during winter standard
time periods. Connect to the AMSAT
conference server on Echolink a few
minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the
second Sunday of each month. In
winter (end of March until the end
of October) the net meets on 3.685
MHz at 1000 UTC. In summer (end
of October until end of March) the net
meets on 7.068 MHz at 0900 UTC.
Start listening 15 minutes before these
times.

All communication regarding AMSAT-
Australia matters can be addressed to:
AMSAT-VK
9 Homer Rd
Clarence Park SA 5034
Graham's e-mail address is:
vk5agr@amsat.org

Pictures received by Mineo Wakita
- JE9PEL:

[http://www.ne.jp/asahi/hamradio/
je9pel/](http://www.ne.jp/asahi/hamradio/je9pel/)

HO-59 HITSat

Catalog number: 29484
Launch date: September 22, 2006
Status: Operational
Telemetry Downlink: 437.4250 MHz
AFSK 1200 BPS
Beacon: 437.2750 MHz CW
Callsign: JR8YJT

PO-63 PEHUENSAT-1

Catalog Number: 29712
Launch Date: January 10, 2007
Status: In Orbit
Uplink/Downlink: 145.825 MHz FM
Voice Recorder: 145.825 MHz FM
Educational projects not yet issued
with an Oscar number.

CAPE1

Launch Date: April 17, 2007
Status: In Orbit
Downlink: 435.245 MHz 9600 bps
FSK AX.25

CP3

Launch Date: April 17, 2007
Status: In Orbit
Downlink: 436.845 MHz 1200 bps
FSK AX.25

CP4

Launch Date: April 17, 2007
Status: In Orbit
Downlink: 437.325 MHz 1200 bps
FSK AX.25

Libertad-1

Launch Date: April 17, 2007
Status: In Orbit
Downlink: 437.405 MHz 1200 bps
AFSK AX.25

GENESAT-1

Catalog Number: 29655

Launch Date: December 16, 2006
Status: Operational
Telemetry Beacon Downlink: 437.0670
MHz AFSK 1200 BPS
<http://www.crestnrp.org/genesat1/ahc.html>

International Space Station – the ARISS project

Catalog number: 25544
Launch date: November 20, 1998
Status: Operational
Current Mode: Occasional Voice/
packet
Digipeater
Expedition 15 crew:
Commander: Fyodor Yurchikhin
RN3FI
Flight Engineer: Sunita Williams
KDSPLB
Flight Engineer: Oleg Kotov
Digital/APRS:
Worldwide packet uplink: 145.990
MHz FM
Worldwide packet downlink: 145.800
MHz FM
Voice:
Region 1 voice uplink: 145.200 MHz
FM
Region 2/3 voice uplink: 144.490
MHz FM
Worldwide downlink: 145.800 MHz
FM
SSTV TESTING: watch for updates
on the BB.
Worldwide Reported Downlink:
145.800 MHz FM
Crossband Repeater:
Repeater Uplink: 437.800 MHz FM
Repeater Downlink: 145.800 MHz
FM
Mode and Antenna Polarization:
V: Linear
U: Linear
Callsigns:
German: DP0ISS
Russian: RS0ISS
RZ3DZR
USA: NA1SS
Packet Mailbox: RS0ISS-11
Packet Keyboard: RS0ISS-3
Digipeater callsign: ARISS
Official ARISS Webpage: <http://www.rac.ca/ariss>

ISS Daily Crew Schedule: <http://spaceflight.nasa.gov/station/timelines/>
That concludes the list of known 'goodies'. Remembering AO-7's unexpected return some time ago, many operators listen from time to time on the beacon frequencies of the defunct birds. Here is a list of those known to still be in orbit and their beacon frequencies. You may like to download Keplerian elements and listen. Your news could surprise everyone, it's happened before!

NCUBE-2	437.305 MHz
XO-53 SSETI	437.250 MHz
AO-49 AATIS	145.825 MHz
MO-46	437.325 MHz
NO-45 SAPPHIRE	437.095 MHz
SO-42	437.075 MHz
SO-41	436.775 MHz
AO-40	2401.00 MHz
UO-36 UoSAT-12	437.025 MHz
SO-35 SUNSAT	145.825 MHz
PO-34 PANSAT	436.500 MHz
SO-33 SEDSAT-1	437.910 MHz
TO-31 TMSAT-1	436.925 MHz
FO-29 JAS-2	435.795 MHz
PO-28 POSAT-1	429.950 MHz
IO-26 ITAMSAT	435.808 MHz
KO-25 KITSAT	436.500 MHz
KO-23 KITSAT	435.170 MHz
UO-22 UOSAT	435.120 MHz
FO-20 JAS-1b	435.795 MHz
LO-19 LUSAT	437.125 MHz
DOVE DO-17	2401.22 MHz
UO-14 UoSAT-3	435.070 MHz
FO-12 Fuji	435.795 MHz
AO-8	435.095 MHz
AO-10	145.810 MHz
AO-6	29.550 MHz
AO-5 Australis	29.450 MHz
OSCAR III	144.375 MHz
RS-15	29.352 MHz
RS-13	144.860 MHz
RS-12	29.408 MHz

Future goodies

Phase 5a Mars Mission

Proposed Launch Date: 2009 or 2011
Status: Design Phase
<http://ticket-to-mars.org>

PHASE 3E

Proposed Launch Date: Late 2007
Status: Under Construction
<http://www.amsat-dl.org/p3e/>

AMSAT-Eagle

Proposed Launch Date: Early/Mid 2009
Status: Design Phase
<http://www.amsat.org>

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Contest Calendar July– September 2007

July	1	Canada Day Contest	CW/SSB
	7	VK/trans-Tasman 160 Metres Phone Contest	SSB
	14/15	IARU HF World Championship	CW/SSB
	21/22	CQWW VHF Contest	All modes
	14	Jack Files Memorial Contest	CW/SSB
	21	VK/trans-Tasman 160 Metres CW Contest	CW
	28	Waitakere (NZART) Sprint	SSB
Aug	4	QRP Day Contest	CW/SSB/FM/PSK31
	4	TARA Grid Dip	PSK/RTTY
	4	Waitakere (NZART) Sprint	CW
	4/5	10-10 International QSO Party	SSB
	11/12	Remembrance Day Contest	CW/SSB/FM
	25/26	Keymen's Club of Japan Contest	CW
	25/26	ALARA Contest	CW/SSB
Sept	1	Russian RTTY WW Contest	RTTY
	1/2	All Asian DX Contest	SSB
	1/2	Region 1 Field Day	SSB
	8/9	Worked All Europe DX Contest	SSB
	15/16	Washington Salmon Run	CW/SSB/Digital
	29/30	CQWW RTTY DX Contest	RTTY

Welcome to another Contesting Column

May saw the CQWW WPX CW contest in full swing, with the lower part of the six non-WARC HF bands alive with contest activity. Conditions were not the best for VK or ZL in general, but this is to be expected at this stage of the sunspot cycle. Ten metres occasionally springs a surprise or two, with openings to the USA or some of the more elusive parts of Africa, according to where you are located in VK. Ten is the band to watch over the next couple of years as sunspot activity is predicted to rise sharply and produce a welcome return of DX in quantity on 28 MHz. The rules for WPX allow a multiplier (in this case, a callsign prefix) to be 'counted' only once during the contest regardless of band, so 28 MHz and 1.8 MHz don't often get a high degree of traffic during this contest as conditions and general geography tend to limit the occupancy as the majority of the prefixes should be attainable on the other bands. The WPX contest is usually best approached with a 'rate' strategy with band and propagation knowledge focussed towards knowing when to change band to enable the

highest number of QSOs per hour, as the number of permitted band changes is limited within a given duration for some entry categories. For SO2R operators, knowing when it is most profitable to break the run-rate on a particular band for a multiplier on the second radio is the key to success.

ANARTS RTTY

By the time this column goes to print, the ANARTS RTTY Contest will have been done and dusted for another year. This is a contest that has had something of a chequered past but continues to provide an interesting format for seasoned operators and an excellent 'training ground' for newcomers to RTTY. Due to personal circumstances, the contest manager, Colin Davies, has relinquished the role to Pat Leeper VK2JPA. Pat can be contacted on patleeper@optusnet.com.au and the rules for the contest are unchanged for 2007. More information can be found at www.anarts.com.au. I'm hoping to have my QRP station back on-air for this one as I want to try my newly assembled rudimentary SO2R setup for RTTY. I tried a 'dummy run' a while ago and it unearthed all manner of issues, but this approach is always best

as problems can be ironed-out prior to actually competing.

Commonwealth Contest – Final Scores for VK Team

The Commonwealth Contest (aka Beru) in March was more of a battle than ever before, with the added twist of Teams being introduced this year encouraging a healthy increase in participation from VK stations.

The new format generated an impressive revitalisation for the contest, with the bands abuzz with CW from around the planet, including some impressive signals from the VK Team. With the comparison made to the competitive spirit within the Cricket World Cup by the organisers as regards the competition element and bearing in mind that the Poms finally got their hands on some ashes in 2006 (but only by burning the Cutty Sark), the contest was a fierce battle which saw ZL as the overall winners and VK coming second. The UK team came fourth.

Final scores by the VK Team are as follows:

Call sign	Points
VK4BUI	2805
VK2NU	2605
VK4EMM	4860
VK6BN	2920
VK2BJ	5045
VK6HD	3055
VK4XA	2585
VK6LW	5335
VK4TT	2770
VK4XY	2845
VK6VZ	3495

Twelfth Man honours go to VK6HG with 2020 points.

Although not on the 2007 VK Team, other local participants included VK2AYD with 3835 points; VK2AEA with 3050; VK2KM with 2690; VK6AJ with 1420; VK8AV with 1340; VK7RO with 700; VK6RZ with 690; VK5HO with 545 and VK5UE with 100 points.

Congratulations to all participants and the Aussies will be back in force in 2008!

Contesting Basics 101 – Part 3

This is the third and final part of 'Contesting 101' unless anyone contacts me with specific requirements for more detail or indeed other topics.

Can I work the same station more than once?

Generally you can only work a station once on each band and mode that is allowed during the contest. For example, in an SSB-only contest, you can only work a station once on each band. In a contest such as IOTA (Islands On The Air) that allows both CW and SSB, you may be able to work a station twice on each band, once on CW and once on SSB. The best advice is: read the rules!

What if I work a station more than once on the same band and mode?

If you claim points for both contacts, you will lose both the points claimed and possibly additional points as a penalty for your error. This sounds a little bit harsh, but with the myriad of software available nowadays this is an unlikely event. It is permissible to work a station multiple times if you only claim points for one of the contacts - usually the first one - but this is a waste of time and won't enhance your score. Remember, the contest is only a finite period of time in

which you are trying to contact as many unique calls as possible.

Why are there different entry categories?

This approach allows contesters to compete against similarly equipped stations, individually, or as part of a team. Some can afford high-power well equipped stations, while others (such as myself) compete with a "barefoot" or QRP transceiver. The different equipment can be reflected in the score, with the simpler stations often achieving a lower QSO count than the big boys - but not always! A lesser equipped station in a rare location can sometimes outperform a high power station in a 'populated' area, as many will call the rare DX but fewer may call the other, easy call. A big signal does not necessarily mean that they'll queue up to work you!

What sorts of categories are there?

The category details depend on the specific contest, but the categories for the CQ Worldwide DX contest are a good example of the possibilities:

- Single Operator High - a single operator, maximum power 1.5 kW (Note: This power limit does not apply in VK, due to licence limitations of course! VK stations entering this category would be limited to 400 W.), no DX alerting assistance (for example, DX cluster spots) allowed.
- Single Operator Low - a single operator, maximum power 100 W, no DX alerting assistance allowed.
- Single Operator QRPP - a single operator, maximum power 5 W, no DX alerting assistance allowed.
- Single Operator with DX Spotting Net (also called "Single Operator Assisted") - a single operator, maximum power 1.5 kW, passive use of spotting nets allowed.
- Multi-Operator, Single Transmitter (also called "multi single" or "MS" for short) - any number of operators, but only one transmitted signal allowed at any time. The additional operators will often be listening for new multipliers, and passing the information on to the one transmitter operator.
- Multi-Operator, Two Transmitter (also called "multi two") - Any

number of operators, but only two transmitters. In CQWW, both transmitters may work any stations. In some other contests there are strict restrictions on what the second transmitter may do - for example, it may only be allowed to work new multipliers.

- Multi-Operator, Multi Transmitter (also called "multi multi") - Any number of operators, operating any number of stations, but with only one transmitted signal on each band at any time. In many cases a "multi-multi" station will have a dedicated transmitter for each of the contest bands.

Note that in CQWW, single operator entries can choose to be all-band, or only to work a single nominated band. There's such a range usually available, that finding a section that suits your requirements is not a problem.

What do "SOLP", "SOHP", "SOAB", "SOSB", "M/S", "M/2" and "M/M" mean?

These are all abbreviations for contest entry categories:

- SOLP - Single Operator Low Power
- SOHP - Single Operator High Power
- SOAB - Single Operator all band
- SOSB - Single Operator Single Band, often includes the band, e.g. "SOSB/80" for a single band entry on 80 m
- M/S - Multi/Single - Many operators but only a single transmitter
- M/2 - Multi/Two - Many operators with two transmitters
- M/M - Multi/Multi - Many operators with many transmitters

What is "DX Cluster"?

DX Cluster is the term used to describe a worldwide computer system on which DX stations are reported ("spotted"). It can be accessed via Packet Radio or on the Internet at www.dxsummit.com for example. Use of the system is only permitted if you are entered in an "assisted" category. No matter what category you are participating in you may not enter your own station into the DX cluster, this is called "self spotting" and is frowned upon in all contests.

continued on page 46

2007 Remembrance Day Contest

Peter Harding VK4OD.

Hello once again and welcome to the 2007 Remembrance Day Contest.

Since I proposed changes to the 2006 "Remembrance Day Contest" I have received several suggestions, therefore I would like to take this opportunity to explain the minor changes to the rules for this year.

We want to emphasise the traditional values in this contest to honour our diggers.

This article presents the formal rules for the 2007 Remembrance Day Contest which appear in the contest section of the WIA website and in the AR magazine for July.

The RD Contest is the most important event on the Australian amateur calendar, with heavy participation by individual operators and serious competition between states.

As it was for 2006 we have carried on with the rule to formally make ineligible contacts which may use an Internet connection. Therefore, the use of such things as IRLP or ECHOLINK are now specifically banned.

From this year we have opened the "Receiving Only" category to any licensed stations. HOWEVER, if they participate in this category they CANNOT take part in any of the Transmitting sections.

With the introduction of the Foundation and changes to all licence structures, the 2006 Remembrance Day Contest saw a number of the new "F" calls participating. We look forward to more taking part this year.

This year's changes are aimed at restoring the drive and renewing the enthusiasm in the grand old lady. We specifically wanted to strengthen the RD without confusion and hope the new rules will help the Remembrance Day Contest retain its rightful place as the premier Australian contest event.

The Remembrance Day Contest for 2007 will be held for the 24 hours commencing at 0800 UTC on Saturday 11th August 2007 finishing at 0800 UTC on Sunday 12th August 2007

Firstly, in essence, what won't change

is the spirit of the thing. We haven't meddled with the basics which make the "Remembrance Day Contest" so very special. The winning state will be the one which stands head and shoulders over the rest. Those things won't ever change. Other things will.

Due to the complexity and in order to simplify the points tabulations, I have simplified the bonus points for the HF operators. Reason is that we have bonus points for HF in 160 and 10 metres, CW, VK0, and also in the midnight to dawn shift.

We have also kept as a non requirement the necessity to show the RST. However if it is sent then, if you wish, you can reflect it in the log and if an operator requests an RST and it is sent, it should represent a true assessment of the received signal. Logs should still show sequential numbers starting at 001, with bonus points tallied at the end of the contest and added to the claimed score.

SSB and CW will continue to be considered separate modes on HF and from this year, subject to licence privileges, any operator who works stations using 10 metres FM above 29 MHz will also have the opportunity to immediately re-log the same station using SSB or CW below 29 MHz.

On VHF, we also encourage increased operation by allowing you to work a station on FM and immediately rework them on SSB or CW, or, indeed, both. This provision was inadvertently changed several years ago when the then manager moved to ban completely automated exchanges between packet stations.

The effect it had, other than to remove the packet robots, of course, was to almost totally eradicate CW and SSB contest operation on the VHF and higher bands in one fell swoop. This year we redress the situation.

Although your VHF log can include stations worked on CW, FM or SSB, we will continue to need separate logs for HF and VHF categories, due to the different rules applying to the two categories.

Many operators concentrate exclusively on VHF and higher band operation, and many of them will have seen that stations which might be very strong on six or two metres could be substantially weaker on 70 cm, and probably all but inaudible on higher bands. From 2005 we sought to address this imbalance by offering reward-based incentives for putting the work into higher band operation.

So, all contacts on bands from and including 23 cm and above attract double points, irrespective of and in addition to any other incentives already offered. 160 metre band HF operators also receive double points, as do all CW operators.

HF operators using either 10 or 160 metres are able to work stations within their own state boundaries, although interstate operation only applies on 80-15 m.

Once again we have not considered allowing WARC band operation, and have decided to restrict HF operation to the 160, 80, 40, 20, 15 and 10 metre bands only.

When polled for comment on a recent VK1WIA broadcast, a number of people asked about multiple contacts. Until 2006, dupes were not allowed on HF but were allowed on VHF after only two hours. The VHF arrangements will not change this year. However, repeat HF contacts are allowed after two hours. This will encourage both more and longer operation, and real participation in the fun.

What's more, there's a special time for all operators still on the air between 1 am and 6 am local time. All points scored during those wee hours are doubled. If you work a station whose time zone means they are outside the 1 am to 6 am point, only your points will be doubled. Although the contest runs during UTC times, the special "night owl" loading is determined strictly by your time zone.

Until the 1970s ushered in substantial VHF operations, a very convoluted point-scoring system was in place for HF, in which more points were allocated for contacts spanning multiple call areas than to one's neighbouring states. Even

with computer technology, scoring such a thing could be a time-consuming process indeed, and very confusing for entrants.

For scoring purposes, too, determining the overall winner is a different affair. The Remembrance Day Contest has always been State against State, but determining the winner was a confusing process involving overall improvement factors. These days, who wins is a simple

question of how many people take part from each state and actually submit logs. More than ever before, for your state to win, submitting your log is vital.

Electronic Logging is preferred but by no means mandatory. Those entrants with a suitable PC may wish to consider it for this year's contest log. By using one of these programs, the file that is emailed to me can be imported easily into the scoring database program. Links

for these programs are listed below. I have tried and tested them all and with the assistance of all the creators, parts of their program have been rewritten to assist scoring.

That's a basic summary of the changes. Every one of them is designed to boost your scores without making the scoring too messy for either the competitor or the manager.

Good luck, and good contesting!

2007 Remembrance Day Contest

Saturday 11 August 0800 UTC

to

Sunday 12 August 0759 UTC

Presented by: Peter Harding VK4OD

Email: vk4od@wia.org.au

Purpose:

This contest commemorates the Amateurs who died during World War II and is designed to encourage friendly participation and help improve the operating skills of participants. It is held close to 15 August, the date on which hostilities ceased in the southwest Pacific area.

It is preceded by a short opening address by a Guest Speaker transmitted on various WIA frequencies during the 15 minutes prior to the contest. During this ceremony, a roll call of amateurs who paid the supreme sacrifice during WWII is read.

A perpetual trophy is awarded annually to the Australian state or territory with the best performance. The name of the winning State or Territory is inscribed on the trophy, and that State or Territory then holds the trophy for 12 months. The winning State or Territory is also given a certificate, as are leading entrants.

Objective:

Amateurs in each VK call area will endeavour to contact amateurs in other VK call areas, ZL and P2 on all bands except WARC bands. On 1.8, 28, and 50 MHz and above, entrants may also contact other amateurs in their own call area.

Contest Period:

0800 UTC Saturday 11th August 2007 to 0759 UTC Sunday 12th August, 2007. 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:

1. Sections:

(a) High Frequency for operation on bands below 50 MHz;

(b) Very High Frequency for operation on and above 50 MHz;

Operators may enter each section, but separate logs must be submitted for each section and for each Callsign used on that section by the operator.

2. Categories:

(a) Single Operator; and

(b) Multi-operator.

3. Sub Sections:

(a) Transmitting Phone (FM, SSB);

(b) Transmitting CW (CW); Note: CW in this context means CW only; any other digital modes such as Packet, RTTY, AMTOR, PSK31, etc are specifically excluded from the contest.

(c) Transmitting Open (a) and (b);

(d) Receiving (a), (b) or (c).

4. All amateurs Licensed in Australia, and not physically within VK/P29/ZL as VK's outside VK, may enter the contest, whether their stations are fixed, portable or mobile. See Rule 16.

5a. Cross-band and/or cross-mode contacts are not permitted.

5b. Operation via any means other than those which use direct radio transmissions is banned. This includes all means such as IRLP or Echolink, which rely on contact via the internet.

5c. Contacts via Satellites is also not

allowed for scoring purposes.

6. Call "CQ RD", "CQ CONTEST" or "CQ TEST".

7a. On ALL bands, stations may be contacted at intervals of not less than two hours since the previous contact on that band and mode.

7b. No points will be awarded for contacts between stations in the same call area on HF, except on the 160 metre and the 10 metre bands, on which entrants may work stations in the same call area.

7c. On the 10 metre band, contacts may also be made using the FM mode, using simplex only, on frequencies above 29.0 MHz only. This will be considered a different mode for scoring purposes, so an SSB or CW contact could immediately be made with the same station below 29.0MHz for an additional score.

8a. On 50 MHz 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.

8b. For the VHF category, up to three contacts may be made with the same station consecutively on each band, but must be made using the different allowable modes of CW, SSB and FM. However, the different modes must be within the frequency ranges stated in the text descriptions of the latest Call Book as 'mode' only. For example, on the two metre band, RD Contest CW contacts may only be made in the range 144.050 to 144.100 MHz. SSB contacts are restricted to 144.100 to 144.400, while FM contacts must be above 146.000

MHz. The national simplex calling channels (146.500 MHz on the two metre band), and the frequencies either side thereof, excluding recognised repeater frequencies, are the suggested frequencies. When changing modes, entrants must also change frequency.

- 9a. 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 other than computer logging, using his or her own callsign. More 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 in any way other than computer logging during the contest.
- 9b. Holders of more than one licence or callsign **MUST** submit a separate entry for each callsign used.
- 10a. Multi-operator stations are only allowed one transmitter per band/mode at any one time. Simultaneous transmissions on different bands are permitted. Simultaneous transmissions on the same band but using different modes are permitted. Any large multi-operator stations may find it more convenient to use separate band and/or mode logs.
- 10b. Automated operation is not permitted. The operator must have physical control of the station for each contact. However CW and voice keyers are permitted, although the use of computers is restricted to logging purposes only.
- 11a. For a contact to be valid, a three-digit serial number commencing at 001 and incrementing by one for each successive contact must be exchanged between stations making the contact. (RS/RST reporting is not required, but if given should be an accurate appraisal of the signal).
- 11b Separate logs are required for entrants competing in both HF and VHF sections, although all allowable modes can be contained within each log.

12. Contacts via repeater, satellite or relay are not permitted for scoring purposes. Contacts may be arranged through a repeater, although contact numbers may not be aired there. Operation on repeater frequencies in simplex is not permitted.

13. Score:
- on 160 metres two points per completed valid contact;
 - on 23cm or higher bands two points per completed valid contact;
 - on all other bands one point;
 - on CW irrespective of band, double points.

all scores obtained between the entrant's local time hours of 0100 and 0600 are doubled. If working into an area where the time is outside those hours, the score is doubled only for the station whose local time is 0100 to 0600 hours.

14. Logs should be in the format shown below and accompanied by a Summary Sheet showing callsign; name; address; category; sub sections ; 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 (postal mail only); date. Please supply a contact telephone number if possible.

15. Entrants operating on both HF and VHF are required to submit separate logs and summary sheets for both categories.

16. 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 State by making a statement to that effect on their summary sheet(s).

17a. Logs can be submitted by electronic mail or postal mail:

By mail, send logs and summary sheets to: **RD Contest Manager**.

Endorse the front of the envelope "**Remembrance Day Contest**".

Peter Harding VK4OD 40 Centaurus Cres

Regents Park, QLD 4118.

E-mail, PLAIN TEXT logs only may be sent to rdlogs@wia.org.au

17b. Electronic Logging is preferred

but by no means mandatory. Those entrants with a suitable PC may wish to consider it this year. By using one of these programs, the file that is emailed to me can be imported easily into the scoring database program. Links for these programs are listed below. I have tried and tested them all and with the assistance of all the creators, they have rewritten parts of their program to assist scoring. On completion of the contest you can email the **VK?XXXX.csv**, which is a comma-delimited file format, which can be imported into our database.

See Software download links note below

17c. In all cases, logs must be received by last mail on Monday 10th September, 2007. Late entries will not be eligible. Electronically sent logs will be returned with a courtesy note, also Snail Mail will be returned unopened.

17d. If you are sending your logs by electronic means, I would recommend that you set the flag to request "confirmation of receipt" and "when the file is read". This way you will receive two confirmation messages. If you do not receive either return message please send me an inquiry mail. For users of Snail Mail send a self addressed envelope with the sample reply form to request a receipt for your paper log, which is available at <http://www.wia.org.au/contests/rd/Reply%20Form.pdf>. **HOWEVER** in all circumstances the rule as in 17c above **WILL STILL APPLY**. So get the logs in early.

18. Certificates will be awarded to the leading entrants in each sub-section, both single and multi-operator; in each State; P2 and ZL. Entrants must make at least 10 contacts to be eligible for awards, unless otherwise ruled by the Contest Manager.

19. Any station observed as departing from the generally accepted codes of operating ethics may be disqualified.

Determination of winning state or territory

Scoring will be achieved by taking the total number of logs for each State or Territory, divided by the total number of licences issued in that State or Territory (excluding beacons and repeaters) as published in the WIA Callbook for that year, and multiplying by the total score for that State or Territory. Points can only be considered where a station has submitted a valid log.

Unless otherwise elected by the entrant concerned, the scores of VK0 stations

will be credited to VK7, and the scores of VK9 to the mainland call area which is geographically closest. Scores of P2, ZL and SWL stations will not be included in these calculations, although entrants in those areas are eligible for all certificate awards.

Receiving Section Rules

1. This section is open to all SWLs in Australia, Papua New Guinea and New Zealand. Licensed operators may enter this section but this will make them ineligible to also compete in the Transmitting sections.

2. Rules are the same as for the Transmitting Section. Double points will apply to ALL received CW contacts, and contacts received between 01:00 and 06:00.
3. Only completed contacts may be logged, it is not permissible to log a station calling CQ.

Layout of logs:

The log should be in the format shown below, whether submitted electronically or via the postal mail. Sample logs are available on the WIA and local website or may be posted on request, with a stamped, self-addressed envelope.

Sample Summary Sheet:

Remembrance Day Contest 2007

- Callsign: VK1xxx
- Name: Operator's full name
- Address: Physical address of contest station
- Category: Single or Multiple Operator
- Section: HF or VHF

Sub Section: Transmitting Phone, CW or Open (both)

Total Score: number of points claimed

Declaration:

I hereby certify that I have operated in accordance with the rules and spirit of the Contest.

- Signed: Your signature if log is submitted via mail.
- Date: date submitted

Sample Transmitting Log

Remembrance Day Contest 2007

- Callsign: VK1xxx
- Category: HF or VHF / Single or Multiple Operator

Section: Transmitting Phone, CW or Open

Time (UTC)	Band (MHz)	Mode	Call	Number Sent	Number Rcvd	Pts
0801	14	CW	VK2QQ	001	002	2
0802	14	SSB	VK6LL	002	001	1
0806	14	SSB	VK5ANW	001	003	1
0808	14	SSB	ZL2AGQ	004	004	1
0811	14	SSB	VK4XX	005	008	1

Example Receiving Log

Name/SWL Nr:

Category: HF

Section: Receiving Phone:

Time (UTC)	Band (MHz)	Mode	Call 1 st Op	Call 2 nd Op	Pts
0801	14	SSB		001 002	1
0802	14	SSB		VK6LL 002 001	1
0806	14	SSB		001 003	1
0809	14	SSB	VK7AL	VK2PS 007 010	1

Links to Computerised Logging Programs

NOTE: Please check your favourite website for current versions, as most of the programmers are now doing a rewrite, to allow for this year's rule changes.

From Mike Subocz VK3AVV, the VK Contest Log (VKCL) can be found at the following URL:

<http://web.aanet.com.au/mnds/>

From John Drew VK5DJ RD logging program can be found at the following URL

http://vk5dj.mountgambier.org/Amateur_radio.html
http://vk5dj.mountgambier.org/Amateur_radio.html

From James McBride VK6FJA WinRD+ logging program can be found at the following URL

<http://www.rjmb.net/rd/index.htm>

Contesting Basics 101 – Part 3 continued

What category should I enter?

If you don't have a linear amplifier or cannot use one for reasons of neighbourly harmony, then the single operator low power section is an attractive option. You don't have to compete with all the larger signals in the high power category. If you are an experienced QRP operator, then by all means choose QRP instead, but if you are not, you may find this category

a bit frustrating as you will have to learn how to make your QRP signal heard while learning the ropes of contesting at the same time. If your antenna system is limited then you may want to enter single-band or, like me, enter all-band anyway even though I've only a restricted range of antennae available. I tend to erect a couple of temporary antennae for a band or two which are

then dismantled after the contest.

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

Australian Ladies Amateur Radio Association Inc.

27th ALARA Contest

NOTE:Contest is always on the last FULL weekend of August.

ELIGIBILITY:All licensed operators throughout the world are invited to participate. Also open to SWLs.

OBJECT: Participation: YL works everyone, OMs & Clubs work YLs only.

One contest (combined phone and CW) run over 30 hours.

STARTS: Saturday 25th August 2007 at 0600 hours UTC

ENDS:Sunday 26th August 2007 at 1159 hours UTC

SUGGESTED FREQUENCIES: Bands to be used are 3.5, 7, 14, 21, and 28 MHz only.

The following are suggested frequencies for easier location of contacts:

28.380 to 28.410

21.170 to 21.200 and 21.380 to 21.410

14.250 to 14.280

7.070 to 7.100

3.560 to 3.590

OPERATION:

Every individual phone or CW contact may be counted.

There must be an interval of greater than 1 hour between contacts with any one station on any one band and in the same mode.

No net or list operations.

No crossmode operations.

No crossband operations.

All contacts must be made in accordance with operator and station licence regulations.

PROCEDURE:

Phone: call "CQ ALARA CONTEST"

CW: YLs call "CQ TEST ALARA"

OMs call "CQ YL"

EXCHANGES:

ALARA member: RS or RST, serial no. starting at 001, ALARA member, name.

YL non-member, OM or Club: RS or RST, serial no. starting at 001, name, and whether Club station.

OMs, Clubs & SWLs work YLs only.

SCORING:

Phone: 5 points for ALARA member contacted
4 points for YL non-member contacted
3 points for OM or Club station contacted

CW: All contacts made on CW count for double points

OM, SWL, & Club: 5 points for ALARA member logged
4 points for YL non-member logged

Sample Log:

Date UTC	Time UTC	Band MHz	Mode	Callsign	RS(T) & Serial No. Sent	RS(T) & Serial No. Rcd	Name	Points
30/08	0135	28	SSB	VK6DE	59001	58028	Bev	5
	0141	21	CW	VK3KS	599002	599045	Mavis	10
	0600	14	SSB	FK8FA	59025	59011	Aimee	5
	1100	3.5	CW	VK7LUV	599129	599004	Susan	10
	1103	3.5	SSB	VK3BSP	59130	59006	Joe (Club)	3

LOGS: Single log entry. Logs must show date/time UTC, band, mode, callsign worked, report & serial no. sent, report & serial no. received, name of operator of station worked, whether it is a Club station, and points claimed.

LOGS MUST BE SIGNED. Logs also to show full name, callsign and address of operator, and show final score (points claimed). Logs must be legible. No carbon copies. No logs will be returned. Decision of the Contest Manager will be final, and no correspondence will be entered into.

Logs must be received by the Contest Manager by: 30th September, 2007.

CONTEST MANAGER: Mrs. Marilyn Syme VK3DMS
99 Magnolia Ave.
MILDURA.3500

OR: alaracontest@wia.org.au
Vic. Australia

CERTIFICATES will be awarded for the following:

Top score overall

Top score phone only

Top score Australian YL CW

Top score DX YL

Top score ALARA member in each country and VK call area

Top score YL non-member in each continent

Top score OM in each continent

Top score SWL in each continent

Top score VK YL Foundation Licence holder

Top score overseas YL CW

Top score VK Club station

A TROPHY will be awarded to the following:

Top scoring Australian YL

Top scoring Foundation Licence ALARA Member

CLUB STATIONS: Operators of Club stations may use the Club call only for contacts, and **MUST** identify each contact as with a Club station. Use of personal callsigns while operating as a Club member is not permitted.

PLEASE NOTE: This Contest is always held on the last complete weekend of August.

ar

John Moyle Memorial National Field Day 2007

Denis Johnstone VK4AIG/VK3ZUX
Contest Manager

24 Hour Portable Operation – Multiple Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK2SRC	Multi	Phone	All	565	7170	*
VK3CNE	Multi	Phone	All	523	5568	*
VK4WID	Multi	Phone	All	336	2216	*
VK2HZ	Multi	Phone	All	171	2020	*
VK2MA	Multi	Phone	All	251	1662	*
VK4WIS	Multi	Phone	All	429	1218	*
VK5ARC	Multi	Phone	All	179	1044	*
VK4BAR	Multi	Phone	All	306	908	*
VK5BRL	Multi	Phone	All	264	906	*
VK4WAT	Multi	Phone	All	419	838	*
VK2FRE	Multi	Phone	All	57	816	*
VK2AWX	Multi	Phone	All	280	746	*
VK1YBQ	Multi	Phone	All	296	592	*
VK2BOR	Multi	Phone	All	116	586	*
VK3III	Multi	Phone	All	67	442	*
VK8DA	Multi	Phone	All	30	60	*
VK3ER	Multi	Phone	VHF	325	7082	*
VK3LY	Multi	Phone	VHF	129	4170	*
VK3ZPF	Multi	Phone	VHF	126	1560	*
VK2EH	Multi	Phone	VHF	39	850	*
VK2ATZ	Multi	All	HF	1019	2034	*
VK4IZ	Multi	All	HF	874	1738	*
VK5BAR	Multi	Phone	HF	461	922	*
VK4TI	Multi	Phone	HF	391	782	*
VK4WIT	Multi	Phone	HF	171	342	*
VK4KKN	Multi	Phone	HF	167	334	*
VK7OTC	Multi	Phone	HF	134	268	*
VK6SCS	Multi	Phone	HF	106	212	*
VK2WZ	Multi	Phone	HF	30	60	*

24 Hour Portable Operation – Single Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK1DA	Single	Phone	All	117	3366	*
VK5AR	Single	Phone	All	119	1966	*
VK4TGL	Single	Phone	All	60	944	*
VK2ZTY	Single	Phone	All	108	435	*
VK2UVP	Single	Phone	All	10	28	*
VK4TRX	Single	Phone	VHF	22	266	*
VK5MFW	Single	Phone	HF	433	864	*
VK4JM	Single	Phone	HF	124	248	*
VK4EV	Single	Phone	HF	91	182	*
VK3UBM	Single	Phone	HF	66	132	*
VK3MV	Single	CW	HF	24	48	**

Six Hour Portable Operation – Multiple Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK3AWS	Multi	Phone	All	137	1262	*
VK2WG	Multi	Phone	All	348	920	*
VK2BTW	Multi	Phone	All	104	376	*
VK4NRL	Multi	Phone	HF	104	204	*
VK4WIM	Multi	Phone	HF	70	130	*

Six Hour Portable Operation – Single Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK3HY	Single	Phone	VHF	58	1362	*
VK3PRA	Single	Phone	VHF	25	182	*
VK4JAZ	Single	Phone	VHF	14	80	*
VK5OQ	Single	Phone	All	65	256	*
VK5JQ	Single	Phone	All	23	108	*
VK6ZNV	Single	Phone	HF	121	242	*
VK2IO	Single	Phone	HF	69	138	*
VK4FHYH	Single	Phone	HF	55	110	*
VK2FDMB	Single	Phone	HF	50	100	*
VK6AVO	Single	Phone	HF	32	64	*
VK3ECH	Single	Phone	HF	15	30	*
VK2AYD	Single	CW	HF	15	30	*
*	Certificate Awarded					
**	President's Cup					

Home Station – 24 Hour

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK4FIGA	Home	0	0	222	350	*
VK3KE	Home	0	0	212	346	*
VK2HBG	Home	0	0	208	303	*
VK2CZ	Home	0	0	170	220	*
VK4HTM	Home	0	0	118	214	*
VK4FABC	Home	0	0	138	202	*
VK3AAK	Home	0	0	85	159	*
VK3AVV	Home	0	0	60	111	*
VK2TZA	Home	0	0	103	102	*
VK4AN	Home	0	0	55	97	*
ZL1TPH	Home	0	0	26	51	*
ZL2CQ	Home	0	0	16	28	*

Home Station – 6 Hour

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK2ZEN	Home	0	0	105	155	*
VK2KDP	Home	0	0	65	109	*
VK2EI	Home	0	0	64	108	*
VK3BML	Home	0	0	63	100	*
VK2JAM	Home	0	0	22	41	*
VK5RG	Home	0	0	6	11	*

Comments on John Moyle Memorial National Field Day 2007

This year's entries came from every Australian mainland call area and Tasmania. However there were only two entries from across the Tasman from ZL. An effort will be made in 2008 to suggest to the NZART to inspire some more interest among amateurs in ZL.

I have included all of the results that I received in total and if any are missing, they are completely lost and I can only offer my apologies to anyone affected. I believe that all logs submitted are included in the scoring. I am sorry if your log is missing, but it did not get to me despite my most careful procedures.

Based upon submitted logs, there were some 12,535 contacts amounting to some 64,028 points claimed. This was pretty heavy contesting, but it resulted in only some 76 logs being submitted. This is around the same as previous years. Unfortunately, the number of stations who went to the bother of going out and setting up as a portable station and then not bothering to submit a log as an entry is a disappointment. Perhaps we can put in a little bit more effort next year? Some multiple operators got very big scores and perhaps a revision of the rules for large club stations is worth considering.

Band	UHF		VHF		HF	
	Contacts	Points	Contacts	Points	Contacts	Points
10 GHz	1 (0)	30 (0)				
5.7 GHz	1 (0)	30 (0)				
2.4 GHz	4 (2)	120 (100)				
23 cm	94 (140)	1670 (1469)				
70 cm	777 (854)	12375 (10317)				
2 m			1545 (1528)	24410 (23185)		
6 m			436 (487)	6813 (6556)		
10 m					25 (33)	49(66)
15 m					125(82)	248 (164)
20 m					1646 (831)	3276 (1642)
40 m					6041 (4647)	11402 (8974)
80 m					1831 (1812)	3596 (3494)
160 m					9 (31)	18 (62)
Total	877 (996)	14225 (11886)	1981 (2105)	31223 (29741)	9677 (7436)	18580 (14402)

Table should be read – 2007 results (with 2006 results in brackets)

Many of the portable stations that went to the effort to send in a log got a certificate. I believe that people who made the effort to set up a portable station and operate should be acknowledged. Do the rules need a revision to reward such effort?

Only four Foundation licence operators bothered to submit a log. (One from VK2 and three from VK4.) There were many more than this logged during the contest. Perhaps they can be better advised next year? All Foundation operators who submitted logs were awarded a certificate. It is interesting

to note that there were no logs from any Foundation licence operators in VK3.

Activity was carried out on all bands permitted under the rules. There was very noticeably increased activity on HF, but the frequencies followed the declining sunspot cycle. This is very close to the bottom and so conditions are likely to improve substantially next year. In the higher Microwave bands there was very limited activity. Maybe it follows a weather cycle, rather than the solar cycle? VHF and UHF activity hardly altered, with the higher scoring reflecting the higher points allowed for increased numbers of longer distance contacts.

The participation across the various Call Areas was patchy. There was one interesting observation from these results in that the weather was a possible explanation of the very poor turn out of portable stations in VK3 and the much improved turn out in VK2 and VK4.

Call Area	Portable		Home		Total	
VK1	2	1	0	0	2	1
VK2	17	18	7	5	24	23
VK3	11	12	4	5	15	17
VK4	16	13	4	3	20	16
VK5	7	11	1	3	8	14
VK6	3	1	0	1	3	2
VK7	1	1	0	1	1	2
VK8	1	3	0	0	1	3
ZL	0	0	2	0	2	0
	58	60	18	18	76	78

The scoring on VHF may need further revision as the scores produced on VHF seems to exceed the scores on HF, where the effort required to get a high score, far out weighs the comparative effort on VHF. However, this is not the nature of contesting where HF takes time and effort to work the number of stations required, while VHF and UHF requires the vagaries of weak signals to guarantee a contact?

VK3 had a lower number of stations operating either as a portable or home station. Maybe next year we can get a few more stations especially portable ones in VK3? Perhaps the weather could be kinder next time?

There were many more electronic logs submitted this year. This has been due largely to the excellent work by Mike Subocz (VK3AVV) and his worthy program VKCL (VK Contest Log). Those that submitted a log in the VKCL export format were extremely easy to work with. Those that simply forwarded the text output of VKCL were also rather simpler to work with than a paper log by hand.

Unfortunately there were still a few individuals who submitted their log only handwritten on paper; while this can be integrated into the scoring it cannot be manipulated electronically and was harder to use. Finally there were a few who sent a log submission in an electronically unreadable form and they were asked to resubmit their logs which they subsequently did and were included.

This year, the rules stated that Excel is the preferred submission format. A sample linked Excel logging report was prepared and sent to those who requested this file. Pleasingly many logs used this easy-to-use sample as the basis of their

submission. (Contact me at vk3zux@hotmail.com if you would like a copy of my linked spreadsheet in Excel for next year.) Other suitable file submission formats are Word or the ADI output file from VK Contest Log. Text files or paper files can also be used.

There were a few who complained about the scoring process again this year. These complaints fell into three main categories.

1. The comparative difference in score and scoring between HF and VHF/UHF contacts.

Table of alternative categories

Operators		Modes			Bands		
	Time						
Multi	24	Phone	CW	All	HF	VHF	All
Multi	6	Phone	CW	All	HF	VHF	All
Single	24	Phone	CW	All	HF	VHF	All
Single	6	Phone	CW	All	HF	VHF	All

Home	24
Home	6

SWL	24
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In fact within the John Moyle Contest, the rules allow for some 27 possible alternative categories as shown above. Each category is actually completely independent from every other category and so there are in fact 27 parallel contests. In this way, it is completely different from any other contest presently in Australia.

For this reason it is not possible to have an overall winner in this contest, as scores from any category especially between different bands and different modes are not comparable. Only scores within the same category are correctly comparable. Hopefully this will explain the most common source of concern.

2. The second most contentious area is the 'Non Phone' modes.

In this contest, CW is the only 'non-phone' mode allowed for within the rules. All other forms such as TTY, PSK, JT65 etc are simply treated as CW. However, many comments were received as to whether these 'Digital Modes' could be used. There are many concerns regarding these computer based modes. Mainly to do with the very large scores that could be amassed with a bit of planning and the use of automatic calling CQ.

- (a) What assurance can be given that the contacts were in fact using a human operator and not simply a fully automatic station?
- (b) Do these modes allow for the exchange of correctly formatted numbers as required by the rules? (Some modes use specially shortened calling cycles and their own detailed exchange methods).
- (c) Would a further 'Digital Mode' be required in the rules to cope with the range of options?
- (d) What distinct modes among the many available options are acceptable?
- (e) What format would the log output require to be to present the contact exchange information in an acceptable form?
- (f) Would a separate 'Digital Only Contest' be the better solution by creating a more even playing field?

I look forward to comments and feedback on these options.

3. Next, we have a rather non contentious issue of scoring for CW (hand) contacts.

A few people made comments that they had wanted to make CW contacts and others were not prepared or not able to exchange numbers in CW. In addition there were very few logs actually submitted claiming CW contacts.

The comment was made that CW is probably dead or at least close to dying.

A further suggestion was made to allocate a higher point score to a CW contact.

While CW is no longer a precondition for obtaining an Amateur licence, it is a skill that is widely distributed among existing operators and a skill that should be nurtured among the newer licence holders. It is my view that to enhance the number of CW contacts a higher point scoring could be allocated for contacts completed in CW compared to a 'Phone' contact.

I would like to consider increasing the number of points allocated for CW contacts, but I prefer some feedback from you before including any changes in the rules for 2008.

4. The number of people who submitted logs claiming 'All Modes' and only logged contacts using SSB of FM.

The Modes allowed in the rules are PHONE (SSB or FM) and CW (Manual or Digital Mode).

The PHONE Modes are SSB, DSB, FM or AM. That is the modulation is an audio signal derived in the first instance from a microphone.

The alternative is CW, either hand or computer derived, that simply turns the carrier on and off. The plethora of other 'Digital Modes' are discussed above (2).

This should reduce the possible confusion next year? (VK Contest Log will need a wider choice of options as some of the confusion came about from the program.)

5. The complexity of the VHF/UHF scoring system that differs from all of the other contests conducted in these bands in Australia.

It is agreed that the different scoring system between the John Moyle Memorial National Field Day Contest, compared with the Ross Hull and the Spring & Summer Field Day contests, makes for a marked degree of confusion. I have received quite a number of comments in this regard and I intend to discuss with the other contest managers the possibility of a comparable method of scoring on VHF and UHF.

The rules have evolved over time and reflect a changing climate as far as VHF/UHF operations. The relative ease of setting up an efficient station with modern equipment may overly reward the effort involved?

It is maybe time to reconsider the scoring principles involved and the method of calculating scores. I welcome your feedback on the topic.

6. Finally there was discussion about the massive scores accumulated by multi-operator club stations being so much higher could possibly be achieved by a single operator.

It is my view Multi-operator stations and Single operator stations already are separate categories and so are not competing against each other. Looking at the scoring above it is clear that a capable single operator can produce a very creditable score.

I do not think any difference in scoring rate between single and multi stations will achieve anything more than providing more confusion. I however, look forward to any further comments.

If you have any contribution to the topic, the Rules for this contest available at <http://www.wia.org.au/contests/> already contain my contact information and feel free to contact me

with your submission. If sufficient interest is raised, it can be assembled into a topic for subsequent publication in AR.

Well done to all of those that participated in the contest and well done those who bothered to submit a log. It is hoped that the number of logs to be submitted next year will continue the current trend of increased log numbers.

I wish to thank those who did send in photographs of their equipment set-up and personnel involved for inclusion in the AR magazine. These have been submitted to AR along with this report. Please give Peter Freeman vk3kai@wia.org.au anything else you have for later use for this magazine.

ar

Breakdown of Contacts by Call Area and Band

	10 m		15 m		20 m		40 m		80 m		160 m	
	P	C	P	C	P	C	P	C	P	C	P	C
VK1	2	1	0	0	24	12	486	243	76	38	0	0
	0	0	0	0	10	5	112	56	2	1	0	0
VK2	3	2	40	20	726	365	4231	2333	1277	660	0	0
	4	2	10	5	172	89	3277	1695	1312	695	40	20
VK3	0	0	4	2	167	85	644	346	317	163	6	3
	8	4	8	4	120	60	1120	598	416	215	6	3
VK4	40	20	192	97	1658	837	3959	2076	1278	644	12	6
	52	26	116	58	833	419	2719	1364	1158	580	14	7
VK5	2	1	10	5	366	184	1663	833	474	237	0	0
	2	1	4	2	120	60	1379	719	373	189	2	1
VK6	0	0	0	0	126	63	298	149	94	47	0	0
	0	0	0	0	87	48	110	81	132	66	0	0
VK7	0	0	0	0	108	54	96	48	64	32	0	0
	0	0	0	0	18	9	141	76	75	53	0	0
VK8	2	1	2	1	50	25	4	2	0	0	0	0
	0	0	26	13	282	141	116	58	26	13	0	0
ZL	0	0	0	0	42	21	21	11	16	10	0	0
	0	0	0	0	0	0	0	0	0	0	0	0

Numbers in Bold are 2007 and others are 2006



Gippsland Gate Radio & Electronics Club

On 21st July 2007,

the Club shall be conducting its annual

HAMFEST SALE

for the sale of new and used electronics and radio equipment.

As last year, the venue will be at the

Cranbourne Community Hall

on the corner of Clarendon and High Streets, Cranbourne.

High Street is part of the Sth Gippsland Highway. Melway 133 K4.

The doors will open for buyers at 10 am with a \$6.00 entry fee.

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

Over the weekend of May 26th to 27th, a slow-moving high-pressure cell once again produced some good tropospheric enhancement over the south-eastern part of the country.

Chas VK3PY reports that he had some notable contacts:

I saw the opening coming on the Hepburn map earlier in the week and had the foresight to arrange a sked with Mark VK2EMA in Tottenham (central VK2) for Saturday morning. I particularly wanted his grid (QF37) on 1296 MHz. We started on 2 m with reasonable signals, up to 5x5 at times. Moving to 70 cm improved things with signals consistently hovering around S9. Our initial attempt at 1296 was a struggle, but while rag-chewing on 432 Mark noted my signal had built up to over S9, and suggested we try 1296 again. This time it was a pushover with 5x3 signals both ways. The distance is nearly 700 km - not bad going, and grid number 38 is in the bag.

Saturday morning I also worked Colin VK2FABV in West Wyalong on 2 m for a new grid on that band. He was 5x2 and gave me 4x3.

Another notable contact was Leigh

VK2KRR. Ordinarily, Leigh puts a pretty healthy signal on 144 and 432 at my QTH anyway, and we seem to be able to work at will on 1296, but Saturday evening his 1296 signal was staggeringly strong, prompting me to grab my digital camera and record a movie of one of his overs. It's 38 MB - Leigh can talk!

Thanks for that, Chas. The movie hasn't appeared on the YouTube Featured Videos yet – hi!

Jim VK3II was also having some success, as he usually does from his good location:

I worked Colin VK2FABV on 2 m SSB on Saturday 0901 hrs – 0905 hrs (local) at 5x2. I think he also worked VK3AAK and VK3HZ before me. I also worked Colin again on Sunday for over 15 minutes, starting at 1000 hours (local). His SSB signal got up to 5x4 at times. Colin has a pair of stacked 10-element Yagis at 60 ft. His QTH is Wyalong - a 524 km path for me. Not bad for 10W

It's great to see our newest class of amateurs becoming seriously interested in the "right" end of the 2 m band. We should do what we can to encourage this - it can only be a good thing to have more

active VHF/UHF stations spread across the country.

Speaking of stations spread across the country, Peter VK5ZPG in Quorn – 40 km north of Port Augusta - is one of our more remote VHF enthusiasts. His closest opportunities for contacts are in the Adelaide area – a distance of around 300 km. Nevertheless, Peter is quite active in the VHF arena using any possible propagation modes that will achieve long-distance contacts – Aircraft Enhancement and Meteor Scatter being two of the main ones.

Peter has been hard at work improving his station. He reports: *the 'new' linear (AMI7) is up and running, putting out a conservative 300 to 350 watts PEP. A 40-foot tower has been purchased and is yet to be delivered. Until then, I'm limited to a Yagi height of only 18 feet. Being a little out of the way re beam headings for operators between capital cities, hopefully these improvements will help attract a little more attention.*

We look forward to some big signals from Quorn when summer comes around.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur – VK7MO

Welcome to George VK4AMG, who has been participating in the FSK441 Meteor Scatter Activity Sessions for several weeks on 144.230 MHz. These are held from 7.00 to 8.00 am NSW/Vic local time each Saturday and Sunday morning. George is still to complete a QSO but he has got close by exchanging call signs and reports and just missing out on those RRRs for confirmation. Persistence will pay off – good luck George.

Local EME: Sometimes, if a local signal is not too strong, it is possible to complete EME QSOs on JT65 with stations only a 100 km or so away. The direct signal will normally be much stronger but it is often possible to see the weaker Moon Echo because it will come back on a slightly different frequency due to Doppler Shift. Around Moonrise, the Doppler on 2 metres will shift the signal up around 300 Hz and

proportionally greater on the higher bands. If you see two sets of the JT65 reference tones when beaming towards the moon, check the Doppler on WSJT to confirm that the signal is coming from the Moon. Then you can use the freeze/tolerance facility on WSJT to select only the signal from the moon and complete a local EME QSO.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

May produced several sporadic E openings particularly from Queensland to VK2, 3 and 5. The openings weren't always of long duration with only medium signal strengths.

On 16th May, there was a brief opening

from VK5 to VK2. The VK2RHV beacon was audible in VK5 with Paul VK2BPL working Brian VK5BC.

Then on 18th May, the band opened for several hours from VK5 to VK2, VK4 and FK8. Unfortunately, not a lot

of contacts were made but Brian VK5BC worked John VK2BHO, Paul VK2BPL and John VK4KK. The FK8SIX beacon was audible up to S3 for nearly 3 hours. At the same time, the band was open

continued on page 54

DX-News & Views

John Bazley VK4OQ

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.

Email: john.bazley@bigpond.com

We have been waiting for quite some time for the ITU to allocate a prefix for Montenegro. I am sure that all DXers will remember that Montenegro gained independence in late June 2006 and had been using the following prefixes: 4O3, 4O6, YT3, YT6, YU3, YU6, YZ3 and YZ6. The International Telecommunications Union did not want to give the new country a new prefix and required the states of Montenegro and Serbia to agree upon one or two prefixes of the five (4N, 4O, YT, YU, YZ) from the former country of Serbia/Montenegro. On May 11th, an agreement was made and the ITU now lists the 4O (Four Oscar) prefix as belonging to Montenegro. So Montenegro can use 4O0 (Four Oscar Zero) through 4O9 (Four Oscar Nine). Serbia will continue to use the YT and YU prefixes. This will include all call areas (0-9) for each. However the 4N and YZ prefixes have been given back to the ITU for future use by another nation. This has been confirmed by a spokesman from the ITU Radiocommunication Sector. When asked exactly when the two nations need to complete this change – the response was “as soon as possible”. So there may be a short period of time to complete the switch over.

Serbia: YT0, YT1, YT2, YT3, YT4, YT5, YT6, YT7, YT8, YT9, YU0, YU1, YU2, YU3, YU4, YU5, YU6, YU7, YU8 and YU9.

Montenegro: 4O0, 4O1, 4O2, 4O3, 4O4, 4O5, 4O6, 4O7, 4O8, 4O9.

DXers need to update their logging software, carefully!

RSGB IOTA Contest – July 28/29, During this event, at least half of the 10 Florida IOTA groups will be QRV by members of the South Florida DX Association. They are hoping to activate all ten! So far activity will be from the following island groups:

IOTA	Name of Island	Ops
NA-138	Amelia Is.	K9ES
NA-141	Hutchinson Is.	W4UM K1PT K4MM
NA-062	Florida Keys	N2NL, K4EYS
NA-079	Dry Tortugas	

NA-052	Marco	
NA-069	Sanibel	
NA-034	Honeymoon, St. N2MFT Armands, etc.	
NA-076	Cedar Key	
NA-085	St. George	N4PN
NA-142	Santa Rosa	N4OX and NF4A

VE Cezar VE3LYC and Ken G3OCA are planning an IOTA operation from East Pen Island, VY0 (NA-231, new one) between 20 and 22 July. They are prepared to have two stations on the air operating CW and SSB from 10 to 40 metres. QSL via VE3LYC, direct or via the bureau. Cezar says that East Pen Island is “the breeding place of polar bears, which brings interesting challenges to the team”.

YV The 4M5 DX Group members YV5WW, YV5OHW, YV5RED, YV1RDX, YV1CTE, YV5TX and YV5SSB will be active (SSB, CW and RTTY) as YW1DX from Cayo Sombrero (SA-089) on 27-30 July, including the IOTA Contest. Before and after the contest they will concentrate on the WARC bands. QSL via IT9DAA.

VP9. **Paul G4BKI** operated CW only as VP9KF from Hamilton Parish, Bermuda (NA-005) from May 15th to June 5th, including the CQ WW WPX CW. QSL to W4/VP9KF (Paul Evans, 6809 River Road, Tampa, FL 33615, USA). Further information can be found at <http://vp9kf.com>

While on the subject of VP9 Bermuda, readers may not be aware of “The Worked All Bermuda Award” that is awarded to any amateur radio operator, worldwide, who confirms contact with a Bermuda amateur in each of the nine parishes on the island. Verification will be valid copies of QSL cards from the local operators. The award is a superb map of Bermuda, signed by the Governor in power at the time and is provided free of charge. Well worthwhile working for.

BS7 –Scarborough Reef. The recent operation from Scarborough Reef has been approved for DXCC credit.

Quite a number of QSOs (1380, most of them on 30 m) did not make it into the initial on-line log. The problem has now been fixed and the log now contains

45,820 QSOs from 13.48 UTC on 29 April through 23.54 UTC on 5 May with 17,884 unique callsigns. The new band/mode breakdowns are as follows:

Band	SSB	CW	RTTY	TOTAL
160 m	0	54	0	54
80 m	121	217	0	338
40 m	509	3039	0	3548
30 m	0	4226	0	4226
20 m	10391	11435	54	21880
17 m	3325	3744	0	7069
15 m	4011	1985	268	6264
12 m	402	474	0	876
10 m	841	724	0	1565
	19600	25898	322	45820

The continental breakdowns are: Asia 21112, Europe 16329, North America 6918, Oceania 948, South America 301, and Africa 212. Several statistic tables can be found at <http://www.scarboroughreef.com/srstats.html>

The following note was issued by Steve who is handling the QSLs for BS7H.

I have received quite a number of 'QSO not in logs' questions in the last week, such as – I forgot my QSO detail, – my dog/significant other animal/kid/etc trashed my log! So let me help with some ground rules:

I'm not in a position to answer whether you are in or not in the log at the moment. Rather than ask via email, I'd ask you to kindly put the inquiry in a NOTE with your QSL to me. I'll research the log as I work your QSL request, and respond accordingly. If you are NOT IN THE WEB log, don't give up, put down EVERY QSO you believe you had, and I'll do the rest. If the web log shows 20 SSB, put down EVERY QSO you think you had on 20 SSB, not just the first. Don't be embarrassed with dupes, rather, give me all the QSOs you've had, I'll see the dupes anyway, but if you are not in the log the first time, it will save me a lot of time researching. Remember, every researched call takes time from processing other cards. If it's a busted call, I'll use well-established judgment in issuing the card, and may ask you to help confirm that the person whose call appears did NOT make a QSO.

If you DO NOT HAVE ANY detail besides what is in the web log online, it's impossible for me to give you credit for the card. I need to have SOME

continued on page 54

VHF/UHF – an expanding world *continued*

between VK4 and VK2 with the FK8 beacon being audible in both states. John VK4TL and VK4ZFC in Far Northern Queensland worked several VK2's including John VK2FAD at Budgewoi and Dave VK2JDS near Bathurst. Kevin VK4BPK at Mackay also worked John VK4KK near Gympie.

The 19th May saw another opening from VK5 to VK4. The VK4RTL Townsville beacon was up to S9 in VK5 with Brian VK5BC again working John VK4KK.

Another opening on the 21st May - this time Kevin VK4BPK working John VK2BHO near Wollongong, Brian VK2AH at Bulli and Rob VK3XQ in Melbourne. At the same time, Allan VK4ID was hearing the VK5RBV beacon up to S7 and completed a contact with Brian VK5BC.

On 26th May, the band again opened from far Northern Queensland to VK5 with the Townsville VK4RTL beacon being heard in VK5. Brian VK5BC completed contacts with Andru VK4KAY in Mackay and Peter VK4APE in Charters Towers. The same day Norm VK3DUT reported hearing the VK5VF and VK5RBV beacons as well as the ZL TV and Karl VK7HDX in Launceston reported the ZL TV.

On 27th May, Jack VK2XQ in Sydney

DX-News & Views *continued*

supporting detail on your QSO. Give me your best guess from memory, who you heard work BS7H just before or after. Chances are one of your friends was in the hunt at the same time, and can help. Remember, it will be a lot easier to remember it now than a month from now. And I'm not in a position to issue a QSL to you 'just because' the web log says you're there. That's not the way it works.

Don't fret the 39 cent stamp or the 84 cent stamp you sent before the postage increase. I'll cover it.

If I do not respond to your email, please don't take it personally. Please follow the guidelines here. I tend to not answer the emails when they ask the questions above, as each email is roughly equivalent to the time it takes to answer 2-3 QSLs ... and I tend to choose to answer the cards first.

I'll let you know when the cards start going out via this forum.

reported the ZL TV being audible for some time and working Bob ZL3NE in Auckland. Jack also reported the Hobart VK7RST beacon. The same day, the Alice Springs VK8RAS, Longreach VK4ABP and Townsville VK4RTL beacons were all audible along with the Toowoomba TV sound (51.672 MHz) in VK5. Brian VK5BC worked Allan VK4ID, Glen VK4BG (ex VK4TZL) and Mick VK4ZAA. Weak contacts were also made with VK4KAY & VK4BPK both in Mackay.

To complete the month, the band again opened on 28th May. Dave VK4ASB in Zillmere worked Kevin VK3WN in Ballarat and Rob VK3XQ. Kevin VK4BPK in Mackay completed contacts with Rob VK3XQ, Norm VK3DUT, Rod VK3TG, Trevor VK3VG, Steve VK5OZ in Adelaide and Joe VK7JG Launceston. Kevin also reported hearing the Alice Springs beacon.

On the 6th June, Jack VK2XQ, Brian VK2BX and Norm VK3DUT all reported hearing strong New Zealand TV and later in the day Jack reported hearing the FK8SIX beacon at S5.

Please send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

ar

As an aside, if you have a problem with how I do QSLs, how long it takes to get a card from me, etc, please take it up with me directly. I don't appreciate reading it third hand via a reflector, etc. Frankly, if you are kind enough to send me a note, I'll be glad to help research it. In many cases, I may be able to help you understand why the process takes so long for your QSL, as I keep pretty good records of those calls that take time, and for what reasons that is the case.

73

Steve KU9C

Special thanks to the authors of *The Daily DX* (W3UR), *425 DX News* (IIJQJ) for information appearing in this month's *DX News & Views*.

For interested readers you can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

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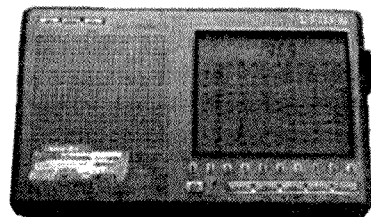
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Notes

1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

New YL success!



Pam VK4FABB (now VK4PTO), only joined ALARA in 2006, but has been very active ever since. Pam is the first recipient of our newly designed Award, and also the first F call to gain the Award. Pam is now ALARA's VK4 State Representative.

The ALARA Award has been very beautifully redesigned by Kathy VK3XBA, bringing it into the computer age. As from the beginning of 2007 this Award will be open to any amateur, including all those who may already have one of the original Award certificates. Surely this would be another attractive addition to the shack wall. VK & ZL amateurs need only 10 contacts with ALARA YLs in 4 Australian call areas to qualify. DX amateurs only need 5 contacts with ALARA YLs in 3 Australian call areas



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Our Cover this month

This month we review the Icom IC-756 Pro III transceiver.
Read the report commencing on page 21

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA National Office (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 an additional \$2 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.

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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Editorial Comment

Peter Freeman VK3KAI

A word about photographs

Amateur Radio receives many excellent articles for publication. Unfortunately very few of the accompanying photographs approach the description of excellent; the great majority are unpublishable or nearly so.

This is a great pity. An otherwise excellent article is reduced in 'reader entertainment' because photographs that could complement the text, and add to reader interest, are unprintable, or of such poor quality that their value to the article is, negative.

So, in an effort to explain what makes a 'good' photograph, from a publishing point of view, here are a few, very simple, requirements.

- The photo can be either black and white or colour. These days, with modern processing software, colour is generally preferred.
- The photo *must* be in focus. Seems a somewhat obvious thing to say, but to an amateur photographer, this is quite a difficult feat to accomplish.
- The photo *must* have excellent contrast, with no obvious flaws, i.e., no obvious fading, or glare, and good colour contrast between individual components of the scene.
- Think about the composition of the shot before you press the shutter release button. Are the key features arranged appropriately (or viewed from the best angle) so that the overall photo looks "pleasing to the eye".

Watch for some common pitfalls:

- Beware of foregrounds - sharp focus may be on a wine glass, or the back of someone's head, when the desired subject is blurry. Using flash when shooting groups at tables often causes tablecloths and faces in foreground to flare while wanted detail furthest from camera is in darkness.
- Beware of backgrounds. Flash against a light coloured wall creates an unattractive dark shadow. When used against a dark empty background, subjects may lose their definition. Beware of 'busy' background patterns that steal focus - e.g. curtains, paisley wallpaper, or in the case of antenna shots, dappled trees or bright sky.

- Photos are better if there is plenty of other light around. The flash should not be the only source of strong light.
- White shirts flare - take care.
- Action photos are more interesting than grip 'n' grin photos. Beware of the "Bumfest". People's faces are more interesting than their backs.
- Technical photos: Don't use flash. The best light is obtained outdoors at noon on a cloudy bright summer day! Replicate this as closely as possible. Use a flat light blue background.

If you can achieve these attributes, you will have a good, publishable photo - and your article will benefit enormously.

Seems simple! Well, it is obviously not - a good, professional tip is to take as many photos as you can, in as high a resolution as you can; in that way a few will indeed be of excellent standard. These are the ones we want for publication.

Many photographers now use digital cameras instead of film. DO NOT print the photos and send us the hard copy - send us the electronic photo file in as high a resolution as possible.

Most email systems will cope with a total email size of around 10 MB, so individual images can be up to around 5 or 6 MB. If in doubt, download the high resolution image to your PC, use your image software to save a copy of the file in a smaller size and send that to us.

Images around 500 kB to 1 MB for a postcard size image are adequate for use inside the magazine. Images less than 100 kB are almost useless for reproduction. We print at 300 dpi and such images print very small.

If we want an image for the cover or inside back cover, we can contact you requesting a higher resolution (larger file size) version of the image.

Of course, you can always burn all the high resolution images to CD and post them in to us.

So, take your time, take more shots than you need, and send the excellent ones in with your article. Our readers *will* be happy. And, as the author, so will be you.

Cheers,

Peter VK3KAI, on behalf of the entire production team. **ar**

Member Benefits?

What do WIA members get that other amateurs do not get?

A fair question, when you think about it. In promoting itself, the WIA relies heavily on its advocacy role, which is of course for the benefit of all amateurs and potential amateurs.

But when you start to look at it carefully, there are many other benefits that the WIA provides with little distinction between members and non-members.

I raised the question at the GippsTech meeting a few weeks ago, and invited responses, not only in the meeting, but also informally after the meeting. I had done this the year before, and over the weekend I had received a number of thoughtful and helpful comments, last year on a completely different issue.

The question had started to emerge for me when we were considering the whole management of the QSL bureaux.

The WIA had promised, on the restructure, "to provide as soon as reasonably practical and at no cost to members of the WIA a QSL Bureau service". We had given effect to that promise, largely by simply supporting what already existed in the different states and territories.

A number of the QSL Managers offered non-members the opportunity to lodge stamped addressed envelopes or funds, to enable the Manager to send their cards on to them.

There are two conflicting considerations that can be identified in the case of inwards cards.

One is that there is a strong argument that QSL cards sent in good faith by a member of an overseas IARU society for an amateur in our country should not be simply thrown out because that person is not a member of the WIA.

The other is that if the QSL managers are holding money on behalf of non-members they are doing so as the WIA's appointed QSL managers and so the WIA should ensure that the money they hold is properly accounted for and subject to proper audit.

What do other societies do?

The Radio Society of Great Britain (RSGB) says that you can only send items via the RSGB QSL bureau if you are an RSGB member. The ARRL (USA) does the same.

Both societies allow non-members to collect inwards cards, in the case of the RSGB if a suitable pre-paid envelope has been provided to the QSL sub-manager. The RSGB even requires payment from non-members for a list of QSL sub-managers, something that is free for members on the 'members only' part of the RSGB website.

Some national societies only handle inwards cards for their members, and advertise that fact extensively. These include the national amateur societies for Denmark, France, Germany, Hungary, Japan, Monaco, Norway, Poland, Portugal, Russia, South Africa, Sweden and Zambia.

What about awards?

The WIA has offered all its awards to everyone, though with a cost differential. For example, the WIA General Awards program provides one certificate free to all WIA members, and charges Australian non-members \$12 for each certificate, and charges overseas applicants \$US12 for each certificate.

What do other societies do?

The ARRL DX Century Club Award is one of the most prestigious awards in the world, and on its website the ARRL say this "The DX Century Club Award, ... is available to amateur radio operators throughout the world ... ARRL membership is required for DXCC applicants in the US, its possessions, and Puerto Rico. ARRL membership is not required for foreign applicants."

And, of course, the IARU WAC (Worked All Continents) award is available only to members of their national IARU member society.

Many societies require local membership for at least some of their awards.

Many people telephone the WIA office seeking information – where is the nearest club, who do I contact if I

want to qualify as an amateur, can the police charge me with operating my station mobile away from my station address, what has happened to my AR, and so on.

Some are obviously from members, some may be and some are not likely to be.

We do (and I think should) treat all telephone enquiries with the same courtesy and offer the same assistance, though we expect the WIA office staff to do their best to encourage people who are not members to become members.

What was the response when I asked the question at GippsTech?

The issue attracted immediate discussion, and many people expressed their view to me in private. They were WIA members and non-members.

Let me summarise what I think is a reasonable summation of the views that were expressed.

No one disagreed with the proposition that there should be some things that are exclusively for WIA members, though identifying what those things should be was not so easy. Ideas such as a members-only part of the website, and software described in the magazine available only to members were among the suggestions offered.

A message from a number, expressed different ways, was the advice to "walk carefully".

"Walk carefully" because a number of amateurs lived in the past, and saw the WIA as unreasonable and dictatorial, and whatever we did would encourage further criticism from these people. "Walk carefully" because a number of amateurs would resent the withdrawal of any privilege, even though they were not prepared to contribute to sustaining the advocacy role of the WIA, and again whatever we did would encourage further criticism from these people.

Despite those warnings, I believe that the WIA is now at the point where it must examine what it does provide for non-members and ensure that membership is meaningful.

Amateur Licence Fee Increased

ACMA increased the amateur licence fee from \$58 per year to \$61 per year, an increase of \$3 per year, with effect from 1 July.

In January this year the WIA lodged a submission with ACMA in response to ACMA's review of its cost recovery arrangements, announced just before Christmas, and following a meeting between ACMA and WIA President Michael Owen VK3KI and Peter Young VK3MV, now a WIA director.

The cost of amending an existing licence has not changed.

It is understood that where the old fee has already been sent to ACMA it will be accepted, and the next renewal date will be brought forward to a slightly earlier date to reflect the slight underpayment.

The WIA exam service forms on the website, both as incorporated in the Assessor Instructions Revision 5 and the downloadable forms have been updated.

ACMA Delays in Processing Amateur Licences

The WIA office has received a number of phone calls from WIA Exam Service assessment candidates concerned about the delay in the processing of their applications for certificates of proficiency and apparatus licences by ACMA after the WIA has forwarded them to ACMA.

The WIA has been advised by Alan Jordan of ACMA that as a result of the need to train new staff, and some new responsibilities given to those staff, the turnaround time for issuing amateur licences has been extended.

However, it is ACMA's aim to achieve a two-week turnaround time for issuing amateur licences.

While the WIA will continue to aim to forward the applications and certificates within 5 working days after their receipt from the Assessors, Assessors and candidates should be aware of the longer time before the new licence is issued; currently as much as four weeks after the documents have been processed by the WIA.

2007 Club Grant Scheme Closes

The WIA has allocated \$5,000 this year for grants to affiliated clubs, to support projects that promote and advance amateur radio, the WIA and its Affiliated Clubs by supporting useful and/or innovative projects undertaken or to be undertaken by Affiliated Clubs.

The closing date for applications by clubs was Monday 16 July 2007, and this year 8 separate submissions were received from 7 different affiliated clubs.

WIA meets with ACMA

On 25 June 2007 WIA President Michael Owen VK3KI and WIA Director Peter Young VK3MV met with Mark Loney, Executive Manager Pricing and Policy, Alan Jordan and John Kington at the ACMA Central Office in Canberra.

The meeting was initiated at the request of the WIA for a briefing on the delays in dealing with a number of matters, particularly arising out of the Amateur Service Review Outcomes Paper. The ACMA acknowledged the delays and sought to work with the WIA in addressing its concerns.

Of particular concern to the WIA was the delay in the making of the further amending Determination to give effect to the balance of the matters identified in the Outcomes paper, now a delay of 3 years. The WIA also raised the delay in finalising the arrangements with CEPT to allow Australian amateurs travelling overseas the privilege of operating in other countries without the need to obtain an individual authorisation in those countries, and the delay in the issue of a Class Licence to enable amateurs visiting Australia to operate here without the need for an individual licence.

Another concern was the delay in the finalisation of the issue or re-issue of 2 letter call signs.

The WIA is also concerned at the continuing uncertainty about the future of the management of the amateur examination and the related certificate issue, as well as the call sign management function.

The WIA pointed out that the delay in the LCD meant that uncertainty prevailed over the power permitted to be used by

Foundation licensees, the privileges of Foundation licensees and also that the WIA's publication "The Foundation Licence Manual" was running short and it could not be reprinted until the regulations were up-dated.

While the WIA accepted that the current delay in the LCD was beyond the direct control of ACMA, Mr Loney offered to do all he could to achieve a speedy finalisation of that, and that other immediate solutions would be investigated to address a number of the other problems faced by the WIA and its members. Mr Loney indicated that more resources would commence the following week to address these outstanding issues with the view to finalisation as soon as possible.

In particular, work on the visiting/visitor licence issues has commenced and will be completed as soon as the enabling legislation is drafted.

ACMA advised that a statement on the allocation process for the issue of two-letter call signs would be made shortly, and the announcement may be made within a statement addressing the broader issues surrounding call sign management.

The WIA representatives felt that the meeting was positive and conducted in a constructive manner with a commitment to explore a range of options to meet the concerns expressed by the WIA on behalf of its members.

Hams Across Australia!

Jeff Johnson VK4XJJ is walking across Australia raising monies and awareness of the Deaf/Blind. With other amounts promised, Jeff's DeafBlind walk is half way and now half way to the target of \$10,000 towards a small bus with wheelchair access.

Rex Newsome VK4LR has offered to match donations to Jeff's Walk, and to match donations to date has already deposited \$2,000.

WIA President and Director visit Westlakes

Westlakes Amateur Radio Club at Teralba, near Newcastle was the host to WIA President Michael Owen VK3KI

continued on page 25

A home brewed rotator

Warren Fritz VK4FJ
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I had been going back and forth to my Yagi mast for so long that I had nearly worn a track right through the floor. Finally I decided that enough is enough and I needed a rotator. However the answer to two questions eluded me, 'how and with what'?

Then a work-mate said to me one day, 'I know where there is something you might be able to use'. I said 'OK', and thus obtained a 30:1 reduction gearbox, heavy as heck, that I put in the shed.

As happens a lot of times, it just lay there. Then one day, while partaking of a certain refreshment known as rum and cola, an idea came to mind.

This gearbox might be set up to make my Yagi mechanically rotatable!

Like a lot of people, I tend to collect bits and pieces that might at first seem useless. So, after a little more thinking, and looking through my shed, a rotator began to take shape.

The first item required was a base to sit the gearbox on, which I constructed from a worn-out grader blade, cut into four pieces and then concreted into the ground. To that was added a couple of pieces of scrap angle iron and box steel to provide a frame for the gearbox to sit on. So there you have it, one gearbox mount.

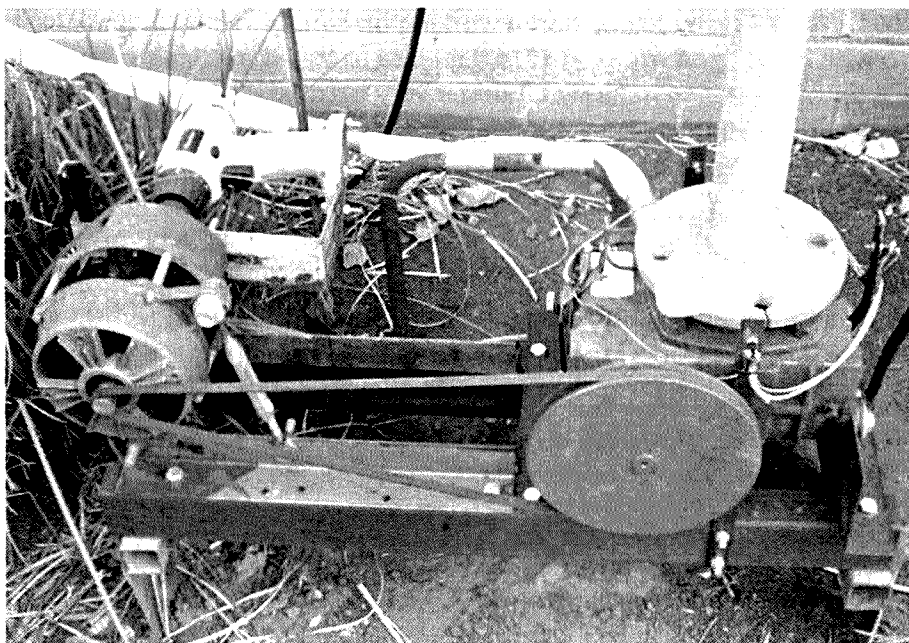
There it sat again for quite some time. Then one day, two twelve-volt cordless drills were obtained. The next challenge: how to mount the drills so that they would drive the gearbox!

One of the drills was partly modified, with the battery being removed and hard-wired to a twelve-volt truck battery for power.

It was mounted on a bracket with the chuck attached to the axle of a washing machine motor, which was mounted so that a belt could be fitted between the pulley on the motor and one on the gearbox. The washing machine motor, which does no work, was modified to fit onto the base frame.

The next step was to modify the second drill. It was wired up so that its directional switch (that is, forward/reverse) controlled the polarity of the battery power to the drill connected to the washing machine motor, and thus its rotation direction.

Overall, by using the switch on the



The home brew rotator

drill at my operating station, I could control the gearbox rotation and the direction of the Yagi. For protection from the weather, a gas BBQ lid was fitted over the gearbox and the drill.

Next and finally, all I needed was a direction indicator. I decided to use 5 micro-switches placed around the base of the mast in such a way that a small piece of metal would momentarily press the switch as it rotated past. Three of these switches light one of three bulbs which I set up at my desk to show North, East and West. The other two switches/bulbs tell me when the antenna is facing South or has come to its stopping point from either direction.

The photo shows the final product with its weather cover removed. The gearbox sits under the Yagi mast at the right. At the left can be seen the washing machine motor with the drill behind it, mounted on a bracket. The micro-switches sit on brackets around the base of the mast, and are operated by the tapered lug fixed to the rotating pipe flange.

So after about six months and a few refreshments and a lot of trial and error, I can now sit at my station and track signals without going outside and turning the mast by hand.

It might take a bit of work and time, but to build something like this out of scraps and bits and pieces, and have it work, gives you quite a bit of pleasure and enjoyment.

Normally, when people see my rotator, they scratch their heads and look at it in amazement. They can't believe what a mix and match of parts my rotator is made up from, or that it actually works. However, it does, and I would like to hear from anybody else who has home brewed gear like this, or if anyone would like to ask a question regarding this project I can be contacted on 0438 671 688.

By the way, the antenna on the mast is a six element Yagi for 27 MHz, which is also home brewed, but that's another story.

ar

Where has amateur radio headed now?

Jim McNabb VK3AMN
vk3amn@wia.org.au

My father (Sandy) was a ham radio operator (VK3AMN) from April 1947 until sadly becoming a silent key in 2004. We had many happy hours working on aerials, radios and the like, and meeting many ham radio friends from all around the world. In 1974, I started to try for my licence but with a young wife, kids and work, and with little or no time to study I found it very hard and had to put any thought of getting my licence on hold.

Up until my father became a silent key, we were working together on SSB; and with the PC generating PSK31, he was still learning new ways to use the radio. I started to miss the time spent on the radio from that time.

Has the "F" licence worked?

I was lucky that many friends that dad had made in ham radio told me about the introduction of the "Foundation Licence" and encouraged me to sit for it. I went to the EMDRC ("Eastern Mountain District Radio Club Inc") rooms on Saturday 9 March 2006, where I was made to feel very welcome, and sat for my first exam for some 45+ years on Sunday 10 March 2006. I passed the Foundation Licence exam and was given my first call, VK3FAAJ.

I soon left on a three month trip to the Kimberley in VK6 land. I took an Icom IC-706MKIIG with a 40 m home made dipole, a ¼ wave 40 m whip, a long wire, a portable tuner and a 2 m and 70 cm whip on the front of the four wheel drive.

I contacted the Travellers Net on 21.185 MHz, and the Coral Coast group on 7.060 MHz, any day that I could. I got my first DX, a 'JA', on 40 m with my 10 watts whilst travelling along the Tanami Road in VK8 land. This was great, as I had to get a dipole or my long wire up and running each day and also remember that "height is might". Many thanks are due to Gordon VK4BQ for his time each day that I got through to the Coral Coast group, and the many other hams that would talk to me on my trip, all of which was great for my confidence.

I had a lot of fun in getting the dipole up as high as I could and, needing to remember where the station is you are

trying to contact, locate the dipole side on to them. Note that trees never grow where you want them (the first of many lessons in mobile ham radio). My second lesson was to put an earth wire on the tuner and radio - lucky it was only 10 watts.

With the trip under my belt and back home, I found that using the radio was a great way to meet some great hams on the air, and at the club meetings. With increasing confidence gained from working ham's on air, and a bit more study, I passed the Standard Licence and became VK3LWX on 8 November 2006; then, still working at my own pace, studied for the Advanced licence exam. "I will get it when I get it" was the way I went about it. I passed the Advanced exam on 16 December 2006 and acquired my new call, VK3AMN. I was lucky that Sandy's call sign was still available - as well, it was easier than changing the call signs on all of Dad's old books and home made gear. The only thing that I am sorry about is Dad will never get to talk to me on the air.

Some advice!

You should only upgrade "if and when you want to".

Only sit for the licence exam when you are ready and not when others tell you.

- It's only a hobby and not the end of the world if you don't pass. There's no hurry.
- Once you get your "F call" you're on the air, and learning the very best way, with hands-on experience.
- I would not be on the air without the "Foundation licence". I would like to thank the WIA, the EMDRC and many hams who helped me along the way, with a special thanks to

Lionel VK3MN, Ross VK3MY and Keith VK3FT, and Ron Bertrand VK2DQ with the Gold Coast Radio Club for their help and time in getting me on the air. The many hours that these members put into the hobby will keep the hobby alive. There are many other members helping the new members in getting on the air, their time and help is freely given.

- Any one who thinks they would like to get a Foundation licence but think they can't, please think again. The "Foundation licence" was made for us, you don't have to do CW, you don't have a lot of theory for the Foundation licence, all you need is a bit of common sense and some basic knowledge on working the radio, and safety. With a little study and help from any of the many clubs and ham's you will be up and running in no time, remember if you don't ask you will never know. There are no silly questions, only silly people that don't ask. Everyone had to start somewhere.
- Without the changes to ham radio, I believe it may have died out in the next few years, with its ageing members and very small number of new members each year. But now with the changes, I think that ham radio has been reborn and will only grow. The last I have read is that there are 1000+ "F calls", and a large number of them upgrading.
- Great work WIA, and the many assessors and members that have helped make this happen. I hope to meet you on the air soon.

ar

Operating a QRP station in a quiet age

Grant McDuling VK4JAZ
grantmcduling@action-international.com

It's all about simplicity, sunspots and ... silence. I have developed the ability to live in hope as I patiently await the return to normality as the sun slowly makes its way out of the low in its sunspot cycle.

But that's no reason for me to sit on my hands in my QRP shack, I reason, trying to think of the last CW QSO I had. For the last few years I have had to be content with FM and SSB QSO's, not that that's a bad thing. At least they are at the 5W limit and qualify as QRP contacts.

Every night, in between sending out my now obligatory CQ on one of my QRP rigs, I try not to let the silence of the frequency deafen me. Sure I hear signals on the 20 and 40 metre bands, but do they hear me? That's the question. If they do, they certainly don't answer, as they respond to the stronger signals. I turn on my trusty soldering iron in an attempt to avoid going nuts and commence work on yet another QRP rig. I sometimes wonder if I am a sucker for punishment.

My latest rig is a 0.75 W Ramsay transmitter and receiver combination that is tuned to the calling frequency of 14.060 MHz. The beauty of this little rig is that, unlike my others (Rockmite and Pixie 11) its VCXO design allows up to 8 to 10 kHz of tuning around the crystal frequency. This would surely be handy in helping me snare a contact, I reasoned when choosing to build the rig. It also features a clean keying waveform and a built in T-R switch.

The receiver too is highly sensitive and comes with a matching enclosure, so the pair look good. It easily receives SSB, CW, RTTY and AM signals and with its varactor tuning, smoothly receives around 250 kHz of the 20 metre band. In fact, I can also listen to the 22 metre broadcast band, which is handy given the lack of QSO's I've had of late.

Anyway, the instructions for both kits were excellent, and the circuit boards are so well constructed and uncluttered that the avid homebrewer like myself can have a field day (no pun intended) messing around, experimenting and adding modifications until the sun makes up its mind to return to normality.

I knocked together a small 8 Ohm



Photo 1. The VK4JAZ QRP station.

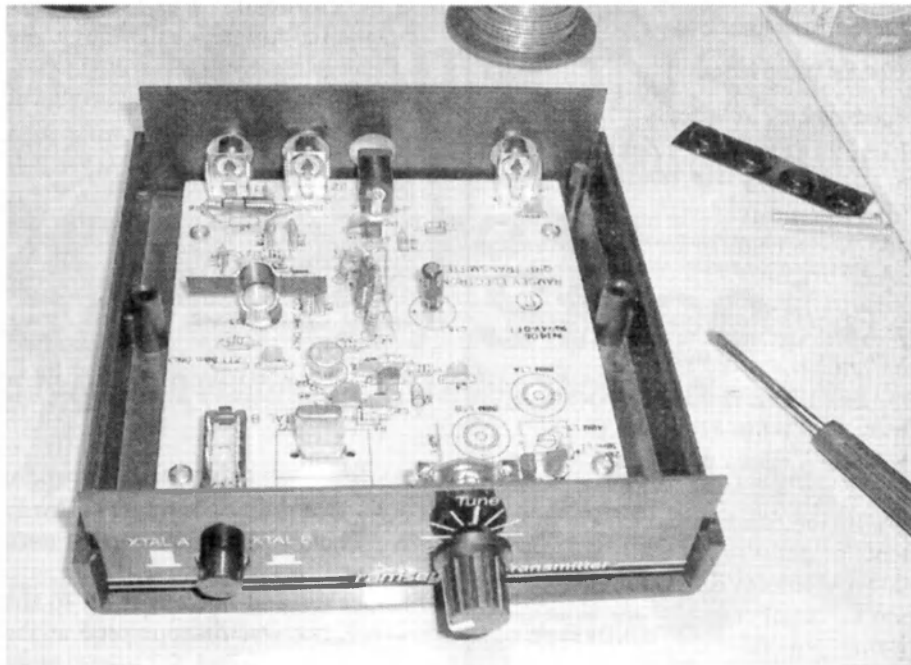


Photo 2. Building the Ramsay 20 metre transmitter.

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10/11 beams comp opt 5 ele	\$370
10/11 5/8 vert 4 rad 1/4 wave	\$208
Tri band IIB 35 C 10/15/20 m	\$782
3 ele 20 m comp opt	\$475
log periodic 9 ele 13 30 8.4 m boom	\$1098
NEW 160 m Vertical SUBURBAN	\$355
40 m linear loaded 2 ele beam	\$595
M B Vert auto switch 10/80 m	\$339
6 m 7 ele Yagi beam 60 mm boom	\$397
6 m 5 ele compr opt beam	\$285
Top loaded 160 m vert	\$439
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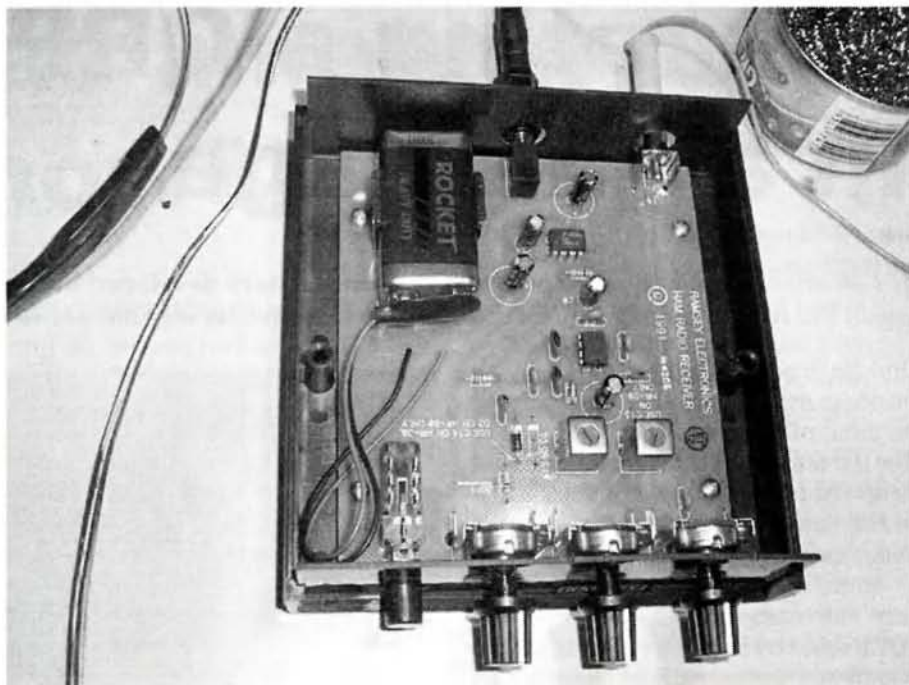


Photo 3. The Ramsay HR20C 20 metre receiver.



Photo 4. The 0.5 W amplifier mounted in an Altoids tin.

loudspeaker and hooked it up to the receiver, but was disappointed at the volume. This called for some more building, so I shot off to the local Dick Smith outlet and bought a neat little 0.5W audio amplifier kit that they call The Champ (kit no. K5604). This cost me the princely sum of around \$5. I

mounted the completed kit into a spare Altoids tin I had lying around (all good QRPers have them, as they are part of QRP folklore) and I was in business. What a great little kit this is!

My evenings in my 100% QRP shack are now not so quiet. In between pounding CQ, I listen to Radio New Zealand, All India Radio, China International

Radio and even Radio Australia on my Ramsey Direct Conversion Receiver. And who knows, one day someone may respond to my call and I'll be able to post out a real QSL card. I still have to make use of the WIA bureau!

ar

Silent keys

Brian A. Stevens VK5FV (Major Ret.)

Brian Stevens passed away suddenly at home in Rostrevor in the early hours of Wednesday 4 April, 2007.

He was born at Broken Hill on 29 May 1931 but spent all of his early life at Renmark, on the Murray. Although his thirty year military career and life's journey took him to many places, his deep love of the river and the boyhood pursuits it provided, remained with him for all of his life.

During his early army life, he served in Korea and as a member of the occupation forces stationed at Kure in Japan. It was here that he met and married his wife Harumi. In Viet Nam as a Signals Officer, he performed a vital role in communications with the Australian Contingent.

Later in his career Brian extended his considerable expertise in communications into the field of amateur radio. This thereafter became a special part of his life. Whilst stationed in PNG his callsign P29FV became a much sought after contact by many throughout the world.

His attainment of the coveted DXCC was a very proud moment. In later years as VK5FV, he was eagerly seeking only a few call letters to complete his second DXCC. The much awaited improvement in ionospheric propagation made his ambition appear 'so close but oh so far'.

He was a very active member of the Rostrevor Lions Club. All members of this club as well as many others throughout the community sought and readily received the benefits of his expertise in many areas. One call to Brian, and he would be there in a flash to help anyone with computer concerns.

Brian was a very proud family man. He often spoke of the considerable achievements of his three children. He also held great affection for their respective partners and particularly for his five grand-children.

'It took little time for me to discover, Brian was less like a friend but more like a brother'.

Bernie Matson VK5ABM

Frederick James (Jim) Archer Wright VK3CFB

It is with regret I announce the passing of Fredrick James (Jim) Archer Wright VK3CFB.

Jim was a Life Member of BARG, which indicates how highly respected he was within the club.

Jim and his new wife Vera (dec.) came to Australia after the end of World War 2 on a motor bike and sidecar, travelling across Europe and Asia and using ships only when absolutely necessary.

He did write his life history and put it in book form and on CD.

Jim had been suffering ill health for a number of years but managed to keep up with new and old friends on 'Echolink'.

As was Jim's, and the family's wish, a private funeral was held.

Submitted by Bob Pitcher VK3NBV,
President BARG.

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The 'Spectrum Snooper'

Dale Hughes VK1DSH

The radio frequency spectrum can be viewed in two ways; in the time domain or in the frequency domain. Probably the most useful instrument for viewing a signal in the time domain is the oscilloscope, it plots amplitude vs. time. In the frequency domain, the spectrum analyser plots amplitude vs. frequency. Each of the viewpoints can give us information about the signal, its structure and the environment in which it travels. Both instruments are complex and often contain a mixture of analogue and digital circuitry. Conventional oscilloscopes are common and easy to use; and few people would bother to build one. Spectrum analysers are much less common and are still expensive, and some designs are available for home constructors¹. As in all fields of electronics, the PC is changing the way we do things. PC based instrumentation is flexible and offers convenience undreamt of a few years ago, along with decreasing cost of ownership.

This article presents a design for a spectrum analyser that is useful over the HF spectrum. It uses a PC to control the analyser hardware and to display the spectral information. Using a PC eliminates much of the circuitry that is needed to scan a range of frequencies and display the results on an oscilloscope or other X-Y display.

The design presented here uses fairly conventional RF circuitry for signal acquisition and a PC interface for display and analysis. A major departure from other designs is the use of a Direct Digital Synthesiser for the local oscillator. Using a DDS simplifies the issues of frequency accuracy and repeatability, as the DDS is as stable as its crystal clock oscillator. DDS systems are also easily controlled using a microcontroller, something not true of free-running VCO systems. This design uses a single frequency conversion so that spurious responses are minimised. The specifications of this

instrument are as follows:

- 0.1 MHz to 30 MHz frequency range.
- Wide dynamic range.
- 4 stage input attenuator (0, 10, 20 & 30 dB steps).
- Resolution bandwidth of ~10 kHz.
- 45 MHz Intermediate frequency with crystal filter.
- Optically isolated RS232 interface to host PC.
- Adjustable frequency span and step size.
- Logging facility for acquiring spectra over time periods of seconds to days.
- Can be used as a selective level meter.

An example of the usefulness of such an instrument is shown in the following 3D plot of band occupancy vs. time, where time, frequency and

signal levels are shown on the three axes. The day-night cycle of ionospheric propagation can be clearly seen, as well as stations starting and ending transmission. Interestingly, interference can be seen to wander through the band. In this example, 5 scans were averaged each 5 minute interval over two complete days, and the results plotted. The frequency increment was 1 kHz, and the analyser was connected to an aerial wire approximately 5 m in length strung up to a tree.

Circuit description

A spectrum analyser is basically a receiver, except that the signals are displayed for analysis rather than listened to. Figure 2 shows a conventional superhet line-up of functional sections in the analogue module. As the intermediate frequency is 45 MHz and the frequencies of interest are between 0.1 MHz and 30 MHz, up conversion is used. For this to occur, the local oscillator tunes between 44.9 MHz and 15 MHz.

As can be seen from figure 2, the circuitry is divided into two sections. The analogue module contains the RF and detection circuitry, and the digital module contains the (noisy) digital and microcontroller circuitry. It is ESSENTIAL that the two modules are exceptionally well screened and decoupled from each other. If this is not done, the instrument will show many spurious responses from locally generated noise, significantly diminishing the usefulness of the instrument.

The RF input signal first passes through a step attenuator which has four settings: 0, 10, 20 and 30 db. This allows strong signals to be attenuated so that the front-end of the analyser is not

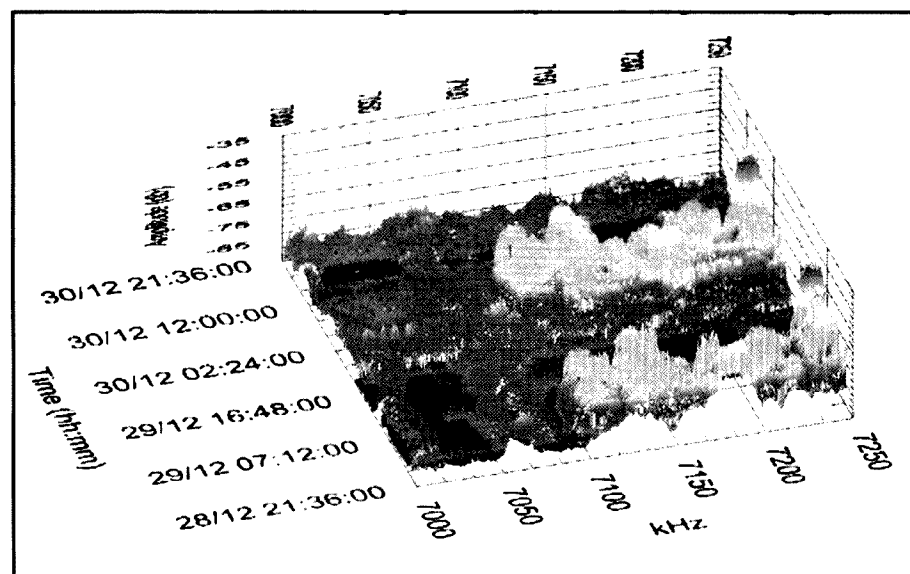


Figure1: 3D representation of spectrum occupancy for a section of the HF band.

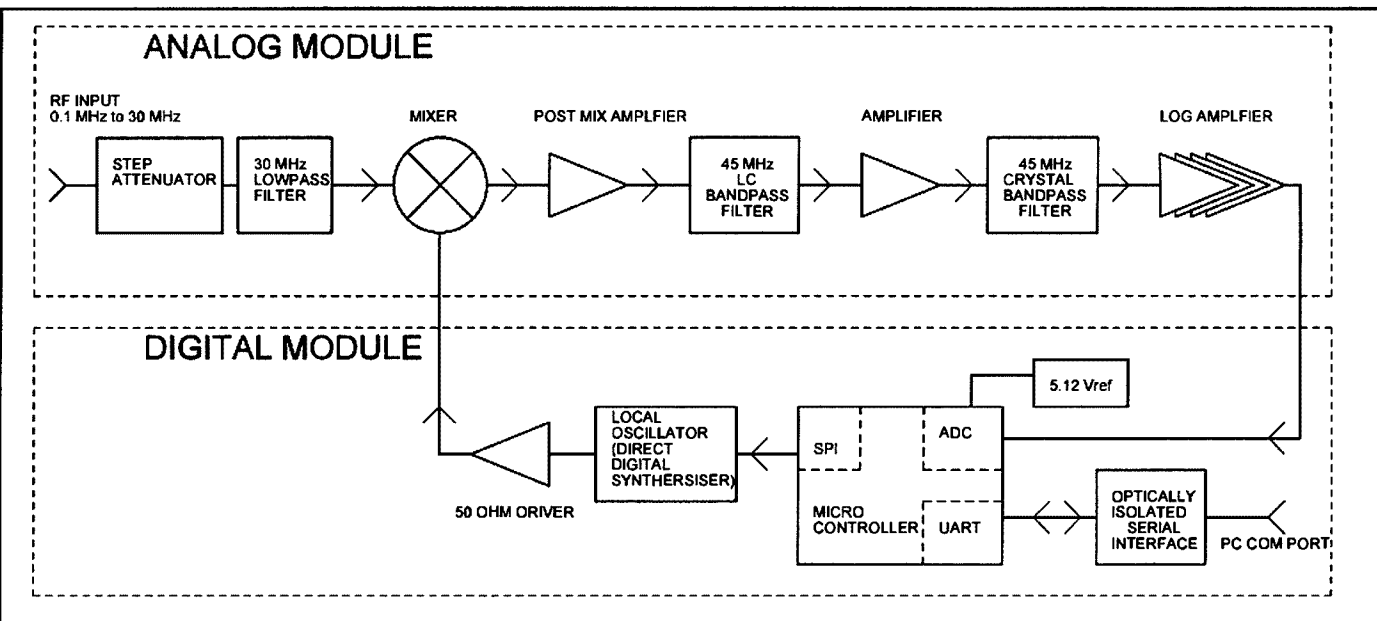


Figure 2: Block diagram of instrument.

overloaded. The attenuator is housed in a separate screened box that sits on top of the analogue module, and it is connected to the mixer via a double screened coaxial cable. The attenuator resistors are 1206 sized surface mount devices. To obtain the required attenuation a parallel combination of resistors is used, the values are shown on the schematic diagram. The attenuator sections are switched by small relays which are isolated by optocouplers, and the control lines are passed through feed-through capacitors to minimise noise pickup.

A seven-pole low-pass filter is used to eliminate frequencies above 30 MHz, so that the image response and strong VHF signals do not interfere with operation of the instrument. The low-pass filter design is taken from a table of designs in the ARRL Handbook². The inductors were wound on small toroid cores and silver-mica capacitors were used to minimise temperature drift of the filter characteristics. The filter has a 35.4 MHz cut-off frequency and its response is greater than 20 db down at 45 MHz. A scan with a wide-band noise source confirmed these figures.

Following the input filter, a SBL-1 double balanced mixer produces an output at the intermediate frequency which is then amplified by a post-mixer amplifier (U3). This function is provided by a MAR-4 amplifier which provides gain in addition to a well defined termination impedance for the SBL-1 mixer. Selection of the wanted 45 MHz

signal is achieved by a band-pass filter consisting of a pair of tuned circuits that are link coupled.

Following the mixer and band-pass filter is an AD603 variable gain amplifier (U5), a 45 MHz 4-pole crystal filter and an AD8307 logarithmic amplifier (U6). This part of the circuit is adapted from the application information provided for the AD8307 amplifier³. Potentiometer VR1 allows the gain of the AD603 to be trimmed if accurate calibration of the analyser is required.

The crystal filter requires a source and load impedance of 350 ohms in parallel with 6.5 pF, and an 18 pF coupling capacitor. Resistors and variable capacitors achieve this requirement. The filter is a Toyocom brand, type 45E2FF, 4-pole filter with a nominal bandwidth of ± 3.75 kHz at 3 dB and ± 12.5 kHz at 30 dB and it sets the resolution bandwidth of the analyser. Note that the filter comes as a pair of matched 2-pole units that are cascaded. Each unit is the size of a standard crystal except that each can has three connections.

The output from the log amplifier is a voltage which corresponds to the logarithm of the input voltage and the calibration factor is 10 mVdB^{-1} . This voltage is sent to the microcontroller for analogue to digital conversion.

In the digital module, the microcontroller (U10) controls the DDS chip, converts analogue voltages to binary numbers and talks to the host PC through an optically isolated serial

interface. So that the binary number which corresponds to the output voltage of the logarithmic amp is accurate, a temperature stable voltage reference is provided (U11). Potentiometer VR2 allows the reference voltage to be set to exactly 5.120 V DC and this is used as the reference voltage for the 10 bit analog-to-digital converter inside the microcontroller.

The Direct Digital Synthesiser (U8) generates the local oscillator signal for the mixer. A 30 MHz crystal oscillator (U7) provides the clock source for the DDS chip which multiplies it to 180 MHz. This gives the DDS chip an upper useful output limit of about 70 MHz. To ensure that the DDS output is pure, the signal passes through an elaborate elliptical low-pass filter⁴ and is then buffered by U9 so that the signal can drive the 50 ohm input of the balanced mixer.

To minimise the possibility of radio frequency interference from the attached PC, the serial connection between the digital module and the PC is galvanically isolated. This means that there is no physical metallic connection between the circuits; instead opto-couplers (U14 and U15) are used to transmit the serial signals. Power for the PC side of the interface is extracted from the handshaking signals: 'Data Terminal Ready' and 'Request To Send'. A 7660 voltage inverter (U12) generates the negative supply for the interface, and an operational amplifier (U16) acts as a comparator to 'square up' the serial

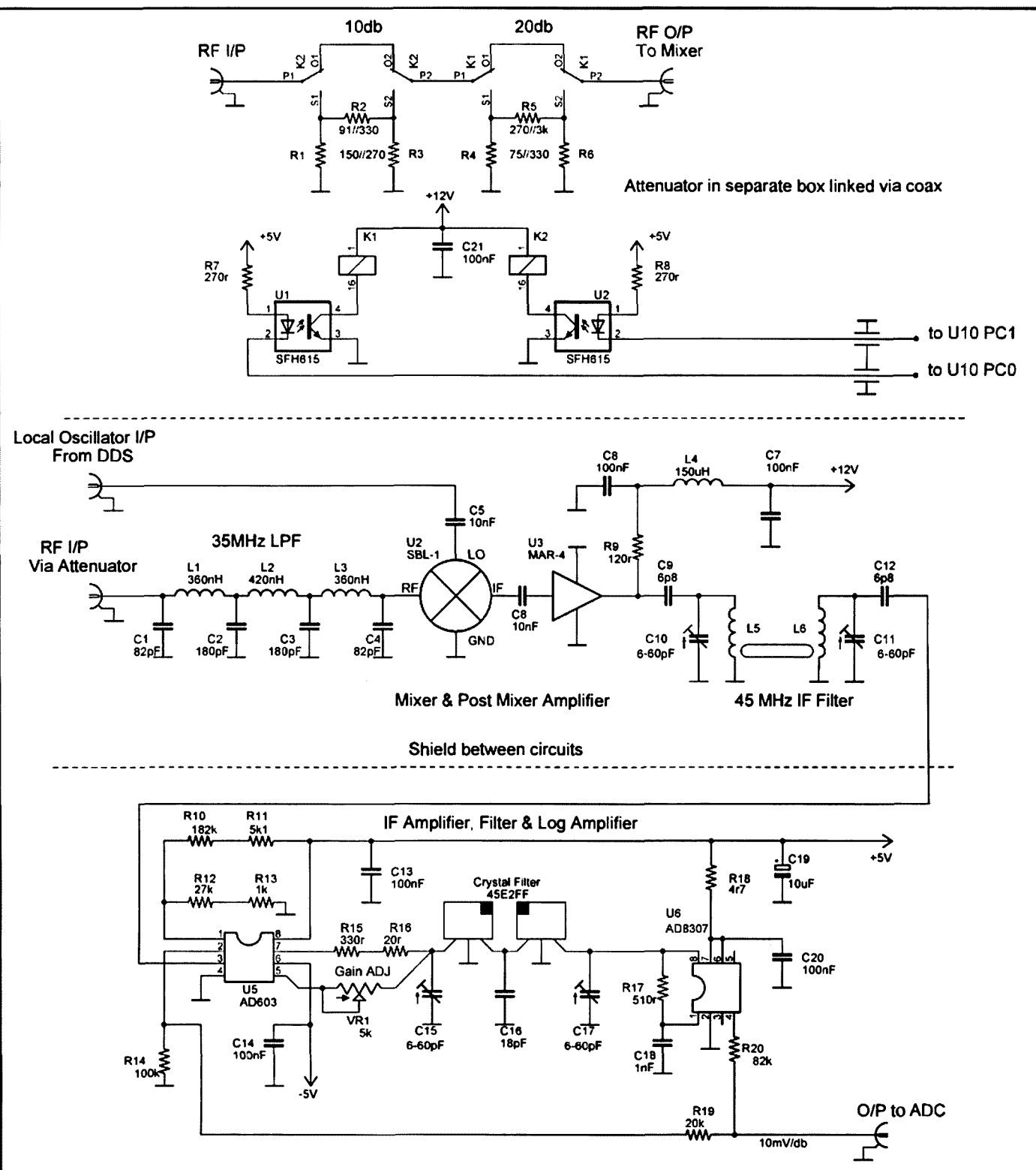


Figure 3: The analogue circuitry.

Construction

The instrument is housed in a metal case, inside of which are three smaller, RF tight boxes for the analogue and digital modules. All RF cables are double screened, and all other circuits are passed through feed-through capacitors. Most of the analogue circuitry is mounted on a

number of small, double sided, printed circuit boards, except the crystal filter which was built using 'dead bug' style construction. Internal partitions inside the analogue module separate the input stage from the IF and signal processing stages.

Digital circuitry inside the digital

signal for transmission to the host PC. For the isolation to be effective, the 'Signal Ground' from the PC must not be connected to the common of the spectrum analyser. Commands from, and data to the PC are transferred at 38.4 kbaud.

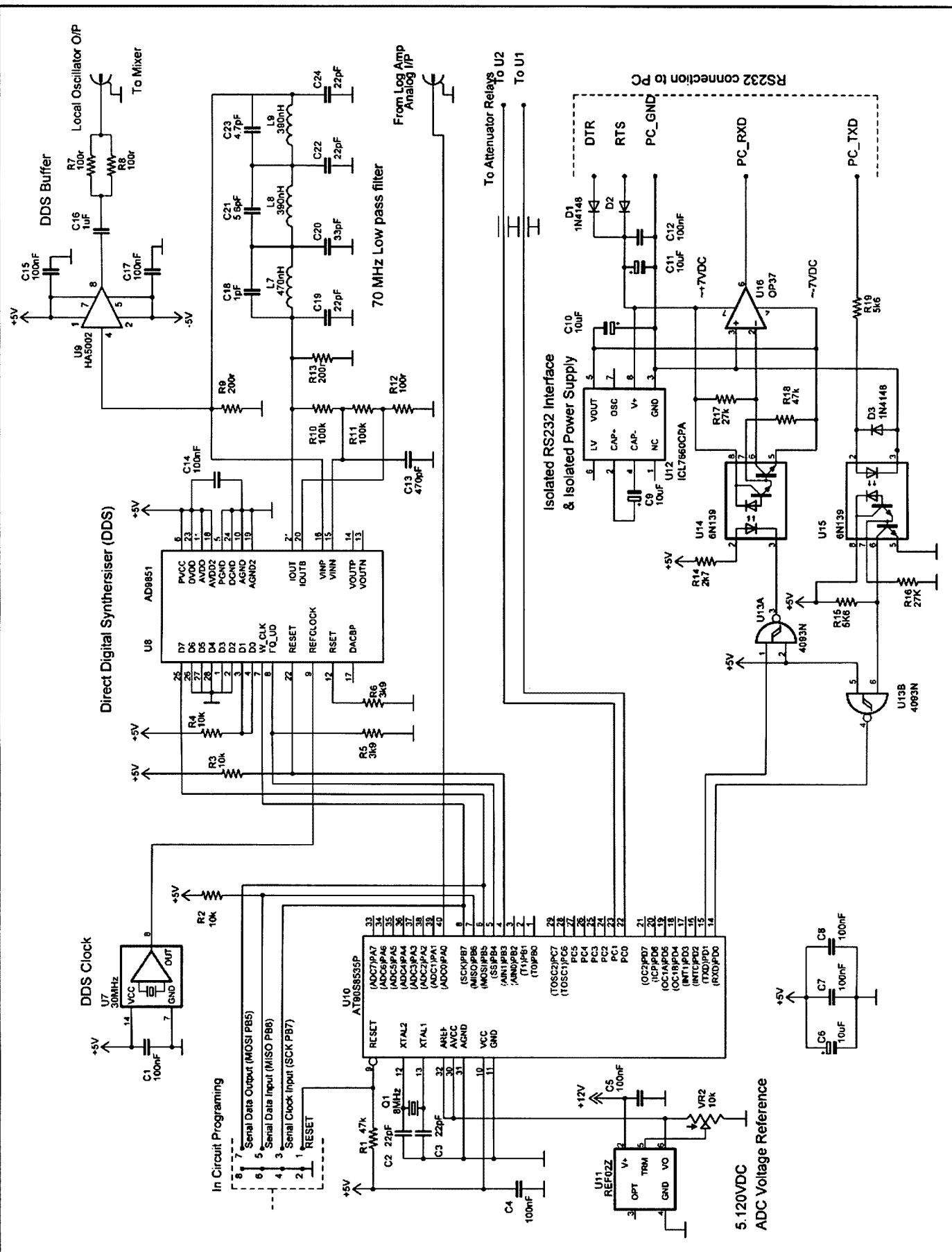


Figure 4: Circuitry in the digital module.

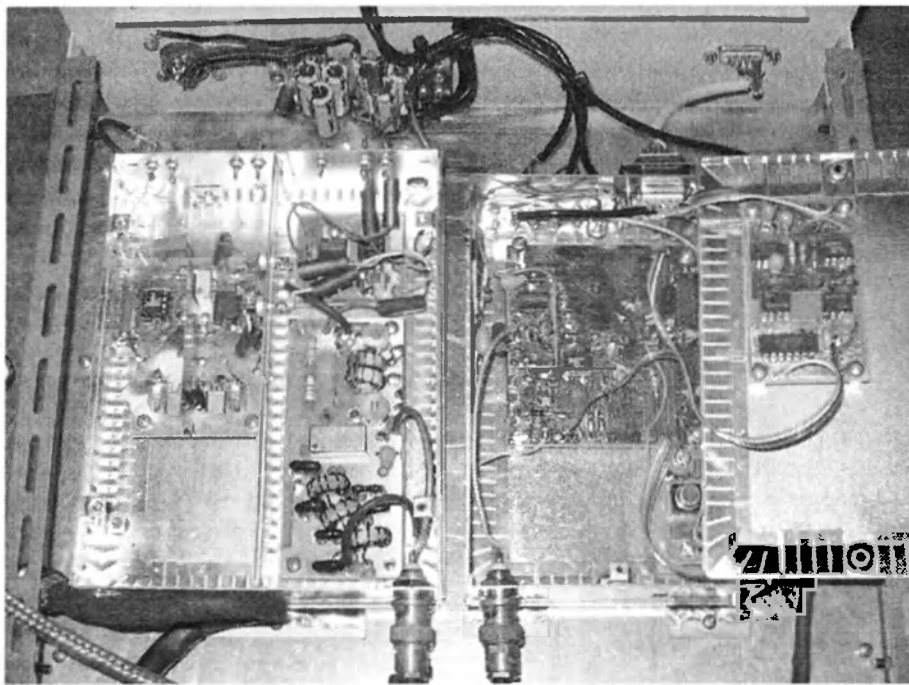


Figure 5: Internal view of the analogue & digital modules. From left to right: IF, crystal filter and log amp. RF low-pass filter, mixer and first IF amplifier. (± 5 V regulators above). DDS and Microcontroller board, with buffer at top middle. Isolated serial interface on lid of RHS box. The step attenuator sits on top of the analogue module in a separate small enclosure.

module is mounted on a number of printed circuit boards. Power and signal lines are filtered and decoupled to reduce the possibility of radiated interference. Provided adequate screening, filtering and decoupling is applied, there are no other special construction requirements.

A number of adjustments are required before the unit can be used:

1. Adjust VR2 on the microcontroller board so that the voltage on pin 32 of U10 is 5.120 V DC.
2. Connect the analyser to a stable and clean RF source at, say, 10.0 MHz and set the analyser to repeatedly scan across the frequency. Adjust C10 & C11 on the mixer board for maximum response.
3. Adjust C15 & C17 on the crystal filter to obtain the maximum response with the most symmetrical and narrowest display.
4. If required, adjust the IF gain control, VR1, to set the trace to the correct amplitude level.

Following these adjustments, connect a 50 ohm terminator to the input and scan the range 0.1 MHz to 30 MHz. No significant spurious responses should be evident. (See comments in the Performance section.)

Components

Some of the components are quite specialised e.g. the Analog Devices chips. These were purchased directly from Analog Devices via their web site (www.analog.com) and internet purchasing facility. Mini-kits (www.minikits.com.au) are a local supplier of the AD9851, AD8307 and MAR-4 devices. The crystal filters are manufactured by Toyocom and were purchased from Rockby Electronics (www.rockby.com.au), the stock number is 12232. The DDS circuitry uses all surface mount components and requires considerable care in assembly. The surface mount components and the HA-5002 (U9) were purchased from Farnell (www.farnell.com.au). The SBL-1 mixer was on-hand and could be replaced with a TUF-1 from Mini-kits. The Atmel microcontroller (U10) was also on-hand and is now difficult to source,

however it can be replaced with the pin-compatible ATmega8535 with minor changes to the system firmware. Amidon T50-6 toroid cores are available from RJ & US Imports (<http://users.catchnet.com.au/~rjandusimports/index.html>) along with other stockists.

Some of the inductors for the instrument are hand wound; the axial and SMD units need to be purchased, Table 1 provides the inductor information. The capacitors used in the 70 MHz filter on the output of the DDS are special microwave ceramic types; their details are given in Table 2.

An external power supply was used to provide ± 12 V DC and ± 5 V DC for the various parts of the instrument. A transformer/rectifier and three terminal regulators were used and current consumption is quite low. No schematic for the power supply is provided as the design of a suitable power supply is straight forward. None of the other components should be difficult to locate, and substitution of other suitable or available parts should cause no major problems.

Software

There are two software components for the instrument:

1. firmware that controls the microcontroller,
2. application software that runs on the host PC.

The firmware is written in assembler and simply accepts and interprets commands from the PC, controls the local hardware e.g. the DDS, attenuator, analogue to digital converter etc, and sends data back to the PC. This section will not be discussed further, and the source code is available to anyone who

Table 1: Inductor details:

Inductor	Value	Core/type	Turns	Supplier/Part Number
L1	360 nH	T50-6 (yellow)	9	n/a
L2	420 nH	T50-6 (yellow)	10	n/a
L3	360 nH	T50-6 (yellow)	9	n/a
L4	150 uH	Axial	-	Jaycar/LF-1536
L5	420 nH	T50-6 (yellow)	10/2*	n/a
L6	420 nH	T50-6 (yellow)	10/2*	n/a
L7	470 nH	0805 SMD	-	Farnell/400-0547
L8	390 nH	0805 SMD	-	Farnell/400-0535
L9	390 nH	0805 SMD	-	Farnell/400-0535

2 turns for the coupling winding.

Table 2: 70 MHz filter capacitor details:

Capacitor	Size/Value	Supplier/Part Number
C18	0805/1 pF	Farnell/756-8398
C23	0805/4.7 pF	Farnell/756-8479
C21	0805/5.6 pF	Farnell/756-8487
C19, C22, C24	0805/22 pF	Farnell/756-8568
C20	0805/33 pF	Farnell/756-8592

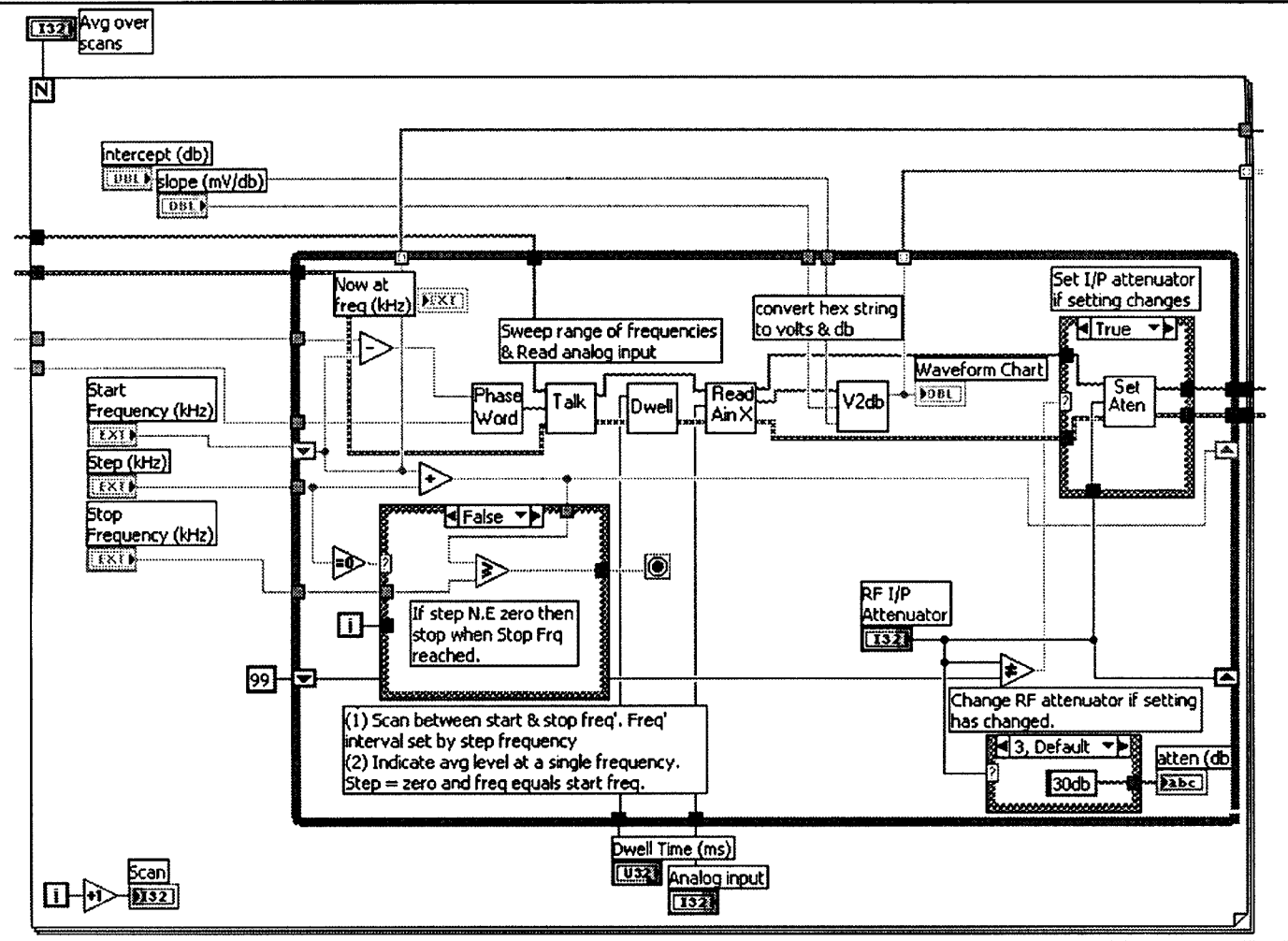


Figure 6: A section of the LabVIEW code used in the analyser.

is interested. On the other hand, the application software that runs on the PC does most of the hard work.

The application software is written in LabVIEW™, which is a graphical programming language ideally suited to this sort of control and data acquisition application. In many respects the software looks similar to a schematic diagram with various components connected by wires, figure 6 shows a section of the code. The source code is available to anyone who would like a copy; however this will require using the LabVIEW™ development software. Otherwise an executable version can be provided.

The section shown in figure 6 is a 'for' loop and it executes 'N' number of times (In this case the number of scans over which to average); it controls the scanning of the DDS frequency, reading back the logarithm of the input voltage and the step attenuator setting. Data, into and out of the 'for' loop is by means of 'tunnels' on the sides

of the loop. The various small icons with labels above them are front panel controls or indicators. The larger boxes 'Phase Word' etc are 'subVI's' which are equivalent to subroutines in conventional programming languages; they use the same graphical programming style. The LabVIEW language has all of the usual programming constructs, but presents them in a graphical way. It also allows sections of the code to operate in parallel and if strict sequencing is required, it has to be explicitly programmed.

The instrument front panel (Figure 7) allows the user to setup the spectrum analyser hardware and the PC application software. The front panel is a 'virtual instrument' and behaves like an actual instrument would, except that a PC is used instead. The advantage of this is that the PC can do all the 'hard' work including numerical analysis, graphical display and file manipulation. For this instrument the front panel appears as an X-Y display along with controls and indicators. A number of 'tabs' hide

controls or functions that do not need to be changed often.

One of the great advantages of this style of instrument is the ability to acquire, store, process and display data so that analysis and interpretation can be done at a later date.

Performance

Considering the relative simplicity of the circuitry, the analyser performs very well and it is a useful instrument. Such a device has many uses in the shack; from examining and aligning filters, tracking down interference or monitoring a particular band, to checking the output of transmitters. Checks of the instrument response have shown that the amplitude response is flat within a few dB over the whole frequency range. Also, there appears to be only two spurious signals; the first is at 22.5 MHz which is exactly half the IF frequency, the second is at 30 MHz which is the frequency of the DDS clock. Both of these spurs are very narrow and do not interfere with use of

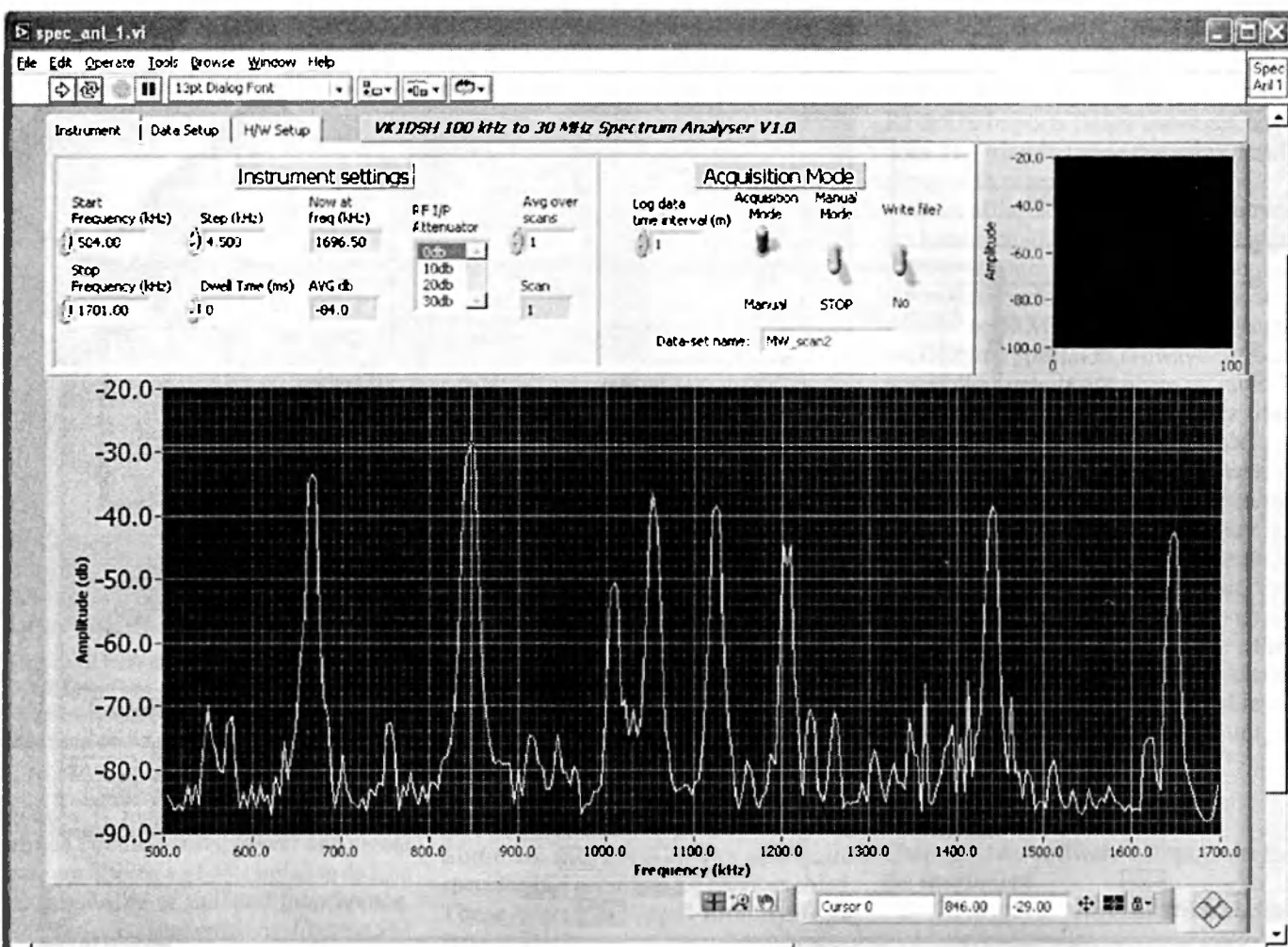


Figure 7: Front panel of the spectrum analyser showing a scan of the MW broadcast band. In this case, the frequency limits were 504 kHz and 1701 kHz, with a frequency step of 4.5 kHz. The user can change the frequency range, frequency step, scan time, RF attenuator and averaging settings. If required, the data can be written to a file for later analysis. The indicator at the top right shows the data as it comes in, while the main X-Y display shows the averaged result in greater detail. Some of the indicators and controls can be matched to the icons in Figure 6.

the instrument. Part of the reason that the spurs are few is that a single conversion approach has been taken. Multiple conversions to improve bandwidth and display resolution inevitably result in more spurious signals. Also, to reinforce the message; great effort must be put into screening, shielding and decoupling all the sections of the instrument if reasonable performance is to be achieved.

If required, the analyser can be set to a single frequency and continuously measure the amplitude of that frequency. This is useful for peaking single frequency amplifiers or oscillators. In this case, the 'start' and 'stop' frequencies should be set to the same value, and the 'AVG dB' indicator will show the signal amplitude.

The signal to noise ratio of the displayed spectrum can be increased

by averaging 'N' number of scans. The signal increases by 'N' times, while the noise increases by \sqrt{N} times, which is always smaller than 'N'; so averaging over 10 scans will improve the displayed signal to noise ratio by a factor of approximately three.

The main limitation of the instrument is the 30 MHz upper frequency limit; the specifications of the existing instrument were dictated by the availability of some of the critical components, notably the crystal filter. If suitable crystal filters were available for, say, 70 MHz, the upper limit of the instrument could be increased to 50 or 60 MHz. Faster Direct Digital Synthesizers and higher intermediate frequencies could extend the frequency range even further. Otherwise converters could be used to cover 30 MHz sections of higher frequency bands.

Conclusion

A basic spectrum analyser has been presented. It uses readily available components and offers reasonable performance and flexible operation for the radio experimenter. Source code and printed circuit board layouts are available for those who would like to experiment with this type of instrument.

References

- 1 W. Hayward & T. White, "A Spectrum Analyser for the Radio Amateur", *QST*, Aug & Sept 1998. ARRL "Experimental Methods in RF Design", 2003:7.26 – 7.35
- 2 ARRL Handbook 1993 P. 2 – 45. Filter #55.
- 3 Analog Devices, AD8307 Low cost DC-500 MHz, 92 db Logarithmic Amplifier, Rev B. 2003
- 4 Analog Devices, AD9851 CMOS 180 MHz DDS/DAC Synthesizer, Rev D. 2004

International Lighthouse Weekend

18-19 August, 2007

Glenn Alford VK3CAM.

No contest here, just a real winner for a great weekend, to go away and get involved in working some rare DX. This is one event I can recommend!

A year goes quickly. Last year, Carl VK3EMF, Joe VK3BKI and myself VK3CAM activated Cape Schanck Lighthouse for the second year in a row. Previous years have included McCrae Lighthouse, Maritime Museum Southbank, Currie Lighthouse and Cape Wickham, King Island.

Cape Schanck, 2005 and 2006. This location offers a good selection of accommodation on the grounds, within sight of the lighthouse. Plenty of space for antennas and long wires, with a few useful trees. The facility is also for the hobby. The nice part about this location is the easy access from Melbourne. You can also drive right up to your accommodation.

Running two stations is easily achievable, with plenty of space for antennas. Fortunately no cross interference between the stations either. We used the trusty Cushcraft R5 vertical, a good traveller, and numerous wire dipoles. The rigs were an IC-775 and TS-50S, and plenty of contacts were enjoyed.

During the quieter periods you could enjoy a lighthouse tour, museum tour or coastal walks. Swimming is not recommended, and extreme care should be taken when rock walking along the coast,



The Cape Schanck Lighthouse



TVI High Pass Filter with Braid Breaker.




An inline TVI filter with Braid Breaker.

A large amount of TVI can travel down the outer braid of Coax as well as the centre conductor. The braid breaker isolates the centre conductor and braid from the TV/VCR/DVD. The High Pass filter cuts in at 50MHz. This filter has -80dBm attenuation at 40, 80 and 160 Metres.

Pager Notch Filter:

A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

Contact us if you need a special filter, we manufacture here in  Australia rather than overseas.

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due to unpredictable waves.

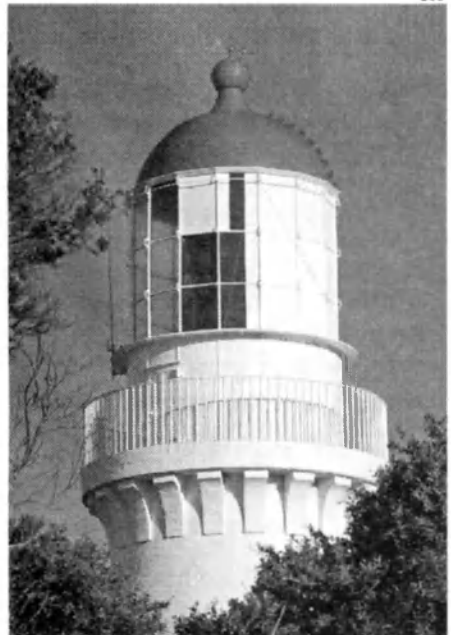
Some tips...Check and test all leads and equipment, before going. Be careful of tea tree and thorn bushes as they love long wire antennas. They seem to grab hold, and not let go. Take necessary tools, spares, tape, cable ties. Don't forget the camera.

This year, 2007, I have proposed to the team we return to King Island, to the Currie light. We will endeavour to make it a three or four day weekend on the island. Our call, VK3ILH/7, will be operating from the keepers' old workshop at the base of the lighthouse. We will be running at least two stations, and will be on the main HF bands, as conditions allow. There is a possibility we will also try two metres. Note that digital phones do not work on the island.

It's not a contest, and the rules are very simple, operate within sight of the lighthouse, and have fun. To register your lighthouse and check other lighthouse registrations go to <http://www.illw.net/>

You don't need to rough it – within Victoria there are about forty lighthouse locations. Most are controlled by Parks Victoria, and some are leased to private operators. A number offer accommodation in old keepers quarters on the site, which are ideal to operate from, have access to power, and are relatively comfortable.

So start planning and get involved. If you are interested in giving it a try, and you need assistance or suggestions, contact either Carl or myself.



The lantern room at Cape Schanck

Not fast food – an AR introduction to “microwaves”

Peter Freeman VK3KAI.

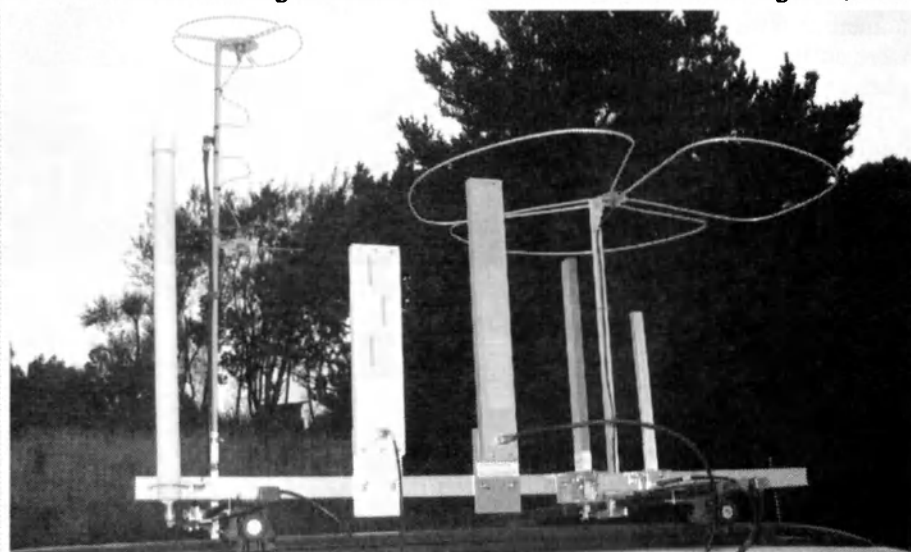
The “Microwave” is ubiquitous in the kitchen in Western society. The microwave oven provides fast food in the home, using RF energy from a magnetron at around 2,450 MHz at power levels of 600 W to beyond 1000 W. Fortunately for the cooks, the energy is radiated into a shielded enclosure and absorbed by the water molecules in the foodstuff inside. The result is that the food rapidly heats up as the water molecules become excited by the RF energy.

There are a relatively small number of licensed amateurs that are excited by microwave RF energy. Not those getting “heated up”, rather those who find microwaves intellectually stimulating. Why might this be so? What are the microwave bands and what do they offer? Are we the only users? This article intends to give an introduction to the amateur microwave bands. It will be followed by additional articles giving extra information, initially focussing on the bands that are now available for the first time to Standard Licence holders.

Many Standard Licence holders are keenly exploring their new privileges on HF, VHF and UHF (although many Advanced Licence holders are happy to continue their existing activities and

have not explored into the microwave spectrum – of course, that is their right). One of the attractions to amateur radio (for some) is the diversity of “the hobby”. We have many bands and modes of operation available. There are many aspects of the hobby that can give great satisfaction to the amateur interested in exploring those aspects that mentally stimulate.

So, why should we consider exploring the microwave bands? The reasons are many and varied, probably different for every amateur that takes the plunge to invest time and dollars in equipment to operate beyond the 70 cm band. Some of the reasons may lie in the band allocations for each band, as described in the LCD documents. Together, all of



A later configuration of the VK3KAI “Rover” machine for the Summer VHF/UHF Field Day Contest. This configuration is fully mobile, with omnidirectional horizontally polarised antennas for all bands 144 MHz to 10 GHz, plus a vertical whip on 6 m. The antennas are (L–R): 23 cm Alford slot, stacked pair of Big Wheels on 70 cm, slotted waveguide antennas for 2.4 GHz, 3.4 GHz, 5.7 GHz and 10 GHz, with the 2 m Big Wheel behind. 6 m vertical not visible. The vehicle certainly attracts attention when in transit between operating sites!

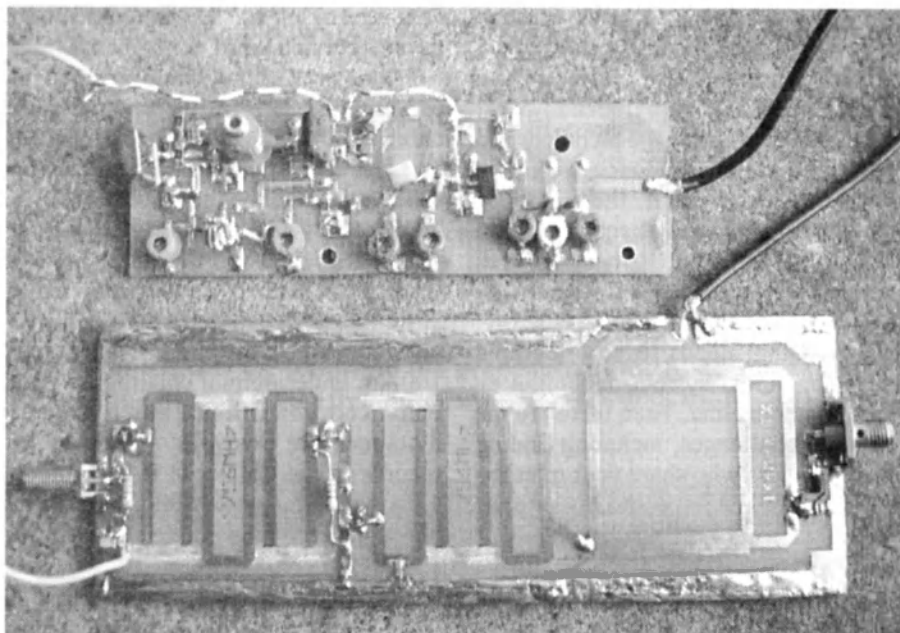
the HF bands (160 m through to 10 m) give the amateur access to approximately 3.3 MHz of spectrum. The VHF and UHF (6 m and 2 m plus 70 cm) bands gives us another 38 MHz, if we are fortunate enough to be located outside areas which have restrictions placed on parts of the 6 m and 70 cm bands.

Yes, propagation is different once we move beyond the HF spectrum. But what is new – we all know that propagation changes even across the HF spectrum with the time of day and with the sunspot cycle. The 6 m band is considered by many to be a transition band – it shows many characteristics of the VHF bands, but also occasionally exhibits HF-like characteristics. Many amateurs are aware that even 2 m and 70 cm occasionally exhibit enhanced propagation beyond the classic descriptions of “line of sight” communications. Some of these characteristics are observed using the relatively wideband mode of FM. Many other propagation modes can be experienced if one explores the “weak signal” transmission modes, traditionally CW and SSB, and the newer digital modes, including the WSJT modes. But I am wandering off track – these are issues for a different set of articles!

The next amateur band, going higher in frequency and currently available in VK, is the 23 cm band. This band alone gives us access to 60 MHz of spectrum. The possibilities are greatly increased – it now becomes possible to transmit FM television signals within the band. The bands above 70 cm through to the 1.25 cm (24 GHz) band give the amateur access to around 1362 MHz of spectrum! Of course, we need to recognise that much of this spectrum access is on a secondary basis.

One of the services that we share with on some of these bands is ISM – industrial, scientific and medical. This service usually operates at low radiated power outside of the specific installation. ISM also includes several modes of data communications, such as Bluetooth, the 802.xx data modes and newer modes being developed and refined. There are restrictions placed on these data modes for use by members of the public. The modes are designed for communication over relatively short ranges using low ERP (effective radiated power) signals.

Amateurs are not confined to these restrictions if they are only



A homebrew prototype N1BWT transmit converter for 23 cm built by Ralph VK3WRE.

Whilst some commercial equipment is available for 23 cm, the microwave bands present plenty of opportunities for home design and/or construction.

communicating between themselves – we can use higher antenna gains and transmit powers. So there is great scope for exploration of amateur-only data networking if we adapt existing and/or new techniques with our allowed higher power levels and greater antenna gain. Of course, we cannot directly connect to the public switched network using these higher effective radiated power

level systems as other regulations come into play.

Basically, the microwave spectrum gives us huge potential for exploration of newer techniques and for exploring what is really possible under different enhanced modes of propagation. The space is also there to explore new modes if one has the inclination.

Whilst the available spectrum space



The VK3KAI station used in the 2005 Summer VHF/UHF Field Day Contest. The station antennas can clearly be seen. From L to R: Ex-PayTV dish for 10 GHz, a vertical whip for 6 m and HF liaison, a Big Wheel for 144 MHz (front), a pair of Big Wheels on 70 cm (behind, with only the bottom of the pair visible) and an Alford slot antenna on 23 cm mounted in a plastic radome.

may suit some, many microwave-active amateurs are simply using the typical narrowband modes that we see in use on the HF, VHF and UHF bands. Most find the attractions are the technical and operating challenges. Once we move above the 23 cm band, there is little commercially produced equipment on offer. Therefore, the first challenge is to source, design, construct and commission the equipment to be used. Once working, the equipment needs to be integrated into a functional system, including an appropriate antenna. Then there are the operating challenges, including finding other amateurs who share your interests and then establishing contacts using the equipment.

How does one source equipment for the microwave bands? The cheapest method is to construct the gear yourself from kits or to purchase assembled equipment. On some bands, commercially manufactured equipment is available, even if not commonly stocked in VK. Some hints will be given as we consider each band in turn. Many afflicted with the microwave bug gain great satisfaction in the construction and assembly of their

transverter/s, even if they are based on an easily obtained kit of components.

There are other considerations in assembling a system for a microwave band, including feedlines and antennae. The characteristics on each band will be different, as will be the results.

What is feasible using SSB? At 1296 MHz, a 10 W PEP output system with low loss feedline to a reasonable antenna can easily achieve reliable communication on paths greater than 100 km under normal conditions. With enhanced conditions, much greater distances are possible – look at the records in the Callbook. It is common for signal strengths on the microwave bands to be much stronger than on the 2 m band, commonly used for liaison between stations.

Different propagation modes become available on the microwave bands. Many amateurs, especially in Europe and North America where numbers are greater, are using rain and snow storm cells as scattering media to complete contacts well in excess of “line of sight” paths, out to several hundred kilometres. Modest transmit power levels, and the high antenna gains possible due to the use of parabolic reflectors, give high effective radiated power and enable the use of tropospheric scatter to establish contacts.

Part of the challenge includes the sourcing of test equipment (or at least access to the test gear) to aid in alignment and commissioning of the equipment. Of course, we should be building some basic test functionality into our equipment so that we can monitor transmit power.

Once bitten by the microwave bug, it is common to see the microwave afflicted striving to build gear for that next band, to improve system performance of the gear already working, and to make contacts over greater distances. Where does one start? The easiest way is on the 23 cm band where some commercially built equipment is available and kits for construction are readily available. There are also a reasonable number of operators active on this band, so contacts are relatively easy to make. Many will then jump to 10 GHz (3 cm band), probably the next most-populated band. The pattern will then be to acquire gear on the bands in between these two bands. Once active on all bands to 10 GHz, operators then begin the march upwards, often band by band.

One important consideration when moving into new territory is finding information. There has been a variety of very good books published for the amateur in the past. You will find some information in the standard handbooks, such as the ARRL and RSGB publications. There is a great deal of information available on the Internet. When you are looking at the offerings at the local ham fest events, keep your eyes open for the following books: Microwave Handbook (RSGB), VHF/UHF Handbook (RSGB), ARRL UHF/Microwave Experimenter’s Manual, ARRL UHF/Microwave Projects Manual, the UHF Compendium and other books – check the offerings at the WIA or ARRL bookshops. All of these have excellent foundation material, even if some of the design and device information has become dated.

There are several Proceedings volumes available from the ARRL, such as the Central States VHF Conference, Microwave Update and other US “VHF” conferences. On the magazine front, seek out DUBUS and VHF Communications, both published quarterly. Another excellent source of information is the UK Microwave Group. Their website (www.microwavers.org) has back issues of their newsletter “Scatterpoint” available for download, as well as lots of other useful information. A subscription to Scatterpoint is inexpensive if you opt for electronic delivery.

Locally, consider attending the GippsTech Conference, held in July each year at Churchill, Victoria. This conference covers a great deal of material concerning weak signal work at VHF, UHF and microwaves. A Proceedings volume is published each year (containing the papers presented at the previous conference). Further details can be found at <http://www.vk3bez.org/>

Our initial considerations of the microwave bands will focus on the traditional narrow-band modes. I will also attempt to cover some basic test equipment considerations early in the series. If time permits, we may later begin to explore other possible techniques.

My next article will consider some aspects of what many consider as the “first” microwave band: the 23 cm band.

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Icom IC-756 Pro III HF – 6 m all-mode transceiver

Bill Roper VK3BR and Ron Fisher VK3OM

The IC-756 Pro III transceiver is the fourth in the 756 series, following the precedent of the IC-706 transceiver in which Icom continues to develop a successful design rather than start from scratch with each new rig.

The first in the IC-756 series was originally introduced just on 10 years ago. One of its distinguishing features was the large LCD display. Since then the radio has been significantly upgraded, first of all as the IC-756 Pro about seven years ago, the IC-756 Pro II about five years ago, and now the IC-756 Pro III about three years ago.

The Pro version of the IC-756 saw a major change in the design of the unit with the introduction of 32-bit floating point DSP filtering which has carried through to the later models, the introduction of the TFT colour LCD screen, and the addition of a high stability PLL reference oscillator providing a high frequency stability of ± 0.5 ppm. The IC-756 Pro II saw the introduction of selectable sharp and soft filter shapes.

What does the IC-756 Pro III have and do?

Looking at the IC-756 Pro III in comparison to the IC-756 Pro II, it is hard to notice any discernible difference. However, inside the rig there have been a number of improvements which are noticeable in weak signal reception. Icom say that they have included a number of developments from their high end transceiver, the IC-7800, into the Pro III. These include a new receiver front end which gives a +30 dBm third order intercept point producing a distortion-free high dynamic range. Also included are large inductors in the front end BPF (band pass filtering) stage to enable the receiver to handle both weak and strong signals with lower distortion. To add to this, the BPF switching circuitry has been improved with the use of low distortion diodes to reduce the effect of strong out-of-band signals.



Photo 1: The IC-756 Pro III in operation on 14 MHz.

The Pro III uses a fundamental-mode monolithic crystal filter at 64 MHz as the roofing filter. It has a better shape factor and is less susceptible to intermodulation distortion under strong-signal conditions, and is the same 15 kHz filter used in the IC-7800.

Also, the Pro III preamplifiers use the same basic circuit design as the IC-7800 preamplifiers to minimise distortion and maximise dynamic range.

This combination of design improvements brings the Pro III into a new level of receiver performance for a mid-range transceiver.

As the Icom IC-756 Pro III is a current,

very sophisticated mid-range amateur radio transceiver, it is not possible to fully cover all of its features and capabilities without taking up most of the space available in this magazine. Therefore, this review will cover only those features which the two reviewers found most interesting and which we believe will be of most interest to potential purchasers of this radio.

The Pro III is a high performance all-mode HF and 6 m transceiver. The most noticeable feature of the Pro III when you first look at it is the brightly coloured 12.7 cm (5 in) square LCD display. This screen displays the frequency of the

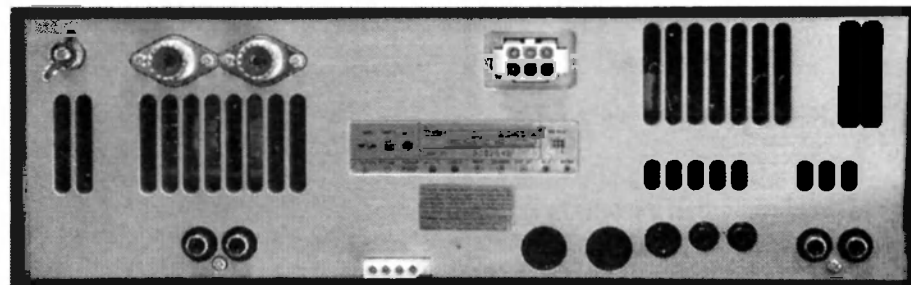


Photo 2: The relatively simple rear panel of the IC-756 Pro III. Note that none of the sockets are labelled.

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OzGear is now 'internet only'

This is not the news we wanted to bring to you... but... due to poor customer support resulting in low sales figures, we have been forced to move from being in a physical shopfront to become a part-time internet-shop-only-based operation.

To a large degree this "change" has occurred by virtue of more and more people purchasing internationally via the internet, coupled with the market forces generated by the "grey-market-ers" and eBay and the people who buy from them. With people continually purchasing from such 'non-authorized sources', the death knell has sounded for the Australian "physical" radio and electronics shopfronts, OzGear's included.

The outcome :

- We cannot be contacted by phone – the 07 31142506 number is an "email us" advice message only.
- We have left the Acacia Ridge shop address and become home-based.
- No more personal pickups. Everything is either couriered or mailed.
- Email is the only way to reach us – and it will be answered as time permits.
- "Advice request / Help Desk" facilities are no longer available.

Products :

- We have minimised product lines and stock levels.
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main and second receivers, the mode of operation, the spectrum scope, a graphical display of the IF filters selection, and much more including the multiple menu selections for set-up and operation. Seven different fonts are selectable for the text on the screen. The reviewers preferred *Italic 1*.

The Pro III is 340 mm wide by 111 mm high by 285 mm deep, and mass of 9.6 kg. A built-in AC power supply is not included. The external PSU needs to supply 13.8 V at 23 A.

The receiver covers from 30 kHz to 60 MHz continuously and the transmitter is enabled for all Australian amateur bands from 160 m to 6 m. A useful feature is the warning beep when you tune past a band edge. All modes are covered including full RTTY receive ability, although you can only transmit up to a 62 character RTTY message from the eight inbuilt memories. For full RTTY performance you require an outboard Terminal Unit,



Photo 3: The large LCD screen displaying the mini spectrum scope and the filters. Note the graphical representations of the 'soft' and 'sharp' filter shapes.

TNC or PC with dedicated software, as is the case with most current transceivers.

The 32-bit floating point DSP and 24-bit AD/DA converters provide many useful DSP features. AGC pumping is completely eliminated, and there is full control over AGC attack and decay times with programmable slow, medium and fast presets.

The DSP-based twin passband tuning is very effective in reducing signal and noise interference to the received signal. With the DSP enabled IF filtering, a variable choice of selectivity options is available from 3 kHz on SSB out to 9 kHz on AM. This extends into the filter shape which can be set to 'sharp' (a flatter top to the filter shape which actually produces a wider frequency response) or 'soft' (which produces more of an analogue filter bandpass). The reviewers found the 'sharp' setting to be preferable on SSB, whereas the 'soft' came into its own on CW.

A strong feature of the Pro III is the DSP noise reduction facility. The level and intensity of this can be adjusted by turning a rotary knob. It is fast acting and very effective at removing all sorts of noise and static, and enhances



Photo 4: The matching SM-20 microphone.

the signal readability without muffling or distorting the recovered audio sound too much. However, it does slightly attenuate the receive audio output when in use. One of the reviewers lives in a noisy suburban environment and uses several DSP noise reduction devices with his transceivers. To his thinking, the Pro III DSP noise reduction facility was outstanding.

In addition, the Pro III has a standard, adjustable noise blanker which is quite effective on pulse noise such as that produced by car ignition systems.

To enable rejection of interfering heterodynes on receive; the Pro III has not one, but two notch filters. The manual notch provides an incredible 70 dB of attenuation of a single frequency heterodyne without reducing the performance of the AGC. It is not, however, unusual to hear clicking sounds in the speaker when tuning the manual notch to frequency as the DSP characteristic changes. The automatic notch filter will track two or more interfering signals simultaneously without signal loss or distortion.

The transmitter power is variable from about 2 W to 100 W on all bands on all modes except AM where the maximum power according to the manual is 40 W.

An analogue meter serves as an S meter on receive and on transmit is selectable to show power output, SWR, compression and ALC level. The large LCD screen can also be programmed to show an excellent bar-graph version of the meter.

Band changing is quick and easy with dedicated buttons for each amateur band and one for general coverage. Triple band stacking registers are extremely convenient for band hopping.

There are 101 memory channels, but what is particularly useful is the five channel (or set menu changeable to 10 channels) memo pads which enable the quick writing and recalling of frequency, operating mode and various other items such as bandwidth, AGC, etc. This memo pad facility is in addition to the 99 memory, plus two scan limit memories, channels.

The Pro III receiver has a dual watch function which enables reception of two

signals in the same band simultaneously. This enables the operator to keep an ear on two frequencies at once. The recovered audio between the main and secondary receive frequencies is adjustable with a balance control. In some ways this is not as good as having two independent receivers but, nevertheless, is a very useful facility.

A handy feature is a digital voice recorder which provides 90 seconds of recording from four memories for transmit messages. On receive, a button push enables the last 15 seconds of received audio to be stored in each of an additional four memories for playback.

An IF DSP speech processor is provided with three band-width settings, treble and bass response adjust, VOX and a transmit monitor.

For the CW enthusiast, a straight key or external keyer can be connected to a ¼ inch jack on the back panel, or a keying paddle can be connected to a ¼ inch jack on the front panel to use the inbuilt keyer. Full and semi break-in is available with a front panel adjustment for delay.

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tuning) controls, you can narrow the receive filters for CW down to 50 Hz with an excellent shape factor and steep skirts, and no suggestion of ringing. This is where DSP filtering scores in comparison with standard IF filters.

Rear panel facilities include the usual Icom interfaces for connection to data terminals and automatic control of matching Icom linear amplifiers and ATUs, two SO239 antenna connections (one of which can be setup to be a receive antenna only) and a separate RCA receive antenna socket which are selectable from the front panel (and are stored in band memories), and connections for a transverter.

The inbuilt automatic ATU (antenna tuning unit) matches the transceiver to the connected antenna covering from 0.1 to 60 MHz in 10 bands. Once the ATU matches an antenna, the ATU settings are memorised as a preset point for each frequency range in 100 kHz steps so that when you change the frequency range, the ATU settings are automatically changed. You can deactivate the ATU if the SWR is 1.5:1 or less, and it will automatically reactivate when the SWR exceeds 1.5:1. We found the automatic ATU to be quite fast in operation.

Two 24 hour clocks are displayed in digital format in the top right hand corner of the LCD display. These can be set to any two time zones. We found their time keeping to be quite accurate.

The IC-756 Pro III on the air

When switching on the IC-756 Pro III, an annoying feature is the 10 second delay before operation commences while the screen advises you that calibration of the DSP unit is taking place.

Another intriguing feature is that the LCD screen can take up to 10 minutes before it reaches full brilliance, although it is quite readable from start-up. This delay is mentioned in the handbook and intrigues the reviewers whose LCD TFT computer screens appear to be at full brilliance immediately they are switched on.

A first impression when receiving a signal on the Pro III is the clean recovered audio response. The audio from the speaker built in to the top of the transceiver's case is surprisingly good, but is truly outstanding when using a

good quality external speaker.

One reviewer was particularly impressed with the audio recovered from AM broadcast signals. This was helped by the IF bandwidth on AM being able to be selected to 3, 6 or 9 kHz.

Tuning steps are very convenient and, like most other features of this radio, can be personalised via the extensive menu system. For normal SSB use you would most likely select the 10 Hz step tuning speed. For such instances as digital signal reception, the 1 Hz steps are very useful. For fast movement, the 100 Hz tuning rate comes into its own. In AM, the tuning steps can also be set at 1 kHz steps. In all other steps except the 1 Hz rate, where the dial readout is to 1 Hz, the dial readout is to 10 Hz only.

One new feature compared to the IC-756 Pro and Pro II is enhanced ability to tailor your transmit audio. With the PRO III you can dial in customised upper and lower transmit bandwidth roll-off frequencies for the wide, mid and narrow ranges.

While the PRO III's bandwidth choices are not unlimited, they do allow for low-end selections for each range of 100, 300 or 500 Hz; and on the high end, they're 2500, 2700 or 2900 Hz. This means the absolute maximum SSB transmit bandwidth is 2.8 kHz, somewhat less than the PRO II. The narrowest transmit bandwidth remains at 2.0 kHz.

The reviewers found unquestionably the best SSB transmit audio quality was produced with the widest available bandwidth. We also found that the most pleasant transmit audio was obtained with the equaliser setting at +5 at the high frequency end and -3 at the low frequency end.

One of the reviewers checked the AM capability of the rig by joining the 80 m AM net one evening. The best AM transmit audio quality was found to be when the power output was set at 25 watts rather than the 40 watts as specified in the Pro III manual.

One PRO III improvement that CW operators will appreciate is the newer model's keying. The PRO II shortens the dits when operating in full break-in mode but this shortcoming is totally eliminated in the PRO III. Surprisingly, this improvement is not mentioned anywhere in the Icom advertising for the Pro III. Both radios sound just fine in

semi-break-in (VOX) mode, however.

We plugged a key into the front panel connection to the inbuilt keyer and found the keyer to work very well with a good range of speed adjustment and break-in delay adjustable from the front panel.

Data communication

When the IF filter passband is reduced to 500 Hz or less in SSB data mode, special bandpass filters are automatically selected. This sharpens the filtering for better rejection of interfering signals. At the same time it turns on the ¼ tuning step facility which enables more accurate tuning for PSK31, SSTV or AFSK modes. Your own computer and software is required to use these modes.

The operating 'feel' of the Pro III

The reviewers were pleasantly surprised at the relatively small number of front panel controls for such a complex transceiver. Set up on the desk in front of the operator, use of the Pro III was initially quite intuitive and straight forward. Most facilities were able to be used effectively without recourse to the operating manual.

Later, when we became more used to the rig, we explored the many possibilities available through use of the extensive menu system. Virtually everything is adjustable and most of the menu selection buttons provide different outcomes when held for one second or more rather than simply being momentarily pressed. This is where the fun in using the Pro III really comes into its own.

A very useful feature of the Pro III is the spectrum scope which displays the band activity over a bandwidth of ±12.5, ±25, ±50 or ±100 kHz centred on the receiver frequency. There are two versions of the spectrum display, normal or mini. When the mini spectrum scope is displayed there is room on the main LCD screen for other menu items such as the filter display (see photo 3).

Having used the spectrum scope feature on the Pro III, it was difficult to go back to a transceiver which did not have this facility.

The main tuning control is heavily weighted in keeping with Icom tradition and is smooth in operation. Spinning the knob rapidly increases the tuning rate.

SM-20 microphone

On loan with the rig was the SM-20 desk top, base station microphone. It is a unidirectional electret microphone with up/down frequency switches built into the base and a switchable low cut audio response facility under the base.

There is also a variable gain control located under the microphone base. The SM-20 seems ideally matched to the IC-756 Pro III in both physical appearance and in audio characteristics.

Operating manual

The 117 page manual is comprehensive in its coverage of how to use the many features of the Pro III. What a pity the detailed description and coloured photographs of the transceiver as presented in the advertising brochure were not also included in the manual. Also, it would enable the user to much more quickly find what he is looking for in the manual if it included a detailed index in addition to the Table of Contents.

Conclusions

The Icom IC-756 Pro III sets a standard of operating features which is not equalled in any of the contemporary

transceivers in the same price range. We found it to be a very user-friendly piece of equipment to operate with many excellent features. It will be interesting to see whether there is a Pro IV version in due course and whether it will cover 2 m and perhaps 432 MHz.

Both reviewers were extremely reluctant to part with the rig. Quite apart from the usual excellent facilities one expects from a transceiver of this quality, the features that stand out in the minds of the reviewers include the outstanding transmit and receive audio quality, the effectiveness of the DSP noise reduction, and the usefulness of the spectrum scope.

The reviewers did not try the transceiver on 6 m due to the lack of a suitable antenna, but expect it would perform equally well on this band.

Our thanks to Peter Willmott VK3TQ of Icom Australia for arranging the loan of the review rig.

The list price of the IC-756 Pro III is \$4,449, and that of the SM-20 is \$325.60. However, by shopping around, you should be able to do a little better.

Photos by Bill Roper VK3BR
ar

WIA News continued

and Director Phil Wait VK2DKN on Saturday 30 June 2007.

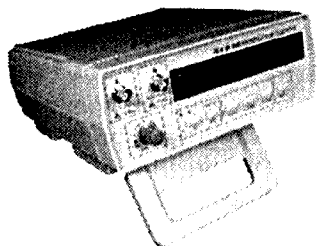
The Club had invited the President to visit the Club some time ago, and the WIA was very anxious to increase its ties with the club, as Westlakes provides the WIA's Outward QSL service, as well as the New South Wales Inwards Bureau, all thanks to QSL Bureau Manager Alec Efimov VK2ZM and his team. The visit gave the President an opportunity to learn more about the Bureau and to seek Alec's suggestions.

At the formal meeting on Saturday afternoon Michael talked about the many current activities of the WIA, particularly as manager of the amateur examination system and as the representative of Australian amateurs at the upcoming ITU conference, and Phil described the current developments in the fight against BPL interference.

Westlakes President Russell Ashdowne VK2KEG thanked Phil and Michael, saying that he hoped that the links between the WIA and Westlakes would be further strengthened.

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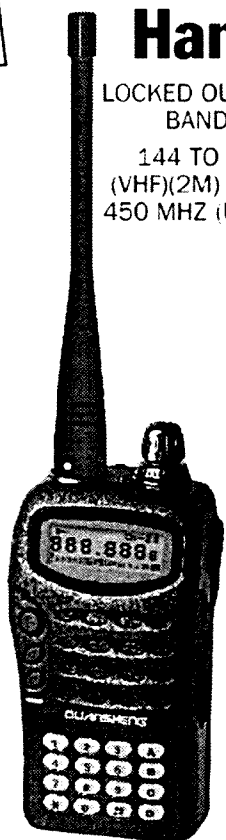
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GippsTech the 10th

Roger Harrison VK2ZRH

Australia's 'stand out' amateur radio event reached a significant milestone this year and deserves to set more in the future.

The GippsTech Conference is the 'premier' amateur radio technical event in Australia. Held annually each July at the Monash University campus in Churchill, located in the heart of Victoria's Gippsland region, the two-day event is organized by the Eastern Zone Amateur Radio Club. The 10th was held over the weekend of 7-8 July, attracting some 100 registrations to hear a dozen speakers deliver 15 presentations. Participants this year came from VK1, 2, 3, 4, 5 and 7.

Although I'd long heard about GippsTech and the wondrous things said and done over the years, even to the extent of my chasing up copies of presentations from past events, this was the first I had ventured to attend. I was encouraged to do so during a casual conversation I had with Conference Chair Peter Freeman VK3KAI at the Wyong Field day back in February. A persuasive fellow. He subsequently talked me into giving not one, but two, talks.

The event actually starts with an informal get-together and dinner on the Friday night. This year's was well attended by participants and partners. It was a convivial evening, with some long-past acquaintanceships renewed and new ones made. The electric anticipation of a stimulating two days of presentations, discussions, challenges, arguments and debates crackled in the bistro of the Morwell Hotel Motel. I was not disappointed.

This year's subject matter ranged across UHF and microwave hardware techniques, software tools and techniques both for equipment design and on-air operation, VHF-UHF propagation, portable power supplies, moonbounce and new challenges for VHF-UHF operators.

It was refreshing to see a younger generation deliver talks on practical topics and their own experiences, such as those by Richard Gipps VK3ZCL on bandpass filter design (with giveaway software), Andy Sayers VK2AES on a 23 cm cavity-backed dipole feed (with



Robbie VK3EK and Ruth Cook lead the participants of the Alternate activity (aka Partners' Tour) off to the coach. Photo by Chris Morley VK3CJK.

home-brewed example shown) and the exposition by Charlie Kahwagi VK3NX on microwave EME trials and successes. Home brew lives!

Two out-of-left-field talks sparked some lively interest: Bob Tait's (VK3XP) on auto alternators as portable field power supplies (with good industry 'insider' info) and David Smith's (VK3HZ) effort on Google Earth tools – giving user-customisable aerial views of the Earth with overlays providing locations of beacons, stations and field day locations (for example), with other overlays possible, showing aircraft positions, propagation paths, etc. Neat!

The parade of hardware presentations was truly inspirational, demonstrating what can be achieved with home workshop tools. Dale Hughes VK1DSH set the standard with a home brew network analyzer to 2.5 GHz, showing what is possible with bits from surprising sources. Peter Freeman VK3KAI bravely bared his soul on his prototype 2.3/2.4 GHz transverters – works in progress. Neil Sandford VK2EI gave three short

talks covering the practicalities of his simple microwave PLL (revisited from an earlier GippsTech), a 24 GHz waveguide power monitor, and waveguide quarterwave transformers, all produced with modest home workshop tools.

On the subject of propagation, Brian Tideman VK3BCZ followed up on talks he had given at previous GippsTech events with his intriguing observations and views on 144 MHz propagation, Es, Sun and Earth, in the true amateur tradition of technical investigation and self-training. Your scribe delivered a lecture on sporadic E (Es), how it happens, its vagaries and habits, and how we might beat the 'classical' MUF. I issued a challenge: who will make the first 432 MHz Es contact? Judging from a few crestfallen faces, I shattered some fondly held beliefs, and from the 'light bulb moments' that appeared on others, the pennies dropped on long-remembered puzzles about Es propagation.

With some late arm-twisting by Peter VK3KAI in the weeks leading up

to GippsTech, I gave another talk on the haunts and habits of transequatorial VHF-UHF propagation, posing the next challenges for VK offered by this exciting mode. The amateur radio community still has much to contribute to propagation observation and research.

Two out-of-right-field presentations provided some awe-inspiring highlights. Chris Skeer's (VK5MC) travelogue and report on the European EME 2006 Conference showcased some of the well-known European EME operators and their stations. Wow! Andy Sayers (VK2AES) treated us to a video of the microwave radar technologies his employer, CAE Systems, is manufacturing. Clever stuff is still produced by Australian industry.

Saturday's Open Forum saw WIA President, Michael Owen (VK3KI), outline the Institute's recent achievements and the challenges it faces about its role and functions in the immediate and longer future. He stimulated some frank and fearless debate; a wide variety of views were aired and opinions exchanged. Valuable feedback for all.

The Sunday closing forum threw up the subject of beacons, their operations, locations, frequency allocations and role in today's VHF-UHF activities. A lively, animated debate led to a sort-of consensus that the 'beacon policy' prevailing for the past 30 years needs revisiting and revitalizing.



Alan Devlin VK3XPD was kept busy with discussions and selling his useful items during every break in the main lecture program. Photo by Waldis Jirgens VK1WJ.



The audience listening intently during one of the presentations. Photo by Chris Morley VK3CJK.



Many gathered at the Morwell RSL for the Conference Dinner on Saturday evening. Photo by Chris Morley VK3CJK

From both a participant's and a presenter's viewpoint, the organization and conduct of the Conference gets a nine out of ten. The lecture theatre and its audiovisual facilities are first rate. The facilitation of eyeball QSOs and discussions during breaks is good – an important component of these events. Good support from equipment suppliers adds an extra fillip and was appropriately different from that seen at hamfests and field days. And the partners' program is popular! GippsTech the 11th? – train, plane or automobile – get there!

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QSL cards from the WIA National QSL Collection

Ken Matchett VK3TL, Hon. Curator:
(03) 9728 5350, wiaqslcollection@wia.org.au

There were 'pirates' about in the 1920s

The WIA would like to thank the donors of QSLs to the Collection, amongst them John G3BDQ of Hastings, England, who has sent another batch of vintage QSLs. Of particular interest was bS2, a Belgium QSL dated 1925. Single alphabetical prefixes (often written in lower case like this one) indicated the country of origin of the QSL. Single letter prefixes included B=Belgium, G=Great Britain, (before the division of Great Britain into Scotland, England, Isle of Man, Channel Islands etc), A=Australia, C=Canada, Z=New Zealand. At this time several countries including Belgium did not permit amateur transmissions, but this failed to stop illegal transmissions. Some QSLs sent to Australia had a note warning not to mention station call signs on the reply QSL or envelope. It is very probable that the operator of station bS2 was a 'pirate'.

Jeff VK6AJ from South Perth uses a Yaesu FT990 and a 6-element log periodic at 35 feet. Amongst his latest contributions are the following: Switzerland HE3RSI. A QSL looking every bit like a Swiss SWL. It is actually a special issue QSL commemorating Swiss Radio International. Originally the numeral prefix served to indicate a region or state of a country as in, for instance, W1 to W zero (States of the USA). All States, except California, were obliged to share a number. Since that time prefixes have been used in their thousands to celebrate national events, and when dates were used to characterise these events the prefix numbers became very large indeed. Jeff sends the QSL LZ11951R from Bulgaria (the date of celebration of St John of Rila is shown) and LZ128LO (128th anniversary of the liberation of Bulgaria from the Ottomans. Jeff also sent Nepal 9N7DX, Iraq Y19LZ, Vietnam 3W8A, Kazakhstan UN7TX, Poland SPOTPAX, (TPAX was the Polish call sign used in the first documented QSO with a foreign station in December 1925), HF1EU (celebrating Polish access to the European Union) and HF7IARU (celebrating 75 years of the



A rare single letter prefix QSL from the 1920s.

PZK), Croatia 9A80A (80th anniversary of Radio Club Zagreb), South Africa ZS75PTA (75 years of Pretoria ARC), Japan: an unusual callsign 8N1C50-A (50th anniversary of Chofu-city).

From Trevor VK4ARB: Puerto Rico WP3R, Antigua V21-AK, Anguilla VP25EI (25 years of separation, St Barthelemy Island FJ5BL, Revilla Gigedo XF4T, St Paul Island WV2B/CY9, Comoro D68GA, Cape Verde D44BC, Morocco CN8GI, Andorra C31VA, Botswana A22EX, Australia VK6ISL (OC 214), Indonesia YE8I (IOTA OC 208), Uganda 5X1XX, Libya 5A29 (Celebrating Revolution), Fernando da Noronha PY0FX.

Graham VK2FGI, one of our top DXers, sends some nice DX. Spain AM7, Costa Rica TE32, Mongolia JT60, Argentina AY3, Colombia HK0 IOTA SA017, Cuba T40, Namibia V51 etc.

The QSLs of John Isaac VK3PL have been received by the WIA. Nearly all were early post-World War 2 vintage, amongst them some of considerable archival value, including French Indo-China F18KVA before its break-up into Laos, Vietnam and Cambodia. QSLs for

Indo-China are valid up to 21 December 1950, although there is some controversy over this date. (Laos and Cambodia gained full independence in 1954.) The QSL W2WMV/C9 from Mongolia used the old China prefix of C9, since at that time Mongolia had become a Chinese territory. The card was dated 1948. Among other interesting QSLs received was MP4BAD, a card from Trucial Oman (now UAE), which was then under military occupation. The military prefixes of several countries were not assigned by the ITU. However the ARRL sanctioned their validity for the DXCC. Other military prefix QSLs included: Somalia MD4GC, Eritrea MI3UW, MI3DX, and MI3ZZ. More DX included: Belgian Congo OQ5BQ (1949), Swan Island KS4AI, Tanganyika (now Tanzania) V93SS, and a couple of rare deleted ARRL countries: Tibet AC4NC and French Cameroons FE8AB before independence ended French occupation. Pakistan AP2Y, Chagos VQ8AB, China C74T, C7TN, CIAN - American forces in China in 1948 (the QSLs were posted from 'Roosevelt Road,

continued on page 30

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VK2

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vk2wi@ozemail.com.au

Clubs

Waverley ARS held another successful annual auction in June. There was a good array of equipment on offer, which was snapped up by the large crowd. Waverley holds exams at regular intervals – go to exams@vk2bv.org or for club details go to the web site vk2bv.org

The **Mid North Coast ARC** remind us of their Field Day in January 2008. They also have produced a series of DVDs on the majority of amateur equipment manuals.

Oxley Region had another successful Field Day over the June long weekend at Port Macquarie. They have a monthly meeting on the first Saturday afternoon of the month and informal gatherings on the second and fourth Friday evenings. Contact at P. O. Box 712 Port Macquarie 2444.

The **Orana Region ARC** have a bi-monthly meeting at Dubbo on the last Saturday of the odd month. Make contact in the Western area via repeaters VK2RCC 6800, VK2RCD 6725 or VK2RDD 9950.

Fishers Ghost ARC meet on the last Wednesday at 7 pm at the Campbelltown Performing Arts High School.

Blue Mountains ARC meet on the first Friday evening at the 1st Blaxland Scout Hall in Glenbrook. Their annual Winterfest may become their Springfest while they determine a date and venue. Check out their web site at www.bmarc.org

This month **Summerland ARC** have

their **HAMFEST** on Sunday 12th from 9 am. Their club rooms are in Richmond Hill Road, Goonellabah, vk2src@sarc.org.au

WICEN NSW has a busy time coming up. At the end of this month is the annual 400 km Shahzada Horse Enduro for the week 27 – 31 in the St. Albans valley. They have a request for assistance with the Snowy Hydro Upper Murray Challenge in the Khancoban area Saturday 6th October. Their AGM is scheduled for Sunday 23rd September. The Hawesbury Canoe Classic is over the weekend 27 – 28 October. Contact 0408 397 217 or www.nsw.wicen.org.au

ARNSW

In June, the office operation of ARNSW moved from the temporary office in Parramatta to the VK2WI Dural property, 63 Quarry Road. By now, the former office telephone [9689 2417] may have been replaced by 02 9651 1490. The Freecall number remains as 1 800 817 644. FAX becomes 02 9651 1661. The postal address remains for the moment at P. O. Box 9432 Harris Park NSW 2150. There are no changes to the email – vk2wi@ozemail.com.au and the web address www.arnsw.org.au. Check the VK2WI news sessions and the web site for current details of the office arrangements.

All QSL Bureau operation in VK2 is provided for the WIA by Westlakes ARC. Contact 02 4958 1588. Those

former members of the NSW Division who were Bureau users should make new arrangements with Westlakes as the previous arrangements ended last month.

Following the success of the Trash and Treasure and 50th anniversary at Dural in May, another major event is planned for the last Sunday [25th] of November. The next T&T will be on Sunday the 30th September.

A major membership renewal period occurred in July for ARNSW Members. Thank you to those who have returned the necessary paperwork. A Membership application form can be down loaded from the ARNSW web site. Members who have a mail redirection address with ARNSW will be advised of a change to one at Dural so that they can change records with ACMA.

VK2WI

On the first of July, VK2WI added a transmission on 60 metres – 5423.5 kilohertz – to the morning VK2WI News portion to provide a signal source for the country relay stations. The transmitter is 100 watts PEP into an inverted vee dipole in the USB mode. In early July, good reports had been reported from the intended target area, which is from where the 80 metre morning groundwave ends and before the skip on 40 metres comes to earth.

The 30 metre transmission on 10.125 MHz, which has been operational for the last couple of decades, is currently going well across Australia. VK6 have chosen the same frequency and provide a good signal on our side of the country. Unfortunately, there is a time clash during parts of both transmissions which may affect some listeners.

VK2WI will transmit the RD opening from 1730 hours on Saturday the 11th. Telephone contact with VK2WI during the broadcasts periods remains at 02 9651 1489. For those unable to listen to either Sunday news bulletins you can read the script on the web site www.arnsw.org.au

73 – Tim VK2ZTM.

QSL collection continued

Tientsin!). Falkland Islands VP8AI, British Honduras (now independent Belize), Gold Coast ZDF4AM – a rare deleted country. French India FN8AD dated 1951, now deleted since India's independence. Australia AX3T, a specially assigned prefix for operators on 196 kHz, France HW3AT, England GB4SG St. George's Day (all GB prefixes from Great Britain are special event QSLs), Bulgaria LZ13CWT (13

centuries of Bulgaria), USA W0CXX - a QSL of Arthur Collins of the Collins Radio firm. The Collins transmitters and receivers of the 1950s were regarded as the Rolls Royce of amateur radio equipment.

More acknowledgements next month.

Please support the WIA Collection with your donation.

73 Ken

ar

VK3

Amateur Radio Victoria News

Terry Murphy VK3UP

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Lighthouse activation

The International Lighthouse & Lightship Weekend will be held over the weekend of 18 and 19 of August and Amateur Radio Victoria (VK3WI) will activate the historic Timeball Tower and Lighthouse at Point Gellibrand, Williamstown on both days.

Anyone interested in operating or assisting the station should contact the coordinator, Terry Murphy, VK3UP at vk3up@amateurradio.com.au

Last year it was pleasing that new licensees dropped in to say hello and a few got on air to help fill the logbook.

Resources within the membership

It has been suggested by some members that a list be prepared of those with trade and professional skills who could help Amateur Radio Victoria.

This year significant expenditure has been required on electrical, plumbing and other work. The Amateur Radio Victoria Council has decided to explore the possibility that members may be able to give 'mate's rates' for the provision of such services.

It would be a win-win situation for both the member and the state-wide organisation. We are in need of trades people, including a painter, so if you can help please contact the Secretary Ross Pittard VK3FCE.

VK3 Winter Alpine Expedition

For many this winter has felt colder than usual, partly due to the mild and dry conditions experienced in the past couple of years.

The alpine regions of south-eastern Australia are recording some of the best snowfalls for quite a while, which is very pleasing to a group which includes radio amateurs who have a tradition over the past decade to trek across the back country to the Bogong High Plains.

No warm ski lodges or other creature comforts for these guys. Stephen Warrillow VK3SN, Gerard Warrillow VK3JPA and Mat Lumalasi VK3HFI

strap on their skis to spend four days away from civilisation on 2-5 August.

Their ultra-light solar powered multimode station will be in action each afternoon and into the late evening so listen out on all bands HF through to the local 70 cm repeaters.

Power for the radio comes from sealed lead-acid batteries and roll-up solar panels. While they do enjoy making contacts, there's a serious side to it. Should there be an emergency the amateur radio will put in them touch with the outside world. Mobile phones just aren't reliable in that area.

The team is well prepared for their adventure, which they see as a personal challenge that allows them to truly enjoy the beauty of the snow covered high country, with views all the way to Mt Kosciuszko in New South Wales on a clear day.

Foundation Licence Sessions

Upcoming dates: 25 & 26 August, and 15 & 16 September, at Box Hill North.

Know someone who could be interested? Contact Barry Robinson VK3JBR 0419 808 323 or arv@amateurradio.com.au

Deceased estates

The relatives and friends of a radio amateur no longer able to continue with the hobby as the result of illness, moving into a nursing home or death, often need help and advice.

Over many years WIA Victoria – Amateur Radio Victoria has provided a service to ensure the appropriate disposal of equipment and other material.

Each case is different. It may be a simple amateur radio station, or a room, garage or shed full of miscellaneous items collected over decades.

Knowledgeable people are available to evaluate the equipment and provide advice on whether it can be sold, donated or needs to be discarded. To obtain help please contact Terry Murphy VK3UP phone 0428 123 044 or vk3up@amateurradio.com.au

Busy month on air

In addition to ILLW mentioned earlier, the Remembrance Day Contest, Australia's major amateur radio contest, occurs in August.

It commemorates the memory of those radio amateurs who lost their lives as a result of service to their country during World War II.

The Remembrance Day Contest starts at 6 pm (0800 UTC) on Saturday 11 August ending 24 hours later. It is held on the weekend closest to 15 August, the date on which hostilities ceased in the south-west Pacific.

The rules were published in last month's *Amateur Radio* magazine and the internet. If you've not taken part before, read the rules, get on air, exchange some numbers and have fun in what is the 'friendly' contest.

The main aim is to file an entry in the contest which goes towards the score of your state and is the determinant for the winning state. There are also individual certificates on offer, see the rules.

The ALARA (Australian Ladies Amateur Radio Association) contest is run over 36 hours on 25-26 August. Check out the rules. For us males (OM's), only contacts with YL stations count, while the YL can contact either OM or YL stations.

ARNSW

Office relocated to

VK2WI

Phone

02 9651 1490

See VK2 notes.

VK3

Frankston & Mornington Peninsula Amateur Radio Club

Peter Willmott VK3TQ

FAMPARC was recently involved in both 80 m and 160 m Trans-Tasman Contests.

Our able contest team, led by Roy VK3GB and Brian VK3VBJ, constructed a 2 element wire beam pointing over the pond to New Zealand.

In the 80 m section, this combination enabled the club to take 2nd place and overall highest point score for an Australian Station in the 6 Hour multi-op event. The same antenna formula was applied for the 160 m contest.

The club is hoping that with the big effort putting up the 160 m wire beam, the use of a new radio in the Icom IC-756ProIII and some enthusiastic "learner" operators driving the station, like secretary David Macaulay VK3EW and Stephjan Nickolic VK3TSN, we have given the contest a good shake.

The club normally makes the contest a social event. Many of the club members come down and enjoy a party atmosphere and a lot of fun is had by all. Below are

some photos of the event.

FAMPARC is also maintaining its title as the "Education" club. In addition to the bi-monthly Foundation courses, the club is currently running an Advanced licence course in conjunction with the Moorabbin and District Amateur Radio club.

The course currently has 17 students and, pleasingly, many students are new Foundation licensees from previous club courses.

FAMPARC and Moorabbin are excited that their students are taking the challenge to upgrade.

The class is being run by Nominated Assessor Peter Willmott VK3TQ, co-instructing with Ken Halse VK3ZER and

WIA Assessor Graeme Lewis VK3GL. The class will run till November, reminiscent of the traditional AOCP course. The students have completed their Regulations assessments and are now pushing full steam into the Theory. Peter said that it was a relief not having to dust off the CW keyagain.



The review unit in action at the TT 160m contest



Club Photo



Stephjan Nickolic VK3TSN in Action

VK3

Geelong Amateur Radio Club (GARC)

Tony VK3JGC

Election of a new Club President

At the general meeting on the 13th of April 2007, Lee VK3PK stepped down from the Presidency after 3 years in the role, handing over to Ian VK3VIN. Dallas VK3DJ remains as Club Secretary and Kevin VK3FKEV takes over the role as Treasurer from Don VK3IT. New committee members were Arno VK3YAP and Tony VK3JGC, with David VK3VLH continuing to represent the younger club members.

One of the major planks of the club mission statement is to significantly raise its profile both within the world of Amateur Radio and the Geelong Community as a whole. To that end a new post of Publicity Officer on the GARC committee has been created and filled by the appointment of Tony VK3JGC, at the general meeting on the 1st of June 2007.

Club Meetings

The GARC has been in existence since 1948 and meets every Friday at Storrer Street in Geelong at 7 pm for an established programme of lectures and presentations covering all aspects of the hobby; this also includes hands-on workshops for such activities as antenna construction. The programme also includes non radio topics, as the club membership accommodates a wide range of interests. The club building is easily distinguishable, with its two prominent antenna towers at either end; visitors are always welcome. The club building is equipped with a TV lounge where most members congregate prior to the meetings, an extensive library containing most of the popular radio magazines, a radio shack VK3ATL, that can operate from 70 cm to 160 m and a well equipped presentation/meeting room with projection facilities.

On the first Wednesday of each month the GARC Microprocessor Group meets to develop and build software packages aligned to ham radio activities. The most notable of these has been the "Rig

Masta" that plugs into the CAT input of several current transceiver models to enter frequencies digitally from a key pad. This project was initially developed for the visually impaired radio hams but has been taken up by those wanting a more convenient frequency entry mechanism.

Also Wednesday at 8 pm (EST) is the club on air night as VK3ATL, using the VK3RGL Geelong repeater on 147.000 MHz.

Licence training

The GARC has an established and accredited training programme to take interested non-licensed, members, both male and female, through the Foundation, Standard and Advanced call requirements both theory and practical operating procedures; this was initiated by Lee VK3PK who, with Chas VK3PY and other experienced club members, still continues to provide this service. So far over 20 members have acquired their 'F' call signs utilising this service and currently 6 of those have progressed on to gain Standard and Advanced calls.

Repeaters

The GARC members Ken VK3NW and Lee VK3PK maintain the well known Geelong VHF repeater VK3RGL on 147.000 MHz as well as VK3RGC at Montpelier on 147.125 MHz; the latter repeater is currently undergoing operational improvements. A third repeater supported by the GARC, also VK3RGL, but on 439.575 MHz located at Mt. Anakie is also undergoing development work and is targeted for going on air in August 2007. The VK3RGC repeater has the facility to operate IRLP, engineered by Lee VK3PK., and will be operational in that capacity in the near future.

Club Member Activities

– Antennas, SHF and beyond.

Two club members David VK3QM and Chas VK3PY have taken a particular interest in both the building and operation of communications equipment operating

SHF, with David VK3QM and Chris VK3AML extending these activities through to modulated light. The results have been astonishing in the terrestrial distances achieved and will be the subject of a more detailed article later.

Dallas VK3DJ has written an article for AR on Squid Pole Antenna Construction – this is of particular interest to those operating static mobile and Gavin VK3VTX has been using one of these on a regular basis on 80 metre skeds with club members whilst travelling around Australia in his campervan.

Social and Community Activities

To add to the broad spectrum of activities, the GARC has also been involved in providing radio communications for a major Geelong event - The Celebration of All Abilities Festival, lead by current President Ian VK3VIN. Representatives of the GARC will be hosting a demonstration of Amateur radio at the Winter Festival on 29 July.

The GARC winter Solstice dinner took place at the club house on the 22nd of June and was well attended, involving the club members, partners, family and friends. The next Solstice dinner in June 2008 will also celebrate the 60th anniversary of the formation of the Geelong Amateur Radio Club.

Going Bush

Around every couple of months throughout the year, a group of up to a dozen from the GARC go 'bush' to Dereel, south of Ballarat, on a 22 acre site, owned by Dallas VK3DJ, to spend a long weekend in a 28 x 14 foot shed amongst hundreds of gum trees. The primary activities being a quiet environment for operating the HF and VHF bands, experimenting with antennas and drinking lots of red wine!! A recent addition to the on-site facilities is a petrol generator to work in conjunction with a large solar panel to charge the batteries used to power the radio equipment and lighting.

News from...

VK3

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

The second quarter of this year has certainly been a very productive time for our members. There has been a constant flood of homebrew projects completed during this period, and new projects started. The final judging of our crystal set competition took place in a light hearted atmosphere. This was a most popular contest and many entries were received. Winner of the novice section was Brian Crabtree. There were two finalists in the open section. Runner up was Keith Stickland VK3XKS and winner was Pippa Reeves VK3YME. This contest was so popular that it is envisaged a similar contest will be held next year.

Another construction project was a 2 m portable antenna. The design of this antenna was described in a recent

WICEN news bulletin.

The antenna is simple to make from a single length of 50 ohm coaxial cable and will work well across the whole of the 2 m band. Members spent one evening constructing the antenna and the next week we had a tunc-up night. The antennas were checked by Neil VK3XNH using the club's commercially made antenna analyzer. In total, there were 22 antennas made and all are now working correctly.

Another project that some members



are working on at home is trackers for APRS use. These are being built from kits obtained by John VK3LJS. So far

TET-EMTRON

Antenna Manufacturers

New Tet-Emtron Vertical Range

- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
- Light.
- Free standing—no intrusive guy wires.
- 1 kW PEP power rating.
- Can be ground mounted or elevated.

The new TET-Emtron Vertical range is designed with ease of use in mind. Tuning is done by the radials when the antenna is in its final position (where possible). The radials can either lay on the ground, be buried or hang from the elevated antenna. The antenna comes with a set of radials that has a resonant radial for each band. Further sets can be ordered from TET-Emtron if desired.

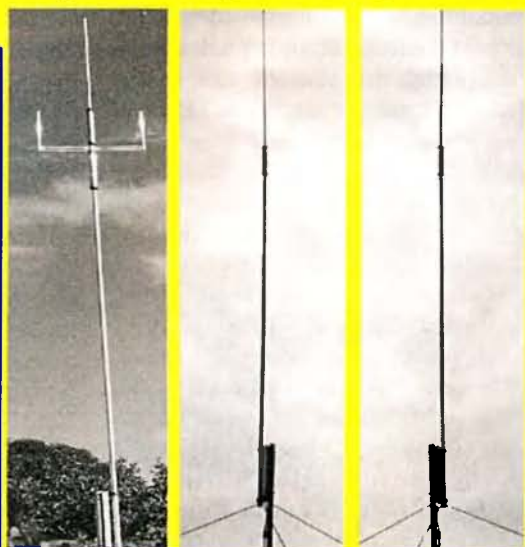
See the web site for more info and a complete dealer list.

40 Blackburn Street
STRATFORD
Victoria 3862 AUSTRALIA
www.tet-emtron.com
Email: rawmar@hotmail.net.au

Ph: 61 3 5145 6179
Fax: 61 3 5145 6821
ABN: 87404541761

New Tet-Emtron Vertical Range

TEV-4 TEV-3 TEV-3 Warc



Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

VK3

11 kits have been or are in the process of being made up. We can therefore look forward to more APRS activity in the Geelong area in the near future. In addition to this, 2 members have constructed antenna analyzers. The details of this instrument appeared in the June 2006 edition of AR. Again a lot of interest has been shown in this project and it is likely that it will become a club project some time in the future.

During April the annual get together between the Ballarat Amateur Radio Group and the GRES took place. This year it was their turn to visit us. The talk for the night was given by John VK3LJS on APRS. One of our visitors mentioned that he not only enjoyed the evening but also the continuous supper that was provided. We are all looking forward to

next year when it will be our turn to go to Ballarat.

We had one guest speaker for the quarter, Peter James VK3AWY. Peter is a communications engineer who specializes in the installation and maintenance of long distance HF radio equipment. As many of us are not employed in the communications industry, Peter's talk gave us an insight into what was commercially available and how it is used. Peter also showed us some locally available Codan equipment and for many of us this was the first time we had seen a locally manufactured HF transceiver. Thanks must go to Peter for such an interesting evening.

A decision was made to restore as many of our older valve broadcast

receivers as possible. As many of us had either never worked on valve equipment, or had simply forgotten, Murray VK3ACQ gave us a refresher course. He explained what to look for but the main thrust of his talk was safety. The safety aspect is most important, as we have become used to working only on low voltage solid state equipment. Murray explained that even the simple act of turning a valve radio upside down while still operating can lead to exposure to high voltages which are lethal. So far a number of sets have been restored and more are on the bench.

Visitors to Geelong are invited to attend our regular weekly meetings. These are held at 237a High St Belmont every Thursday evening at 8 pm.

VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

VK7 RD 2006 Results

Congratulations to all VK7 operators who put in a great showing in the Remembrance Day competition in 2006. VK7GN took out the Open Section with 767 points and Richard VK7ZBX took

out the VHF Single Operator Phone section with 380 points. By the time you read this it will be RD 2007 so, come on VK7, and let us show VK how it is done!

APRS on HF

Brian VK7BW and son Andrew VK7HAW have been travelling through outback Australia and utilising APRS on HF. Regular beacons were heard for most of their trip relaying location information into internet gateways and back out through VHF gateways in VK7, thanks to Scott VK7HSE and Roger VK7ARN.

North West Tasmanian Amateur Radio Interest Group

NWTARIG has changed its ISP with a new domain of vk7ax.id.au. The club email is still the same: nwtarig@spamex.com. The new club website address is: <http://www.vk7ax.id.au/nwtarig/>. With the new ISP, Tony VK7AX has been trialling video streaming from the internet out on the ATV repeater VK7RNW. Tests have been conducted between Danny VK7HDM in the South and Tony in the NW. This will enable the linkage of the Southern ATV Group and the North West ATV Group in future.



REAST: The chicken kebab production line – our F-Troop getting involved!

VK7

Northern Tasmania Amateur Radio Club

Congratulations to Neil on achieving his full call, which is VK7TTT. There appears to be a blooming of camper vans within NTARC with a meeting looking more like a camping and caravanning show, Hi Hi! The latest is Peter VK7PD, who is sporting a camper van. Tony VK7YBG is looking for volunteers for JOTA in October, contact him on VK7RAA.

Radio and Electronics Association of Southern Tasmania

Congratulation to Thomas VK7FDAE, Tony VK7FACC and Roger VK7FRMH

who have received their call-signs, welcome to the airwaves. REAST has seen an increase in the number of families of amateurs. So, they have decided to introduce a family membership. Only \$10 will get you full membership of REAST and all we ask is that the family member(s) live in the same household as a REAST member. Check the club website for more information.

The ATV experimenters' nights have been very popular with activities including ATV presentations, demonstrations, discussions and we have seen many interstate visitors at the nights. The WAGs (Wednesday Afternoon Group) is going strong with regular technical demonstrations and discussions.

The club now has a 2.4 m C band satellite TV dish which has been donated and installed, with thanks to all involved. This provides yet another piece of equipment to train on and with which to have some fun.

REAST's July presentation night saw our ex-officio butcher Ken VK7DY take us through some butcher's "tricks of the trade" and showed us many things you can do with a leg of lamb, chooks and humble mince meat! The skinless sausages competition was fierce between Denise VK7FDKM, Chris VK7FCDW and the author. The lemongrass seasoned sausages won the night and fortunately Chris brought along some Mylanta for afterwards, Hi Hi!



Very little input from clubs and organisations throughout the state again this month.

The Far North and North Queensland Amateur Radio Get Together (FNNQARG), conducted by the Townsville Amateur Radio Club (TARC), has been and gone for another year and was enjoyed by all who attended. The event, held at the beautiful seaside town of Cardwell over the Queen's Birthday weekend, was well attended by more than 70 amateurs and their XYLs. The weather, dare one say it, even tended to be on the cool side and comments referring to Melbourne and the Antarctic

were common during the Friday and Saturday night proceedings.

Popular FNNQARG sponsors Barry VK4TBD and Lucia Dionysius, proprietors of Navcomm Electronics Equipment, Townsville, had a wonderful display of up to the minute amateur rigs and equipment and many operators were seen to be walking away with boxes under their arms and satisfied smirks on their faces. Assisting Barry and Lucia on the display were Kiyoshi VK3BZX and Masanori VK3CXJ from Yaesu and Takashi VK3FNFY and Peter VK3TQ from ICOM.

Gary VK4WT from Ravenshoe

demonstrated his trailer mounted, three stage tower and this ingenious piece of engineering received much favourable comment throughout the weekend — as well as providing the platform for an array of antennas into the official communications centre. Details of Gary's antenna may be seen at <http://rdxg.com>

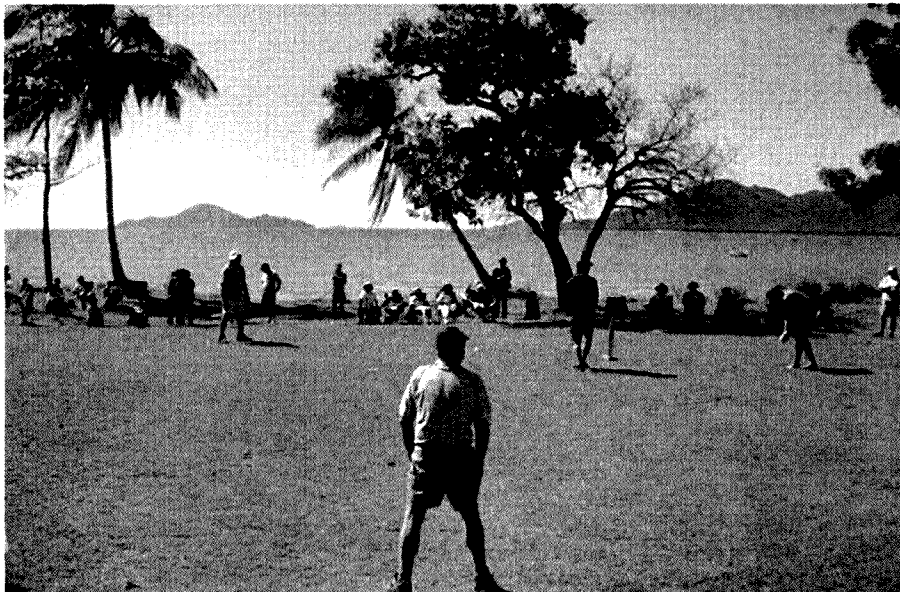
On the Saturday and Sunday nights the customary get-togethers under the "big tent" were well attended, tall stories got taller and black dogs got blacker. The cooler than expected weather did see most revellers tucked up in their beds at a very respectable hour, however. Following an organised boat cruise on Saturday evening many comments were heard about how hard it had been to have eaten all the fresh prawns that were caught. Poor souls.

An enjoyable interlude of the weekend was the unexpected arrival of popular trucking amateurs Dave VK4ZDP and Bill VK4FW and Cheryl in their big rigs. Naturally everyone was interested in having a look at the "office" in both trucks. Whilst most were suitably



The Gathering FNNQARG 2007

VK4



Cricket as it should be played. FNNQARG Cardwell 2007

impressed by the arrangement of radio gear, even more were impressed by the quality living quarters in the cab itself on both rigs.

The dawning of a perfect Sunday morning saw the respective teams from FNQ and NQ becoming more and more nervous as the deadline hour approached for that now famous FNNQARG Cricket Match. Teams were carefully drawn up, warm up and stretching exercises

dutifully done, and the stringent rules of the game very seriously outlined by that most incorruptible of cricketing umpires, Roscco VK4AQ. Something about the severity of penalties for the perpetrator of an errantly hit ball knocking over his stubby. A couple of wonderful highlights of the game saw Dale DMC being awarded the Dummy Spit of the Match Award for his unsportsmanlike behaviour when being dismissed LBW.

The fact that he was at least a couple of metres to the left of the wicket was of little consequence according to the Umpire. Then there was outfielder Dennis JDJ being knocked out of his easy chair by a well aimed ball from John JKL. The classic of all, though, was Kiyoshi VK3BZX, managing to throw his bat further along the pitch than his hit ball actually travelled. It nearly cleaned up the bowler at the other end!

North Queensland ran out overall winners

over FNQ, 122 to 118 runs.

The most valued male player award – a Yaesu VX-170 VHF Handheld – went to John Gielis VK4JKL whilst Cheryl VK4F??? received an ICOM IC-P7A Handheld for her efforts as most valued female player of the match.

It is worth noting here that Cheryl Goldfinch, XYL of VHF aficionado John VK4FNQ sat for and passed her Foundation Licence the day previously. Congratulations and well done Cheryl. We are all waiting, with bated breath, to see if she is awarded the VK4FRYL callsign if only to be forever known as Feral Cheryl.

Throughout the course of the weekend, John Gielis VK4JKL, President of the Cairns ARC was heard to be shouting “push, push, push” be it during the erection of tents, antennas or moving trailers. One wag suggested that hereinafter he be known as the Gynaecologist.

Following the presentation of awards on Sunday evening, it was decided by those present that we continue to hold FNNQARG at Cardwell in 2008 when it will be the 25th Anniversary of FNNQARG. So ... expect a little extra next year.

The City Of Brisbane Radio Society (VK4WIE)

COBRS are going to Mt. Wolvi for a field day weekend on the 8 and 9th September. SunFest is on, so we hope to have some contacts from visitors.

Mt. Wolvi is east of Gympie on the TinCan Bay road and has excellent VHF/UHF possibilities. The weekend is a social outing for our club and we hope to see a few people drop in. Some from the Darling Downs and Hervey Bay have indicated they will be there.

VK4FUST runs Packet for the Australian Rally Championship in Queensland.

Miles, a member of GCARSI and WICEN, operated packet as an ‘F’ call legally during the WICEN exercise held in conjunction with the Australian Rally Championship round in Queensland.

Most packet operators have to transmit



Cheryl Goldfinch receives her Best Female on the Field award from Navcomm Townsville proprietor Barry Dionysius VK4TBD. Cricket Umpire Roscco VK4AQ looks on.

News from...

the time taken by a single competitor over a special stage one at a time.

Because the Nambour Super Special Stage ran two cars simultaneously around the Nambour showgrounds, Miles had to transmit two competitors' times as quickly as possible every minute. He was keeping up with the traffic flow until a power supply problem took him off the air. He immediately went to manual mode and just wrote the required information down on paper, whilst calling for assistance on the engineering channel handheld.

When we arrived he pointed out the problem to us. We were able to connect his station to the 4WD battery and get him operational again. He immediately started transmitting the times and scores he had written down and was fully caught up with all times and scores recorded, transmitted and acknowledged before the last car had visited his control.

Miles used an IBM laptop, a Pakrat 232 TNC and an Icom IC-706MkIIIG through a HV7CX for the exercise.

Engineering was through a 70 cm hook-up using VK4WRC's Yaesu VX5.

Miles prepared for the long haul with a low draw lantern and food and drink at his side.

Other Amateur Radio Activities

One of the many outside activities in which Townsville ARC members participate is the provision of communications



Miles – in for the long haul

support for the Twin Cities Autosport Club. An important part of their role is the timely passage of times in hill climb events, in addition to providing additional on-course safety nets. At their most recent event, six members of TARC assisted and it was during this event that enthusiastic newcomer to AR, Ray Schinkel VK4NET was signed off for his CAMS General Official licence and can carry out official's duties at any CAMS motorsport event in the world. Well done Ray.

The story of repeater pioneer Art Gentry W6MEP.

John VK4JKL has forwarded details of an interesting website relating to the history of repeaters, which I'm sure will be of interest to many of our readers. Many of us take repeaters for granted these days and the article tells it pretty much how it all began. Well worth a read. <http://www2.arrl.org/qst/2004/03/pasterna.pdf>

VK5

Adelaide Hills Amateur Radio Society

The June meeting was another most interesting one, all about Linux. Many of us have heard of Linux but the explanation given by Steff VK5HSX of SCARC was very clear and very helpful. It is likely that a number of members will 'have a play' with Linux now.

AHARS has successfully launched an Assessors Course in VK5, so there will be more qualified people available in the future. This will be conducted on

28/29 July at the Aviation Museum, Port Adelaide.

Don't forget the biggest Buy and Sell is on again this year on 17th November 2007, at the Westbourne Park RSL Hall on Goodwood Road. Doors open for buyers at 0900 and the queue starts to the right! There will be several commercial tables for the latest items, of course. If you wish to have a table please contact Barry, VK5ZBQ. Be there to meet your

Christine Taylor VK5CTY friends and convert their junk into your treasure.

An interesting series of lectures is planned for the next few months, so if you are in Adelaide for the third Thursday of the month, please contact Jim VK5NB, Barry VK5ZBQ or John VK5EMI for more information. Meetings are held in the Belair Community Hall at the top of Old Belair Road and start at 7.30 pm.

ar

A correction

The information about the regular ALARA luncheons in VK6, in the June issue of AR was incorrect and out of date. Sorry ladies!!

First of all, the VK6 lunches are now held regularly at the Bayswater Hotel, on the last Wednesday of the month (except for December). Yes, they were changed last year, but this reporter missed the changes.

The VK6 group also had a special Birthday Luncheon on Wednesday June 27th at which they celebrated both ALARA's 32nd Birthday and the 28th Birthday of the VK6 group. In fact this ALARA group was among the first to hold regular luncheons at all. Well done!

The group is also looking for more 'lunchers'. If you are perhaps newly licensed or have just retired so you can make the regular venue, please get in touch with Bev VK6DE or one of the Perth local YLs. They would love to have you join them.

Hope you had a great celebration – hint, hint, maybe you took some photos?

Other Birthday Luncheons

VK5 will hold their Birthday Luncheon on Sunday 28th July at the Marion Hotel. For more information please get in touch with Jean VK5TSX.

This year, Pam VK4PTO is organising an ALARA luncheon through the Gold Coast Radio Club. For more details please contact Pam. Both these ladies are QTHR in the callbook.

If there are any other Birthday Luncheons, please forgive me for not publicising them but have a thoroughly good time, anyway.

Meetings between ALARA members (and other)

Having just enjoyed a two month visit to Europe, I understand better the marvellous friendship we, as amateurs, can develop with people in other countries.

During my time 'over there', I met three ALARA members and a number of other amateurs, all of whom made me very welcome and all of whom made my visits to their countries much more interesting.

There is nothing like local knowledge to help a visitor to see the most interesting places. No guide book is anywhere nearly as good.

In Munich, Maxie DJ4YL (and her sister Marile, who other amateurs in Australia will have met) showed me all round Munich and took me to see the most magical 'fairytale' castle, Neuschwanstein, near Fussen.

Maxie introduced me to Albert DL8FA and Angelika DL3MFP who escorted me around for two days after Maxie had to fulfil an earlier commitment. We spent a day at the site of the 1980 Munich Olympic Games, which is all still very much in use, and a day at the Technological Museum.

In this Museum, and in the one Raija SM0HNV took me to in Stockholm, there are working amateur radio stations. They are manned by local amateurs on a roster system and are an excellent way to interest the public in our hobby. Is it time we had similar stations in the Museums around Australia, I wonder?

Raija also knew her local area so well she could show me so much I would have missed on my own, including the marvellous 'village' of Scansen. Situated on a prominent hill, this village has reconstructed houses and workshops from all periods of Sweden's past where people in costume are ready to show you around and explain how some of the old machines worked. Sovereign Hill at Ballarat has a similar format but

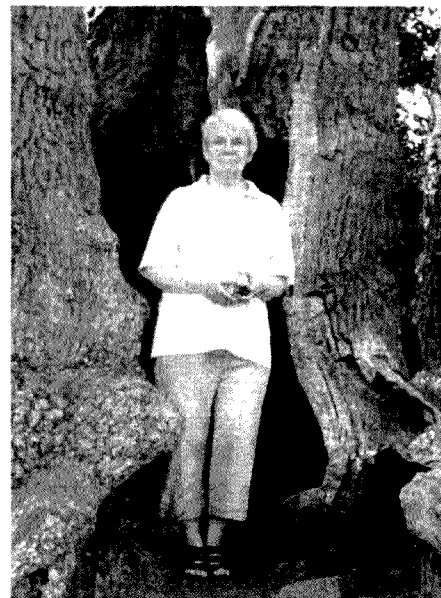
Scansen covers a wider period of history and wider range of occupations.

I also spent a most enjoyable day with Ella, in Brighton, England. I had met Ella on a previous visit and at Hamilton when we were both attending the 2000 YL International Meet, so we had much to talk about as we wandered. We saw the astonishing Brighton Pavilion and a number of venues in use for the Brighton Festival and its Fringe Festival.

Wherever I was met by fellow amateurs I was greeted with open arms reminding me yet again how lucky we are to 'meet' such people through our hobby.



Maxie and me at the airport on my arrival,



Raija in her favourite hollow tree, not far from her home,



Ella and me with the roof of the Brighton Pavilion in the background.

Landmarks for Raija and Maxie

Both these YLs celebrated 50 years in amateur radio this year; Raija passed the mark in April and Maxie in May.

In both cases, it was only in conversation that this information was mentioned, but this is a significant number of years to have been involved in our hobby.

Congratulations to both of you from all in ALARA.

Don't forget the ALARA Contest (or the RD)

August is an important month for all amateurs. The Remembrance Day Contest on 11/12 is our way of recognising and showing our appreciation of the service so many men and women gave in the Second World War. Among these were a large number of amateurs who used their skills to serve their country.

There are also many current amateurs who took up the hobby after the War because they had learned things during their service that led them in this direction.

Let us all participate in the RD, when we work for our states rather than ourselves.

At the end of the month is the ALARA Contest, held over 36 hours so we can use 80 metres twice, as this is the band

best suited to working within Australia at night. Unlike the RD, we can repeat contacts on the same band as long as

there has been an hour since the last contact with the particular station.

The complete rules for both Contests are in the July issue of Amateur Radio, so make sure you have studied them well.

The ALARA Award

To be eligible for the ALARA Award it is only necessary to make 10 contacts with YLs as long as at least five states are represented. The ALARA Contest and the Remembrance Day Contest are very good times to obtain the less commonly heard stations to complete your list.

Please send your application to Kathy VK3XBA with the list of stations claimed and \$5 for the certificate.

A busy microphone

Recently four new "F" call YLs got together. They all made calls that day, using the same microphone. It was rather busy!!

Michelle has had her callsign for a while and has joined the ALARA Monday night nets fairly regularly and Jean has been brave enough, but the others have yet to join the net. Maybe soon??

ar



Jean VK3FJYL, Michelle VK3FEAT, Margaret VK3FMAB, and Michiline VK3FMGE

Remember

Remembrance Day Contest

11 and 12 August

ALARA Contest

25 and 26 August

Contest Calendar August – October 2007

Aug	4	QRP Day Contest	CW/SSB/FM/PSK31
	4	TARA Grid Dip	PSK/RTTY
	4	Waitakere (NZART) Sprint	CW
	4/5	10-10 International QSO Party	SSB
	11/12	Remembrance Day Contest	CW/SSB/FM
	25/26	Keymen's Club of Japan Contest	CW
	25/26	ALARA Contest	CW/SSB
Sept	1/2	Russian RTTY WW Contest	RTTY
	1/2	All Asian DX Contest	SSB
	1/2	Region 1 Field Day	SSB
	8/9	Worked All Europe DX Contest	SSB
	15/16	Washington Salmon Run	CW/SSB/Digital
	22	Westlakes Cup	SSB/DSB/AM
	29/30	CQWW RTTY DX Contest	RTTY
Oct	6	PSK31 Rumble	Digital
	6/7	Oceania DX Contest	SSB
	7	RSGB 21/28 MHz	CW & SSB
	10	10-10 International Day Sprint	All
	13/14	Oceania DX Contest	CW
	20/21	JARTS WW RTTY	RTTY
	21	Asia-Pacific Sprint	CW
	27/28	CQ WW DX Contest	SSB

Welcome to this month's Contest Column.

Remote Contesting

The title of remote contesting could easily generate thoughts of the operation of a station located away from the general populace, possibly with a temporary set-up for equipment and indeed for the operator.

However, the title can be skewed somewhat when technology is taken into account, as there is a growing trend towards the remote operation of radio equipment via the Internet. This approach is still in its relative infancy, but quite a number of stations are currently on the air today which feature no local operator at all. Station hardware already exists within exotic locations with data linkage back to another part of the world where the operator is located, for both general use and sometimes for contesting activities. Ten Tec's latest HF radio incorporates an Ethernet

connection for this very purpose so they, at least, must perceive a viable market for the facility.

Technical limitations of yesteryear such as data and signal latency, have generally been overcome by broadband Internet linkage and the increased computing capabilities of modern PCs. Linkage is achieved by a number of means, but is usually provided by RF hardware suitably equipped with data connectivity, linked via the Internet to an alternative location equipped with suitable computing and software facilities to enable the two-way passing of transmit and receive audio along with control signals for the rig.

It's expensive and complex, so why bother?

So, why would an operator want to bother with the expense and effort to provide such facilities? With planning applications for antenna systems becoming ever more difficult to obtain due to neighbour objections and the

public's overall suspicion of the word 'radiation' being associated with amateur radio transmissions (even if it is non-ionising) often due to media coverage of mobile telephone masts and perceived health issues, it's not too surprising to find the suburban radio amateur turning towards alternatives to provide a working station from which to operate. For others however, remote sites in "RF quiet" locations with room for large antenna systems, particularly when located in "favoured" locations outside the state/country of the operator, are a significant advantage compared to the 'normal' operator who must put up with limitations such as an apartment or locally generated electrical noise.

But for contesting, is it cheating?

The current technology imposes a bit of a handicap on remote operation due to some remaining latency (time

delay) issues but that penalty will continue to narrow quickly over time. If an operator is located in Sydney but the transmitting hardware is located in Perth, a VK6 identifier would be required as the RF is emitted from a VK6 locality. However, what about the case of the operator being located in Sydney and the remote facility being located in Perth, but no RF emitted from Perth as it is only used for listening purposes? A VK2 prefix would be used as the transmitting equipment is located in VK2, but a significant advantage could be obtained with a listening facility located closer to a continent of interest. Theoretically, the listening hardware could be located anywhere in the world and would clearly be an advantage under certain circumstances such as marginal band conditions in VK2 whilst the band is lively in the receiver location. Propagation would still be required to allow the transmitted signal to get to the distant station, but this surely is possible on occasion?

Contesters have always looked to push the envelope and gain an advantage within the remit of the rules, using whatever resource and guile they possess. Contesting is a technical sport involving a combination of technology and operators striving to use technology in the cleverest way possible to get that edge over the competition. However, there is the problem of where do we draw the line while trying to preserve some spirit of yesteryear but also look forward to new ways of possibly enhancing contesting by adopting new technologies. Should there be a separate category for remote stations, for example? Maybe, a 'Remote' category for stations utilising the overall facility but transmitting and receiving from the same geographical location but linking the audio etc to another location, but also a 'Distributed' category for stations using multiple receive facilities?

Some contests already try to accommodate these aspects. Some rules already exist for various contests, requiring all station hardware to be within a 500 m radius in an attempt to limit the remote receive perceived



Jessica VK2FJES with her well deserved prize!

advantage, but this is often aimed at the RF side of things as opposed to limiting the extent of the 'control wires' as would be the case for Internet linkage. Do we really care if the operator is sitting right in front of the rig? Are you working the operator, or the callsign denoting the RF emitting location? What do you claim for an award such as DXCC, for example? Is this just the same type of QSO as via a repeater, but utilizing the Internet instead?

The introduction of a separate category for remote operation implies an advantage by operating in this manner – but is this true? An operator must deal with many more technical issues than a single point station and even if the issues are dealt with successfully, you still cannot do all the things you can in a traditional station. Even over the best low latency connections, timing your calls in a pileup is more difficult and there is less information available for decision making. Station design and maintenance takes more time and effort, there are more things to go wrong and many of the failure modes, even if recognised immediately, take much

longer to fix, resulting in more lost time or an early end to the contest.

There also seems to be an emotional component in some of the opposition to remote operations in a similar vein to the SO2R issue. "I have always done it SOIR, I don't want to learn SO2R, so nobody else should be allowed to either" for the SO2R issue becomes "I can set up a normal station, I have no need for remote operation, so nobody else should be allowed to do it either" for the remote issue.

At the other end of the scale, if you used a cordless headset are you breaking the 'traditional' rules by not being directly attached to the station equipment? For that matter, what about using a PC to send CW? What is the difference between sitting 1 m away from your rig, or 100 m away over extended wires for headphones etc, or 10 km or more away using

the Internet?

Is there a valid argument to the effect that if we are to at least try to keep the Internet from further eroding interest in amateur radio and the many facets within, we must be able to adapt to the times?

Remote operation is already a reality, so I suspect that contesters will just have to learn to gain the most benefit out of it and learn how to incorporate it into our technology limits and contesting traditions. As long as the callsign used reflects the RF emitting location, then this approach seems reasonable enough. The remote location of receiving equipment could be another aspect altogether of course! It'll be interesting to see how things shape up on this aspect. Time will tell.

Westlakes Cup

The Westlakes Club is running the Westlakes Cup contest again this year, on the 22nd September on 80 m. The rules for this contest appear elsewhere within this edition of AR. Jessica VK2FJES (see photo) pays the price for winning in 2006

by becoming one of the bonus stations in 2007. Vince VK7VH is also a bonus station, each contactable every half an hour – if you can find them!

To finish, a few more questions.....

This column has had much focus in recent times on promoting contesting and attempting to increase participation. My column scribe predecessor, Ian Godsil, had put a great deal of time and effort into this aspect and in my view, is to be applauded for his sterling efforts.

It is my intention to continue to promote contesting in an attempt at bolstering participation, as the competitive nature and spirit seen in Australia for cricket, football, tennis etc simply does not seem to currently feature in radio to the same extent.

Amateur radio as a hobby contains a myriad of specialist 'sub sections' such as DFing; WICEN; SSTV; RTTY; contesting and home-brewing equipment, to name but a few. Is interest simply spread too thin and the resultant level of participation not a sign of 'trouble/problems' but merely a result of the overall numbers of amateurs and the range of available activities?

The WIA continues to attract members to its ranks – the more the merrier – but AR magazine is mainly devoured by WIA members, with a smaller proportion being sold via the newsagents' shelves.

With such a comparatively small audience, are we ever likely to see a step-change in participation? If we managed to attract a proportion of 'new' calls to contesting, is it really likely to be such a huge impact on the bands? I'd certainly like to think so, but time will tell! Plans

are afoot for an alternative domestic contest with an 'F' call slant, so maybe this will encourage a few newcomers to have a go.

Might it be the case that VK hams who used to participate have given up for some reason? Is it a case of no more challenges, possibly? Are the rules too complicated? Is activity too low to warrant the time for domestic contests? Is international contesting perceived as being too difficult due to geography or even inequalities of licensing conditions? Would a 2+1 callsign structure bolster the ability of VK stations to be more competitive against our overseas brethren?

What is it that motivates YOU to participate in contests? Are you reading this column from a passing interest or curiosity, or have you been contesting for some time and are now a seasoned contest operator? Is it simply to win; or just to participate; or beat your last score; or beat a fellow ham who has always beaten you previously? Maybe it's some other reason such as increased band activity during contests allowing your DXCC / IOTA award tally to be augmented; improving CW skills; or simply to test a new antenna arrangement?

So, what gets your blood racing and drives you to participate in contesting?

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

Westlakes Cup

Date: Saturday 22nd September 2007

Time: 2030 EST (1030 Z) till 2130 EST (1130 Z)

Band: 3.535 - 3.620 MHz

Mode: SSB, DSB, AM

Max Power Limit:

100 Watts Standard and Advanced Licence Holders

10 Watts Foundation Licence Holders.

Rules:

All Stations shall call 'CQ Westlakes Cup'.

Exchange for Points shall be the operator's name and a signal report.

After the contact is made and reports exchanged the station that had called 'CQ' must QSY at least 5 kHz from the frequency before calling again. There will be no 'sitting' on a frequency and working a 'pile up'.

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You must QSY after each contact is made.

Valid Contacts:

Only VK or Special Prefix (AX, VI) Australian stations may be worked. The Contest may expand to ZL, P2 and other South Pacific neighbours in the future.

Points A:

There will be two BONUS stations operating in the Contest.

The BONUS stations are the stations that hold the Cup from the previous years Contest.

The stations that are the BONUS stations will be worth 1 (one point) for the QSO plus 3 (three) bonus points and may be worked twice in the Contest, once every half hour, if you can find the mischievous little devils.

This year, (2007) the BONUS stations will be VK7VH/BONUS and VK2FJES/BONUS.

Points B:

Amateur Radio Clubs and WIA affiliated stations are encouraged to take part.

Every Amateur Radio Club that takes part in the Contest shall be worth 1 (one point) for the QSO plus 1 (one bonus point).

Every Amateur Radio Club taking part shall sign with the call eg. VK2--/CLUB. WIA station calls such as VK2WI, VK4WIT, VK2BWI etc. shall qualify under the same scoring system as Amateur Radio Clubs and must identify themselves with a /CLUB after the Call sign eg. VK3WIA/CLUB.

Amateur Radio Club stations and WIA Club Stations may be worked only once in the Contest hour.

Points C:

Every station that does not fall into the BONUS categories listed above shall be worth 1 (one point) per QSO and shall be worked only once during the Contest.

Points D SWLs:

SWLs shall be able to claim the same points as per transmitting stations. For example if an SWL hears a BONUS station they may claim 1 point plus 3 Bonus points. If they hear a Radio Club or WIA Club Station they can claim 1 (one point) for the QSO plus 1 (one Bonus point).

They must record the callsign and information of both stations in the QSO.

Contest Procedure:

At 2015 EST (1015 Z) on 3.585 MHz +- QRM, the BONUS station shall make an announcement outlining the basic rules of the Contest.

For 2007, the station making the announcement will be VK7VH. At the end of the basic outlining of the rules of the Contest, VK7VH may pass the microphone to VK2FJES to issue a word of encouragement and greeting to Contest participants.

If there are any last minute questions to be asked then questions will be answered at this stage.

At 2 (two minutes) prior to the beginning of the Contest, the BONUS station shall make an announcement to the effect that the Contest shall begin in 2 (two) minutes.

At the completion of the Contest, the BONUS station shall call in all stations that wish to declare their scores for the Contest.

If, for any reason the BONUS station cannot perform these functions, the Westlakes Amateur Radio Club Contest Manager or a Deputy will do the job.

The call-in shall be on 3.585 MHz +- QRM and shall start from the lowest scoring stations, eg 10 pts, up to the top scorers in the Contest.

During this process, additional stations may be seconded from the group on frequency to take call backs from any region which the BONUS station thinks his signal may not be covering well. Such station/s may receive a special certificate in recognition of their efforts.

The object of this 'Check In' after the Contest is that stations may get an 'idea' of the Contest results on the same night as the Contest takes place, although confirmed places will only be made known after the 'Contest Manager' has received and checked the logs.

Contest Logs:

An Excellent Logging Programme has been produced by Mike VK3AVV and is available by typing VKCL into your Google Search Engine and follow the prompts in the VK Contest Logger. Thanks Mike.

Logs submitted in other formats shall contain the following information:

Cover Sheet:

Call Sign.

Name of Licensee.

Address of Licensee.

Email Address of Licensee: (optional)

Points Claimed including BONUS Points

Log Details:

Time: Local or 'Z'

Call Worked.

Signal Strength of station worked and name of operator

Signal Strength given to station worked.

Declaration:

I declare that I have operated in accordance with the rules and spirit of the Contest and in compliance with my licence conditions.

Awards:

An inscribed Cup shall be awarded to the stations with the highest Points Scores attained, one in the Advanced and Standard Licence Category (100 Watts) and one in the Foundation Licence Category (10 Watts). The Cups shall be inscribed with the Callsign name and details of the highest points scorer and shall be retained by the Contest Winners.

The stations that gain possession of the Cups shall become the BONUS stations for the following year's Contest. The Contest Manager retains the right to decide to change the rules of the next year's Contest.

Certificates shall be awarded to the first, second and third place getters in each section (Advanced/Standard, Foundation and SWL) of the Contest.

Additional Certificates may be issued to those who, in the opinion of the Contest Manager of Westlakes Amateur Radio Club, have contributed, maintained or attained prominence in any particular area of expertise or excellence in the Contest.

Logs:

Logs should be sent to:

The Contest Manager
Westlakes Amateur Radio Club
PO Box 3001
TERALBA NSW 2284

Logs via Internet may be sent to the following E-Mail Address:
contestmanager@westlakesarc.org.au

The closing date for the receipt of logs will be midnight EST on 31st October 2007.

Results can be expected to be processed and posted on the Westlakes Amateur Radio Club Website and distributed to WIA News outlets within one week of the closing date for entries.

The Contest Manager's decisions with regard to logs and positions in the Contest shall be final and no correspondence shall be entered into regarding the results.

Good Luck to you all.

Best Regards

Richard, Contest Manager
Westlakes Amateur Radio Club
ar

The big news is that Vladimir Bykov UA4WHX, has been QRV during June from the very rare entity Rwanda as 9X0VB. Rwanda has not been activated since late 1997. It ranks #33 on DX Magazine's "2006 Most Wanted Survey". In Europe it is #58, in Asia #14, in North America it is #29 and the rest of the world #36. The Daily DX reports that they have received word that Vladimir is in Kigali and will "probably be around here for a while". The QSL route, as always, is via UA4WHX, but wait until he gets home before sending your QSLs. Vladimir says he is operating from "the house of the regulator", a Colonel from the Rwandan Defence Ministry. He is Diogene Mudenge 9X1AA, and is "trying to put together an Amateur Radio society in Rwanda. I wonder if this will spark off some more activity from this area? Yes, EA5RM just announced that a multi-national team is planning an operation sometime later this year.

I quote the following from an e-mail received from Lindsay VK3WM:

"I would like to bring to your readers' attention the ANZA DX net, which is the longest running radio net in the world that started in 1939. The full title is Australian New Zealand Africa DX net, which operates 6 days a week on 14.183 MHz, at 0515 Z, with a different net controller each day. There is no 20 m net on Tuesdays. There is one 15 m net on Saturday at 0500 Z. (Lindsay does not give the frequency). Controllers are Bill VK4UA, John VK4LJ, Myrle ZL2MIC, Russ K7INA, Lindsay VK3WM, and Morris ZL1ANF."

The International Telecommunications Union (ITU) bulletin #885, dated 1 June 2007, reports "On the occasion of the 10th anniversary of Hong Kong's reunification with China, the Administration of Hong Kong (Special Administrative Region of China) authorizes amateur stations to use the special call sign prefix VR10 in replacement of VR2 from 1 July 2007 to 30 June 2008."

The U.S. Department of Commerce, NOAA, Space Environment Center (SEC) has released their latest prediction on the cycle minimum. For the third month in a row they are predicting the bottom as July 2007 with a predicted solar flux average of 75.2. The complete

chart is at <http://www.sec.noaa.gov/ftpdir/weekly/Predict.txt>. The values are based on ISES cycle 23 forecasts of 13-month running smoothed values.

The 2006 DXCC Yearbook should be posted mid July. To receive the free publication you must either be current on the DXCC Honour Roll during 2006 or have made at least one submission to DXCC during the calendar year 2006.

3B7 The 3B6SP team en route to Agalega encountered serious problems with the catamaran "Josephina", which lost one engine and a sail. All on board were safe, and the catamaran was towed by fishing vessel "Covadis", to Raphael Island, Saint Brandon (AF-015). They stayed on the island and operated as 3B7SP while the craft was repaired.

9A & T9 Once again Zik VE3ZIK (<http://www.qslnet.de/ve3zik>) will be active as 9A/VE3ZIK from Bilice, Croatia between 16th June and 5th September. He plans to operate CW, SSB, RTTY, PSK31 and FM on the HF bands, and to participate in the IOTA Contest. He might also operate as T9/VE3ZIK from Bosnia & Herzegovina on 20-27 June and again on 5-10 September. QSL via DL3PS, direct or through the DARC bureau (e-mail requests for bureau cards can be sent to zik@tiscali.de).

9U0 Sigi Presch DL7DF has announced plans for a multi-op team going to Burundi from September 26 to October 9, 2007. The group will use the call 9U0A. Activity is expected on 6 through 160 metres on CW, SSB, RTTY, PSK31 and SSTV. The experienced crew will include Manfred DK1BT, Wolf DL4WK, Sigi DL7DF, Jan DL7UFN, Frank DL7UFR and Leszek SP3DOI. The team will emphasize the low bands. For equipment, they will have four transceivers (two K2's, an IC-706 and an IC-7000) and three TY900 kW amplifiers. The antennas will include a Titanex V80E, 18 metre low band vertical, a four square on 30 and 40 metres, two hexbeams for 10-20 metres, a five element Yagi for 6 metres and several beverages for the low bands. Plans are to have on-line logs, which are expected to be updated during the DXpedition. The pilot station for this operation will be Bernd DF3CB (bernd@df3cb.com).

QSL via DL7DF either direct or via the bureau. Direct QSLs can be sent to Sigi Presch, Wilhelmsmuhlenweg 123, D-12621 Berlin, Germany. Direct requests should send SAE and one IRC or two US\$ for outside of Europe and one IRC or one US\$ for mail within Europe. Check out their Web page at <http://www.dl7df.com/9u/>.

3D2AG Tony has postponed his trip to Rotuma, 3D2/R, later this year. Once he gets there, he plans a two-month stay.

SV2ASP/A Father Apollo, was quite active on the bands in May, when he made 1,500+ CW, SSB and RTTY QSOs. He is receiving cards for CW QSOs made between 2300 UTC on 16 May and 0200 UTC on the 17th. Note that at that time he was operating phone, and his callsign was pirated. Father Apollo is very busy, and he does not foresee any further activity for a while.

EA6 Look for EA8TL/EA6 to be QRV from July 31st to August 24th. He'll be on from Ibiza. Activity will be on 2, 10, 12, 15, 17, 20, 40 and 80 metres SSB. His rig will be an IC-706MKIIG running 100 watts on HF and 50 watts on VHF.

KL7 Lanny W5BOS, will operate from two islands in Alaska between August 2nd and 7th. The first will be a new one, Semidi Islands (NA-235/P) using the call W5BOS/KL7. All of the Semidi Islands and associated rocks are part of the National Wilderness Preservation System and as designated Wilderness are closed to mechanical equipment such as generators. This operation will be battery power only. The second operation will be from Unavikshak Island (NA-238) using the call W5BOS/AL0. This island was activated last year but conditions were very poor and Lanny wants to give those that missed it another chance. This will be his final operations from Alaska. QSL both operations via N6AWD.

Happy DXing.

Special thanks to the authors of *The Daily DX (W3UR)* -- 425 *DX News (I1JQJ)* for information appearing in this month's DX News & Views.

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WIA DXCC Standings, 30th June 2007

Callsign Countries DXCC Ex. (337) Phone

VK5WO	337/370
VK6LK	337/362
VK3QI	337/351
VK3SX	337/343
VK3DYL	337/343
VK2FGI	337/343

Honour Roll (328) Phone

VK6HD	336/362
VK7YP	336/341
VK5MS	335/389
VK4LC	335/382
VE6VK	335/372
VK4UA	335/370
VK3AMK	335/354
VK6NE	335/351
VK3AKK	335/348
VK3EW	335/341
VK2AVZ	333/344
VK1ZL	333/339
VK2DEJ	333/339
VK6APK	333/338
VK3TZ	332/336
CT1EEN	332/336
VK3OT	331/345
VK4AAR	331/335
VK3EUZ	329/330

General listing Phone

VK3YJ	327/333
VK6ABS	327/000
VK5FV	326/329
VK4SJ	326/327
VK2UK	323/328
VK4LV	320/322
VK1TX	319/000
VK6LC	317/319
VK2HV	317/000
VK6RO	313/320
DL2AWG	309/000
PY2DBU	308/315
VK4ICU	303/305
VK4EJ	302/304
VK3PA	298/299
9V1RH	297/303
VK6DY	297/301
JA3EY	296/300
VK3KE	296/299
DL1TC	294/295
VK4AN	293/300
VK2CA	293/000
VK3DU	292/301
VK2CSZ	290/293

VK4BAY	287/290
VK7TS	285/286
VK3JMB	285/000
VK6ANC	283/287
VK3UY	264/266
JA7MGP	260/000
VK2XH	257/000
DL3ASJ	256/000
VK8NSB	255/000
VK3CIM	254/258
VK8DK	253/254
VK6DU	249/252
VK2FHN	246/000
VK4AO	240/000
VK2AU	235/000
VR2XMT	235/000
VK4DMP	227/228
DL6MRS	226/000
UA6LDD	225/226
VK3DVT	206/209
VK6RZ	201/204
VK7JAB	198/000
VK2EO	195/000
VK2EJK	176/000
9A2KL	172/175
VK6EH	170/000
VK2BQS	166/169
DL9UBF	165/000
DL6USA	162/000
VK5EMI	160/000
VK7LUV	160/000
SV1EOS	157/000
JA6KTY	156/000
VK6HZ	151/000
VK2SPS	143/145
VK2QV	141/000
VK3JXO	141/000
VK3DQ	138/152
VK8LC	138/000
OK1ZSV	136/000
VK4FNQ	134/000
SV1XV	130/131
WA5UA	128/000
VK4VIS	127/129
VK5ATU	126/128
CU3AAT	125/000
SV1UT	123/000
VK2VZQ	122/000
VK4EZ	119/125
VK5UO	112/115
VK3CML	109/000
XV2LC	109/000
VK9RS	107/000
VK6ISL	106/000
AX4EJ	105/000
VK2RO	103/105
SV1FTY	102/000

SV1GYG	102/000
HS1NGR	101/000
VK5JAZ	100/000
VK6ZAI	100/000

DXCC Ex. (337) CW

Position Vacant Honour Roll (328) CW

VK6HD	336/357
VK3QI	336/348
VK5WO	335/351
VE6VK	330/357

General listing CW

VK6RZ	324/329
VK3AKK	312/317
VK4XA	306/333
VK4LV	301/308
9V1RH	297/303
CT1EEN	294/000
VK6AJ	292/304
VK4ICU	291/000
VK4AN	288/294
VK2CWS	245/247
VK3DQ	243/270
VK3CIM	235/236
RD3AF	233/000
VK7TS	219/000
VK3KE	219/000
VK6RO	216/218
DL7PA	203/000
VK2GR	181/188
PY2DBU	181/183
VK4CXQ	174/000
VK5UO	171/172
SP9ADV	168/171
DK6AP	168/000
DL6USA	165/000
VK4UA	151/164
VK4AAR	145/147
VK4DC	142/000
VK2AR	140/143
DL1TC	133/000
DL6UGF	126/000
VK6DU	125/127
DJ4BG	121/000
VK5BWW	110/113
T94VT	108/000
9A2KL	103/000
DL3GDS	102/000

DXCC Ex. (337) Open

VK5WO	337/374
VK6HD	337/364

VK3QI	337/352
VK3SX	337/343

Honour Roll (328) Open

VK4LC	335/382
VE6VK	335/380
VK4UA	335/372
VK3AMK	335/354
VK3AKK	335/348
VK3EW	335/341
VK3OT	334/348
VK2AVZ	333/344
CT1EEN	333/337
VK4AAR	333/337
VK3UY	333/336
VK6RZ	330/336
PY2DBU	328/343

General listing

Open

VK6RO	327/334
VK4LV	325/333
VK2UK	323/328
VK2HV	319/000
VK6LC	318/320
VK4DV	316/331
VK4AN	314/322
VK4ICU	311/313
DL1TC	302/303
VK3KE	301/304
VK3PA	298/299
VK7TS	295/296
PY2DBU	294/298
VK3JMB	288/000
VK6ANC	285/289
VK3CIM	284/288
9A2KL	280/283
UA6LDD	279/280
VK6DU	277/280
VK6MK	256/259
VK8NSB	256/000
VK3DQ	255/284
VK5UO	251/255
VK2CWS	251/253
VK2FHN	249/000
DL9UBF	206/208
DL6USA	201/000
SP9ADV	200/203
VK2GR	184/191
VK2BQS	183/186
VK4CXQ	179/000
VK4DC	168/000
DL6UGF	161/000
SV1EOS	161/000
VK5ATU	158/160
VK2AR	156/159
VK3VB	153/155

VK6HZ	151/000
VK3JXO	146/000
VK2SPS	144/145
SV1XV	142/144
VK4EZ	140/147
ON5SPA	127/000
VK2WL	124/126
VK7CQ	123/125
VK5DC	117/118
N0MSB	117/000
VK9RS	111/000
VK2AJE	109/000
UA0IGV	103/000
VK2AWD	102/106
VK5CO	100/106
VK5GX	100/101
DL1APX	100/000
RA3BZ	100/000
VK1AI	100/000

General listing

Data

VK3EBP	253/255
VK3KE	202/000
VK3AMK	200/202
VK2BQS	126/128
VK4AN	133/000
DL4ARJ	120/000
ON5SPA	111/000
CT1EEN	110/000
VK5RY	100/102

Gen-listing 6 m.

Open

VR2XMT	154/000
VK4FNQ	141/000
CT1EEN	110/000
VK4ABW	109/000
VK6JQ	103/104
VK4CXQ	101/000

Gen-listing

Satellite

VR2XMT	112/114
VK3XDQ	106/000

Gen-listing 2 m.

Open

Position Vacant

General listing

SWL

DE2DAD	100/000
VR2XMT	154/000
VK4FNQ	141/000
CT1EEN	110/000
VK4ABW	109/000
VK6JQ	103/104
VK4CXQ	101/000

Spotlight on SWLing

Robin L. Harwood VK7RH

I have not been able to do any real monitoring lately because of persistent winter ills. These have laid me low and fighting off recurring bronchitis. Hopefully, with spring just around the corner, I will get back into the swing of things once more. I do, however, miss the facility of being able to remotely tune over the internet, since the demise of DXtuners. There seems to be no replacement although there are a handful of online receivers but they mainly consist of 30-second packages of compressed audio.

The Hungarian external services did indeed cease on 30th June but they did not leave shortwave because they are relaying domestic programming plus Hungarian broadcasts from Vatican Radio. Also it appears that Iceland may also have ceased shortwave broadcasts for Atlantic fishing fleets. These were usually just outside of the 13-metre broadcasting allocation and were technically classed as being a utility

station because they were on USB. They are supposed to broadcast to Australia from 1100-1200 on 21590 using a 250 kW sender and from 1800-1900 on 11795 and 1800-2200 on 3975 to Western Europe

The US Congress recently voted to fund broadcasts to Venezuela, following the forcible closure of a private television network and pressure on the remaining radio and television networks to be nationalised by the Chavez Government. It has not commenced yet and may be very similar to the existing anti-Castro Radio Marti which has been on since 1959-60.

The television station that was forcibly closed simply went online and apparently Venezuelans can download news and comment from YouTube.

Radio Marti can often be heard on 6030 in our local evenings but the channel is clear on Mondays, allowing other signals to occasionally sneak

through the persistent Cuban jamming. Incidentally, the constant jamming on 6015 is actually in North Korea.

Jerusalem continues to be on shortwave in English but there has been talk that these broadcasts may be merged with Israeli television and separated from the domestic radio networks.

Kuwait apparently has reappeared on shortwave in English. It usually is on at 0500 on 15105.

Radio HCJB in Pifo may be leaving shortwave very soon. The transmitting site is to be demolished to make way for the new Quito International airport. Shortwave programming will continue from various VT Merlin senders in Europe. Although the senders in Kununurra WA identify as HCJB Australia, it really is a separate station from HCJB in Quito.

Well that is all for this month. If you have any news please email me at vk7rh@wia.org.au

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Awards

WIA MultiBand DXCC Program 30th June 2007

Callsign	2 m	6 m	10 m	12 m	15 m	17 m	20 m	30 m	40 m	80 m	160 m	Bands	Total
VK6HD			304	261	322	307	332	308	331	315	243	9	2723
VK3QI			292	279	305	294	335	308	297	244	115	9	2469
VK3EW			278	231	304	254	328	137	292	284	106	9	2214
CT1EEN		110	294	290	324	305	328	146	243	163		9	2203
VK5WO			155		153	106	254	109	225	134		7	1136
VK3PA			135		145		269	109	178	230		6	1066
PY2DBU			199	125	187	104	276	102				6	993
VK6LC			121		153		307		191	144		5	916
UA6LDD			189		190		191		189	148		5	907
VK2CA			165	102	207	116	214					5	804
9V1RH				149	173	139	154		137			5	752
VK4AN			220		238		287					3	745
VK3KE			115		178		290		104			4	687
VR2XMT		154			127	162	172					4	615
VK3DYL			114		168		296					3	578
VK2DEJ					114		305		101			3	520
WA5UA			102		106		128					3	336

Please note: From 1st May 2007, our Awards Program is now 100% National WIA and we offer 23 all new awards. At this period, for the long term future, the awards program is now under review by the WIA Board. Review results will be published soon.

If your callsign is not listed, it means you have not updated in the last 5 years. To re-join the WIA DXCC program a complete new DXCC submission is required.

The next closing date for DXCC Standings is the 31st December 2007.

Awards information and down loadable files are available on our WIA website <http://www.wia.org.au/awards/> or email to: awards@wia.org.au

WIA Awards Manager, P.O. Box 196, Cannington, Western Australia 6987.

Mal. VK6LC

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VHF/UHF – an expanding world

David Smith VK3HZ

vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

There has been little of note reported this month regarding propagation on the bands. It is winter and a good time to stay inside in the warmth, or in the workshop fashioning some new device in preparation for the coming season.

GippsTech 2007

The winter lull – a good time for a technical conference and get-together, and what better than GippsTech.

The 2007 conference was run once again in Churchill over the weekend of July 7-8 and attracted over 100 attendees. Peter VK3KAI, together with the organising team from the Eastern Zone Amateur Radio Club, ensured the event ran smoothly from start to finish. The venue, provided by Monash University, and the catering, provided by the local Lions Club, were, as usual, first class. Robbie VK3EK ably piloted the Courtesy Bus, transporting people to and from their motels and then, during the day, occupying the “other halves” with tours of the local district.

Of course, there would not be a conference without the generous contributions of those who gave presentations. The general theme on Saturday was Propagation with a number of other topics as varied as Bandpass Filters and the use of Automotive Alternators for Field Day Power. On Sunday, Microwave and EME were the main subjects. During the breaks, people migrated to another area where there were several stalls selling RF and microwave items, giveaway tables and displays of numerous construction projects. At the end of proceedings, there was a monster raffle, with major prizes being a Power/SWR meter, 23 cm Power Amplifier and a nice bottle of Port (thanks!).

The other aspect to such an event is the chance to get together with those you have spoken to many times, but perhaps never met (it is rare that image of someone in the “mind’s eye” matches the reality). On Friday evening, an informal get-together at the local pub

provided the first opportunity to catch up. Then the Saturday night dinner was the scene of many a story over a glass of your favourite – progressing well into the night for a few who were rather bleary-eyed on the Sunday. Then it was Sunday afternoon and everyone was on their way home again – over all too quickly.

So, get out your diary and mark the weekend of July 5-6, 2008 for GippsTech 2008 – not to be missed.

Beacons

Recently, there was unfortunate news from Mark VK5AVQ that the VK5VF beacons in Adelaide have been taken off-air.

On Saturday 23 June, the VK5 VHF/UHF beacons VK5VF fell silent, after some 44 years of operation from their Mt Lofty broadcasting site. The 52.450 MHz, 144.450 MHz, 432.450 MHz and 145.650 MHz Morse transmitters were switched off at 0215 UTC and the equipment removed at the request of the national owners of the site. The 1296.450 MHz beacon has not been on air recently.

The beacons have been a reliable signal source across southern Australia since their commissioning in June 1963. Many times, they provided early warning for both ends for contacts across the Bight from VK3 to VK6. The only significant down time was following the 1983 Ash Wednesday fires.

Hopefully another suitable site will be found soon, but the current one will be a hard act to follow. For sometime now, the people involved have been looking for a new location for the Microwave beacons as all the trees have now grown back after Ash Wednesday giving poor take off to the East and South East. One of the positives from all the publicity resulting from the shutdown is that a number of opportunities have surfaced for the relocation.

Thanks to VK5ACE, VK5KK and VK5KDK and the many others who have supported the project.

EME

You will see in the Digital DX Modes section that Rex VK7MO has been recently dabbling with EME on the 2.3 GHz band. What modesty has prevented him from saying is that this is the first VK EME contact on 2.3/2.4 GHz. Congratulations Rex.

Doug VK3UM reports some entertaining times recently on EME:

For the DUBUS 2007 432 MHz CW Contest, I was unfortunately unable to stay for my North American window on Saturday 24th March due to extremely high winds (> 80 kmh) that came with a cold front just after I commenced operating. I had a nervous 20 minutes or so attempting to raise the dish to the parked (bird bath) position as the wind was even too strong for the two 12 ton hydraulic rams to get it past the 30 degree mark. The noise of the wind roaring through the mesh was quite alarming but the dish survival was theoretically never in doubt as the construction is designed for 125 mph (just over 200 kmh), but one never wishes to prove the point!

The conditions were the worst I have experienced for a very long time. Polarity was changing rapidly and over a wide range, deep fading was evident for the whole period as well. On top of all that, Libration was most significant as well. It required considerable patience with the smaller stations to wait until polarisation and QSB combined favourably. There always is a threshold where signals above 4 Yagis and 1 kW, for me, are normally easy to work, even under such conditions but those below that EIRP pose a challenge with my installation. I learnt later from Peter SM2CEW that there was considerable Auroral activity ... that came as no surprise! I did not get the opportunity to measure Sun noise but I would expect it to have been quite elevated.

I regretfully have to make mention that the lack of activity from NA (in my single window) was the worst I have seen in

>20 years. Two USA stations was a little disappointing.

As usual the operating procedure and patience shown by all the operators I worked was just exemplary. And that is what I enjoy most about this mode of EME, the total random nature of all QSO's, and the technical challenge of physically making the QSOs under adverse conditions with no outside electronic help. There was only one caller I failed to drag from the noise despite their persistence.

Final result was 30 QSOs with 27 multipliers - Claimed Total Score 81,000.

Conclusion: still very strong but US active stations diminished significantly.

Lovell Telescope Festivities

This year, the University of Manchester's Lovell Telescope is celebrating its 50th anniversary with a number of weekend festivals at the times of significant events in 1957. Details of some of the activities can be found at www.jb.man.ac.uk/public/im/eme.html

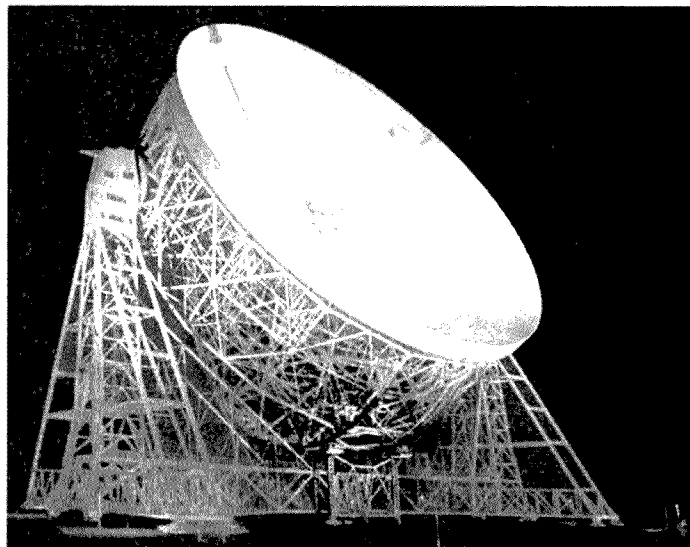
Over the weekend of June 16th/17th - to celebrate the first move of the telescope - the festival organisers decided to have a literary theme, sending poems to the Moon and back. However, the Observatory's policy is to be totally radio quiet, so it could only be used

for the reception. Even with a 76 m antenna, it would take a fairly substantial station at the other end to allow SSB transmissions at a frequency at which the telescope could be easily equipped.

There was already a good feed system at 408 MHz which it was felt could be tuned up to 432 MHz. As 432 MHz seemed to be quite widely used by EME enthusiasts this seemed the obvious band to choose.

Doug VK3UM was one of the stations involved in the activities. The following was reported by Ian G0DMU onsite at the radio telescope:

I was at Jodrell early on the 17th June to receive the call from Doug McArthur (VK3UM), who is celebrating his 50th year as a radio amateur, located 10 km north of Glenburn, Victoria, Australia. I believe that the Moon as seen from there was only 3 or so degrees above the horizon. Doug was using a 8.3 m Dish with 1500 watts Tx power, so it was



EME to the Lovell Telescope

not surprising that his CW was strong and I had no difficulty in resolving his SSB signals when his Australian accent became obvious! He sent messages of congratulations several times - not all identical but this is a meld of them:

CQ CQ GB50EME Lovell Telescope Manchester de VK3UM Victoria Australia. This is Australia calling.

Congratulations on the 50th anniversary of the Lovell Telescope. We wish you many more years of further operation. 73's Doug VK3UM

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au

Digital DX Modes

Rex Moncur - VK7MO

As the digital mode JT65 relies on bandwidths or bins of 2.9 Hz, it has generally suffered if stations are not stable. The view has been that, at microwave frequencies, the frequency spreading due to libration and Doppler from the moon would rule it out for EME. Joe Taylor has included an AFC system that copes with around 20 Hz of frequency shift, providing it is reasonably consistent and the signal is a few dB above the minimum level. The JT65C version has twice the tone spacing of the JT65B version, which allows it to cope somewhat better with libration frequency spreading. All versions of JT65 still use 2.9 Hz bins, but the JT65B and C versions use algorithms to assess the likely frequency of tones using either two (JT65B) or four (JT65C) bins. This

arrangement does increase the effective noise bandwidth and reduce performance by about 1 dB for JT65B and 2 dB for JT65C. The advantage of this approach is that tones can be shifted up to two bins or 6 Hz either way on JT65C and still be identified in their correct bin. JT65 also uses a heavily redundant forward error correcting code such that if a number of tones go outside their correct group of bins, it can still recover a message accurately.

Despite these advances, the prevailing view was initially that JT65 started to fall off in performance at 432 MHz and was unlikely to be useful at much higher frequencies. Over the last two years it has been found that, in most cases, the limitation is not libration or

Doppler shift from the moon but the stability of amateur rigs. As stability has been improved, it has been found that JT65 works very well on 432 MHz and in the last 12 months QRP (5 watt) contacts (VK7MO to VK4AFL) have been achieved on 1296 MHz. Recently, the first 2300 MHz JT65 QSO was reported between W5LUA and WW2R. Following this Rex VK7MO (2.3 metre dish) conducted one-way experiments with Sergei RW3BP (3 metre dish) who copied his 2301.965 MHz JT65C signal in Moscow at 3 watts. The key to this improvement is that both stations were GPS locked. At 100 watts, Sergei could not copy CW confirming that JT65 maintains around 13 to 14 dB advantage over CW - something that applies from VHF up to at least 2300 MHz. At

2300 MHz Doppler shifts can be 10 Hz or more during a JT65 transmission, which means it is starting to be at the limit of AFC. Thus future extensions of JT65 to even higher frequencies are likely to depend on some means of automatic correction for Doppler Shift. Also, libration frequency spreading will undoubtedly become the limiting factor at some stage but it seems, because of the forward error correction code, this will be well above 2300 MHz. Thus there is still plenty of potential to extend the use of JT65 to even higher frequencies.

Following the tests reported above, a two-way QSO was completed with Jan and Vladimir, OK1KIR, who uses a 4.5 metre dish and VK7MO with a 2.3 metre dish. Due to frequency instability at OK1KIR's end, it was generally not possible to achieve JT65 decodes, but by waiting long enough for his rig to by chance give less than 25 Hz drift

in a transmission, a single decode was obtained. Then a QSO was completed using the shorthand messages, which even with drift can be readily read from a waterfall display. Encouraged by this, Jan borrowed a high stability HP signal generator and a QSO was easily completed with perfect copy for more than an hour, thus confirming that the secret to using JT65 at the microwave bands is frequency stability.

Now that small station EME is possible at 2300 MHz, some consideration needs to be given to frequency allocations. The USA operate on 2304 MHz, Europe on 2320 MHz with Japan up on 2424 MHz. While we have access to 2424 MHz in VK, it has become almost useless in city areas due to computer wireless links and other uses. However, we still have a 2 MHz segment between 2300 and 2302 MHz. While it is not in accordance

with their bandplans, the USA and many European countries can operate down to 2300 MHz. However, as international stations will have to tune away from 2304 MHz it is best to use the highest part of our 2 MHz segment. Until practice shows otherwise, suggested arrangements are:

- 2301.900 to 2301.950 CW,
- 2301.950 to 2302.000 JT65 with 2301.965 being the JT65 focus frequency

This arrangement is consistent with practice on 1296 MHz where arrangements are:

- 1296.000 to 1296.050 CW,
- 1296.050 to 1296.100 JT65 with 1296.065 being the JT65 focus frequency

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au

The Magic Band – 6 m DX

Brian Cleland – VK5BC

The expected winter Sporadic E season proved to be a fizzer with very few openings in June. The openings that did occur were in general not of long duration with poor signal strengths and QSB.

John VK4FNQ in Charters Towers reported conditions were very poor in June with very few openings logging only the following contacts:

19th June; Rod VK3TG (Kyneton) & Kevin VK3WN (Ballarat) both with heavy QSB

25th June; Rob VK3XQ, Alex VK5ALX (Whyalla) & Col VK5RO (Adelaide).

John also reports hearing the following beacons:

19th June VK5RBV (Barossa) 559, VK5VF (Adelaide) 419

20th June VK5RBV 419

25th June VK3RMV (Wannon) 519, VK5RBV 519, VK2RHV (Hunter Valley) 529 & VK2RSY (Sydney) 419.

Kevin VK4BPK in Mackay fared a little better, using an IC-706MKIIG, 100 watts & a 3 element home brew Yagi reports working the following:

24th June Rob VK3XQ 4/3,

25th June Rob VK3XQ 5/7, John VK2BHO 5/4 & Rod VK3TG 4/1,

30th June Brian VK5BC 5/7,

2nd July Rob VK3XQ 5/3, John VK2BHO 5/8

4th July Rob VK1ZQR 5/1, Rob VK3XQ 5/2,

8th July Paul VK2YVG 5/5, Norm VK3DUT 5/6, Brian VK5BC 5/9+ & Rob VK3XQ 5/7.

Andru VK4KAY also in Mackay reports that they had their coldest and wettest June on record. Andru says "Band conditions reflected the misery of the weather with no openings recorded from 1/6/07 through to 23/06/07, all very quiet. There seemed to be a pattern to 6 m openings up to the beginning of June. Andru at work – 6 m opens, Andru at home – 6 m closed.

However the weather patterns changed around this 23rd June and I have recorded the following in my log."

24th June – 6 m opening late in the afternoon! Around 5 pm. Could hear the 10 m VK3 beacon mobile. I could hear VK2 and VK3 stations talking on 50.110 while mobile in the truck - however couldn't get signals strong enough to make any

contacts. The opening lasted about 1 hour.

30th June - could hear the VK3 and VK5 beacons on 10 m sometime after lunchtime. Was mobile at the time in the truck. Called 50.110 for about 0.5 hours with no answer, however later in the afternoon Kevin VK4BPK did make some contacts.

8th July. Around 1.15 pm could hear VK TV carrier 46.240 around SI and VK TV carrier 57.250 also around SI. Picked up the VK5RBV beacon on 50.315 within 5 minutes or so at 5/0, but disappeared within 20 minutes, 2 pm 50.130 VK5BC up to 5/5 - easy contact with QSB but signal audible at all times, 2.15 pm 50.110 VK3XQ up to 5/0 - signal marginal using phone. Heard Rob on CW around 50.1095 coming through 5/2, good solid signal and gave him a call to let him know that I could hear his CW. 2.20 pm VKTV. Ch1 57.260 came up to about S3 and soon after VKTV. CH2 62.250 up to SI, Signals stayed around for

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Milestone achievement at Bochum

This amazing achievement was announced last month on the AMSAT bulletin board by Peter Guelzow DB2OS. It is an important milestone for the Marburg team on their way to P3E and the Mars project P5-A. It concerns the results of tests carried out in 2006 using the 20 metre tracking dish at Bochum in Germany. The AMSAT-DL/IUZ team were able to detect signals from the Voyager-1 interstellar probe. Imagine that! The Voyager-1 probe is the farthest object from earth ever built by humans. In March this year it passed the 100 AU distance. One Astronomical Unit (AU) is the average distance of the earth from the sun and is a common measurement used in astronomy when large distances are involved. It is an extraordinary feat to detect signals from such a distance and it proved beyond doubt the ability of the Bochum installation to cope with the challenges of the forthcoming Mars probe. Those among us who relish a challenge of their own may like to follow the links on the AMSAT-DL web site and read of the amateur radio beacon planned for the Mars project. This could represent the greatest challenge any amateur radio operator could face. I reckon one could hang up one's spurs after receiving this spacecraft's beacon whilst on its way to Mars. Think about it. You could take part in what may be the ultimate frontier of amateur radio. Last month the Bochum team received a message from the JPL Voyager Flight Team congratulating them on their outstanding achievement. The message included a picture of the entire JPL team showing members holding a poster of the reception report from Bochum. It was signed by Roger Ludwig on behalf of the Voyager Flight Team. Well done AMSAT-DL/IUZ.

Happy Birthday AO-7 – again!

AMSAT-OSCAR 7 was launched on 15 November 1974 from Vandenberg Air Force Base in the USA. So it would have had its 5th birthday in 1979. AO-7 followed its predecessor AO-6

(1972) which was the first successful linear transponder bird. AO-7 provided many years of service but eventually succumb to battery failure in mid 1981. Remarkably on 21 June 2002, some 21 years later, Pat Gowen G3IOR reported hearing an odd signal that seemed to be transmitting Oscar style CW telemetry, it had the old familiar HI HI followed by a string of numbers in groups of three. It proved to be AO-7 - and it's been an astonishing ride ever since. Pat was the first to hear and report the signals and it's been 5 years since that time. Happy 5th birthday, again, AO-7. Good luck to those using the old satellite. Please respect the fact that it is well beyond its "use-by" date. Please follow the recommended procedures for operation so we can all enjoy the clear signals and high orbit of this amazing bird. In the absence of the HEOs its wide footprint represents our best hope for some limited DX at present in this part of the world. Make a practice of listening regularly to the beacon. Stop transmitting if it's found to be "FM-ing".

What band is that?

Amateur radio is full of jargon. Amateur radio satellite operators have to cope with more than their share. We read of a particular satellite as having a "mode LS" transponder. What does this mean? It means that the satellite has on board transmitters and receivers which operate in the "L" and "S" bands. They are coupled to produce a transponder operating in the above mode. No surprises so far, but it assumes you know what the expression "L" and "S" bands mean. The lettering system is a sort of shorthand which makes it easier for engineers to talk of these things without repeating lots of numbers. Here is a list of the more common ones associated with commercial satellites and broadcasting.

Band	Frequency
"L"	1.0 - 2.0 GHz
"S"	2.0 - 4.0 GHz
"C"	4.0 - 8.0 GHz
"X"	8.0 - 12 GHz
"Ku"	12 - 18 GHz
"K"	18 - 27 GHz

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK
9 Homer Rd
Clarence Park SA 5034

Graham's e-mail address is:
vk5agr@amsat.org

"Ka" 27 - 40 GHz
"V" 40 - 75 GHz
"W" 75 - 110 GHz

So a mode LS transponder will require the user to transmit in the "L" band and listen in the "S" band. The above listings are commercial in nature and generally refer to services offered by commercial communication satellites. Amateurs use an extension of this system which includes the "V" band, meaning VHF, usually 2 metres and the "U" band meaning UHF, usually referring to the 70 cm band. Thus one of the most popular combinations used on recent satellites has been mode-US where the user transmits in the 70 cm band and receives in the 2.4 GHz band. Future HEO satellites will carry a matrix of transmitters and receivers capable of being switched into almost any combination, limited only by the available antennas on the satellite.

continued next page

Silent key

Alf Webb OAM, VK2UC

It is with deep regret that I advise that one of our members, Alf Webb VK2UC, is now Silent Key.

Alf was a very long standing amateur and resident of Lismore, and was approaching the wonderful age of 102 at his passing.

He was born on 10 September, 1905 in the London suburb of Islington, and migrated to Australia in May, 1911 where the family moved to the North Coast area.

He served in the 15th Light-horse Regiment from 1924 to 1931. In 1940 he joined the Army Volunteer Defence Corps until entering Army Signals in

1943 where he served until his discharge in June, 1946.

Introduced to amateur radio by a cousin in 1922, Alf obtained his AOCB in 1947, and remained an active amateur operator on CW and phone until a few short months before his passing.

He joined the (then) PMG in Lismore in 1947 and retired from (the now) Telstra in 1969.

In 1990 he was awarded the Order of Australia Medal for service to the RSL and the community.

Alf was a foundation member of SARC, and was also President in 1984.

Later he was made a Life Member of SARC.

He was Australia's oldest active amateur, being active on air every day on Morse and voice until a few months before his death.

Alf's funeral was held at St Andrew's Anglican Church, Lismore on 19 July.

Known, liked and missed by many on the North Coast.

Vale Alf Webb OAM VK2UC, SK.
Forwarded by John Alcorn VK2JWA, on behalf of Summerland ARC, Lismore.

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AMSAT continued

More pressure to auto-track

Life just becomes more and more complicated these days. There was a time when the LEO satellites were workable easily with very rudimentary gear. This is still true to a degree today and the newcomer is being well catered for - but the writing is on the wall. Frequencies will keep going up, no doubt of that. In terms of terrestrial amateur radio that doesn't present much of a problem. Satellite communication is a different matter. There's the ever present problem of Doppler shift correction. Some current satellites overcome this by using FM where frequency tuning is much more forgiving than SSB. Given that however,

the right technology can facilitate SSB comms right up to UHF and higher. It is being done now, as we speak. Tracking programs are available to tune your radios to compensate for Doppler to an accuracy which enables "hands-off" working by SSB. They implement full two-way Doppler compensation which by tuning both receiver and transmitter, keep the contact on the same frequency on the satellite transponder. Sounds complicated? It certainly would be if you tried to do it by hand. You would go crazy. Modern computers and radios can do it though and it points the way to the future of amateur radio satellite communications. Imagine a LEO satellite streaking overhead or a HEO doing the same around perigee and there

you are conducting a QSO while your radio is being controlled by the laptop to keep everything in line. Nothing new about that of course. Many people, myself included, have been doing it on the digital birds for 15 years or more. But now the "ante has been upped" many times over. Frequencies like 1269 MHz and SSB to boot make even those systems look old hat and unable to cope. If you are intending to stay with amateur radio satellites for a while, you will no doubt encounter these changes. Save yourself a lot of heart-ache by reading up on the future of this area, particularly if you are thinking of upgrading your radio gear or computer soon.

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VHF/UHF – an expanding world continued

about 30 minutes and then faded out, unfortunately no other stations heard.

On 23rd June, Dave VK5/SWL reported hearing Norm VK3DUT 5/5 with QSB working Bob VK3AJN as well as the Sydney VK2RSY beacon. Norm VK3DUT also reported the VK5RBV Barossa beacon at 559.

The best opening for June occurred on the 24th June with the band open from VK4 (Brisbane to Mackay) to VK2, VK3 & VK5. Wayne VK4WS & Adam VK4CP were in the thick of the action

working many stations including VK5's ZLX, ADO, KBR, VK2's ADB & FHN, and VK3's XQ & DUT. Peter VK5ZLX also worked Trevor VK4AFL, Rob VK4TWR Gladstone & VK4CRO.

Rod ZL3NW near Christchurch reported hearing the VK2RHV Hunter Valley, VK2RSY Sydney & VK7RST Hobart beacons on the 28th June. At the same time the Hunter Valley beacon was audible in VK5.

30th June: Brian VK5BC found both the Townsville VK4RTL & Alice Springs VK8RAS beacons were

audible and on calling north worked Jeff VK8GF Alice Springs & Kevin VK4BPK Mackay.

On 5th July, both the Sydney VK2RSY and Hunter Valley VK2RHV beacons were audible in VK5 and on the 8th July Scott VK4CZ Brisbane reported hearing both VK7RST & VK7RAE beacons and working Rob VK3XQ 5/4.

Please send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au

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VK2

SARC outing: 30th anniversary of club repeater VK2RSC

John Alcorn VK2JWA.

The Summerland Amateur Radio Club celebrated the 30th anniversary of their club repeater VK2RSC on Saturday 8 July 2007 with a club picnic at the repeater site, Parrots Nest, about halfway between Lismore and Casino, on the Bruxner Highway.

The weather was fine, and it was determined that the day was a great opportunity for some heliograph practice.

Rob Gallagher VK2KGGK, who lives on Hogarth Range, some 45 kilometres to the west of the Parrots Nest site, had taken an Mk V heliograph to his QTH, and set it up, while I had set up a Mk V and 25 cm (10") US type heliograph

on site.

We had agreed to liaise on two metres and, after some trial and error, Rob got the flash from my large mirror, giving him an aiming point for his heliograph, and in a short time we also received his flash, which was easily visible over the 45 kilometre path.

We then exchanged Morse letters, slowly, HIHI.

Dave VK2ZDR and Amy VK2FCAT also practised using the device, and were quick to learn the technique. After this, Rob packed up and drove

down to join the group.

All in all, beautiful weather, good company, an enjoyable BBQ meal, and some amateur radio fun. An excellent day.

The photos give a glimpse of the activities enjoyed.

ar

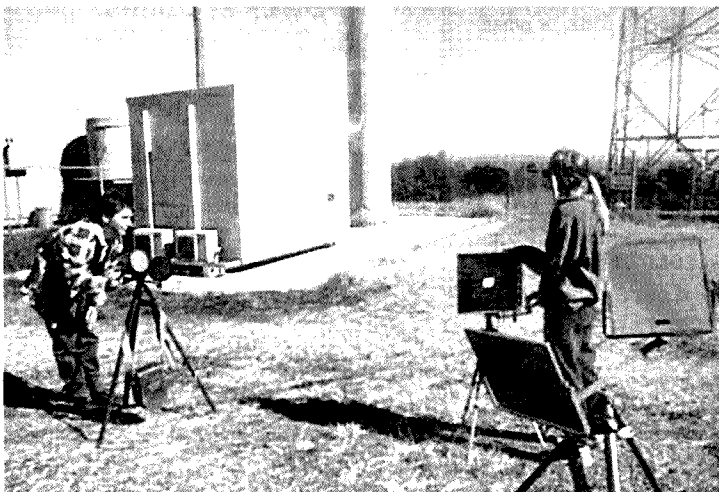


Photo 1: Dave VK2ZDR and Amy VK2FCAT practising with the heliograph training mirror.

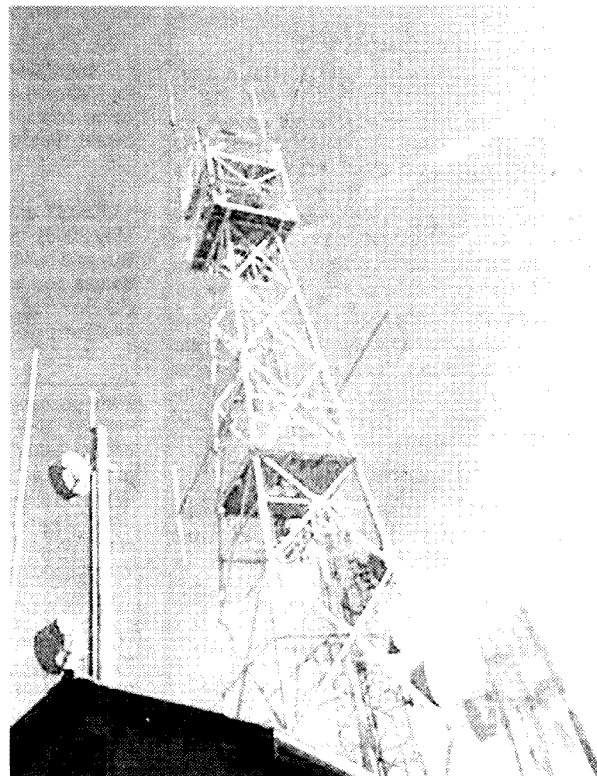


Photo 2: The tower upon which VK2RSC lives

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• A good condition AM. FM. RF Signal Generator complete with manual. The manual can be photo copied. R.Cannan, VK2LJC. 02 4295.1227. vicic@southernphone.com.au

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• Yaesu FT-101E. Excellent condition plus new spare PA tubes, plus Yaesu YO-100 monitor scope and SP-101B speaker, the full Yaesu line. Service manuals for both units. \$450 the lot. Phone John VK3BAF QTHR. Phone 03 8502 8627.

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• 3 x GME 12 volt 35 amp linear power supply \$120.00 each

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• 3 x 19 inch equipment rack frames, 1345 mm H, 540 mm D \$150.00 each. Equipment is in Brisbane QLD and would hope for local pick-up from me, but can arrange postage if required at cost. Mob 04 0949 3303

WANTED QLD

• Copy of manual and circuit of Yaesu Musen antenna tuner model FC-700. Brad Booth VK4CDL, 48 Gregory Street, Cardwell. 4849.

• Copy of owner manual and circuit, if possible, for Microlog AIR-1 CW Morse code module. Will cover costs. Brad Booth VK4CDL, 48 Gregory Street, Cardwell 4849.

FOR SALE SA

• VK5JST antenna analyser kits [see AR article May 2006]. Improve your HF antenna efficiency. Buy and build this world-class analyser. For more details see www.scarc.org.au; contact SCARC PO Box 333, Morphett Vale, SA 5162, or email: kits@scarc.org.au

WANTED SA

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WANTED TAS

• Can anyone help with an AM/FM board for ICOM IC-725? If so, please email greaves@supernerd.com.au or sms to 04 1715 8753. VK7NBJ.

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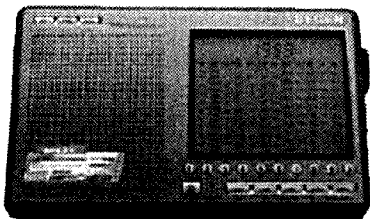
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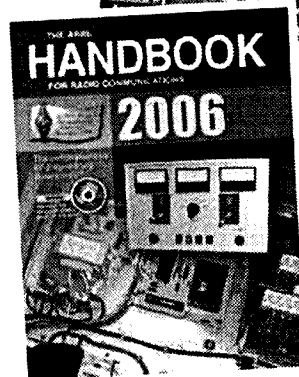
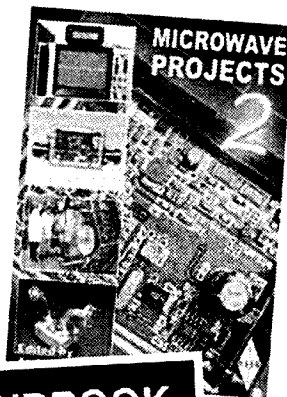
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The WIA offers one year and 5 year membership for some categories excluding Concession Student and family member. The fees for each category are Full Member \$75 (\$356) , Overseas member \$85 (\$403) , Concession members (pensioners) \$70 (\$332) , Concession member (Student) \$70, Family members \$30.

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VK2 New South Wales VK2QV Chris Flak VK2XCD Chris Devery VK2BFN Adrian Clout	Phone 02 9651 1490 vk2wi@ozemail.com.au vk2advisory@wia.org.au	VK2WI - Sunday 1000 and 1930 hours local.1.845; 3.595; 7.146; 10.125; 14.170; 28.320, 52.525; 145.600; 147.000; 438.525; 1273.500 megahertz. Plus regional relays. 5423.5 kHz [morning] VK1WIA news Included In the morning
VK3 Victoria VK3JJB John Brown VK3PC Jim Linton VK3APO Peter Mill	Phone 03 9885 9261 arv@amateurradio.com.au	VK1WIA, Sunday 11 am and 8 pm, 3.615 and 7.085 (LSB), 10.130 (USB), VK3RML 146.700, VK3RMM 147.250, VK3RMU 438.075.
VK4 Queensland VK4BY Don Wilchefski VK4ZZ Gavin Reibelt VK4KF Ken Fuller	vk4advisory@wia.org.au	VK1WIA, Sunday 9.00 am via HF and major VHF/UHF repeaters
VK5 South Australia and Northern Territory VK5OV David Box VK5APR Peter Reichelt VK5ATQ Trevor Quick	Phone 08 8294 2992 boxesdnm@lm.net.au peter.reichelt@bigpond.com vk5advisory@wia.org.au	VK5 South Australia VK5WI: 0900 hrs local time. 1.843 LSB, 3.550 LSB, 7.140 LSB, 28.470 USB, 53.1 AM, 147.000 FM Adelaide, 146.900 FM South East, 146.925 FM Central North, 439.975 FM Adelaide North. VK8 Northern Territory 0900 local time 3.555 LSB, 7.050 LSB, 10.130 USB, 146.900 FM.
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Notes
1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

Gippsland Microwavers



L to R: Rob VK3EK, Ralph VK3WRE, George VK3HV, Tom VK3XBG, Ken VK3DMW, John VK3ZRZ and Peter VK3KAI.

Photo by Denis VK3ZUX.

About 10 years ago, a small number of individual amateurs in the Latrobe Valley in Victoria were interested in weak signal VHF/UHF and microwave communications. The result of their discussions was the running of the first GippsTech Conference in 1998.

The Conference has increased interest locally and more broadly around south eastern Australia and beyond. The 10th annual GippsTech event was held in early July – see our report inside the magazine.

The photo shows some of the Gippsland Microwave operators with just a small sample of their gear.

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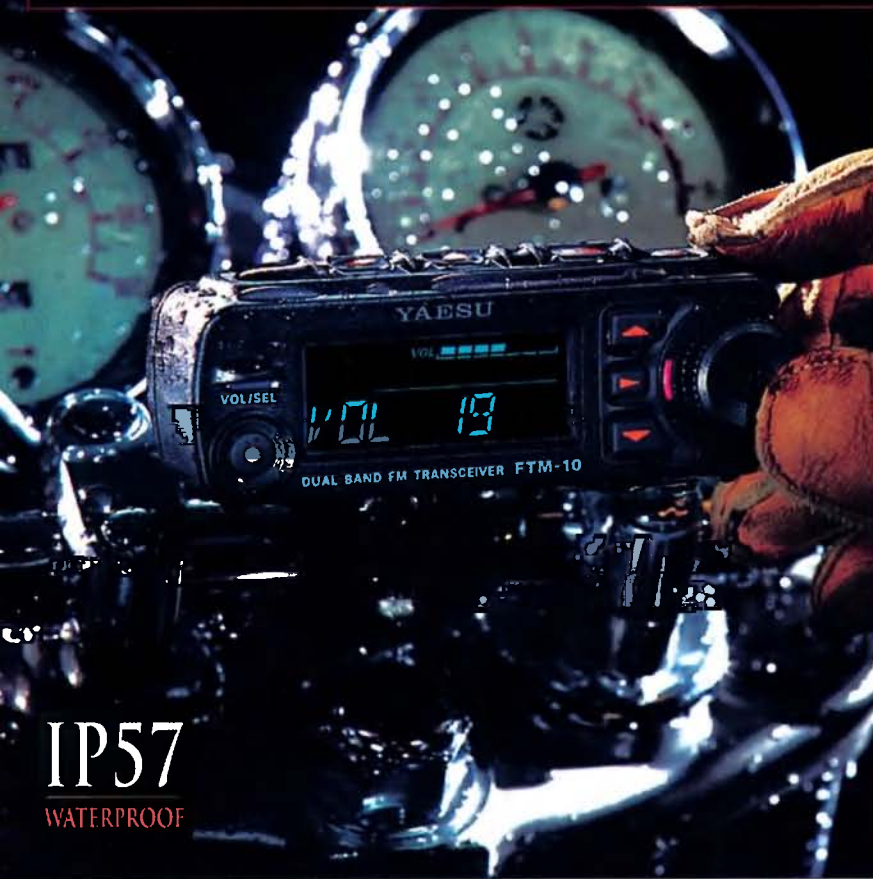
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September 2007

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Our Cover this month

"Targa Tasmania is a tarmac car rally, with a focus on historic and classic cars, which runs over five days and covers much of Tasmania. For many years, amateurs have formed the core of the communications team...". Read the story on page 21. Inset picture courtesy of Perfect Prints

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

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Back issues are available directly from the WIA National Office (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 an additional \$2 for each additional issue in which the article appears).

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Editorial Comment

Peter Freeman VK3KAI

AR delivery

On behalf of the entire Publications Committee, I thank all who have responded to our request for information about the date of delivery of AR to members' addresses. As I prepare this Editorial, we had received replies from 163 members for the June issue, 186 for July and 102 for August, with us expecting to receive a few more for August, especially from areas a little further out from the capital cities.

Whilst we have yet to examine the data in detail, it appears that most members are receiving their copy of AR within a reasonable time from the mailing date. It appears that Australia Post does a reasonable job of attempting to meet its delivery guidelines. There are always a few exceptions, but we would need to undertake a major exercise to attempt to identify the causes of those unusually late deliveries.

Ernie Walls VK3FM reports that many respondents have included some nice comments on the magazine – we all thank you for the compliments.

You might ask "What prompted this short survey?" We have received a small number of comments regularly from members about the delivery date of AR to members' homes. A little deeper investigation usually reveals that the major issue is not so much the actual date of delivery, but that some are annoyed that they see the magazine on their local news agency stands a day or more before it appears in the mailbox. I appreciate that this might be a little frustrating for those so affected. The problem comes about because of the delivery mechanisms.

All member copies are posted through the Australia Post distribution network. The expected delivery times can be established by looking through the appropriate documents on the Australia Post web site. For most areas of Australia, delivery should take a maximum of seven (7) days, unless you are at the further reaches of this large continent. Our data shows that for each of the three months for which we have data, these deadlines have been met except for a very small number of later deliveries.

Copies of AR going to the news stands

are delivered in bulk to one of the major magazine distribution companies. As the distribution of magazines to the retail outlets is the speciality of this type of company, they have developed extremely efficient distribution systems. Part of the efficiency, compared to Australia Post, is that deliveries are only made to a relatively small number of outlets in each town. On the other hand, magazines delivered via Australia Post make up a small proportion of an overall huge quantity of mail items delivered to essentially every household across the nation.

Together with our publication house, Newsletters Unlimited, we are exploring ways that may allow for the earlier delivery of AR each month. There are many factors involved and it may take some months before we reach our goals. However, even if we do our best, some members might still see the magazine in the shops before it is in the mailbox. We therefore ask members to be patient – all involved are working as best we can with the systems available to us.

August – contest month?

In VK, it seems that August was contest month. I trust that all enjoyed their participation in the three major weekends of activity: the RD Contest, the ILLW and the ALARA Contest. Having participated, you should make the extra effort for the two contests and submit your logs. It really does not matter if you will not win – by submitting your log, you show that you have supported the goals of the Contest. I know that each extra log means additional work for the Contest Manager, but I am sure that it is work that they really appreciate. It is the lack of logs that the managers usually find frustrating – why go to all the effort of refining the rules, distributing them to multiple outlets, and sending out news items to magazines, clubs and the broadcast team, only to see a small number of logs entered. More logs show that the news has been heard, and indirectly the efforts appreciated. Check the Rules – make sure the log is in by the deadline!

Cheers,

Peter VK3KAI

ar

TAC to FTAC to NTAC

One of the most respected groups that provide a service for the WIA is the TAC – the Technical Advisory Committee, or rather what used to be called FTAC, the Federal Technical Advisory Committee, which is, of course, what we now call NTAC, the National Technical Advisory Committee.

We do make life hard for ourselves, don't we, playing with names and titles?

But it is the fact that the National Technical Advisory Committee is an example of gradual change to preserve what is good, to adjust to the new structure of the WIA and to try to make what is good even better.

One of my more vivid memories of days gone by in the WIA was a series of meetings attempting to develop a logical and national set of 2 metre FM frequencies, the then new mode using second hand commercial equipment, rather than the rather random frequencies that had developed. Slide rules to calculate crystal frequencies produced some pretty strange results.

Then, during the 1970s the Federal Council of the WIA established a VHF-UHF Advisory Committee, with the main function of developing national VHF-UHF band plans.

Around this time the Federal Repeater Secretariat (later Federal Repeater Committee) also came into existence to provide national co-ordination of repeater development. Several years later these committees were merged into the Federal Technical Advisory Committee, which was also given responsibility in other areas of technical co-ordination and planning.

By this time some Divisions were also creating their own Technical Advisory Committees. In 1990 the structure of FTAC was reorganised to include representatives of each state TAC as well as the original technical advisory panel.

Then came the national WIA.

Fairly soon after that came ACMA, instead of the ACA, and the centralisation of licensing to Canberra.

One of the roles of the Technical

Advisory Committees had been to endorse repeater and beacon licences, and with the centralisation of the ACMA licensing function the WIA, in July 2005, created the position of National Repeater and Beacon Coordinator to liaise with the ACMA and the appropriate members of the NTAC.

That role was important. It ensured that repeater and beacon frequencies conformed to the band plans, provided pre-vetting to ensure that the applications were complete, provided an informed point of contact, and enabled ACMA to do the minimum site compatibility checks.

It is also a lot cheaper than having to provide certification from an Accredited Person appointed by ACMA in accordance with Part 5.4 of the Radiocommunications Act.

Peter Mill VK3ZPP was already deeply involved in the WIA endorsement of repeater applications, and the Board was pleased when he accepted the national position.

But apart from beacons and repeaters and band plans, what did they do?

I knew who to contact when I needed technical advice for VHF or UHF submissions to the ACA (as it then was!) and that was John Martin VK3KWA, chairman of FTAC/NTAC.

The Board then reviewed the whole structure and procedure of the committee, and among other things, defined its role as follows:

- (a) To provide technical information, advice and recommendations to the WIA Board.
- (b) To draft, revise, circulate and contribute to policy studies, documents or submissions as required by the WIA Board.
- (c) To co-ordinate with and cooperate in technical activities carried out by other WIA Committees and appointed officers.
- (d) To provide liaison with similar bodies established by national societies in other countries.
- (e) To develop, review and publicise the national band plans.

- (f) To develop recommended technical standards for specialized amateur stations such as beacons, repeaters, links and ATV stations.
- (g) To co-ordinate frequency assignments for beacons, repeaters and links.
- (h) To ensure that licence applications for beacons, repeaters and links are processed in compliance with the national band plan, other relevant WIA policies and government requirements.
- (i) To maintain, and provide for publication, a database of Australian beacons, repeaters and links
- (j) To maintain and publish a database of Australian VHF/UHF/SHF distance records, and to process claims for new records.
- (k) To carry out other duties as assigned to the NTAC by the WIA Board.

The Board appoints people of particular skills to take responsibility for particular areas, and also appoints Regional Advisors for each call area.

Now, a further step has been taken.

As announced by a recent release, and with the detailed procedure on the WIA website, the Board in consultation with the NTAC has announced a clear procedure for obtaining the WIA's endorsement for a new or changed repeater or beacon licence.

What is different?

Really, very little, except for the handling of the process through the WIA office. The procedure is set out in NTAC documentation on the WIA website, and the applications and documents should be lodged with the WIA national office. The office will log the matter, copy the appropriate members of the Committee including the Regional Advisor and generally be responsible for tracking the progress of the matter.

Why do that? In the end, all of the people who undertake these tasks are volunteers. Sometimes volunteers get sick. Sometimes they take holidays. Sometimes other aspects of their lives

WIA announces changes to WIA Awards Program

The WIA Board, in consultation with the WIA Awards Manager, Malcolm Johnson VK6LC, and taking the advice of Treasurer Jim Baxter, has announced some important changes to the WIA Awards rules.

Full details may be found on the WIA website under "Awards".

As from 1 September 2007, a new fee scale will be introduced, and following the lead of many overseas societies, including the ARRL, from 1 December 2007, within Australia, WIA Awards will be available only to persons who are members of the WIA.

WIA membership will not be required for applicants for WIA Awards resident outside Australia.

WIA Members will be entitled to one certificate and two Award up-dates per membership year at no charge. The fee for each further General Award certificate in a year will be A\$20, with the DXCC multi band certificate fee being \$25. Other fees can be found on the website.

The fee for foreign applicants will be A\$25 or US\$25 for each General Award Certificate and A\$30 or US\$30 for each multi band DXCC award, and A\$15 or US\$15 for each award up date. Again full details can be found on the WIA website.

The fee for WIA non-members resident in Australia until 1 December 2007 will be A\$30 for each certificate, A\$15 for each award up-date and A\$35 for each replacement certificate.

After 1 December 2007 membership of the WIA will be required for Australian residents to apply for WIA awards.

There are also some changes to the verification rules, which are hopefully a bit clearer than they were.

However, Electronic QSL methods such as eQSL, LoTW, Fax and email continue at present not to be acceptable as confirmation of QSO's for WIA awards. The rules now make it clear that applications for a WIA Award that do not substantially comply with the rules may be rejected and shall be returned to the applicant with an invitation to resubmit the application once the defects have been corrected.

WIA Board announces new Advisory Committees

The WIA Constitution that was adopted when the WIA moved from a federal structure to a single national body provided for Advisory Committees from each of the areas previously covered by the Divisions, and whose task was to advise the WIA Board in respect of more local matters.

The first members of each Advisory Committee were the members of the relevant Divisional Council who wished to be members. The Constitution provides that after three years new Advisory Committees were to be formed, with many of the details to be determined by the WIA Board.

The process to create new Advisory Committees has now finished. The Constitution provides that each Advisory Committee will have one member nominated by the WIA Board (the WIA Nominated Member) and the regulations adopted by the Board provide that three further members are to be elected.

If there are just enough nominations to fill the vacancies, then those nominating are elected, and if there was a shortfall, then the Board makes appointments to fill the vacancies.

The Board also has power to define the areas of each Advisory Committee, and has created the Northern Territory as a new and separate area for an Advisory Committee, and (after consulting with the Canberra Region Amateur Radio Club, previously the ACT Division) included the ACT as part of the New South Wales area, with a special provision to allow (but not compel) one member of the New South Wales ACT Advisory Committee to come from the ACT.

The Board has appointed its WIA Nominated Members to each Advisory Committee, nominations for election have been called by notice published in Amateur Radio, in two states the number of nominations matched the vacancies, the Board has appointed two people whose nominations were rejected on technical grounds, then where there were still vacancies, consulted with those already appointed and took their advice, and finally have made the last appointments to fill each Advisory Committee.

Accordingly, the new Advisory Committees are:

New South Wales/ACT Advisory Committee

Owen Holmwood VK2AEJ *
Dominic Dahl VK2YDD
Col Christiansen VK2BCC
Alan Hawes VK1WX

Victorian Advisory Committee

Bryan Pliatsios VK3HXR *
Lee Moyle VK3GK
Noel Ferguson VK3FGN
Mark Stephenson VK3PI

Queensland Advisory Committee

Don Wilschefski VK4BY *
Kevin Johnson VK4UH
JR (Ross) Anderson VK4AQ
Harvey Wickes VK4AHW

South Australian Advisory Committee

David Box VK5OV *
Peter Reichelt VK5APR
Paul Hoffman VK5PH
WRG Holman VK5GH

Western Australian Advisory Committee

Neil Husk VK6BDO *
John Howlett VK6ZN
Keith Bainbridge VK6XH
Robert Bristow VK6POP

Tasmanian Advisory Committee

David Potter VK7YUM *
Clayton Reading VK7ZCR
Jason Reilly VKZJA
Peter Rumble VK2IY/VK4KX

Northern Territory Advisory Committee

Garry Woods VK8GW *
Alan Baker VK8ZAB
Trevor Wardrope VK8TJW
Wayne Cockburn VK8ZAA

The WIA Nominated Members are shown with * after their callsign.

The new Advisory Committees do not actually take their position until 1 October, but in the mean time each Advisory Committee has been asked to identify their chairperson, work out how they are going to function and to work out the contact addresses and numbers for their committee.

In some areas a transition has already started from the old committee to the new, for example in Queensland where meetings are planned in October and so

both the old and the new are involved.

In announcing these appointments WIA President Michael Owen VK3KI said, *How the new Advisory Committees function will very much depend on the members of the Committee. The Board sees the Advisory Committees as a local representation of the WIA, there not only to advise the Board but also to actively promote and advance the WIA.*

I thank each and every one of you who have either agreed to participate or who have volunteered to participate in working for the WIA in this important way.

WIA announces changes to WIA QSL Service

A QSL Service at no cost is one of the services offered by the WIA to its members.

The WIA Board, in consultation with the National QSL Bureau Coordinator, Neil Penfold VK6NE, and through him the various QSL Managers, and taking into account WIA President Michael Owen's report of his discussions with the Westlakes Amateur Radio Club (who provide the Outwards QSL service for the WIA), has made a number of important changes to the WIA QSL Service.

The changes will take effect from 1 December 2007. Full details may be found under QSL on the WIA website.

The Board had decided that as both Inward and Outward services are provided by the Managers on behalf of the WIA, Managers should not accept money from either members or non-members as the cost of keeping and auditing adequate accounting records outweighs any benefit.

If a WIA member makes an arrangement with the local QSL Manager for their cards to be sent annually, then WIA will meet the cost of forwarding any cards received for that WIA member at their address on the membership list once a year.

WIA members who are members of an affiliated club may instead through their club request that their cards be sent to them at their club. Inward QSL Managers shall send WIA members' cards to their clubs at such times as are economic having regard to the number of cards involved, but at least once a year.

The WIA will meet the cost of sending the cards to the clubs.

So far as non-members are concerned, the Inward QSL Managers will retain non-members cards for at least one year before disposing of them, and will make available cards for collection by or on behalf of non-members in a manner convenient to the Manager.

So far as the Outward Service is concerned, WIA Members should send their cards sorted in DXCC country order direct to the WIA Outwards QSL Bureau addressed as follows:

WIA Outwards QSL Bureau
P.O. Box 3073
Teralba
NSW 2284

Affiliated clubs may collect cards on behalf of their WIA members and forward them in reasonable sized batches to the WIA Outwards QSL Bureau at the above address. The Outwards Bureau will confirm the WIA membership of the club members.

Non-members' cards will not be handled.

New NTAC repeater and beacon procedures

The National Technical Advisory committee, NTAC, is responsible for advising the WIA Board on technical matters, developing and revising national band plans, coordinating frequency assignments for repeaters, links and beacons and other tasks, and the National Repeater and Beacon Coordinator, a member of NTAC, provides "Letters of Coordination" as required by ACMA before licensing repeaters and beacons.

Following extensive consultations with the National Technical Advisory Committee Chairman John Martin VK3KWA and National Repeater and Beacon Coordinator Peter Mill VK3ZPP, the WIA Board has announced changes to the procedure for obtaining the WIA's "Letter of Coordination".

Inquiries and applications should in the first instance be sent to the WIA national office, either by mail or email addressed to nationaloffice@wia.org.au

The WIA office is responsible for routing the application to the appropriate Regional Advisor and tracking the application through the process, and

will acknowledge to the applicants that material has been received. It will also advise the applicant when the "Letter of Coordination" has been sent to ACMA.

In addition, the issue of repeater and beacon licences and changes to the licences, including terminating a licence, should also be advised to the WIA national office.

This way, the WIA can ensure that the appropriate people are kept informed, and that if particular NTAC experts are away for any reason, applications are not unreasonably delayed.

Further details can be found on the WIA website, and shortly suggestions for processing applications and templates will also be placed on the website.

Members apply for qualification as Learning Facilitators

In late April the WIA announced that WIA Learning Facilitators will replace the Invigilators and WIA Learning Organisers (who will need to be either WIA Assessors or WIA Learning Facilitator) will replace Group Leaders.

1 December 2007 was the date proposed for the change.

Full details can be found in the booklet "WIA Learning Facilitator Instructions" on the WIA website.

The application for training and registration may be made using the form on the WIA website, which may be used as an application for either Assessor Training or Learning Facilitator training and registration. There may be questions that appear unnecessary to answer. If so, don't answer them and if more information is required, the WIA office will contact you.

Already 24 members have applied for qualification (which may be done on-line) and registration as a Learning Facilitators, and more are expected soon. In addition, a number of new applications have been received for qualification as WIA Assessors.

Clubs and individuals are asked to ensure that all applications for qualification as a WIA Learning Facilitator are lodged at the WIA office as soon as possible.

Mains power supply and circuit protection (Fuses and circuit breakers)

Lyle Whyatt VK5ZNB

This article relates to domestic type installations, as industrial installations will have other criteria. The fuses and circuit breakers (CBs) under discussion are the circuit fuses at the switchboard, not the fuses which may be installed in any apparatus.

Operation of fuses and circuit breakers

Wire fuses

Wire fuses are heat/temperature sensing devices. In normal operation, at loads up to its rated capacity, the fuse will heat up as a resistor in the circuit (which it is). Under overload conditions the temperature rises to the melting (fusing) point of the wire element, and the fuse opens the circuit. Under typical conditions, with tinned copper wire, the actual fusing current will correspond to about twice the rated current. Figure 1 shows a common porcelain fuse-holder and also a modern CB which can replace its re-wireable wedge.

If the fuse is subject to a short circuit, the temperature rise will be almost instantaneous and the wire will vaporize, causing an arc within its holder, and leave only coppery black flash residue. Some re-wireable fuse wedges have a torturous wire path to help extinguish the arc. As the size of street supply mains and consumer circuit wiring is increased, there is a possibility that the

lower impedance of the mains will allow sufficient current to flow to maintain the arc, which continues until some other protection feature operates. In extreme cases, a fire may ensue, especially in multi-phase installations.

HRC Fuses

High Rupturing Capacity (HRC) fuse elements are typically silver wire or foil and are contained in a ceramic tubular container with metal end caps. The space within the tube is filled with a sand-like substance. These fuses act in the same way as wire fuses with respect to overload conditions, and typically will not operate until about three times the rated current is exceeded for some time. Under short circuit conditions, the vaporization of the element and any arcing is contained within the ceramic tube and is not likely to cause a fire. Figure 2 shows a typical HRC fuse cartridge with both base and top of its fuse-holder.

Fuse and CB ratings

The rating of fuses and CBs includes three parameters:

- Voltage of circuit
- Current rating. Normal/continuous operation.
- Rupture capacity. The effective capacity to interrupt an instantaneous fault current up to thousands of amps without mechanical failure (blowing up or destroying itself!)

Wire fuses have a very low rupture capacity under fault current. Typical HRC fuses have a rupture capacity of 80 to 100 kA and offer the highest protection, but with the added expense, if you have to replace them. Wire fuses should never be used to replace HRC fuses. Replacement fuses should always match the existing fuse rating but could have a higher rupture capacity.

Circuit breakers

Circuit breakers (CBs) are essentially a spring-loaded switch with the contact release mechanism being both temperature (normal load current) and magnetically (fault current) controlled. The separating contact system will be located within an arc-chute to stretch

Glossary of terms

Fuse: A device placed in the active line of a circuit, which provides protection through the fusing of a wire or similar element. This device requires replacement of the fusible element before the circuit is restored.

Circuit breaker: A device, which through heating and/or magnetic effect causes a spring loaded contact to be opened. This device can be simply re-set to restore supply after the fault/overload is removed.

Overload fault: A circuit which is electrically overloaded beyond the designed limit, although the excess current is not caused by any faulty appliance, e.g. a stalled motor.

Short circuit fault (temporary): A live circuit where the active and neutral are brought together in an intermittent contact.

Short circuit fault (bolted): A circuit, initially dead (switched off), which has the active and neutral effectively bolted together through

some fault, and then the switch is closed. This fault always results in very high current flow.

Mains supply fuse: The fuse (or circuit breaker) installed by the power authority, normally at the service point for the consumer.

Fault current level: The instantaneous fault current which is caused in the power mains at the service point and switchboard location. Its magnitude depends on the distance from the power station, on the voltages used, and on the differing conductor sizes in the street supply circuits. Values of 6 kA to 50 kA are typical.

Mains supply alternatives: There are many different forms of mains supply and these may require different fusing criteria when considering fault current. Typical forms are:

- Bare mains mounted on poles/cross-arms, with insulated separate service wires to

the house and then (service) fused at the eaves or in the meter box.

- Bare mains mounted on poles/cross-arms, with insulated neutral screened cable (concentric stranded neutral around the central active core/s) and then (service) fused in the meter box.

- Bare or insulated mains mounted on poles/cross-arms, with a service fuse box mounted on the pole, supplying the consumer via an underground connection.

- Underground mains with service fuse pits/pillars at the boundary of the property. This is further divided between houses on the mains side of the road (with maximum fault current) and those fed across the road with the longer, smaller sized service cable.

and extinguish the arc around the moving contact within the body of the CB. Figure 1 shows a typical domestic CB which may replace the old porcelain re-wired wedge.

As a fully engineered device, a CB will be able to control over-current heating (time curves are published) and instantaneous faults according to the details of the design. Typical modern rail-type switchboard CBs may have a fault rating of 4.5 kA to 8 kA. If you are installing or replacing CBs use the 6 kA or 8 kA types when your fault current is high (How far away is your supply transformer?).

Plug-in CBs

Many older switchboards used wire fuses with porcelain bodies. There are plug-in CBs available which plug into the fuse base in place of the wire fuse holder. Typically these have a 5 to 20 amp rating to match the old fuses. These CBs provide much better fault protection than wire fuses and do not need to be replaced after an operation. After checking and clearing the fault, just switch 'off' to reload the spring contact assembly and then switch 'on'. They normally have a 1.5 kA to 3 kA fault rating which is better than a wire fuse, but not necessarily good enough for your fault current condition. Always look for the 3 kA variety. Do not replace a HRC fuse with an old-design porcelain type fuse base just so that you can use one of these CB's. Your HRC fuse was put there to provide high fault current protection.

Power supply system

In older areas with bare overhead copper mains, the conductors may be small (up to just adequate!) in size and these mains will provide a comparatively high impedance to fault current. This, combined with the service run from pole to house, will limit the available fault current at the switchboard such that 1.5 to 3 kA CBs should be able to handle it OK. However if you are connected to the mains at the actual transformer pole, or only one span away, your fault current could be significant, and higher rating CBs should be used.

In newer areas with larger bare/insulated overhead aluminium mains, the impedance will be less and significant fault current may be possible. The service wiring could be 10 mm² copper

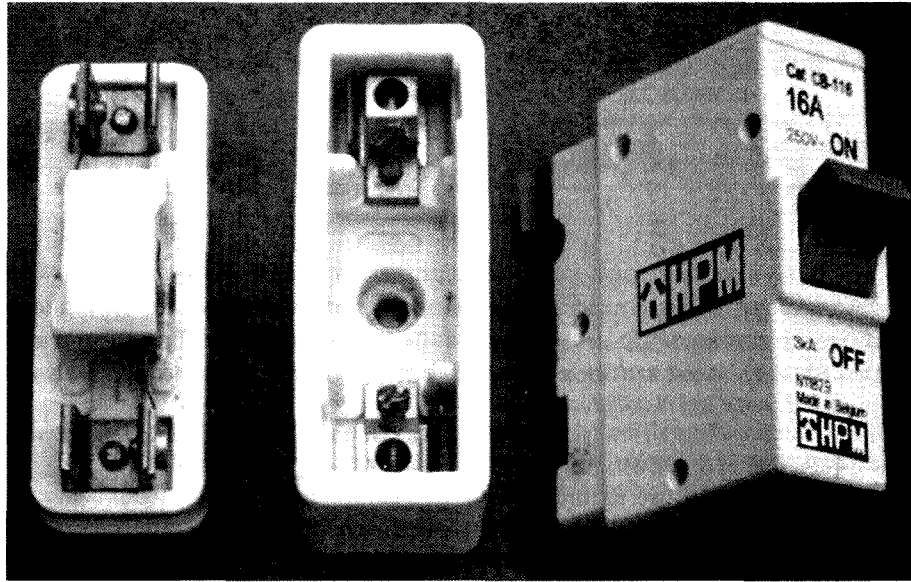


Figure 1: Porcelain wire fuse and CB replacement

and this is able to carry significant fault current to the switchboard. In these conditions wire fuses should not be used and only HRC fuses or 4.5 kA CBs, minimum, should be considered.

In modern areas, the underground street mains cables will be large, typically 150 mm² aluminium, and the smaller tee-off service cables to the other side of the road will be 35 mm² aluminium. These cables can carry substantial fault current and only HRC fuses or 6 kA CBs are recommended. In no circumstances should wire fuses be used.

A call to your power supplier should

be able to establish the fault current at your location, or at least at your supply transformer.

All modern supply service fuses will be HRC type, whether located in a pole service box, in a service pillar/pit or on the switchboard. In areas remote from the city, the service fuse may be replaced with a high rupture CB with an external operating lever. This enables a consumer to reset the CB after an incident without the necessity to call out a power company technician who has to travel many kilometres just to restore supply.

ar



Figure 2: HRC fuse cartridge and holder

Building a variable inductance oscillator

Leon Williams VK2DOB.

About twelve months ago I designed and built a QRP SSB rig for the 40 m band. I have been using it with great success and am continually amazed at where five watts can take you. I have worked most of VK, ZL and even a contact into JA without really trying, when propagation was favourable. Reports have been very pleasing, with most stations amazed that I was only running five watts after giving me a 5 and 9 report.

While homebrewing a new rig is very rewarding, one of the frustrating aspects is deciding what to use as the tuning control and frequency readout. Not that long ago this would have been a nice air spaced tuning gang and a smooth vernier reduction drive. However these items are now almost impossible to buy, at least at affordable prices, and unless you have a well stocked junk box, that new rig is bound never to see the light of day. I contemplated a modern digital approach, with maybe a PLL or a DDS, but both were complicated, expensive, used SMD components and really was not in keeping with the 'more with less'

philosophy that us QRP homebrewers espouse.

I had often wondered about using the approach that older car radios used, that is, tune with a variable inductor instead of a variable capacitor. This appealed to my inventive side, because I considered that making a variable inductor would be much easier than a variable capacitor. I then set myself the task of designing a usable system. I'm happy to say that the results have been very pleasing, with the oscillator proving to be extremely stable, and the tuning easy and smooth to operate. An unusual thing about using the oscillator is that the tuning knob

moves in and out as you tune across the band, but you quickly get used to that behaviour.

Tuning mechanism

The tuning mechanism is shown in Figure 2, and is simply a long brass screw that is screwed in and out of an air cored coil. The coil forms part of a tuned circuit in a free running oscillator, and in my case was required to tune from 3.8 to 4.0 MHz. This was easily achieved with about 10 mm travel of the screw within the coil, which equates to about 11 revolutions of the knob. An interesting thing to note is that when the brass screw

TET-EMTRON

Antenna Manufacturers

New Tet-Emtron Vertical Range

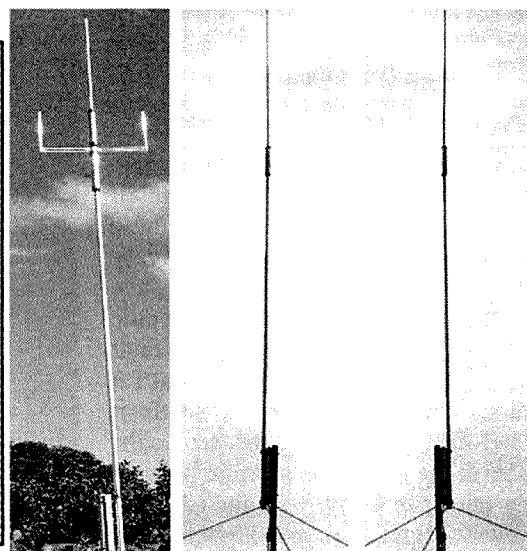
TEV-4 TEV-3 TEV-3 Warc

New Tet-Emtron Vertical Range

- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
- Light.
- Free standing—no intrusive guy wires.
- 1 kW PEP power rating.
- Can be ground mounted or elevated.

The new TET-Emtron Vertical range is designed with ease of use in mind. Tuning is done by the radials when the antenna is in its final position (where possible). The radials can either lay on the ground, be buried or hang from the elevated antenna. The antenna comes with a set of radials that has a resonant radial for each band. Further sets can be ordered from TET-Emtron if desired.

See the web site for more info and a complete dealer list.



40 Blackburn Street
STRATFORD
Victoria 3862 AUSTRALIA
www.tet-emtron.com
Email: rawmar@hotmail.net.au

Ph: 61 3 5145 6179
Fax: 61 3 5145 6821
ABN: 87404541761

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

OzGear is now 'internet only'

This is not the news we wanted to bring to you... but... due to poor customer support resulting in low sales figures, we have been forced to move from being in a physical shopfront to become a part-time internet-shop-only-based operation.

To a large degree this "change" has occurred by virtue of more and more people purchasing internationally via the internet, coupled with the market forces generated by the "grey-market-ers" and eBay and the people who buy from them. With people continually purchasing from such 'non-authorized sources', the death knell has sounded for the Australian "physical" radio and electronics shopfronts, OzGear's included.

The outcome :

- We cannot be contacted by phone – the 07 31142506 number is an "email us" advice message only.
- We have left the Acacia Ridge shop address and become home-based.
- No more personal pickups. Everything is either couriered or mailed.
- Email is the only way to reach us – and it will be answered as time permits.
- "Advice request / Help Desk" facilities are no longer available.

Products :

- We have minimised product lines and stock levels.
- Primary product lines are Icom, Yaesu, Sangean and Tigertronics. *We remain an authorised Australian dealer with manufacturer's Aussie warranties !*
- Some other products are available – only as listed on the web site.
- Many products are now supplied on a back-order basis only.

For those who already deal with us by email/web/mail order, the only real change is the reduced product lines.

Visit OzGear.com.au for continuing up-to-date details on product lines and pricing

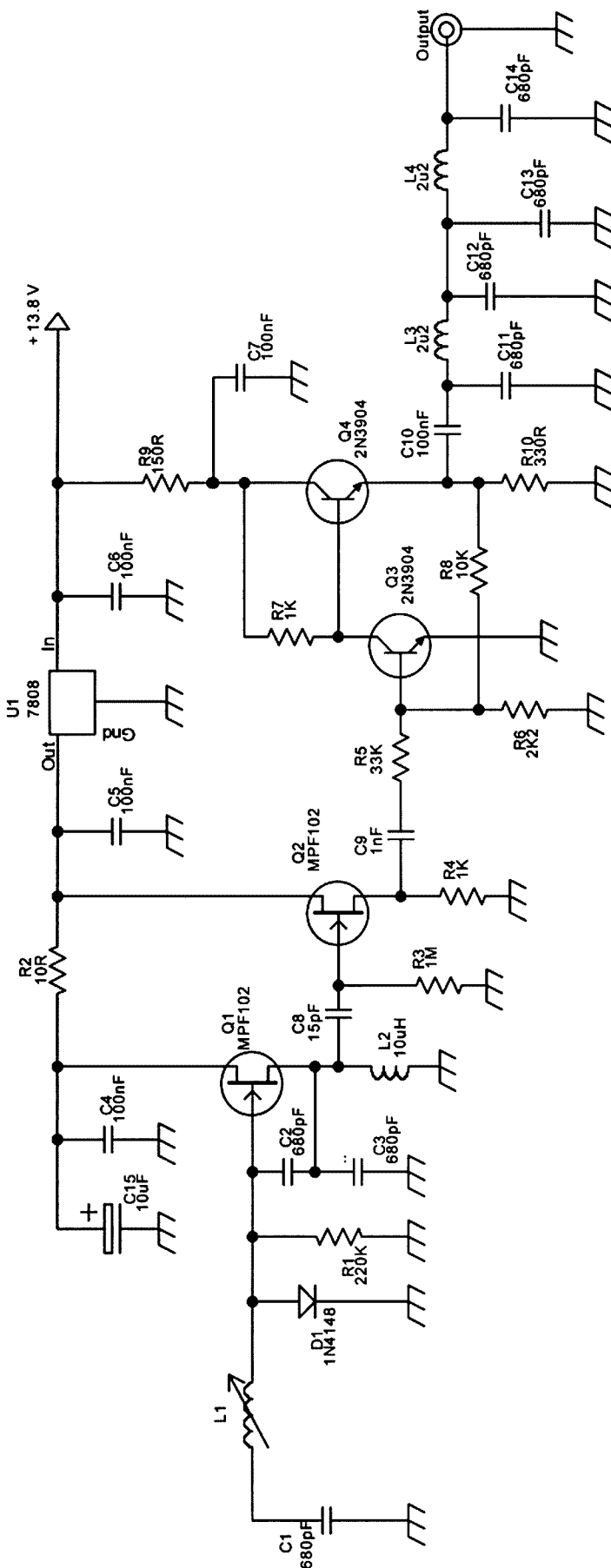


Figure 1: Mechanical assembly of the variable inductance oscillator.

is inserted into the coil the inductance decreases. This is opposite to what one expects with a ferrite core.

The unique aspect of this design is the mechanical tuning components which consist of two nuts mounted on flexible arms, a tension spring, and a brass screw. The rotating screw provides a simple but elegant reduction drive, but it is the spring that has the most critical role. Firstly, it binds the screw between the threads of the nuts, centering the screw in the coil former and minimizing free movement. Secondly, the differential tension between the nuts acting on the screw introduces friction to the rotation, resulting in a pleasant tuning action with little backlash.

The circuit

The circuit for the oscillator is shown in Figure 1. As can be seen it is a fairly standard circuit and no claims are made for originality. Q1, an MPF102 FET, forms a Colpitts oscillator with L1 being the tuning coil described above.

C1 essentially sets the centre frequency and the value will need changing to move the oscillator onto a different frequency. The output of the oscillator is loosely coupled via a small value capacitor to Q2, a common source buffer formed with another MPF102 FET.

From here the signal is further buffered by the feedback amplifier formed with 2N3904 transistors, Q3 and Q4. This buffer stage doesn't have any gain, but has the more important role of providing a low output impedance drive. The buffer output is fed to a low pass filter composed of L3, L4 and the 820 pF capacitors. The resultant output signal is very low in harmonic content.

A 7808 voltage regulator supplies 8 volts to the oscillator and FET buffer, while the final buffer stage is fed from the main DC supply rail. Ample decoupling is used throughout the circuit ensuring a low impedance supply rail and minimising instability.

Construction

Take an 8 mm diameter white "Biro" plastic pen barrel and cut a 35 mm length. Drill two closely spaced 1 mm holes about 10 mm in from either end. These holes are used to secure the winding tails, and are drilled at an angle to make it easier to feed the wire in through one hole and out the other. Take a 1.5 metre length of 0.25 mm diameter enamelled copper wire and thread one end twice through the two holes at the start end of the winding, and pulling tight. Carefully wind on 50 turns ensuring the turns are tight and lie side by side. Hold the winding in place with finger and thumb and take the loose end of the wire and loop it twice through the 1 mm holes at the end of the winding and pull tight. Cut the ends to leave tails about 50 mm long.

In the prototype I found there was no need to coat the winding to prevent it from moving.

The brass screw requires an extension

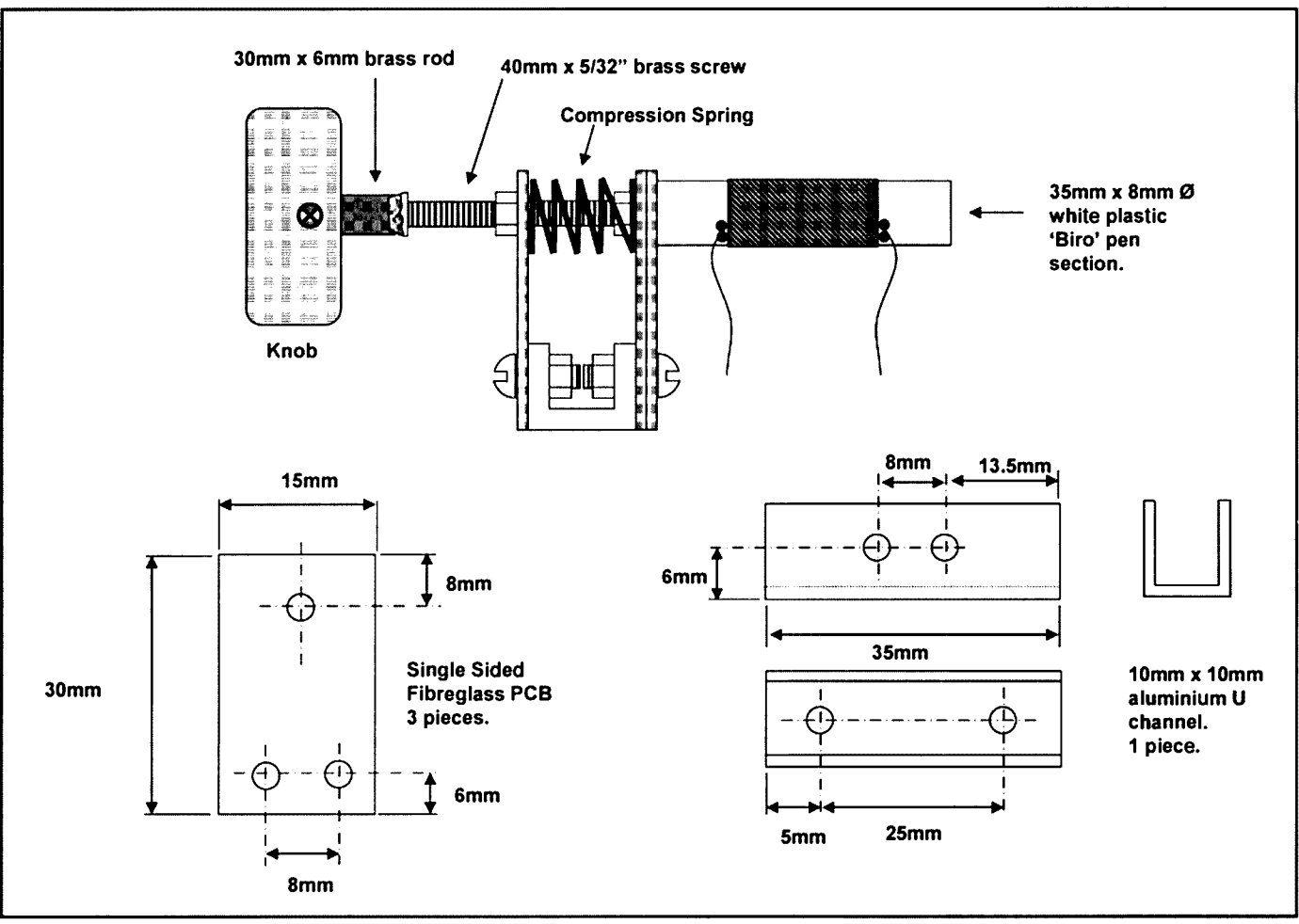


Figure 2: Circuit diagram of the variable inductance oscillator.

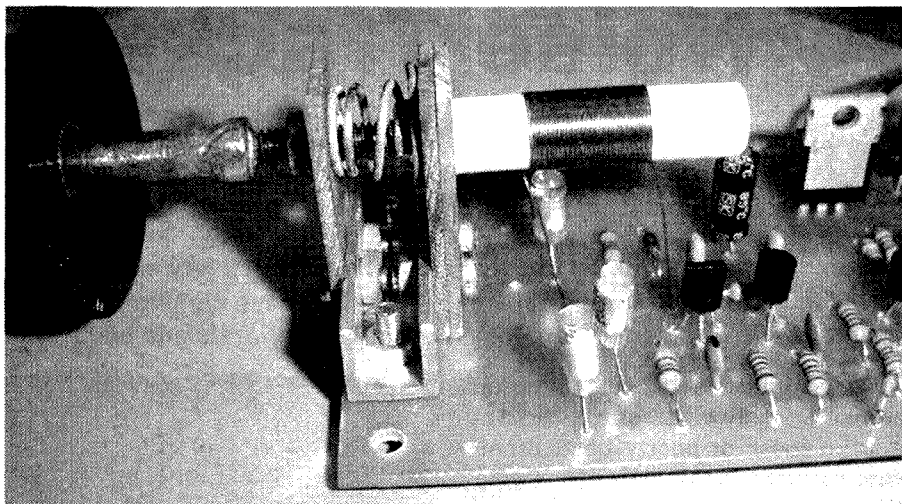
piece so that a standard knob can be fitted. Solder a 30 mm long section of brass round rod to the head of a 40 mm long 5/32" brass screw (Ed: a 4 mm screw should work). Check that the assembly is straight and rotates true. This may take a couple of goes before you get it right. Ideally, if you have a lathe and the skills, turning the whole assembly from a single piece of 6 mm diameter brass rod would be a much neater approach. I should apologise here for mixing imperial with metric units, but my hardware store doesn't stock metric brass screws.

Take a 30 mm long piece of 10 mm by 10 mm aluminium channel and drill four 3 mm holes on either side for the PCB pieces and two mounting holes on the channel bottom.

Cut three 15 mm by 30 mm pieces of single sided fibreglass PCB. Clamp them together and file the edges smooth. While keeping the pieces clamped together, drill a 4 mm tuning screw clearance hole and two 3 mm mounting holes. You should now have three identical pieces.

Mount one piece of PCB to the aluminium channel with 6 mm long screws and nuts so that the copper side faces outwards. Take one of the other pieces and carefully ream out the 4 mm hole until it is a push fit for the coil former. Screw the two remaining pieces to the other side of the channel with 8 mm long screws and nuts, ensuring that the piece with the hole for the former is on the outside and that both copper sides face towards the channel.

Run a brass nut halfway along the tuning screw and pass it through the hole in the single PCB piece. Run a second nut onto the screw and adjust the position of the nuts until they rest against the copper face of the respective PCB pieces. Hold the assembly steady and solder the nuts to the PCB pieces. Withdraw the screw and insert the compression spring between the two PCB pieces. Hold the opposing PCB pieces between thumb and finger and apply slight pressure to move the PCB pieces parallel again. Insert the tuning screw through both nuts and remove the hold from the PCB pieces. You should now feel some resistance to the rotation and any sloppiness should be gone. At this stage you can add the knob and adjust the spring tension to suit by altering the type or length of the spring.



A view of the completed variable inductance oscillator.

Push the coil former into the PCB piece with the large hole. Check that the tuning screw sits in the middle of the former, and that the winding loops inside the former don't foul the screw, and then glue into position. The whole assembly can now be attached to the oscillator PCB with 3 mm screws and nuts and the coil tails soldered to the relevant PCB pads.

To aid in frequency stability, it is advisable to install a shield to cover the coil and oscillator circuit. The prototype used a box shaped shield constructed from tinplate (salvaged from a fruit tin), and secured and grounded through 4 PCB pins soldered to each corner.

As stated earlier, the dimensions of the tuning coil and oscillator capacitor values in the prototype were for a frequency range of 3.8 to 4.0 MHz. Obviously if a different frequency range is required the number of turns on the coil and the capacitors will probably need changing. Note too that the oscillator frequency varies slightly with the screen fitted, so you will need to take this in account when determining the final number of turns.

Frequency Readout

The idea of this article was to describe the mechanical details of the tuning mechanism and circuit for a variable inductance oscillator. To be of practical use some kind of frequency readout is required. I incorporated a PIC based frequency counter and 2 line LCD display in my rig. However a more simple approach is to use a PIC chip with

audible Morse output. Designs and kits for these types of readout can be found on the Internet. For those interested I would be happy to supply details of my frequency readout design, or indeed any details of the QRP rig itself.

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A “Noise Tracker” receiver for 144.455 MHz AM

Drew Diamond VK3XU

It seems that a 22 kV aerial line runs down just about every second or third street in suburban Melbourne, and all the main roads in semi rural areas (like mine) have high-voltage feeds. Unfortunately, if the lines are not maintained in good condition, they inevitably deteriorate and become noisy.

Faulty insulators and surge arrestors are not the only cause of trouble. Any item of loose or poorly bonded pole hardware can create noise by arcing. For example, a common problem occurs when a timber cross-arm brace fixing bolt works loose (due to shrinkage of the timber pole and/or vibration), which opens a small gap where arcing may occur in dry weather, resulting in broadband radio noise.

When lodging an interference complaint with the local electricity supply company, it greatly helps if you can positively identify the actual faulty pole.

By various means we can usually find the general area (beam headings, or driving/walking around with an AM radio, etc.). But for the “closing-in” stage, directionality improves as we go higher in frequency.

Fortuitously, 2 metres (144 - 148 MHz) is (in my experience) a rather good band for tracking radio noise, being sufficiently high in frequency to allow us to use a reasonably dimensioned “fox-hunting” style 3-element Yagi antenna, for which many patterns exist.

An ordinary 2 m FM receiver is of limited use in noise tracking - AM is much better. Some hand-held scanner radios do offer AM (see also Bryan Ackerly VK3YNG’s ARDF material in Reference 1). However, those wishing to have a go at making their own little dedicated “noise tracker” AM receiver, please read on.

Super sensitivity is not required (indeed, it is not desirable). An ability to hear down to perhaps 5 microvolts has been found quite adequate. Nor is good selectivity or image rejection necessary, which greatly relaxes the usual design criteria for a receiver! The prototype can easily detect a 5 microvolt 50% modulated AM signal. Rejection of the 143.545 MHz image is poor. In this

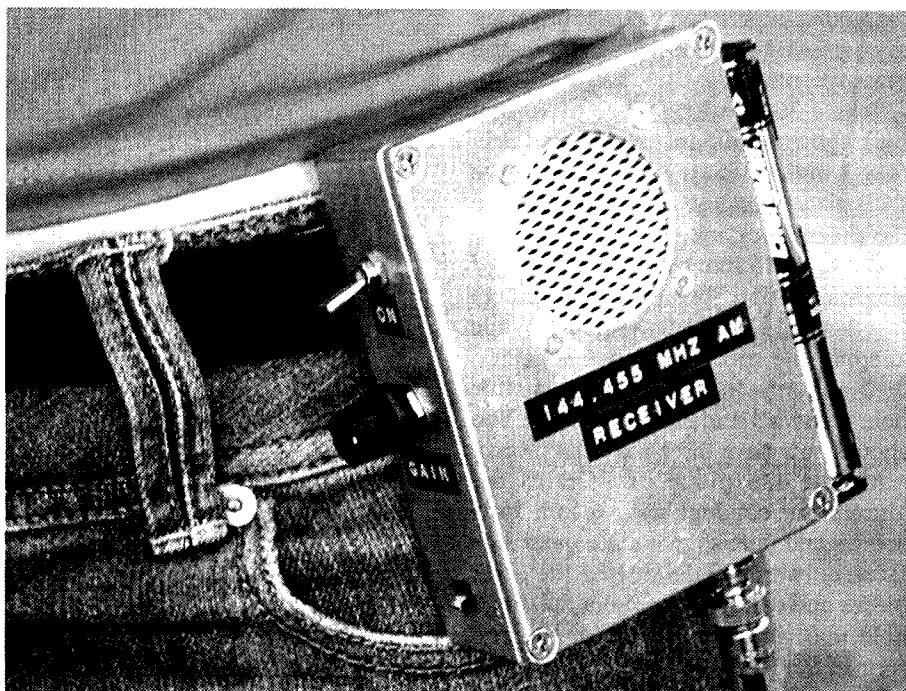


Photo 1 – The “Noise Tracker” receiver clipped to the user’s belt.

instance it does not matter, for we are only interested in noise. Interestingly, the receiver does a good job of “slope” detecting FM signals too.

Circuit

Many experimenters will remember the ZN414 AM radio chip, sadly now obsolete. Rapid Electronics (UK) produce a worthy replacement, the MKT484.

The MKT484 is only workable to about 3 MHz (Reference 2), being intended primarily as an AM broadcast band TRF receiver chip (in which application it works well [Reference 3]). To receive signals on 144 MHz, we need to “heterodyne” the desired frequency down to some lower frequency. A simple superhet receiver may be formed by preceding the MKT484 with a ubiquitous NE602 chip as mixer.

Some signal input selectivity at

144.455 MHz is provided by two coupled resonators L1 and L2 at the input to the NE602 mixer (Figure 1).

The local oscillator signal at 144.000 MHz is extracted through a series tuned tank L3 as the 6th harmonic of a 24 MHz TTL square-wave output from an ordinary clock oscillator assembly. Intermediate frequency (IF) shall be 455 kHz by use of an ordinary “transistor radio” IF transformer on the output side of the ’602 mixer.

Residual IF signal exists, together with detected audio, at the output of the MKT484, so a rather large decoupling capacitor (100 nF) is recommended by the chip maker. Additionally, a 1 mH (1,000 μ H) choke was found necessary at the input of the LM386 audio amplifier chip (the MKT484/LM386 combination tends to become regenerative or “super-sensitive” if insufficient decoupling is employed).

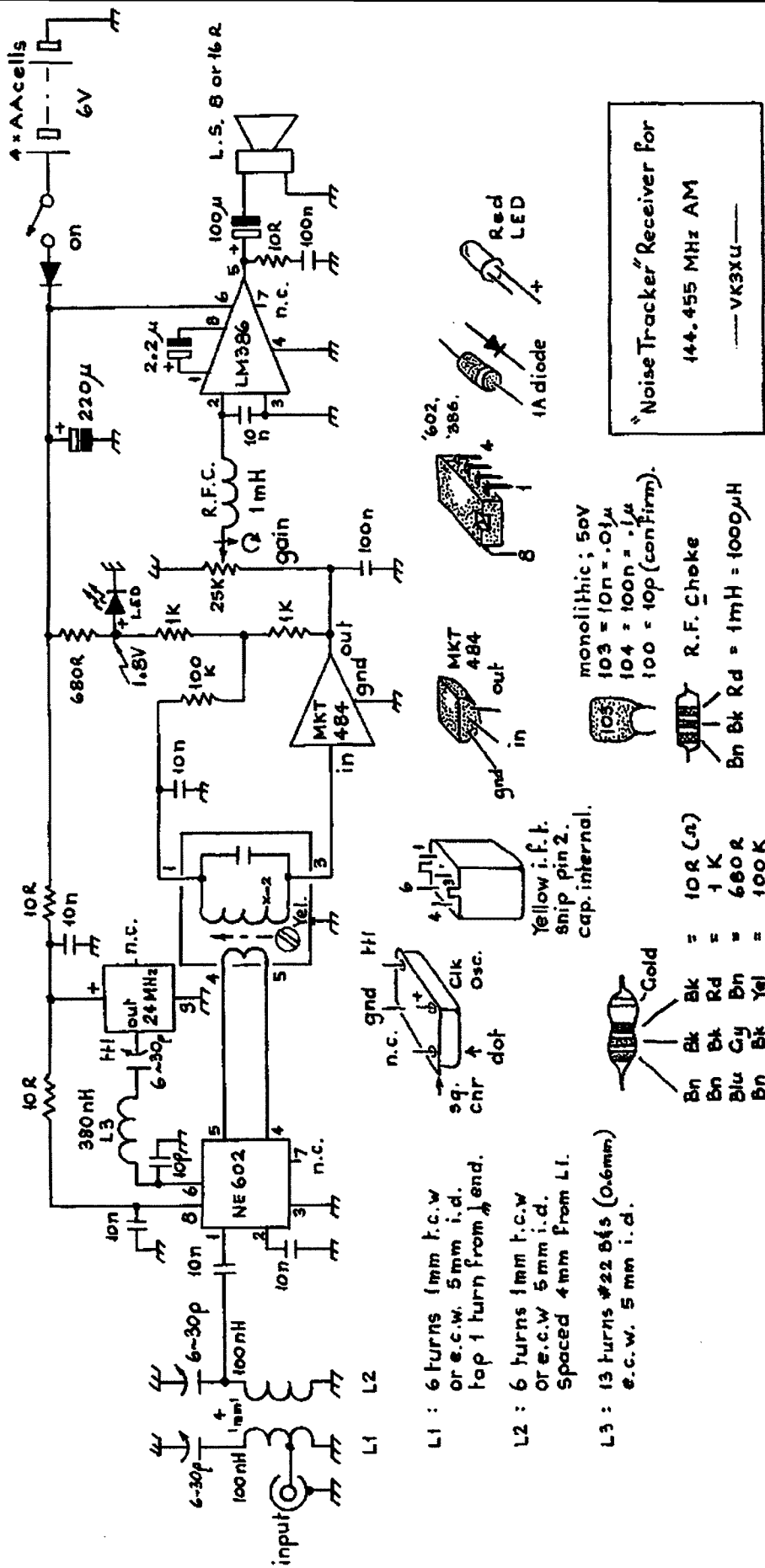


Fig. 1

Fig 1 - Circuit of the "Noise Tracker" receiver for 144.455 MHz AM.

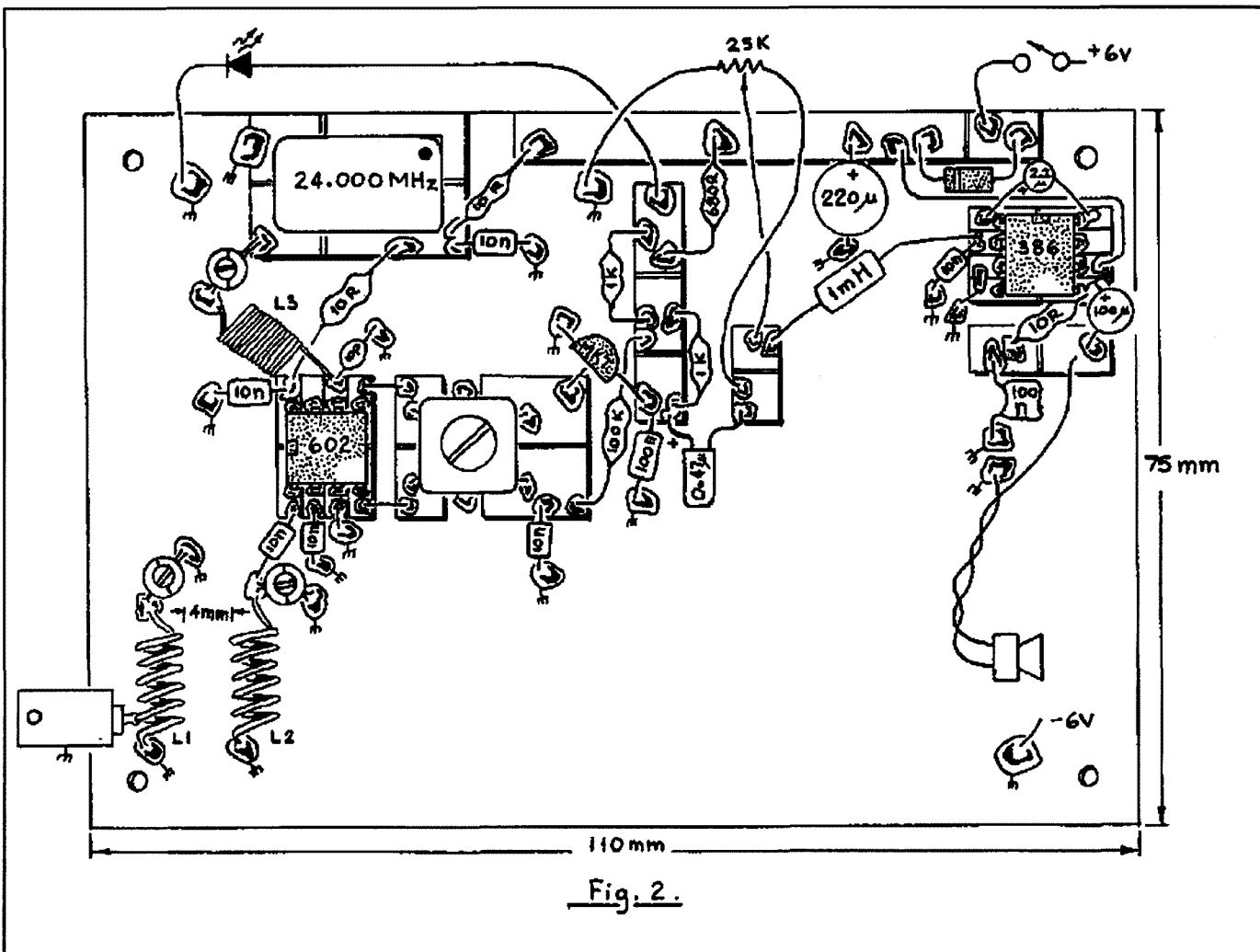


Fig. 2.

Fig 2 – Suggested circuit board layout for the receiver.

Construction

The receiver should be housed in a die-cast or similar metal box. My neatly fitting “paddyboard” circuit board (Reference 4) measures 75 x 110 mm. A sheet-aluminium clip may be fabricated so that the gadget may be attached to the user’s belt, as illustrated in Photo 1.

A suggested circuit board layout is pictured in Photo 2 and Figure 2. The layout allows for an internal miniature speaker. The NE602 (or SA602 or NE612) is fitted upon the copper side of a 19 mm x 4-strip “substrate” of Vero board, which in turn is super-glued (sparingly), copper side up, upon the main circuit board. Remember first to separate the pins each side of the Vero with a shallow (junior) hacksaw cut. Take care when soldering the chip that pins do not poke right through and risk shorting to the ground foil.

The LM386 may be fitted into an IC

socket, which in turn is soldered upon a Vero substrate as described above.

A 17 mm x 24 mm four-land substrate accommodates the 24 MHz clock oscillator, which must be positioned near the NE602 as shown in Fig. 2.

Pin 2 of the IF transformer must be snipped to prevent it from shorting to pin 3. The IF can lugs are soldered to foil in the gap shown in Fig. 2. Set the slug to about mid-range, it requires no further adjustment (unless you wish to receive other than 144.455 MHz).

The MKT484 has a maximum supply of 1.8 V dc, which is derived in this instance from the constant voltage drop across a red LED. The LED may be positioned in the side of the box to serve as an “on” indicator.

A 6 V battery supply of four type AA cells may be conveniently accommodated in a 4-cell holder. Mine is attached to the box with two carefully placed 2 mm countersunk screws and nuts. Battery

wires are carried into the box through a 3 mm countersunk hole adjacent the holder’s top.

Operation

Visually inspect your soldering for quality and accuracy. Look particularly for solder bridges between Vero tracks and clean up with solder-wick as necessary. Check that all polarised components are correctly oriented.

Apply battery power. The LED will glow. With the gain potentiometer fully clockwise, you should hear just a soft hiss, indicating that the set is “gainy”, and probably working. First adjust the oscillator series tank trim capacitor for a perceptible peak in hiss.

If you have access to a laboratory signal generator, apply a 50 % modulated AM signal of initially about 50 μV to the receiver’s input via 50 ohm coax cable. Carefully adjust the two input trim caps for maximum signal (not peak noise).

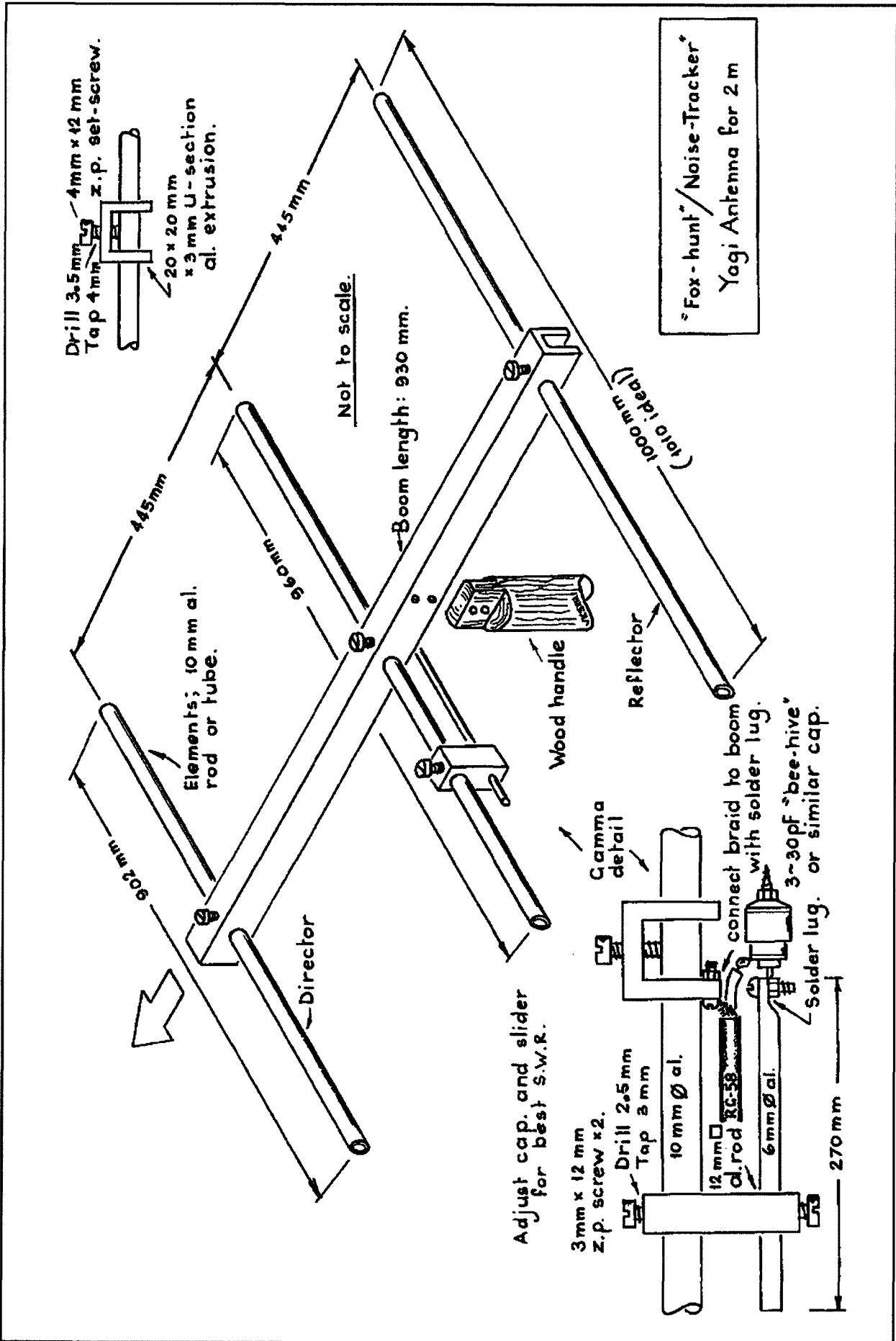


Fig 3 - Suggested fox-hunting style hand-held Yagi antenna for use with the receiver.

Drop the signal generator's level and re-tweak all three trim caps in turn. When properly tuned, you should be able to easily hear 5 μ V or less.

A "Leader", or similar, service generator will also do, but you will probably need another 40 dB or so of additional external attenuation on the output (set for minimum level) to obtain a suitably low level signal.

Antenna

A suggested foxhunting style hand-held Yagi antenna is shown in Fig. 3. My model was built directly from the tables provided in Reference 5. The dimensions shown are for 145 MHz, which permits the antenna to be used also as a handy portable antenna for 2 m FM work.

I have used "10 mm x 1 mm x 1 m Metalmate" aluminium tube from Bunnings for the elements. Theoretically, the reflector should be about 1,010 mm long, but the tubes are supplied only in 1 m lengths. The 10 mm shortness does not appear to materially affect performance.

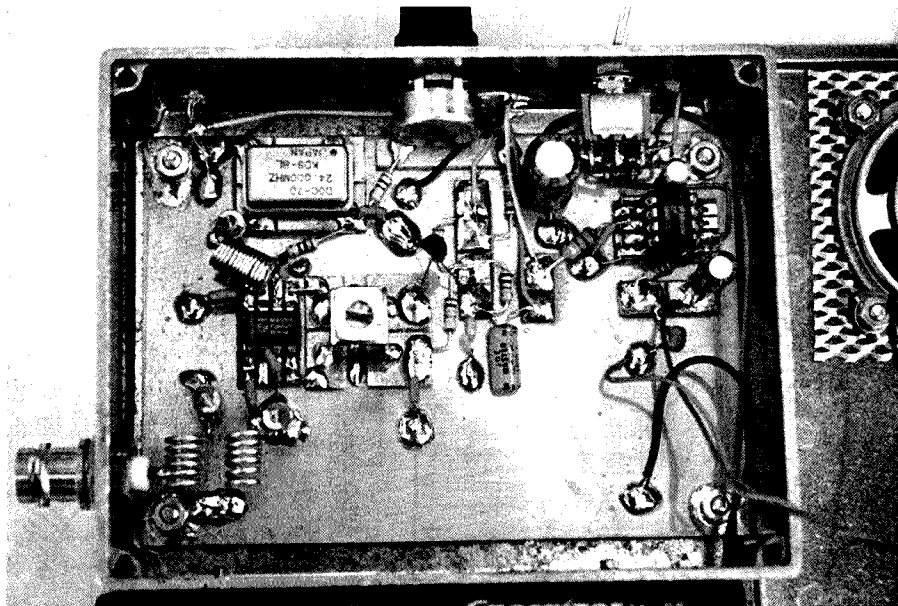


Photo 2 – A view inside the receiver case showing the suggested layout of the components.

The boom is made from a 930 mm length of U-section aluminium extrusion from the off-cuts bin at my local merchant.

I have a preference for gamma matching 50 Ω coax into driven elements; with two variables (capacitor and slider) it

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is possible to adjust these for a low SWR. As well, there are numerous (possibly) simpler patterns out there. Do have a look at the site in Reference 1, and explore some of the interesting links listed.

In actual use, when tracking noise (after first locating the apparent approximate area concerned), you should find that (generally) it is possible to hear the noise from as far as two or three pole spans away. Simply point the director for highest noise level (Photo 3). Try both vertical and horizontal polarization as you walk towards the noise source. Reduce or increase gain as required.

When the suspect pole has been pinpointed, have a good look at the hardware mounted thereon. It may be that a stick, or possum/bird body part is caught there, or a tie-wire is loose. You may even (at night) be able to see and/or hear some arcing or corona. Any such additional information would be helpful when reporting the fault.

Parts

It happens that most of the prototype components were purchased from my local Jaycar store, including die-cast box (HB 5067), battery holder (AS 3000), MK484 chip (ZK 8828), 25 k miniature pot, IF transformer (coil set of 4; LF 1050), trim caps (RV 5716) and 1 mH RF choke (LF 1546). However, similar suitable items are also available from our usual suppliers, including Altronics, DSE, Semtronics, Rockby and Electronic World.

Additionally, 24 MHz clock oscillator modules may be obtained from Semtronics (www.semtronics.com.au). NE602 (or SA602 or NE612) chips may



Photo 3 – The receiver and Yagi in use locating a noise source.

be ordered from Starlight Electronics (Andrew Blight VK3BFA, 03 9802 4329).

References and Further Reading

1. www.foxhunt.com.au
2. www.datasheetcatalog.com
3. "The "Practical Wireless""; I. Liston-Smith, G4JQT, Practical Wireless, June 2003.
4. ""Paddyboard" circuit construction - revised"; Amateur Radio, May 2005.
5. VHF/UHF Handbook; Dick Biddulph, G8DPS (editor); 1998 edition, RSGB, p 5.17.

Photos: Andrew Diamond and Karlen Dockrey
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A simple modification to boost battery output in handheld transceivers

Dr Hank Prunckun VK5JAZ

Problem

Handheld transceivers generally come from the factory with specially-built rechargeable battery packs. These are generally sealed cell constructions that provide the necessary output voltage to operate the radio at maximum transmit power. If a lower transmit power level is desired, this is usually adjusted by selecting a lower wattage through one of the radio's switches, or software settings. UHF CB radios and amateur band handhelds both operate using this same principle.

However, some radios come with a battery case that accepts either AA or AAA cells. The total voltage required to reach maximum transmit power using

these cases is calculated by multiplying 1.5 volts per cell by the number of "slots" in the battery case. For instance, a radio that requires six volts has four slots. This is fine and the radio operator will achieve maximum transmit power if cells rated at 1.5 volts are used (such as alkaline types).

If rechargeable cells are used, such as nickel metal hydride (or the older nickel cadmium types), which are rated at 1.2 volts per cell, a voltage drop of 1.2 volts (that is 0.3 volts per cell by 4 cells, equals 1.2 volts) will be experienced. The radio operator now has available, not 6 volts, but 4.8 volts. In terms of transmit power; this could amount to a 20% decrease.

Is there a way around this problem without having to use expensive, non-rechargeable alkaline batteries?

Theory

A typical battery case accommodates a number of batteries arranged in either a series or a parallel configuration (or sometimes a combination of the two). This configuration is designed to deliver the required voltage when using 1.5 volt cells. But the battery capacity of these devices is always an issue, as radio operators constantly want to operate for as long as they can without recharging. This situation can be easily improved by buying the largest capacity nickel metal hydride (NiMH) batteries that one

can afford (say, around 2,200 mAh). However, as battery cases are essentially plastic "shells" that house the required number of cells (rated at 1.5 volts), there is no mechanism that will allow additional cells to be inserted if the voltage is reduced by the use of NiMH batteries.

Method

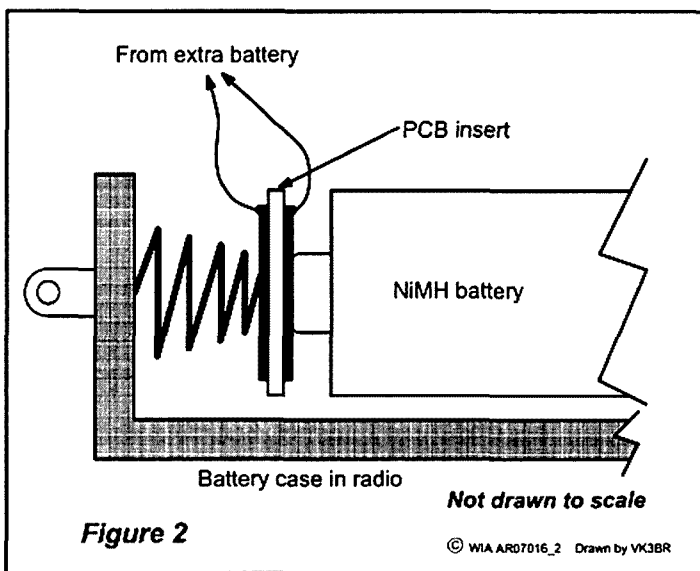
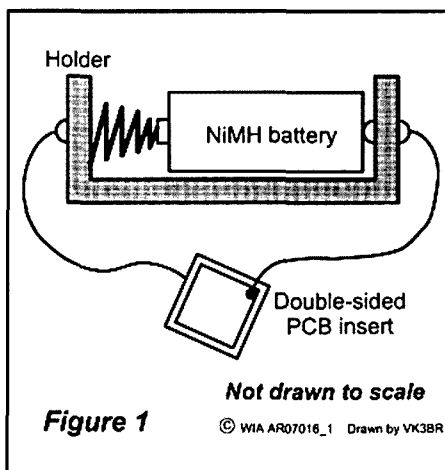
Inserting (electrically) an additional 1.2 volt NiMH cell into a battery case can be accomplished in a straight-forward manner by wiring its holder as shown in Figure 1. This circuit consists of a 1.2-volt NiMH battery with wire leads from the terminals of a plastic battery holder (eg. Jaycar catalogue number PH-2903) to a small, thin, double-sided piece of circuit board. The circuit board is then inserted in-between the terminal connectors of the battery case and one of the batteries sitting in its slot, as shown in Figure 2. This, in affect, adds an additional battery in series with the existing circuit.

The aesthetics and mechanical aspects of holding this additional battery in place can then be left up to the operator. How it is done will be based on the need for permanency, the ergonomics of the particular radio being used, and the tools and resources available at the workbench. The PCB insert may require some shaping to fit a particular battery case, and care is needed to insert it with correct polarity.

Results

I constructed the modification described above and tested it on my Kenwood TH-22A handheld. According to the technical specifications in the manual, the radio is rated at 5 watts output if a full 12 volts is applied. If AA cells are to be used, Kenwood supplies a BT-9 case that houses 4 cells, thus providing 6 volts (using alkaline cells) or 4.8 volts (using NiMH cells). The results of the comparison between transmit power level at 6 volts and 4.8 volts was noticeable using a Revex W540 SWR/power meter connected to a 50 ohm dummy load.

At 4.8 volts, my bench-top test of the TH-22A produced just about 1.4 watts output. At 6 volts, the power level jumped to around 2.6 watts. These results are consistent with what one would expect for that increase in voltage. Given that the Revex W540 has crude scale readings for power



Scouts Radio Activities Group and C Cubed

Gerard Rankin VK5ZQV

Firstly, what is 'C Cubed'!

In this Century of Scouting celebratory year, the public can join in activities previously open only to the Scouts themselves, by participating in the fun filled activity known as C Cubed (Cybertrak Centenary Celebration).

On Saturday, 24 February, SRAG, the Scout Radio Activities Group, provided communications and ran the 'Air Waves' activity at the C Cubed event, celebrating the Centenary of Scouting in 2007. The attached photo provides some idea of our setup on the day showing our communications van, mast and marquee. The marquee provided a display of radios, the repeater and a computer displaying APRS plots.

Our involvement introduced more than 150 Joeys, Cubs, Scouts, Venturers and Rovers from all over South Australia to radio communications and through the "Air Waves" activity provided opportunities to the participants for some hands on operation.

We had many enquiries about upcoming JOTA stations, prospective Foundation Licence candidates and a lot of interest in our displays of radio equipment and operating systems including APRS running live at the event. The WIA Grant Scheme provided some support for this project. Many 'WIA Calling CQ' brochures were handed out to interested individuals as well.

Overall it was a great day with lots of positive feedback, and it has definitely raised our collective profile.

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A simple modification to boost battery output in handheld transceivers *continued*

increments in the decimal range, there was some estimation required on my part. Nevertheless, in terms of order-of-magnitude, the results demonstrate what can be achieved through this simple modification.

Conclusion

It has been asked, in another context, "does size matter?" But the question has

relevance here too. Certainly battery supply voltage affects the maximum transmit power of handheld transceivers, so therefore "bigger is better."

If a radio operator substitutes rechargeable NiMH batteries for alkaline cells, then the transmit power will decrease. One way to overcome this is to insert an additional 1.2 volt cell in series using this modification. It is

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Silencing the Toyota 100 series diesel RFI

Bob Talt VK3XP and Phil Walt VK2DKN.

I have been aware that the late model Toyota diesels were particularly noisy electrically, with much of the interference coming from the injector drivers housed in a box on the passenger side of the engine. Some of the radio installers of the popular Codan and Barrett radios usually running on the RFDS, or favourite 4WD club frequency, have stated openly that if you want to use the radio turn off the engine.

Well after a visit to the Parkes Radio Telescope and a meeting with Phil Wait VK2DKN and a bit of idle chatter, I asked Phil if he had experienced the noise problem with his Toyota 100 series diesel. He said he had but after a bit of mucking around trying to locate the noise source he found most of the noise was coming from the injector driver box. Well off he trotted to his local Jaycar store and purchased some ferrite to see if putting some of these around the cable coming out of the box to the injectors would fix the problem.

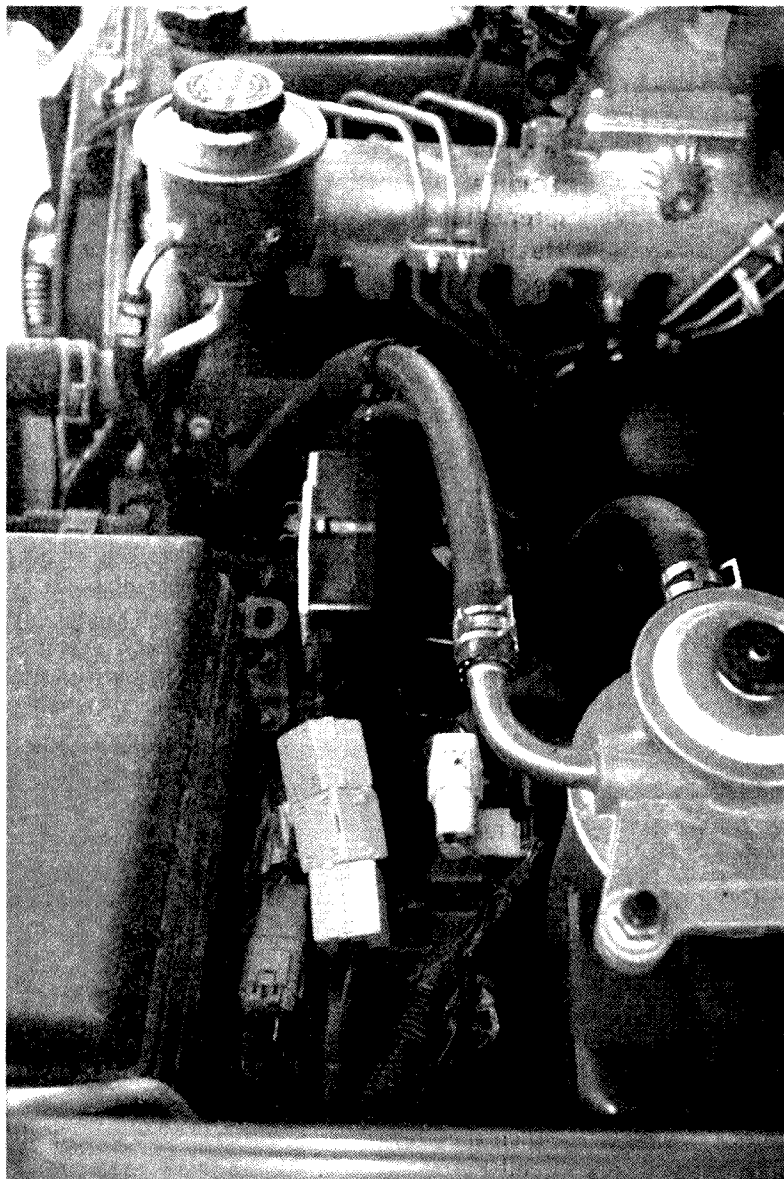
Well it did the trick, with the noise level dropping from an unbearable 10 over the 9 on 40 metres to about ½ an 'S' point.

We went for a quick burn around the streets of Parkes with the audio at full bore; the noise was just audible, but you had to listen hard... Well done Phil.

Up with the bonnet and a picture for the article to go in AR!

A nice easy fix to a difficult problem.

Be aware that this will not necessarily fix other diesels, as some vehicles use FET drivers and the introduction of some 'L' into the circuit changes the slew rate of some circuits resulting in changed vehicle performance. If you have a similar problem and have a fix let us know through the pages of AR.



You can see the white beads placed on the cable coming from the injectors.

ar

WIA Comment *continued from page 3*

TAC to FTAC to NTAC

overtake the time they can give to amateur radio. Sometimes things just go to the wrong place and no one knows about it.

We ran into this sort of problem with the qualifying of Assessors, and now with the Learning Facilitators. We have found it very much better to process the applications through the office, tracking

where they are at, making copies as required for the different people involved and being able to answer questions as to where things are.

So, as well as clearly defining a procedure, we have hopefully put together a procedure that will, in the long run, ensure a better result.

So, please look at the WIA website

and find out more about NTAC. And, if you want to license or change the licence of a repeater or beacon, also look at the website, understand the procedure and use the template provided.

Yes, the people who give their time to NTAC are skilled and experienced. They add value to amateur radio and the WIA.

ar

Amateurs keep Targa Tasmania on track

Roger Nichols VK7ARN
WICEN Coordinator (South) Tasmania

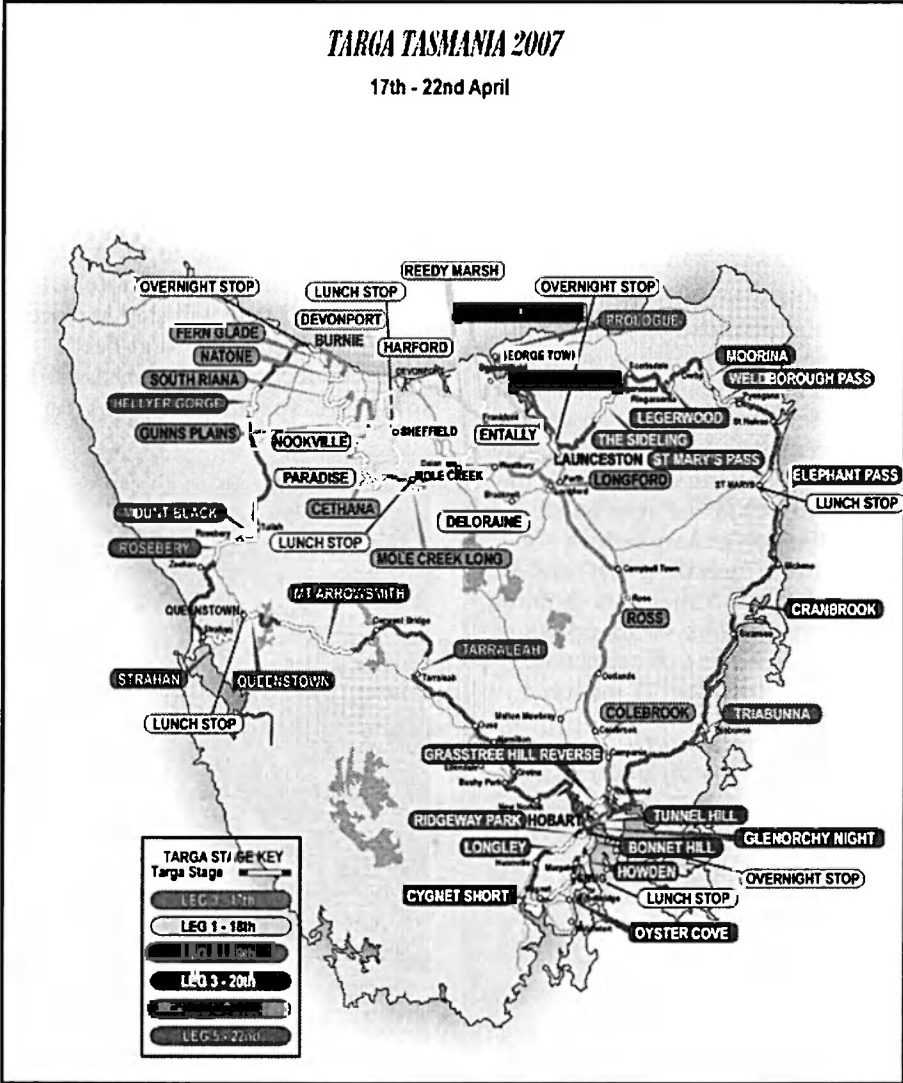
Targa Tasmania is a tarmac car rally, with a focus on historic and classic cars, which runs over five days and covers much of Tasmania. For many years, amateurs have formed the core of the communications team, this year deploying repeaters on 26 stages and providing 42 SOS and other radio points. The team included 22 amateur and sixteen other operators. Close to 300 competitors covered more than 2,100 kilometres, including 450 kilometres on 42 competitive stages. Many on the communications team covered similar distances, though at less favourable times of day (and at a slower pace!). Normal day time hours were spent 'on the job', followed by 'after hours' travel to the next day's location. The first stages each day involve teams being set up and ready for operations as early as 05:45 am. But, it can't be all bad because some teams have been coming back for more for 10 years.

In 2007, a new dimension was added. Most amateurs with an interest in APRS often comment that it is good to see mobile stations on the APRS map. The great majority of stations simply sit there going nowhere. (It would be a worry if they did move because most are QTH's and digipeaters)! Targa Tasmania provides a virtual feast of moving vehicles and therefore an opportunity to make APRS a little more interesting. So, the organisers were approached to see if they were prepared to co-operate. They were, willingly – after having a taste of APRS on the Tasmanian Subaru Safari (AR Nov 2006). That event was relatively easy to cover, being confined to an area of the southern forests of Tasmania over only two days.

An audit of resources decided that two vehicles could be tracked (increased to three at the last minute) and the Clerk of the Course was given the choice. He chose cars Zero and Fast Sweep with the Tour Leader added later. Targa includes a Tour category for those who wish to drive their classic cars at a more sedate pace along closed roads, thus enjoying the cars' capacity beyond what is normally available on public roads. This group precedes the competitive cars on many, but not all, stages. Their timely passage is critical to overall event timing, so knowledge of the location of the Tour Leader is important to Rally Command. The Zero car is the last of several safety checkers and precedes the first competitor. Its completion of a stage, or the major part of longer stages, is a determinant of the OK to go. The Fast Sweep follows the last competitor

through the stage. In addition, the 004 car of Ron VK7ZRO, who is the Targa Support Services Manager, carried a

tracker. 004 travels the full course ahead of the field. The display of the position of each of these on a screen



The Targa Tasmania 2007 route.

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in Rally Command in Hobart gave the Clerk of the Course strategic information and provided a great challenge to the APRS'ers.

Two thirds of Tasmania is reasonably well covered by APRS. Hill top digipeaters are sited on Mt Barrow (1,400 m) in the north east, VK7RAA, Snug Tiers (400 m) in the south east, VK7RHT, Mt Read (1,100 m) in the west, VK7RWC plus Table Cape on the north west coast, VK7RAC. Several fill-in VK7 digipeaters also operate, including RAD in Hobart, DIK-1 in Ulverstone and ABB-1 near Penguin. Observations of travellers over several months gave an indication of the APRS coverage of the Targa competitive stages and the transport stages between them. There were some big gaps, especially on the east and west coasts.

Plans for two other hill top digipeaters were advanced. Dion VK7YBI built, licensed and deployed VK7RVP (1,100 m) near Valentines Peak to fill the gap between the west and north-west coasts. He also built the VK7REC digipeater which Joe VK7JG, with NTARC (Northern Tasmanian ARC) members deployed on Snow Hill (970 m) to provide additional cover on some of the east coast and to fill a 'dodgy' gap in the midlands between Hobart and Launceston. These will stay in place as part of the Tasmanian "digi-fleet".

RF connections between north and south are spasmodic. RAA on Mt



The VK7MBD truck-mounted 12 metre telescoping mast.

Barrow can get into RHT on Snug Tiers reasonably often, but not so in reverse due to the much lower power (4 W) of RHT. Therefore, I-Gated traffic was



VK7ARN's APRS field monitoring station.

going to be integral to maintaining state-wide cover. Rally Command would draw its filtered data from an APRS server. Dick VK7DIK runs an I-Gate fed from RWC, Danny VK7HDM from RAD, Paul VK7KPG from RAA and Dave VK7DC from RAC. Unfortunately the hackers got into Danny's network but Scott VK7HSE was able fill the hole via RHT.

The primary focus of the exercise was 'big picture' – the general movement of the three strategic vehicles around, or along, each leg (day) of the rally. However, more detailed coverage of each stage would be a 'nice to have'. To this end, it was decided to deploy fill-in digis at some of the stage voice repeater sites. Up to four were deployed each day.

Perhaps the biggest challenge came almost at the end. Mt Arrowsmith is the longest and geographically most remote of all the stages. It is 48 kilometres in length, winds between high mountains and is remote from hill top digis. RWC on Mt Read is the nearest but there are

high barriers between Mt Read and the Mount Arrowsmith stage. It was known that the voice repeater site on the Strahan stage had good access to Mt Read. The next stage, Queenstown, had given mixed coverage from its repeater site direct to Mt Read but was expected to reach the Strahan repeater site OK. Targa voice cover for the Mount Arrowsmith stage is achieved via the Forestry Tasmania and Parks networked repeaters on Mt Owen and Mt King William.

The remoteness of the stage precluded thorough testing, so a contingency was planned.

This was to place a battery operated digipeater as high on Mt Owen as access and logistics would allow (involving an even earlier pre-dawn start, possibly snow, and recovery afterwards). Permission to



John VK7ZZ and Peter VK7TPE with John (centre) at sunrise on Mt Owen.

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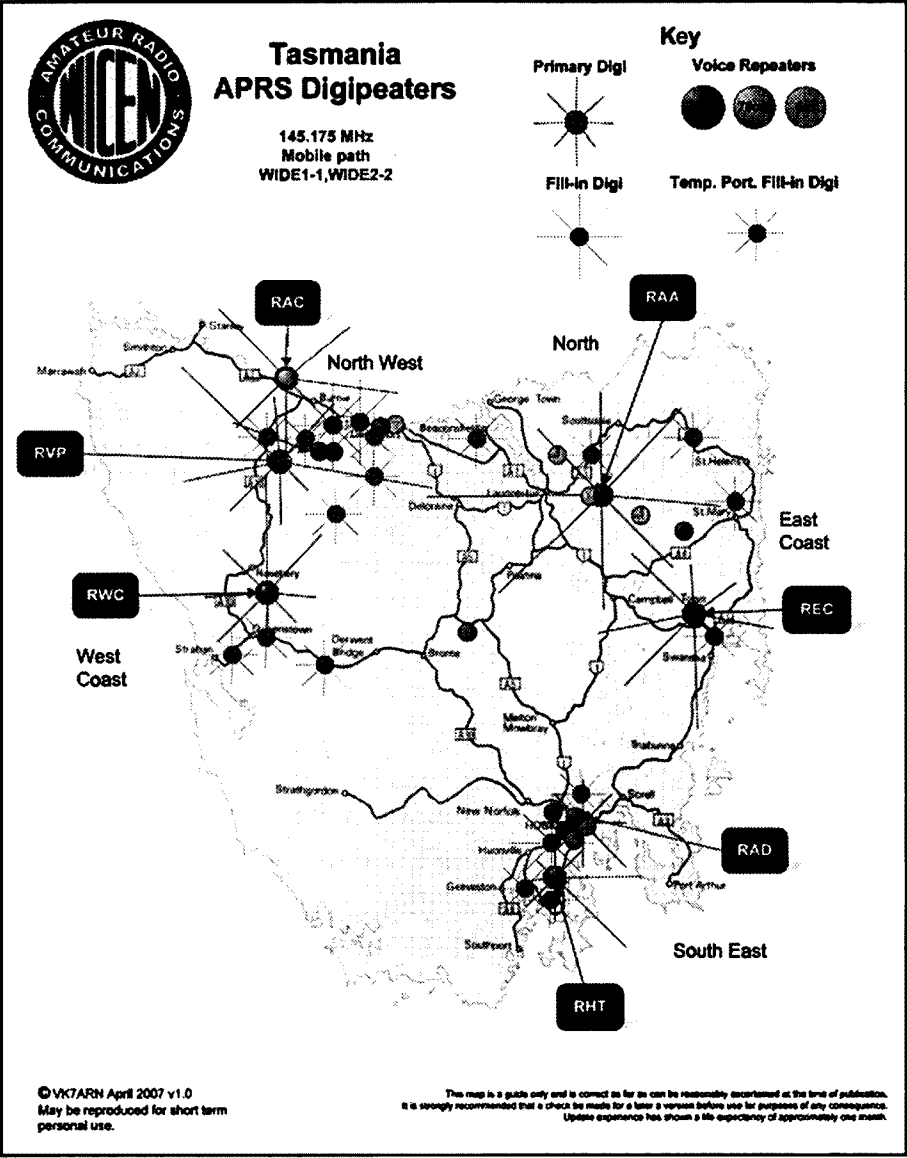
access the locked mountain track was obtained. A digipeater would also be deployed at a Targa Radio Point located 32 kilometres into the stage at the Frenchman's Cap helipad.

So, how did it go? The Clerk of the Course reported that the system was very helpful with only one hole of any consequence.

Coverage of most stages and transport legs was excellent. Unfortunately, the two hardest areas, the upper East Coast and Mount Arrowsmith were frustratingly missed. The East Coast because of the failure of a PRM radio used on the Weldborough Pass digipeater (lost Tx) and, even more frustratingly, on Mt Owen because of what is suspected to be something as simple as a BNC connector not correctly attached to a radio. Set up checks of both, including TNC LEDs and local RF output, gave the appearance that all was well, but later bench tests found output measurable only in milliwatts. A lesson learned the hard way!

By way of compensation, the deployment of the digi on Mt Owen was exciting in its own right. A reconnaissance in daylight located a suitable site which was revisited pre-dawn, in thick mist, the next day. The track is very steep, four wheel drive only. Most of the way up, nothing was visible on one side, mainly because there was nothing there – nor was there for a very long way down. The mast base was jammed between rocks and guys attached to more rocks. The digi and battery were enclosed in a waterproof bag with adequate ventilation. Sunrise occurred whilst the job was being completed giving spectacular lighting of the cloud tops below and the sheer rock faces above. A retreat, with a stop for eerie photos down in the clouds, returned the intrepid explorers to the bitumen. Unfortunately, further access was barred until the rally had passed, so the ailing digi stayed ailing.

This successful amateur event was largely enabled by the excellent cooperation within the Tasmanian amateur radio community. A list of all concerned would be long. However, special mention has to be made of Dion VK7YBI who built both RVP and REC digipeaters and deployed RVP with Steve VK7FWWF, and to mountain man Joe VK7JG, for technical input and REC



Targa Tasmania's APRS digipeater network.

deployment. The input of Scott VK7HSE must also be recognised. He provided me with much guidance until illness made it impossible. It was great to have him out of hospital and back on board for the event. VK7s Brian BW, Bruce MBD, Peter TPE and the writer, in addition to their normal Targa roles, established digis at, or close to, their primary job locations each day. Also thanks to the I-Gate owners, mentioned earlier, who maintained the feeds.

Equipment notes

Trackers

- Zero car – mouse GPS, TinyTrak3
- Plus, PRM (25 W) – alternate paths TAS3-3 and WIDE1-1, WIDE3-3
- Sweep car – mouse GPS, TinyTrak3

- Plus, PRM (25 W) – alternate paths TAS3-3 and WIDE1-1, WIDE3-3
- Tour Leader - mouse GPS, TinyTrak3, Maxon data radio (4 W) – alternate paths TAS3-3 and WIDE1-1, WIDE3-3
- (Thanks to Mal at Twigg Solutions who express despatched a mouse GPS to enable the Tour Leader to be included with the tracked vehicles.)

Fill-In digis

- 1 x MFJ1270B, PRM (25 W)
- 1 x MFJ1270B, IC-207H (50 W)
- 1 x PacComm TINY-2, PRM (25 W)
- 1 x Kenwood TM-D700
- 1 x Elcom microUSB TNC, IC-208H (50 W)

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Stop the whining: Construct a high-pass braid-breaker filter

Dr Hank Prunckun, VK5JAZ

Problem

Recently I installed a Kenwood 144 MHz mobile transceiver (TM-261) in my car. Until this time I had used a Kenwood TH-22A handheld for mobile work. However, a fixed, high power radio for the 2 metre band offered more reliable transmission and far better reception, especially on simplex frequencies.

The only problem was that the radio I installed produced a high-pitched whine when the engine was running. The whine varied in pitch as I accelerated and decelerated. It was audible on both receive and transmit, making it intolerable for me and for those I talked to on the air. But there was no whine when the engine was off. A bit of reading in a few old ARRL handbooks convinced me that these symptoms were consistent with interference from the car's alternator.

Theory

In order to avoid spurious noises entering a radio, it should be isolated from all sources of interference. When installing the TM-261 transceiver, I connected the radio's power cable directly to the car's lead-acid battery. This avoided interference entering the radio via the electrical system as the battery is an excellent filter of unwanted signals. It also provides some level of voltage regulation and over-voltage protection by providing the radio with pure DC.

The chassis of the radio is another potential entry point for unwanted signals; however when I mounted the rig in my car, I fitted it into the compartment between the two front seats. As this is made from a high impact plastic, there was no problem – it was electrically isolated.

The final entry point for interference is the antenna system. My installation comprised a stainless steel antenna mount that I fastened to the car's boot and a quarter-wave antenna from Mobile-One Pty Ltd (catalogue M144-1). The coaxial cable ran directly to the SO-239 socket at the back of the radio.

My first attempt to quell the whine was to install a line filter in the positive

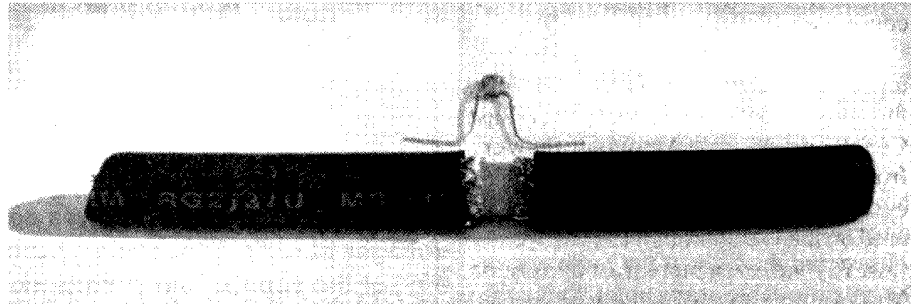


Figure 1: Braid exposed and cut, ready to solder



Figure 2: Final filter assembly

(active) side of the power cable. I had an old Radio Shack heavy-duty filter that was marketed for 27 MHz CB mobile radios. As it was rated at 20 amps, I installed it. But it had no affect. I followed this by adding a 50 V 10,000 μF electrolytic capacitor after the coil filter to form a pi-type filter between the positive and negative wires of the power cable. Again, there was no change to the whine. Clearly the battery was doing its job of filtering the DC. As there was no need for these devices to remain in the circuit, I removed them.

This led me to test the antenna cable. As soon as I disconnected the PL-259 plug at the back of the radio (therefore breaking the connection of the earth braid but leaving the centre conductor in circuit) the noise stopped. Another rummage through the pages of several radio handbooks revealed that this was what was termed "an earth loop." It appears there were two paths to earth created at DC and audio frequencies: one from the car chassis to the radio through the antenna braid; and a second from the car chassis to the battery and then to the radio. The alternator whine couldn't get to the radio via the power cable (as the battery was taking care of this path), but

not so via the antenna cable.

I needed to stop the whining. But how?

Method

The easiest and cheapest way to achieve this was to install a "braid breaker" filter in the coaxial cable. The filter needed to pass the VHF frequencies between the radio and antenna system, but trap the lower frequency white noise generated by the alternator. A simple ceramic capacitor of a value around 2,200 pF would be sufficient.

The construction of this filter could be done in a number of ways. For example, it could be enclosed in a small plastic box with an SO-239 socket at each end, similar to high-pass filters used for HF transceivers. Note that it should be a plastic box and not a metal box, as the intent is to "break" the earth braid, not ensure continuity of the circuit.

As there was not a lot of room in the console between the two front seats where my Kenwood was installed, I opted to fix the capacitor to the outside of a short piece of 50 ohm RG-213 coax cable. This was done at a point where I had stripped the cable's insulation and removed about one centimetre of braid

A tester for capacitor and diode leakage

Drew Diamond VK3XU
Photos: Andrew Diamond.

A lot of the work we do involves components that operate at rather high voltages at radio-frequencies, mains frequencies and DC. Yet few (if any) of the popular ready-made meters are capable of testing for high-voltage capacitor leakage, or peak inverse voltage (PIV) of diodes.

Early radio and electronics workers had none of the clever instruments we take for granted, such as digital multimeters, frequency counters, antenna/network analysers, etc. Nevertheless, they did have a trick or

(see Figure 1). As my soldering skills and poor eyesight prevented me from ensuring the capacitor's leads were very short, I choose a smaller value capacitor. The reduced value compensated for any additional capacitance introduced by the longer leads (I settled on a 470 pF ceramic capacitor).

A PL-259 plug was then fitted to each end of the coax and the capacitor protected by covering it with a stiff piece of plastic. I sealed all of this with a generous amount of electrical tape, which helped to prevent the coax from bending and either cracking the capacitor or breaking the soldered joints (Figure 2).

I inserted the filter at the radio end of the antenna cable at the point where the cable connected to the radio. Here it is invisible, weatherproof and could not be physically damaged by accidental pulling or tugging on the cable.

Results

With the engine off, I tested the filter and noted no difference in reception between having it in place, or without. I connected an SWR meter and tested the radio in transmit mode. The SWR reading was no different to the base measurement I took before inserting the filter (i.e. it read about 1.1:1 at all frequencies between 144 and 148 MHz).

I then started the engine and observed with delight the clean crisp audio I had experienced when the engine was off. The whining had stopped. I did a few test transmissions and noted the SWR was the same as the reference measurement across the entire 2-metre band.

Conclusions

Alternator whine on any mobile two-way radio is not only annoying but excruciatingly painful to the ear. An easy and inexpensive way of eliminating this type of noise is to insert a high-pass braid-breaker filter in the antenna cable. This is simply a capacitor spanning the broken braid and housed in a suitable construction to protect it from damage and inclemency. The total cost of this project is less than \$10 if all the parts are purchased new. If bits are salvaged from old lengths of coax cable and discarded circuit boards, it could cost you as little as the time spent to build it.

The result — clean, crisp audio — is worth far more than either of these expenses.

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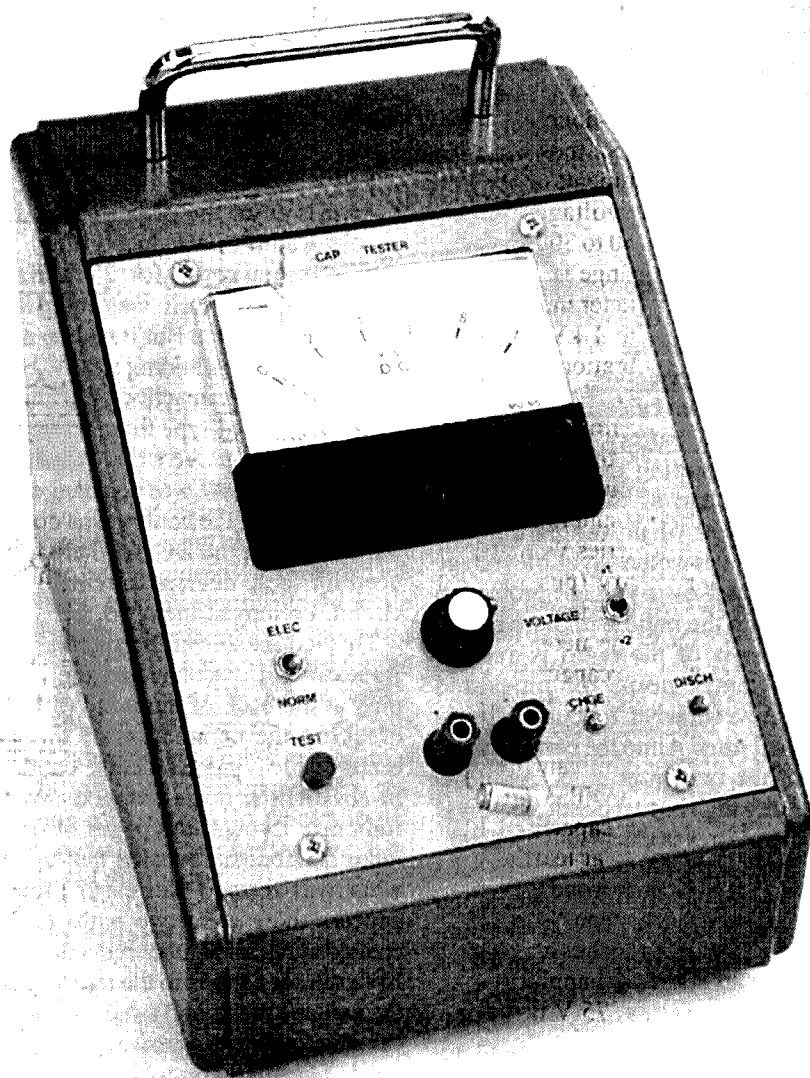


Photo 1 — The front of the Capacitor Leakage Tester.

by the capacitor is dumped into the 1.5 k Ω wire resistor, across which is a second "Discharge" neon, that will glow briefly. A capacitor may thus be tested through numerous charge/discharge cycles.

Electrolytic capacitors - even good ones - will usually show some leakage current (Reference 2, pp 192 - 193). In addition, being rather large in capacity, they may never charge through that 470 k Ω resistor. When S3 is in the "elec" position, charging current is increased by shunting the 470 k Ω and neon combination with a 4.7 k Ω wire resistor, whose value was determined empirically after testing many and various typical radio type capacitors ranging from 1 μ F to 470 μ F.

A good electrolytic capacitor will give a bright glow upon test/charge (whereupon the source voltage will dip momentarily), then gradually fade and extinguish as the capacitor charges more fully, and will almost reach the actual test (source) voltage.

When S4 is released (Discharge) the second neon should glow brightly. The cycle may need to be repeated several times in order to "form" capacitors that are new, or have been unused for some time.

Diodes may be tested with S3 in the "non-polar" position. The cathode (band) of the diode must connect to the positive test terminal. On "Test/charge" you may see a tiny brief glow as the diode's junction capacitance is charged, whereupon there should be no further glow (to within about 75 V of rated PIV).

No part of the testing circuit is connected to chassis, thus preventing the operator from receiving a "bite" should accidental skin contact be made between one of the test terminals and ground. Fingers must be kept off the component leads during testing.

Construction

My tester is housed in a re-cycled steel box with sloping panel (believed to be ex Telecom - a donation from VK3AX's junk-box) measuring 155 mm x 175 mm x 230 mm HWD. Any similar sized, or slightly smaller, case, metal or plastic, should serve.

Component layout is not at all critical. A suggested method is for the resistors and capacitors to be accommodated upon an "8-way" (16 tag) tag-board. Just the tops of a few thus mounted components

can be seen in Photo 2. If your front panel is detachable (like mine - see Photo 2), leave an adequate "goose-neck" of additional hook-up wire length to permit any later repair/modification work.

Mains earth only shall connect to chassis ground, and all wiring connections on the mains side must be adequately covered to prevent accidental contact.

Parts

It happens that most of the prototype's components were purchased from my local Jaycar shop, including 2155 transformers (MM2002), tag-boards

(HM3320), 0.47 μ F/630 V Greencaps (RQ5247) and NE2 neon lamps (SL2690).

Similar suitable parts are also available from other vendors, including Altronics, DSE, Semtronics, Rockby and Electronic World.

Reference

1. *Practical Wireless Service Manual*; F. J. Camm, 11th ed. (1960). Newnes.
2. *Radio(tron) Designer's Handbook*; F. Langford-Smith, 1963 ed. Amalgamated Wireless.

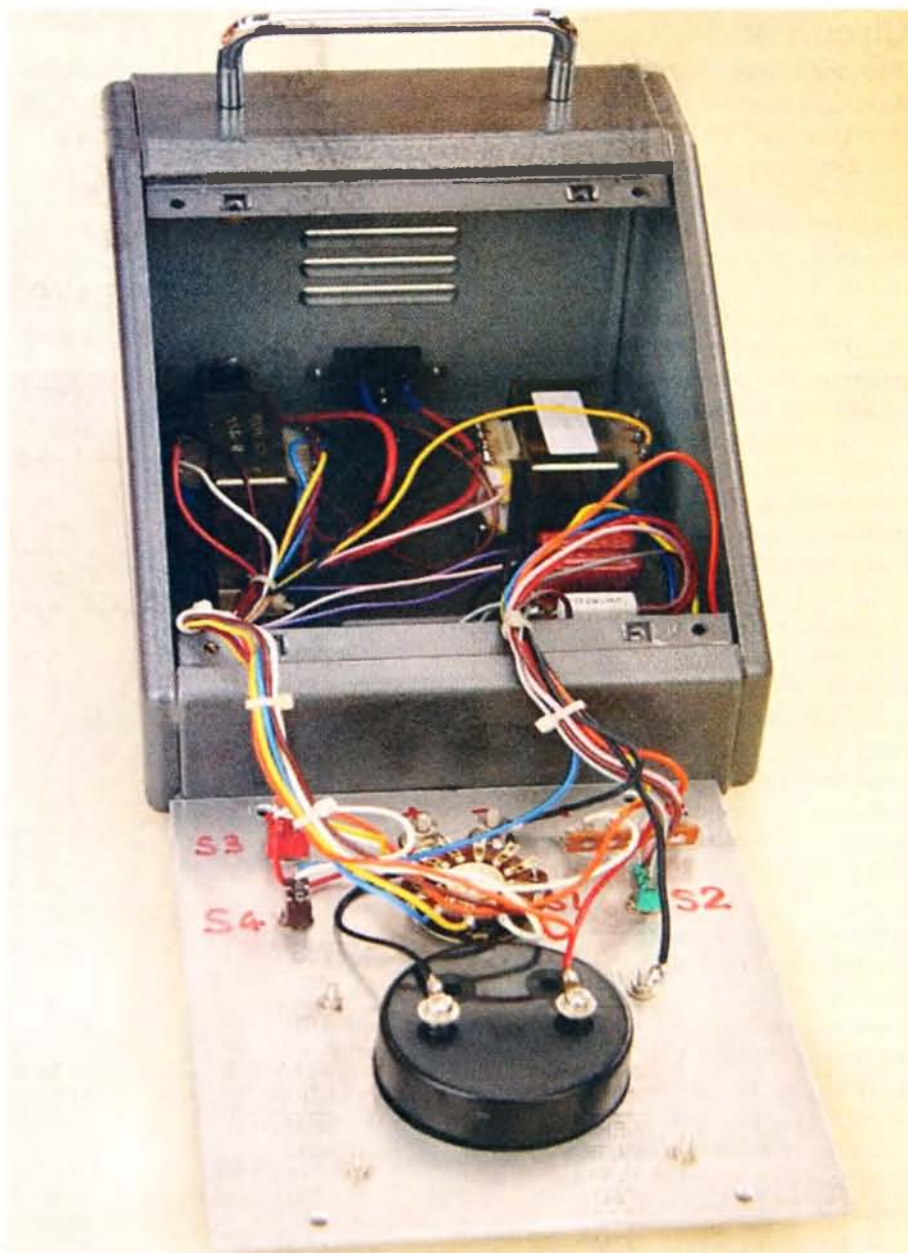


Photo 2 - The Capacitor Leakage Tester showing the detachable front panel.

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Clubs

The Blue Mountains ARC has just conducted their annual Winterfest, which due to difficulties in securing the date became 'Springfest' on Saturday the 1st September. The BMARC meet on the first Friday evening at Glenbrook.

The Oxley Region ARC held their AGM last month with a minor shuffle on the committee. President is Alan Nutt VK2GD; Vice President Henry Lundell VK2ZHE; Secretary Jim Neil VK2VIV; Treasurer John McLean VK2KCE; committee Bill Sinclair VK2ZCV, Craig Martin VK2ZCM and Bill Brooke VK2ZCW. Last month the club activated the club callsign - VK2BOR - by taking part in both the RD and Lighthouse weekends. The Oxley Region, based at Port Macquarie, serving the Hastings Region of the Mid North Coast, have the monthly meeting on the first Saturday afternoon and informal evenings on the second and fourth Fridays. Meetings are held at the SES building in Gordon Street, near the town centre. A weekly

workshop is conducted on Wednesday morning, where members work on the overhaul and upgrade of the 2 m and 70 cm equipment for the two repeater sites, VK2RPM and VK2RCN. The repeaters are used for the various weekly nets.

WICEN [NSW] will be holding their AGM this month at the Ryde Eastwood Leagues Club in West Ryde.

The ARNSW Home Brew Group will next meet at Dural on Sunday the 30th September, in the afternoon. Their activities follow the morning T&T function. This will be 'show and tell' for the various and final entries in the 80 metre AM transmitter building project. The group also meets monthly on the first Tuesday evening at McDonalds, North Parramatta. There is a net on the third Tuesday evening on VK2RWI 7000.

ARNSW

The recent move of the office function to the Dural site is proceeding well. As most contact is via either email or the telephone, which can be handled

off site, call diversion is in place on all three numbers to the Secretary, Brian VK2TOX, or in his absence, to the message bank. Although it was announced in "AR" last month that there is a new office phone [02 9651 1490], the old office number [02 9689 2417] is still operational but will gradually be phased out. The 'freecall' number [1800 817 644] is still available for country member inquiries. The latest Sydney 'white pages', being distributed at the moment, has the old listing and it will take until the next edition to get it away from the casual caller. In this edition, the address entry shows the Harris Park post office box [9432] in place of a street address, which will also remain operational until next year's box renewal period. There has been some recent difficulty with the email address [vk2wi@ozemail.com.au] or at least with the provider, with slow or lost messages. FAX is available on 02 9651 1661 but it is only checked a couple of times a week. Callers to the VK2WI station on Sunday should use its phone: 02 9651 1489.

A reminder that ARNSW - the trading name of the company - WIA NSW Division - is a state-wide club. While the operations may appear to be city based, it is a state wide operation by medium of the news bulletins with the voice and web site. Membership is invited from any VK2 amateur and an application form can be down loaded from the web site www.arnsw.org.au

Further discussions have been held with the local Council over the proposed storage shed and there is hope of a favourable outcome - and DA - by submitting a new location on the site that gives a greater offset from the side boundary. Members of the ARNSW committee are investigating what type of building could be suitable to develop, as stage two, for meeting and office facilities. Due to site constraints brought about by other constructions, the original VK2WI building concept can not be extended. It is currently in the shape of a 'T' and the original concept was to be an 'H', by adding the second 'T'.

Coffs Harbour Radio Expo

Hosted by the Mid North Coast Amateur Radio Group

Sunday 20th January 2008

St Johns Church Hall,

Mc Lean Street Coffs Harbour

8.30am Start

Trade Displays, Disposals, Door Prizes, Club Displays, Home Brew Displays, Satellite tracking, Tower Displays

*Special new equipment
low prices on the day only*

Yummy Hot food and cold drinks Entry \$5.00 per person

More info on www.mncarg.org or phone

Gary Ryan VK2ZKT 02 66552990

The present building, of double brick construction, now 50 years old, has stood the test of time very well.

Work has been in progress over the past few weeks to erect a new boundary fence at VK2WI. It commenced at the front and will in time encase the entire five acre site. The rear portion of the site slopes down from the ridge and has dense timber growth. The entrance will be wider (6 metres) with a second gate for long vehicles and when there are the T&T days. It has also been an opportunity to clean up a lot of the fallen timber which will provide more parking. Work is also proceeding to lay underground feeds to the various antennas.

The last Sunday of this month (30th) will be the next T&T at the VK2WI site, 63 Quarry Road, Dural. The activities commence at 10.30 am. The big and final T&T for the year will be held on Sunday the 25th November.

VK2WI

News submission to VK2WI News is requested in the printed form by email to vk2wi@ozemail.com.au. Clubs, groups and individuals are invited to use the service to cover their past, current and future activities. There is a wider listening audience than you think. Listen

at 1000 and 1930 on Sunday, either direct from VK2WI or the many relay sources throughout VK2 or read the script on the ARNSW site at www.arnsw.org.au

The operation of the 60 metre linking transmission during the morning news from ARNSW is going well, even if some interstate observer was apparently confused. ACMA made contact with a report submitted to them that it was 'drifting' and on the wrong sideband (LSB). As previously advised, the transmission is generated by a commercial grade transmitter, a licence requirement, is crystal locked and is in the Upper Side Band mode, the format for operation on a commercial channel. If one looks at the frequency register, VK2RWI shows it has an assigned frequency of 5425 kHz but as there is a 1.5 kHz negative offset in the carrier frequency, it is announced as being on 5423.5 kHz. Reports on the coverage footprint are most welcome by either the VK2WI callbacks or an email to vk2wi@ozemail.com.au. The 5 MHz transmission is currently only made during the 'VK2WI News' portion of the morning transmission, as the VK1WIA format does not allow the easy insertion of the required identification. 5 MHz is filling the gap in coverage between 80 and 40 metres. No evening operation is possible as the propagation

characteristics would extend the range beyond its intended fill in role allowing it to be heard beyond Australia.

The apparent confusion of the 'sideband' brings back a story of the early days of the VK2RSY beacons when the Department passed on a report that the call sign being sent was all 'gibberish'. The problem with the FSK transmission was quickly solved when it was suggested that the observer switch their receiver to the other sideband.

Currently the VK2RSY beacons on air are 28.2615 CW; 50.289 CW and 1296.420 FSK MHz. 2 m and 70 cm wait on new transmitters and relocated antennas. 3699 kHz, while acting as a Morse training aid, can provide grey line and 80 metre propagation indications.

The 160 metre antenna was repaired recently, broken off at the feed point, when a tree branch fell and caused the halyard system to jam. It required the services of an agile rigger – Tom VK2YGG – to ascend the pole. Part of the site renovations will be to further improve the feed point height. The 160 dipole is configured as an inverted vee. The transmitter – currently an AWA J54-800 – operates in the AM mode. Callback reception is in LSB.

73 – Tim VK2ZTM.

VK3

Amateur Radio Victoria News

Ross Pittard VK3FCE

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Changes to the broadcast

The Amateur Radio Victoria Council meeting last month reviewed matters related to putting to air via its VK3BWI network of the WIA weekly VK1WIA broadcast on Sundays.

A major change is that it now goes to air at 10.30 am on Sunday mornings instead of 11.00 am, the callback procedure on the 2 m repeater VK3RMM has been refined and a 40 m callback re-introduced.

Amateur Radio Victoria has recently completed upgrades to its VK3BWI HF transmission facilities costing more

than \$3500 for new feeders, multiple antennas, the commissioning of a new 80 m transmitter and frequency change for the 40 m transmitter.

Following this upgrade at its cost, the state-wide organisation also decided to re-introduce the 40 m callback on Sunday mornings, which is in the capable hands of experienced 40 m operators Colin VK3LO and Laurie VK3AW.

We encourage all HF operators to check in to our 40 m callback, particularly Foundation stations and interstate listeners. The HF Frequencies are 3615 kHz, 7158 kHz and 10130 kHz,

which are in addition to the 2 m repeaters VK3RMM Mt Macedon and VK3RML Mt Dandenong, and the 70 cm repeater VK3RMU Mt St Leonard.

For those stations who wish to send reception reports via e-mail these are welcome at broadcast@amateurradio.com.au

Regular listeners will also have noticed a change to the callbacks after the broadcast through the VK3RMM repeater.

The new format is that our Broadcast Officer, Grant Stowell VK3VIM, conducts a check-in by 'callsign'

News from...

only and this is followed by the F-Troop Net Controller who conducts a callback for anyone wishing to make a comment or who has a question about the broadcast.

Digital D-STAR

Like many others on seeing an Icom advertisement in Amateur Radio magazine last month, you may have wondered exactly what is the 'D-STAR' technology available in some of the company's transceivers.

D-STAR (Digital Smart Technologies for Amateur Radio) is a digital voice and data protocol developed for use in amateur radio.

In addition to the over-the-air protocol, D-STAR also provides specifications for network connectivity, enabling radios to be connected to the Internet.

D-STAR includes a facility to find, by callsign, a station that is on air, and Internet connected D-STAR repeaters form a global network to enhance that capability.

This is the result of Japanese funded research administered by the Japan Amateur Radio League that investigated digital technologies for amateur radio to take the Amateur Service truly into its second century.

The JARL published the D-STAR standard in 2001, and in doing so made the protocol open for D-STAR systems to be built using both commercial and homebrew equipment and software.

While Icom has taken a lead on the technology by extensively testing the

protocol and developing its products, other manufacturers will follow.

Icom transceivers are available that can run on 2 m and 70 cm both digital voice and analogue FM. A digital data stream using 23 cm is also available.

The Darwin Amateur Radio Club VK8DA already has an Icom D-STAR repeater on the 2 m, 70 cm and 23 cm bands. It's expected to be introduced in Victoria this year, followed by New South Wales, Queensland and elsewhere in early 2008.

RadioFest 2008

The Centre Victoria RadioFest will be held at the Kyncton racecourse on Sunday 10 February, 2008. Within minutes of announcing the date all major commercial traders confirmed their bookings.

Keep a watch on the website radiofest.amateurradio.com.au for the latest developments. The organising committee with representatives from the Central Goldfields and Midland Amateur Radio Clubs, and Amateur Radio Victoria, are meeting early this month to plan the event program.

For inquiries email radiofest@amateurradio.com.au, mail address Box 2354, Bendigo Mail Centre 3554, Fax: (03) 5442 8025 Phone: (03) 5442 8022.

Lighthouse activation

There has been another successful involvement by Amateur Radio Victoria

in the International Lighthouse & Lightship Weekend.

About a dozen, mainly Foundation Licensees, showed an interest in activating the VK3WI callsign on the weekend of 18 and 19 of August at the historic Williamstown Lighthouse and Time-Ball Tower and Lighthouse at Point Gellibrand, Williamstown.

More details can be found on our website.

Congratulations to all who took part and in particular thank you to the event coordinator, Terry Murphy VK3UP.

Education activities

The latest Foundation Licence training and assessment weekend held in August saw seven candidates being found competent for the qualification to take out an amateur station licence.

Enrolments are now open for the next weekend at Box Hill North which is 15 and 16 September. Do you know someone, a relative, friend or work colleague who could be interested in becoming a radio amateur?

For inquiries, to enrol or obtain the Foundation licence manual for \$19.50, contact - Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Another of the Amateur Radio Victoria's Standard Licence Bridging Courses began early this month with a number of Foundation Licensees eager to upgrade under the tutoring of Kevin Luxford VK3DAP.

Eastern and Mountain District Radio Club

Some members of the EMDRC in Melbourne have been walking on a regular basis in an effort to tame their waistlines.

The walk is four km from the QTH of Lionel VK3NM to "The Toy Shop", otherwise known as Strictly Ham in Bayswater.

But as readers can see there are some distractions along the way which have to be manfully resisted.

However resistance is futile at the toy shop: an Icom IC-718 and a Kenwood TL-922 found new homes, after much coffee was drunk!

The photo shows Lionel VK3NM (L) and John VK3ARK (R).



Geelong Amateur Radio Club

SHF operation by the GARC

Most amateurs operate in a comfort zone overarched by HF operation at one end and VHF at the other. There are however individuals in every radio club that align more solidly to the amateur radio prime directive of experimentation. The GARC is no different; be it antenna design, software development or operating in the SHF spectrum. The latter is of particular interest to David VK3QM and Chas VK3PY. Although commercial antennas can be adapted to bands up to 10 GHz, the RF generation is decidedly home brew and they have developed a particular expertise in this area.

Early in 2007, David VK3QM/p5 set up a station on Kangaroo Island with Chas VK3PY and with Ken VK3PX setting up reciprocal arrangements in the Barrabool Hills operating on 2.4 GHz with 25 watts SSB. The distance achieved with two way communication was over 600 km.

At regular intervals during the year from Barrabool Hills, operating on all bands from 144 MHz to 10 GHz, VK3QM with VK3NX have made contact with The South East Radio Group, VK5SR, at Mount Gambier over a path of some 300 km.

GARC planned activities for the last two quarters of 2007

In addition to technical presentations, the GARC has a programme of diverse subjects lined up which include:

- Presentation to the GARC by the Australian Ladies Amateur Radio Association, ALARA; currently some 15 % of the amateur fraternity are ladies
- Visit organised by Greg VK3VOX to the CFA to understand its operational activities and communication strategies during emergencies
- With a conservative estimate that 20% of Australians suffer from type 2 diabetes, Lee VK3PK is making arrangements for a presentation at the GARC by Diabetes Australia for the club, targeting members with waistlines exceeding 100 cm!
- The club president Ian VK3VIN is liaising with The Greater Geelong City Council for a presentation to the GARC members on the planning and building requirements and related procedures for the erection of antenna towers
- Arrangements have been made for the GARC's presence at the

Geelong Council's All Abilities Festival at the Geelong Museum. This is of particular interest to Ian who is a legally blind operator. Some 12 GARC amateurs will be in attendance during the day.

- Tony VK3JGC has a planned circuit of the PROBUS clubs in Ocean Grove to provide a PowerPoint slide show on Amateur Radio and its evolution and integration into the computer and internet era.

Repeater Status

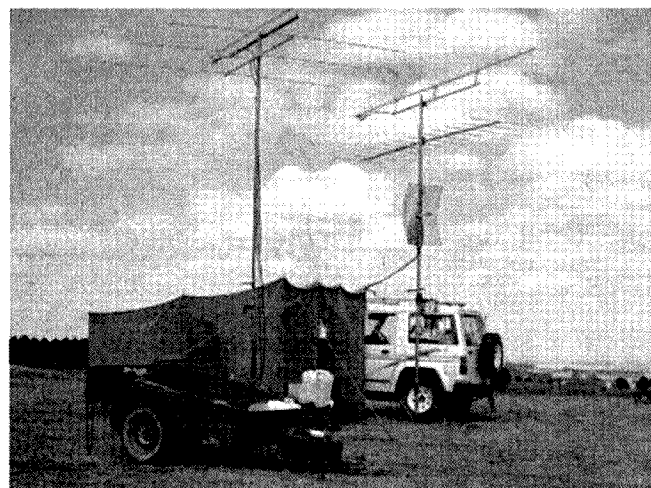
VK3RGL on 147.000 MHz is fully operational with some software additions to assist users.

VK3RGL on 439.575 MHz is currently off air undergoing receiver improvements

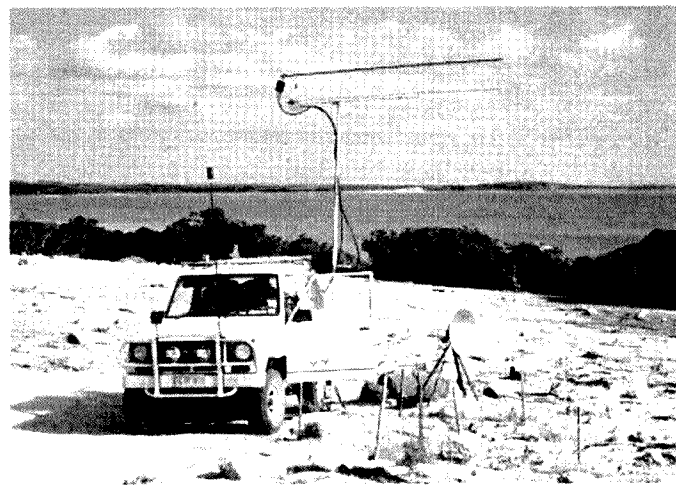
VK3RGC on 147.125 MHz is currently off air undergoing software development.

The GARC Website

The GARC website at www.vk3atl.org is once again operational but under reconstruction. However contact details and other club activities may be sourced there.



This picture, taken at Barrabool Hills in January 2007 shows a 6 m antenna below a 23 cm antenna on the trailer whilst on the 4WD there are antennas for 2 m, 70 cm and 13 cm.



David VK3QM's portable set up on Kangaroo Island

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

This has been a busy month for AHARS. We had a most interesting meeting given by a fairly new member, Denis Haseldine, who spoke about the type of security Australia has to have in place in various parts of the world.

Not a lot of detail of equipment used etc. could be discussed, but there was plenty of material of interest Denis could pass on. A most enjoyable talk.

On the evening of Saturday 21st July, a most successful Mid-year Dinner was held, attended by more than 50 people. The food was excellent, the talk flowed freely and a good night was enjoyed with friends.

For the last couple of months, John VK5EMI has been negotiating for another Assessors Course to be run in Adelaide. Over the weekend of 4th and 5th August, 13 people attended this course which will relieve the problem of insufficient Assessors to service the whole state. A number of those attending were from country areas, which should help more candidates sit near to home.

During the same weekend another Examination program was run by Sasi VK5SN. Two applicants sat to upgrade to the Advanced Licence and 2 others sat for the Foundation Licence. All passed!

Don't forget the buy and sell

AHARS will be holding their annual Buy and Sell on Saturday 17th November in the Westbourne Park RSL Hall on Goodwood Road.

A number of commercial dealers will be present and there will be lots of bargains as amateurs have a 'clean up'. Come along and exchange their junk for your junk. Or better still, for your money!

The AHARS Buy and Sell is traditionally the biggest and best occasion for amateurs to meet old friends and exchange all the latest news as they wander around making their purchases.

PUT IT IN YOUR DIARY NOW!



David VK5OV, his XYL, Meg VK5YG and Colleen, XYL of Wally VK5TW.



Christine VK5CTY and John VK5EMI



J R "Rossco" Anderson, VK4AQ

Dalby and District ARC

Club Secretary, Neil VK4NF, advises that the following positions were filled following the AGM which was held on Sunday, 5th August.

- President: Ricky Lammas VK4NRL
- Vice President Reg Kerslake VK4AQU
- Sec/Treasurer Neil Holmes VK4NF
- Publicity Officer Judy Holmes
- Repeater Co-ord. Ricky Lammas VK4NRL
- WICEN Officer Reg Kerslake VK4AQU

Membership fees of \$25.00 and \$15.00 (Conc) will remain the same for the coming year.

- Harvey Wickes VK4AHW
- Ross Anderson VK4AQ

The geographic locations of this panel are pretty well distributed and it has been proposed that Ross will generally cover the Far North and North Queensland area, Don the Central Queensland area, Harvey looking after Wide Bay, Sunshine Coast and Darling Downs and Kevin covering the Brisbane and the Gold Coast areas. This is not as yet set in concrete, but the proposal seems sound to me. Hopefully I will be able to advise who will be the new Chair of the committee in next month's issue of AR.

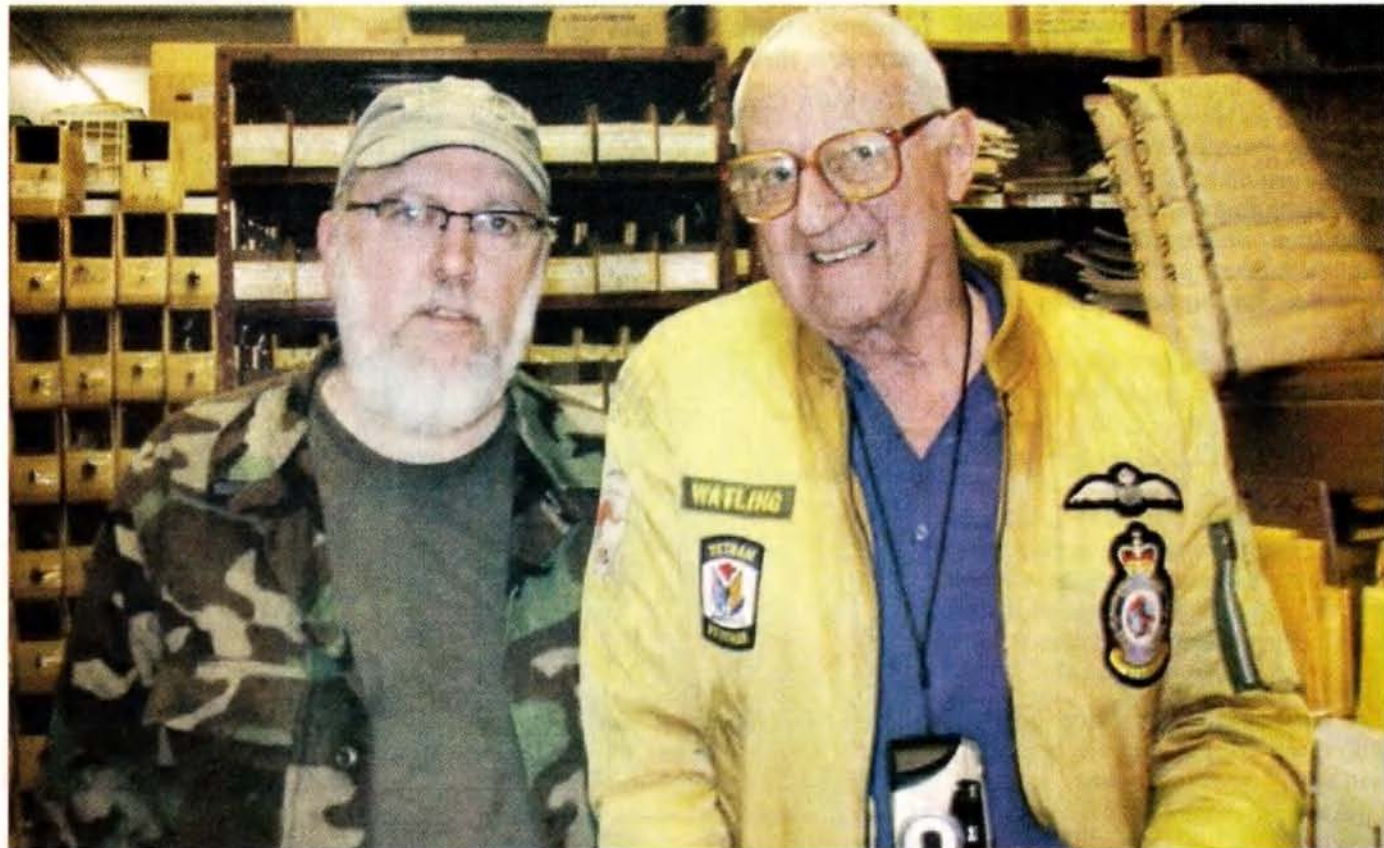
I would like to do a small pen picture item on each panel member in a future edition of AR.

There's an old adage that goes something like "If it's not raining, it's pouring." Since last month's column I've found myself appointed one of three QAC members as well as becoming the Nominee and President of my Lawn Bowls Club. Fortunately my bowls club is one of the smaller ones in the Far North and does not require too much hands-on operation.

Queensland Advisory Council

I'm sure there will be a general announcement elsewhere in this magazine regarding Advisory Councils but I am pleased to announce here that, with effect from 01 October, the following members will form the QAC element of the WIA Advisory Council:

- Don Wilschefski VK4BY
- Kevin Johnston VK4UH



During his trip to the USA and the Dayton Hamvention earlier this year, Nick Watling VK4YT paid a visit to Fair Radio Sales in Lima on their open day. Nick VK4YT (R) with Roger K0RMK at Fair Radio Sales. See Nick's brief report in the VK4 notes on page 37..

Queensland Club Presidents' Luncheon

As has been the tradition for many years, the Queensland Club Presidents' Lunch is to be held in Brisbane again this year on Saturday 13th October at 12 noon. Unfortunately a venue had not been decided at the time of submission of this article but advice will be well promulgated before the event.

Each Club President, or a representative of the club, is invited to attend the luncheon.

WIA President Michael Owen, WIA Director Ewan McLeod and WIA Secretary Ken Fuller will be in attendance, so this would be an ideal time for club representatives to bring themselves up to speed on WIA affairs. The luncheon will also provide an opportunity to meet the incoming QAC members who will also be in attendance.

Club representatives planning on attending the luncheon should contact Don Wilschefski VK4BY at qac@wia.org.au or Ken Fuller at vk4kf@wia.org.au

South Coast Amateur Radio Club

It was lovely to catch up with wandering members Rudi Heesemans and XYL Margaret when they dropped in to a recent club meeting. They have just returned to their home QTH after travelling extensively through north and south Australia. A world tour covering America, Europe, Greece, Malaysia and other areas was to follow. Both Rudi and Margaret are well and wished to be remembered to all their Amateur Radio friends.

Get Well wishes are sent to Roddie Mineo VK4VA, Jan Kavanagh XYL of John VK4JLK and Rod Bradnam VK4CRB/ZL1CD, who have all been poorly of late.

Congratulation to Mervyn, Jannett, Marlene and Peter on passing their Foundation Licence recently and we look forward to hearing them on air just as soon as their call signs are issued.

Townsville ARC

This super-active club has been involved with many and varied projects recently with two springing readily to mind. First there was the "Egads! My Project Doesn't Work. What Have I Done" night and their screen printing afternoon. The latter project saw a number of TARC,

WICEN and Convention merchandise produced including hi-viz vests and shirts, ladies' tops, polo shirts and men's underpants. The afternoon was such a success that another is planned at the end of the month.

Tablelands Radio Group

Mike VK4MIK expects to have had a very successful ILLW weekend at Grassy Hill Lighthouse in Cooktown by the time this article has been printed and advises that a full and complete report will appear in AR.

New Authorised Vertex Standard Dealer

It is pleasing to note that RDXG Communications has begun trading and will offer the full range of Yaesu amateur band radio equipment to amateur radio operators on the Atherton Tablelands in FNQ. Partners Gary VK4WT and Jeff VK4BOF, located in Ravenshoe and Innisfail, are also agents for RDXG portable towers, RF Industries, ACG Scalar, Mobile One and BP Solar. The dealership will service the areas bounded by Tully to the south, west to Croydon and north to Cooktown.

I am sure that every amateur in this generally out-of-the way part of the country wishes Gary and Jeff every success in their venture.

Rydge's Capricorn Car Rally

Leigh Wilson, VK4YLW

On Saturday, 14th July, 2007, "Rydge's Capricorn Rally" was held. This car rally is organised by the Central Queensland Motor Sporting Club and sponsored principally by Rydge's Capricorn Resort, which is located on the beachfront, just north of Yeppoon on the Capricorn Coast, in quite a beautiful location. It provides ideal support for the successful running of the rally, which is a round of the Queensland Rally Championship. Stages were held on grounds adjacent to the resort, as well as in the nearby Byfield State Forest, and approximately 40 cars and crews were entered. Feedback from competitors is that this is a well-liked and well-run rally, which will continue to grow in popularity.

As in previous years, Rockhampton and District Amateur Radio Club (RADAR) provided radio communications. Twenty operators attended, comprising representatives of the Mackay, Gladstone, and Bundaberg clubs, as well as RADAR Club members. In previous years, the

local CREST had provided UHF CB communications support, but due to that organisation being dissolved at the end of June 2007, all radio communications this year were in the hands of amateur operators. Some of CREST's surplus gear was put to good use by the amateurs.

Rally base was set up at the resort, from where all stages were controlled. The radio controllers and the rally directors were co-located there. UHF CB channel 10 simplex was used for Rydges area stages. The RADAR portable UHF repeater on 438.625 MHz was used for stages in the Byfield forest area to report to rally base, and the local channel 3 UHF CB repeater was used as a common communications channel for all parties. Both UHF repeaters were located on a high hill site overlooking the location. Some use was made by amateurs of channel 6500 in the 2 m band; local use was made of simplex UHF CB channels; and the local 2 m and 70 cm repeaters on Mt Archer could also be reached from most locations, if required. Radio communications for the rally were provided from before 7.00 a.m. on Saturday until approximately 8.30 p.m. that evening.

The day dawned bright and clear but cold and there was frost in the area. The day remained clear with a cool breeze, but became cold again at sunset. It was also the time for the mosquitoes to come out! The rally was a good exercise for amateur radio operators to set up a portable station and communicate. The minor problems encountered did not stop communications and lessons learnt will be put to good use for next year's event. There was an operator located at the start and at the end of each stage, and for them the time went quickly as there was always something to be done. All in all, an enjoyable day was had by all. RADAR Club would like to thank the out-of-towners who took the trouble to travel some distance to participate and help out.

Don VK4BY, was co-ordinator. Clive VK4ACC, Nev VK4KNB, Leon VK4KLL, and Frank VK4FLR spent time before the rally servicing and installing the repeaters. Amateur operators on the day were Don VK4BY, Lyle VK4LM, Clive VK4ACC, George VK4AJL, John VK4AJS, David VK4DJC, Douglas VK4HGD, Jim VK4HJD, Julieann VK4JAG, John VK4JWH, Barry VK4KKN, Leon VK4KLL,

Nev VK4KNB, Mike VK4LMB, Kurt VK4TKU, Marcel VK4TMH, Leigh VK4YLW, Andrew VK4FFAO, Bob VK4FRFC, and Bruce VK4FSNA.

Ohio HAMVENTION

Recently I mentioned that I hoped to have an article on the 2007 Dayton, Ohio, HAMVENTION. Thanks to the good offices of popular FNQ Amateur and now retired Chief Pilot of the Cairns based Royal Flying Doctor Service, Nick VK4YT, here it is, in his own words.

A visit to HAMVENTION

Nick Watling VK4YT

In May this year I visited the USA to stay with my daughter in Boston and to visit relatives and friends in New York and Phoenix. The trip also allowed me to realise a long held desire to attend the Amateur Radio Convention (known as HAMVENTION), in Dayton, Ohio.

The Convention is held every year, in May, at the Hara Arena Sports and Convention Centre. This year it ran from Friday 18th May through Sunday 20th May and attracted thousands of amateurs and radio enthusiasts from the USA and all over the world.

Being a modest collector of old military radios and boat anchors in general, I was also attracted by an open day held at Fair Radio Sales in Lima, about 50 miles north of Dayton. This open day was held on the Thursday immediately preceding the Hamvention. I was able to indulge my fascination in a big way with shelf after shelf and room after room filled with old military radios. Unfortunately, under new US rules governing the export and shipping of ex-military radio equipment, the transport costs have become prohibitive. So it was a case of "look at it and weep" for me.

I met up with two amateurs from Ireland who were staying at the same Dayton Airport hotel and we were able to share the taxi fare costs and at the same time, enjoy each other's company.

I had been warned that in order to best appreciate the extraordinary "Flea Market" it was advisable to arrive as the gates of the stadium opened up at 0900 on the Friday. What an amazing site it was - covering acres of ground with every type of table, tent, back of truck and temporary selling site that you

could imagine. The range of electronic equipment covered everything from the 1930s to the present day.

One incident comes to mind that will demonstrate the size of the market. At one table I found an item that I had been looking for. Because I had a number of small items already, I asked the stall holder to retain the item and I would pick it up again later in the day. When I went to find the stall I could not do so because I became disorientated amid the plethora of similar stalls! So the vendor finished up retaining the item and my \$5.00 as well. If I had bothered to check his stall number on the pavement beside him, I would have had a much better chance of finding him again by referring to the market layout map in the convention guide book. Lesson learned the hard way. (Maybe if he reads this article he will on-forward the part, Nick HI).

I came across a mint condition ART-13 aircraft transmitter (Hams over 60 years of age will remember it) for only US\$200.00 - a very reasonable price. Unfortunately under the new regulations the unit would have had to have been shipped by air at the prohibitive cost of US\$750.00. Another good idea gone west.

Current radio and associated equipment was on display inside the centre and was also an amazing experience and any attempt by me to adequately describe it would be doomed to failure. It was interesting to see the Australian firm Emtron was represented demonstrating its range of excellent (and expensive) linear amplifiers.

Forums were held on a whole range of amateur radio subjects. Everything from restoring old radios to computers in amateur radio was covered. These forums, where the speakers really knew their subjects off pat, were well organised and attended.

The usual array of food and refreshment outlets was available and ran very brisk businesses. If you are a fan of hot dogs, hamburgers and donuts and coffee you would have been in your little heaven.

I can thoroughly recommend that, if at all possible, all amateurs should visit the Hamvention at least once during their lifetime. It is an amazing and rewarding experience. The next HAMVENTION will be held on May 16th, 17th and 18th, 2008.

Websites are: www.hamvention.org and www.daytonacvb.com

Radio Amateurs Old Timers Club of SA

The annual luncheon
will be held on

Thursday 25 October 2007
(12 noon for 12:30 lunch).

**Remember to bring your Seniors
Card.**

**Venue: Marion Hotel,
Marion Road, Mitchell Park.**
Public transport Bus M44, Stop 24.

*RSVP to one of the following
committee members before
22 October 2007:*

President: Jim McLachlan VK5NB.

Phone: 08 8294 2992

Secretary: Ray Deane VK5RK.

Phone: 08 8271 5401

Assistant Secretary: Ron Coat
VK5RV. Phone 08 8296 6681

Ray Deane, Honorary Secretary

Wagga Amateur Radio Club hosts Riverina Field Day

The Riverina Field Day will again be hosted by the Wagga Club over the weekend of October 27 and 28 at the club's rooms in Small St. Wagga Wagga. The Field Day commences on the Saturday evening with a dinner at the clubrooms. On Sunday doors open at 9am with the usual flea markets plus a number of Traders including ICOM through Wodonga agent Henry Radio.

This Field Day has a long history dating back to when it was known as the South West Zone Convention. Then it was hosted by many towns in the Riverina such as Griffith, Deniliquin, Young and even Grong Grong. This very popular country ham fest is nowadays hosted on alternate years at either the Twin Cities Radio & Electronics Club in Albury or the Wagga Amateur Radio Club.

So, keep this weekend free and plan to visit Wagga Wagga, City of Good Sports and Garden City of the South to catch up with old mates and make new ones.

VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

North West Tasmanian

Amateur Radio Interest Group

NWTARIG held a general meeting on 28 July, special guest speaker was Peter VK2IY/7 who is the Club's Assessor. Peter spoke on a range of interesting amateur study areas giving simple methods of remembering the resistor colour code, inductance and capacitance phase relationships, and Pythagoras theorem to calculate the length of those antenna guy wires. Next meeting is 29 September 2007.

Northern Tasmania Amateur Radio Club

July 11th saw the author give an illustrated talk on the optical communications experimentation that Rex VK7MO and he have been doing along with a demo of some of the equipment. There was also an impromptu BPL update talk on what appears to be happening with BPL in VK7. The NTARC August meeting was a presentation by the Launceston Scanning

Group on what they are all about. The presentation included a demo of the latest scanning equipment along with some great sound clips that have been collected by the group. By all reports, another great presentation.

Radio and Electronics Association of Southern Tasmania

REAST welcomes Joachim, VK7FAAI, Ron Pedersen and Rod Douglas who were all successful in gaining their Foundation Licences. Congratulations also to Harvey VK7HLE who passed his Advanced Licence assessment and is awaiting his call sign that I understand will be VK7TED. REAST has confirmed arrangements for the first (of many) Standard Licence Training Courses. This is a 12-week course presented by a range of REAST members. Club station call-sign VK7OTC will be heard during the RD thanks to a big effort being put in by VK7s BEN, ZBX, ZMS and ZCR.

WICEN South was active in August with radio communications for the Southern Tasmania Endurance Riders safety checkpoints on the RD weekend and then operating VK7OTC on the International Lighthouse/Lightship Weekend station at the Cape Bruny lighthouse.

Mike Hawkins VK7DMH took us on a journey of discovery about process control and the associated technology. Mike gave some history of process control all the way through to a demonstration of the configuration of the modern 24 GHz radar instruments. Mike showed the configuration and flexibility of radar technology on the big screen. Mike finished up by commenting that Radar is an exciting area of instrumentation and it has opened up many other areas to accurate and consistent measurement for process engineering. However Mike reminded us that there is no such thing as an instrument that does everything... HIHI. A great talk, thanks Mike.

ar

Silent Keys

Robert (Bob) Ellis Richards VK7KRR

(26 October, 1941 - 5 August, 2007)

Bob was born in Hobart but moved with his parents to Georgetown where he attended Georgetown Primary School and later Launceston Technical College. After schooling he joined Australia Post, where he worked for 23 years before taking an early redundancy.

From the early 1960s onwards, Bob was a member of the Army Reserve, being attached to 6th Field Regiment Signals Corp based at Milne Bay Barracks, Launceston, using some great old boat anchor rigs, e.g. No. 19 sets, 122 sets, 62 sets and the famous A510 portable set. He advanced with great achievement in the Army Reserve, obtaining an endorsed G11 licence enabling him to command amphibious craft, AACO International, and other heavy rigid vehicles of which this licence gave him the rights.

Bob was an active CB'er in the "old days" before obtaining his Novice call

in 1983, VK7NRR. He worked HF and has a collection of QSL cards that would make anyone proud. He also loved UHF FM where he made many friends. In 1996, Bob gained his "K" call - VK7KRR. He was passionate about many different aspects of amateur radio, SSB, FM, packet radio and IRLP.

Bob was an enthusiastic member of the Northern Branch of the WIA and later the Northern Tasmanian Amateur Radio Club. Bob has held the positions of Treasurer/Secretary and then Treasurer, a position he held until his passing. He became qualified in later years as an accountant, studied by correspondence at home, a remarkable achievement indeed.

Bob's other great love was his miniature train. He was a member of the Evandale Light Rail & Steam Society where he would delight in loading his train with

children on the open days and running round the tracks.

During the last few years, Bob has suffered from indifferent health. Bob is survived by his wife of 39 years Roz, his 3 children Andrew, Louise and Katrina and grandchildren Trent and Keisha.

73 Bob. You'll be missed for a long time.

AI VK7AN & Graham VK7ZGG



Tom Moffat VK7TM

Tom was born in the United States. His father was involved with the design of the navigation equipment for the Jindivik program in the 50s, so it is no wonder that Tom ended up out here. Tom obtained electronic qualifications with the Bell Telephone Company. He initially worked in Victoria, as Chief of Staff for GTV-9. He moved to Tasmania with his wife Gael, in the early 70s, and became the Motorola sales and service agent for Tasmania.

I first met Tom when he and Gael were holidaying here in about 1973 and I was in Hobart visiting my parents for the weekend. Tom's radio was playing up and he called in to use my gear to repair it. We became instant friends, a relationship that has only deepened over the years.

We again met up on my return to Hobart. It helped that our wives were both from Queensland and had much in common. The Repeater Widows Club was soon in full swing as we worked on a number of amateur radio projects together, including the first amateur television broadcast of the weekly news, the first mobile television broadcast in the southern hemisphere, amateur or commercial and of course, the first VK7RHT, which we built together and was commissioned on Mt Wellington.

Tom soon became one of the best-known names in Australian amateur radio circles through his monthly columns in various magazines, an interest which became an occupation over the past ten years or so. Who will forget Moffat's Madhouse and his monocle? Tom's

optometrist made it for him as he refused to wear reading glasses.

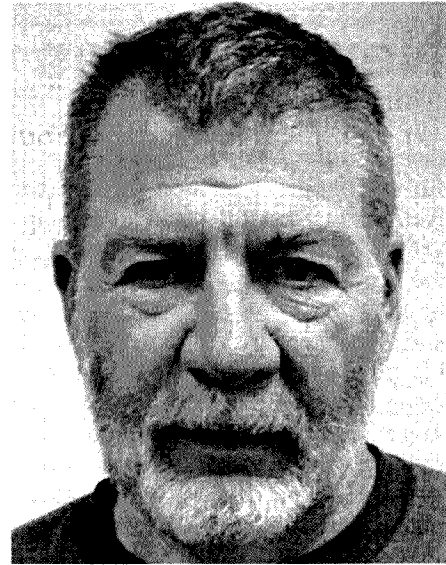


Drawn by Bob
VK4WG*

Tom was a highly intelligent person who had an instinct for new technologies and took to computers like a duck to water. I wonder how many people built his weather satellite decoder over the years? He sold them in kit form and many yachties and amateurs were soon checking their own weather, long before sound cards and DSP hit the scene.

He also built an experimental robot known as the Tasman Turtle. Tom was never given the intellectual credit for the project and was too unassuming to object when others took the credit from him. For a time he worked for TVT-6, now Win TV, in Hobart, where his face was seen as a quirky news reporter with an American accent. Some of Tom's work, particularly at Macquarie Island, is still regularly used as file footage.

In the 1990s Tom returned to the USA where he lived north of Seattle until finally returning to Australia about 5 years ago. He was very proud when he



became a naturalized Australian.

In hindsight, I now think the signs of Alzheimer's disease, which was diagnosed early this year, were already showing through as he lived his last few years making very little contact with us and with little on air activity. Such contact as we had, did not portray the brilliant Tom of past days.

Tom died peacefully on Tuesday 31 July 2007, leaving Gael, his former wife, who continued to care for him as much as he would let her, two daughters, Jenny and Fiona, a son Steven and three grandchildren.

Farewell old friend.

Brian Morgan VK7RR

*Thanks for many years of *Moffat's Madhouse*, 137 articles published in three Australian magazine titles.

Bob VK4WG

Les Cooper VK7LS

(30/01/30 – 31/07/07)

Les was first licensed in the mid 1960s. At that time Les was working at the EZ Co in a non-radio trade and took a while to pass the written essay type theory exam. With persistence he first obtained an unlimited licence, as he passed his 14 wpm Morse prior to his theory. Les was a very active amateur involving himself in all aspects of the hobby, building and operating his own equipment, AM in those days, and showing real pride

and capability in his achievements. He operated all bands, including VHF, with his home built equipment.

Les's boyish nature and friendly smile will be remembered by all who have met him and was a characteristic that we will all remember. He was an active amateur right up until the time he was admitted to hospital, usually on the local 160, 80 and 2 metre nets from his Collinsvale home QTH.

Les was arguably one of the most active members of the "Tasmanian Sewing Circle" and made many friends through his regular "call ins" to that net. Much could be said about almost a lifetime of amateur operating by VK7LS, who through his love of the hobby and the many other HAMS with whom he had contact, made for a valued rewarding experience for us all.

Vale Les VK7LS

Dave VK7DM

QSL cards from the WIA National QSL Collection

Hon. Curator: Ken Matchett VK3TL
wiaqslcollection@wia.org.au

New prefixes and suffixes

The WIA would again like to express its thanks to the Austrian QSL Collection for its continuing support for our own National QSL Collection over many years. The Austrian QSL Collection is the largest QSL Collection in the world, holding over five million QSL cards, and is managed by Wolf OE1 WHC and his group of volunteers. The WIA could never hope to match the enthusiasm for saving something for the future possessed by Austrian licensees. Amateurs over there even donate sums of money for the maintenance of the Collection.

Amongst the QSLs sent recently:

Argentina L49, L59. As previously pointed out, governments throughout the world tended to issue two-letter prefixes from the ITU's post-war prefix allocation. For Argentina this was LU



from the allocation LOA-LWZ. A new allocation with a single letter was issued quite recently. There are no fewer than seventeen single letter L prefixes in the WIA Collection, many with multiple numerals, e.g. L49.

Other QSLs include Ceuta EG91C, France TMIX (IOTA EU-032), Scotland MMO-DFV/8, Arran Island (IOTA-EU123), Tunisia TS7N (IOTA AF-073) and Canada XM3AT (Queen's Golden Jubilee).

We are also in receipt of many of the German prefix zero QSLs such as DL0, DK0, DA0 etc. Almost all of these are special issue call signs, usually held by radio clubs or issued for the celebration of an event.

Sweden recently issued prefixes SE4CJY and SAØF. Also SJ5 and SJ0 were special prefixes used by club stations to commemorate the union between Sweden and Norway in 1905.

Multi-digital prefixes are really amongst us. Wolf has sent LY20040 (LY two hundred-40) commemorating Lithuania's membership of the EU. Finland OH2DZ/P (IOTA EU-140), Kaliningrad R750KG, Ukraine EO225EA, Norway: two unusual prefixes LD95N (end of maritime CW) and LI7ff, Bulgaria LZ8IIARU having

a special callsign suffix (80 years of the IARU), Estonia ES85M.

In closing may I ask readers to bear in mind that the WIA seeks not only rare DX. We are not very likely to receive in the email DXCC QSLs that members have been chasing for years. They are not likely to donate these. (There are some that do, but we do not expect it.) It is what may be called THOSE OTHER QSL CARDS that we seek. These are the ones that you have not looked at for weeks, or even for years and years. They are sitting in a shoebox or in a filing cabinet. Again I say that they are never looked at on a regular basis. Would it be unkind of me to ask you to visit your Post Office, to buy a Post Office box and bundle those OTHER QSLs into it and post it off. You will not in any way miss them – and you'll still have all your good ones.

During the last few months work on the QSL Collection has become quite difficult. I really would appreciate your help with a generous donation. Postage as usual is fully refunded and acknowledgement made of your support.

Good DX.
Ken.

S.A.D.A.R.C

**SHEPPARTON
HAMFEST**

**SUNDAY 9th
SEPTEMBER 2007**

**ST AUGUSTINE'S CHURCH
HALL**

**ORR STREET SHEPPARTON
(usual place)**

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Contest Calendar September – November 2007

Sept	1	Russian RTTY WW Contest	RTTY
	1/2	All Asian DX Contest	SSB
	1/2	Region 1 Field Day	SSB
	8/9	Worked All Europe DX Contest	SSB
	15/16	Washington Salmon Run	CW/SSB/Digital
	22	Westlakes Cup	SSB/DSB/AM
	29/30	CQWW RTTY DX Contest	RTTY
Oct	6	PSK31 Rumble	Digital
	6/7	Oceania DX Contest	SSB
	9	10-10 International Day Sprint	All
	13/14	Oceania DX Contest	CW
	14	Asia-Pacific Sprint	CW
	20/21	JARTS WW RTTY	RTTY
	27/28	CQ WW DX Contest	SSB
Nov	10/11	Japan International DX Contest	SSB
	10/11	Worked All Europe DX Contest	RTTY
	24/25	CQWW DX Contest	CW

Welcome to this month's Contest Column

At the time of writing, I'm morphing from VK2BAA into a bright shiny new VK4BAA. Things are a little hectic within the BAA household, with me punching away at the laptop keyboard amidst packing boxes and removalists!

The submitted logs for the 2006 CQWW CW and SSB contests have recently been made generally available to allow operators to gauge their performance and to see if and where errors crept into their log. Only the person that submitted the log to the contest adjudicators is given access to the report file, so only the un-adjudicated log data is shown in the tables below.

Claimed Scores for 2006

CQWW CW Contest

It's great to see so many VK stations submitting a log for the CQWW CW 2006 contest. I was operating at the club station of VK6ANC, the Northern Corridor Radio Group as VK2BAA/6 during the contest and had a great time on 15 m as single band entry, with the

occasional visit to other bands when 15 m died-off. I was surprised to find that the EU 'wall' was just as awkward to penetrate from VK6 as it is from VK2. I'd thought that it would be easier to get through the melee on 40 m but on the limited number of visits to the band I still had a problem getting the multipliers into the log – even with a high beam and full

legal limit of RF available! One aspect to note for future contesting activities is that life can be made a great deal easier if the rig has a narrow CW filter – the rig I was using had no filter at all and the pile-up was hard work as a result! Another lesson learnt.

The following VK stations submitted a log for the contest:

Callsign	Operator	Claimed Score	Club Points	Comments
VK2ATZ	VK2BPL & VK2AEA	832,314	Westlakes	ABHP
VK2BAA/6	Phil	511,806	VKCC	15 m HP
VK2CZ	David	Undeclared	VKCC	10 m LP
VK2GR	Allan	169,223	Westlakes	ABLP
VK2IMM/W6	Sergey	216,810	VKCC	ABLP
VK2NU	David	436,288	VKCC	ABLP
VK2WL	Ted	Undeclared	Undeclared	ABLP
VK4AN	Eddie	405,232	VKCC	15 m HP
VK4BU1	Les	388,046	Undeclared	ABHP
VK4DX	Mike	102,030	VKCC	40 m LP
VK4EJ	Bernie	Undeclared	Undeclared	ABLP
VK4EMM	John	189,732	VKCC	80 m LP
VK4TT	Keith	6,235	Undeclared	20 m LP
VK4XY	George	327,672	Undeclared	ABLP
VK6DU	Lance	Undeclared	'WIA'	10 m LP
VK6HG	Bob	152,256	Undeclared	ABLP
VK6LW	Kevin	805,805	Undeclared	40 m HP
VK7GN	Martin	727,509	VKCC	ABHP
VK9AA	Bemd VK2IA	7,372,278	VKCC	ABHP

AB = All Band; HP = High Power; LP = Low Power

As listed on the CQWW website, not a single VK3 station appears to have submitted a log, which is a bit of a surprise. What's happening in Victoria – surely there are a few CW contesters in VK3?

Claimed Scores for 2006 CQWW SSB Contest

It's also great to see so many VK stations submitting a log for the CQWW SSB 2006 contest. I was operating at ZL6QH during the contest and had a great time on 15 m as part of a multi-multi category team effort from Quartz Hill in Wellington.

The following VK stations submitted a log:

Call sign	Operator	Claimed Score	Club Points	Comments
VK1AA	Nick	2001	Undeclared	Multi Op, as Nick's 9 year old son Josh operated too!
VK1CC	David	1,660,257	Undeclared	
VK2APG	Gerry	62,624	VKCC	
VK2ATZ	Geoff	33,075	Westlakes	
VK2BCQ	Brendon	55,550	Undeclared	
VK2BJ	Barry	47,740	VKCC	
VK2BPL	Paul	10,200	Westlakes	
VK2IMM/W6	Sergey	35,854	Undeclared	
VK2IT	Peter	20,328	VKCC	1 st contest in 40 years of ham radio!
VK2KRM	Richard	7,198	Westlakes	1 st contest. Got Advanced licence in July 2006!
VK2MIC	Stuart	7,446	Undeclared	
VK2TZA	Ivar	12,672	VKCC	
VK2WL	Ted	Undeclared	Undeclared	
VK2ZEN	Michael	10,880	Westlakes	
VK3AVV	Mike	98,304	Undeclared	
VK3FY	Chris	3,618	VKCC	Mobile
VK3KE	Jim	119,955	VKCC	
VK3TZ	Tony	181,800	VKCC	
VK4AN	Eddie	180,115	VKCC	
VK4CZ	Scott	2,021,757	VKCC	
VK4DMP	Marcello	49,192	Undeclared	
VK4EJ	Bernie	Undeclared	Undeclared	
VK4HTM	Tom	Undeclared	VKCC	
VK4IU	Peter	227,457	VKCC	
VK4LAD	Stephen	875	VKCC	
VK4NEF	Eric	61,506	VKCC	
VK4UC	John	4,702,874	VKCC	Multi Op.
VK4VCC	Laurie	30,039	VKCC	
VK4WR	Alan	2,788,539	VKCC	
VK4XES	David	6,204	Undeclared	
VK5UE	Colwyn	252	Undeclared	
VK6ANC	John	1,137,235	NCRG	Multi Op.
VK6DXI	Mirek	3,952	VKCC	
VK8AA	David VK2CZ	Undeclared	Undeclared	
VK8AV	Alan	4,320	VKCC	
VK9AA	Bernd VK2IA	1,429,428	VKCC	

The club score allocation for the CQWW contests makes for interesting reading, as VKCC and Westlakes dominate the allocations. The club score system allows a group of operators to consolidate their scores in order to compete as a whole. For VK, club members can be scattered across a large amount of geography and we have special dispensation for this aspect from the organisers of CQWW. There are quite a few 'undeclared' scores though which would've been good to include within a group score. Maybe in 2007 we'll see a few more allocated entries?

CQWW Contesting Records

The organisers of the CQWW contests produce records for each country and for the world as a whole, for both SSB and CW. The record listings tend to be slow in updates, but the latest tables available on the website are shown below.

CQWW CW Records for VK

L - Low Power; Q - QRP; A - Assisted; MS - Multi-Single; MM - Multi-Multi

Category	Call	Score	QSOs	Year record set
All	VK6AA	5,933,760	3822	03
28	VK8XX	848,990	1969	89
21	VK4EMM	886,103	2112	02
14	VK6LW	1,055,835	2236	04
7	VK6LW	610,067	1753	03
3.5	VK6DXI	103,140	487	04
1.8	VK6HD	12,330	97	85
L All	VK3DXI	1,867,762	1706	92
L 28	VK4DX	638,950	1771	00
L 21	VK4EMM	815,850	1923	00
L 14	VK4DX	761,634	1757	01
L 7	VK6LW	533,696	1453	92
L 3.5	VK6LW	83,300	346	96
L 1.8	VK3TZ	12	2	00
Q All	VK2BAA	56,810	210	05
Q 28	No entry recorded			
Q 21	VK6AA/2	378	9	01
Q 14	VK2BEX	84,739	304	91
Q 7	VK2BAA	240	10	04
Q 3.5	No entry recorded			
Q 1.8	No entry recorded			
A All	VK5GN	1,090,795	1662	98
A 28	No entry recorded			
A 21	No entry recorded			
A 14	VK1AA	921,052	1905	04
A 7	VK1AA/4	437,970	1251	03
A 3.5	No entry recorded			
A 1.8	VK6VZ	7,955	79	04
MS	VK6LW	3,404,906	2968	90
M2	No entry recorded			
MM	No entry recorded			

CQWW SSB Records for VK

L - Low Power; Q - QRP; A - Assisted; MS - Multi-Single; MM - Multi-Multi

Category	Call	Score	QSOs	Year
All	VK5GN	3,709,900	2928	99
28	VK4QK	859,011	2238	79
21	VK4VU	1,079,335	2609	79
14	VK6HD	706,251	1483	72
7	VK6IR	208,748	782	84
3.5	VK3FY	100,056	449	84
1.8	VK6HD	5,363	62	83
L All	AX4EJ (VK4EJ)	1,203,124	2061	00
L 28	VK2ARJ	479,987	1601	00
L 21	VK5AM	613,168	1578	01
L 14	VK4EMM	667,056	1533	00
L 7	VK4EMM	97,836	438	01
L 3.5	VK3TZ	105	8	99
L 1.8	No entry recorded			
Q All	VK4WPX	343,804	624	01
Q 28	VK4VHY	26,964	153	83
Q 21	VK3NDS	76,380	394	96
Q 14	VK2BAA	17,171	96	05
Q 7	No entry recorded			
Q 3.5	No entry recorded			
Q 1.8	No entry recorded			
A All	VK5GN	1,844,180	1841	97
A 28	No entry recorded			
A 21	No entry recorded			
A 14	VK1AA	535,248	1213	05
A 7	VK6DU	14,805	128	05
A 3.5	No entry recorded			
A 1.8	No entry recorded			
MS	VK4UC	4,961,152	3939	99
M2	VK4CZ	4,126,800	3309	04
MM	VK2DZZ	125,100	556	81

As can be seen from the tables, there is plenty of opportunity to set a VK record. The easiest way is to take a look at a likely VK record that is either not as yet set or based upon a low score or QSO count, then have a think about your station setup, which antennae you have available for whichever band or bands, and make plans for later this year. If you fancy a challenge (and, let's face it, contesters don't!) select an established record and aim to break it!

Some records have stood for quite some time, such as the SSB Multi-Multi record set by VK2DZZ in 1981 – I was just leaving high school at this time! Another record set quite some years ago was the high power 20 m entry by VK6HD in 1972. Even with the sunspot cycle being as it is currently, 1500 QSOs on 20 m should still be possible for a serious entry from VK? Go on, have a crack at a record!

CQ WPX RTTY Results

The results for the CQ WPX RTTY contest recorded the following VK and ZL stations participating:

SOAB HP ZL2AMI 1,148,660

SOAB HP ZL4BR 669,300

SOAB HP VK4AN 571,650

SOAB HP VK2NU 3,724

SOAB LP VK3KE 106,455

SOSB 40M ZL3TE 11,704

Well done all!

Harry Angel Sprint Results

The results of the Harry Angel Sprint contest are published elsewhere in this edition of AR. The Westlakes Club are no doubt proud to be demonstrating their contesting prowess, with VK2AEA winning the CW section and VK2BPL winning the Mixed section, both by a handsome margin. Well done gentlemen!

The son of Eddie de Young VK4AN, Raj VK4FRAJ, has been busy on the contesting scene. Raj has entered the Jack Files Contest and continues to move proud dad Eddie away from the rig for the IOTA contest just last month in the QRP 12 hour section, claiming a score of 14,040 using SSB and CW. Raj reports trouble with DX stations getting to grips with the four letter suffix, but managed to sustain the battle for 10 hours. We'll no doubt hear more from this young man in the future as Raj is 12 years of age – not that you'd know that by his operating prowess on the air. Well done Raj, and well done Eddie for being a good sport and giving Raj a fair go in your station. But be careful Eddie – you might need to alter the station to allow a multiple transmitter approach, else you won't get on the air yourself anymore as Raj will be at the controls!

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

A note from Ian Godsil

Greetings to all Readers

I have asked permission for this to be included in the Contest Column because I am very conscious of being late with the results of two contests this year and I want to offer you all my sincere apologies for these delays. It was just unfortunate that my wife and I had to move QTH at the end of April, just at the time that the QRP Hours Contest and the Harry Angel Sprint were due.

In the process I lost access to my broadband connection ("technical difficulties" said the ISP) and had to resort to less reliable means of getting your logs. I had hoped that after two or three months I would have been back to something like normality, but sadly things have not worked out that way.

However, I believe that the results attached are accurate and I thank everyone for their patience, as well as the efforts that you made in taking part and submitting your logs.

Following on from this state of affairs, I would like to advise that the QRP Club's annual QRP Day Contest has been moved to Saturday 8th September. The Rules will appear in this Column soon.

So my apologies to you all for my being so tardy this year, but I hope to join you again soon for the wonderful world of AR contesting.

73, Ian Godsil VK3JS

COQC QRP Day Contest Rules 2007

0800 -1200 UTC Saturday 8th September 2007

Sponsored by the CW Operators' QRP Club in Australia and open to all AR operators, the objects are:

1. To work as many stations as possible in each hour,
2. To encourage contacts between VK, ZL and P29 stations,
3. To encourage the use and enjoyment of low power equipment, whether commercial or home-brewed,
4. To test the efficiency of your station under QRP conditions,
5. To compete for a certificate for best hour and/or best three hours,
6. (In VK) to prepare for the Remembrance Day Contest.

Entrants are encouraged to compete for all four hours, but to submit their logs on the basis of "best three hours". Logs will also be considered for highest score in any individual hour.

BANDS: All HF bands (no WARC) may be used, although it is envisaged that the bulk of operations will be on 80 and 40 metres.

CATEGORY: Single Operator only.

MODES: CW/PSK31, Phone, Mixed.

EXCHANGE: A three-digit serial number beginning at 001 and incrementing by one for each contact.

REPEAT CONTACTS: In order to make greater use of available band space and time, repeat contacts with the same station will be allowed once each hour of the contest on each mode (i.e. a station may be worked each hour on CW and Phone).

Please note: RS(T) no longer required, but if given should be an accurate statement of signal strength.

SCORING:

Stations within VK/ZL/P29 score as follows:

VK-VK	1 point	ZL-ZL	1 points	P29-P29	1 point
VK-ZL	3 points	ZL-VK	3 points	P29-ZL	3 points
VK-P29	3 points	ZL-P29	3 points	P29-VK	3 points

Any DX stations (outside VK/ZL/P29) score 5 points.

A **BONUS** of 20 POINTS may be claimed if the QRP station operated with a homebrew transmitter or transceiver.

FINAL SCORE is the sum of the total QSO points, plus any bonus points. Except for the use of homebrew equipment (see above), no multipliers apply.

LOGS: PLEASE USE SEPARATE LOGS FOR CW/PSK31, PHONE or MIXED MODES. Logs must show full details of time UTC, station worked, band, mode, exchange and points claimed. Arrange logs so that each hour is clearly distinguishable. Logs should be submitted for "best three hours" and scores will be considered for highest score for each separate hour. Please indicate clearly if you claim the 20 points bonus for homebrew equipment (once only for the Contest).

CERTIFICATES: Certificates will be awarded to the following:

- (i) first three placegetters in each mode who submit "best three hours" entries,

- (ii) the highest scorer in each hour in each mode in each call area.

GENERAL:

- (i) A SUMMARY SHEET, showing operator's callsign, name, address and points claimed should accompany the Log.

- (ii) Any station claiming to operate QRP MUST NOT exceed a maximum of five watts carrier to the antenna and should add /QRP after its callsign.

SEND Logs and Summary Sheet by mail to --

Ian Godsil, 121 Railway Parade, Seaford, 3198.

Logs may also be sent via email to Ian_G@mail2ian.com

All entries to be received no later than Friday 21 September 2007.

Results Harry Angel Sprint 2007

CW		
1	VK2AEA	60 points
2	VK3GDM	14

SSB		
1	VK5YX	63 points
2	VK7VH	57
3	VK2LCD	54
=4	VK4VCH	51
=4	VK3SSB	51
6	VK4PTO	47
7	VK4HTM	43
8	VK3AAK	42
9	VK2KDP	37
=10	VK3FJAC	36
=10	VK4YZ	36
12	VK3ZPF	33
13	VK4JRO	25
=14	VK3PRA	22
=14	VK2HBQ	22
=16	VK4AJS	21
=16	VK2FRKO	21
=16	VK3FCLL	21
19	VK4DGG	20
20	VK4JM	18
21	VK4UD	17
22	VK7BEN	16
=23	VK4HAG	14
=23	VK2VKV	14
=23	VK3KE	14
=26	VK4JJ	13
=26	VK4BRT	13

MIXED		
1	VK2BPL	62
2	VK8AV	11

Results QRP Hours Contest 2007

CW		
1	VK2AVQ	10 points
=2	VK3GDM	8
	VK3RD	8
	VK3JY	8
5	VK4CEU	6

(Note: As Manager, I did not include my own score)

SSB		
1	VK2LCD	28 points
2	VK7VH	27
=3	VK4HTM	25
=3	VK2BPL	25
5	VK3AAK	18
=6	VK5DG	13
=6	VK2ASU	13
=8	VK4FHYH	10
=8	VK4FNQ	10
10	VK3JY	9
11	VK2AVQ	5
12	VK7XGW	4

MIXED		
1	VK4TGL	8 points

2007 160 metre VK/trans-Tasman Contest

Complete Phone Results

“Participation factor”

PHONE:

39 ZLs and 96 VKs participated. $39/96 = 0.406$.

All ZL points for VK contacts, (not including “prefix group” bonus points) were reduced by multiplying by 0.406.

CW:

No entries

Category 6 (Phone)

	Call sign	Score	Contacts
1st.	ZL1FF	1435	170
2nd.	VK3FRC (multi-op)	1372	177
Eq 3rd.	VK2ATZ (multi-op)	1339	197
Eq 3rd.	VK3HJ	1304	160
4th.	VK4WIL (multi-op)	1269	164
5th.	VK2MA (multi-op)	1256	174
6th.	VK2AWX (multi-op)	1239	170
7th.	VK2TZA	1194	168
8th.	ZL4RMF	1132	146
9th.	ZL4A (multi-op)	1064	137
10th.	VK3TZ	1004	148
11th.	ZL3UR	943	126
12th.	VK2BV (multi-op)	854	131
	VK3JWZ (ineligible)	795	114
13th.	ZL3AKM	742	97
14th.	VK3AMW	653	94
15th.	VK2ENG/Q	465	68
16th.	VK2YW	392	95
	ZL2MS (ineligible log)	364	
17th.	VK4FNQ	359	55
18th.	VK5BC	330	75
19th.	VK4CAG	325	73
20th.	VK2ZCM	307	64
21st.	VK5AW	290	62
22nd.	VK3ANP	171	43
23rd.	VK7ARN	135	30
24th.	VK3WWW	123	24
25th.	VK2GR	117	21
26th.	VK1KLW	99	42
27th.	VK2TMG	83	13
28th.	VK2ZSO/Q	58	12
29th.	VK3TF	20	10

Category 7 (QRP Phone)

	Call sign	Score	Contacts
1st.	VK2ENG	465	68
2nd.	VK2ZSO	58	12

Note: VK3JWZ (Contest Manager) Cat 1 Phone score of 218 is ineligible.

2007 160 metres VK/trans-Tasman Phone Contest

The propagation conditions were perfect on 160 m. There was no QRN at any stage, and the ZL signals were loud for the entire Contest. There was no customary rise in the first hour, or decline at the finish. Maybe this is why the last hour produced the most contacts for many when, usually, some would be tucked up in bed.

Unfortunately, ZL participation was down, and in the most populous zone, there was only one ZL1. Maybe a clash with the “ZL Memorial Contest” on 80 m was the reason. Trevor Buckeridge ZL1FF did not let that deter him, by winning the Contest and collecting the Trophy and certificates for 1st 160 m Phone, and the Night Owl’s “Bucket Mouth Award”. You might recall that Trevor, a relative newcomer to ham radio and contesting, also won the 80 m Phone Contest, - so that will be twice that the Contest Manager has had to spend \$28 on postage. No light-weight Trophies in the VK/trans-Tasman!

The team from Frankston and Mornington Peninsula ARC (VK3FRC multi-op), were equal 2nd with Luk Steele VK3HJ.

Only 30 points separated VK4WIL, VK2MA, VK2ATZ and VK2AWX (all multi-operator Club stations), in 3rd, 4th, 5th and 6th positions respectively. Mike Dower VK2ENG won the certificate for 1st 160 m QRP Phone.

This was 160 m at its best. Even Contest Manager VK3JWZ, with a pretty ordinary antenna, was receiving replies from ZLs that he could hardly hear! - All good stuff!

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**The 18th North
Queensland
Amateur Radio
Convention
September 21st,
22nd & 23rd 2007
JAMES COOK
UNIVERSITY
DOUGLAS CAMPUS**

DX – News & Views

John Bazley VK4OQ,

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.

john.bazley@bigpond.com

2008 already has started to look interesting!

February 2008 will see another operation from VP6D – initial details below. In March 2008, an operation is being planned from Clipperton. So with conditions hopefully improving and still four months to go to 2008, there is still plenty of time for some more announcements to be made!

Ducie Island

The VP6DX team, heading to Ducie Island, has been busy behind the scenes preparing for the much anticipated February 2008 DXpedition, reports Carsten Esch DL6LAU. The group has decided “to extend the duration of the expedition”. As a result the budget will increase for this operation. Plans are to depart Mangareva Island, Gambier Islands, French Polynesia via the Braveheart (www.braveheart.pn), on 5 February 2008 and head for Pitcairn Island, which normally takes about 36 hours.

The Team will spend a few hours there before taking another 36 hour boat trip still aboard the Braveheart, to Ducie Island. They are planning to arrive at sunrise on February 9th. The only landing area is located on the northeast side of the island and can be tricky. They hope to be up and running within 24 hours.

The team needs to be back on Mangareva by March 3rd, so they would need to allow about six days in order to get back in time. Looks as if, if all including the weather goes well, they will have VP6 QRV for as long as 19 days. There is a slight chance of a short visit to another uninhabited island (editor's note: Henderson Island is the only one on the way to and from Ducie Island) if things on Ducie slow down.

Since the Dayton announcement of the trip, the operators list has been adjusted. Unfortunately Krassy Petkov K1LZ, will not be able to go. The current list of operators is DJ8NK, DL3DXX, DL6LAU, DL8LAS, K3NA, OH2BH, OH2PM, SP3DOI, UA3AB and WA6CDR. The group plans to announce the addition of three more ops

in the near future.

A support team will assist the VP6DX DXpedition team. Kan Mizoguchi JA1BK, who was the DXpedition leader on the first operation (VP6DI) from Ducie and who supported the second operation (VP6DIA), will be advising the VP6DX team. DF6QV, DJ2YA and OH1JT will be the Antenna Engineering Team. The team's Webmaster will be DL1MGB. Bob Beebe GU4YOX is the electrical team manager and Miralda Warren VP6MW is the Pitcairn Island liaison. More support personnel are expected to be announced soon.

Early on the team chose to take radios that would possibly be “the best radio for this kind of operation”. The team will have seven of the new K3 transceivers thanks to the sponsorship of Elecraft (www.elecraft.com). Another sponsor for this operation will be ACOM (www.hfpower.com), as the team will have six or seven of the ACOM 1000/1010 amps and one ACOM 2000A (for 160 metres).

Serious efforts are being made in all aspects of this DXpedition, including antennas, to give everyone a chance of working Ducie Island.

They will have two phased verticals on 160 metres aimed at Europe and the US and one vertical will be used to all other areas. Plans are to have two 4 squares on 80 metres, one on CW and the other on SSB, for simultaneous operation. Four Squares will also be used on the 30 and 40 metre bands. On 10 through 20 metres, they will be using phased vertical dipoles.

As you can see, from the list of operators, their time on the island, the equipment and antennas, this will be a serious effort to make Ducie Island available to the DX community. Donations for this operation are being requested, in order to make this operation a success. Your support before the operation is requested, as all of the expenses have to be paid way before the team actually depart. The team members have already put upfront the money.

Donations have already been received or promised by the following sponsors: German DX Foundation (GDXF), Danish DX Group (DDXG), Clipperton DX Club (CDXC), Chiltern DX Club (CDXC), European DX Foundation (EUDXF), UK Six Metre Group (UKSMG) and the Central Virginia DX Contest Club (CVCC). Individual contributions have been received so far from: K9CT, W2RI, DJ0QN, G4DYO, K7HC, N6OX, DK5WL, DL2OE, K7EIE, DL3JJ, JF7RJM and DL7ZZ.

The budget for this operation is over \$200,000 (USD). Those willing and able can support this operation, with details on the team's Web site at <http://ducie2008.dl1mgb.com/content/view/33/54/>. Over the next few weeks the VP6DX team will be preparing the shipping container, which will contain the radios, amplifiers, antennas, generators, etc.

The VP6DX Website (www.vp6dx.com) is constantly being updated and a monthly news letter will be available with all the details prior to the trip. Those wishing to automatically receive the newsletter can go to the Web site and “leave your e-mail address in the News section”.

UA4WHX: Third DXpedition comes to a close

Vladimir Bykov UA4WHX has confirmed that he is heading back home after being in Africa and the Middle East for over two years. He went through two radios, lost a finger and travelled to 21 countries making over 310,000 QSO's. During that time he made many DXers happy with all time new ones and filling in band gaps.

So after so many QSOs, here are the instructions for QSLing. Vladimir will accept bureau QSLs, including those directly from QSL bureau or Societies to his home address. Direct requests may also be sent to:

Vladimir M. Bykov

P.O. Box 2040

Izhevsk 426000

RUSSIA

No QSLs should be sent to his US call

Things are looking up!

Well Spring has arrived and slowly the propagation is improving. I have been informed that the recovery time for this Sunspot period is likely to be longer than in previous years.

I also think that this has been masked by the dramatic reduction in HF traffic. I have also noticed conditions on the twenty metre ham band and 15 metres are also extremely poor.

I am also pleased that my Icom IC-R70 roared back into life after being dead for several months. This happened after I frustratedly tapped the top of the set and was pleasantly surprised to see the digital display and audio return to life. Whenever the set dies, I gently tap it and presto. It must be a dry joint somewhere.

The American IBB, which operates the VOA and other stations such as Radio Free Asia, Radio Free Europe, Radio Sawa (Arabic) and Radio Farda (Persian), announced at the end of July they are going to shut down the Delano transmitters in California, after 63 years of service. This will happen at the end of the current broadcasting period at the end of October. All senders will be decommissioned by the end of January. This will leave Greenville in North Carolina as the only remaining HF site in the continental USA. A medium

wave facility also remains at Marathon, Florida, for Radio Marti programming for Cuba.

The American Congress recently passed legislation to commence programming in Spanish for Venezuela. I have had no word on when this will commence. Cuba has been relaying Venezuelan programming for some time and Cuban programming has been relayed on some domestic Venezuelan stations sympathetic to President Chavez. Many private and commercial stations and networks have been hostile to the government and in retaliation, the government has been cancelling their licences and seizing their senders.

Kol Israel has continued relaying domestic English programming over shortwave but all external programming except Persian has been axed. Israel goes off daylight saving around September 15th, so the English programming will now be at 0430. I do not have their current frequency schedule but they usually are between 11500 and 11600 kHz.

Well that is all for this month. Don't forget you can email me at vk7rh@wia.org.au

Or snail mail to 20/177 Penquite Road, Norwood TAS 7250.

73 de Robin L. Harwood VK7RH.

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Westlakes Cup

Saturday 22nd
September 2007

(Rules in Amateur Radio
August)

Plan Ahead

The Mid North Coast
Radio Expo 2008

When: Sunday Jan 20th

Where: St Johns Church Hall,
Mc Lean Street, Coffs Harbour

Time: 8.30am start

Trade Displays, disposals, club
displays, home brew and more

Info at www.mncarg.org or call
Gary VK2ZKT on 02 66552990

(AC4LN). He insists on IRCs and not cash in envelopes, no matter how much. Vladimir believes the Post Office is safe but does not want to tempt anyone. He can mail seven QSL cards for one IRC, so you can do the maths as to how many should be sent.

This was Vladimir's longest trip. The ARRL DXCC desk has approved all of the previous trips.

More DX

ZD7 Tom KC0W will be active from St. Helena Island mid September 2007 with the callsign of ZD7X. This is NOT a DXpedition, as Tom plans to be on the island for a number of years. Modes of operation will be CW, SSB, RTTY & PSK. ZD7X will be making a special effort on the 30, 40 75/80 & 160 metres bands.

VK9 Lord Howe Island Haru Uchida JA1XGI/W8XGI will be on the air October 19-22, just 3½ days, from Lord Howe Island, with the callsign VK9GLX. Haru will be on 40, 30 and 20 m. He has asked for permission for lower bands. His modes will be CW, SSB, RTTY and SSTV QSL via JA1XGI, bureau or direct, or W8XGI direct only.

P29 G4EDG and CT1AGF will be joining **SM6CVX and G3KHZ** for their IOTA trip to Papua New Guinea September 23-October 5. They will sign P29VCX from Nukumanu Island, OC-284, September 23-29 and P29NI from Takuu Island, OC-283, September 30-October 5. They may then go to the Tulun Islands, OC-256, October 6-9, callsign not determined yet. Look for them all bands, including 160 and 80, with three stations, two amps, verticals and a multi-band dipole. QSL P29VCX via SM6CVX and P29NI via G3KHZ.

SV8 SV8/OK1MBZ and SV8/OK1MKI will be on Skopelos, EU-072, September 10th to September 20th, 80-10 m CW.

Happy DXing.

Special thanks to the authors of *The Daily DX* (W3UR) – 425 Dx News (IIJQJ) for information appearing in this month's *DX News & Views*.

For interested readers you can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

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New Linear Transponder to fly to ISS in December

In a recent press release from the European Space Agency it was reported that plans are underway to resume testing and integration work on the ESA Columbus Space Laboratory to prepare it for connection with the International Space Station.

This is great news for the L/S fraternity because Columbus will carry amateur radio equipment to support a linear transponder with an L-band uplink and S-band downlink. The Columbus lab was flown to Florida back in May 2006, to get in line for its launch to the station. Earlier this year, it was removed from temporary storage, and engineers equipped it with experiment racks and orbital hardware. If all goes well, it will blast into space atop the space shuttle Atlantis as early as 6th December 2007 on the STS-122 Shuttle Flight.

Information on the Columbus Space Laboratory can be found at http://www.esa.int/esaCP/SEMJY2HYX3F_index_0.html. There is no indication of how soon after successful deployment the amateur radio package will be activated. Hopefully it would be slated for early 2008.

GippsTech2007 Conference a resounding success

I feel sure this will be reported in other sections of AR magazine but as a self confessed weak signal junkie I just have to say something.

Amateur radio satellite operation is an area intrinsically bound to weak signals. Tiny fractions of a watt, sometimes tens of thousands of kilometres away. Digital telemetry signals often buried in the noise level. Pushing the performance of your station: that is what satellite operation means to me. Detecting weak signals is the name of the game.

If you are excited by these aspects of our hobby, GippsTech is for you too. Family matters had prevented me from attending earlier conferences but this time I joined friends Peter VK3SO

and Carlo VK3BCL on a fantastic weekend of learning and information exchange. Our very busy magazine editor Peter VK3KAI and his team again put together a program that grabbed and held the attention of all participants. The presenters covering the move into the microwave region, advanced digital detection techniques and anomalous ionospheric propagation all hit the spot for me. In fact I found that every topic presented had application to my main areas of interest.

As I said in opening, GippsTech2007, a resounding success, thanks to Peter and his team.

AO-7 coming out of eclipse period

It looks like AO-7's long orbital winter is about to end – at least for a while and perhaps well into 2008. John LA2QAA has made a study of the AO-7 eclipse charts for the last 3 years and has concluded that there is a progression toward non-eclipse orbits in late 2007 - 2008.

Each time AO-7 "powers-up" after coming out of eclipse, the operating mode can be set randomly lending a high degree of uncertainty to operations through this old bird during eclipse periods. If the eclipse periods are going to become less frequent, that translates into better predictability and therefore more activity can be expected.

Again, operators are asked to observe the recommendations for working AO-7. Please decrease your power as the satellite nears the time of closest approach to avoid overloading it. Any such overload is easily detected as it produces FM-ing of the downlink signal. This assumes that the operator is hearing the downlink signal of course and not just calling indiscriminately. Sadly this happens.

Don't be fooled by propagation anomalies either. The mode-B transponder is working well and will continue to do so providing the alligators go and play somewhere else. Under normal circumstances you do not need a lot of power. Please use only as much as is necessary to maintain adequate communications. If you cannot hear

any signals or if you can but they are very weak – then you should improve your receiving capabilities rather than increasing your uplink power. Since its unexpected return to service, AO-7 is very much a QRP satellite. Please treat it as such.

Past mode changes can be viewed at: <http://www.planetemily.com/ao7/stats2.php>, predicted eclipse chart can be viewed at: <http://www.planetemily.com/ao7/Eclipse.php>

Beacon chasers alert

RS-15 was launched in December 1994 and it fell virtually silent some years ago. Henk PA3GUO reported recently that RS-15's beacon had been heard in Europe. *As it had been over 10 years that I had heard this satellite I decided to give it a go. Using the TS-2000 and a simple 14 MHz dipole with no pre-amp, I was able to hear the beacon. Quite weak, but audible. Frequency 29.3156 MHz.*

If you want to know what it sounds like (and looks like!) Henk's web site is: <http://www.qsl.net/pa3guo> You will hear and see the beacon being switched on (~2 seconds) and off (~3 seconds). Also you will hear and see the beacon 'tuning in' to the correct frequency every time it's switched on. Keps are still available for this aging satellite, so download a set and have a listen.

Even though Henk was successful using a 20 m antenna I would suggest using a 10 m dipole or Yagi. RS-22 is another old timer to return recently. Keep listening around the old beacon frequencies. They are listed on the AMSAT-NA web site. Who knows, you may be first to report another 'old faithful' to come back to life.

Request for TLM data

Can you help Kevin VK3UKF? *I would like to request copies of any telemetry recordings of Sputnik 12/13, I know it was killed by radiation while flying over the South Atlantic Anomaly during a Solar storm. I am seeking any telemetry recordings of this spacecraft's CW signal on HF 29 MHz. When the spacecraft was alive, I wrote a telemetry decoder for Russian Sputniks. I only managed to make 2 small datasets using the CWget*

and my RSdashboard before it went and got itself cooked. This is a request for historical reasons, the data and software I want to put online at QSL.net. Thanks all, Kevin, VK3UKF.

Progress reports on new satellites

Following the 2007 AMSAT-UK Space Colloquium, the following news is to hand.

- Amateur Radio satellite Delfi-C3 video available on: http://www.southgatearc.org/news/july2007/delfi_c3_video.htm
- AMSAT-OZ Satellite on a PCB - AMSAT-UK Colloquium Paper and PowerPoints at: <http://wiki.amsat.dk/>
- P3E Update: http://www.southgatearc.org/news/july2007/p3e_update.htm
- The UK to get its first Cubesat?: http://www.southgatearc.org/news/july2007/uk_cubesat.htm

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The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK
9 Homer Rd
Clarence Park SA 5034

Graham's e-mail address is:
vk5agr@amsat.org

Did you hear our Sunday morning broadcast session?

If you were not listening to the Sunday morning broadcast on 5th August, you missed an interesting session. The voices you heard reading the news were from ALARA.

Graham VK4BB contacted our President, Marilyn VK3DMS, earlier this year and asked if we would be prepared to 'do' the broadcast one weekend, and so it came to be.

For those who had to speak it was an interesting experience. Susan VK7LUV had to wait till the children were in bed. Others had to remake the recording a couple of times before they got it right, but everyone reported that it sounded OK on the day!!

Birthday luncheons and others

Last month, the Birthday Luncheon Pam VK4PTO was planning for the Gold Coast was mentioned. That was held on 14th July at the GCARSI club rooms and was a great success. There were 40 at the lunch.

Of the 17 YLs present, 15 were already members of ALARA before the lunch and the other two probably were members by the end of it! Everyone had a good time.

In VK5, the Birthday Luncheon was held on Sunday 29th July at the Marion

Hotel. There were 19 at the luncheon and two children. Dianne VK5FGHI and her baby (a future YL) are not yet members of ALARA but all the other 12 YLs are. Myrna VK5YW, Joy VK5YJ, Jean VK5TSX (State Rep), Tina VK5TMC, Christine VK5CTY, Maria VK5BMT, Jeanne VK5OQ, Jenny VK5FJAY, Sue VK5AYL, Meg VK5YG, Melanie VK5FMEL, and Dianne, were at one table, and six OMs were at another. Everyone shared some of the chocolates brought back from overseas with their coffee.

At the VK6 luncheons, including the one on July 18th, to celebrate our birthday, there are usually only Poppy VK6YF, Helene VK6HI, Kathi VK6KTS if not working, Maree XYL of Jim VK6JP, Pam XYL of VK6LC, Cliff VK6LZ and Christine VK6ZLZ if not working, and David VK6WT. As you can see, they need some more attendees.

If you are a VK6 YL with a new licence, or an XYL who would like to accompany your OM to the Bayswater hotel on the last Wednesday of the month, you would be very welcome. Alternatively, contact Christine VK6ZLZ, for more information.

In VK3, a group of new licensees have begun meeting for lunch on a semi-regular basis. These YLs all live close to each other, so they meet at a local coffee shop.

In the photo there are only four YLs but there is room for more. Please



The VK3 lunch group.

contact Michelle VK3FEAT, for more information.

It is great to know that we are able to get together for a face-to-face meeting every now and then.

Now that you have participated – what next?

Now you must put in your logs. You wrote up a log of your contacts in the R.D. Contest and in the ALARA Contest you must send those logs to the Contest Managers so they can be collated with all the other logs.

By entering the R.D. Contest your log adds to the total for your State, to help it win. In the ALARA Contest your score

is just for you. Included in the rules for each Contest is the name and the address of the Contest manager, and the closing date for the logs.

All the logs will be listed for both Contests, so you could have the pleasure of seeing your name at the top, or near the top, in both lists. In the R.D. there is the added pleasure in knowing that you have boosted the state score as well.

In the ALARA Contest, certificates are awarded for the top score in each state and in several other sections, with a plaque for the overall top score.

From your contacts in the ALARA Contest you can also apply for the ALARA Award, as mentioned last month. There are new rules as well as the new certificate which was printed

inside the back cover of "Amateur Radio". The information includes the address of the Awards Custodian and the cost of the certificate.

Change of date

The YL International Meet in South Africa next year has now been moved to the 3rd to the 18th October.

This means that there is no longer a clash with the date of the ALARAMEET in Ulverstone next year!! Great news as this means it is possible to attend both Meets.

Watch in the Newsletter and in this column for more information.

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ALARA Award 2007 RULES

Aim: The aim is to score 10 points to qualify for the Award. This Award is available to YLs, OMs, and SWLs contacting ALARA members on or after 1st July 2006. (Anyone who holds an original Award may apply for the new Award)

Scoring VK/ZL: 10 contacts, including 4 Australian call areas.

DX: 5 contacts, including 3 Australian call areas. (One point per contact for local contacts, two points for DX contacts)

Conditions: All contacts must be made from the same call area. Special endorsements available for Mixed, CW, Phone, All 28 MHz etc.

Exclusions: Repeater contacts and official ALARA net contacts do not qualify.

Medallions: Endorsement medallions are available for each 10 points scored

using the same formula as above.

General Conditions: Applicants must submit a log extract signed and declared to be a true record of contacts made. Full name, address, signature and callsign of applicant are required. It is preferred that the log be submitted in an electronic format, such as plain text in Excel, Word etc. Headings must include Date, Time (UTC), Band, Mode, callsign and name of the ALARA member contacted. A copy of the preferred format is available from Kathy VK3XBA (email or phone).

Addresses: Full name, address, signature and callsign of applicant are required.

The Award: The initial Award is the award proper and a contact page which lists the contacts that were used to satisfy the conditions of the award.

Costs: Fee (to accompany each application) for the Award is \$5 Australian

(or equivalent) or 4 IRCs.

The medallions are free if included in the initial application. Medallions applied for at a later date are available in two formats.

1. A sticker that may be placed on either the award or the contact page, or an addition. The cost of the medallion sticker is \$1 per delivery (paid in Australian postage stamps)

2. For the contact page the cost is \$1.50 and includes a medallion printed on the contact page. The page will be one third portrait size and will be sent in a suitable envelope \$1 Aust. per application.

Send to

Kathy Gluyas VK3XBA
4 William St.
Donvale Victoria 3111 Australia
Phone: (03) 9872 3411
Email: kathyg@spacelink.com.au

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SUNFEST 2007

The Sunshine Coast Amateur Radio Club

0900 hrs Saturday 8 September 2007

(Sellers from 0700 hrs)

Woombye School of Arts

Blackall Street, Woombye (UBD Map 66 F12)

Reservations for table space—Contact: Richard VK4YRP

(07) 5492 9898. Email: randwphilp@bigpond.com

Hamfests

SADARC Shepparton

Sunday 9 September

plus10@optusnet.com.au

GCARC Gold Coast

Saturday 6 October

catchcryhamm@yahoo.com

BARG Ballarat

Sunday 4 November

vk3axh@barg.org.au

The Misconceived Link

Paul van der Weegen VK2EX
vk2ex@optusnet.com.au

We all know how our hobby is changing and I am thrilled to be part of it. The introduction of the Foundation Licence is now boosting our hobby into the future. Likewise, I am sure the future will be full of new technologies we haven't even thought of yet. VOIP technology is part of this.

We cannot ignore the impact that the internet has had on all of us. All one needs now is a computer and an internet connection to talk with others all over the world and no licence is required. But we are radio amateurs, and most of us studied hard to get an amateur radio licence, which puts us in a unique position, because we are also licensed experimenters.

The ACMA has given us the tools to advance beyond what we already have and I believe more changes may be on the way in our licence determinations. We need to accept and encourage those few that take the steps to bring these changes forward.

The Misconceived Link is the link we now have to the internet. IRLP and EchoLink are now part of our lives and there are so many misconceptions out there about them. In the past 18 months, I have been involved with these modes of communication, in particular EchoLink, so most of my comments will be from the EchoLink view.

Firstly, a bit about myself. First licensed in 1977 as a novice with a love of HF communications, I have all the usual: triband beam, verticals and dipoles. I love to rag chew, particularly with DX stations, and am not much into contesting or short contacts, except for rare contacts, of course. The most important thing to me is my family, and with three teenagers there was no room for my HF shack, at least at the moment (the kids each wanted a room to themselves). This is why EchoLink has taken such a big part in my daily operations (necessity breeds innovation).

I have heard all sorts of misinformed comments about VOIP (Voice Over Internet Protocol) like "that's not real radio", "you only talk with other computers", "we don't want pictures being sent over the repeater", "keep the system clean", "unlicensed people can access the system", "why not just use a computer to talk to them" and so on.

I can partly agree with some of these comments but let's get it clear about what we are using. EchoLink is meant to hook up to a radio, and I don't fully agree with the use of it from the computer terminal. I use EchoLink every day on my drive to and from work via a simplex node hooked up in my garage and most of my contacts are with other mobile stations doing the same thing or through their local repeater in other countries. What's not "radio" about that? The internet is just a bridge connecting the two radios together, that is it, nothing else, two hams talking over local radio like always, except they are in different countries or maybe hundreds of kilometres apart. That's innovative if nothing else.

Just listen to some of our local repeaters, totally quiet for hours on end, nobody new to talk to, a great resource sitting idle. Introduce EchoLink or IRLP and listen in then. I have just had the pleasure of setting up an EchoLink node to the VK4RBT repeater on the Gold Coast. There was some opposition to doing this at first, so I donated the use of my fully functional simplex link for three months to see how it went and how the local users felt. The task was simple, as I just changed the frequency that my link was on to the repeater frequency and it acted like a local user transmitting on the repeater input and receiving on the repeater output. After one week's operation I printed an activity report from the EchoLink log and ended up with four pages of contacts and activations of the node by local and remote stations.

At the time of writing this article, I checked into the system and noted the types of connections logged into the server. 2712 RF systems active, that is EchoLink computers hooked up to a transceiver and accessed by RF, this is made up of 1453 simplex nodes like the one in my garage and 1259 repeaters. Computer users world wide amounted to only 587, so you see that radio to radio communication is more prominent than

computers users by a large percentage. A large majority of the simplex and repeater systems will not allow a computer user to link to their systems. This is one of the fundamental differences between IRLP and EchoLink; IRLP will not allow a computer connection at all, where with EchoLink the choice is at the discretion of the Sysop.

Personally I have found the hams coming from the computer interface to be very competent operators and mindful of correct operating procedures. I have also found that some hams just can't get on air for many reasons and the computer hook-up has made it possible for them. This has community service possibilities, for the disabled in particular.

Before getting on air with either EchoLink or IRLP you have to prove that you are a current licensed amateur. With IRLP you require dedicated equipment (hardware) and knowledge of the Linux operating system. With EchoLink, and some knowledge of the Windows operating system, you can home brew your equipment easily, or buy ready-made plug and play interfaces. I built my first interface in the garage in one hour and had a system running with full DTMF control shortly after. It's not hard.

Since setting up VK4RBT repeater with EchoLink, I have been approached by a number of local amateurs asking how to set up their own links. Most of them did not realise that it could be used this way. It is exciting that many new Foundation Licence holders are interested and excited about the possibilities.

So come on you hams, get out there among this internet and VOIP technology and see how we can exploit it to our advantage. There is so much more to come, only limited by our imagination, and we can invent even more. And if you hear someone calling out on an IRLP or EchoLink enabled system, please answer them and welcome them to your local radio area. No one likes calling CQ and not getting an answer.

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

There has been a minor surge in activity on the 23 cm band recently. One of the reasons for this seems to be the local availability of relatively cheap 60 W power amplifiers.

Most people on 23 cm run either a commercial 23 cm-capable rig (IC-910H, TS-2000X, IC-1275 etc.) or use a transverter from an HF rig. In nearly all cases, these setups will use one of the Mitsubishi power modules in the output, providing 10 to 15 watts of power. A few stations have amplifiers to produce higher power, but these are either home-built, or purchased from overseas at substantial cost. So, the majority stick with the standard 10 W or so.

The 60 W power amplifiers are commercial units converted from 1800 MHz and require 10 W of drive. This means they are ideal for connecting to the typical 23 cm setup. And while 60 W doesn't sound like a huge increase in power, it makes a substantial difference on marginal paths, particularly if both ends are running the higher power. Of course, a masthead preamp is almost mandatory on 23 cm to overcome feedline losses, which rise to significant levels for all but the thickest feedlines.

Mike VK3AAK, on the Mornington Peninsula, is running one of these PAs and reports the following:

Ian VK1BG and I are working hard at a contact between Canberra and the Mornington Peninsula on 23 cm. Despite a number of tests, we have heard each other's SSB signals but have yet to complete a contact. We will continue to work at it until it is achieved.

On Sunday 22 July at 8.30 am, Peter VK5ZLX was heard on 2 metres calling CQ. A contact was completed 5/9 both ways. As signals were so strong, we decided to try 23 cm and quickly exchanged 5/1 reports both ways. This is a distance of 671 km. The copy was comfortable, and after exchanging pleasantries we thought we should try 70 cm. The Trifecta was completed with 5/5 both ways on this band. An enjoyable morning's work!

Ian VK1BG, who also has one of the PAs, subsequently reports:

After a struggle lasting many weeks,

Mike VK3AAK and I completed a 23 cm SSB QSO on Tuesday 7 August at 8.25 am. Both he and I are quite chuffed about it, as the achievement did not come easily.

For me, the QSO broke a rather long drought on 23 cm. Except for a contact with Charlie (then VK3FMD) in 2003, I had not had a contact into the Melbourne area since about 1992 when Airservices shifted the aircraft tracks.

Chris VK2DO has also been having fun on 23 cm, having recently put up a large array with 100 W at the feed. He reports:

Thanks to David VK3HZ, Mike VK3AAK, David VK3QM, Chas VK3PY and Charlie VK3NX for contacts on 23 cm last night (6 August).

Charlie VK3NX had such a good signal, that I managed to work him some half an hour before he arrived in his shack? (My apologies to David VK3QM for the incorrect identification. This must have been the ultimate annoying conclusion to have erroneously jumped to, yet it was all resolved eventually).

Interesting to note the contact with Mike 3AAK was markedly stronger than any other signal previously heard from him, so some combination of night flights made all the difference.

I look forward to some action on 23 cm in the coming season.

Hepburn Tropo Ducting Forecasts

I've written a few times in this column of the excellent site provided by William Hepburn, which gives tropospheric ducting forecasts based on weather information (www.dxinfocentre.com/tropo_aus.html).

While the forecasts often prove to be uncannily accurate, one of the downsides is that they were only done once per day at 1800Z. This corresponds to 4 am local time, when not many amateurs are out of their beds. For the more popular evening lift, the forecasts were a bit out of date (the weather can change quickly, if you hadn't noticed).

Mr Hepburn seems to have realised this and is now producing forecasts for

6-hour intervals, up to 42 hours ahead. All we need now is an animated view (like the Bureau of Meteorology weather radars) and we can watch the ducts coming and going!

Radio Site Display

I've been having a bit of a play with Google Earth recently, seeing how it could be adapted for use by VHF/UHF weak signal operators. With the help of John VK3ZJP, we have come up with the Radio Site Display that I demonstrated at the recent GippsTech conference. You can find the notes on getting started here:

http://home.exetel.com.au/dwsmith/radiosites/radio_site_display.html

The Radio Site Display shows an aerial view of the Earth with overlays providing the locations of amateur radio beacons, amateur stations, Field Day sites and other information. The view is customised for each user, centred on the user's own location. Other overlays can be added, including aircraft positions and the Hepburn Tropo forecast.

The position information used by the Display comes from the VK/ZL Propagation Logger database. Thanks to Adam VK4CP who has provided access to the database, and who has added Latitude/Longitude fields to the Operator Info and Beacon tables to provide more accurate results. It would be appreciated if all active VHF/UHF weak signal operators entered their precise home coordinates to give everyone better results.

EME

Charlie VK3NX reports on his operation during the DUBUS 3.4 GHz activity weekend:

Great to be on 3.4 GHz on the weekend. It is a pity quite a few stations didn't have a common moon window to me. Nonetheless I had very good results with the new feed.

The new feed is a scaled version of RA3AQ's stepped septum, originally for 23 cm. Compared with the previous "screw polariser", I am getting much better dish efficiency, circularity and the

RL and isolation figures are excellent. Consequently, I have gone from echoes barely perceptible to very loud (> 10dB above the noise, according to Spectran).

I will be staying with this feed and I will now build a scaled version for 2.3 GHz as I look to getting on that band

Digital DX Modes

Rex Moncur – VK7MO

September to December is the best time of the year for Meteor Scatter with around 35% more random meteors than in the first half of the year. Activity sessions using WSJT's FSK441 mode are held each Saturday and Sunday morning on two metres and some stations are also arranging skeds via the VK-ZL logger on 6 metres at the same time. Arrangements for activity sessions are as follows in local times for Victoria and NSW:

0500 to 0600 Saturday, ZL first period to VK on 144.330 MHz

0600 to 0700 Sat and Sun, ZL South Island first period to ZL South Island on 144.230 MHz

Around 0600 to 0700 Sat and Sun, unstructured activity in VK on 144.230 MHz

very soon. In time I will try versions for 5.7 GHz and compare it with my Screw polariser (which already works well on this band). If all works OK then I will try it on 10 GHz.

My reports on 3.4 GHz showed a VAST improvement over last activity weekend, although moon conditions were the same

0700 to 0800 Saturday, VK3/5/7 first period to VK1/2/4 on 144.230 MHz

0700 to 0800 Sunday, VK1/2/3/5/7 first period to VK4 on 144.230 MHz

At 0800, a callback is held on 40 metres, 7083 kHz, to share experiences. Newcomers are welcome to join in the callback and ask questions.

The best distances for meteor scatter are in the range 800 to 1800 km where contacts can typically be completed on 2 metres in 30 minutes. The maximum distance is around 2400 km less around 100 km for each 1 degree of horizon lost at each end. As one approaches the maximum distance, the only meteors common to both stations are those that pass close to the centre of the path and thus the number of usable pings

(if not slightly worse). I worked G3LTF, OK1KIR and LX1DB (also on SSB). I tried with N9JIM but nothing heard. I also tried with WW2R but only partial copy my way, while Dave reports hearing me well.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au

diminishes rapidly and it can take an hour or more to complete a QSO. It is possible to extend the distance of Meteor Scatter with tropo-scatter extensions, so watch the Hepburn charts for large "Yellow" patches at one end as an indicator. The number of usable meteors increases significantly on 6 metres and thus this band can be useful for maximum range meteor scatter such as from the East Coast of VK to ZL or from Adelaide to Perth.

For further information on Meteor Scatter using WSJT look at the NSW VHF DX Group site under Digital Modes at <http://www.vhfdx.radiocorner.net/>

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

July continued to be very quiet with very few reports of openings on 6 m, the winter sporadic E season being almost non-existent.

One of the few openings occurred on July 12th and 13th when Kevin VK4BPK in Mackay completed contacts with Rob VK3XQ, Norm VK3DUT, Kevin VK3WN and VK3VG on both days.

In the Northern hemisphere though, things have been different and many areas have been enjoying an excellent sporadic-E summer season. I received a message from Fred KH7Y who says they have had a fantastic 6 m sporadic-E summer season in Hawaii. Fred says:

We have had 17 openings to the mainland USA during May and June.

Here is the data from my log. If there is only one time the opening was less than 3 hours. Those longer openings are as indicated. There were a few more weak openings where I received the K6FV/B but no contacts and they are not listed.

May 16, 1900 UTC - West coast USA

May 17, 0400 UTC - West coast USA

May 17, 2051 UTC - K6FV/B

May 21, 1904 UTC - W5/W6/W7/XE

May 23, 0342-0530 UTC - W2/W0/W6/W7/XE, 185 QSO's this opening

May 24, 1700-2300 UTC - W7/W6/W8/W9/W4/VE7/W0, 490 QSO's this opening

May 28, 2057 UTC - W6/W6/W6, K6QXY loud, very localized

June 01, 1840-2230 UTC - W7/W6/W0/UY5??/W0/TI8II, 200 plus QSO's

June 17, 17:00 UTC - W4/W4/W1, only and only two counties very localized no other states or beacons

June 18, 1800-2200 UTC - this was a big one to east coast USA. Worked all call Districts & all VE except VE8/VY1, 300 QSO's

June 19, 0440 UTC - K6QXY loud, a few other sixes

June 19, 2300 UTC - 11 JA stations worked, all very loud with JA1VOK 20 over!!!

June 21, 1800 UTC - W4,5,6,7,0 and VE 5,6,7

June 26, 0000-0330 UTC - Big opening again to east coast USA W1,2,3,4,8,9, XE

June 27, 1950 UTC - W0,1,2,3,4,5,7

June 28, 0020 UTC - W0/8/9/3/2 weak opening and short

June 30, 1900-2100 UTC - big opening east coast USA W1, 2, 3, 4,8,9,0.

Well that is about it Brian. All of the above contacts were multi-hop sporadic-E and looks like 18-2200 UTC is the window to work mainland USA from Hawaii on six metres. A very good year indeed.

Aloha, Fred (ex W6YM, now KH7Y and trustee NH6P contest station).

I worked Fred on 20 m since he sent me the above and he says there has been a further 2 openings in July. Now who says sporadic-E isn't good fun. Let's hope it translates into another good summer season down here.

As reported last month, the VK5VF beacons are off the air including the 6 m beacon on 52.450 MHz. Fortunately though, the Barossa Valley beacon VK5RBV on 50.315 MHz is operational. This beacon is about 55 km NE of Adelaide in grid PF95mk, about 580 m ASL and a good indicator of conditions into VK5.

Please send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

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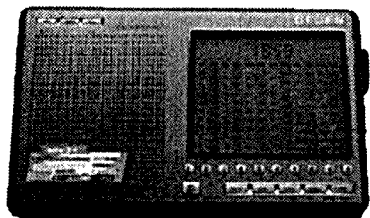
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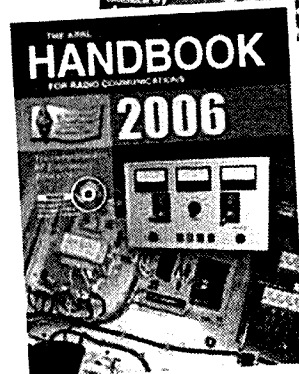
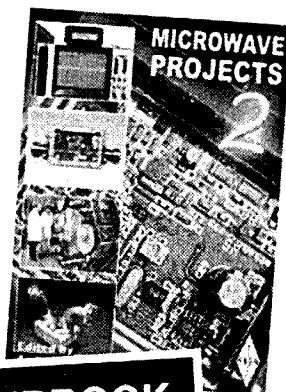
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VK5 South Australia and Northern Territory
VK5OV David Box
VK5APR Peter Reichelt
VK5ATQ Trevor Quick

Phone 08 8294 2992
boxesdnm@lm.net.au
peter.reichelt@bigpond.com
vk5advisory@wia.org.au

VK5 South Australia
VK5WI: 0900 hrs local time. 1.843 LSB, 3.550 LSB, 7.140 LSB, 28.470 USB, 53.1 AM, 147.000 FM Adelaide, 146.900 FM South East, 146.925 FM Central North, 439.975 FM Adelaide North.
VK8 Northern Territory
0900 local time 3.555 LSB, 7.050 LSB, 10.130 USB, 146.900 FM.

VK6 Western Australia
VK6NE Neil Penfold
VK6XV Roy Watkins
VK6OO Bruce Hedland-Thomas

Phone 08 9351 8873
<http://www.vk6.net/>
vk6advisory@wia.org.au
vk6ne@upnaway.com
vk6xv@bigpond.net.au

VK6WIA: 146.700 FM(R) Perth at 0930 hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900, 147.000, 147.200, 147.250 and 147.350 MHz..Also in "Realaudio" format from the VK6 WIA website

VK7 Tasmania
VK7ZAX Phil Corby
VK7DG Dale Barnes
VK7KK Reg Emmett

Phone 03 6234 3553
vk7advisory@wia.org.au
phil.corby@tassie.net.au
vk7dg@wia.org.au
regemm@ozemail.com.au

VK1WIA Sunday 9 am on VK7WI network: 1.840 AM, 3.570 MHz LSB, 146.700 FM (VK7RHT South), 53.825 FM (VK7RAD South), 147.000 FM (VK7RAA North), 146.750 FM & 53.825 (VK7RNW North West), 146.625 FM (VK7RMD North West), UHF CB Channel 15 (Hobart) and 27 MHz CB - 27.225LSB (Hobart). Followed at 9:30 am with VK7 Regional News Broadcast also on 7.090 LSB & 14.130 USB

Notes

1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

Is this a record?



Most of us are probably aware that people can climb the Sydney Harbour Bridge. The climb is quite a tourist attraction.

Here we see Victor Hee VK2KVH, together with his partner Samantha Gray, celebrating his 80th birthday on the main arch of the bridge on Good Friday 2007. Perhaps this is a record – the oldest licensed amateur to climb the bridge?

Photo courtesy Victor Hee VK2KVH

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October 2007

Amateur Radio



The magazine for AUSTRALIAN radio amateurs

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Our Cover this month

Jamboree On The Air and *Jamboree On The Internet* continue to grow in popularity. As Scouts celebrate 100 years of existence, JOTA totes up fifty. Enjoying their participation in 2006 JOTA are (left to right) Scouts Rachael Giulleri, Matthew Hutcheon, Amy Gordon and Michael Caldwell. See more stories on pages 21 and 22. Photo: Robert Broomhead VK3KRB

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back issues

Back issues are available directly from the WIA National Office (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 an additional \$2 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.

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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Member of the

International Amateur Radio Union

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Editorial Comment

Peter Freeman VK3KAI

Anniversaries

The Space Age commenced 50 years ago. In October 1957, the USSR launched Sputnik, the first Earth-orbiting satellite. In this issue, Gerry Wild VK6GW gives us a brief report on receiving the “beep-beep” signal from the satellite, together with images of his Russian QSL card. Without the Space Race, one wonders if our technology would have developed as quickly as it has over the past 50 years.

2007 marks two significant milestones for the Scout movement: 100 years since it was founded by Baden-Powell and, this month, 50 years of Jamboree on the Air (JOTA). Over the years, many amateurs will have assisted with JOTA in some way. Some will have participated as Scouts or Guides.

The JOTA event has been expanded in recent years to include JOTI – Jamboree on the Internet. I believe that we should not view JOTI as a challenger, rather as another medium that complements amateur radio activity – after all, many amateurs already use the Internet to enhance their radio activities. The challenge for us all is to expose Scouts and Guides to amateur radio. At the least, their engagement might see them sufficiently interested to undertake the tasks required to earn another “badge”. Some may even become interested enough in the hobby to consider taking out a licence.

In this issue, we have two reports from the Scouts Australia JOTA/JOTI coordinator, Bob Bristow VK6POP. One reports on the activities in Perth associated with the 100th anniversary celebrations in early August. The other gives us a brief outline of the history of JOTA.

I am aware that many amateurs will be busy preparing for the JOTA weekend – 50 hours duration planned for this year to celebrate 50 years. Surely some amateurs will be sending in reports of their JOTA/JOTI activities? Given our production deadlines, any such reports are likely to appear in the December issue.

A small number of reports have been received on the International Lighthouse/Lightship Weekend. It is anticipated that these reports will be published in

the November issue, whilst some brief news is mentioned in some of the news items this month.

Preparations continue

Whilst some are preparing for JOTA, others are thinking about one or more of the upcoming contests. As the days grow longer and warmer for the southern states, November sees the first of the Field Day contests in VK – the Spring VHF/UHF Field Day. Check out the Rules elsewhere in this issue – there are some changes other than just the dates.

More importantly for the future of the hobby, many amateurs from around the world are preparing for the World Radio Conference (WRC-07) to be held in Geneva. Whilst the potential outcomes may not seem to be significant to many, it is important that we have a presence to at least preserve our current frequency allocations. As we have reported earlier this year, amateur radio in general is represented by the IARU. Many nations, including Australia, have been willing to include an amateur in their formal delegation, giving us opportunities for expressing our views in a more powerful manner. A proportion of the WIA membership fee contributes to the expenses involved in participating in these important forums. If we make any gains in privileges internationally, it will be as a result of these representations.

Further refinements of the WIA structure

October 1 sees the commencement of the new WIA state and territory Advisory Committees. If you are unsure of the membership for your area, see the WIA News column in the September issue of AR or the WIA website.

For Clubs, it is important that you have considered the new training and assessment structure, as Invigilators are about to be removed. Make sure that all your appropriate members have registered for the new system with Assessors and Learning Organisers. Again, details can be found on the WIA website.

73 Peter VK3KAI

ar

Emergency Communications

The Wireless Institute of Australia (WIA), its members and Australian radio amateurs in general, have a long history of providing disaster communications to the community, and Australian governments at State and Federal level, through the operation of the Wireless Institute Civil Emergency Network (WICEN).

WICEN has evolved differently in states and regions in response to the often unique needs of the emergency services in those regions. The interest of amateurs and supported organisations has ebbed and flowed over the years. However everywhere there has been a core of dedicated WICEN operators who have kept the capabilities of Amateur Radio to the fore with the authorities in their respective regions.

It may surprise some readers that, although it carries its name, WICEN has, in the past, not always developed as a close knit part of the WIA. The structure and organisation of WICEN varies widely throughout Australia from incorporated entities to loose groupings of willing radio amateurs actively preparing themselves and their equipment to support their community and others should the need arise. The relationship of WICEN organisations to the WIA also varies as does the relationship of WICEN to State emergency service authorities.

The value of WICEN was highlighted recently during the Victorian bush fires when radio amateurs, pre-trained in operating emergency services communications equipment, were called in to relieve exhausted staff. Another major activity of WICEN is to provide support for community events such as canoe marathons, car rallies, etc. These events often require setting up communications links for extended periods in remote areas and often under difficult conditions. These community service aspects of WICEN are becoming an increasingly important activity.

Quite often, radio amateurs have provided invaluable assistance in times of disaster simply because they happened to be in the wrong place at the right time, or happen to hear something when listening around on the bands. Cyclone Katrina and the Asian tsunami have demonstrated to the world just how valuable on-the-spot radio amateurs are in emergency situations: not just as operators but with the skills to establish

and maintain communications. These radio amateurs have often acted on their own initiative without the support of a national organisation such as WICEN.

WICEN also conducts specific message handling and communications planning and evaluation exercises to continually improve the communications skills of amateur radio operators in adverse real or simulated conditions. These training activities frequently include Government authorities such as the Police and State Emergency Service in each state.

The tsunami events in our region and hurricane Katrina have rekindled interest in emergency communications among radio amateurs and government authorities. In Australia, this has naturally been focused on WICEN as the visible arm of Amateur Radio in the community.

Looking objectively, some trends are apparent in the recent activities of WICEN, and of radio amateur emergency communications in general. Firstly, emergency services communications systems are becoming more resilient and complex, and recently WICEN were asked to supply trained operators only, rather than operators and amateur radio equipment. Secondly, community service (non-emergency) activities are becoming more common and may require supply of operators and their equipment for extended periods in remote areas with little support. Thirdly, there is a growing incidence in our region where radio amateurs find themselves 'Johnny-on-the-spot', providing first-line first-few-hours communications in a disaster until emergency services get themselves organised.

Both the WIA and the IARU have been observing these trends and propose some new initiatives. Firstly, we believe our emergency communications capability should be extended beyond the regional

attributes of WICEN, to cover the entire area of IARU Region 3.

In this regard the WIA has established a new organisation called the National Network of Emergency Communications (WIANNEC) which will eventually appreciate the wide range of amateur radio contributions to emergency communications of importance to Australia. WICEN will continue to focus on regional VK demands, as it always has, while other elements of WIANNEC will prepare and concentrate on disaster communications with other countries in our region. The formation of WIANNEC will eventually require a more formal relationship between the WIA and existing WICEN organisations at State and regional levels so that all amateur radio emergency services can operate in an integrated and coherent way in the eyes of government and the community.

Secondly, we believe there is a need to establish a process to improve the emergency communications preparedness, in a simple way and independent of any formal organisation, of all Australian radio amateurs so they may be better equipped to respond to an emergency situation. This may include an emergency manual for all radio amateurs with tips on how to disaster-proof your station.

WICEN and Australian radio amateurs indeed have a long tradition of serving the community in times of need. For all those involved in WICEN and to all those who have provided their time and equipment to aid others, our heart-felt thanks. We believe (as does the IARU) the time is now right to take a look at how we radio amateurs provide communications services to the community and how we can best structure ourselves to meet evolving community needs.

The time is right to look at how radio amateurs provide communications services to the community and how we can best meet evolving community needs.

WICEN activation VK4 North Coast Region

The VK4 WICEN North Coast Region was activated after major flooding occurred following 300 – 800 mm rainfall in 24 hours. The areas affected were Caloundra, Maroochy, Noosa and Cooloola.

Seventeen Sunshine Coast Amateur Radio Club and WICEN operators were involved on 24 August, while members of the Hervey Bay ARC and Maryborough ARC were on standby.

A debrief session was held at the SCARC clubrooms on Wednesday 29 August 2007 with most of the activated operational personnel in attendance.

The WICEN Area Co-ordinator reported the HQ had access to multiple radio frequencies, internet, landline, mobile phone etc. all of which were used constantly during the activation period to coordinate personnel and track the Emergency Management Queensland (EMQ) Area Director. The WICEN communications van was positioned at a location previously identified as being suitable for the type of activation encountered: Activity included monitoring Amateur Radio, SES, QPS and LDMG frequencies and message handling. Further modifications to improve the van communications capability were identified.

At the Tewantin SES HQ, the WICEN operators were to the fore with their skills needed to support the operation and maintenance of local radio equipment. The operation identified areas where the communications capability of the facility could be improved. Similarly, at the Maroochy SES HQ, the WICEN operator reported areas for improvement as at Tewantin, although the location allowed for effective use of amateur handhelds for communications with the WICEN Van and the WICEN Area Coordinator.

The EMQ HQ in Caloundra was undergoing relocation and renovation, so the WICEN operator had a few problems initially setting up effective communications as the radio communications equipment had been removed as part of the renovations. When the HQ is again fully operational,

that is where the WICEN Area Co-ordinator will be located.

The operation highlighted the need for accelerated training of WICEN personnel in many areas, including the need for familiarization of WICEN personnel with SES radio facilities and procedures. WICEN operators noted that the road and weather conditions required due diligence to attend call out locations and road closure information was essential for the safe deployment of WICEN personnel. As a result, Road Closure information was broadcast to WICEN personnel on the hour and was later requested by and faxed to Maroochy SES.

Standards Australia Committees – Why we need to be there

The WIA has long been involved in various Standards Australia committees, with good reason. As radio amateurs, our operations and our equipment must comply with a variety of Australian and international Standards for electromagnetic emission and immunity, RF exposure levels, electrical safety, and many others. Australian radiocommunications and telecommunications regulation is formulated and administered by ACMA using Standards wherever possible.

One of the most important set of Standards for us is the ElectroMagnetic Compatibility Framework. EMC standards place limits on unintentional emissions over 9 kHz from electrical and electronic equipment. They help protect us against interference from domestic appliances, information technology equipment, switch-mode power supplies, lighting and so on.

Standards called up in regulation are 'mandated' and penalties exist if not complied with. Safety Standards and those we are familiar with in radiocommunications and telecommunications are examples of mandated Standards. Most Standards are not mandated, simply forming a guide to "best practice" and important as a guide to consumers and business, and ultimately a marketing tool.

In order to promote international

harmonisation and advancement of trade, Standards Australia is required to adopt international Standards wherever possible, with modification for Australian conditions when necessary. The international body responsible for creating standards for unintentional electromagnetic emission is the Comité Internationale Spécial des Perturbations Radioelectrotechnique (International Special Committee on Radio Interference, IEC) otherwise known as CISPR. (Other organizations with acronyms such as ISC, EN, ANSI, BSI, DIN, NSAI, and IEEE produce standards which may also be used by Standards Australia).

Since many Australian Standards are based on international Standards, it is only natural that Australia would want to take part in the formation of those international Standards. This is done through Standards Australia's membership of international organisations, such as CISPR.

Standards Australia is a fairly small core organization administering a number of volunteer expert committees. Many people believe that a published Standard represents "world's best practice", but this is not always the case. Standards development involves stakeholder representatives from government, industry and consumer advocacy groups, all of which push (to varying degrees) their particular point of view and self interest. Ultimately, a finished Standard represents a consensus position. This is why it is so important for the WIA to be involved – if not, the privileges and protections we now enjoy could be eroded.

It is also a lot more than simply attending meetings. The WIA is very active on a BPL working group formed to make recommendations for changing the CISPR 22 Standard to take into account BPL technology. CISPR 22 specifies the limits and measuring methods for radiated emission (through the air) and conducted emission (through the connecting cables) for information technology equipment, including BPL equipment. Recently we have taken hundreds of measurements of BPL emissions in real world situations and the BPL Working Group submitted a major report to the international meeting of CISPR-22 held in Sydney last month.

We are sure members will agree that Standards work is a vital aspect of the WIA's activity. Much of that work is confidential and cannot be publicly released. To have influence in these forums, we must abide by their rules and respect their confidentiality requirements. The WIA's work on several Standards committees is not often publicised, but Standards meetings are held every month or so and are very time consuming for those involved.

Thanks to our long suffering and unsung representatives – David Wardlaw VK3ADW, John Bishop VK2ZOI, Gilbert Hughes VK1GH and Phil Wait VK2DKN.

WIA Board appoints Ray Crawford VK4HDX as VK4 QSL Manager

The WIA Board has approved the appointment of Ray Crawford VK4HDX as VK4 QSL Bureau manager. The Board acted on the recommendation of the Queensland Advisory Committee, the National QSL Coordinator Neil Penfold VK6NE and the immediate past VK4 QSL Manager Eddie de Young VK4AN.

Ray Crawford VK4HDX is a member of the WIA, resides at 53 Moore Street Kingaroy QLD 4610 phone (07) 4163 6940. Email: hamdxe59@bigpond.com. Ray is an active DXer and was active in NZART before coming to Australia.

His home address is the address which will be circulated as the point for delivery of VK4 Inwards QSL Cards from overseas.

For outward Bureau Cards, that is cards being sent from WIA members to overseas contacts, members should send their cards sorted in DXCC country order to the WIA Outwards QSL Bureau addressed as follows:

WIA Outwards QSL Bureau
P.O. Box 3073
Teralba
NSW 2284

The present VK4 QSL manager Eddie de Young VK4AN has resigned due to other commitments. Eddie brought a strong interest to the concepts of managing a QSL Bureau and was always ready to suggest ways by which the system could be improved.

WIA Board accepts recommendations for 2007 WIA Grants

The WIA Board has accepted all recommendations from the 2007 grants committee for the award of grants to a number of Clubs. A total of \$5000 is allocated to six projects. Three other project proposals were not supported on this occasion.

The effort of clubs putting forward applications is greatly appreciated by the WIA and it is appreciated that there will be disappointment that not all applications could be satisfied. The procedure of assessment by a committee working independent of the Board or its officers is seen as the best way of ensuring a fair assessment.

The grant committee commented on the need to review the purpose and emphasis of the grant scheme in future years. The WIA Board has decided to seek the advice of WIA members on these matters and a notice requesting member comment will be issued shortly.

The Board thanks all applicants for the effort made in putting forward proposals for the 2007 round of grants.

The project proposals reviewed by the grant committee and decisions made as a result are as follows:

Projects recommended for grant assistance

Twin City Radio & Electronics Club (Inc)

(WIA Membership 30/49)

Project Description: Refurbishment of VK2RAY 6 metre repeater in the Albury-Wodonga area. \$700 had already been spent with a total project cost of \$2135. A grant of \$700 was sought.

Decision: provide a grant of \$700.

Twin City Radio & Electronics Club (Inc)

(WIA Membership 30/49)

Project Description: Purchase of a computer to replace one loaned by a member for training. A grant of \$700 was sought.

Decision: provide a grant of \$700.

Sunshine Coast Amateur Radio Club Inc

(WIA Membership 44/99)

Project Description: Purchase of a commercial two metre diplexer to improve coverage of its 146.850 MHz repeater for emergency and general communications. A grant of \$2000 was sought, with the club contributing the balance of between \$1750 and \$2000 to complete the project.

Decision: Provide a grant of \$1000 when the Club notifies the WIA that it has raised the remaining funds required.

Gold Coast Amateur Radio Society Inc

(WIA Membership 40/82)

Project Description: Purchase and installation of three repeaters, cavity filters for two sites and controller equipment and antennas. A grant of \$4000 was sought with the club contributing the balance of \$10000 to complete the project.

Decision: Provide a grant of \$700 when the Club notifies the WIA that it has raised the remaining funds required.

Eastern & Mountain District Radio Club

(WIA Membership 151/223)

Project Description: A disaster and education preparedness kit, including a generator. A grant of \$1000 was sought to assist this project, with the club contributing \$1000 to the project.

Decision: Provide a grant of \$1000 available when the Club notifies the WIA that it has raised the remaining funds required.

Sunraysia Radio Group Inc

(WIA Membership 14/28)

Project Description: Re-establish the Ouyen repeater. A grant of \$1500 was sought to purchase antenna, coax, connectors and diplexer with the club contributing the remaining \$3843 to complete the project.

Decision: Provide a grant of \$900 when the Club notifies the WIA that it has raised the remaining funds required.

.....
continued next page

Projects ranked below those projects recommended for grant assistance

Redcliffe & Districts Radio Club Inc

(WIA Membership 34/63)

Project Description: Disabled Toilet and Wash Facility in the Club Building. The total cost of this project is \$15,600. The Redcliffe City Council is sponsoring half of this cost. \$2,000 was sought to assist with the remaining costs for the project.

Ipswich & District Radio Club

(WIA Membership 7/27)

Project Description: Replacement of the ageing and intermittently faulty 2 metre WICEN repeater VK4RWM. A grant of \$2180.75 was sought.

Fishers Ghost Amateur Radio Club

(WIA Membership 6/12)

Project Description: Assistance is sought for extensions to the Amateur Radio Building at the Cataract Scout Park situated halfway between Appin and Wollongong. Nominal costs of the proposal were recognised as outside of the level of the Grants Scheme.

Future Directions of the WIA Grant scheme – request for member comment

The 2007 Grant committee made a number of remarks about the future directions of WIA grant schemes and the WIA Board believes that these are matters on which the comments of members should be sought.

Comments on the following remarks provided by the 2007 Grant Committee should be forwarded to the Secretary WIA no later than 1 December 2007. Email comments to secretary@wia.org.au or by post to the Secretary WIA at PO Box 2175 Caulfield Junction Vic 3161. Subject head emails or mark envelopes "Future Direction of WIA Grant Scheme".

Committee Remarks

The committee felt that the scheme is not working very well. Innovation is not

being stimulated. No applications were received for digital communications, APRS or any other newer technology or innovative projects. This is somewhat disappointing. It is suggested that the WIA promote innovation in special interest areas to direct clubs to focus on new areas.

Many clubs have an overwhelming focus on operating and maintaining a repeater communications system, often involving repeaters in multiple bands. Many grants request funds to maintain, repair, or re-establish repeaters. Most of the technology involved is well established.

Few grant applications focussed on promotion of amateur radio or the WIA. Most promotion was incidental to the project.

In particular, incentives to develop on-going training programs, or to plan to exploit forthcoming publicity opportunities, are not best delivered through annual competitive grants but as expression of a policy developed by the Board with funding set aside for these areas.

The grants scheme requires a reporting mechanism. It is suggested that the procedures similar to government grants include the following requirements:

- Detailed estimate for the project including quotes for larger items.
- Following the grant, feedback on progress and notification when the project is complete.
- Notification of funds spent on the project.
- Confirmation of the achievement of the objectives.

Each of the above takes time to manage, and we should not expect a fully professional project proposal.

IARU Region 3 active

IARU Region 3, the IARU organisation for Region 3, has been very busy lately.

Directors Peter Lake ZL2AZ and Shizuo Endo JE1MUI represented IARU Region 3 at the last Asia Pacific Telecommunity (APT) Preparatory Group meeting before WRC-07, held in Busan, South Korea from 16 to 21 July 2007. They had also represented the

amateur service at the earlier meeting in Bangkok in January.

The proposal that the amateur service be allocated a secondary allocation from 135.7 to 137.8 kHz with a 1 watt EIRP power limit was supported, but the proposals that allocations be made to the amateur service to achieve a world wide exclusive band 7.0 to 7.3 MHz and a new secondary allocation around 5 MHz were not supported.

The IARU Region 3 Directors met in Tokyo over two and a half days from 22 to 24 August 2007, hosted by JARL. The Directors are Chairman Michael Owen VK3KI, Shizuo Endo JE1MUI, Peter Lake ZL2AZ, Gopal Madhavan VU2GMN and Joong-Geun Rhee HL1AQQ. In addition, IARU Vice President Tim Ellam VE6SH participated in the meeting.

The Directors have made recommendations to member societies in respect of WRC-07.

Among the many other matters discussed was the Monitoring System. It was agreed to take steps to make this important function more accessible and to continue to seek action against certain intruders.

The further development, particularly at an international level, of emergency communications was addressed. Many Region 3 countries still have national regulations prohibiting realistic practise sessions. Model regulatory provisions to except emergency communications and emergency communications practice from the general prohibition are being developed and distributed.

Following their meeting, the Directors attended the Tokyo Hamfair conducted by JARL.

RD results being processed

The RD results are being processed and the Contest Coordinator Peter Harding VK4OD advises that he hopes to complete the analysis this month (October) with distribution to follow and publication in the December AR (if all goes well, results may be available earlier).

continued on page 9

A RF quiet light using 1W LEDs

Dale Hughes, VK1DSH

Light emitting diodes are now available with light outputs which make them suitable for some lighting tasks that were previously the domain of fluorescent tubes or gas lamps. Low voltage fluorescent lamps are convenient, but can generate considerable radio frequency interference, and gas lamps are hot, fragile and noisy. During the recent Summer VHF Field Day, LED based lighting was tried as it generates no sound or radio frequency interference. The light worked exceptionally well providing a bright and pleasing illumination for the night's radio activity.

The light consists of three one watt white light emitting diodes, D1, D2 & D3 (DSE catalogue number Z 4245) mounted on a metal reflector that could be hung over the operating position. The LEDs are connected in series with a constant current source so that the light output stays reasonably constant with variations in battery voltage. The constant current source also ensures that the maximum current rating of the LEDs is not exceeded. Components Q1, R1, R2, D4 & D5 make up the constant current source. Refer to Figure 1 for the schematic diagram of the light source.

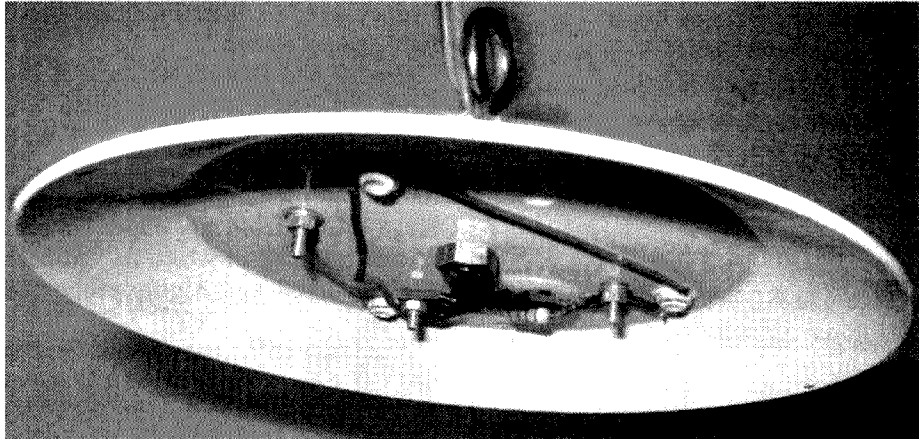


Photo 1 The Completed LED Light

A constant current source can be built in many ways and this design is probably the simplest. The current is set by the voltage on the base (V_b) and the resistance in the emitter circuit (R_e). The collector current, I_c , is given by:

$$I_c \sim I_e = \frac{V_b - V_{be}}{R_e}$$

Where V_{be} is the base-emitter voltage (typically 0.6 V to 0.7 V) and the base current is ignored as it is very small compared to I_c . The performance of the

circuit is plotted in Figure 2, and it can be seen that the current is relatively stable between 11 and 15.5 volts. Usable light output is obtained from approximately 9.5 volts, and full brightness from approximately 11 volts. Refer to Figure 2 for the current consumption versus battery voltage relationship.

Construction is straight forward and the layout can be changed to suit other applications. All the components are glued to a painted metal dish which acts as a reflector and heat sink; although very

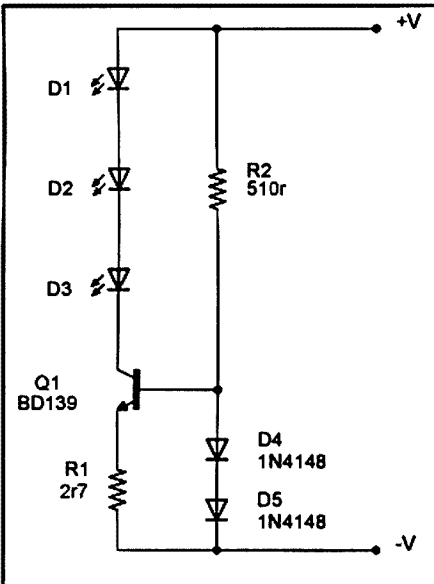


Figure 1: Schematic Diagram of the Light Source

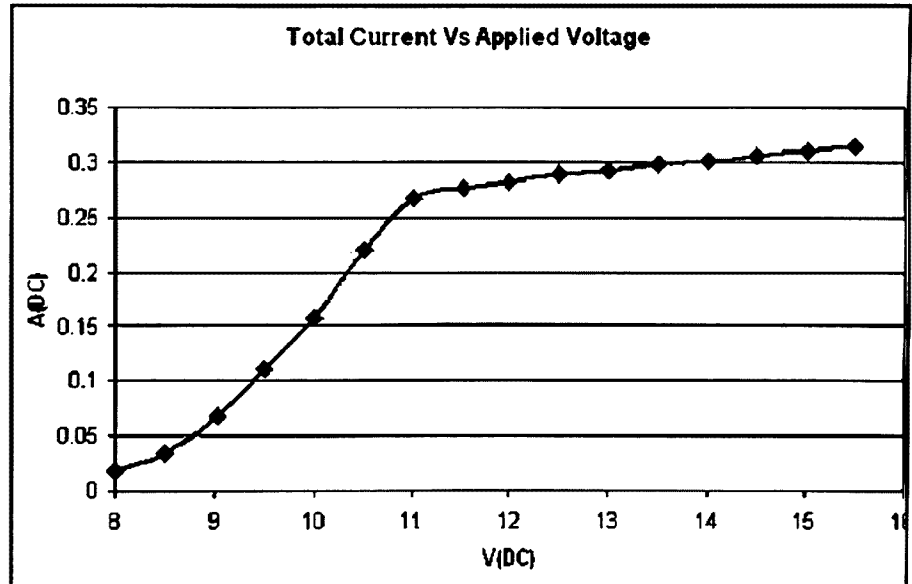


Figure 2: Current Consumption versus Battery Voltage

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Silent key

Allan Wright VK2BVL

Allan Wright VK2BVL of Orange, a long-term WIA member, passed away around midnight on Tuesday 26 June, 2007 in Royal Prince Alfred Hospital Sydney, aged 63, after a long and brave fight against cancer.

Orange and District Amateur Radio Club (ODARC), of which Allan was President when he died, was well represented at his funeral in Orange on Saturday 30 June, together with a very large crowd from his many spheres of interest in all of which he had been a much-liked and highly respected personality.

Allan grew up in Lawrence and Grafton and in the early 1960s began training in Sydney as a technician with the PMG - later known as Telecom Australia, then Telstra. He and Brenda married in 1964 and moved to Dorrigo. His interest in electronics led him into broadcasting; installing and maintaining ABC television transmitters around the country. In 1971 he was posted to Orange and became supervising technician for the ABC's transmitters over western NSW, based at Mt Canobolas.

Allan sometimes had ODARC members literally on the edges of their seats at club meetings, when describing essential antenna maintenance work on the 520 ft (160 m) ABC tower and the adventure of reaching the top, then stepping out onto the actual antenna elements!

In 1993 Allan accepted a senior management position with the same organisation in their Melbourne head office, with responsibilities now covering all of eastern Australia! In 2000 he retired and with Brenda returned to Orange.

Allan heard of a local position far

removed from electronics but which required many of the organisational and managerial skills he possessed. 'Wontama', the district's biggest aged care facility, required a 'Continuous Improvement Coordinator', for which he applied and was surprised to win. His honest approach, respect for everybody and his lovely manner soon also won lots more friends.

A devoted family man, Allan was involved with his children in horse-riding, polocrosse, soccer, Scouting, as well as all the usual activities in helping raise a family. He developed a passion for the collecting and repairing of antique clocks but still found time to enthusiastically take part in every amateur radio club event he could, like car trials, field days, meetings and other events, including the annual local co-ordination of 'Jamboree-on-the-Air'.

Brenda called him 'the ultimate peacemaker' and that applied in family matters, work-related incidents and in amateur radio club affairs. If ever a personality battle looked like brewing, Allan and his quiet, reasonable manner was always able to bring about a happy resolution.

There should be more people in the world like the late, loved and very much missed Allan Wright VK2BVL - Silent Key.

Submitted by Pater Carter VK2ETK
on behalf of ODARC.



A RF quiet light using 1W LEDs *continued from page 7*

little heat is generated during normal use. The glue used was a two part, epoxy resin. Note that the 'slug' on the rear of the LED needs to be electrically isolated, so if a painted surface is not used some other means of isolation must be used. Transistor Q1 is also bolted to the plate, diodes D3 and D4 are glued to the plate, adjacent to the transistor so that as the

plate warms up, the base voltage, V_b , is reduced due to the negative temperature coefficient of the diodes. This feedback helps keep the current constant under changing temperature conditions. An eye bolt in the centre of the light provides a convenient point to support the light.

Photo 1 shows the completed unit.

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continued from page 6

Peter reports that the number of logs is slightly down on last year's total.

Roxby Downs Club blossoms

It is spring time and the Sturt's Desert Pea is blooming. Amateur radio is also blossoming in the arid land at Roxby Downs in South Australia.

Roxby Downs is a purpose-built town located about 560 km north of Adelaide. It is associated with the Olympic Dam mine – a massive multi ore mineral deposit of copper, uranium, gold and silver. It has a population of about 4000.

Michael Wright VK5ARD, who is resident at Roxby Downs, motivated and organised a dozen young potential amateurs from the area for the weekend of the 1st and 2nd of September.

Invite Ron Bertrand to do the training, and Fred Swainston for overall

guidance – how could you go wrong? Visiting Assessors from Adelaide were Peter VK5ZFW, Paul VK5PH, and Trevor VK5ATQ. Much hard work of training and assessing was balanced by celebrations, as it was a very successful weekend. To top it off, a new radio club was formed. Listen for calls from Roxby Downs and welcome new amateurs and a new club to the world of amateur radio.

Another success for the WIA training program initiatives.

The Clubs Scene

Ted Thrift VK2ARA
WIA Club Coordinator

It is always good to hear about a new club. The WIA welcomes the formation of a new club at Roxby Downs. Congratulations to Michael VK5ARD and best wishes for your new club.

The WIA website 'clubs page' is being revamped by Robert VK3KRB. It is at

the stage where we have an index list for each state and a downloadable file for each state. The update form is still available and best efforts will be made to input updates within a week.

The hot issue with clubs is: who is your Learning Organiser? If the file for your state and club only lists a group leader, or no name at all, that means that your club has not supplied a name to your WIA Club Coordinator Ted Thrift vk2ara@wia.org.au. To be nominated as a Learning Organiser, the person needs to be an assessor, or an accredited learning facilitator.

Any clubs or individuals requiring information about incorporation, affiliation, club records or liability insurance, contact me via email vk2ara@wia.org.au. What cannot be given directly will be referred to a suitable person and I will follow up personally.

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A simple CW audio filter

Peter Wathen VK3EPW.

While everyone with the dreaded microphone button in their hand insists CW is dead, I, like a lot of other amateurs, enjoy it.

My only radio at the moment is a home built, home designed transceiver that runs a massive ten watts and while I do use SSB on occasions, I find if I choose the correct band at the correct time CW opens the world up like SSB cannot. (If you are like me and have a hard time decoding accents, at times, then CW is also a winner).

So what is the problem?
It seems like CW, far from being dead, always has stations working very close to each other and while some commercial transceivers have narrow filters fitted, and others have them as an option, my transceiver is limited to a 2.3 kHz filter. (I listen to quite a few CW stations at once)!

At first I had the bright idea of making a variable twin T audio filter to notch out the offenders. The notch filter used two pots, one dual gang and one single gang and had a range from about 1 kHz to 2.4 kHz.

On an audio signal generator it worked well, very sharp and with a very deep notch. However when I put it on the radio the QRN and pink noise made it almost impossible to use.

Not one to give up, I thought OK I can put the filter in the op amplifier feedback circuit and dampen it with a resistor (to stop it from becoming an oscillator), changing it from a notch filter to a sharp band pass filter. So that is exactly what I did. I kept the pots at first and tailored the centre frequency to suit my ears and also used a pot as a feedback resistor to get the filter to a point where it is sharp but the ringing is acceptable.

The circuit is very simple. It uses two ICs as I have shown it here, but it worked so well, I left out the LM380, went all surface mount components and made it small enough to mount behind the filter switch which is now on the front panel of my transceiver.

It should be a nice little weekend project for builders among you.

The filter is very sharp, so don't leave out the slide switch. My transceiver is all PLL with no fine tuning, rather it has 50 Hz tuning steps and I find one step either side is off the filter peak.

If you are using a home brew receiver/transceiver with a wide, or no, IF filter or as one amateur I spoke to, a direct conversion receiver, this filter will improve your reception (assuming you don't already have a sharp AF filter).

If you like CW, try the filter - even commercial transceivers will benefit from a sharp audio filter.

A quick circuit description

Audio comes in to U1B via C1. U1B is a simple unity gain buffer. R3 and R4 were selected to give an overall unity gain to the circuit. U1C is the actual filter, and R6 provides the damping while the other resistors and capacitors tune the filter.

If you would like to change the frequency of the filter change the (R8/R9) and (R10/R11) values together (lowering their values increases the frequency). You will also need to use an audio signal generator to find the peak, then put a trimmer in to R7 position and adjust for best peak (At some point it will oscillate. Don't go there.).

R6 has an effect on the tuning of the filter, as well as the damping.

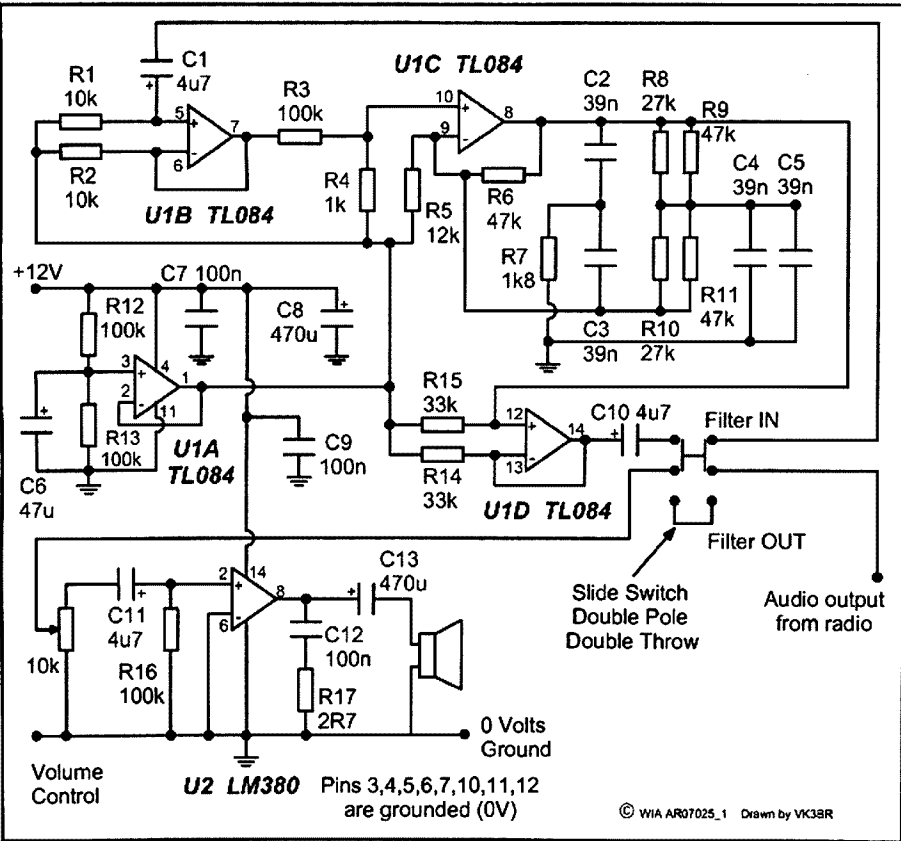
U1D is again a simple unity gain buffer amplifier.

U1A is used to provide a six volt rail for the op amplifiers as it all runs off a 12 Volt single rail supply.

Notes:

Values at the output of U1B were selected to give the overall filter approximately unity gain.

The circuit was originally built and tailored as shown to operate outside the radio. When it proved its value, it was put inside my homebrew transceiver (minus the LM380).



A memorable eyeball

Ron Holmes VK5VH

All resistors used were 1206 SMT. I find them much easier to use than through-hole components. You don't have to drill and just a 1 mm gap in the circuit track will do. However, through-hole carbon or metal film 1/8 or 1/4 W resistors can be used if desired.

Performance data measured with an audio generator and oscilloscope are as follows:

Filter Centre Frequency	526 Hz
6 dB Bandwidth	48 Hz
18 dB Bandwidth	243 Hz
6 dB points	500 Hz / 548 Hz
18 dB points	412 Hz / 655 Hz

The filter is very sharp and does have some slight ringing. However, the QRM and noise reduction are worth it.

The IN/OUT slide switch is a MUST.

All components are available from one or more of the following outlets:

RS Components, Farnell Components, Jaycar, Dick Smith

Component List

- 1 x TL084
- 1 x LM380 (14 pin)

Capacitors:

- 3 x 4u7 63 V Electrolytic/Tantalum
- 1 x 47 uF 25 V Electrolytic
- 2 x 470 uF 35 V Electrolytic
- 3 x 0.1 uF (1206 SMT) Ceramic/Mono
- 4 x 0.039 uF MKT/Green Cap

Resistors:

- 1 x 2R7
- 1 x 1k0
- 1 x 1k8
- 2 x 10k0
- 1 x 12k0
- 2 x 27k0
- 2 x 33k0
- 2 x 47k0
- 4 x 100k0
- 1 x 10k Log Potentiometer
- 1 x blank PCB (Dick Smith)
- 1 x Dalo pen (Jaycar)
- 1 x container Ferric Chloride
- 1 x DPDT slide switch

I had talked on air to Phil W1DBM several times in the 1970's. He lived in Haverhill, New Hampshire, USA. Apart from that, I knew nothing about him except that we were both particularly interested in designing and building our own antennas. On 20 metres, he was using a group of five verticals, so designed that they could be made to beam a signal in different directions. He told me he hoped to have the design published eventually.

When, in 1979, my XYL Shirley and I travelled to America to visit our eldest son, who was working in North Carolina, we drove with him up the east coast and through New Hampshire. I remembered Phil W1DBM. So we called at Haverhill. We drove round the town until we saw a group of five vertical antennas near a house on the outskirts of the pleasant little place.

I knocked on the door of an old two-storied weatherboard building. I think they call it clapboard over there. We discovered later that it had been built in 1835 and that currently they were replacing the kitchen floor. A lady carrying a cat answered the door. I explained who I was and asked if 'Phil' lived there. He did. He was her husband. She told me he was up the back working on an antenna for his trailer (caravan). I crossed a paddock behind the house and found him walking towards me. He looked about 65 and wore bib and brace overalls over a flannel shirt. I placed him as an old farmer, particularly as the house was on several acres and included some fine vegetable plots.

As soon as I told him my call sign he greeted me warmly, called me 'Raarn', and invited us into the house. As I was about to introduce him to Shirley, plus my son and his wife, I realised I did not know his surname and asked for it. He told me it was Rand, or, as he pronounced it, 'Raarnd'. We went inside; he cleared several of his wife's cats from the furniture and we sat down while Louise made a cup of coffee. While we were waiting he took me upstairs to his 'shack'.

I was very impressed with his radio gear, including a monstrous linear of uncertain age. Remembering that he had told me he hoped to publish his design of the five verticals, I asked if this had happened. It had and he showed it to me in an American magazine.

'Actually', he said, 'I've had a few things published over the years. I think the PMG in Australia used one of my books when you brought in Television'. He reached down a manual entitled 'TELEVISION INTERFERENCE' and handed it to me. I noticed on the cover that it was a product of the Remington Rand Laboratory of Advanced Research. He was the 'Rand' of 'Remington Rand' - one of the world's best known names in the electronic field at that time!

He said nothing about who he was. Neither did I. We went back downstairs and in the course of conversation over coffee it became evident that Phil was one of the leading electronics engineers of the world. He, with two associates, had designed the first video cameras on missiles for the military. He had designed early TV cameras for NBC. We mentioned how my son and his wife had recently sailed a 30 foot open boat from Florida to New York. It reminded him that he had designed the navigational equipment for 'Gretel', which had just won an America's Cup sailing race. It was not until later that I discovered that he was a major contributor to QST and CQ.

Amateur radio is an interesting world. I hoped I had not appeared too dumb on the occasions I had talked to Phil on air previously, when all I knew was that his name was Phil and that he shared my hobby. Incidentally, although I thought he looked about 65, I discovered that he had retired at 65 many years before and was closer to 80. Unfortunately, he is now a silent key, but one who made his mark on the world. It was a privilege to have that 'eyeball' and I will not forget it.

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A precision sheet metal bender for around \$40

Jim Tregellas VK5JST
endsodds@internode.on.net

How often have you wanted a custom-made box for that special electronic project? If you've ever tried to fold a piece of aluminium in a vice using a couple of bits of angle iron, a lump of wood and a hammer, then you'll know there has to be a better method, because this is a great way to waste good material.

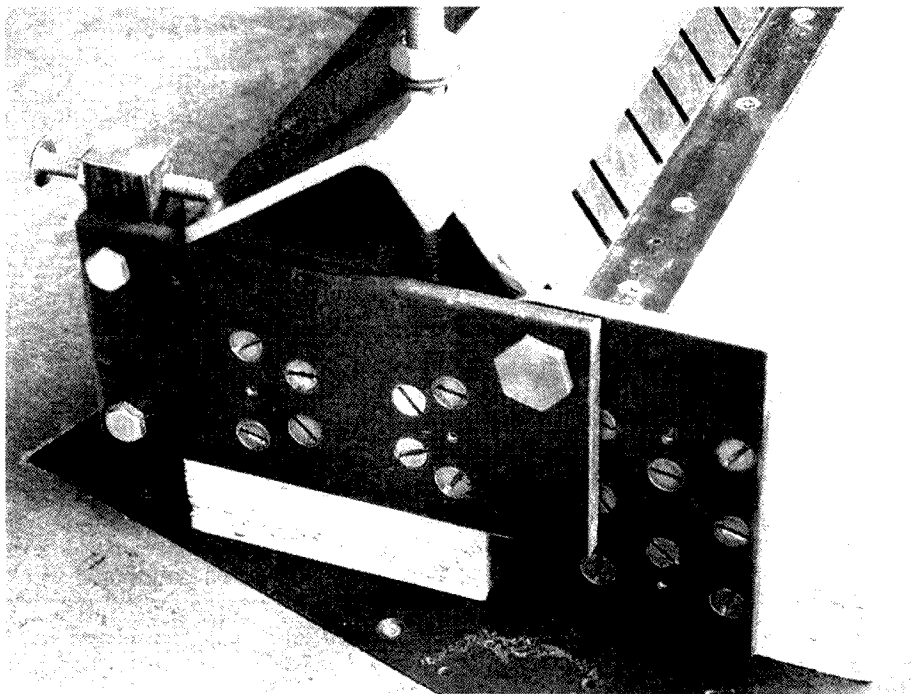
The better method is called a finger folder, and professional units cost well over \$2000. They are designed to fold 1.6 mm steel in widths of up to one metre, and for electronic hobbyist purposes, are complete over-kill. Almost every special purpose box you'll ever want has dimensions of less than 400 mm on any axis and can be made of either 0.8 or 1 mm aluminium. This folder addresses that need cheaply but very adequately.

Specifications

The folder design following provides the ability to fold U-shaped flanged panels with any width between 11 mm and 424 mm (see appendix). Beyond 424 mm, selected widths up to 480 mm can be handled, and edge flanges up to 12 mm are accommodated. For the two initial folds on either side of a panel, edge flanges up to 515 mm long can be made, and so the maximum size panel which can be formed with flanges is actually 480 x 515 mm. The design allows for bend angles from zero to just over 90 degrees. Most importantly, U-shaped chassis with edge flanges (the most common electronic enclosure) can be made. The bending comb in the top jaw is unique and until publication, was probably patentable. Because of the slot widths used and the inter slot spacing selected, the continuous width coverage offered above is provided without the need to move any fingers. Extensive tests have been done on 0.7 mm thick aluminium, and no bend imperfections will be seen where the material bridges the 4 mm wide slots.

Construction

When I examined the metal folder designs that were around, I found that they are all made of steel (usually angle iron) and without exception involve the skill of precision welding. The real



design problem that plagues the bender designer is the provision of robust hinges to take the enormous strains of bending, and of providing structural members which are sufficiently strong to resist significant bending. To complicate the issue further, the centre line of the hinge pins has to coincide exactly with the top of the joint between the front and rear bender jaws. This means specially fabricated hinges and some very nasty set-up problems while they are welded into position with a heavy duty arc welder – not for me- my arc welds are usually very dodgy!

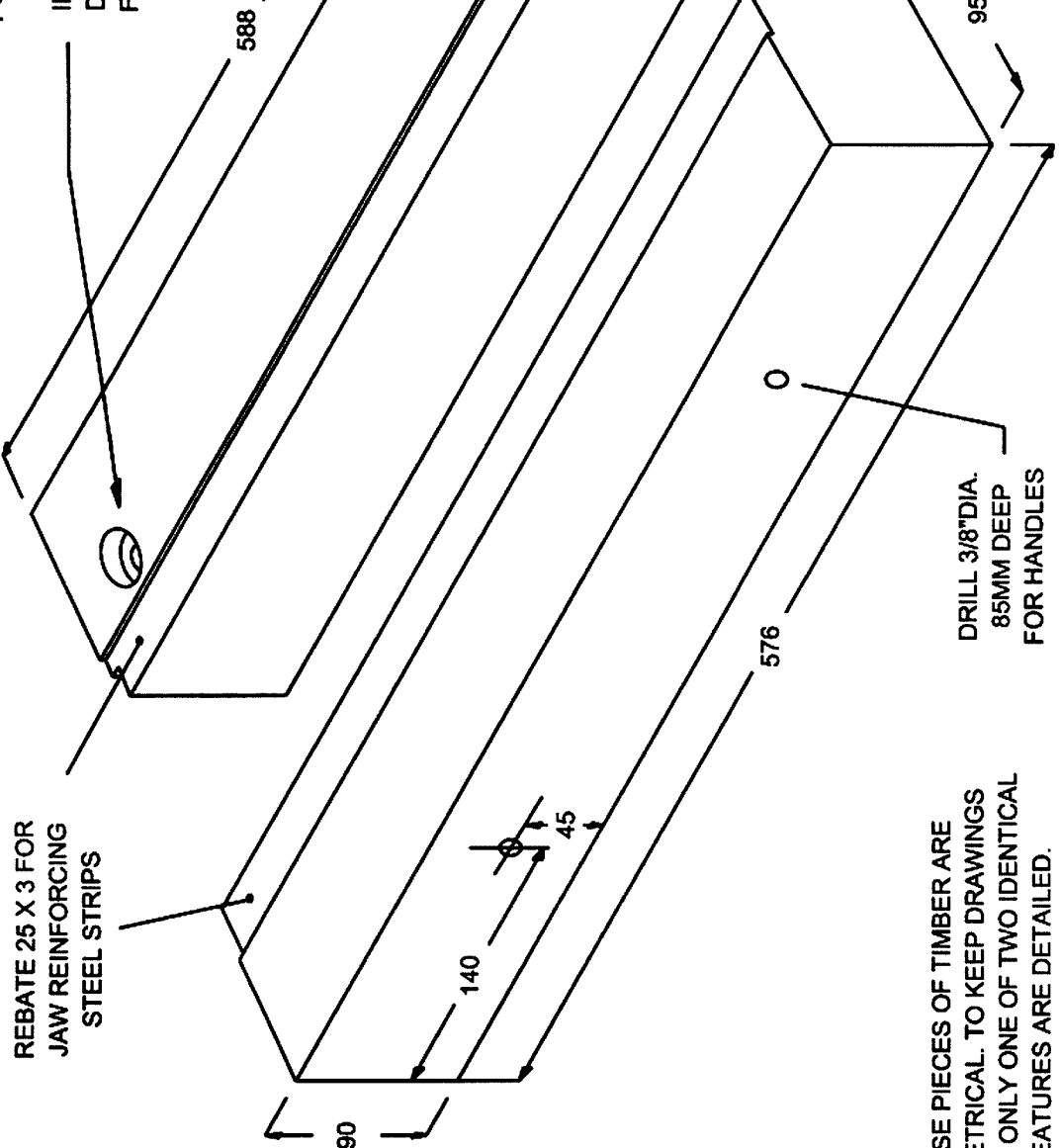
What I wanted was a design which the average home handyman could make with a few basic tools, and by visiting his local steel supplier where all the standard steel sections used could be obtained cut to length. The design which results uses chipboard (NOT MDF!) for the bender jaws, which are shaped using your Triton

saw bench. The hinges are very simply made from standard steel plate and attach to the end of these wooden pieces. So you will need a good bench drill press as well as some marking out tools, various twist drills, a spade bit, a 5/16" BSW full taper die and an angle grinder - but no welder.

The Drawings

You will discover that these are a mixture of metric and imperial dimensions. No apologies are made for this, because I have based this project around items that are easy to obtain, and a visit to your local hardware store will confirm this. It is also worth noting that to avoid using screws of different lengths; the positions of hinge screws have been changed. Those with a keen eye for detail will note that the drawings differ from the photos of the prototype bender in this regard.

FOR HOLE PLACEMENT REFER TO
ARTICLE TEXT. DRILL 1/4" DIA.
INITIALLY. COUNTERBORE 14MM
DEEP (BOTH TOP AND BOTTOM)
FOR 3/8"BSW NUT AND WASHER.
THEN DRILL TO 3/8" DIA.



REBATE 8 X 16MM FOR
FRONT OF HINGE

DRILL 3/8"DIA.
85MM DEEP
FOR HANDLES

THESE PIECES OF TIMBER ARE
SYMMETRICAL. TO KEEP DRAWINGS
SIMPLE, ONLY ONE OF TWO IDENTICAL
FEATURES ARE DETAILED.

DETAILS OF FRONT AND REAR JAWS

MATERIAL ASSEMBLED FROM 5 LAYERS OF 18MM THICK CHIPBOARD

ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED

FIGURE 1

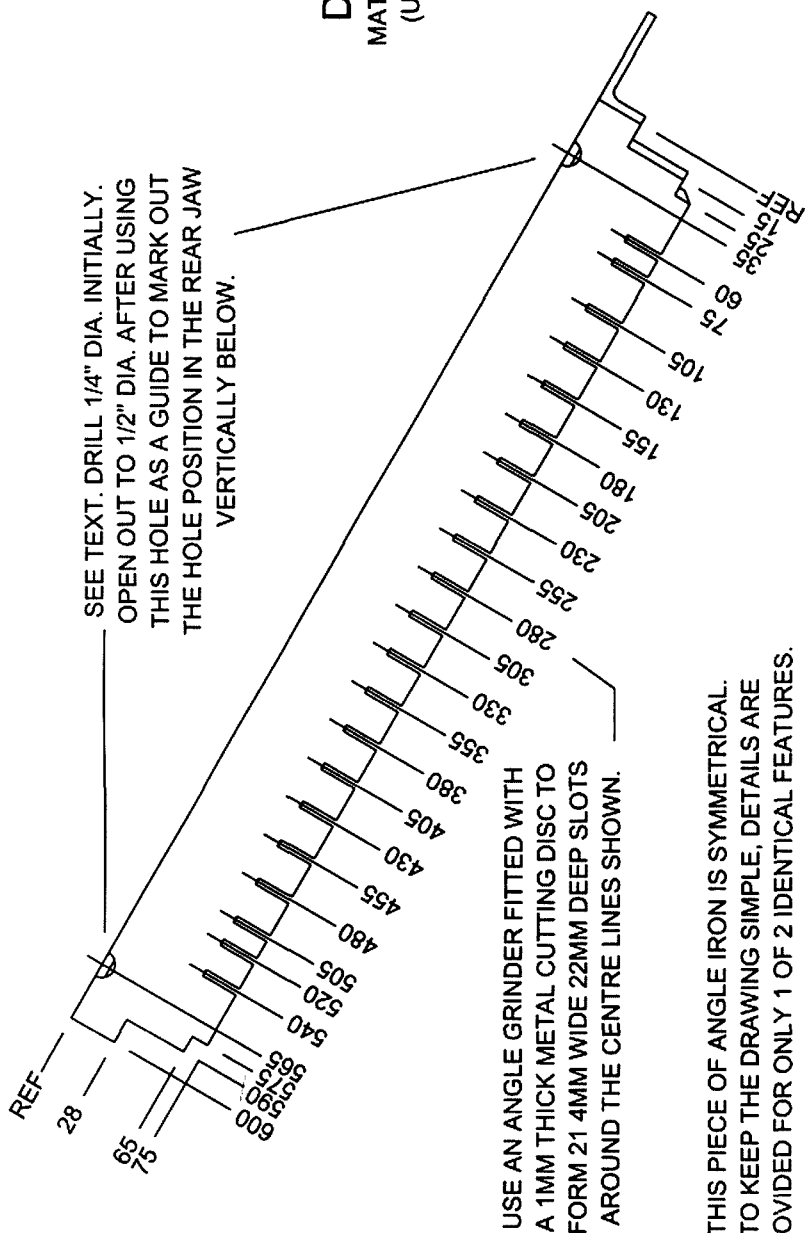
Making the beast

Firstly, obtain all your steel as well as all nuts, bolts and screws. Next, fabricate all the steel work shown in Figure 3 so that it is ready and can be fitted exactly to the woodwork. Before fabricating the hinges, measure the shank diameters of the hinge retaining screws you are going to use ($13/64$ " is specified in the drawing but this is a guide only!) and accurately drill the hinge plates to exactly accommodate this diameter. This will prevent slack developing in the hinges as the bender is used. Note that wood screws must be used to retain the hinges. Wood screws have long unthreaded shanks and this design feature allows them to take very big side forces without movement developing (unlike chipboard screws). Also, very carefully measure the diameter of the shanks of the coach screws used to make the hinge pins and drill the hinge holes to match. Slop of any sort should simply be avoided in the bending action.

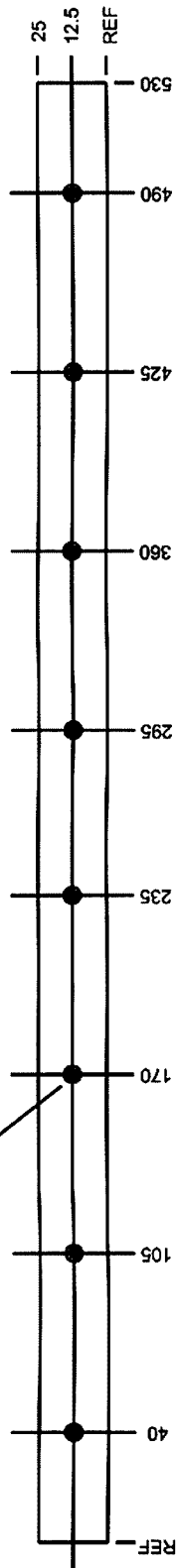
The method used to make the top jaw is worthy of comment. To cut the 4 mm wide slots in this component, space your angle grinder away from a chipboard base plate with a timber spacer so that the cutting wheel is in the same position as the grinding wheel on a bench grinder. (Screw the spacer to the base plate, and attach the angle grinder to the spacing timber with long screws and scraps of aluminium). Provide support for the top jaw during cutting with another piece of timber which has been screwed to the base plate and is mounted in front of the cutting disc (providing the same function as the tool rest on a bench grinder). The 1 mm thick cutting disc used is normally chosen to trim the ends of the steel sheet used for roofing and fencing and has a staggering life. Believe it or not, one disc (around \$2.60) will do all of the cutting in the 5 mm thick steel used for the top jaw and will show almost no wear. During the whole cutting process my disc reduced in diameter by about 2mm and this was only because the abrasive grit at the disc edge became dull and would not cut, and a wheel dresser had to be run on the disc edge to remedy this. I cut the outsides of the slots first, and then removed the remaining central web with a thicker metal cutting disc. Note that if the bender is to provide the continuous width coverage advertised, the slots must have a width of 3.5 to 4

DETAILS OF TOP JAW MATERIAL: 75 X 75 X 5 MM ANGLE IRON (USE 75 X 75 X 6 MM IF AVAILABLE)

FIGURE 2

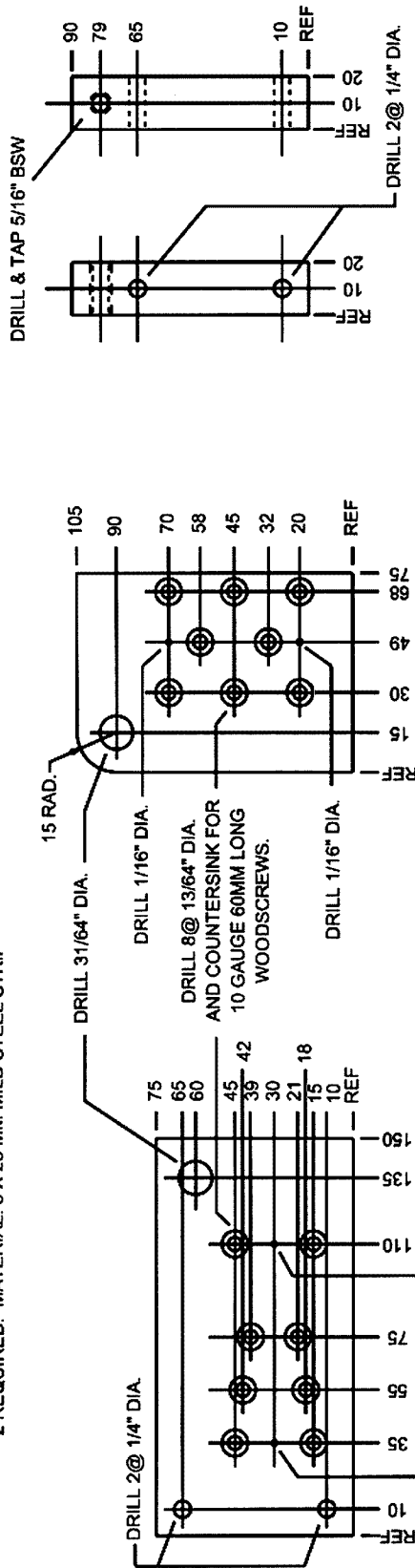


DRILL 8@ 1/8" DIA. AND COUNTERSINK FOR 4 GAUGE 25MM LONG SCREWS.



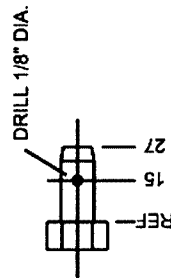
FRONT AND REAR JAW RE-INFORCING STRIPS

2 REQUIRED. MATERIAL: 3 X 25 MM MILD STEEL STRIP



HINGE PLATE- REAR JAW

2 REQUIRED- ONE MIRROR IMAGE OF OTHER
MATERIAL: 75 X 6MM MILD STEEL PLATE



HINGE PIN

2 REQUIRED
MATERIAL: HEAD
AND SHANK OF
1/2\"/>

HINGE PLATE- FRONT JAW

2 REQUIRED- ONE MIRROR IMAGE OF OTHER
MATERIAL: 75 X 6MM MILD STEEL PLATE

THRUST POST

2 REQUIRED
MATERIAL: 20 X 20MM
MILD STEEL BAR

- NOTES
1. ALL DIMENSIONS IN MM UNLESS OTHERWISE SHOWN
 2. DRAWN VK5JST APRIL 2007

OTHER ITEMS NOT SHOWN
HANDLES- 2 REQUIRED- MATERIAL: 300MM LENGTH OF 9 MM DIA. M.S. ROD
TOP JAW RETAINERS- MATERIAL: 180MM LENGTH OF 3/8\"/>

FIGURE 3

TVI High Pass Filter with Braid Breaker.




An inline TVI filter with Braid Breaker.

A large amount of TVI can travel down the outer braid of Coax as well as the centre conductor.

The braid breaker isolates the centre conductor and braid from the TV/VCR/DVD. The High Pass filter cuts in at 50MHz. This filter has -80dBm attenuation at 40, 80 and 160 Metres.

Pager Notch Filter:

A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

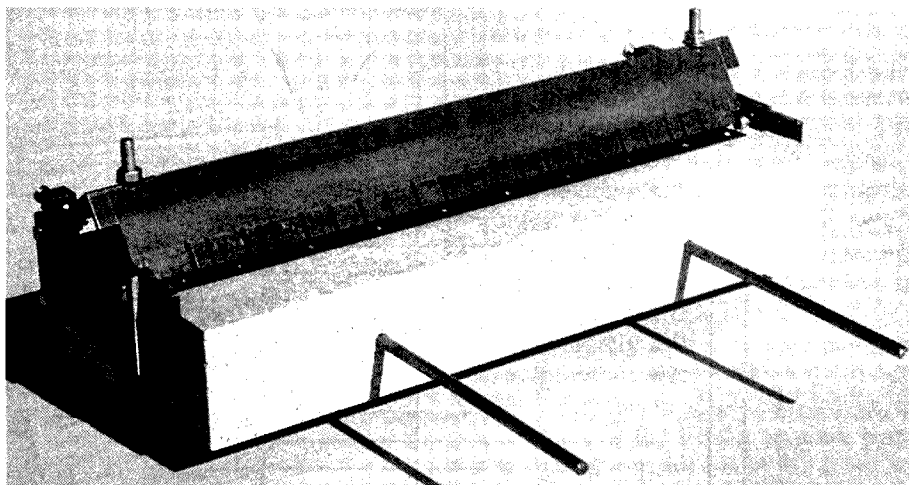
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mm and be precisely positioned about the centre lines specified in the drawing with an accuracy of 0.5 mm. Of course, if you have access to a drill/mill, making the top jaw accurately is dead easy.

To drill the holes in the top of this jaw, work from the back of the angle iron. The back of the material normally has a nice radius where the two sides join, which allows easy marking out and drilling. Work slowly and very gently, particularly when the drill is just about to break through. This is where you will break your drill if you are not working slowly, as you are not breaking through a flat surface. Do NOT drill these holes to their final size of 1/2" diameter just yet. Instead use a 1/4" diameter drill. These two holes will later be used to mark out where the holes in the back jaw lie for the two top jaw retaining screw threads. The holes in the back jaw have to be counter bored with a spade bit to conceal the nut and washer used, and spade bits rarely come with lead ins of much over 1/4" diameter.

Finally, excess steel has to be removed from the edge of the angle iron in which the fingers have been cut. This can easily be done by hand with an angle grinder fitted with a cupped grinding wheel, provided a wooden guide is made up of the correct height and angle to fit the rear of the angle iron (see the photo). The correct angle is 50 degrees and the height of the wooden guide is adjusted on your saw so that the absolute minimum of steel has to be removed. Over a large wooden surface a metal grinding disc will basically polish rather than cut, and this handy observation can be used to force the cutting disc (and its operator) to the precise angle and height required. When the grinder starts skidding on the

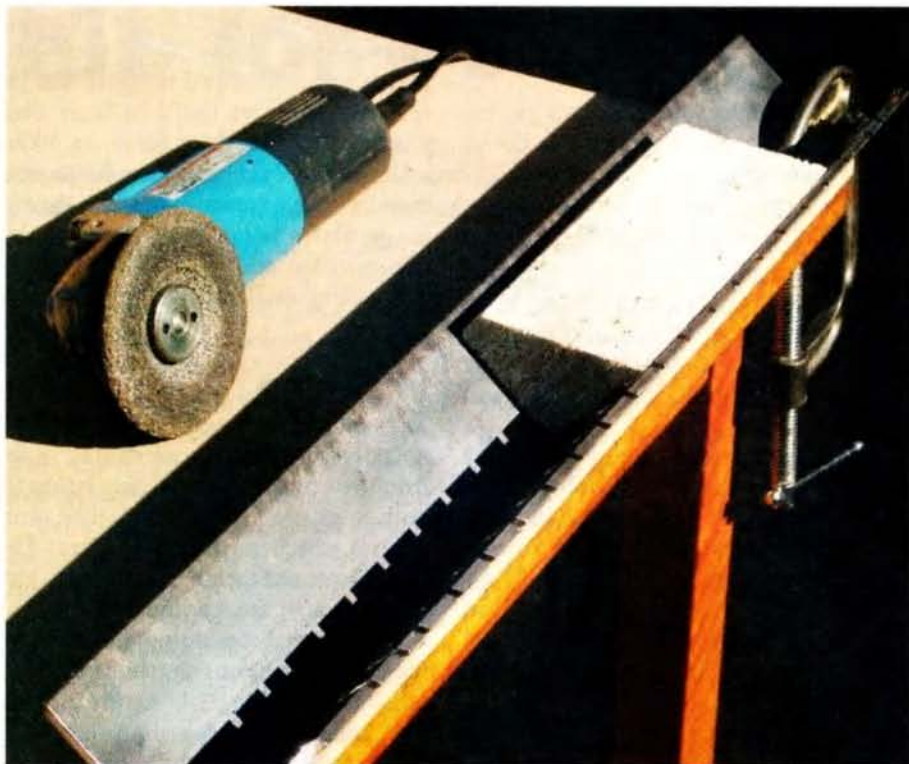
wooden surface rather than cutting into the steel, you have reached the right height. Proceed slowly and evenly, sliding the guide up and down the inside of the angle iron, and checking with a straight edge as you go. You will be surprised at how accurate and easy this apparently crude process is. When you have finished, form a small radius on the leading edge (say 0.5 mm) with a file so that the leading edge does not cut into the material being bent.

Once all your steel work is complete, start on the woodwork. Both wooden components are fabricated from 5 layers of 18 mm thick chipboard and can be cut from 600 mm wide material (half a standard sheet width). If you can't get 18 mm thick material then use 5 layers of 19 mm (95 mm) or 6 layers of 16 mm (96 mm). Chipboard is the ideal material because its mechanical properties are independent of direction (it has no grain), it is easily shaped, mechanically stable, and is flat and cheap. When I first started thinking about the bender, I contemplated the use of red gum fence posts. I quickly gave away this idea because red gum has grain, and under the huge stresses of bending may split along the grain, with the split starting at one of the hinge retaining screws. Note that MDF (craftwood) is formed in layers and behaves as if it has a grain. It should not be used. To see how weak this stuff is, drive a nail into the edge and observe. It is only mechanically strong through its thickness.

Straightness is everything in this design. The two bending edges should exactly mate to better than, say, 0.2 mm. Likewise the bending comb in the top jaw should be straight and mate with great precision with the hinge centre

line in both horizontal and vertical directions. Any old piece of wood can be made straight on a circular saw by using a straight timber or steel guide of the correct length. The correct length for the guide is at least twice the length of the material being sawn plus the saw diameter (at least 1500 mm for the timbers used here). This guide is positioned on the saw table so that there are equal lengths of guide on either side of the saw blade. To straighten a piece of wood with a banana bend, place the timber on the saw table so that the two ends of the banana contact the guide. Push the timber past the saw blade and this will give you a perfectly straight edge on the saw blade side. Now you can flip the timber over and process the other side of the banana. Use this technique when sawing the pieces of timber for the bender.

When you are glueing the various bits of chipboard together to form the bender jaw pieces, use plenty of PVA glue and a paint brush to ensure that every part



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of the surface is covered. Use a straight edge during assembly to check that everything remains straight.

Complete all saw operations on the front and rear bender jaws but do no drilling yet.

Fitting the hinges

This operation, and positioning the top bender jaw relative to the bend line, are the most critical operations in assembling the bender. Take your time and avoid short cuts and the bender will work.

Temporarily place one of the 25 x 3 mm reinforcing strips in its rebate in the front bender jaw. Find eight nails with shank diameters of 1/16" and lengths of around 25 mm which exactly fit the two 1/16" diameter nail holes provided in each hinge plate. Place a front hinge plate against one end of the front jaw, and position the plate so that the bending line (the front top of the 25 x 3 mm strip) lies exactly at the centre of the hinge hole. Set the plate into its correct position by driving the two nails into the chipboard. Now use the other holes in the plate as a template to drill the holes for the screw shanks in the chipboard (about 25 mm deep). Last, drill all holes in the chipboard to accommodate the screw thread minor diameter (around 55 mm deep). Screw the plate into final position. Repeat this process for the other end of the front jaw.

Once the two front hinge plates are screwed into position, the front and rear jaws are clamped together and the rear hinge plates (held in their final positions by the hinge pins) are added to the assembly. Once again the process detailed above is carried out with the rear hinge plates being temporarily nailed into position and used as templates to accurately drill all the holes for the screws.

Finishing

To finish off the front and rear jaws, the holes for the handles are drilled in the front jaw, and the reinforcing strips for both jaws are screwed into their final central positions in the rebates. The thrust posts and their hardware are added to the back of the rear hinge plates.

The rear and top jaws are placed into their final positions and the retaining rods (180 mm long 3/8" screw threads) then added. To do this the front jaw is first hinged up through 90 degrees into its final position to complete a 90 degree bend. A piece of 1 mm thick material is inserted at either end between the reinforcing strip on the front jaw and the front bottom of the top jaw. The bolts at the top of the thrust posts are adjusted to bring them into contact with the rear of the top jaw (you will need to grind two flats on the rear ends of the top jaw for the bolts). This locks the top jaw into its

correct position and the bottom jaw can now be pilot drilled with a 1/4" diameter drill, using your bench drill and the pilot holes in the top jaw as a guide.

The top jaw pilot holes are then opened out with a 1/2" diameter drill bit. Again, work slowly and very carefully from the rear of the angle iron. Next, the bottom jaw is drilled right through using the 1/4" drill. Counterbores for the nuts and washers are then completed (approximately 14 mm deep top and bottom) with the appropriate spade bit. Last, the 1/4" diameter pilot holes in the rear jaw are opened out to 3/8" diameter. As a final touch, the wooden jaws may be given a coat of varnish.

Using the Bender

The 5/16" bolts (with their lock nuts) at the top of the thrust posts should be adjusted so that when the top bender jaw has been pushed back hard, one and a one half material thicknesses exist between the top jaw and the front jaw, when the front jaw has been hinged right up to the 90 degree position. This law applies irrespective of the material thickness being bent and will give excellent bends. Never force the bender. All bends should be set up so that bending is easy. Finally, the top jaw retaining nuts (or wing nuts if you prefer) should only ever be tightened with your fingers.

And now the real fun can begin.

Appendix

JAW NUMBER WITH WIDTH IN MM

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
15	30	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	15	20

INTERNAL WIDTH OF ITEM FOLDED (IN MM) VERSUS JAWS USED

5	-	85	QT	165	MS	245	AJ	325	CO	405	BQ
10	-	90	PS	170	AG	250	CL	330	BN	410	DT
15	A	95	AD	175	CI	255	BK	335	GT	415	CS
20	T	100	CF	180	BH	260	JT	340	FS	420	AQ
25	C	105	BE	185	MT	265	IS	345	AN	425	-
30	B	110	PT	190	LS	270	AK	350	CP	430	BR
35	ST	115	OS	195	AH	275	CM	355	BO	435	CT
40	RS	120	AE	200	CJ	280	BL	360	FT	440	-
45	AB	125	CG	205	BI	285	IT	365	ES	445	BS
50	CD	130	BF	210	LT	290	HS	370	AO	450	-
55	BC	135	OT	215	KS	295	AL	375	CQ	455	-
60	RT	140	NS	220	AI	300	CN	380	BP	460	AS
65	QS	145	AF	225	CK	305	BM	385	ET	465	BT
70	AC	150	CH	230	BJ	310	HT	390	DS	470	-
75	CE	155	BG	235	KT	315	GS	395	AP	475	-
80	BD	160	NT	240	JS	320	AM	400	CR	480	AT

Mobile whip for 40 metres

Ron Holmes VK5VH

I have built whip antennas using several different designs, for both 40 and 20 metres. This article provides the construction details of one model that has proved very successful, to assist anyone keen to make their own.

The antenna comprises a helical-wound lower section with a telescopic whip mounted on top to provide length adjustment. The helical section is wound on a plastic pipe and this is enclosed in an outer pipe to provide weather protection, as well as mechanical strength.

The construction materials are readily available from hardware stores.

Helical section

I used PVC pipe with an outside diameter of 22 mm. Its total length is 50 cm and the helical winding occupies the central 45 cm.

The winding was made using bare copper wire, about 0.5 mm diameter. I have also used plain tie-wire for this but the important point is that the wire diameter must be small enough to allow the assembly to fit inside the outer tube. The winding pitch is not critical at about 5 turns per cm. The wire was anchored at each end using a small hole drilled through the pipe. Add a coat or two of clear varnish to hold the windings in place.

A piece of wooden dowel, about 5 cm long, was glued inside one end of the pipe. A hole was bored along the axis of the dowel, of the correct diameter to fit and support the telescopic whip. A similar method was used at the other end to fix in place an axial mounting screw. This should have the correct diameter and thread to suit your antenna base.

Using two flexible insulated jumpers, I connected the helical winding to the telescopic whip at the top end and to the mounting screw at the bottom. These soldered connections should be made with care, watching out for dry joints.

Final assembly

My outer tube was made from similar PVC piping with an outside diameter of 27 mm. The length was 50 cm, the same as the inner pipe. Also required are two end caps to fit the larger pipe.

A hole was drilled through the centre of each end cap, one to suit the diameter of the telescopic whip, and one to suit the mounting screw.

The final assembly was completed by sliding the smaller pipe inside the larger one, and adding the two end caps. The latter were fixed in place with a couple of short self-tappers. The antenna is shown in Figure 1, using a cut-away presentation to expose the inner pipe and helix.

Options

I have added a modification to this design which allows it to be used on 20 and 30 metres, as well as 40 metres, thus covering the most commonly used mobile bands. All this requires is a tapping on the helix about 18 cm up from the bottom and an external flexible lead connected to the tap. With a sturdy clip, connect the other end of this lead to the base of the telescopic whip for operation on 20 metres, or to the mounting screw for 30 metres operation.

A similar mobile whip can be made specifically for 20 metres by following the same design, but making the pipe length 35 cm instead of 50 cm.

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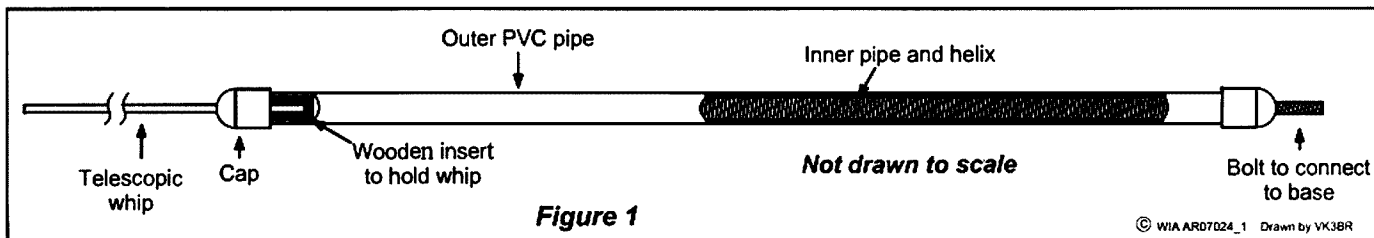


Figure 1: Whip assembly (cut-away to show helix).

A precision sheet metal bender for around \$40 continued

Parts List

Steel cut to size

- 2@ 150 mm lengths of 75 x 6 mm mild steel flat bar
- 2@ 105 mm lengths of 75 x 6 mm mild steel flat bar
- 1@ 600 mm length of 75 x 75 x 5 mm angle iron (or 75 x 75 x 6 mm if available)
- 2@ 530 mm lengths of 25 x 3 mm mild steel flat bar
- 2@ 90 mm lengths of 20 x 20 mm mild steel bar

- 2@ 300 mm lengths of 9 mm diameter mild steel rod

Hardware

- 32@ 10 gauge 60 mm long countersunk steel wood screws
- 16@ 4 gauge 25 mm long countersunk steel screws
- 6@ 3/8" BSW steel nuts
- 6@ 3/8" bore steel washers
- 2@ 1/2" (shank) diameter steel coach screws (hinge pins)
- 2@ 3 mm diameter 25 mm long split pins

- 4@ 30 mm long 1/4" BSW steel bolts
- 4@ 1/4" BSW steel nuts
- 2@ 40 mm long 5/16" BSW steel bolts
- 2@ 5/16" BSW steel nuts
- 2 @ 180 mm lengths of 3/8" BSW threaded steel rod

Timber

Sufficient 18 mm thick chipboard offcuts to make 5 strips 115 mm wide x 600 mm long and 5 strips 100 mm x 600 mm long (see text for alternatives).

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Satellite reception report – Sputnik

Gerry Wild VK6GW

In October 1957, I was living in Albany WA whilst employed at the local commercial radio station 6VA. I recall reading in the local press that the Russians had launched the first space vehicle and that it was transmitting “beeps” on 20.005 and 40.002 MHz as it raced around the earth.

A few evenings later, I was sitting with my wife on the back steps of our house looking at the darkened sky when we noticed a small flashing object coming over the horizon and heading directly overhead. At that time my Ham shack was located directly behind us on the back verandah. In those days my transmitter was double sideband running 8 watts input to a doublet antenna fed by open wire tuned feeders. The clothesline was one of those twin parallel wire arrangements suspended on horizontal wooden supports. It was easily adapted as an antenna, one of the wires acting as a director, the other cut in the centre and modified to suit the doublet configuration.

My receiver was an AWA 5 valve dual wave (which I still have). This had been modified for ham use by wiring a small variable capacitor in parallel with the oscillator section of the tuning gang. The set had been in operation as I had been monitoring our local broadcast. Quickly switching over to SW, I had no trouble at all hearing the “beeps” getting louder and louder. We were absolutely stunned, and the first thing I did next morning was send off a report of the sighting and reception to the USSR Academy of Science in Moscow. The QSL card I received is one of my prized possessions.

I did some research later on and discovered that Sputnik is the Russian word for satellite. It weighed 83.6 kilos, was in the form of a sphere of 580 mm diameter and carried four rod antennas 2.4 - 2.9 metres long. The instruments

and power sources were housed in a sealed capsule and included transmitters operating on 20.005 and 40.002 MHz, sending series of pulsed signals of 0.3 sec duration. The power source permitted operation of the equipment for three weeks. The satellite lasted 92 days and burnt up in the denser atmosphere on January 4th 1958.

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Below and right: The card received by the author. Not being a speaker of Russian, I can only surmise it is an acknowledgement of some sort.



*Участнику наблюдений за первыми в мире
Советскими искусственными спутниками Земли*

G.K. Wild

Благодарим Вас за присланные сообщения. Ваши наблюдения представляют научную ценность и используются нами при обработке материалов в соответствии с программой Международного геофизического года.

Мы надеемся и в дальнейшем получать Ваши сообщения.

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Scouts have been talking for 50 years

Jamboree On The Air (JOTA) and Jamboree On The Internet (JOTI)

Bob Bristow VK6POP
JOTA-JOTI Coordinator
Scouts Australia



This annual activity is almost upon us again. This year, 2007, is a special one for JOTA – it is the 50th occurrence of the event.

For the last 50 years, amateur radio operators have promoted and supported JOTA with enthusiasm and calm efficiency. I remember being quite bewildered by all those knobs and dials, and admiring of the ham's ability to turn and tweak them to make something happen.

The Jamboree On The Air began as an amateur radio station at the World Scout Jamboree at Sutton Coldfield in 1957, marking the 50th anniversary of Scouting. The amateur radio activity was a success and Jamboree On The Air began as a separate event in 1958.

Jamboree On The Air grew in popularity and is now, along with Jamboree On The Internet, the largest international Scouting event in the world. Around 500,000 Scouts and Guides take part in this global event every year.

In the 1990s the internet grew in popularity and Scouts were quick to make use of new technology to meet and talk to each other. In November 1996, the World Scout Committee, noting that Scouting already had a considerable presence on the Internet, and that there was already an informal and rapidly growing Jamboree On The Internet, decided that JOTI should become an

official international Scouting event, and that it should be held on the same weekend as the Jamboree On The Air (JOTA).

These days as technology develops, amateur radio uses the internet to connect radios to computers, radios to radios and as a source of information. As technology further develops, the equipment we use for communication will become smarter and more powerful.

Some of the South American Scout Associations no longer use the terms "JOTA" and "JOTI", rather they call the event JOCOMM – Jamboree On Communications. Not quite the same ring to it I must admit, but possibly it works better in Spanish.

Who knows where the activity will go, and how much more blending of computers, radio and internet will happen? For that, we have that to look forward and imagine, or just wait and see.

Meanwhile, to all those who have been involved in, or are about to become involved in, JOTA-JOTI, thanks for your contribution.

Information regarding JOTA-JOTI can be found at www.scouts.com.au

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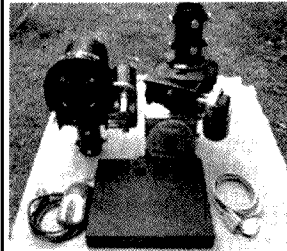
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19–21 October 2007

Scouts celebrate 100 years

Bob Bristow VK6POP

Scouts around the world celebrated the centenary of Scouting in the first week of August with sunrise ceremonies at 0800 local time, where Scouts and ex-Scouts re-affirmed their Scout Promise. During that week there was a World Jamboree in England, attended by 42,000 Scouts from most countries in the world, and a re-enactment camp took place on the island to celebrate the Centenary of Scouting. Other countries held jamborees and camps at the same time.

August 1st is the anniversary of the Brownsea Island camp, which was a boy's camping event on Brownsea Island in Poole Harbour, southern England, organised by Lieutenant-General Baden-Powell to test his ideas for the book *Scouting for Boys*. Twenty boys from different social backgrounds participated from 1 August to 8 August, 1907, in activities around camping, observation, woodcraft, chivalry, lifesaving and patriotism. Recognised as the world's first Scout camp, the event is regarded as the real origin of the worldwide Scout movement.

At the same time, Scouts formed a global network via amateur radio and the internet to make contact and pass greetings to each other.

Scouts in Perth, Western Australia conducted a replica camp on Heirisson Island in the Swan River, in the centre of the city of Perth. They arrived by boat and set up camp in the roughest weather so far this year. They survived gale force squalls and torrential rain for the first four days of the camp.

The Scout Communications and Technology Team was asked to provide an internet connection to the camp. There is no infrastructure on the island. We decided that if we were providing an internet connection to the world, the radios will be there too.

Access to the school's wireless network was negotiated with Trinity College, which is situated about 500 metres away on one bank of the river, and the challenge was to make a reliable link.

The school's network was visible on a laptop, which was encouraging, however signal strength wasn't reliable. This called for stronger stuff. A 24 dBi parabolic antenna was deployed outside the shack; however the link was still unreliable due to the trees, rain and a combination of both. The antenna

was relocated 75 metres closer to the riverbank to improve the line of sight, and a wireless access point added at the antenna to provide a link to the shack. With a little juggling of the position of the antenna, we could get a healthy signal in the shack.

The internet connection wasn't a big success because of the restrictions on the ports available on the education system, and we couldn't use Echolink and some other software.

The radio shack was in an ex-army 11 x 11 tent. We had two HF rigs, and two 2 m / 70 cm rigs.

Antennas were supported by a 10 metre Hills telescopic tubular mast. Antennas for VHF/UHF were home brew 'pogo stick' coaxial vertical dipoles, and for HF, inverted vee dipoles for 80, 40 and 20 metres.

Electricity was supplied with a 5 kVA generator. This was far superior to our previous portable efforts with smaller generators where the lights modulated

with our speech and the generator 'coughed' when we hit the PTT.

We made successful contacts around the world using Echolink via the VK6RLM repeater. Contacts included GB100BI (the Brownsea Island camp), GB100J (the World Jamboree site near Chelmsford, Essex), 8J100S and others.

We learned a lot from those six days in the rain. Lessons ranged from being more careful about placement of antennas in relation to each other through to the need to set up skeds to ensure there is someone to talk to the Scouts.

The most rewarding part of the weekend was the interest shown by the young people in the radios, and the thrill they experienced when speaking by radio to Scouts at the World Jamboree and Brownsea Island. Amateur radio isn't dead. We must all do what we can to bring the hobby out into the open and show young people that it is as alive and relevant now as it ever has been.



A Scout operates the Heirisson Island amateur station VK6SAA during the celebration of the 100th birthday of Scouting.

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IC-756Pro III HF-6 m	\$4299
IC-T90A Triband h/held & spkr-mic	\$399
IC-208H Dual band Mobile	\$399
NEW IC-2820H Dual band Mobile	\$799
IC-2200H 2 m 50 W Mobile	\$319
IC-V8000 2 m Mobile	\$349
IC-910H 2m/70 cm all-mode	\$1999
IC-T2H 2 m H/H & spkr-mic	\$199
IC-R5 H/H Scanner w/batts & chgr	\$299
IC-R20 Deluxe Handheld Scanner	\$699
IC-R1500, IC-R2500, IC-PCR1500, IC-PCR 2500	
IC-AH4 Automatic Tuner	\$499
IC-AT180 Automatic Tuner	\$599

FIRST WITH THREE YEAR WARRANTY

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TH-D7A Dualband H/H inc THC	\$699
TH-F7E Dual band Handheld	\$499
NEW TM-V71A 50W / 50W, echolink	\$699
TM-D700A Dual band Mobile	\$899
TM-G707A Dual band Mobile	\$499
TS-480HX HF+ 200 W 6 m+100 W	\$1999
TS-480SAT HF-6 m 100 W+ATU	\$1899
TS-570SG HF-6 m 100 W+ATU	\$1999
TS-2000 HF-70 cm + ATU	\$2799
TS-2000X HF -23 cm + ATU	\$3799
TS-570DG HF 100 W + ATU	\$1799

Andrews batteries for Kenwoods from \$39

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• K2AT+2 Batt. \$99	• K2AT+2 Batt. \$99
• GYQ 8288 tiny \$129	• ONE YEAR WARRANTY
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ANDREWS 2780 \$399
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ANDREWS 808 SOLD
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A project for beacon-watchers

Here is a project that could keep you occupied for hours, days, perhaps permanently.

Some in the satellite fraternity are already involved, and their efforts have been rewarded. I'm referring to listening for the beacons of defunct satellites.

Here's a way of seeing your name up in lights. Be the first to report an old amateur radio satellite returning to life.

In general terms, the batteries are the weak link in any amateur satellite and it's usually the battery that fails first. Limited solar power charging can be a contributing cause. The result is usually an eventual inability of the solar cells to maintain battery condition during eclipses. That leads to further deterioration of the battery and failure results. The good news is that some battery failure conditions can sometimes correct or partially correct themselves over time. An internal short circuit in a cell can cause the whole system to fail and make the solar cells inoperative as well. The internal short may become open again, as is suspected to have happened in AO-7. Even though the battery may be otherwise almost useless it means the solar cells can again provide power to the electronics. The bird will be totally dependent on sunlight of course but at least it is operating again.

What are the chances of this happening again? Who knows? But with so many defunct satellites still in orbit it can't hurt to listen for beacon activity – at least from time to time.

Here is a list of defunct satellites known to be still in orbit and their beacon or down link frequencies. You may like to devote some time to listening for them. The list is abbreviated to just the satellite name and most likely frequency so you can keep it handy. Full details are always available on the AMSAT web site. Keplerian elements are still available for these satellites.

NCUBE-2:	437.305 MHz
XO-53 SSETI:	437.250 MHz
UWE-1:	437.505 MHz
AO-49:	145.825 MHz

MO-46:	437.325 MHz
NO-45:	437.095 MHz
SO-42:	437.075 MHz
SO-41:	436.775 MHz
AO-40:	435.438 MHz
OO-38:	437.100 MHz
UO-36:	437.025 MHz
SO-35:	436.291 MHz
PO-34:	436.500 MHz
SO-33:	437.910 MHz
TO-31:	436.925 MHz
AO-16:	437.026 MHz
PO-28:	429.950 MHz
IO-26:	435.808 MHz
KO-25:	436.500 MHz
KO-23:	435.170 MHz
UO-22:	435.120 MHz
AO-21:	145.983 MHz
FO-20:	435.795 MHz
LO-19:	437.125 MHz
WO-18:	437.104 MHz
DO-17:	145.825 MHz
UO-14:	435.070 MHz
FO-12:	435.910 MHz
AO-10:	145.810 MHz
AO-8:	29.4020 MHz
AO-6:	29.4500 MHz
AO-5:	144.050 MHz
OSCAR III:	144.325 MHz
RS-15:	29.352 MHz
RS-13:	145.860 MHz
RS-12:	29.408 MHz

A few obvious candidates would be UO-11 which only recently disappeared and could return at any time. AO-10's beacon is definitely worth some effort. Who knows when it could again spring into life? Imagine being first to report a weak signal from AO-40.

Your own personal satellite?

How would you like to have your own personal satellite in orbit and be able to control the modes and frequencies of operation? Pipe dream? Almost certainly – but you can have the next best thing. AO-51 has a variety of modes available and the mode schedule is “adjusted”

each month by AO-51 controller, Drew KO4MA. From time to time, usually once a month, Drew calls for requests from users everywhere for a particular mode to be scheduled for the following month. You may like to see certain modes turned on more frequently or perhaps at a time you are planning that hill-top DXpedition. E-mail Drew at <ao51-modes@amsat.org> and he will do his best to accommodate your requests. This is a great service and is about as close to having your own personal satellite at your disposal as any of us will get.

Sounds from space

There have been several collections of “Space Sounds” that I can remember and some of them have been offered for download or sale. This is the latest effort. Matthias, DDIUS invites satellite operators to visit his “Sounds from Space” website at <<http://www.ddius.de>>. He has posted a collection of recordings from various space objects. Most of them are ham radio satellites with some commercial satellite sounds.

ISS milestone

How many can remember the very first module of ISS being propelled into orbit? It was featured on all the news media. Named “Zarya” (Sunlight), it was launched on Nov-20 1998 and on August-14 this year NASA announced that it had completed 50,000 orbits. That is nearly 9 years ago and that makes it the oldest part of ISS. Can you remember what kind of computer and radios you were using 9 years ago?

A first for ARISS

Amateur Radio on the International Space Station (ARISS) passed a significant milestone recently. School children in China took part in the first ARISS contact with that country. Full details are available on the ARISS web site. Briefly, the contact took place with students from the Nanjing No. 3 High School in Nanjing, Jiangsu. Present at the time of contact were two long time Chinese radio amateurs, Chen BAIHAM, and Tong BAI AA, along with a host of local officials, parents and school personnel.

Online operating is not always easy!

This year is rapidly flying by and over the past weeks I have found it increasingly difficult to spend quality listening time on my two receivers. As I have previously remarked, I do miss the opportunity I had to remotely operate online receivers in various locations. No replacement has emerged and I somehow suspect that security considerations plus copyright issues have made it difficult to reopen an online portal. Yes there are two small receivers within the USA but they do not use the Java software. I can only download recorded audio in either 10 second or 30 second snippets. They also are in heavy demand so it is not possible to do any sustained monitoring, so it is back to using my own receivers and antennas.

Saving daylight?

As I was compiling this, I received a query when Daylight Saving was starting. You may recollect that there was a tentative agreement for having a standard date for commencement, because under our Constitution, the regulation of time is normally left to the State jurisdiction. This has led to continuing confusion as it pertains to daylight saving because there was no consensus regarding the changeover dates.

Tasmania has traditionally commenced on the first Sunday in October and NSW, Vic, SA and the ACT on the last Sunday. I believe that a standard changeover date has been now agreed to by all states plus NZ with the exception of Queensland and the Northern Territory. But when does this come into effect? Well, NZ has already enacted legislation for daylight saving to commence on the last Sunday in September till the first Sunday in April, yet I have not seen any confirmation that these common dates

will commence this year in Australia. (*In Victoria, daylight savings commences on 28 October 2007. In 2008, it moves forward to 5 October 2008. Ed.*)

Of course, the majority of the Northern Hemisphere will revert to the standard time at the end of October, whilst North America and Cuba will revert the first week in November. It truly is a pity that there is no worldwide uniformity for a worldwide common date to minimise confusion. Incidentally, Venezuela has opted to change their standard time zone from UTC-4 to UTC-4.5 as from next year. This decision is political and not commercial.

The changeover date in the Northern Hemisphere, that is October 28th, also means that the B-07 period commences. This is when broadcasters traditionally alter their frequencies and hours to compensate for propagation changes from Summer to Winter (Winter to Summer in the Southern Hemisphere). It also seems when some broadcasters have

opted to cease shortwave broadcasts due to budgetary pressures or falling audience figures. This has allowed us to find some smaller domestic broadcasters which have been hidden by the higher powered international senders.

Sadly these smaller outfits are also disappearing. In one instance, the lack of spare parts for an ageing sender has forced the organisation to cease broadcasting on shortwave.

Well, that is all for this month. Remember you can always send me your news and comments via email to vk7rh@wia.org.au or via the post to 20/177 Penquite Road, Norwood, Tasmania 7250.

73 de VK7RH

ar

Wide publicity on local radio, TV and the World Wide Web via two major internet news portals in China enabled the event to reach an (amazing) estimated 100 million people.

AMSAT-VK mailing list

At present there are 70 people on the AMSAT-VK e-mail list kept by Graham VK5AGR. Graham has reported that some of the e-mail addresses he is holding may not be up to date. He is getting several bounces each time a mailing goes out. Have you changed your ISP or your username recently? Perhaps it slipped your mind to advise Graham. Has it been some time, months perhaps since you received any e-mail information or reminders from Graham? Please check and if you feel there is any doubt, drop him an e-mail so he can check your address against his current list.

ar

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK
9 Homer Rd
Clarence Park SA 5034

Graham's e-mail address is:
vk5agr@amsat.org

A truly amazing ALARA contest

The conditions for the ALARA Contest this year were amazingly good. For some weeks, 80 metres has been extremely noisy for the Monday night Nets, so we were not very hopeful for the two nights of 80 metres during the Contest. In the event, the band was so quiet we could hear stations booming in from far and wide.

It was great to have so many of the new F-call YLs participating, and getting very good scores into the bargain.

It was lovely to hear Norah VK5NYD and her OM David VK5AYD from Coober Pedy. They may not be around during the rest of the year but they have become regulars in the ALARA Contest. For new people to have a chance to speak

to people who live most of their lives underground is a new experience.

There were stations from every state and territory of Australia and several ZLs to be heard each evening.

During the daylight hours (and others), we had quite a number of our DX members listening out for contacts.

Judging from some of the scores heard towards the end of the Contest, there had been some 24-hour operators, I think.

I am sure we will all be delighted at the number of participants and the scores gained by the top scorers.

For a Contest that was close to being cancelled because of lack of support, the ALARA Contest has become a very viable Contest.

Now all we have to do have done is to have sent our logs to Marilyn VK3DMS, either by email or snail mail. The details were in the ALARA Newsletter and in the July issue of Amateur Radio.

Logs were due in by the end of September. No matter how small or how big your log, every one counts and you should have copied it out and sent it to Marilyn.

Did you get enough VK contacts for an ALARA Award?

We have made it simpler to get this attractive award. VK and ZL amateurs need only 10 YL ALARA member contacts from 4 different call areas, while DX amateurs need just 5 YL ALARA member contacts from 3 call areas.

The certificate has been redesigned by Kathy VK3XBA but still includes the floral emblems of all the states and territories of Australia, and the lovely golden wattle as well.

Each certificate will now have a date of issue and a serial number on it. As the inside back cover of the July AR shows us, the very first of the new certificates was awarded to one of our newest and keenest members, Pam VK5FABB, now VK4PTO.

If you have made enough contacts for the award please send your applications to Kathy VK3XBA QTHR the callbook, along with 3 IRCs or A\$5.

Your certificate will be a beautiful addition to your "brag wall".

VK3 has a special luncheon

The VK3 YLs had a Saturday luncheon at the Mountain Gate Hotel recently. Jean VK3FJYL was one of the main organisers but there were a number of others very keen YLs helping her out.

There were quite a number of new ALARA members but there were also several long-time members.

Pat VK3OZ came across from the Western Port Bay area and Jenny VK5ANW – who is spending so much time in VK3 these days that she is not sure to which state she belongs - made a cross-country trip to be there. Jenny is one of the earliest ALARA members and Pat has been active in ALARA for many years. They thoroughly enjoyed joining up with and encouraging the 'newbies'.

If the attendance at this first luncheon is any indications we have a vibrant group coming along.

This is the same group which has been meeting for coffee every couple of weeks as well, so they are keen to exchange ideas. Well done. Perhaps other groups will follow suit.

Our members continue their other interests, too

Recently VK5 had a series of State-wide Living Artists Exhibitions. Meg VK5YG had paintings in three different galleries around Murray Bridge and sold a couple of paintings as a consequence. She was also active in 'manning' the galleries during the month-long exhibition.

Well done Meg, and well done to all the artists within the ranks of ALARA. There are a number of talented artists among us but unless they tell us what they are doing we cannot tell everyone else.

Please let Dot VK3DB and I know all about your activities within and without amateur radio.

ar

Correction ALARA award rules

p50 *Amateur Radio*
September

My address should read:
"14 William St etc", not "4".
"4" is the town house at the
end of the street.

I hope the postman will realise
the error, but to be safe, if
you have already sent your
information to "4", could you
please resend it to "14".

The error was made during
publishing.

73
Kathy VK3XBA
Awards Custodian, ALARA

Bill Taylor VK6XA

1925-2007

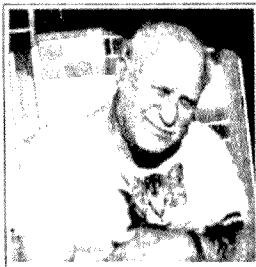
Bill passed away peacefully at Fremantle Hospital on 25th July.

His life had been a long succession of varied experiences – different jobs, different homes, in different parts of the world (and different states of Australia). One thing remained constant, and that was his enthusiasm for amateur radio. This interest began when he learned the Morse Code at the age of eleven.

At age sixteen (when he claimed to be seventeen), he joined the Services and spent time in the Royal Canadian Army; then in the United States Marines serving in the Pacific where he retrieved radios from crashed enemy aircraft and typed incoming coded messages (while at the same time reading novels!). Malaria forced him to be repatriated to America.

Following his recovery a couple of years later, he joined the United States Army and went to Japan as a member of the occupation force. During the three years he spent there he learned to speak the language like a native, and also married. He returned with his wife to America and then was sent off to France and Berlin with the Counter Intelligence Corps. He carried out very dangerous assignments which included the use of electronic search equipment and electronic surveillance equipment. Back in America once more, he left the Service in 1954 and worked for a number of companies, to do with technical things – as a television lighting engineer; writing operation and maintenance manuals for Vandenberg Air Force Base; repairing and calibrating digital voltmeters, radiometers and AC converters; writing the programme plans for research and development and manufacturing of the security subsystems for the Minuteman Weapons system; and as Applications Engineer for Hewlett Packard, designing digital data equipment.

In 1966 he tired of the California rat race and moved with his wife and two young daughters to Canberra where he began working with CSIRO. He patented an animal tracking device and designed a tropical plant growth chamber. He then moved on to selling computer systems for Control Data Corporation.



BILL & WILSON

VK6XA

**PERTH
WESTERN AUSTRALIA**

Zone 29

Radio	Confirming	QSO	of		
at	Ur sigs	on	Mc	SSB	CW

Formerly: W8YMJ, W6NVJ, JA5AN, DL4QW, F7DW, VK1WT, VK2AWT

WILLIAM TAYLOR
27 DELTON WAY
ATWELL W.A. 6164

Sadly, his wife died the following year.

He married for a second time, and the country life beckoned. After a couple of years on a mixed farm near Young, NSW, he moved the family over to Perth. There were now five children and we all got used to having an antenna of some description in the garden or on the roof wherever we moved to next. Unfortunately, this sometimes meant that a large, attractive and shady tree might lose a branch if it happened to be in the way. And of course, as most of Bill's contacts were with amateurs on the other side of the world, I had Morse code and lights on when it was really the time for sound sleep!

On the air Bill made a number of great friends, in particular those who favoured the CW mode. However, contact with them became more and more difficult due to hearing problems and arthritic hands. It was a sad day in 2003 when he realized he could no longer engage in his hobby, after fifty five years as a licensed amateur.

Bill leaves behind a loving family and friends who admired him for forging ahead despite the many disadvantages and setbacks he had to contend with all his life. His good sense of humour helped us all.

Submitted by his wife Margaret.

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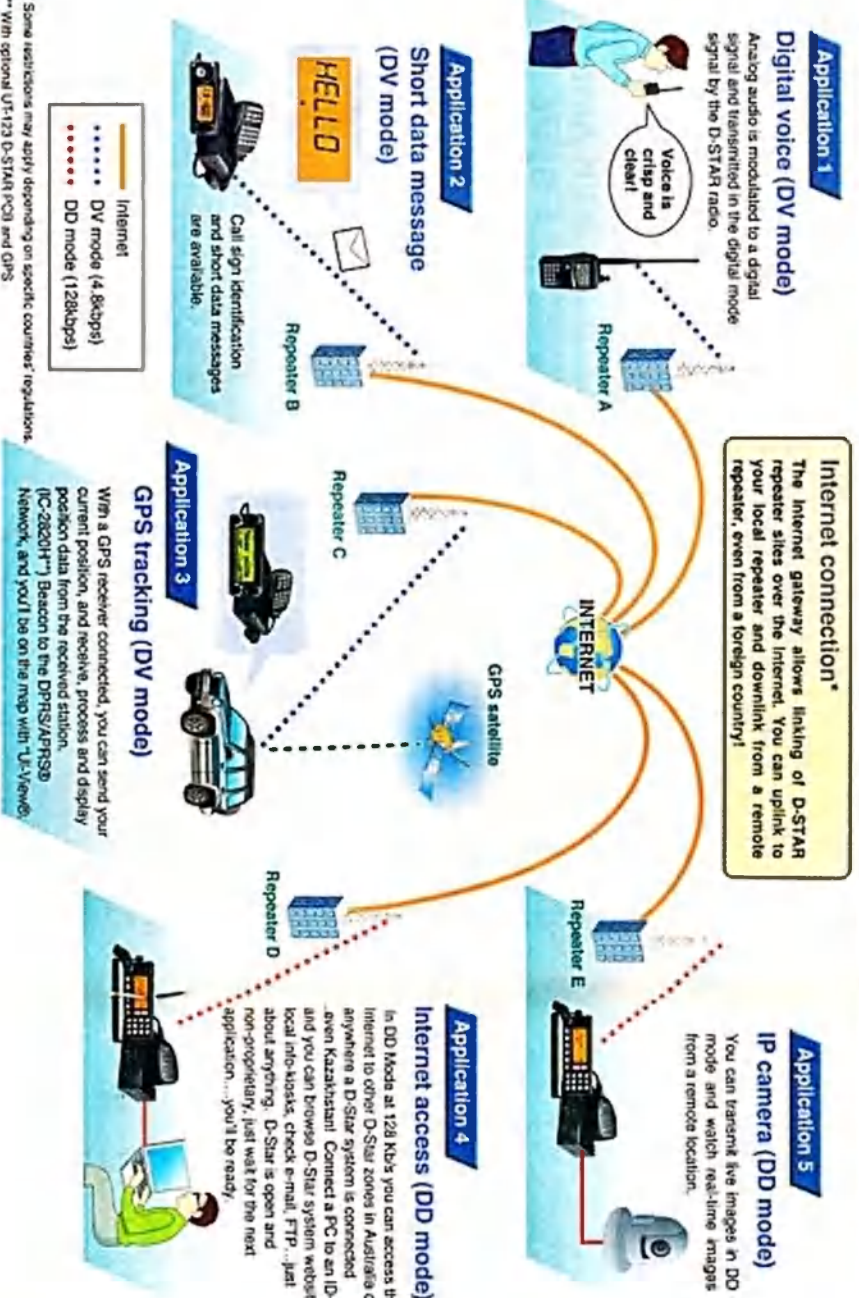
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Five Examples of Having Fun With D-STAR

Have you ever thought how you could access the Internet via amateur radio? What would it be like to be in a crystal clear communication via ham/hobby or mobile city to city, country to country? Would you like to send SMS types with Octal, track position data, find your friends or check their progress on U-VIEW? Maybe you are part of WI-FI, needing to integrate voice and data modes real time... Send voice, files and pictures real time at 128Kbps, E-Mer-D-Star!



Application 1

Digital voice (DV mode)
Analog audio is modulated to a digital signal and transmitted in the digital mode signal by the D-STAR radio.



Application 2

Short data message (DV mode)



Call sign identification and short data messages are available.

- Internet
- DV mode (4.8kbps)
- DD mode (128kbps)

Internet connection*

The Internet gateway allows linking of D-STAR repeater sites over the Internet. You can uplink to your local repeater and downlink from a remote repeater, even from a foreign country!

INTERNET

GPS satellite

Application 3

GPS tracking (DV mode)

With a GPS receiver connected, you can send your current position, and receive, process and display position data from the received station. (IC-2820H*) Beacon to the DPRS/APRS9 Network, and you'll be on the map with U-VIEW9.

Application 5

IP camera (DD mode)

You can transmit live images in DD mode and watch real-time images from a remote location.



Application 4

Internet access (DD mode)*

In DD Mode at 128 Kbps you can access the Internet to other D-Star zones in Australia or anywhere a D-Star system is connected - even Kazakhstan! Connect a PC to an ID-1 and you can browse D-Star system websites, local info-banks, check e-mail, FTP... just about anything. D-Star is open and non-proprietary, just wait for the next application... you'll be ready.



Frequently Held Myths About D-STAR GET THE FACTS!

- 1. "D-STAR only works on 1.2 GHz."**
Low-speed DV D-STAR voice and data works just fine at 144 and 430 MHz. 1.2 GHz supports the bandwidth needs of high speed DD data. Choose the technology that satisfies your needs.
- 2. "There's no difference between D-STAR and packet"**
Even D-STAR's lowest speed is competitive with the highest-performance packet systems available today. D-STAR's simultaneous digital voice and data at 4800 bps is beyond the capability of any packet technology. Hi-speed D-STAR systems are ten times faster than the highest packet speeds.
- 3. "D-STAR is no different from IRLP or Echolink®"**
VOIP systems like IRLP and Echolink® are only capable of routing voice signals. They don't support data exchange at any speed. Calls targeted to a specific user are not possible by any amateur technology except D-STAR.
- 4. "D-STAR is just a digital party line!"**
The ability of D-STAR repeaters to route data and digitized voice worldwide sets it apart from a single party line. Sophisticated D-STAR controllers and gateways implement modern telecommunications functions in an amateur package.
- 5. "D-STAR is a replacement for broadband home Internet"**
Truly a fantasy! D-STAR can connect a user to the Internet, true, but all of the amateur radio restrictions on commercial activity still remain in place. D-STAR will provide the tools for a lot of great amateur innovation, but it's not intended to replace Internet providers.
- 6. "D-STAR won't work with APRS®"**
Except for the ID-1, All D-STAR radios can do DPRS when connected to a GPS receiver. The exciting thing is, with D-STAR being an open protocol, software experimenter, Pete Lovell AESP, has written a program that interfaces DPRS to APRS9 and sends the converted APRS data to your APRS IS gateway. This means you can see all the new D-STAR stations on U-VIEW9. With the "D-STARINCE" application, any D-STAR repeater with a gateway can send DPRS (APRS data) to the APRS Internet system. The D-STAR team will be implementing this interface in Australia.
- 7. "I'll be locked into Icom equipment forever."**
While Icom is the first manufacturer to support D-STAR, any manufacturer or amateur can use the JARL standards to create equipment - transceivers, repeaters, and gateways - compatible with the D-STAR system. As the D-STAR system grows, look for other manufacturers to join the fun.

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* Some restrictions may apply depending on specific countries' regulations.
** With optional UT-123 D-STAR PCB and GPS

VK2

Tim Mills VK2ZTM
c/- vk2wi@ozemail.com.au

Clubs

The Blue Mountains ARC held their recent 'Winterfest' on a nice spring day, Saturday the 1st of September. BMARC Publicity Officer John VK2QN thanks the traders, exhibitors, club members and visitors for making it another successful day. Plan now for the 2008 Winterfest.

This month it will be for amateurs in southern VK2 to enjoy the annual Riverina Field Day weekend, hosted this year by the Wagga ARC at their club rooms. This annual event which now alternates between the Twin Cities ARC and Wagga, will be held over the weekend 27th and 28th October. On Saturday evening there will be a dinner at the club rooms and Sunday from 9 am there will be the usual flea market and a number of traders. The WARC club rooms are in Small Street. Check page 37 of last month's AR for some background. Originally this event was the South West Zone Convention, which was hosted by a different Riverina town each year. It was started in the early 1950s by (the late) Jim Edge VK2AJO.

Repeater groups should check out last month's AR on page 5 or the WIA website re changes to repeater and beacon coordination. The VK2 Regional Advisor is Brian VK2WBK.

You may have noticed that the MNCARC has a Radio Expo arranged for Sunday 20th January 2008 at Coffs Harbour.

Oxley Region is looking for candidates for Foundation or Standard training courses which they conduct at Wauchope and Port Macquarie. Postal contact at PO Box 712 Port Macquarie 2444.

The Illawarra ARS now meet at the Industry World Visitor Centre, Springhill Road, Coniston on the second Tuesday evening. Check out their new look web site www.iars.org.au

The Central Coast ARC is planning for the 2008 Field Day in February. The club invites comment on any possible changes that could be incorporated into the annual event. Information on examinations offered by the club can be obtained from Greg VK2GRJ on 02

4329 0614 or email at education@ccarc.org.au

Tamworth RC Inc meets on the first Friday evening at 7.30 pm at the Tamworth/Oxley Scout Hall, Carthage and Hall Street.

Waverley ARS has regular exams – check out exams@vk2bv.org.

WICEN (NSW) Inc held their AGM last month. The major event late this month is the Hawkesbury Canoe Classic. For contact with WICEN – call the Duty Officer 0408 397 217. Or email operations@nsw.wicen.org.au

ARNSW

Planning continues for the final Trash and Treasure event for the year. This will be in the form of a mini field day – similar to the event last May – and will be on Sunday the 25th November at VK2WI Dural. It will incorporate a club conference and the end of year party for members and visitors. Traders and exhibitors are being sought and arranged. Contact ARNSW Secretary – Brian VK2TOX for details and offers.

There may be a couple more ARNSW arranged Foundation Licence examinations this year and ARNSW is including a year's membership for each candidate. Contact the office by telephone 02 9651 1490 or 9689 2417, email vk2wi@ozemail.com.au, FAX 02 9651 1661 or postal PO Box 9432 Harris Park 2150. Website www.arnsw.org.au

By early last month the new boundary fencing had encased about half the property. The previous fence at the front of the property had been erected in the 1970s under the supervision of Dave VK2BDT who had rounded up a gang of 'amateur' farmers and put their skills to the task. Iron based products have a limited life and the new fence – using galvanized posts - should have a better life. So far the new fencing has been on the easy part of the property which was largely on flat ground. The majority of the project has been undertaken by Dural Officer Brian VK2WBK. Much of the remaining portion is in rough terrain and help would be appreciated by Brian.

Coffs Harbour Radio Expo

Hosted by the Mid North Coast Amateur Radio Group

Sunday 20th January 2008

St Johns Church Hall,

Mc Lean Street Coffs Harbour

8.30am Start

Trade Displays, Disposals, Door Prizes, Club Displays, Home Brew Displays, Satellite tracking, Tower Displays

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Gary Ryan VK2ZKT 02 66552990

VK2WI

As we come out of the sunspot minimum, the lower HF frequencies continue to be variable in the coverage of the morning session from VK2WI. The 5 MHz VK2RWI linking frequency is being used by more listeners to overcome the difficulties in the country coverage for either direct reception or repeater relaying. There were difficulties in incorporating the 5 MHz transmission into the relay of the VK1WIA segment due to identification required by the licence conditions. These are that the transmitting station must identify and pause at intervals of 10 minutes. A way has been found and it becomes the task of the duty Engineer to pick out a suitable point in the National presentation to insert the required ident. Some listeners report reception of the 60 metre signal weaker than they expected. In some cases reception improves by using a random length wire rather than a dipole cut to a frequency like 40 or 80 metres. ACMA recently amended the operating frequency for VK2RWI on 60 metres by moving it up 1.5 kHz to place the carrier on 5425 kHz.

Last month the 23 cm VK2RWI repeater failed due to a power supply problem. When investigated by station engineer Mark VK2XOF, it was found that the transmitter side was drawing excess current for a meagre 4 watts output. The system is based on a pair of transceivers so it was practical to swap

over the Tx – Rx functions, giving it a new lease of life at 15 watts. It has been in service for more than twenty years so it is entitled to a rest. There is a small and dedicated group of users revealed by the callback log. Unfortunately 23 cm operation appears limited due to little available equipment.

Mark also advises that a new 23 cm beacon is in the construction stage to replace the present system, which is the second generation unit, and it has also done sterling service. The present unit has about 2 watts in the FSK mode to an Alford Slot antenna with horizontal

polarization. Its replacement will be closer to 20 watts in the CW mode. Check out VK2RSY on 1296.420 MHz.

This month is the annual JOTA operation and VK2WI will provide a play out of the opening address early on Saturday afternoon. The exact details will be given in the weekly news. Stations that will be operating may care to let the news compiler – Erik VK2MAN - know of their schedule or requests for assistance by an email to "VK2WI NEWS" at vk2wi@ozemail.com.au

73 – Tim VK2ZTM.

Wagga Amateur Radio Club hosts Riverina Field Day

The Riverina Field Day will again be hosted by the Wagga Club over the weekend of October 27 and 28 at the club's rooms in Small St. Wagga Wagga.

The Field Day commences on the Saturday evening with a dinner at the clubrooms. On Sunday, doors open at 0900 with the usual flea markets plus a number of traders including Icom through Wodonga agent Henry Radio.

This Field Day has a long history dating back to when it was known as the South West Zone Convention. Then it was hosted by many towns in the Riverina such as Griffith,

Deniliquin, Young and even Grong Grong. This very popular country hamfest is nowadays hosted on alternate years at either the Twin Cities Radio & Electronics Club in Albury or the Wagga Amateur Radio Club.

So, keep this weekend free and plan to visit Wagga Wagga, City of Good Sports and Garden City of the South to catch up with old mates and make new ones.

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

Licence restructure 2nd anniversary

Amateur Radio Victoria will next month mark two years of involvement in Foundation Licence classes and assessments. Its sponsored assessors will have taken part in a total of 30 assessment sessions.

It began with what was called the 'Melbourne Trial' of the then new

assessment system and involved many other assessors who attended to learn.

The Amateur Radio Victoria 'class of November 2005' had nine enrolled. Our instructor Murray Lewis VK3EZM had a daunting task of preparing to teach without copies of the Foundation Licence Manual being available.

Airmailed in was a set of the RSGB 'Foundation Licence Now' book that

was distributed to those enrolled in the class with instructions about what pages to study and those to ignore that were purely related to British regulations.

Murray VK3EZM then had some confidence that the candidates were adequately prepared for the course. The late Chris Jones VK2ZDD did his utmost best and the Foundation Licence Manuals arrived the day before the class began.

News from...

Now two years later, Amateur Radio Victoria will have played its part in helping 200 individuals become radio amateurs through its training sessions and associated bridging courses leading to licence upgrades.

The next weekend training and assessment weekend is 20 & 21 October. Enrolments are now open. Do you know someone who could be interested in becoming a radio amateur and learning something new?

For inquiries, to enrol or obtain the Foundation licence manual for \$19.50, contact - Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Collaboration gets results

A recent example of the cooperative involvement of Amateur Radio Victoria is the new communications tower at Arthur's Seat on the Mornington Peninsula.

The project began seven years ago when community radio station 3RPP needed a new tower, and it faced a number of hurdles including bureaucratic red-tape that at one stage looked likely to put the project in doubt.

In giving its support, Amateur Radio Victoria (WIA Victoria & WICEN Vic) helped to strengthen the lobbying efforts of 3RPP by enhancing the tower project so it was clearly an important community infrastructure.

Also joining the campaign with moral support were the Volunteer Coastguard and St John Ambulance leaving the local government decision makers with strong justification for giving it their approval.

A lot of hard work including fund raising for the \$130,000 project was carried out by the station volunteers with support of the local community and the Bendigo Bank. The Federal Government was also among those who provided financial assistance.

At the invitation of 3RPP Station Manager Maria McColl, it was my pleasure to join the official launch of the 45.5 m tall tower on 28 August. The 3RPP gang is very appreciative of support provided through Amateur Radio Victoria's Peter Mill VK3APO.

The VK3RPU repeater 439.825MHz relocated to the new tower is receiving exceptional reports.

e-mentoring begins

Our members who have become radio amateurs since November 2005 are now being provided a new membership service which we call e-mentor.

Mentoring includes all forms of sharing of skills and knowledge and a helping hand when required.

The current F-Troop Net controllers Ross Pittard VK3FCE and Terry Murphy VK3UP have volunteered to answer questions through the service via the email address mentor@amateurradio.com.au

The F-Troop Net held at 11.05am each Sunday through the Mt Macedon 2 m repeater will continue to provide an on air opportunity of new licensees.

Membership renewals

The need for further modifications to our office computer systems has delayed the issuing of some membership renewals. We apologise for the inconvenience.

Recently about 100 renewal notices were issued. Membership of the statewide organisation costs \$30 Full or Associate and \$25 Concession, for two years. Total membership is more than 600 and new members are most welcome.

Plan ahead

Centre Victoria RadioFest at Kyneton, less than an hour from Melbourne, Ballarat and Bendigo, on Sunday, 10 February, 2008.

Major traders, second-hand market, club corner, come 'n try activities and interesting mini-lectures.

For sales tables and car-boot spaces contact Nick Angelo VK3UCK 0448 653 201 or vk3uck@hotmail.com

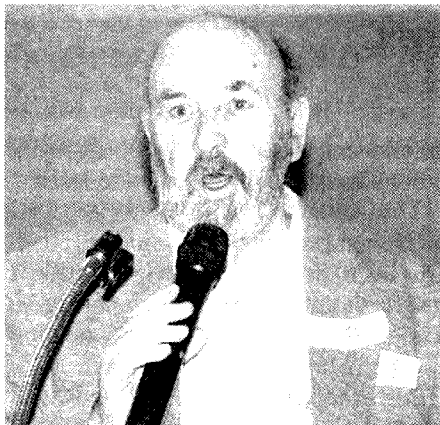
This major event is organised by Amateur Radio Victoria, Central Goldfields ARC and Midland ARC. More details at the website radiofest.amateurradio.com.au

Eastern & Mountain District Radio Club

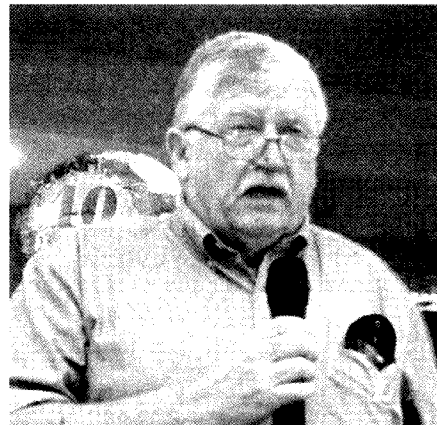
40th Birthday Celebration

On Sunday 26th August, the EMDRC held a lunch at the Knox Club in Wantima to celebrate the 40th birthday of the club. The club was formed

following the Dandenong Ranges Bush Fires of 1962 where the small group met at a private house. During 1966 the group met and formed the EMDRC, and as they say the rest is history.



Bob VK3AIC



Carl VK3EMF

The Luncheon was kept in order by Carl VK3EMF, the voice of Sunday's club net VK3BNW, and the guest speakers included Bob Duckworth VK3AIC, Tony King VK3FBD and Geoff Atkinson VK3YFA, all life members of the club. The speakers gave details of the foundation of the club and remembered many of the now silent keys that were instrumental in the foundation and success of the club. The luncheon was attended by 65 members of the club.

VK3REC repeater

The VK3REC repeater controller has recently been upgraded. Amongst the many new features of the repeater is the ability to announce upcoming club functions along with a voice announcement of the call sign and the time. The club repeater operates on 147.175 MHz.

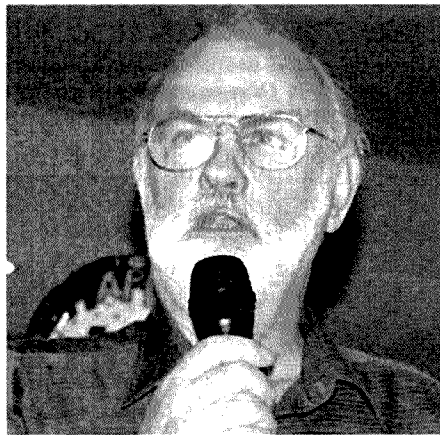
Club Net

The new Sunday morning transmission of the WIA broadcast will now be rebroadcast at 0930 Sunday mornings on the VK3REC repeater. This will be followed by the EMDRC club net at 1000. The new time slot of 0930 will enable those who have family commitments to listen to the WIA news before the day's activities get under way. Members and visitors are welcome to check in to VK3BNW at 1000.

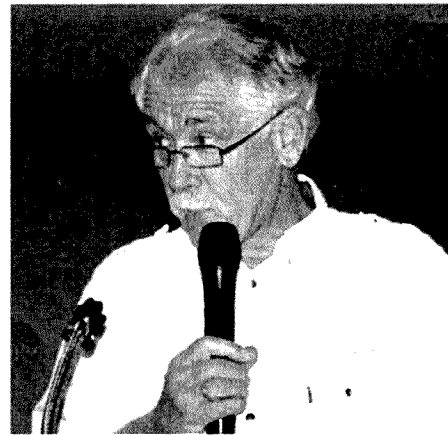
2007 Oceania DX Contest: Saturday October 6th to Sunday October 7th

The EMDRC will be operating a portable station at Kurth Kiln, located near Gembrook, and we extend an open invitation to all members who wish to participate.

We have the camping area booked in addition to the huts for the Club's use from the 4th till the 10th October: any one that wants to camp there may do so or limited accommodation is available in the huts. We will most likely set the station up in the huts, and if it is cold or wet we can have a fire inside the hut. The station will be located in the "caretaker's cottage" and there are also a number of huts with comfortable accommodation



Tony VK3FBD



Geoff VK3YFA

available on site at no charge. There are also excellent camping facilities for those who would like to bring their own camping gear.

The Oceania DX contest has been around for many years in early October and was known previously as the VK/ZL Contest. Activity has increased over the last three years due to a huge promotional effort by a joint Australian and New Zealand Committee. The 2007 contest is on the following dates:

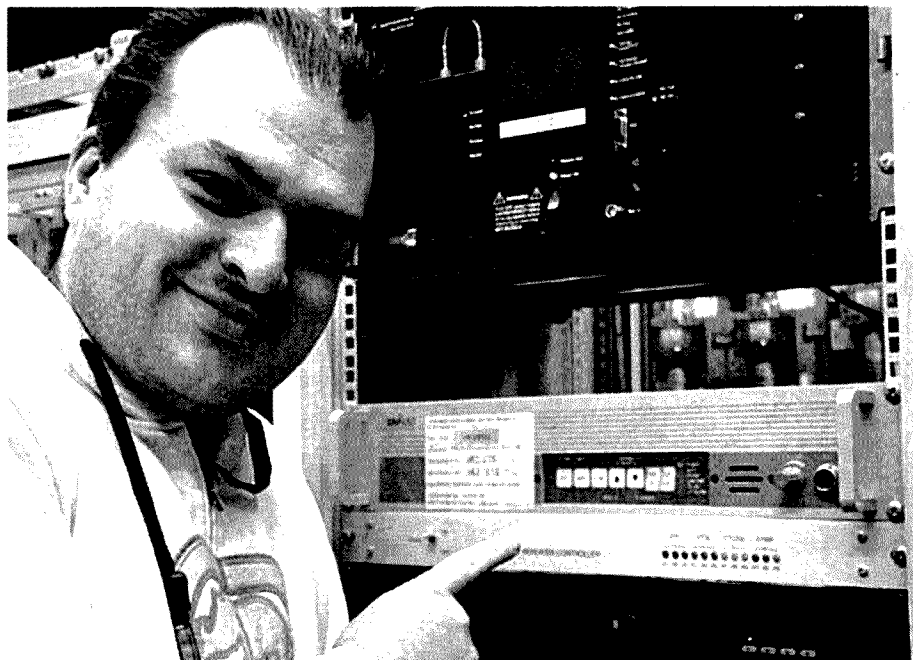
PHONE: 0800 UTC Saturday 6 October to 0800 UTC Sunday 7 October 2007

We would like to have some members who are able to help setting up some antennas a day or two before, it would be ideal if we can operate on all the bands, we hope that as many club members could come along and help with this Activity.

If you would like to attend the event could you please contact vk3ark@optusnet.com.au

The Parks web page for Kurth Kiln is: http://svc015.wic028p.server-web.com/1park_display.cfm?park=238

The friends group is: <http://home.vicnet.net.au/~fofkk/>



Bryan at the new controller



J R "Rossco" Anderson, VK4AQ

As you read this column, the Townsville Amateur Radio Club's biennial Amateur Radio Conference will have been and gone, quite successfully I am sure. When Gavin VK4ZZ and his willing band of helpers from TARC are involved in an activity, it always goes well. Look for a full report on proceedings in next month's column.

One of the highlights for last month was, of course, the International Lighthouse and Lightship Weekend which, by all accounts, was another success story. I most certainly had a wonderful time of A/R and camaraderie



The Classy Grassy Hill Group. The operators dine out at the Cooktown RSL Club: Back (L-R) Greg VK4FGBS, Jeff VK4BOF, Mike VK4MIK, Rossco VK4AQ, Dennis VK4JDJ and Wayne VK4ARW. Front (L-R) Wilf VK4ZNZ, Billy VK4WL, Stan VK4MFA, Val VK4FAIR, Alan VK4HBN, Gary VK4WT



Jeff VK4BOF and Alan VK4HBN work hard at getting QSOs



Ross VK4AQ getting Greg VK4FGBS into the swing of ILLW.



Much mirth and frivolity interspersed the serious activity at Cooktown 2007.



The Happy Family outside the Shack at Cooktown ILLW 2007.

at Grassy Hill in Cooktown, upon which I report elsewhere in our magazine.

Not a lot of submissions from around VK4, unfortunately, but the input is ever so slowly starting to increase. I urge all clubs to get me a little news of their goings on by the sixth of each month, please.

SCARC-WICEN

At 0815 on Friday 24 August 2007, the North Coast WICEN/SES Specialist Communications Unit was activated by a request from Emergency Management Queensland. The Suncoast region received unprecedented amounts of rain causing extensive flooding in the area.

We activated the SCARC-WICEN caravan in its ideal position at Dulong. Additional operators were sent to EMQ HQ at Caloundra, Maroochydore and Tewantin SES Units. We were finally stood down at 1830 hrs, but requested to stay on alert.

About seventeen SCARC/WICEN personnel responded with Hervey Bay and Maryborough operators also brought to the ready.

As a timely reminder, the VK4 WICEN Secretariat consists of representatives from Far North Region, North Region, Central Region, South East Region, South West Region, Moreton Region and Sunshine Coast Region.

The Secretariat encourages clubs, who have not done so already, to appoint a WICEN coordinator to their executive ASAP. The Secretariat's mission is to represent club appointed WICEN coordinators at the State level, and ultimately to the WIA at the Federal level. It is the Secretariat's intention to foster information sharing and encourage the standardisation of procedures throughout Australia.

The WICEN Secretariat is affiliated with the WIA. If any clubs require assistance or advice on how to become involved with WICEN, please contact the Secretariat via email: wicenqld@wia.org.au

President's Luncheon

WIA secretary Ken Fuller has advised that the venue for the upcoming President's Luncheon to be held on

Saturday 13th October, will be the Blue Room at the Geebung-Zillmerc RSL Club, which is conveniently located across the road from the Geebung railway station on the Caboolture line. Bus service 235 from the city also stops outside the club.

A long walk

Lyn Battle VK4SWE reports that Jeff Johnson VK4XJJ, who recently completed a four month walk from Spencer Gulf in South Australia to the Gulf of Carpentaria, spent a very pleasant couple of days on Swcers Island with her and OM Tex after his arduous journey. The local charter company Aero Tropics donated seats on the mail plane for Jeff and his brother Bill VK2FWGJ, so they could come across for a night and make some radio calls back from this QTH of OC-227.

Surprisingly, Jeff wanted to walk around the island to see all the sights! One would have thought he had had enough of walking by this stage. They also took a metal detector with them but I have not heard any stories of locating any buried treasure from days of yore, hi.

Lyn was able to present Jeff with a cheque arising from donations sent to her from local amateurs and staff at the Swcers Island Resort who wished to support Jeff's cause, the Deaf and Blind Association.

There are Rigs and there are RIGS!

It pleases me that Cheryl VK4FRYL (Feral Cheryl?) has finally given in and allowed me to do a little item on her and her unusual rig. We, as amateurs, usually associate rigs with the FT or IC or TS variety but hers is a little different, as can be seen in the accompanying photograph. Cheryl works at Phosphate Hill as a truck driver (as she rather quaintly refers to it). She is in a fly in/fly out roster from



Cheryl Goldfinch VK4FRYL with her rig.

Townsville on a 13 day on and 8 days off roster. Her shifts are of 12 hours duration. The dump trucks have a gross weight of 138,344 kg. Cheryl's OM is John VK4FNQ, whom I'm sure most VHF aficionados would have worked at one stage or another. In coming months, I hope to be able to do snippets on Dave VK4ZDP and Bill VK4FW in their rigs. I am also hoping for something from Lyn VK4SWE in her new Maritime Mobile rig, where the fish just want to jump straight into the boat!

The Brisbane Amateur Radio Club (BARC) advised that they have booked the Community Hall, upstairs and downstairs, at the Mt Gravatt Show Grounds for BARCFEST 2008. This popular event is scheduled for the Saturday prior to Mother's Day.

In their club newsletter, QSP, a synopsis of a recent talk given by the Heart Foundation was presented. I thought that this was a great club initiative, being the recipient of six coronary and one carotid bypass myself. None of us are getting any younger and it is beholden on all clubs to arrange discussions of this nature in my humble opinion.

ALARA 32nd Birthday Party

Pam VK4PTO organised a lovely party for local lady amateurs at Nerang recently. Ken VK4KD, reporting in the South Coast Amateur Radio Groups

excellent monthly newsletter, reports that a grand time was enjoyed by all in attendance, much of it arising from Pam's OM who conducted some really hilarious sessions with his camera.

Ken also reports that the Mid North Coast AR Group is holding a Radio Communications Expo at St John's Church Hall, Coffs Harbour, on Sunday, 20th January 2008, so those of you in the area, jot this down in your diaries.

The Art of "Spin"

How could I not include this gem, submitted by David VK4KIX and reproduced in TARC's monthly newsletter, Backscatter.

Judy, a professional genealogical researcher, discovered that Hillary Clinton's great-great-uncle, Remus Rodham, a fellow lacking in character, was hanged for horse stealing and train robbery in Montana in 1889.

The only known photograph of Remus shows him standing on the gallows. On the back of the picture is this inscription: "Remus Rodham; horse thief, sent to Montana Territorial Prison 1885, escaped 1887, robbed the Montana Flyer six times. Caught by Pinkerton detectives, convicted and hanged in 1889."

Judy e-mailed Hillary Clinton for comments. Hillary's staff of professional image adjusters cropped Remus's picture, scanned it, enlarged the image, and edited it with image processing software so all that is seen is a head shot.

The accompanying biographical sketch is as follows: "Remus Rodham was a famous cowboy in the Montana Territory. His business empire grew to include acquisition of valuable equestrian assets and intimate dealings with the Montana railroad. Beginning in 1883, he devoted several years of his life to service at a government facility, finally taking leave to resume his dealing with the railroad. In 1887, he was a key player in a vital investigation run by the renowned Pinkerton Detective Agency.

In 1889, Remus passed away during an important civic function held in his honour when the platform upon which he was standing collapsed.

And that's how it's done, folks!

Tablelands Radio Group Cooktown ILLW 2007

J.R. (Ross) Anderson, VK4AQ

Given that he was threatened with being attached to the halyards and strung up the antenna tower by certain parts of his anatomy for forgetting to bring the tarpaulin for our "shack" last year, I am happy to report that Dennis VK4JDJ was to ensure no such 'endorsements' were entered into his logbook this year.

Thus began the planning for the International Lighthouse and Lightship Weekend (ILLW) at Cooktown this year. Almost from the time the event concluded last year, planning had begun for 2007; such was the growing enjoyment from these weekends. As far back as January plans were on the drawing board to improve the Tableland Radio Group's (TRG) performance at ILLW 2007. These plans ranged from better rigs and operating environment, enhanced antenna performance and a heightened social activity. To simply say that we met these goals would be an understatement.

As has become the custom over the last three years amateurs from Innisfail, Cairns and the Atherton Tableland, together with xyls and family, formed up just to the north of Mareeba for the journey to Cooktown. The convoy comprised ten vehicles and the widest assortment of 'cargo' attached to roof-racks, trailers and vans was to bring some rather curious expressions from passers by. Convoy Master Wayne VK4ARW established us all on Ch 50 and set off at a cracking pace in his Nissan X-Trail/Caravan combination just after 9 a.m. First stop Rifle Creek for a cuppa and fresh scones with strawberry jam and cream provided by Bev, XYL of Rosco VK4AQ. Lunch and a fuel stop at Lakeland Downs and on to Cooktown by mid afternoon. The road is sealed all the way to Cooktown these days and our convoy, spread over about a kilometre, sat on 100 kph all the way. There are even two quite extensive stretches where the speed limit is set at 110 kph. I'm sure many of our more elderly readers' eyes will widen when they read those last two sentences, especially when they think back to how it used to be hi.

Safely booked into Van Park and motel, a bit of a nano nap and it was time for the TRG Dinner at the Cooktown RSL where 27 of us sat at one long table. To say that our operators, all decked out in their black tuxedo t-shirts, white shorts and black and white thongs, drew a few bemused stares from the locals would be the second understatement of the article. We did, however, have to live up to our (self appointed) title of the "Classy Grassy Hill Group." With a good meal — mainly freshly caught and pan fried barramundi — under our belts it was a couple of drinks, plenty of merriment, some rag chewing and off to bed before 11 p.m. This author has always believed in eating beef when in beef country and fish in coastal reef territory. Cooktown to me has always been somewhat of a dilemma, however.

Group Leader Mike, VK4MIK, having advised everyone the night before that he wanted them setting up the operating site on Grassy Hill, the location of the Cooktown Light, by 8 a.m. sharp had everyone hopping through hoops by 7.30 a.m.

The first task was to get the RDXG multi-stage extruded tower, designed and built by Gary VK4WT, into position and guyed, and believe me, there were some guy ropes attached. At one point, Gary was heard to yell "OK, you blokes, grab a guy each." Well, dear readers, you don't need me to tell you what happened next, much to the consternation of Gary!

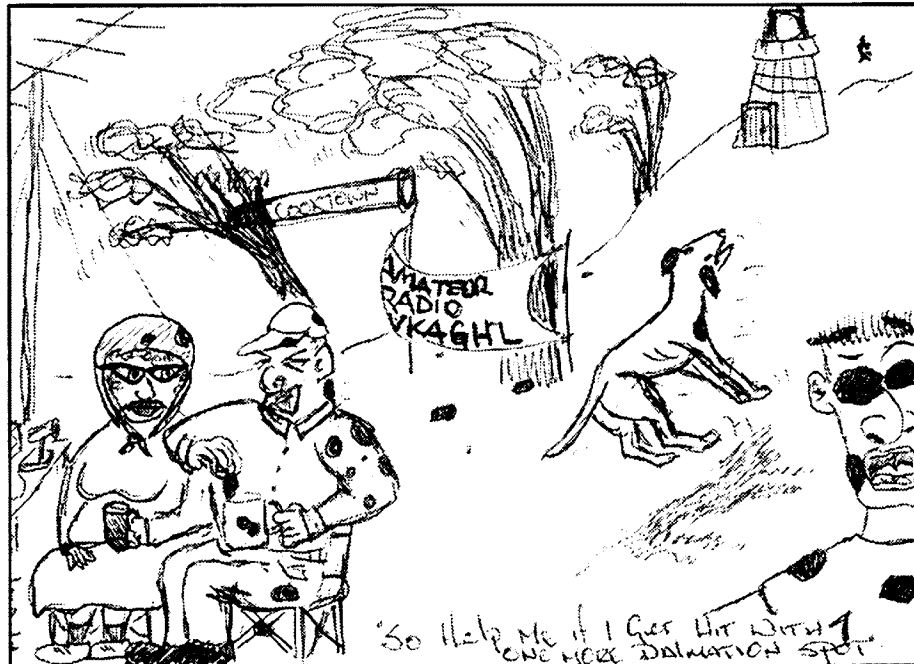
Much mirth and frivolity later we managed to get Wayne's, VK4ARW, monster of a 20 m 3 el Yagi monobander and rotator affixed to Gary's tower. Wayward trees and Murphy caused some anxious moments but eventually the antenna was in situ and testing indicated it was ready for some serious

DXing. Because of the turning circle of this big Yagi we had to relocate the mast elevating the 40 m dipole a bit further away from the operating station. This posed no problems as far as the feeder went but the feedline from the anemometer to its transponder was too short and we were not able to accurately read wind speed for the entire weekend. Suffice it to say that the anemometer had a good work out on its own and looked quite impressive to passers by and tourists. We were then able to pretty much send Mr Murphy packing.

Gazebo and wind breaks in position, operating stations functioning well on battery power and all systems showing green it was almost time to start, at 10 a.m. promptly. Importantly the cooking station was well protected from the incessant high wind and coffee was soon on the go.

At this juncture, Dennis VK4JDJ, Mike VK4MIK and Rossco VK4AQ departed for Cooktown's Anzac Park to join in the Vietnam Veterans' Day service where they laid a wreath on behalf of the TRG and joined in a simple but touching service organised by the Cooktown RSL and Vietnam Veterans' Group. It was the first time Dennis had attended a remembrance parade or worn his medals since returning home from Vietnam and he found the experience of attending the gathering with a couple of close mates quite settling.

During the afternoon and evening a steady stream of contacts were made with Australian Lighthouses in the main but we did manage a couple of overseas lights during the course of the 24 hour period. At one point during the afternoon we created a smallish dogpile with stations trying to get our unique VK4GHL (Grassy Hill Lighthouse) callsign. A highlight in the list of contacts was ex-Lighthouse Tender Cape Don, by CW and SSB and now under restoration by the Maritime Museum in Sydney. During the early hours of Sunday morning a path into Europe opened and we managed QSO's with many countries much to the delight of local event organiser Mike. Around picannini daylight Rossco VK4AQ nabbed a number of CW contacts on the Gnarly



Net on 80m and followed up on them during the SSB session later on. Between about 2 a.m. and 5 a.m. it became very quiet, radio wise, despite the best efforts of Mike and Rossco. However it was definitely not quiet as regards wind and Rossco was heard to say on more than one occasion that it was windy enough to blow the spots off a Dalmation dog.

At 8.30 a.m. on Sunday morning yawning operators together with their

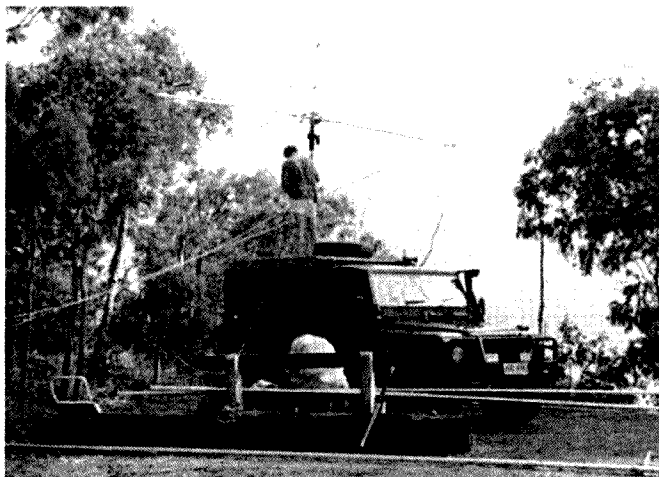
XYLs/families began arriving on the hill to the smell of French toast, sausages, eggs, bacon, tomato au-gratin, pan fried mushrooms, fried onions and baked beans being prepared by Bev, Dennis and Rossco. This seemed to go down fairly well. Probably too well as we missed about 30 QSOs because all the operators were too busy eating!

However, readers, it was not all HAM Radio for the entire weekend. Local





Building the Station.



Growing an Antenna Farm

operator, Pat VK4MUY, had organised a day out for the ladies on Saturday which saw them enjoying a trip to the local markets, Old Bank Musuem, Craft Shops, morning tea provided by locals Pat VK4MUY and Dave VK4FUY, Botanical Gardens and the main town museum. The ladies enjoyed a lovely lunch at the Powerhouse, a part of the Botanical Gardens. Many thanks to the Bendigo Bank for providing a range of gifts for the ladies and also to Jenny, XYL of Gary, for the presents of hand-made jewellery she made for all the XYLs attending.

Sue, Dana and Sandy, all Tablelanders who don't get a lot of opportunities to visit the coast, made the most of the dark hours by fishing from the main wharf. They caught themselves a nice feed of fresh fish and even topped it off with a couple of rather nice mud crabs which they caught in their hired dilly pots. If only one of the ladies had not come running back excitedly shouting "I've got crabs!"

One thing we must ensure before next year, is the refresher course in signage identification in National Parks for Keron, xyl of Wayne — especially signage saying Ladies and Gents! And I always thought that Fire Engine Red was the reddest of red. I now know there is a much brighter shade hi.

A highlight of the weekend was a visit by Bill Carter and his sister Ruth who visited us on Saturday afternoon, coming up the coastal road from Cairns. Bill has a long relationship with Australian

Lighthouses and over the years has lent his support and encouraged radio clubs and groups to participate in the annual ILLW event. His grandfather was the lighthouse keeper at Cooktown from 1911 – 1918 and when he died whilst on the job there, his son took over until another keeper could be found. In an address on the Sunday morning Bill congratulated the group on its efforts over the last three years and mentioned the historical significance lighthouses played in our country's development and emphasised the need for preserving these beautiful old structures for future generations for that very reason. He went

on to say that the Cooktown gathering was one of the largest he had seen, or even heard of, taking part in an ILLW.

Another innovation for this year's ILLW at Cooktown was the "goodies bag" put together by Roscco and given out to the attending operators. Much of the content was prepared by Roscco himself but he does acknowledge the kind generosity of sponsorship from the Bureau of Meteorology, Kenwood Australia, ICOM Australia and the very kind donations from Gary VK4WT and JeffVK4BOF of RDXG Communications who have recently opened an Atherton Tablelands agency for Vertex Standard

On the Road in Convoy

By "Crunch" (xyl of Wilf VK4ZBZ)

*What a mob of yokels
And bunch of Daisy-Mays,
Driving up to Cooktown
To stay a couple of days.*

*Roaring on through Lakeland Downs
Kicking up the dust,
Radios all squawking
Communications are a must.*

*'Cos unless we stick together
We'll end up with faces red,
That's why we don't rely on
Directions from 'ZNZ.'*

*On the road in convoy
Strung out along the track,
Five ve-hicles up front of us
And five strung out the back.*

*'ZNZ' stuck in the middle
A safe place for him to stay,
Wouldn't want him out in front
Leading us astray.*

*Calling CQ CQ CQ
On frequency and bands,
We'll activate the lighthouse site
And wake up all you HAMS.*

*So tune in your radios
And quickly scan about,
If you're listening out for us
We'll give you all a shout.:*

Australia. Thanks also to Dale VK4DMC for his kind contribution.

VK4GHL statistics for the 24 hour period are as follows:

Australian Lighthouses worked: 47
Overseas Lighthouses Worked: 3
Total contacts made: 170

Nationalities worked: New Zealand, Russia, Poland, Siberia, Japan, China, Korea, Maldives, Italy, Germany, United Kingdom, Sweden, Czech Republic, Ukraine, Lithuania, Norway, Netherlands and Spain.

Grassy Hill Lighthouse was the most northern lighthouse operated in Australia and it seems to us to have had the highest number of operators in attendance and operated continuously from before 10 am Saturday 18 August until 1015 am Sunday.

Amateurs attending Cooktown ILLW

2007 were Mike Patterson VK4MIK, Dennis Bauer VK4JDJ, Bill Lochridge VK4WL, Gary Gregory VK4WT, Wayne Richer VK4ARW, Wilf Booth VK4ZNZ, Greg Scott VK4FGBS, Alan VK4HBN and Val VK4FAIR Whiting, John Gielis VK4JKL, Jeff Cochrane VK4BOF, Cooktown locals Dave VK4FUJ and Pat VK4MUY Edmunds, Stan Aldridge VK4MFA and Ross Anderson VK4AQ. Particular thanks must go to Mike, Wayne and Dennis for their behind-the-scenes efforts to ensure the whole operation only gets better every year.

In the wash-up of this year's event it was generally agreed that everyone had a ripper time, the social activity was great, humour, much of it spontaneous was never far below the surface and operating conditions, high winds excluded, were ideal. The constant good will and wit of Alan, Wilf and Stan typified the weekend.

Pity about Billy's snoring every time he managed to score someone's vacant "gobble up" camp chair though!

Unfortunately, the whole event has probably grown a little too large — logistically and environmentally — and, regrettably, there was insufficient space to accommodate the numbers we had this year. We will need to rethink our activities somewhat to reduce the traffic on Grassy Hill as one of the restrictions placed on us by the Cook Shire Council was that we did not impede traffic flow to the popular tourist lookout from which Captain Cook once gazed seaward so long ago.

Twilight barbecues around the pool and no 'big breakfast' will be the first amendment to the 2008 itinerary. Downsizing seems to be the catchword of today, doesn't it?

VK5

Christine Taylor VK5CTY

Adelaide Hills Amateur Radio Society

AHARS continues to grow. Currently we have 141 members. Each meeting we have one or two new members join. This is great, and it means that we can attract good speakers to our meetings.

Last month we had a panel of three speakers talking about the GNR radios and how they have worked for them. We had someone from the Metropolitan Fire Service, someone from the Country Fire Service and a representative of the SES, Emergency service.

The speakers addressed both the technical aspects of GRN and the practical, in the field use of the radios.

After the many and varied 'stories' we had heard it was a pleasure to hear how they actually functioned on site.

There were many questions at the end of the talks and the club was glad to make clear to the speakers of the role WICEN can play in assisting the different emergency groups to communicate with

each other even when they do not share a common frequency.

During the meeting, the last of the two-tone oscillator kits were distributed and a number of possible future projects were discussed.

If you are in Adelaide on the third Thursday of the month, please join us at one of our meetings. Contact John VK5EMI or David VK5AMK for more details. Both are QTHR the callbook and phone book.

Fleurieu Peninsula Group

Another lovely day was enjoyed by the 30 people who attended this luncheon and the coffee and cakes that followed.

The date of the luncheon did clash with the ALARA Contest but this did not deter most of the YLs from staying on and enjoying the whole day. One couple did go home immediately after the luncheon so they could get busy on the 20 and 40 metre bands looking for the DX stations. We hope they made lots of contacts and enjoyed the really excellent propagation.



Bevan VK5TV, Noel VK5VT, Graham VK5KGP and Craig VK5ZAW

As always the talk was a mixture of amateur radio and general topics, with everyone having something to say. We meet again in three months time.

VK6

Northern Corridor Radio Group Inc Hamfest 2007

This year was the 21st Northern Corridor Radio Group Hamfest, and did we come of age! With a lot of inspired work by Hamfest Co-ordinator Phil VK6ZPP a truly special show was staged. With a good turn out of eastern states traders coming especially for the event, we decided to hold a pre-Hamfest get-together on Saturday night. It was well attended, with Bushcomm, Andrews Communications and TET Emtron all enjoying a social evening.

VK4KVK was delayed by the late arrival of his plane from VK4, but Joe VK6BFI kept some of the tasty dishes for him. There was to be a BBQ of scotch fillets, but the spread which was to be just the first course, turned out to be so sumptuous that the BBQ was abandoned. We could not have wined and dined any better at a four-star restaurant. It really does show what can be done with club premises which have all the right facilities. To be able to entertain the traders in the manner which was so

convivial with the wine and food being first class, should have convinced the visitors that our club is "progressive"?

On a bright and sunny Sunday morning, Hamfest Heaven opened with the venue that was filled with all the needs of any amateur, ready to admit almost 400 people. The Event proved to be as popular as ever, and approximately 20 NCRG members had, by opening time, arranged the 65 tables for all the traders, exhibitors, the various groups representing their activity, Buy and Sell Tables, and to feed the Inner Man/Woman, the Kitchen.

Eastern states traders, along with City Online, the Yaesu agent for WA, Bushcomm, Outbacker and other locals, set up their displays of brochures and a plethora of amateur related equipment. If it was not on a table for sale there and then, the order book was ready to take your order. It should be remembered the traders from the east had to travel by air, and it was not practical to bring

a sample of all the equipment that they stock in their shop. However they did make a lot of the Hamfest visitors take a great interest in their wares. The local traders too were able to stop the visitors and they too seem to have enjoyed a lot of interest in their displays.

Of show stopping action, the Peter Terren Tesla High Voltage Display certainly grabbed the attention of people. Set up inside the Recreation Centre, the big wire cage was illuminated by the discharging of the Tesla Coil emitting its electric arcs to the wire cage. To say that it was spectacular is a slight understatement. For an insight into what this doctor of medicine can build, go to www.tesladowndunder.com You will be amazed!

The Army's 109 Signals Squadron set up their static display inside the venue, and their vehicles outside with them showing the Army's mobile radio capability, \$2,000,000 in one truck! One of the Army recruits drew all the raffle

Neil VK6NE & Keith VK6XH



Peter Terren plays high voltage



Colin VK6ACT with his new Yaesu FT10-M.

tickets for the many prizes that were provided by the club and the traders.

All the prizes were donated and were: Yaesu FTM-10R dual band mobile, Kenwood Hi Fi system, Andrews Comms 2 m mobile, Terlin Outbacker antenna, Bushcomm \$200 antenna voucher, TET Emtron 2/70 mobile whip, KVK Antennas book on CD and several Kenwood Bar runners. Maybe we can tempt Icom to donate a prize next year too! A full list of prizes and pictures are on the club website www.ncrg.org.au in the Hamfest section.

As for the Lucky Door Prize.....The entry door ticket seller saw VK6VR leaving just before the door prize was to be drawn. He called out to Peter and said to wait as the door prize was soon to be drawn. So he turned around and went back into the venue, where the draw was immediately drawn. Next thing we see is Peter walking out again with the prize (a Quansheng 2m handheld and gift pack) under his arm. How is that for a good luck story?

The Old Timers took the opportunity to have a mass picture session, as did the YLs and XYLs present, look for their pictures later.

The kitchen staff served the multitude with efficiency and thanks go to those who worked hard for the club. XYLs of Barry VK6HX and Alek VK6APK along with club members and Joe VK6BFI on his cappuccino machine really did the Club proud.

There seemed to be a big percentage of non-amateur visitors attending our Hamfest this year. It would be interesting to know how they came to know of the event?

Of note for next year, is an undertaking by Lee Andrews, KVK Antennas and Tet Emtron to come over again.

Hopefully we will see you there as well.

73 de Keith VK6XH
Secretary NCRG and Chairman of the new VK6 Advisory Committee.

Plan ahead

BARG Hamfest

Ballarat

Sunday 4 November

vk3axh@barg.org.au

.....

Ross Hull

**Memorial VHF Contest
(VHF/UHF)**

Boxing Day (Dec 26)

2007 to Jan 2008

TET-EMTRON

Antenna Manufacturers

New Tet-Emtron Vertical Range

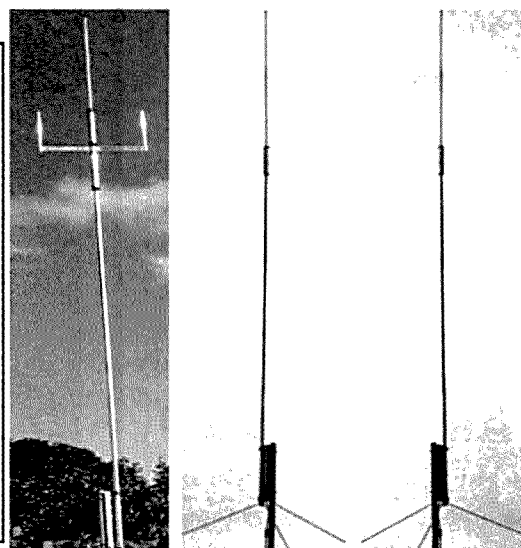
TEV-4 TEV-3 TEV-3 Warc

New Tet-Emtron Vertical Range

- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
- Light.
- Free standing—no intrusive guy wires.
- 1 kW PEP power rating.
- Can be ground mounted or elevated.

The new TET-Emtron Vertical range is designed with ease of use in mind. Tuning is done by the radials when the antenna is in its final position (where possible). The radials can either lay on the ground, be buried or hang from the elevated antenna. The antenna comes with a set of radials that has a resonant radial for each band. Further sets can be ordered from TET-Emtron if desired.

See the web site for more info and a complete dealer list.

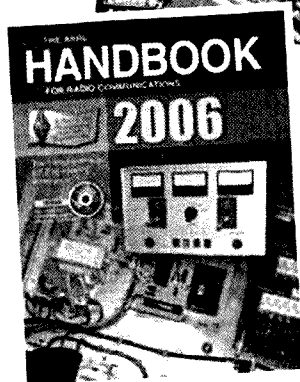
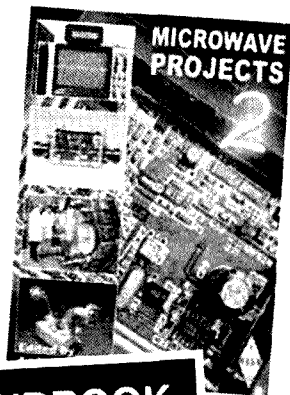


40 Blackburn Street
STRATFORD
Victoria 3862 AUSTRALIA
www.tet-emtron.com
Email: rawmar@holkey.net.au

Ph: 61 3 5145 6179
Fax: 61 3 5145 6821
ABN: 87404541761

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

Amateur Radio Bookshop



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News from...

VK7

Justin Giles-Clark, **VK7TW**
Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

It was great to hear so many VK7s during the Remembrance Day contest. The 50th JOTA is later this month on the weekend of 19, 20 & 21. There are many Scout and Guide groups around VK7 who are looking for assistance with JOTA/JOTI. If you are prepared to volunteer some time in the North West area contact Tony VK7AX on 6425 2923 or email: nwtarig@spamex.com. In the North contact Tony VK7YBG on VK7RAA or email: dodgem37@netspace.net.au. In the South contact Rod VK7TRF on 0417 314 425 or email: roja3kel@yahoo.com.au. This is a great opportunity to get young people interested in amateur radio through the Foundation Licence.

Regular VK7 broadcasts have been going for well over 50 years and thanks to John VK7JK we have callback statistics for many of those years. We are able to report a welcome trend throughout VK7 with greater numbers of callbacks each Sunday. The chart on page 43 shows that for the last 6 years we have seen a steady increase in call backs from an average of about 60 per week to an average of 115 four years later. This is mainly due

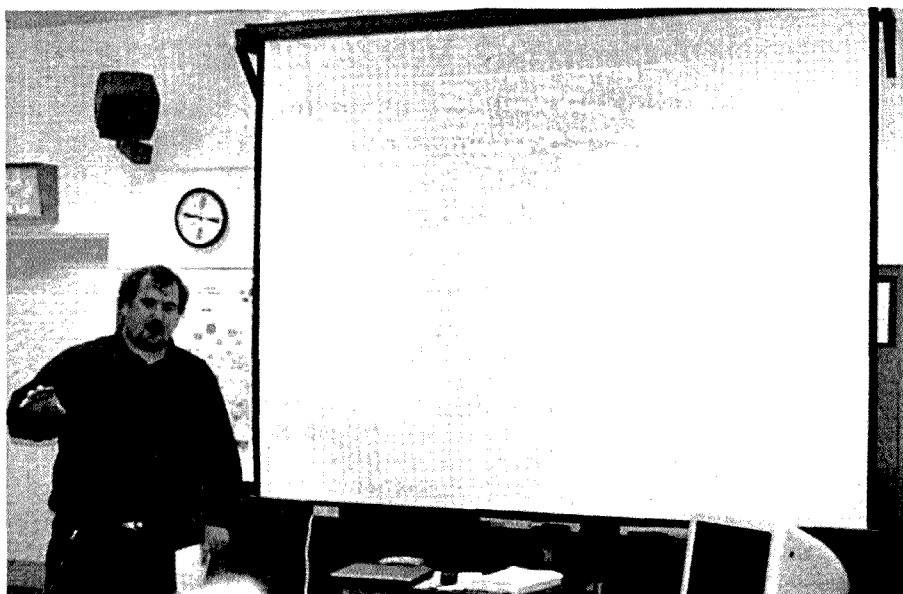
to increasing numbers on MF, HF and repeaters. Greater detail can be found at: <http://reast.asn.au/news.php>

North West Tasmanian Amateur Radio Interest Group

A battery bank replacement and additional solar panels at the VK7RNW Lonah Site has seen the repeater return to its usual healthy state. This was thanks to the efforts of Ivan VK7XL, Jim VK7JH and Tony VK7AX. A boost charge was also given to the remaining battery banks thanks to Jim's portable generator. The regular broadcasts have returned on Monday nights alternating between the VK7RNW and VK7RMD (Mt. Duncan) 2 m repeaters.

Northern Tasmania Amateur Radio Club

We welcome two new Foundation Licensees in Ann Eagling (VK7YBG's XYL) and Max Gibson. Bill VK7MX has a few Victory frequency counters and



Ben, VK7BEN – Hacking HF – Linux for Hams Presentation (see story in REAST segment)

some new Quangsheng drop-in chargers for sale and he is also organising some protective cases for the Quangsheng. If interested contact Bill on 6398 6100 or 0409 608 183 or you can contact him on VK7RAA. The October meeting is a BBQ night at the Mt Barrow interpretation centre.

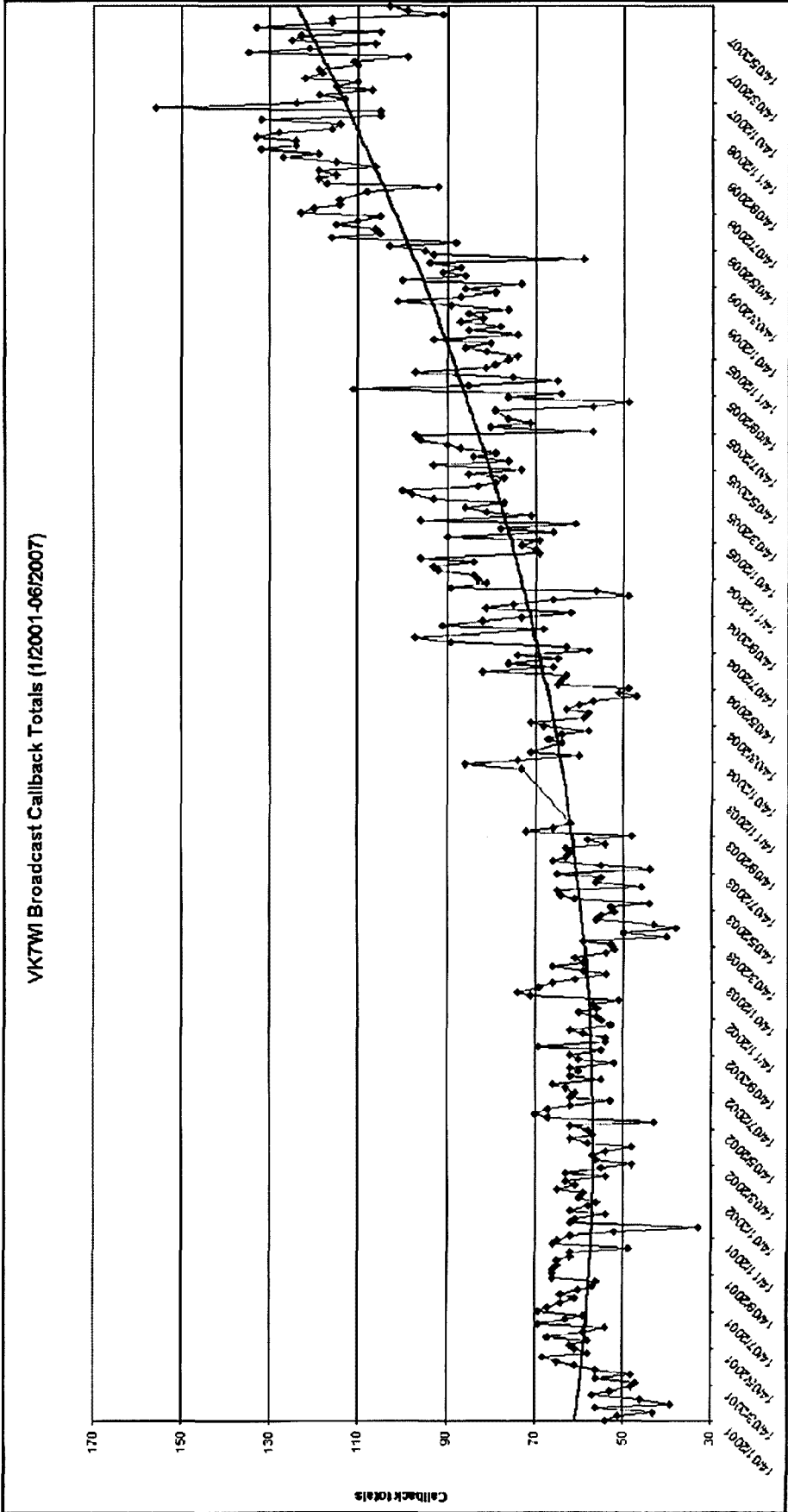
Radio and Electronics Association of Southern Tasmania

The WICEN South crew of VK7s Chris FCDW, Gary JGD, John ZZ, Roger ARN, Scott HSE and Stu NXX supported the Southern Tasmanian Endurance Riders in the Wielangta forest south of Hobart with safety checkpoints. Despite the wet and muddy conditions the team provided a great service. Club station VK7OTC was active during the RD thanks to VK7s BEN, ZMS, ZBX and ZCR who operated a multi-multi station for the entire 24 hours from the Central Highlands of Tasmania. It is great to see our ATV anchor man Ken, VK7DY and XYL Wendy VK7FWJS back from their more than 8000 km trek around Australia.

Congratulations to Ron VK7FEAA and Rod VK7FROD who now have their call signs and are busy on air. The first (of many!) REAST Standard Licence Training Courses has started with 12 participants. The course is being presented by a range of knowledgeable club members and provides a great way to upgrade. The course runs for about 12 weeks.

The September presentation was given by Ben VK7BEN and was a look at Linux in the shack. Ben took us through some history, installation, versions and finished up with a demo of Harv's Ham Shack CD-Rom. This was an excellent presentation and hopefully gave members a look at Linux and what it is all about. Thanks Ben (see photo on page 41).

ar



Contests

Phil Smeaton VK4BAA

Contest Calendar October – December 2007

Oct	6	PSK31 Rumble	Digital
	6/7	Oceania DX Contest	SSB
	9	10-10 International Day Sprint	All
	13/14	Oceania DX Contest	CW
	14	Asia-Pacific Sprint	CW
	20/21	JARTS WW RTTY	RTTY
	27/28	CQ WW DX Contest	SSB
Nov	10/11	Japan International DX Contest	SSB
	10/11	Worked All Europe DX Contest	RTTY
	17/18	Spring VHF/UHF Field Day	All
	24/25	CQWW DX Contest	CW
Dec	26 to Jan 2008	Ross Hull Memorial VHF Contest (VHF/UHF)	All

Welcome to this month's Contest Column!

Oceania DX Contest – 2006 SSB Results

Callsign	Category	QSOs	Points	Mults	Score	Callsign	Category	QSOs	Points	Mults	Score
VK5-398738	SWL ALL	279	1113	197	219261	VK4FRED	SINGLE-OP ALL	39	195	17	3315
VK4EMM	SINGLE-OP ALL	1033	2962	642	1901604	VK3JS	SINGLE-OP ALL	25	153	21	3213
VK2APG	SINGLE-OP ALL	991	2114	548	1158472	VK2KDP	SINGLE-OP ALL	33	125	21	2625
VK4UC	SINGLE-OP ALL	505	861	325	279825	VK5MMM	SINGLE-OP ALL	29	138	16	2208
VK4BUI	SINGLE-OP ALL	414	902	266	239932	VK4LAD	SINGLE-OP ALL	27	132	14	1848
VK7GN	SINGLE-OP ALL	357	469	247	115843	VK4DX	SINGLE-OP ALL	38	38	32	1216
VK2GWK	SINGLE-OP ALL	326	437	229	100073	VK2KRM	SINGLE-OP ALL	27	46	26	1196
VK5MAV	SINGLE-OP ALL	182	630	106	66780	VK2UVP	SINGLE-OP ALL	12	77	12	924
VK4NEF	SINGLE-OP ALL	178	437	129	56373	VK7HAH	SINGLE-OP ALL	26	43	21	903
VK4FJ	SINGLE-OP ALL	193	340	145	49300	VK5UE	SINGLE-OP ALL	16	52	10	520
VK2TZA	SINGLE-OP ALL	163	512	76	38912	VK2ZEN	SINGLE-OP ALL	14	38	12	456
VK2BJ	SINGLE-OP ALL	120	412	80	32960	VK6DXI/MM	SINGLE-OP ALL	10	34	7	238
VK2HBG	SINGLE-OP ALL	117	509	54	27486	VK1WJ	SINGLE-OP ALL	13	13	10	130
VK3KE	SINGLE-OP ALL	115	333	78	25974	VK2CZ	SINGLE-OP 40M	178	890	86	76540
VK3AVV	SINGLE-OP ALL	124	273	94	25662	VK2LCD	SINGLE-OP 40M	64	320	27	8640
VK2BAA	SINGLE-OP ALL	103	325	72	23400	VK3FCLL	SINGLE-OP 40M	36	180	8	1440
VK2FBOB	SINGLE-OP ALL	97	599	31	18569	VK4AN	SINGLE-OP 20M	751	751	394	295894
VK2FHN	SINGLE-OP ALL	126	214	79	16906	VK4DMP	SINGLE-OP 20M	638	638	329	209902
VK6HZ	SINGLE-OP ALL	100	237	71	16827	VK4KKD	SINGLE-OP 20M	235	235	144	33840
VK4HTM	SINGLE-OP ALL	89	236	71	16756	VK4CZ	SINGLE-OP 15M	125	250	93	23250
VK7ZZ	SINGLE-OP ALL	80	213	50	10650	VK6ANC	MULTI-ONE ALL	854	2446	568	1389328
VK8HPB	SINGLE-OP ALL	88	126	70	8820	VK4WR	MULTI-ONE ALL	1022	2234	588	1313592
VK6DXA	SINGLE-OP ALL	52	236	34	8024	VK4WIL	MULTI-ONE ALL	598	1387	373	517351
VK2NU	SINGLE-OP ALL	53	169	37	6253	VK2ATZ	MULTI-ONE ALL	316	751	199	149449
VK4VCC	SINGLE-OP ALL	59	149	41	6109	VK3SAT	MULTI-ONE ALL	75	304	54	16416
VK7ARN	SINGLE-OP ALL	58	163	37	6031	VK7MBD	MULTI-ONE ALL	68	244	38	9272
VK2WG	SINGLE-OP ALL	39	298	19	5662						

Oceania DX Contest – 2006 CW Results

Callsign	Category	QSOs	Points	Mults	Score
VK4EMM	SINGLE-OP ALL	1124	4439	678	3009642
VK7GN	SINGLE-OP ALL	513	1331	342	455202
VK2BJ	SINGLE-OP ALL	337	1234	252	310968
VK4XY	SINGLE-OP ALL	420	1035	290	300150
VK4BUI	SINGLE-OP ALL	335	1097	248	272056
VK2BAA	SINGLE-OP ALL	292	1063	213	226419
VK2GR	SINGLE-OP ALL	201	968	158	152944
VK5MAV	SINGLE-OP ALL	222	915	152	139080
VK2NU	SINGLE-OP ALL	134	605	109	65945
VK3KE	SINGLE-OP ALL	71	271	65	17615

Callsign	Category	QSOs	Points	Mults	Score
VK4TT	SINGLE-OP ALL	83	140	56	7840
VK4DX	SINGLE-OP ALL	85	105	67	7035
VK3JS	SINGLE-OP ALL	26	202	16	3232
VK4FW	SINGLE-OP 80M	128	1280	76	97280
VK3TX	SINGLE-OP 80M	6	60	4	240
VK4AN	SINGLE-OP 40M	523	2615	285	745275
VK2AR	SINGLE-OP 40M	76	380	53	20140
VK8AV	SINGLE-OP 40M	50	250	37	9250
VK7RO	SINGLE-OP 40M	20	100	17	1700
VK2ATZ	MULTI-ONE ALL	460	1613	312	503256

The Oceania DX contests go from strength to strength, with a very pleasing increase in participants from VK in 2006. Were you aware that there is a plaque available for the top VK club in the contests? Why not rally some members from your club and see what you can do in 2007?

VK6ANC, the team from the Northern Corridor Radio Group, took top honours for Multi One in the SSB leg of the contests, with a very impressive score of 1,389,328 and a close battle with VK4WR. The VK4WR team were ahead on QSOs and multipliers but the apparent approach of quality (higher scoring) QSOs over quantity seems to have paid-off for the VK6ANC operators as they won the day with an impressive QSO points score of 2446.

It is great to see an SWL in the listing too. I have been recently sent quite a number of QSL cards by SWLs listening during contests. From a personal point of view, I am delighted to receive such reports, as I am always trying out new antennae and configurations and it is often good to see where the RF got to! Hence, I always return the compliment – although I will now have to get some more printed for my new callsign.

John VK4EMM is welcomed back into the contesting fold with a magnificent effort to get first place in both the SSB and CW legs of the contest.

Tony VK3TZ, John VK4UC, Phillip VK2FHN, Mirek VK6DXI and Martin VK7GN are the VK section of the contest committee, whilst John VK4EMM, David VK2AYD, Olaf VK1JDX and David VK2CZ have recently decided to step down from Committee duties. The contest is evidently in good hands as participation expanded somewhat

in 2006 despite the sun spot cycle taking its inevitable toll. The contest is especially fun as VKs are included in the sought-after sweetmeat for the rest of the world to try and get into the log. For more information on the contest, take a look at the website at <http://www.oceaniadxcontest.com>

ALARA Contest

The ladies at the Westlakes Club entered this year's ALARA contest as VK2ATZ. This is the first time that the girls have taken part and the team consisted of Leonie VK2FHRK, Lisa VK2FOX, Diane VK2FDNE, Karen VK2NYL and Karen VK2ZKG. Paul VK2BPL lent a hand with the station and, as an 'old hand' at contesting, the ladies could not have had a better mentor. With team members taking it in turns to run the station at various times of the day and night, everyone shared in the fun and QSOs. Paul was kind enough to send me some photos of the event but my PC managed to chew them up (that's my excuse and I'm sticking to it!) and make them invisible, so my apologies for not including them here.

Relocation

At the time of writing the September column script, I was in the process of morphing from VK2BAA into a bright shiny new VK4BAA. Things are still a little hectic within the BAA VK4 household, but things are now tidy enough for me to have taken a little bit of time away from unpacking to put up a full wave 40 m quad loop at 60 feet (20 m) into the nearby trees. The branch is slightly too low for a quarter wave vertical for 80 m, which is a shame. Maybe I could coil the remaining metre

or two of wire instead? A lesson learnt however, as I needed a method of getting the suspension rope into the trees. A quick look on the Net some weeks ago allowed a suitable tool to be bought for the task. Last week, I received a note from the Australian Customs office stating that I had tried to import a restricted item without a permit! I had no idea that I required a permit to buy a slingshot from the States. It transpires that the offending attribute is the arm brace facility – even the presence of holes to affix the hardware is not permitted. I bought a slingshot from a local archery store and put it to work, but an expensive lesson was learnt with \$90 lost due to my ignorance. Be warned!

Correspondence received

I am always delighted to receive correspondence from AR readers. So someone does read this column then! Ian VK4KAD wrote with regard to remote contesting and SO2R. Ian has also queried the intent of RD Contest Rule 10b - Automated Operation.

Ian's first question concerns the discussion recently in this column as regards remote operation. Ian ponders: *Perhaps we need a rule to the effect that; 'the transmitter and receiver must be co-located and at a distance of not more than 100 kilometres (or some other arbitrary distance) from the operating location.'* In a cross border situation, for example, a Gold Coast operator with a station in northern NSW, it would be a VK2 station. *Who cares where the operator is, as long as he is in control of the station?*

After all, would an urban contesteer expect me to be penalised because I have a quiet site on top of the Dividing Range

with few antenna restrictions? If another contester has the money and technical ability to do the same, but control the station from suburban Brisbane, what is the difference? To prohibit such an installation is to curtail technical development in the hobby.

Bringing in rules to limit the operation of the station during a contest has been in existence for many years, in an attempt to promote the full spectrum of operators and station facilities within a like-for-like competitive environment. The use of the Net for spotting facilities is a case in point, but how far should this 'go'? Would contest managers go to the extreme of having so many sub-sections that due to the myriad of equipment, locations and operator abilities, we would not actually be competing anymore? There needs to be a level of sobriety and a sensible line drawn to allow a reasonable classification or grouping of contestants without diminishing the value of the activity. If my quad loop is in a higher tree than someone else's, then that is my good fortune and not something to categorise me into my own 'section'. Surely?

I am sure that the RD contest manager Peter VK4OD will respond accordingly directly to Ian as regards rule 10b, but Ian's letter does serve to illustrate the complexity (and hence the difficulty) of contest rule generation and the driving forces behind their existence and wording. Thanks Ian for taking the time to write and to discuss the various foods for thought.

CQWW DX 160 Results

Mirek VK6DXI and Ron VK3IO were busy during the CQWW DX 160 contest flying the flag for Australia in the CW section, with Mirek out in front to take honours. Ron was operating with low power but still managed to keep pace with Mirek – no mean feat!

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via vk2baa@wia.org.au. I have not yet had my email address changed yet to reflect my new VK4 prefix! See you on the bands.

73 de Phil Smeaton VK4BAA

Spring VHF-UHF Field Day 2007

John Martin VK3KWA
Contest Manager

The Spring VHF-UHF Field Day for 2007 will be held over the weekend of November 17 and 18. This is a week later than in past years. The change of dates avoids clashes with some club activities that will take place earlier in the month.

There are two minor changes in the rules:

1. Stations may enter both the 24 hour and 8 hour sections, but only if the station actually operates for more than 8 hours.
2. Changing locations: It is not in the spirit of the contest for grid-hoppers to set up more than one station and move between them. The rules now make it clear that not only the operator but also the station must be moved when operating locations are changed.

Please note also the rule on the use of DX calling frequencies. Where possible, contest activity should focus on the recommended contest calling frequency.

Dates

Saturday and Sunday November 17 and 18, 2007.

Duration in all call areas other than VK6: 0100 UTC Saturday to 0100 UTC Sunday.

Duration in VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Sections

- A: Portable station, single operator, 24 hours.
- B: Portable station, single operator, 8 hours.
- C: Portable station, multiple operators, 24 hours.
- D: Portable station, multiple operators, 8 hours.
- E: Home station, 24 hours.

If a single operator station operates for more than 8 hours, the station may enter both Section A and Section B. If the winner of Section A has also entered Section B, his log will be excluded from Section B. The same applies to multiple

operator stations entering Sections C and D.

General Rules

A station is portable only if all of its equipment is transported to a place which is not the normal location of any amateur station. Operation may be from any location. Stations may change location during the Field Day provided the station is dismantled and reassembled each time it moves. You may work stations within your own locator square. Repeater, satellite and crossband contacts are not permitted.

One callsign per station. If two operators set up a joint station with shared equipment, they may choose to enter Section A or B as separate stations under their own callsigns, or Section C or D under a single callsign. If they enter Section A or B, they may not claim contacts with each other. Stations with more than two operators must enter Section C or D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

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 if necessary.

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 location in a different 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 locator square in which your station operates, plus 10 points for each locator

square worked, plus 1 point per contact. Multiply the total by the band multiplier as follows:

6 m **2 m** **70 cm** **23 cm** **Higher**
 x 1 x 3 x 5 x 8 x 10

Then total the scores for all bands.

Logs

Logs should cover the entire operating period and include the following for each contact: UTC time, frequency, station worked, serial numbers and locator numbers exchanged, points claimed.

Cover Sheet

The cover sheet should contain the names and callsigns of all operators; postal address; station location and Maidenhead locator; the section(s) entered; the scoring table; and a signed

declaration that the contest manager's decision will be accepted as final.

Please use the format below for your scoring table. In this example the operator has operated from one locator and worked four locators on each band:

A sample cover sheet (below) and scoring table is available on the WIA web site. Copies can also be obtained from the e-mail address given below.

Scoring table format

Band	Locators Activated (10 points each)	+ Locators Worked (10 points each)	+ QSOs (1 point each)	x Multiplier	= Band Total
6 m	10	+ 40	+ 40	x 1	= 90
2 m	10	+ 40	+ 30	x 3	= 240
70 cm	10	+ 40	+ 20	x 5	= 350
Overall Total					= 680

Entries

Paper logs may be posted to the Manager, VHF-UHF Field Day, 3 Vernal Avenue, Mitcham, Vic 3132. Electronic logs can be e-mailed to vhf-contests@wia.org.au. The following log formats are acceptable: ASCII text, MS Office 2000 (or earlier) RTF, DOC, XLS or MDB.

Logs must be received by Monday, December 3, 2007. Early logs would be appreciated.

South Korea to host the 14th World ARDF Championships

The KARL (Korean Amateur Radio League) will host the 14th World ARDF championships in Geonggi Province from 2nd through 7th September, 2008.

Participation is encouraged from worldwide amateur radio societies and individual ARDF competitors. A Korean VISA may be obtained from the South Korean Embassy and, if any problems are encountered, assistance will be provided by the Organising Committee.

It is expected that competitors will arrive in South Korea via Incheon International Airport, where they will be met and transported to the competition site, about a two hour drive.

The program allows a free day for sightseeing, on Friday 5th before departure on the Sunday. Given that it will be late summer/early autumn temperatures around 22 C may be expected.

The anticipated entry fee per competitor will be around US\$400.

Further information may be obtained from the WIA ARDF Coordinator Jack Bramham VK3WW, or from the Organising Committee at 2008ardf@karl.or.kr

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WIA VHF-UHF FIELD DAY

Section entered:

- A Single operator 24 hours
 B Single operator 8 hours
 C Multi operator 24 hours
 D Multi operator 8 hours
 E Home station 24 hours

If entering more than one section, please use a separate copy of this sheet for each section.

For Section B or D, time period to be scored:

The station operated from the following grid locators:

Date:

Station callsign:

Callsigns and names of all operators:

Postal address for notification of results:

Postcode:

The station was operated in accordance with the rules and spirit of the contest. I / We agree to accept the Contest Manager's decision as final

Signed: _____

SCORING TABLE

Band	Locators Activated 10 points each	Locators Worked 10 points each	QSOs made 1 point each	Total	Band Multiplier	Band Total
50 MHz		+	+	=	x 1	=
144 MHz		+	+	=	x 3	=
432 MHz		+	+	=	x 5	=
1296 MHz		+	+	=	x 8	=
2.4 GHz		+	+	=	x 10	=
3.4 GHz		+	+	=	x 10	=
5.7 GHz		+	+	=	x 10	=
10 GHz		+	+	=	x 10	=
Higher		+	+	=	x 10	=

FINAL TOTAL = _____

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DX - News & Views

John Bazley VK4OQ

john.bazley@bigpond.com

In spite of several reports predicting that conditions will have started to improve by now, the following information comes from Frank W3LPL. The solar flux minimum is still predicted to have been July. However, NOAA is not predicting any significant increase in solar flux until later this year. Their "low" prediction shows a delay of Cycle 24 until 2008. Any significant increase is dependent on Cycle 24 sunspots beginning to appear on the Sun. This has not yet been observed! "Alarm bells will go off when they do", says Frank! <http://www.sec.noaa.gov/SolarCycle>

DXCC News

J5UAR: (Guinea-Bissau, 2007 operation) has been accepted for DXCC credit. Those who had cards rejected for this operation can send an e-mail to dxcc@arrl.org and they will be placed on the list for update.

Likewise 9U0X - (Burundi, February 2007) has also been accepted for DXCC credit.

1A0KM: The recent operation has been loaded onto the LOTW for confirmations.

T9: The International Telecommunications Union (ITU) has replaced the callsign series prefix block of Bosnia and Herzegovina (BiH) from T9 to E7. While it probably will take some time for the BiH administration

to implement this change, it should put to an end the use of call signs outside the ITU-allocated call sign block by stations in parts of BiH. With this new E7 prefix it is hoped that all Amateur Radio operators within the borders of Bosnia and Herzegovina will use the correct callsigns. Now that this has been completed, Serbia will soon officially start using the YU4 prefix within its borders. The exact dates of when the Amateur Radio operators from BiH will begin to use the new E7 prefix is not known but should be very soon. You can read more on the ARRL Web site at <http://www.arrl.org/?artid=7644> and you can keep an eye on the Bosnia and Herzegovina Communications Regulatory Agency Web site at <http://www.cra.ba/index.aspx>

T3: Toshi JA8BMK will be active as T31XX from Kanton Island, Central Kiribati (OC-043) for about a couple of weeks in late October using SSB, CW and RTTY on 160 - 6 metres. He expects to leave Japan for T30 (via Fiji) in September, and to reach T31 one week after leaving T30 in mid-October. He might also visit Banaba Island and operate as T33ZZ, before or after the T31 activity. Toshi is looking for other operators who may join him and share the expenses (his e-mail address can be found at www.qrz.com under JA8BMK).

ST & 6W: ST2A has now gone QRT - Jovica's (T98A, ex-T94FC) assignment in Sudan has come to an end. During the past two years he operated as STORM and ST2A, and had 40,660 QSOs (35,012 CW, 3386 SSB, 2249 RTTY and 13 PSK31), including 843 QSOs on 160 m, 3916 on 80 m and 585 on 6 m. A few pictures illustrating living and working conditions in the Sudanese desert environment are available at <http://www.t93y.com/st2a> His new assignment with UNHCR (United Nations High Commissioner for Refugees) is in Dakar, Senegal, and will start on 1 September. Jovica's work area covers the whole West Africa and he hopes to activate most countries in the region. Information about amateur radio activities will follow in due course.

KH3: W7KFI's 'on again, off again'

trip to Johnston Island is currently off again! Susan says, "Sorry people, now hurricane Erik is heading this way and it looks like it will pass to the south, so I am heading into Honolulu until the hurricane season ends in November. If there is a break in the weather then I will skedaddle to KH3."

4O: Ranko Boca 4O3A (ex YT6A) reports as of 16 July 2007, all Montenegro Amateur Radio operators' old Serbian calls have now expired. Amateur Radio ops from the fledgling nation have been or will be assigned the new 4O (Four Oscar) prefix callsigns. Former YT6Y, Dragan Djordjevic, is now 4O4A. The International Telecommunication Union (ITU) assigned Montenegro the 4O prefix in mid-May 2007 and took back Serbia's 4N and YZ prefixes. Serbia is no longer using the 4O prefix. No word on when Serbia will discontinue using the old YZ and 4N prefixes, which the ITU has taken back for future use. Francis F6FQK advises that to honour the admission of the Republic of Montenegro to the Council of Europe, the radio club of the Council of Europe has organized an expedition in collaboration with Ranko 4O3A for 17th to 21th October. Callsign is 4O0CE. QSL via F5LGF. Logs will be posted on the web site <http://ewwa.free.fr>

EL: Dutch Amateurs PA3A, PA3AN, PA8AD and PA3AWW will be active from Liberia (EL) from October 5th to 24th. They will be QRV on CW and SSB. Their calls will be announced upon arrival. They have a Web site at www.iberia2007.com QSL via PA3AWW.

YK: Amateur Radio operators in Syria will be celebrating the 60th anniversary of Amateur Radio in YK. To commemorate the event Amateur Radio operators from Syria will be using special prefix 6C60 (that is Six Charlie Six Zero) from October 15th to November 11th.

V31: V31FB, Belize, Ambergris Caye, NA-073, will be on October 25-31, with W5JON and his wife, W5HAM, on site. John will be on 160-10 m SSB in the CQWW SSB. He says years ago his wife, Cathy, said he could operate any contest from anywhere, "as long as it is warm and there is a beach." This will be their

Are you managing the estate of a 'Silent key'?

Please save any QSLs for the National QSL collection, but first contact:

The Hon. Curator,
Kan Matchett VK3TL
on (03) 9728 5350
or email: wiaqslcollection@wia.org.au

Rare DX, special call-signs prefixes and suffixes, pictorials and pre-war QSLs are needed.

Let us save something for the history of amateur radio.

fifth year on Ambergris Caye. QSL to their home call signs.

KH4: Pete M1SOM reports that Midway Atoll, the long stretch of atolls and coral reefs northwest of the Hawaiian Islands, is being preserved as a "marine national monument," with all fishing stopping by 2011. One spot that will still be available to DXpeditions is Midway. Starting about six months from now, the U.S. Fish and Wildlife Service plans to start letting tourists visit Midway, to help clean up debris and invasive species on the island, and hopefully leaving with increased sensitivity to the preservation of the environment. Pete directs us to this site: http://news.yahoo.com/s/ap/20070721/ap_on_re_us/midway_tourism_1

8P6DR: will be activated from September 27th to October 14th by Richard G3RWL. He will be using a K2/100 mostly on CW with some digital activity, including the CQ WW RTTY Contest. Look for him on 10 through 80 meters. QSL via G3RWL; also check his QRZ.COM listing for 8P6DR.

5H9PD: Tanzania will be on the air October 6-19. Operator Pat W8FV will be in Mwanza on the southern shore of Lake Victoria.

P40: P40A, Aruba, will be in the CQWW SSB October 27-28, single op all bands. This will be John KK9A.

ZL7: Jacek SP5EAQ, Wojciech SP9PT, Marek SP9BQJ and Jozef SP9-31029 plan to operate SSB, CW and RTTY as ZL7/SP5EAQ, ZL7/SP9PT and ZL7/SP9BQJ from the Chatham Islands (OC-038) on 5-18 October. QSL via home calls.

3C: Fred KH7Y, Vicente EA5YN, Luis EA5BRE and Elmo EA5BYP will be active as 3C7Y from Bioko Island (AF-010), Equatorial Guinea on 5-14 October. They will operate CW, SSB and RTTY with two stations on all bands. QSL via EA5BYP.

C6: Pete W2GJ (C6APR), Ed K3IXD (C6AXD) and Randy K4QO (C6AQO) will be active from Crooked Island (NA-113), Bahamas on 25-29 October. They will operate CW, SSB, and RTTY on 80 - 6 metres and will participate in the CQ WW DX SSB Contest as C6APR. All QSLs via K3IXD.

E5: Bill N7OU, is heading back to the Cook Islands. Look for him as E51NOU from Rarotonga, South Cooks from October 8th to November 3rd,

including "a casual effort in the CQ WW SSB Contest". He will be operating on 10 through 80 metres mostly on CW running low power. While there he'll be "on a work schedule during weekdays and operating will be limited" to his free time. QSL via N7OU.

QSL BS7H: The first QSLs were mailed on 23 July. Steve KU9C has received over 10,000 envelopes, so it is expected it will take approximately two months before every card is answered. Please do not send for a second card until we announce all cards have been answered. Steve will also upload QSOs to LOTW as he processes the cards so, if you utilize LOTW, you can expect your QSOs to show up roughly the same time you receive your card. This will allow you to avoid mailing in your physical QSL card for verification. A small number of QSL cards were received with either no SASE, or a SASE with old style IRCs that are no longer valid. KU9C will attempt to contact you via email, but if he cannot contact you, these will be returned by the bureau. Steve will also upload bureau card QSOs to LOTW as they are processed.

QSL V51AS: Frank Steinhauser V51AS reports he has a new maildrop address: Heinrich-Heine-Strasse 35, 72555 Metzingen, Germany (the Olching address apparently is no longer valid).

Russian QSLs: Mal VK6LC in an e-mail to me wishes to advise VK DXers that methods of QSLing direct to Russia have slightly changed. Do not send "green stamps".

In a recent e-mail from RX3RC, Mal states that he asks that only valid IRCs be sent to avoid cash in the mail being stolen.

While on the subject of QSLing Russian stations direct, readers may not be aware of a Russian QTH data base which with cut and paste enables you to address the envelope in Russian script. It is at <http://ric.cqham.ru/>

Happy Dxing.

Special thanks to the authors of *The Daily DX* (W3UR) and *425 DX News* (IIJQJ) for information appearing in this month's DX News & Views.

For interested readers: you can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

"Hey, Old Timer..."



If you have been licensed for more than 25 years you are invited to join the **Radio Amateurs Old Timers Club Australia**

or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a \$5.00 joining fee plus \$8.00 for one year or \$15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to
RAOTC,
PO Box 107
Mentone VIC 3194
or call Arthur VK3VQ on 03 9598 4262 or
Bill VK3BR on 03 9584 9512,
or email to raotc@raotc.org.au
for an application form.



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VHF/UHF – An Expanding World

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

As I write this, spring has arrived and conditions are on the improve. In recent weeks, there have been several minor tropo openings from VK3 into VK5 and VK7. Newcastle Channel 5A TV sound has been heard in ZL, although no contacts were achieved. So, fingers crossed that we are in for a season as good as, if not better than, last year. Keep an eye on the weather charts, Hepburn site and the VK/ZL Logger for potential activity. And above all, have that equipment sharpened up and ready to go.

Spring Field Day

The Spring Field Day is coming up shortly on the weekend of 17/18 November. There have been several minor rule changes/clarifications. Full details may be found on the WIA web site: www.wia.org.au/contests/vu_fieldday/index.php

Already, a number of stations have indicated their intention to be out on hilltops. Ted VK1BL reports that there'll be a crowd of stations in VK1:

For the Spring Field Day, there should be at least 4 stations in the field, all with capability up to 23 cm and some with 13 cm and above. A preliminary agenda:

Mt Coree: Andy VK2AES and crew

Gunning: Ted VK1BL and Greg VK1AI

Mt Aggie: Scott VK1PWE

Mt Ginini: Andrew VK1DA and possibly Chris VK2DO

For the Summer Field Day, VK1BL will be active from Mt Coree (bush fire season permitting). In addition, I intend to be active on a number of weekends (Saturday mornings) throughout spring and summer operating from either Mt Coree or Mt Ginini with 1296 and 2.4 GHz (with potentially 3.4 GHz and 10 GHz) capability.

Chas VK3PY reports that VK3 will be ready to work the VK1 crowd:

I will be operating with David VK3QM and Charlie VK3NX from the Barrabool Hills (QF21CU), 15 km west of Geelong in both the Spring and Summer Field Days.

We will have all bands from 50 MHz to 24 GHz inclusive. We expect to have a 1.2 m dish functional for 2.4 GHz this year, which ought to be several dB better than the smaller grid-pack antenna we previously used. Power is 25 W (although 60 W might be available).

If you are planning on portable operation for the Field Day, please announce your intentions on the VK-VHF mail list and on the VK/ZL Logger Forum – Contest, Field Days, Portable Operations. That way, people will know to look from time to time in your direction.

Even if you are not planning to go portable, put in some operating time so that those in the field have plenty of stations to work. It looks like there will be lots of activity.

For those going out in the field, it would be useful to add an entry in the VK/ZL Logger Oplnfo table with details of your operating location. Adam VK4CP – owner of the VK/ZL Logger site – has added the ability to use a /P callsign as an identifier (e.g. VK4CP/P). Such an entry will allow those using the Radio Site Display to analyse the propagation paths to the /P sites.

Speaking of the Radio Site Display, there is now an experimental version running on Google Maps. You'll find the link here: <http://home.exetel.com.au/dwsmith/>

The GM version has the advantage that it is just a web page that displays in your

browser - you do not need to install any special application (you do need an up-to-date browser though). The down side is that GM does not have all the powerful features of Google Earth, so the display is somewhat limited. Anyway, if you can not run Google Earth for whatever reason, the GM version should give you an idea of what it is all about.

New Optical Record

Optical communication is occasionally mentioned here – it is, after all, VERY high frequency communication. Much of the optical activity in Australia is discussed on the Optical DX Yahoo group (http://groups.yahoo.com/group/optical_DX/). A regular contributor to the group is Clint KA7OEI who has been gradually refining his receiver design. He has now achieved some 12 dB improvement over the popular design by Mike VK7MJ – a significant gain.

Clint and associates recently took his systems out into the field in Utah and broke the world record for non-coherent light communication. The previous record of 167.7 km was held by Mike VK7MJ and Chris VK3AML. Clint has now reset this to 172.3 km.

Full details of their efforts, including sound bites and details of the equipment used can be found at: http://www.ka7oei.com/optical_comms/optical_qso_107mile.html

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Help wanted

I wonder if you could help me track down some very old QSL cards.

I am trying to trace QSL routes for several Territory of New Guinea stations from the 60s and 70s:

VK9AG	SEPTEMBER, 1965
VK9FS/9	SEPTEMBER, 1972
VK9AJ	SEPTEMBER, 1972
VK9EJ	NOVEMBER, 1972
VK9CC	NOVEMBER, 1972

Just wonder if by any chance anyone may know the whereabouts of any of these guys. I still need to confirm the deleted TNG on 20 metres!

I would be really grateful for your help if it is at all possible.

All good wishes and 73

Laurie Margois, G3UML
London, England
lauriemar@aor.com

Digital DX Modes

Rex Moncur – VK7MO

Sun Noise Measurement

Because of the statistical variability of noise, it is not possible to measure Sun noise to much better than about 0.5 dB (at 95% confidence) in SSB bandwidth receivers with a typical analogue or digital multimeter. However, if you are set up for Digital Modes with an interface from your receiver to a computer with a sound card, Owen Duffy VKIOD, has produced a program that can integrate the noise over much longer periods and achieve resolutions well below 0.1 dB. Owen's program is designed to provide accurate measurements of noise figure and is called NFM for Noise Figure Meter. NFM can be downloaded at: www.vk1od.net/nfm/

While NFM is aimed at Noise Figure measurement, it includes a high-resolution true RMS audio voltmeter, calibrated in dB, which can be used for Sun noise measurements. In its unregistered version, the program integrates noise for up to 0.5 seconds but for a nominal fee one can extend this to 100 seconds and improve the resolution at the 95% confidence level to well below 0.1 dB. Owen provides information on the relationship between resolution and integration time, bandwidth and confidence level at the following URL: www.vk1od.net/fsm/nmu.htm

For sun noise measurement, all one needs to do is set the integration time in the box marked "Interval (s)" in the top yellow area of the program to an appropriate value, say 30 seconds. Then point the antenna at cold sky and press the "1 Noise LO" button which will produce a cold sky measurement in a bit over 30 seconds; then point to the Sun and press the "2 Noise HI" button

which will, after a similar period, give the sun noise measurement. The sun noise in relation to cold sky or Y factor measurement is then shown under the box identified as "Y(2) (dB)".

As Sun noise varies as a function of Solar Flux, one needs to know the actual Solar Flux at your frequency of operation and Owen has produced a useful tool for interpolating this from data provided by NOAA derived from various solar observatories around the World. You can access this tool at: www.vk1od.net/qsrf/index.htm

If you feed the Solar Flux into a program such as VK3UM's EME Calculator with your station parameters

it will give you the expected sun noise rise which can be compared to your measured sun noise rise as an indicator of station performance. Doug's program can be downloaded at: www.vk3bez.org/vk3um_software.htm

NFM can also be used to assist measurement of antenna patterns at microwave frequencies using Sun noise as the signal. Figure 1 is an example of the pattern of VK7MO's 2.3 metre dish at 2.3 GHz plotted from noise measurements made with NFM.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

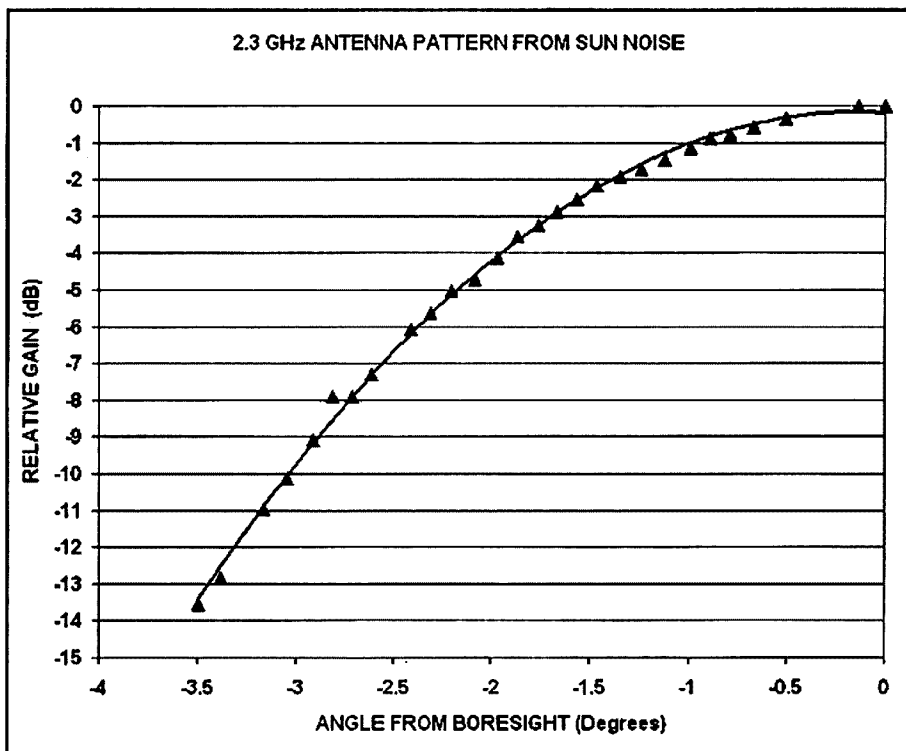


Figure 1: Example of Antenna Pattern plotted from sun noise measurements with NFM

The Magic Band – 6 m DX

Brian Cleland – VK5BC

August has been a very quiet month on 6 m. The only reports of band openings have been from northern Queensland to VK3 and a few reports of briefly hearing beacons. Even John VK4FNQ only reports the following log entries:

Date	Time	Frequency	Call Sign	Comments
3 Aug 2007	0453	50.314.30	VK5RBV	BCN 559
4 Sep 2007	2103	50.287.23	VK2RHV	BCN 559
	2305	50.314.30	VK5RBV	BCN 529
5 Sep 2007	0430	50.046.30	VK8RAS	BCN 51

With the lack of 6 m activity, much discussion has taken place on the VK/ZL Logger and its associated forums of what is needed to be successful in working the much anticipated overseas DX during the next sunspot cycle peak with the ultimate aim of obtaining DXCC. Those living in the northern areas of Australia certainly find this achievement easier but with perseverance, appropriate equipment and the available time, success can be achieved from most areas of Australia.

Steve VK3OT in south west Victoria is testament to this.

Gary VK4ABW is a keen 6 m DXer from north of Townsville and writes:

My tips and tricks for DXCC are as follows:

- Optimise your equipment and antennas for maximum performance. Use the best cables you can afford, use RF chokes on power leads, audio leads, monitor leads, etc.
- Use Digipan as an early warning indicator and for identifying possible indicators.
- Use an audio recorder for those moments when you think you heard something, or your brain took a few nanoseconds holiday. I use a voice recorder on my PC and keep it running during peak cycle activity. I heard VQ9 in the middle of last year (06) and thanks to the audio recorder I was able to play it back.
- Use a spectrum scope if available. Listening to 110 or casually tuning the band, you will miss things. Use all visual and audio means available. Investigate that strange bump 20kHz up ... you never know.
- Be prepared to operate different modes, it's a long way to get 100 countries on SSB alone!
- Use more than one receiver if possible. Parking on 110 won't bring them to you, have one channel on 110 and use the other for manually or auto scanning a segment eg: 090 to 150. That's how I got PY2 last cycle; they were on 120 and didn't go near 110. Also, try calling up and down a bit from 110. I bagged Iraq on 105 that way.
- Low angle radiation is essential for working long haul stuff. We live in Australia and I'm pretty sure there aren't 100 countries nearby.
- Post reception reports of indicators, calls on the clusters, web pages etc. and check the clusters every day (obviously not during the solar minimum).
- Check web pages for expeditions, etc.
- Check back through your log book to see what was happening last cycle. This will give you a 'rough' guide to what may happen next cycle. Look for trends...
- Check back through the clusters for what contacts were made last cycle. Again, look for trends.
- Keep the cluster going on a spare monitor during the cycle peaks. This way you can keep an eye on where everyone spreads out during pile ups and alerts you to that rare country you might be chasing.
- Use an external speaker and high quality headphones when working DX. Internal speakers are a poor excuse for missing contacts.
- If you can't spend the time sitting at the ready position in front of the radio, remote the audio to your handheld and continue with other duties. I've done the lawn numerous times with a handheld in my pocket and headphones on!
- Entertain the thought of going portable on your next outing/holiday, that's how I bagged Western Samoa.

I've received requests for information of where to listen to assist newcomers to 6 m. Below is a list of Australian, New Zealand and New Caledonian 6 m beacons that are presently operational and most likely to be heard at this point of the Sunspot cycle.

Australia

Frequency	Callsign	Location	Grid locator	Mode
50.046	VK8RAS	Alice Springs	PG66wf	CW
50.057	VK7RAE	NW Tasmania	QE38du	CW
50.058	VK4RGG	Gold Coast	QG62qa	CW
50.066	VK6RPH	Perth	OF88aa	CW
50.087	VK4RTL	Townsville	QH30jp	CW
50.288	VK2RHV	Hunter Valley	QF57sc	CW
50.289	VK2RSY	Sydney	QF56mh	CW
50.293	VK3RMV	Wannon	QF02wh	CW
50.297	VK7RST	Hobart	QE37pb	FSK
50.304	VK6RSX	Dampier	OG89ii	CW
50.306	VK6RBU	Bunbury	OF76wr	CW
50.310	VK8VF	Darwin	PH57kn	CW
50.315	VK5RBV	Barossa Valley	PF95mk	CW
50.345	VK4ABP	Longreach	QG26dn	CW
52.438	VK3FGN	Mildura	QF15ct	CW

New Zealand

50.040	ZL3SIX	Christchurch	RE66ej	CW
50.043	ZL1VHF	Auckland	RF73	CW
51.030	ZL2MBH	Napier	RF80	FSK
52.275	ZL2MHF	Upper Hutt	RE78ns	FSK
52.490	ZL2SIX	Blenheim	RE68	FSK

New Caledonia

50.080	FK8SIX	Noumea	RG37fr	FSK
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There are other beacons either planned or not operating at present and I will advise of any updates. If your equipment has the capabilities, it is worth programming the above frequencies into memories and regularly scanning them, it is surprising how often you will find the band opens and you hear a beacon. It is also useful to listen for Channel 0 TV, in particular, Toowoomba sound on 51.672 and Wagga sound on 51.740. The International call frequency is 50.110 and the Australian calling frequency 50.200 with most SSB operation taking place between 50.110 and 50.200. For more information check the Australian Amateur Callbook.

Hopefully 6 m will start coming to life during September.

Please send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

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Plan Ahead

The Mid North Coast Radio Expo 2008

When: Sunday Jan 20th

**Where: St Johns Church Hall,
Mc Lean Street, Coffs Harbour**

Time: 8.30am start

**Trade displays, disposals, club displays, home brew
and more**

**Info at www.mncarg.org or call Gary VK2ZKT on
02 6655 2990**

James Barber Webster VK2BZD (Jim)

It is with deep regret that we record the sudden passing of James Barber Webster VK2BZD at Port Macquarie on Monday 20th August 2007. He was known as Jim to his many friends. Jim was in his 85th year.

Jim was born in Merewether, the son of George Ernest Barber Webster. George was an engineer in the Army. During his formative years Jim's family moved from Waratah, where George had built a house, to Duntroon, then to Victoria Barracks at Paddington. This was followed by two years in Brisbane before the family moved back to Sydney where George built another house in Kingsford in 1939.

While his parents were in Brisbane, Jim stayed with his aunt in Newcastle to complete his last two years of school at Newcastle Boys High where he was a prefect.

Jim majored in physics at the University of Sydney where he completed a Science degree in 1941. He was a member of the University Regiment where he helped as he could with the war effort but could not enlist on graduation because he was automatically drafted into munitions and worked on optics. It was while he was doing this work through the university that Jim met Mary whom he married

in 1948.

After the war Jim became a teacher. Following country postings to Grenfell and Gilgandra, he returned to Sydney as a Science teacher at Homebush High and Master at Birrong Boys High School. In retirement Jim and his wife Mary settled in Port Macquarie where their son Paul VK2BZC and daughter-in-law had earlier moved to practice medicine.

Jim had a deep interest in all things scientific. He was very practical and had craftsman skills in both metal and wood. He particularly enjoyed metal turning on his lathe.

Amateur Radio played a very important part in Jim's life. In Sydney he was very active in the Youth Radio Scheme and ran a radio club at Birrong Boys High School. He supported the St George Amateur Radio Society as well as the WIA. He was an active WICEN member and participated in emergency communications for disasters such as the Royal National Park bushfires and the Newcastle earthquake. He could always be counted on to participate in WICEN training exercises such as the City to Surf and the Hawkesbury Canoe Classic. Jim's preparedness and professional approach to communications always set a high standard.

When he came to Port Macquarie Jim enthusiastically participated in the activities of the Oxley Region Amateur Radio Club. He rarely missed a meeting and was always first to volunteer to assist with tasks. He participated in the portable operation of the club station VK2BOR at the Tacking Point Lighthouse only two days before passing away.

Jim will always be remembered for his willingness to help others. He was always respected for his reliability and his unassuming manner of so freely sharing his vast knowledge.

Jim's funeral service was held on Friday 24th August 2007 in the chapel of the Port Macquarie Crematorium. His son Paul VK2BZC delivered a heartfelt eulogy.

This Silent Key has been compiled from the eulogy which Paul so kindly provided. Thank you, Paul.

Deepest sympathy is extended to Jim's wife Mary, and to all his family in their sad loss.

Vale: James Barber Webster VK2BZD (Jim)

Submitted by Henry Lundell VK2ZHE on behalf of the Oxley Region Amateur Radio Club Inc.

Sir Angus Tait ZL3NL

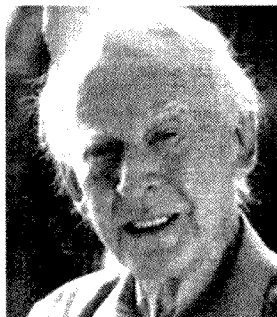
Staff at Christchurch radio communications company, Tait Electronics Limited, are mourning the loss of their founder and Chairman Sir Angus Tait ZL3NL, who died at Windermere Lifestyle Care and Village on 7 August, 2007.

Sir Angus founded the highly successful radio communications company, Tait Electronics in the late 1960s, and at the time of his passing the company provided employment for over 850 people, and was trading successfully in well over 100 countries.

Sir Angus never knew his father, who died shortly before he was born. He first

flirted with electronics when he was 13, and a student at Waitaki Boys High School in Oamaru. When 17 he convinced his mother to let him leave school to take a job at a local radio shop.

During his life he survived one of New



Zealand's worst ferry disasters, spent six years in the RNZAF representing his country in World War II, and indeed had overcome bankruptcy before starting Tait Electronics.

Always a radio enthusiast (with the call ZL3NL), Sir Angus kept up to date with the latest technologies. Until the end at 88, he drove into work in his characteristic red Alfa Romeo, parking his car right by the front door, rather than in a parking space – after all, it was his name on the office door.

(Photo: Tait Electronics)

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•One MFJ1296 all mode interface, new condition, never been used. Can be used to suit any tx/rx. Also 20m mobile whip made by Mobile 1, good condition. 80 m mobile 3 whip, good condition. Contact VK4DV email vk4dv@yahoo.com.au phone 07 4928 5537 (best at night)

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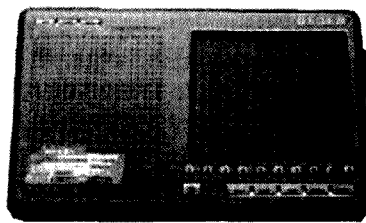
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Classes of Output Stages and Drew Diamond's Class E 160 m AM Tx

At the outset let me say I am a great fan of Drew Diamond's projects. I have purchased some of his books and I have met him personally at the Ballarat Convention held in the Wool Shed. I like his simple and practical approach to design.

During the course of our Wednesday night Club net a week ago, Malcolm MacFarlane VK3JPS raised discussion about Class E operation as described by Drew Diamond in the recent AR article.

Now personally, I had never heard of a Class E output stage, nor had any of the others on the net at that time. I thought I knew about Class A, B and C modes of operation from my reading of magazines, particularly Neville Williams in Electronics Australia, and articles in Silicon Chip etc also from my Electrical Engineering studies at Footscray Tech, back in the '60's. So you can see I am well and truly out of date.

My understanding of Class C operation

is where the valve, transistor, or active device was biased into a cut off condition and driven heavily by the input signal so that the output became a series of heavy current or voltage bursts. These in turn are applied to a tuned, or tank circuit which acts as a fly wheel and converts the pulses into a sinewave output.

A Class C amplifier was thus, non linear and highly distorting, with the driven tuned circuit providing the fill-in voltage and current as well as the necessary harmonic filtering.

I had even heard of Class D operation, where the input signal acted in such a way as to provide pulse width modulation. The stream of pulses would vary in width and thus the energy per pulse was controlled. Amplifiers using this mode of operation were used to control variable speed motors so that the stream of pulses was turned into controlled rotational energy. This type of amplifier has also been used for driving subwoofers.

However, as far as I could see, I

could not imagine what other kind of permutation was possible to be called Class E operation.

It was only when John VK3TCT, who was part of the discussion, actually decided to "Google" Class E operation that we found it was for "real". So I guess I owe Drew an apology for even thinking that it was either a typographical error or that he was just plain wrong.

We also noted that Drew's circuit essentially used "plate" or more correctly "drain" modulation to provide the required AM modulation.

This got me to thinking what might have been achieved if a Class D drive had been used to excite the final tank circuit. Might it not be possible to achieve AM modulation by using a "PIC" to generate a variable pulse width train to drive the tank circuit in sympathy with the audio input? With a bit of luck one chip could be used to generate the pulse width drive over the limited audio range and directly drive the output semi conductor. Possibly the high tension supply might have to be increased to provide the same power output, as plate modulation would no longer be required.

A further crazy thought could be that with a little digital wizardry it might even be possible via a balanced output stage to come up with an SSB transmitter with this kind of configuration.

I would very much like to see a follow up "forum" type article in AR discussing the various new classes of operation. It might even be possible to extend this so that other contributors could throw in ideas and circuit diagrams to provide variations to make Drew's circuit even more versatile.

This could be highly educational, bring us old timers up to date and provide excellent technical matter for the AR magazine. Apart from anything else it could just be bloody interesting for all of us.

Max Brighton VK3ZMT

Editor's note: I would welcome an article as outlined by Max. See the note on the WIA web site on how to write for AR: <http://www.wia.org.au/armag/How%20to%20write%20for%20AR%20magazine.pdf>

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Chairman of the regional committee is in bold

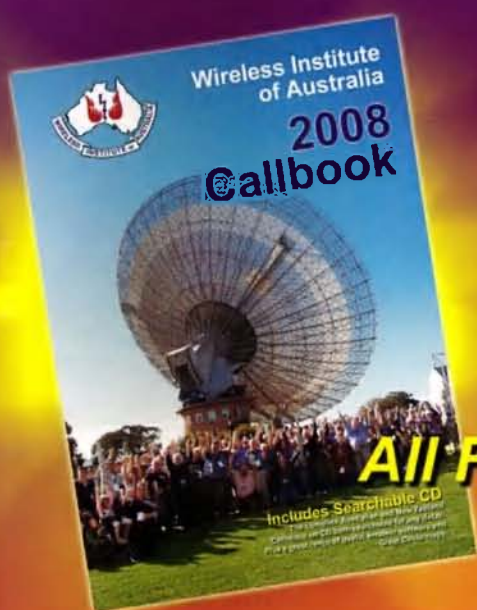
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Ron Fisher VK3OM. Photo by Bill Roper VK3BR. See story on page 8.

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Editorial Comment

Peter Freeman VK3KAI

I recently had a busy week away from home in Adelaide and Mildura, related to my work.

Any thoughts of a little spare time between organised sessions at either venue were largely folly. In Adelaide, there was a significant distraction occurring just outside the Convention Centre – the Tasting Australia event was in full swing, with a variety of food, wine and beer on offer for purchase or some free tastings. Strolling back to the next conference session after a break, I was accosted by David VK5KK – a delightful encounter, as we had not met in person for a couple of years. The meeting was brief, but pleasant. A few days later, I was quietly investigating the local tourist information centre in Mildura when I hear a voice from behind: "Don't I know you? KYF." It was Gary VK3KYF, President of the Sunraysia Radio Group Inc. We had met previously – both Gary and Noel VK3FI had attended a GippsTech conference. The result of this encounter was a pleasant evening spent with Gary, Noel and their wives over some excellent food and wine at one of the local restaurants.

AR equipment reviews

On page 7 in this issue you will find an "Over to You" item received following the publication of the review of the IC-756 Pro III (August AR). Whilst I do not agree with some of the comments/assessments made by the author, Brian does have some valid points that are worth clarification.

Conducting thorough reviews of all aspects of any items of equipment considered requires considerable time and access to resources, especially sophisticated test equipment and experienced personnel to conduct the tests. The Publications Committee (PubCom) discussed the conduct of reviews approximately twelve months ago. Given that all activities of the PubCom are undertaken by volunteers, it needed to consider not just any financial costs but also the time costs of conducting equipment reviews – readers must appreciate that most functions of the WIA are undertaken by volunteers, rather than paid staff. We are not like the ARRL, who have a sufficiently large

membership to employ appropriate staff and have a well equipped test laboratory. The WIA simply does not have such resources. However, it does endeavour to act in a professional manner.

To undertake an "objective" review of a typical item of amateur equipment against manufacturer's specifications would take considerable time, delaying publication of any report. The experience of the entire PubCom membership of recent years has been that almost all commercially manufactured equipment has met, within close limits, the manufacturer's specifications. The challenge always is to accurately perform the measurements! Furthermore, it was the collective opinion of PubCom that it was most likely that an item not meeting specification was a faulty item, rather than reflecting exaggerated claims by the manufacturer.

Therefore, PubCom decided that we would not routinely attempt to undertake such objective testing. We decided that most readers would be happy to have reviews that gave perceptions of equipment performance and characteristics, with the reviews undertaken by experienced amateurs. If the item for review did not appear to meet expectations, we could take one of two steps: undertake further tests and/or liaise with the equipment supplier. In all cases, we allow the supplier to comment on the review prior to publication, without any commitment to altering the review text. In the event of the review author/s and the supplier disagreeing, we will publish any comments from the supplier/manufacturer together with the review.

With regard to Brian's comment on the magazine layout, he is welcome to his views. Detailed layout is determined primarily by our publication house, based on the raw material that we supply, with feedback by the PubCom proofing team. Most individuals will often have their own personal view, but the team decides if the supplied material is acceptable. Again – most of us are simply enthusiastic volunteers, not professionals in the publishing realm.

I trust that the majority of readers find these approaches acceptable – comments are welcome.

ar

The changes – two years on

October 19 2007 was the second anniversary of the introduction of the restructure of the Australian amateur licences, and in particular, the introduction of the Foundation licence.

We now know quite a bit about the effect of the changes, in part because we were asked by ACMA to provide some information on the new licence structure, and in particular on the Foundation licence, and so we carefully reviewed the information we had available.

In the two years, the WIA has qualified 1,834 people for the Foundation certificate of proficiency. Up to about a month ago 228 of those who qualified for the Foundation licence have attempted at least one up-grade subject. 195 Foundation licensees have qualified to the Standard level and 36 have qualified to the Advanced level.

One effect of the introduction of the new entry-level licence has been the reversal of the trend of ever reducing amateur licence numbers.

On 30 June 2001, there were 15,017 amateur licences current in Australia, including repeater and beacon licences as well as people who held more than one callsign. By 30 June 2005, that number had dropped to 14,041. On 3 September 2007, the date of the ACMA data used for the Call Book, the total number of amateur licences current in Australia had risen to 15,326.

We also wanted to know where the people we had qualified came from, and so we took the some 1500 people who had been qualified from March 2006 to the end of September 2007, and that produced the following:

Victoria	516
NSW/ACT	472
Queensland	175
SA	161
Tasmania	72
WA	86
NT	18

We wanted to compare the number

qualified in each state with the population in each state, and so comparing the number of people qualified in each state as a percentage of all people qualified in Australia with the percentage of total population in that state using March 2007 ABS figures, giving us Figure 1. We also reviewed the same group of 1,500 by age group, and what we found is shown in Figure 1 below and Figure 2 on the page 4.

This shows the middle to higher age group as the largest group, but we also find that the number of younger Australians undertaking the entry-level examinations is increasing. This age group will be the area where career choices will be made, and the Foundation licence may be a factor in these choices.

We also looked at distribution by gender, and found that of all who sat, 12.6% were female, with a fairly even distribution across all age groups, unlike the males where the preponderance were

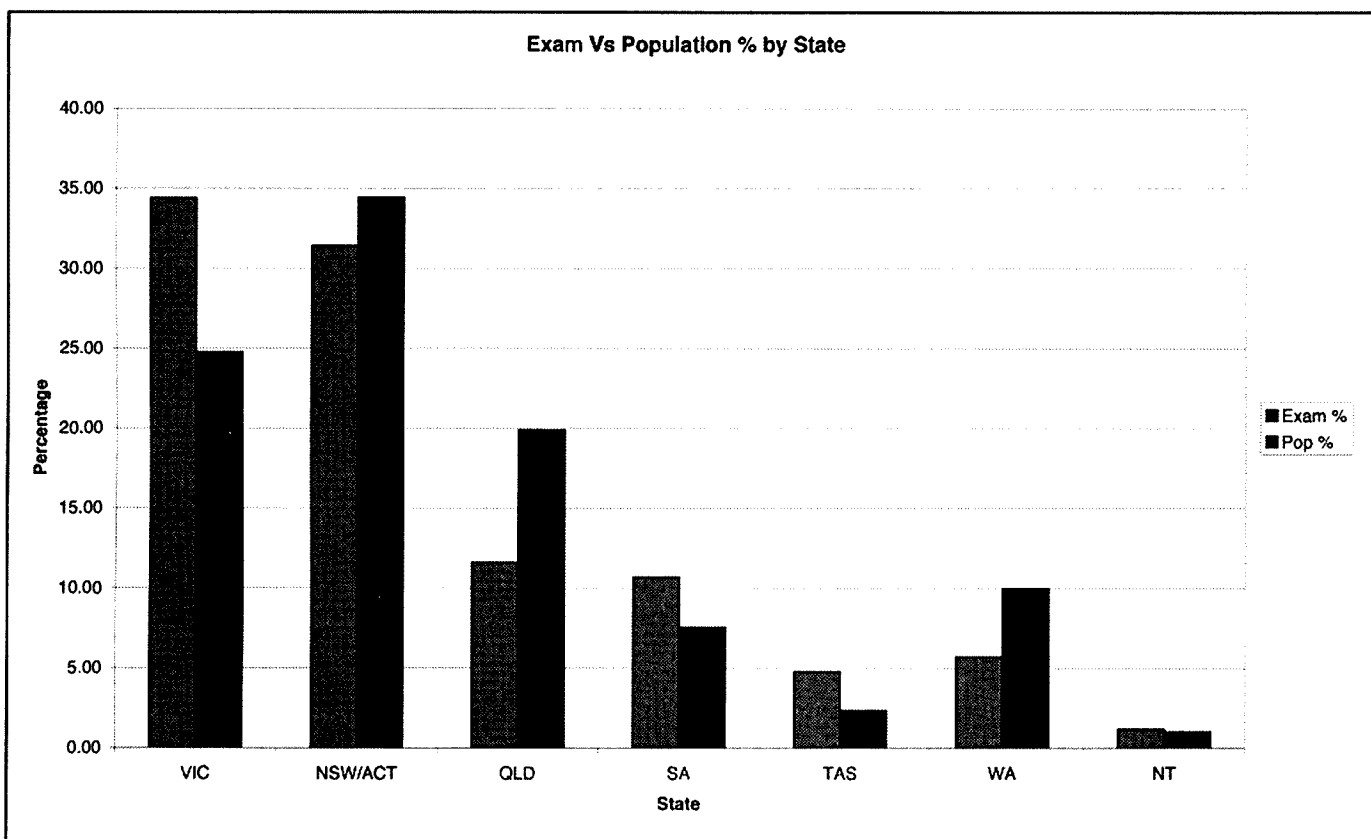


Figure 1

FOUNDATION EXAMS BY AGE GROUP

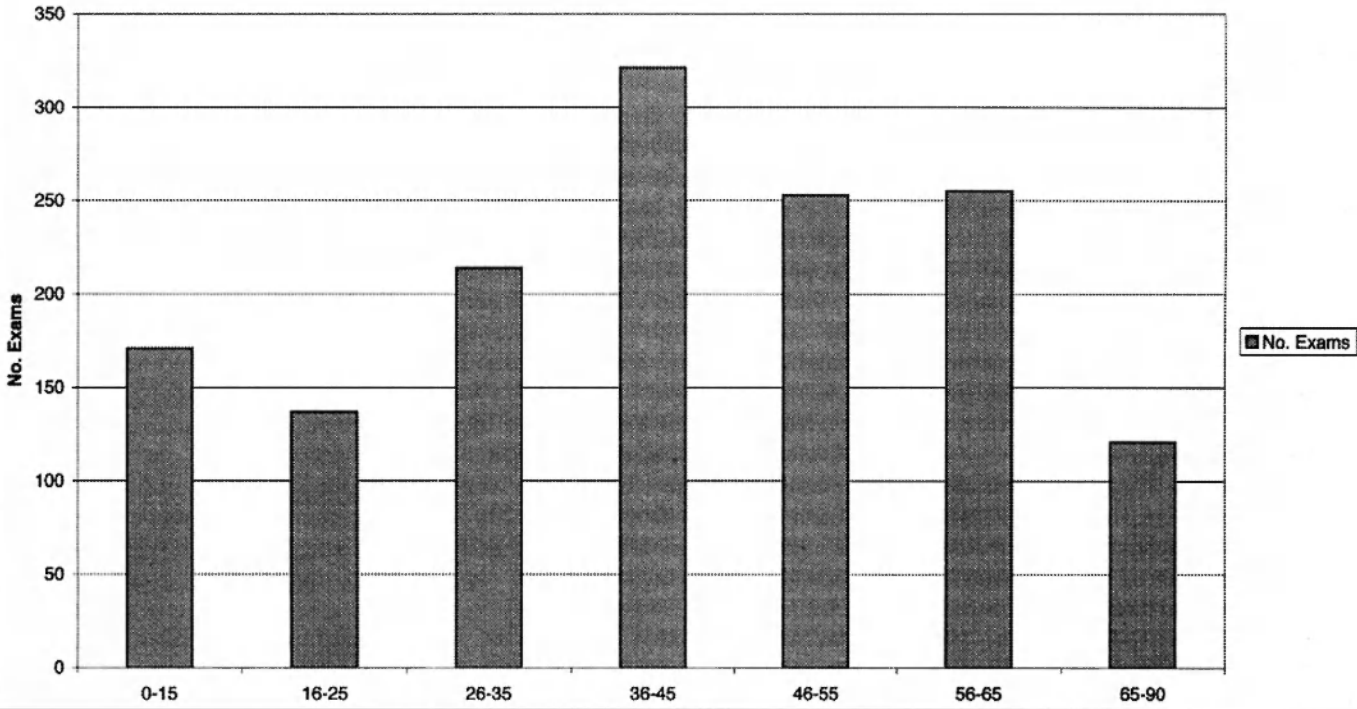


Figure 2

in the middle to higher age groups.

So, what can we say about all of this?

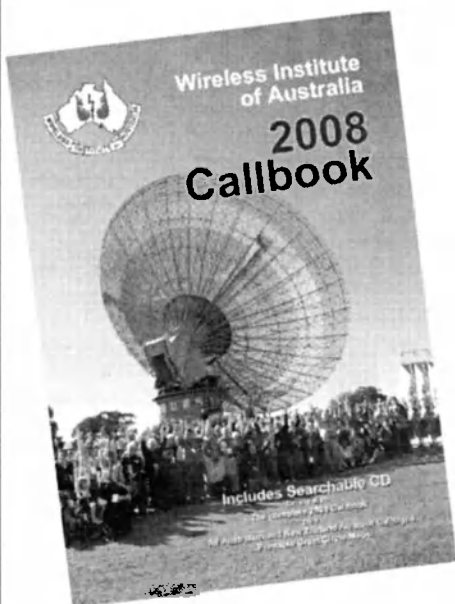
Let me simply repeat the way we expressed our judgement on the material we submitted to ACMA as follows:

While the period since the introduction

of the new structure is short, and the constraints of clubs not necessarily moving immediately to offer training for higher levels and other constraints must be borne in mind, it appears that the new amateur licence structure, and particularly the introduction of

the entry-level operating licence, the Foundation licence, has been successful in attracting new and younger entrants, and the number seeking to up-grade is satisfactory, and overall, the policy objectives of the changes have been achieved.

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Foundation licensees cannot use digital voice modes: ACMA

Believing it desirable that Foundation licensees embrace the new modes with the emergence of digital technologies, the WIA has sought clarification from ACMA, requesting a number of changes to the Foundation conditions.

Schedule 3A of the Amateur Licence Conditions defines the modes that may be used by Foundation licensees, and does not include the appropriate emission mode designator for digital voice modes such as D-Star. D-Star requires the callsign to be embedded in the transmission stream to use a voice mode.

The WIA formed the view that requiring the callsign to be embedded to enable voice communication, essentially no different from other permitted voice modes, was not a difference that should exclude Foundation licensees from using these new modes. Further, it did not change the character of the licence as an entry-level licence. Accordingly, the WIA approached ACMA seeking a further amendment to the LCD to permit such use.

The WIA argued that as the Foundation licensee can only use a transmitter that has "been manufactured commercially" the programming of the necessary identification is no more difficult a task than programming a mobile phone, and that the additional information required for qualification was minimal.

The WIA proposed the addition of an appropriate emission mode designator for Foundation licensees in the 144.000 to 148.000 MHz and 430 to 450 MHz bands, with the additional provision in paragraph 29 of the LCD to permit, if the emission mode was digital voice, any data necessary to enable the use of the voice mode.

ACMA has now responded to the WIA's approach, rejecting the proposal.

ACMA argues that the entry-level licence is meant to be easy to obtain. The amendment proposed to permit digital voice mode "would require expansion of the current syllabus and add a level of complexity to the qualification."

ACMA also contends that adding digital voice modes would erode the difference between the Foundation and the other higher levels of licence, and that the digital voice mode would

require the transmission of digital data, incompatible with the Foundation licence and finally, a further amendment as requested would create further delay in the implementation of the outcomes announced 2004.

The WIA is surprised by the response from ACMA.

WRC-07 started on 22 October

The ITU's World Radiocommunication Conference 2007 (WRC-07) commenced in Geneva, Switzerland on 22 October and will run until 16 November.

Keith Malcolm VK1ZKM left for Geneva on 19 October. Keith will be a member of the Australian delegation to the WRC, nominated by the WIA and representing the amateur services. Keith's travel and other costs are being met by the WIA.

There are 3 items of particular interest to amateurs on the agenda for the WRC.

One is an agenda item that would allow the allocation of the band 7.2 to 7.3 MHz in Regions 1 and 3 to the amateur service, achieving a world wide 7 to 7.3 MHz band. Another matter is the proposal for an allocation to the amateur service of the band 5.260 to 5.410 MHz. The final proposal for a secondary allocation for the amateur service 135.7 to 137.8 kHz with a 1 watt e.i.r.p. power limit does seem to have fairly general support.

"We are lucky to be represented by such an experienced and qualified person, and I am sure that Keith has the support and best wishes of all Australian amateurs" said WIA President, Michael Owen VK3KI.

Keith will be reporting regularly to the WIA, and the WIA will be passing on as much information as possible about this important conference.

Second birthday of Foundation Licence

The second anniversary of the introduction of the Foundation licence in Australia occurs on 19th October 2007.

Just short of a year ago, the WIA announced that 1,000 people had qualified for the Foundation licence.

A year later, on 19th October 2007, 1,834 people have been qualified by the WIA for the Foundation Licence.

"Not quite 1,000 a year, but very close" said WIA President, Michael Owen

VK3KI. "A week ago I attended a lunch for the Presidents of the Queensland amateur radio clubs and the enthusiasm among those present for promoting amateur radio and the entry level licence in Queensland, persuades me that there is every prospect that in a further years time we may well be close to 3,000 people qualified for the Foundation licence."

Icom gives D-Star repeater to the WIA

Icom (Australia) Pty Ltd has given to the WIA a D-Star repeater to be located at Olinda in the Dandenong ranges, to serve the greater Melbourne area.

D-Star is a digital protocol developed by the Japanese Amateur Relay League (the JARL) and stands for Digital Smart Technologies for Amateur Radio.

The repeater will be licensed as VK3RWN and will operate on the 2 metre, and 70 and 23 cm bands. It will take full advantage of the facilities offered by D-STAR, including the opportunity to interlink with the extensive D-Star network, using the Internet as the carrier.

"The WIA has gratefully accepted this generous gift and thanks Icom Australia for its support" said WIA President Michael Owen VK3KI. "Icom has been a great supporter of the WIA, and this is another example of that support."

2007 Queensland Presidents Lunch

The Queensland Advisory Committee continued the tradition of an annual Presidents Lunch at the Geebung RSL Club on 13 October 2007.

The lunch was attended by the presidents or other representatives of some 17 clubs from Townsville in the North to the Gold Coast in the south, with members of the Queensland Advisory Committee, WIA President Michael Owen VK3KI, WIA Vice President Ewan McLeod VK4ERM and WIA Secretary Ken Fuller VK4KF.

Michael gave a report on the current WIA activities and the attraction, training and qualification of new amateurs across Australia.

It was generally agreed that the number seeking to up-grade was very encouraging and there was considerable discussion of the best means of attracting new amateurs.

A handy base for portable antennas

Ron Holmes VK5VH.

Many years ago I bought a war disposals signalling lamp with a folding tripod base. I used this base to support a portable centre-loaded quarter wave vertical antenna for holiday operations. The earthing arrangement then consisted of a couple of pieces of copper tubing about 60 cm long which I hammered into the ground below the tripod and connected to the outside shield of the coax. This arrangement worked very well in most locations.

However there were times when it was not easy to find the requisite soft earth into which to hammer the tubing. Sometimes I could use the vehicle or caravan for an earth or string out a radial or two. But the idea eventually occurred to me that the tripod itself could be wired up to form the lower half of the antenna. A couple of metres or more of wire was strung around the tripod legs about 10 cm above the ground. This was connected to an open-wire loading coil mounted under the top of the tripod. Clips were used to tap the coil for various frequencies. Results seemed much the same as before.

There was little point in suggesting to other hams that they get hold of a signalling lamp tripod. I doubt if they exist these days. So I have now built up a similar tripod with material easily available and this article presents, not

so much the same thing that I built, as the general idea. You may find better ways of doing it.

Tripod construction

Photo 1 shows the erected tripod. The legs are made from 70 x 35 mm dressed pine, 1 metre long. They are attached by hinges to the cap, which is 13 cm square.

You may consider that the legs would look better and be more convenient using shorter lengths of PVC pipe, fitting inside one another and extended for use. They could be length-adjusted by drilling a series of holes through the bottom few centimetres of the top section and the top few centimetres of the bottom section. A pin would then go through both sections to lock them in place.

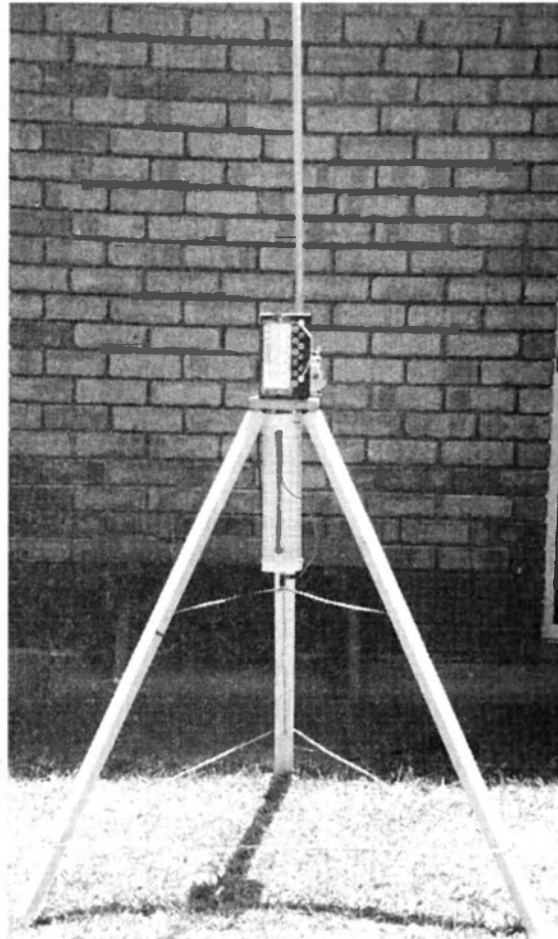


Photo 1. Tripod base, erected

available from hardware stores. A slit 1 cm wide runs down each side of the former starting and ending about 2 cm in from the ends. I made saw cuts across this every 5 mm to hold the turns of the bare wire and enable tapping.

The coil has 20 turns close-wound at the top, and 35 turns spaced 5 mm apart below this. I used enamelled copper wire about 0.8 mm diameter for the close-wound section and bare copper wire bought at Cheap as Chips for the lower part, for ease of tapping. It was too thin

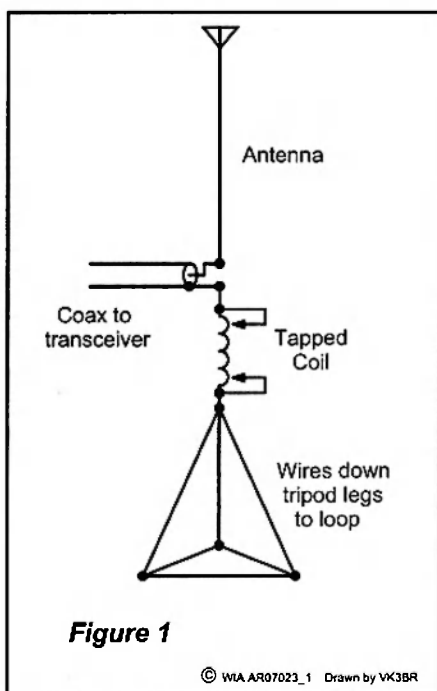


Fig. 1 – Schematic circuit

The earth system

The earth loop, some 2 metres long, is shown in the photos, strung between the three tripod legs about 10 or 15 cm above ground, and so capacitively coupled to it. There are three leads from the bottom of the loading coil, each running across to a tripod leg then down it to connect to a corner of the earth loop. The electrical system is shown schematically in the circuit of Figure 1.

The coil

My coil is wound on a PVC tube 30 cm long and about 8 cm outside diameter with caps each end. This material is

so I twisted two lengths together. A lead with an alligator clip at each end of the coil allows the use of however much inductance is needed to get the lowest SWR reading. Of course you can use any type of coil you like so long as it has sufficient inductance for the job.

The coil shown in Photo 1 is an earlier version, comprising only 5-mm spaced windings. It would not tune up on 80 metres without adding a variable capacitor, which is just visible behind the black box. The remedy was to add the additional close-wound section mentioned above.

Conclusion

What I am suggesting is the general idea of a base for portable antennas, with a built-in earth system. My XYL made a long bag of japara cloth into which everything is stowed, and which lies neatly just inside the boot of the car.

The antenna mounting arrangements can be adapted to suit your own requirements. My system has an SO-239 coax socket mounted under one corner of the tripod cap, with its centre pin connected to the antenna and its body to the top of the loading coil.

In Photo 2, the base is seen in use on the foreshore at Robe in the south-east of South Australia. The antenna here is a larger version of the tapped base-loading model used in my 'Shack in a Brief Case'. In this case, the antenna consists of two one-metre lengths of aluminium tubing, one fitting inside the other, plus a telescopic whip on top. It tunes up on all bands except 160 metres. (For 'Shack in a Briefcase', see AR July 2002 or look it up via the WIA web page (wia.org.au/armag/2002/AR_July02_pp4-7-9-10.pdf)).

ar

Over to you

Equipment review in August 2007 AR

Much of the material appearing in recent AR magazines has been well written in appropriate style and good English. But ...

I wonder whether there has been a little too much licence given to the reviewers of the Icom IC-756 Pro III?

I work as a professional writer. When I am asked to review an item, I compare the performance of the item with published or industry-standard specifications. This particular review fell a long way short of such. It was little more than a pair of fire-siders wind-bagging. Some of the material was pure marketing waffle - probably taken straight from the manufacturer's material - but most was pure, unsupported and untestable opinion.

Why such a big photo of the microphone, to which two small paragraphs were devoted, while the remaining 4.5 pages were supported by three photos, two of which had insufficient detail to support any of the text, and the other which was accurately described as containing nothing?

What is your editorial policy?

Brian VK2GCE

(Ed: see this month's Editorial Comment)



Photo 2 – Portable base in service

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Equipment review

The Yaesu FT-450 all mode HF and six metre transceiver with IF DSP

Ron Fisher VK3OM.

Photos by Bill Roper VK3BR.

The FT-450 - an overview

No, not just another HF transceiver. This one is different in all aspects of design and presentation. It is in some respects a small version of the popular FT-2000, sharing the IF signal processing and many other features of this transceiver.

It is advertised as a "compact" transceiver. The actual size is 229 mm wide, 84 mm high, 217 mm deep and it weighs 3.6 kg. Interestingly, the front panel is the same size as the old FT-7, one of the first solid state transceivers that Yaesu produced. I am sure many readers will remember and are still using this wonderful old transceiver.

So what does the FT-450 have and where does it fit into the scheme of things? Looking at the last question first, I see the FT-450 as a compact home station rig or for use as a portable, but perhaps not as a mobile. A mobile bracket is offered as an option which might be useful if you drive a bus, but as the front panel cannot be made to operate remote from the body, I don't think it would be practicable to easily fit it into a normal car.

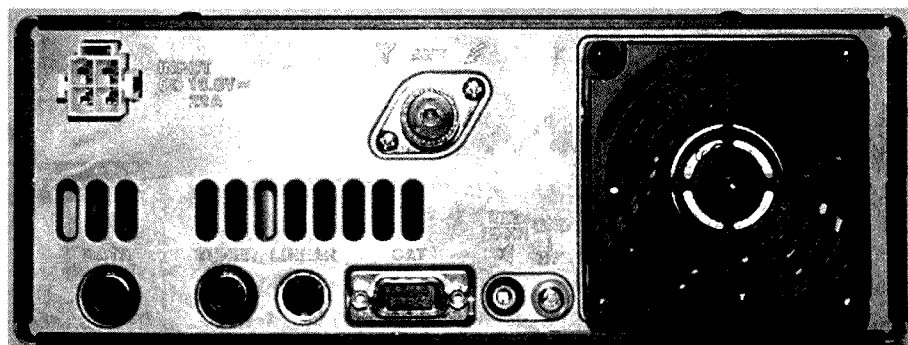
One change introduced in the FT-450 is a new DC connector in place of the six pin plug and socket that we have become used to over many years. This is a four pin plastic plug which Vertex tells me is the new "standard". I must say that Yaesu is not the only manufacturer to adopt this plug. I have to wonder if the various companies get together to decide on these changes.

The FT-450 is a rugged, multi band multi mode transceiver that provides coverage of the 160 to 6 metre amateur bands. There is also a full general coverage receiver tuning from 30 kHz to 56 MHz. It runs 100 watts output on all modes except AM where the power is reduced to 25 watts. An external 13.8 volt power supply rated at 22 amps is needed.

An inbuilt automatic antenna tuner,



FT-450 front with mic



FT-450 back panel

the ATU-450 is available as an optional extra and this can be installed by Vertex on purchase of the transceiver. This tuner was fitted to the transceiver supplied for our review. Other antenna tuners are available as options which I will describe later in this review. The transceiver comes with a hand held microphone, a DC power cord and a comprehensive instruction manual which comes with a

complete set of circuit diagrams.

A notable feature is the liquid-crystal display which presents a very large and clear frequency readout. A bargraph is calibrated as an "S" meter, transmitter power output meter, an SWR meter and an ALC indicator. Another display shows the status of the DSP setting. These include the contour setting, which allows the shaping of the receiver pass band to



A close-up of the microphone supplied with the FT-450

enhance the receive audio quality, the position of the notch filter, the degree of IF selectivity, the amount of noise reduction selected and the position of the IF shift control. The third section of the display depicts a block diagram of the receiver and shows which of the various parameters have been set by the operator. These include the front end attenuator, the intercept point optimization selector, the noise blanker and AGC status.

Like all modern radios, the FT-450 is menu driven. There are actually 65 menu items, most of which are set and forget. To make thing easier, the menu mode can be set to display all 65 items or an abbreviated set of the 19 most used items.

A technical overview

Starting at the front end, the signal goes through the selectable 20 dB attenuator. Then through the eight band pass filters to reduce out-of-band interference. The RF stage has two 2SK520 JFETs before going into the first mixer. The RF stage can be bypassed by switching on the IPO. The first IF frequency is 67.899 MHz and this is preceded by the four pole 10 kHz roofing filter which reduces adjacent signal interference. The second IF at 24 kHz is where the magic of the DSP takes place.

...an excellent little transceiver, let down by a few very simple omissions

The FT-450 on the air

The first impression when using the transceiver is the small size of the tuning knob. Not only is it small, it is hard to get used to. There is no spinning action to help. Also with the lack of a tilt bail to raise the front of the transceiver the bottom of the knob is very close to the desk. One solution is to use the DSP selector control which enables you to zip up and down the bands in pre-selectable steps. The received audio on SSB through the internal speaker was quite acceptable, but perhaps a little lacking in both high and low frequencies. Switching to AM, this was even more noticeable. At this point, I decided to run a frequency response test to see what was going on. With the AM band width set to the widest point of 9 kHz, I noted the following: With 1 kHz set for reference at 0 dB, 250 Hz -6 dB, 300 Hz +2 dB, 600 Hz +1.5 dB, 2200 Hz -6 dB and 3000 Hz -20 db. No wonder the audio sounded restricted.

Putting it on SSB, one of the first things I listened for was the digital buzz. I had been alerted to this from reports from the US, and sure enough it was there loud and clear. Whilst it does not block out the transmit audio, it is none the less most annoying. In later tests, using AM on 160 metres, the buzz was not reported.

TVI High Pass Filter with Braid Breaker.




An inline TVI filter with Braid Breaker.

A large amount of TVI can travel down the outer braid of Coax as well as the centre conductor. The braid breaker isolates the centre conductor and braid from the TV/VCR/DVD. The High Pass filter cuts in at 50MHz. This filter has -80dBm attenuation at 40, 80 and 160 Metres.

Pager Notch Filter:

A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

Contact us if you need a special filter, we manufacture here in  Australia rather than overseas.

www.vicnet.net.au/~jenlex

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It seems that this problem is confined to early model transceivers and only on SSB. One wonders!

One feature that was appreciated is the digital microphone equalizer. After battling with others where there might be hundreds of settings, this one has ten preset functions and these are shown graphically on the display. You can choose flat, bass boost or cut, middle boost or cut and high end boost or cut or a combination of any of these. A few on air tests will soon sort out the best setting for your voice. Tests I carried out on air indicated that for AM, the flat position "0" was best, while for SSB position "4", flat bass and middle with high boost was preferred.

The speech processor is actually in operation all the time unless the low setting of the microphone gain has been selected. Slightly strange idea but it works very well.

Comparing the receive capabilities to my FT-1000, I would consider the FT-450 to be a shade better when compared on 40 metres, listening to European DX in the late afternoon. This is where the selectable DSP comes into its own.

The digital noise reduction was most effective in reducing the general background noise that seems to plague 40. The noise blanker also seems to be very effective particularly when used with the DNR. Strong signal handling was excellent as was the rejection of these same signals when trying to pull a weak "G" out on an adjacent channel.

Another useful feature is the voice readout. This needs to be set up in the menu and from there a push of the "voice button" gives the frequency, mode and "S" meter reading. A very handy feature for visually impaired amateurs. One thing to watch when using menu mode is that the tuning will be locked. Just push and hold the "F" button for one second and get back into VFO mode. I have to say that I got caught on this one a few times. However another similar experience is worth noting. If you are using AM mode, and tuning below 1.8 MHz, the tuning will lock. You are expected to use the DSP/SEL knob to tune in steps. This is the default setting in the menu. Once you know, this can be changed easily to produce a normal tuning output. I got caught on that one too.

The ATU-450 internal auto antenna tuner appeared to work well. It is

designed to match a 3:1 SWR. Most of my antennas are well below this, but I set up an ATU to produce a 3:1 SWR which the FT-450 fixed easily.

A quick description of the FC-30 and FC-40 ATUs

These are both external units, but can be controlled from the FT-450. Firstly, the FC-40 is designed to match a long wire antenna. It will operate from 160 to 6 metres with a 20 metre or longer wire. Secondly, the FC-30 appears to have the same matching range as the ATU-450. Note that neither of these units was supplied for review.

The operational manual

This runs to a total of one hundred pages and, in general, is well put together, with many very clear diagrams. You will need to keep it handy when setting up the menu items. It is nice to see that a full set of circuit diagrams is included in the manual. Perhaps the only thing that is missing is an actual index. While the table of contents is very complete, a full index could save time looking for an elusive item.

Conclusions

The FT-450 is an excellent little transceiver. However, it is let down by a few very simple omissions.

- Number one is the curious lack of a tilt bracket to lift the front panel. There is not even one offered as an option.
- Number two is the poor audio response in AM mode. I am sure there are still many of us out there who enjoy listening to AM broadcast stations when the bands are dead. Is a reasonably flat response from 100 Hz to 4 kHz too much to ask for?
- The supplied microphone is very large and has no up/down buttons. Could I suggest the MH-31A8J would have been a much better choice?
- Connecting a linear amplifier other than the very desirable VL-1000 could present a problem. The ten pin mini din plug needed to interface to the FT-450 is not available from Vertex nor from any of the usual electronic parts distributors. I presume that the required connecting cable is

supplied with the VL-1000.

Having said all of that, there is a great deal to like about the FT-450. The overall design is top class. The receiver performance in SSB is top notch. Transmit audio is good, but not outstanding. I would have liked to have tried one that did not have the digital buzz on the transmit audio but one was not available. I gather this has been fixed on later models but how did our review transceiver and many others get out of the factory with a problem like this?

I was curious about the supplied microphone, the MH-67A8J. There is no mention as to just what type of microphone it is. I decided to unscrew the back and take a look. For the huge size of the case I expected a bit more than a 4 mm diameter electret insert on a small circuit board with a microswitch for the PTT, and a couple of steel plates about 25 mm square bolted inside. In spite of the impressive grille on the front, the actual opening for the microphone is a slot about 4 mm by 1 mm. However it produces acceptable audio quality.

The FT-450 has been a pleasure to review. I would like to thank the staff at Vertex Standard for their help answering my questions and of course for supplying the review transceiver.

FT-450 pricing and options

FT-450 Transceiver	\$1815.00
ATU-450 Internal ATU	
FC-40 Auto ATU	
FC-30 Auto ATU	
VL-1000/VP-1000 1 kW linear	
Extra DC Lead	
Note: the DC plug is not available as a separate item.	
MH-31A8J Hand Mic	
Carry handle	
Mobile bracket	

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Comment from Vertex Standard (Australia) Pty. Ltd.

Peter,

Thank you to Ron and yourself for giving us the opportunity to have our product reviewed. We apologize for being unable to make a newer version without the digital buzz available for the review. We have no amendments to recommend or comments to publish.

Daniel Cole, Marketing Coordinator

Charging single small cells with solar energy

Grant McDuling VK4JAZ.

I have recently begun making use of electronic devices that are powered by AA and AAA cells and in so doing, became aware of a need that I had to take action to resolve. You see, my MP3 player uses only one AAA cell while a pocket radio I listen to while working is powered by three AA cells.

Now I guess there is nothing unusual in this, but what was proving to be bothersome was the fact that my battery charger only works if I load in two cells at a time; it simply won't charge a single cell at a time. So with the AA cells, for instance, it is fine to charge two at a time, but how was I to charge up the third one without having to invest in enough of them to be able to charge up four at a time when I only needed three?

You get my dilemma. While browsing through the latest Dick Smith catalogue, I stumbled across mention of the range of solar modules they stock and I began to think. Time to get back to the drawing board, I decided, and to put plans in place for a simple to construct and easy to use solar charger that can handle one cell at a time.

I settled for a 2.0 V 200 mA solar module that cost me all of \$14.98, an 1N4004 general purpose rectifier diode to protect the cell from discharging back into the solar module when not charging, and a miniature centre off switch that set me back \$3.96. To that I added two battery holders, one for the AAA cell and one for the AA one.

I mounted the components on a simple piece of masonite board, to which I added four legs. Then I simply wired the whole contraption up according to the schematic I knocked together, and I was in business. The results were more than pleasing. I found I could charge up my flat cells in a day. This simple contraption is, of course, an unregulated charger that doesn't require anything other than simple alignment – pointing it roughly in the direction of the sun.

I experimented with differing times and kept notes to assist me in determining just how long I need to expose the cell to the sun to achieve a full charge. I would take the cell out of its holder after four or five hours and measure the voltage with a DVM. I discovered that after around 8

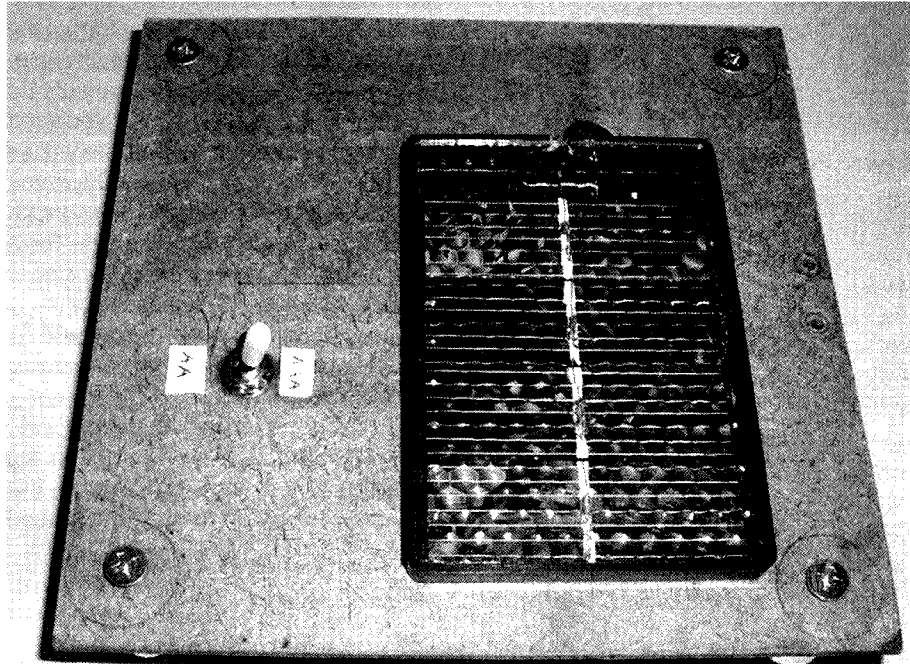


Photo 1

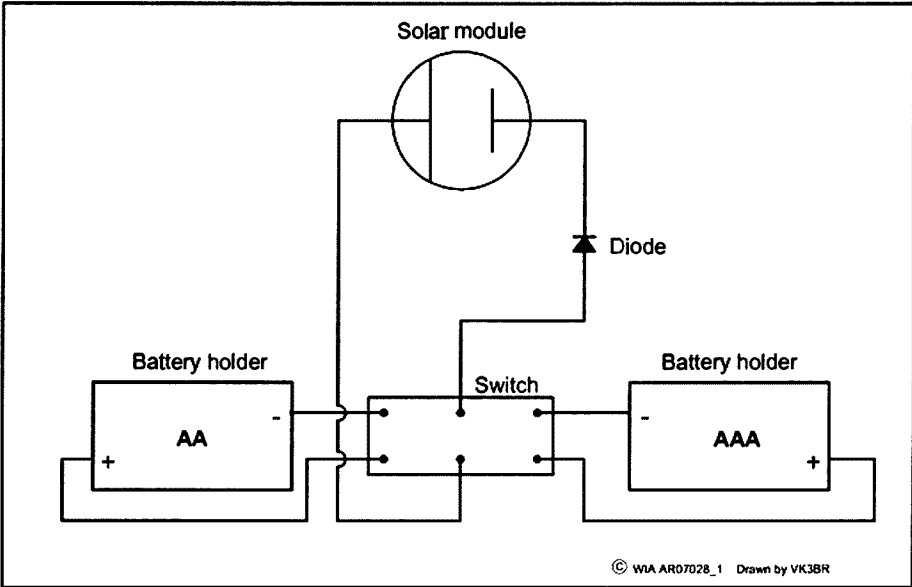


Figure 1

continued next page

A 'Bodgers' way of making PCBs

Reg Carter VK3CAZ

I do admire the beautifully sculpted PCBs that appear in AR along with details of how to produce them using the full facilities of the modern computer.

However, I am one of those difficult people who consider the PCB as merely a replacement for 'rats-nest' wiring and since the track side of the board is almost inevitably hidden on the underside of the device being built I don't really care what it looks like as long as it is correct and sufficiently spaced so as to avoid electrical problems.

Hence my 'Bodgers' way of speedily producing 'one-off' boards.

My method is as follows:

Get a copy of the track side of the board and using transparent tape fasten it to the copper side of the blank piece. Then using a 1 mm drill or whatever size is needed drill all the holes needed. When that is done check it carefully to ensure all the holes have been drilled. This is most easily done by holding it up in reasonably good light and looking through the holes at a stronger light. You will be able to see the tracks and the holes, and when you are satisfied that

they are all drilled remove the diagram. Then holding a 3 mm drill in your hand rotate it backwards so as to de-burr the holes. Now using a 'Brillo pad' or similar, clean the copper side thoroughly, follow up with a wash with methylated spirit and allow to dry.

With that done, take the printout of the tracks and using a Pilot brand freezer pen draw in the pads and tracks (I usually do the entire thing freehand but if you want to make a pretty board then use a rule for the long straight tracks). Once you are sure the tracks and pads are drawn correctly leave the 'ink' to dry for a little while and then go over the tracks again to make sure of enough resist. If you only press lightly the tracks will be as narrow as you wish and as dense as is necessary.

Next, dump it in a dish of ferric chloride and watch it whilst agitating the dish. Once the unwanted copper has dissolved remove it from the dish and

wash it thoroughly (but do not do this in a stainless steel dish or sink). Dispose of the used ferric chloride properly and the job is done. It may not be a pretty board but it does the job and who ever sees the underside again! Methylated spirits on a rag will remove the resist.

If I am doing a board for a device which is not for high frequencies and for which I have no board layout then what I do is literally transfer the circuit diagram onto paper by drawing all the pads, tracks and component holes as close as necessary for the components. Then fix it to the 'plain side' of the blank PCB and drill the needed holes from that side. After de-burring the holes the tracks can be drawn as before on the copper side.

Crude it may be but it is swift and should you need more than one board just tape the blanks together and drill the whole lot at once.

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Charging single small cells with solar energy

continued from previous page

hours the reading would indicate around 1.2V. and bearing in mind that the cell is rated at 1.25V, I decided this was sufficient. However, when listening to my MP3 player, the charge would only be sufficient for around an hour before the player would die. So I needed the cell to be in the sun for longer. I doubled the exposure time and the results are more like what I would expect - 1.33V. And it doesn't seem to matter if the weather is cloudy, good results were achieved just the same.

Because solar chargers are current-limited devices, it is fine to use the charger as is to charge single cells. Just watch for overheating, as the last thing you want is for the cells to get too warm in the Australian sun. They could start leaking. So monitor them as they charge and extract them when the charge is right.

This little solar charger will work for any type of rechargeable cell, and all for the one-off cost of around \$20.

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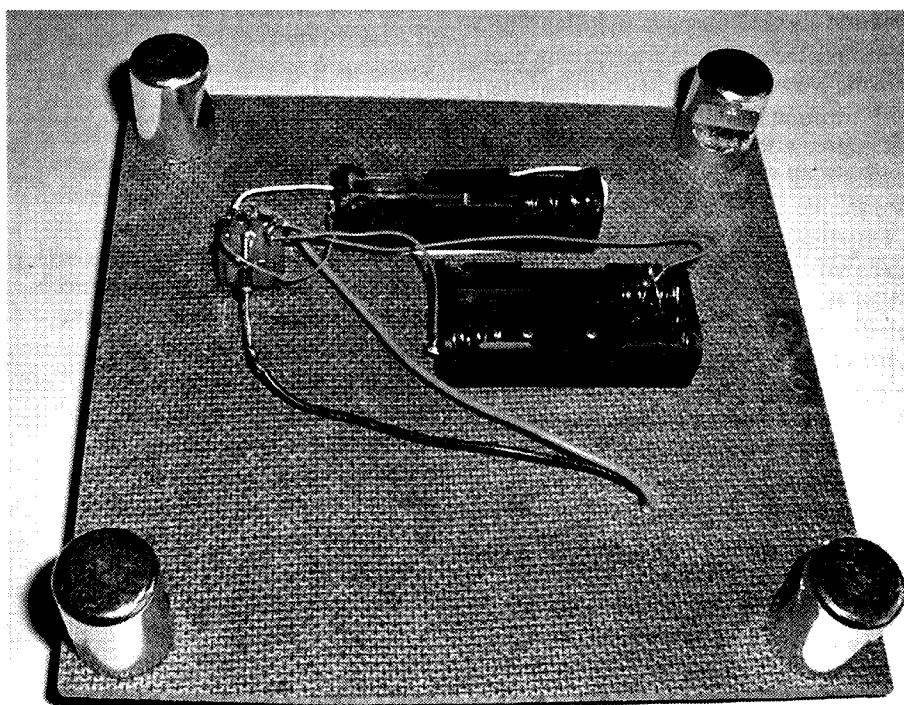


Photo 2

A pretty good antenna for 80 metres

Bill Isdale VK4TWI

As I write this, the sun is at the rock bottom of its cycle with no sunspots visible. The observatories monitoring solar activity are showing images of a smooth ball that could as well be an orange. Without the enhanced reflectivity to HF radio signals that a more active sun brings to the ionosphere, propagation on the high frequency bands is more intermittent. The DX is harder to find but we can still make good use of the existing conditions as we await the return of a solar maximum.

At times like this, an effective antenna and choosing suitable operating frequencies can make the difference between a rewarding operating experience and a loss of enjoyment in the hobby.

Lower frequencies will be reflected even when the ionosphere is receiving very little solar enhancement. In fact, the first few hours after dark are quite suitable for working the lower part of the HF band, with many friendly nets regularly operating. One of the realities of using this band is that at night good results can be achieved out to about 1,500 kilometres from your location by using a radiation pattern that launches the energy straight up so that it will reflect downwards and disperse over a footprint very much like that thrown by a satellite transmission. By about 8 pm or so, SSB on 80 metres will be coming alive.

A positive aspect of the present minimum ionospheric reflectivity is that it provides a suitable environment for critically evaluating an antenna. There is no risk of being misled by getting good results from an inefficient antenna simply because propagation conditions are very advantageous. A requirement to throw as much energy as possible straight up is very different from what is usually done to achieve useful DX performance, where a low angle of radiation is sought. For present purposes, a near vertical incidence sky wave is just what is needed.

Before starting construction, however, it is useful to establish some design criteria. In this case, the band to be operated within is towards the bottom end of high frequency, so an antenna that is an efficient radiator and catcher of energy at these frequencies will be fairly large. This will influence where it can be located. Vertical radiation can be improved by using a low antenna. This

is usually much easier to install rather than to attempt to locate it a quarter wavelength or more above the ground as we would be aiming to do if low angle radiation was our goal.

To maximize vertical and near vertical radiation, a half wave dipole mounted relatively low is quite effective. Energy will be directed upwards. There is certainly some loss into the ground as at most locations it is a poor reflector but the result is still satisfactory. This is going to be a pretty good antenna and not a perfect one.

A half wave dipole antenna cut for this frequency will be close to 40 metres in overall length. The design is relatively tolerant of some modification to allow it to fit within the available space and I have found that as long as the middle two thirds is fairly straight and level then taking the ends around a corner or drooping them down is acceptable as long as overall symmetry is not completely lost. The best compromise will be what fits in the space available in such a way that it is about 5 metres up and as straight and as far from obstacles as possible. With only a modest height requirement, creative use can be made of trees and structures as supports, usually at minimal cost. Some suitable exterior grade cord and some insulators to terminate the wire to are very inexpensive and the insulated wire sold by the roll at electrician's supply stores works very well. It is typically used in buildings as earth wire and is both keenly priced and widely available. The stranded wire is sufficiently flexible that it will tolerate the movement that

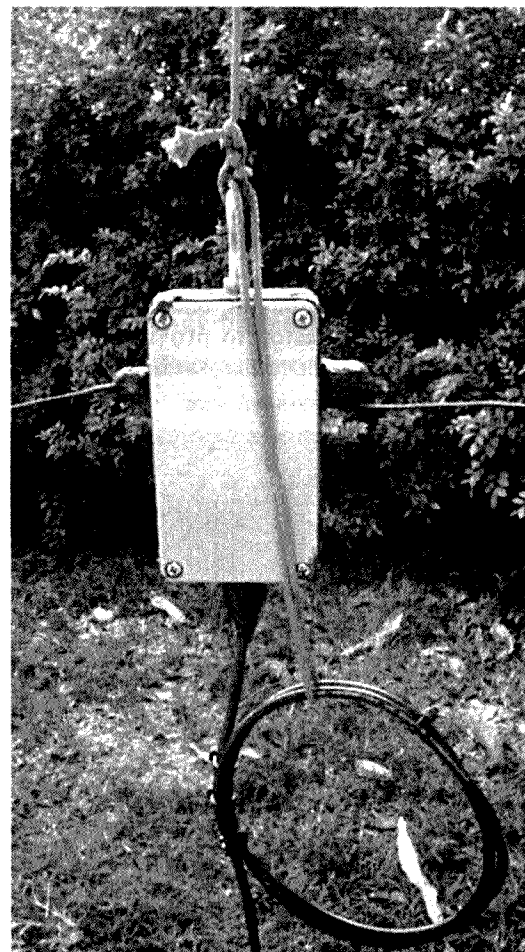


Photo 1: Balun – the cord takes the weight and the sealing tape keeps the weather out.

must be expected in the outdoors. The green and yellow striped insulation is thick and strong, breaking the outline sufficiently to provide a reasonable camouflage. The length of each quarter wave section of the dipole will be about 95% of the free space quarter wavelength at the frequency that you intend to use. Some will prefer to shorten the wire to 94% to take account of the effect of the insulation. Top quality hard drawn copper wire and Dacron cord is available

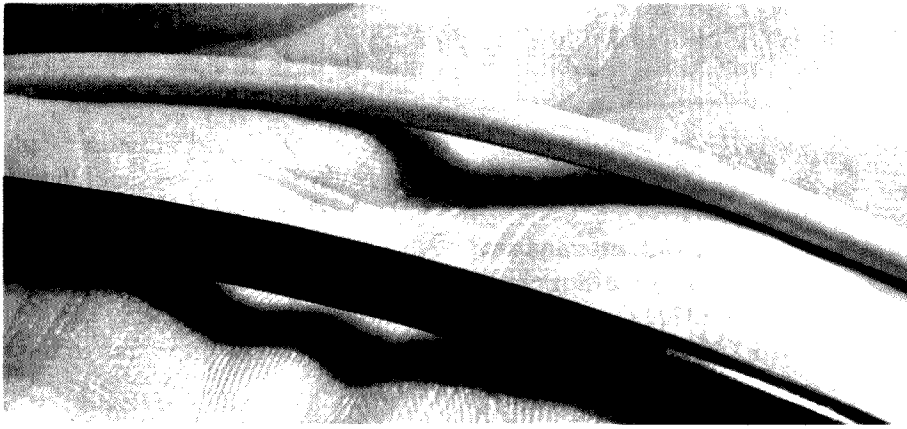


Photo 2: Wire – the light colours blend into light backgrounds.

locally from specialist radio hobby suppliers.

A 1:1 balun at the feed point will provide impedance matching to coaxial cable, which can be led into the shack. I won't go into baluns here other than to say that you can make one or buy a ready made item. If buying one, make sure it has been tested to provide a consistent performance across the HF

spectrum and will handle the power you intend to put into it. Be alert that a distant vendor may perhaps innocently supply something that is effective only in a narrow frequency range and the power handling of which is rated at some high value which it might be able to handle, but only for a very short time. Well made baluns are available locally for reasonable prices. These should be properly sealed so as to be water resistant and have an eyebolt on top to make it easy to hang them from a support such as a tree. A quality product which works well across the HF bands will be able to be used again for a variety of antennas as your needs change.

For use on HF, the coaxial cable can be as inexpensive as RG58 and still perform well if the run is not too long. 25 metres or so will have only a little loss. A lower loss cable will of course be more important for longer runs. It is not realistic to expect the connector on the cable to support much weight. To take the weight of the cable some of it just below the connector can be made into a loop of a size that it will comfortably curve into, perhaps about 15 cm in diameter, held in shape with some black

external grade cable ties and the loop used to tie the supporting cord to so that it holds the balun and also the weight of the cable.

Connections can be easily weatherproofed with one of the sealing tapes available from electronics stores. The connections of antenna wire to the balun, usually made with a bolt, will maintain the minimum resistance to signal flow if they are protected from the corrosion which exposure to oxygen and the elements will bring. The fittings will probably be stainless steel in a solidly constructed balun so corrosion of that metal will be slight but it is worthwhile to make an effort to keep the connections clean. Stainless steel is not corrosion free but corrosion resistant, the chromium content means that the slight layer of oxidation of the chromium forms a protective surface on the metal. Copper will oxidize significantly more and you may wish to get out the soldering iron and tin several centimetres of the wire at the point where you will be fixing it to the bolt on the balun so as to make it a little easier to work with and less prone to corrosion. Bending the wire into the desired shape before tinning it makes for a better result. I have found that sealing these joins keeps them remarkably clean and therefore optimally conductive for at least several years.

This antenna is purpose built for the task and can be expected to provide a low standing wave ratio [SWR] such that an antenna tuner is unnecessary. It will easily handle as much power as we are able to legally put into it and is very inexpensive. A variation is to dispense with the balun and use, for instance, a commercially available dipole centre, essentially a piece of tough plastic, to join the antenna wire to a length of ladder line. This is a balanced line and has hardly any loss. If it is possible to route it through the air clear of obstacles it can be taken to a suitable antenna tuner which may be used to match the impedance of the radio to that of the antenna over a wide range of frequencies. In the case of a dipole cut for 3.5 MHz it should be able to be operated as a doublet on all of the amateur HF bands above that as well. It may not be quite as good as a purpose built antenna for a particular band, but it will be pretty good, with energy lobes that will vary on different bands so that the directionality of the antenna will



Photo 3: Tree – I have used black wire here so you can see it.

shift, becoming more end-fire at higher frequencies.

It all comes down to the available resources, most particularly space. A wire antenna has the advantage of being inexpensive to construct and the material is readily available. Stringing up some wire is an efficient way to obtain the maximum area for the capture and radiation of signals with minimal wind loading. Another advantage is that the antenna is light and flexible. It can be built to allow for the movement of trees by using a counterweight to hold it over a limb so that it adjusts itself on windy days. Keeping the counterweight close to ground level will avoid having a weight suspended high in the air, a possible safety hazard. Looping the supporting cord over a tree limb and tying it off at a convenient lower location while leaving a coiled up length of cord sufficient to allow the antenna to be lowered and raised again makes for ease of maintenance.

A further major advantage of the wire antenna is its low visual signature. With a little attention to using light coloured wire and insulators against the sky, dark insulators and dark cord in amongst vegetation, the antenna becomes extremely unobtrusive; a real benefit. In my yard, with trees as supports, it proved challenging to take a photo illustrating the completed antenna. Performance is good, cost low and construction easy. Testing has shown that it is more difficult to see a yellow and green covered wire against the sky than if it is covered in black insulation, while black wire and insulators are harder to see than white ones in amongst vegetation. One aspect worth a little consideration is how to get access to suitable places in a tree to use for supporting an antenna. Naturally enough, trees tend to be light and flexible at height so there may not be a good support for a ladder. It would be unwise to climb a ladder where there is a risk of falling. Using something like a slingshot to take a line into a tree brings the risks inherent in having a projectile in the air; it will not always go where you intend. I have had some success with what is called a squid pole. I thought, until I saw one, that perhaps the name came simply from them being used to catch squid. In fact, the tapered collapsible sections when extended look like a giant tentacle. A fishing gear shop is a good source and

a 9 metre pole can be had for around \$50. I have found that although fairly flexible, they are light and useful for dropping a line with a small weight attached over a branch. The pole stores in its own lowermost section, less than 1 metre in length and, being made of fibreglass, is not conductive, a comforting safety feature. Putting an antenna 7 or 8 metres up a tree while keeping both feet safely on the ground where they belong is worth the cost of the pole.

Safety in the longer term should also be considered when erecting an antenna. It is important to take into account what will happen in the event of a storm. Make sure that if it falls it will do no harm, particularly that it will always be well clear of power lines. As it will be radiating some energy, at least some of the time, have regard to the safety aspects of that and the possibility of interference to other equipment. It is best to avoid having a radiating element close to and parallel with other wires, including those inside a home, whether yours or someone else's, as it is more likely that a current will be induced in a line that is more or less parallel with the radiator. If the antenna is used at the frequency it is cut for, then the SWR will be low and there will be less likelihood of unintended radiation from the feed line causing interference to any other apparatus. There will be radiation from the antenna, not the screening sheath on the coaxial cable, and the radiation pattern will follow the shape of the antenna, not the feed line. A transmitter will be designed to protect itself from damage by automatically reducing power if a high SWR is encountered so designing the antenna for a low SWR is like taking a kink out of a garden hose – the transmitter will be able to effectively deliver its power and the antenna will both radiate and receive efficiently. This is particularly important if available transmitter power is limited.

An antenna will almost always involve a compromise of some sort. In this case, the compromises should be relatively easy to make and the antenna will be inexpensive, easy to construct and effective for the use for which it is intended. You could say that is a pretty good antenna.

The photos are by my son Billy Isdale.

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John Moyle 2007 Redcliffe Style

Steve Pearson VK4IT

The Redcliffe and Districts Radio Club participated in the 2007 John Moyle Field Day using the call sign VK4IZ. A portable multi-operator station was setup at the Murrumbong Scout Camp at Petrie, 25 km north of Brisbane. This event is one of the highlights of the club's calendar, and as per previous years, a great weekend was had by all who attended.

Two operating positions were set up at the campsite, one for 80, 40 and 10 metres, and the other for 20 and 15 metres. Yagis were used on 10, 15 and 20, with a vertical and dipoles for 40 and 80. Full legal power was used on all bands with both phone and CW operation. A few changes were introduced this year and proved to be very successful.

CW operation

In previous years, CW operation has been minimal and usually separate from phone operations. This year, a team of CW enthusiasts joined in the action and worked in tandem with the

phone operators. When voice contacts were few and far between, the CW operators sprang into action. The team approach worked brilliantly, maximizing contacts on the bands with the added bonus of getting a number of voice operators trying their hand at CW. The club followed up by conducting a CW 'Tech Talk' presentation in April.



Shaun and Charlie work 20 metres CW.

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Our Secret Weapon

One of the most time consuming tasks setting up in previous years has been the method used for getting wire antennas up into the tall trees. The bow and arrow and fishing rod approaches have been retired and the 'Big Shot' has been called into

action. The 'Big Shot' is an oversized slingshot, and it provided a much easier and faster way to get wires over large trees. A number of setup hours were saved using this device and the dipoles were up in no time flat!



George, Peter and Shaun get the wires over the trees while Kerrod watches from a safe distance.

Saturday Dinner

In previous years it has sometimes been a difficult task attracting the numbers required for a full 24 hour effort. How do you attract people out to the site? Provide a fully catered lamb roast meal! Peter VK4TGV started this tradition at last years JOTA activity and it looks like it is here to stay. Attendees at this year's field day enjoyed roast lamb and vegetables cooked to perfection from a number of camp ovens. Now we just have to work out how to keep people on the radios while we serve dinner!

The club would like to thank all who attended on site and the hundreds of stations in VK and beyond who answered our calls. Also thanks to Coates Hire for supplying the generator and Murrumbong Scout

Camp for the use of their campsite and portable toilet. A big thank you to the event organisers and all who assisted throughout the weekend. Another great John Moyle weekend Redcliffe Style!

More photos are available on the club website <http://vk4rc.we.net.au>



Peter prepares for the Saturday night feast.

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Time to get serious

Graham Selwood VK4SG.

Now it's time for some serious talking to the doom and gloom whingers in language that they'll understand.....*The bands are not dead....The bands are not dead....The bands are not dead.*

It's just your mindset that tells you that. I have worked more DX on HF in the last year than I have ever worked in any one year period of hamming since becoming licensed in 1975!

OK, you say, he must have an antenna farm to die for and a two kilowatt linear (idling at 400 W of course), as well as the latest and greatest all bells and whistles rig.... Naah not here! In the last year I've used my Yaesu FT-817 with a 40 W homebrew amplifier, a Kenwood TS-680 (circa 1988) and I am currently using a Kenwood TS-930 (circa 1984)...nothing special or 'State of the Art' there.

Antennas....Well I'm a VHF/UHF man at heart, so my 13 m pole has Yagis for 2 m, 70 cm and 23 cm up top. An inverted V for 40 m and a two element sloping wire Yagi for 20 m....pretty normal suburban backyard stuff there as well.

So what's the secret? Well, we've all got two ears and one mouth so you should at least use them in that proportion. In other words Listen, Listen and then Listen some more. That will get the first two parts of the secret solved. You will know where to operate and when to operate, and there's only one part left, how to operate.

After listening to yet one more statement on 40 m about 'dead bands'(you can hear the DX stations beneath the regulars), I went directly to 14100 to use one of the tools that every ham should be using, the IBP HF beacon network.

And this is what I heard at 4:00 pm local time on 20 April, 2007: see Figure 1.

What's that you say? A bunch of squiggly white lines on a blue background! Well that, my friends, shows a transmission, from left to right, from New York (weak), northern Canada, California, Hawaii, New Zealand (strongest), Perth, Japan, Russia (weak), Hong Kong, South Africa and a trace of Kenya.

The beacon network has 18 transmitters based all over the world, transmitting on 5 HF bands with variable power steps,

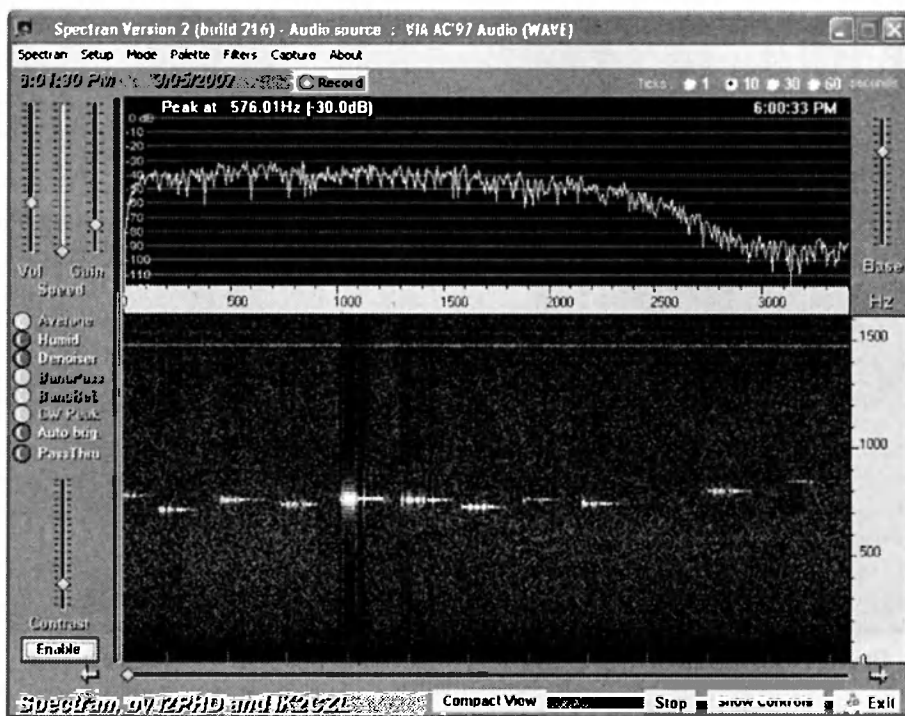


Figure 1: A Spectran glimpse of the international beacon network on 14.100 MHz.

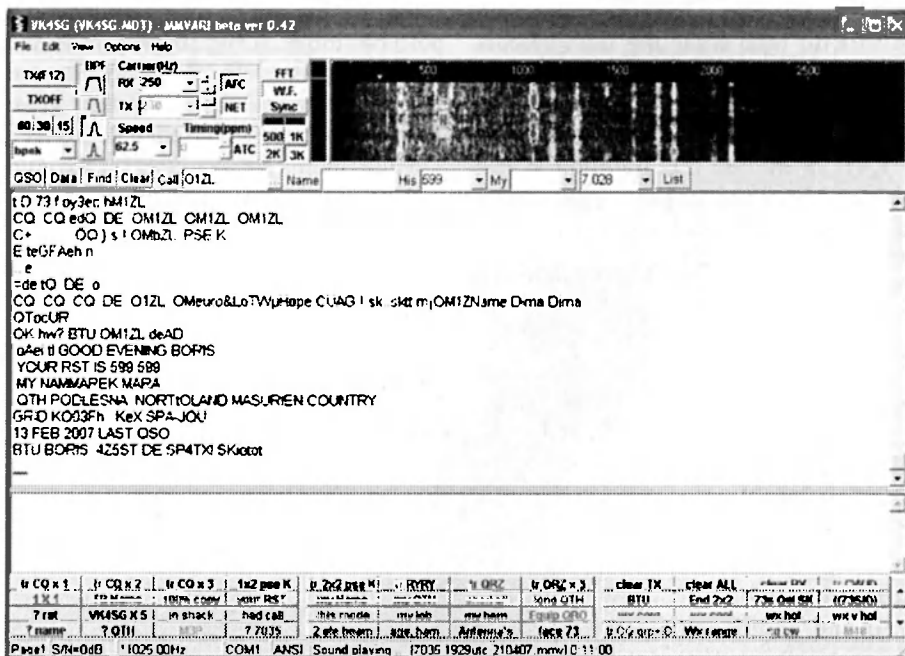


Figure 2: PSK31 signals (and one PSK63 signal) on 7.035 MHz

repeating every three minutes, twenty four hours a day. A full description is in every Callbook, and on the web.

The program that I used to capture these

CW transmissions is called Spectran. It can be obtained freely from many web sites. All that is required is a lead from your speaker/headphone connection to

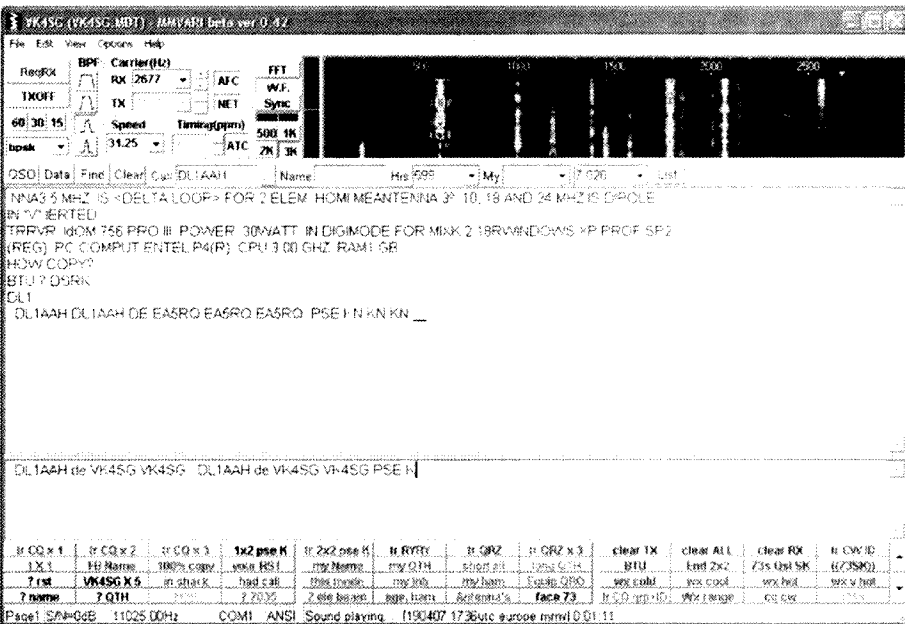


Figure 3: PSK31 signals on 14.070 MHz.

your soundcard input. If you read CW you don't need to use your computer, but if you don't, you can capture the lot, identify just one station (usually NZ is by far the strongest) and count from that signal to identify the rest.

So, 20 m was open to North America, Asia and Russia at the same time that the procrastinator on 40 m was telling all and sundry that the band was completely dead. My first bit of advice is to learn about the beacons and use them!

Now for something interesting. If you tune a band and it appears completely dead, try the following spot frequencies, 3580, 7035, 10140, 14070, 18100, 21070, 24920, 28070. There will probably be a funny warbling sound there, that my friend is PSK31, the mode that opens and closes bands.

Now people will tell you that Olivia or Domino or Throb is the better digital mode, and they all have their advantages, but the point about PSK31 is the thousands of hams all over the world using it.

Figure 2 shows twelve PSK31 and one PSK63 signal from European stations on 7035 at daybreak.

Figure 3 shows twelve or so stations on 14070 or around at 17:36 UTC.

To use PSK31 you need an interface between your rig and your sound card. These are available from many sources and generally cost around \$40 for a

kit. To just listen, all you need is a lead from your speaker/phone output jack to your soundcard. The software (many versions) is available free from many websites. Just type PSK31 in your search engine. I use MMVARI 0.42 myself, and DigiPan 2.0 and MixW 2.18 are other popular types.

So what am I suggesting? That you put the microphone away? Well, if you want to work all the DX you want, over 70 countries on both 40 m and 20 m in the last 5 months, with low power and simple antennas, you will have to. DX is always there on narrow band modes, PSK31 and CW. To prove a point, I got up early in the morning before the last club meeting, on March 25, and within an hour I had worked MW3 Wales 7035 PSK, DJ8 Germany 10140 PSK, OH3 Finland 14070 PSK and F4B France 3530 CW. The only one in the club not impressed with that was John VK4OQ, who does the same thing each day regularly with 100 W CW! I use 50 W when operating PSK.

Why am I telling you all this?

Because I can't keep up with the QSL cards! VK is quite rare DX to the Europeans at the moment and I sometimes find myself at the bottom of a pileup. I need you to do your share.

So extract your key or mouse and give me a helping hand.

ar

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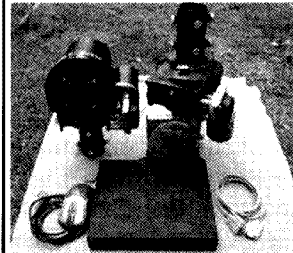
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Adding an extra winding to toroidal power transformers

Drew Diamond VK3XU

Our usual electronics suppliers offer a good 'off the shelf' range of conventional and toroidal power transformers. But there are times when some other non-standard voltage and/or current value is required. One of the attractions of toroidal power transformers is the possibility of adding additional winding(s).

A recent example (Reference 1) was a need for an additional 5.2 Vac winding to power the heaters of two transmitting valves, that each draw 6.5 A (total 13 A).

In transformer work, it is usual to express the transformer's power rating in terms of the product of secondary load voltage and current (volt-amps, or VA), thus allowing for reactive loads which, despite their full or partial 'wattless' property, must never-the-less be supplied by the transformer's primary and core. Typical catalogued (Altronics and Jaycar) toroidals are rated 20, 30, 50, 80, 160, 300 and 500 VA. For the above example, total power of the load is $5.2 \times 13 = 67.6$ VA (rounded to 70 VA). The chosen transformer is rated 160 VA, which leaves $160 - 70 = 90$ VA for the remaining (existing winding/s).

Figure 1 shows the transformer current carrying ability of common B & S and metric enamelled copper wire gauges, derived from constants given in Reference 2, p236. Current values indicated by the curve may be increased somewhat for intermittent service (such as a PSU for an amateur transmitting amplifier).

To find the number of turns required for a desired voltage, simply wind, say, ten turns of ordinary hook-up wire on to the core. Temporarily attach a mains plug and cord to the primary winding. Suitably cover all exposed mains connections. Apply mains voltage and carefully measure the winding voltage. You should typically measure 2 Vac, which equates to 0.2 volts per turn, or 5 turns per volt.

Here is an example. For a recent experimental transmitter project I required an unregulated DC supply of 52 Vdc at up to 1 A. The output from a bridge rectifier and reservoir capacitor will be about 1.3 times the winding rms voltage, so the winding must supply

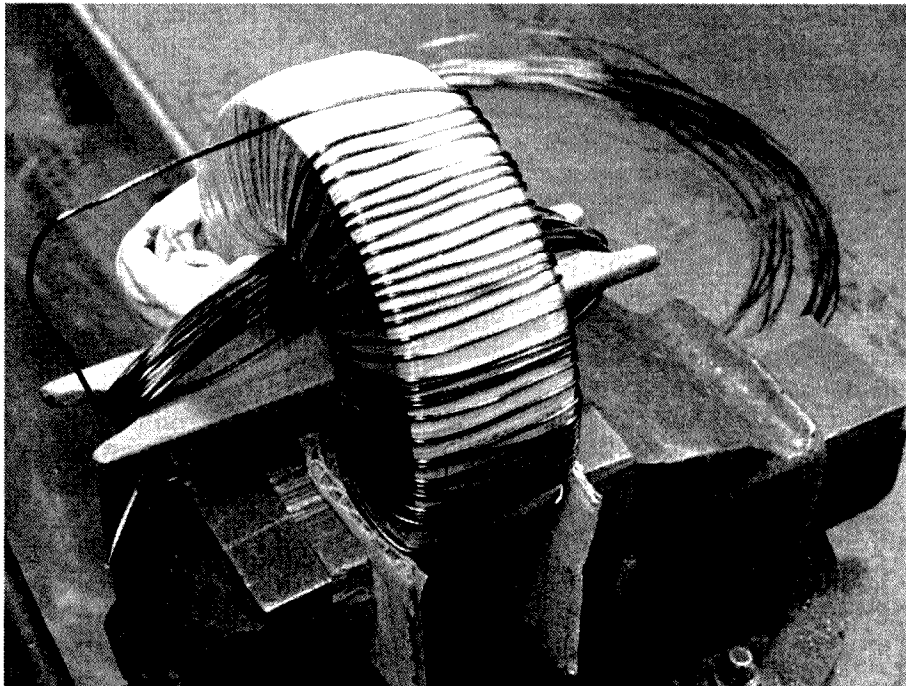


Photo 1

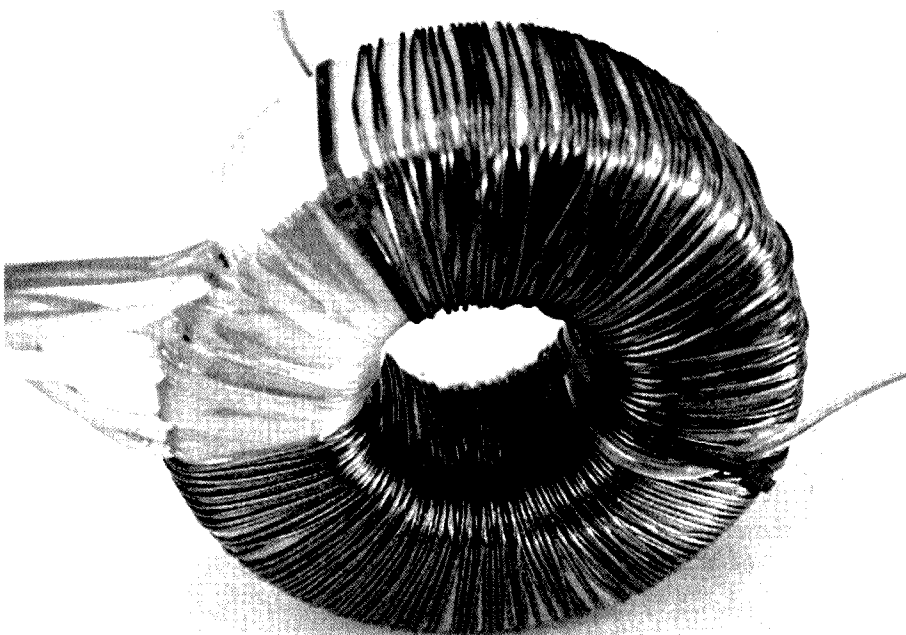


Photo 2

$52/1.3 = 40$ Vac. The number of turns required is therefore $5 \times 40 = 200$ turns, and the length of wire required will be 20 times the length of our 10-turn test winding, plus some spare for tails and error.

We must remember that, due to the effect of the capacitor, the AC secondary current may be about 80% more than the DC load current (Reference 3, p8.4 and Reference 4, para 6.12), so the chosen wire must be able to carry up to 1.8 A. Figure 1 shows that the nearest suitable wire size is # 20 B & S, or 0.8 mm.

The load on the additional secondary winding is $40 \times 1.8 = 72$ VA. For example, if a 160 VA toroidal is chosen, the load on the remaining (existing) winding(s) must not exceed $160 - 72 = 88$ VA.

The transformer may be fixed in the jaws of your vice, protected with a layer of thick cardboard. Photo 1 illustrates a suggested method of applying the winding. The enamelled wire is wound upon a 'shuttle', made from an appropriately sized rectangle of plywood (or similar) with a v-notch at each end. Plan to finish with some wire to spare. Do not snip until the secondary voltage has been tested! The start and finish of the winding may each be secured with a plastic cable tie after first slipping spaghetti tube over the tails, as pictured in Photo 2.

For applications where a non-standard voltage is required, and provided that the total VA rating is not exceeded, a new winding of appropriate gauge may be connected in series with existing winding/s.

References and Further Reading

1. "A 400 W Linear Amplifier for 160 m"; *Amateur Radio*, Oct - Nov 2006.
2. *Radio(tron) Designer's Handbook*; F Langford-Smith, 4th edition, AWA.
3. *Voltage Regulator Handbook*; National Semiconductor Corp.
4. *The Art of Electronics*; Horowitz and Hill, 2nd edition, Cambridge University Press.

Photos: Andrew Diamond.
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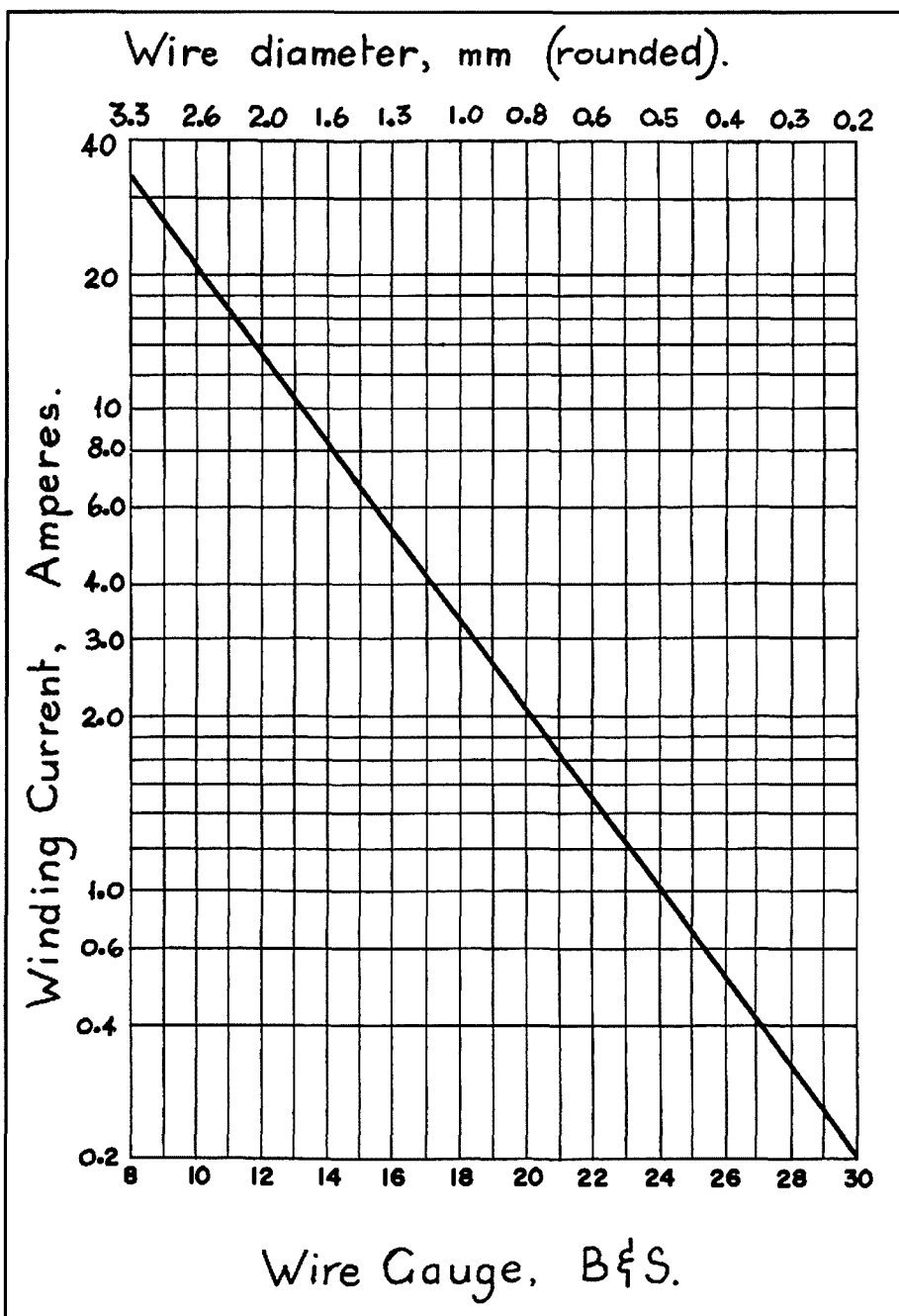


Figure 1

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VK7WCN-WICEN Tasmania (South) at Cape Bruny

for the 2007 International Lighthouse/Lightship Weekend

Roger Nichols VK7ARN.

Cape Bruny light was activated for the third time in four years by WICEN in southern Tasmania, this time with the call sign VK7WCN. Cape Bruny is on the southern tip of Bruny Island to the south east of Tasmania. It was the southernmost Australian light activated for the weekend at 43.3 degrees South and the fifth southernmost in the world (there were four lights activated in Argentina lying further to the South).

The Cape Bruny lighthouse was convict-built in 1838 and replaced by a nearby automatic light in 1996. Today, it is administered by the Tasmanian Parks and Wildlife Service and maintained by a real Lighthouse Keeper, Andy VK7WS. The light sits atop the cape with the other buildings at a lower level on the neck between Lighthouse Bay and Quiet Bay.

Kettering ferry terminal was the group's Saturday morning meeting place for the trip overseas, about twenty minutes crossing the D'Entrecasteaux Channel to Bruny Island. The French explorer Admiral Bruni D'Entrecasteaux certainly left his name in the area

continued on page 24



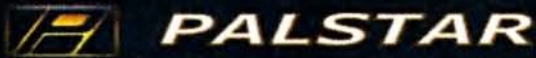
L to R – Maureen, Peter VK7TPE, Chris VK7FCDW, Liz, Roger VK7ARN, Stu VK7NXX, Bev.



John VK7ZZ on station in his campervan.



F to B – John VK7ZZ, Roger VK7ARN, Stu VK7NXX, Peter VK7TPE.



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PALSTAR AT1KP Specifications

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- Output to both balanced and unbalanced lines
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PALSTAR ZM30 Antenna Analyzer

The Zm30 is an automated micro-controlled SWR antenna analyzer with a 8 bit micro-controller with a precision low power DDS signal generator. It also includes a self-calibrating reflectometer and displays SWR at selectable frequencies from 1 Mhz to 30 Mhz. It measures: SWR, impedance, reactance, inductors and capacitors, transmission lines, stubs, Q, and resonant frequency. There is a serial port for field upgradable software. Battery operated. As on all Palstar products the front panel is powdercoated.



The PM2000A Watt meter measures and displays forward power, reflected power, and SWR simultaneously on it's dual movement meter system in the frequency range. Accuracy is assured because the WM150 has a true shielded directional coupler. .

QST found that the Palstar WM150 is the only wattmeter that has true Active Peak Reading. The PM2000A is the next generation of watt meters from Palstar.



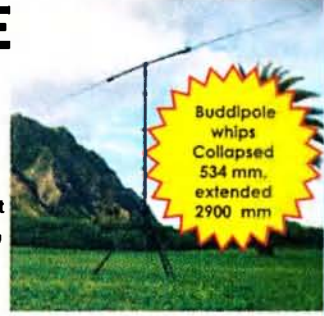
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and want a broad range automatic antenna tuner, look no further! The **LDG AT-897** Autotuner mounts on the side of your FT-897 just like original equipment. The tuner has a front panel button to initiate the tuning



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The AT-897 takes power from the CAT port of the FT-897 and provides a second CAT port on the back panel of the tuner so if you are using another CAT device, hooking it up is simple. Two interface cables come with your AT-897. If you are a QRP enthusiast or plan on operating via internal batteries, the AT-897 is your tuner! The AT-897 needs no fan. Current consumption when it is tuned is in the micro-amp range. Since LDG uses latching relays, you can even remove power from the tuner after you have tuned on the band you are going to operate! Two year limited mfg. warranty.

FT-897 shown in photos, not included.



Read the full specs and reviews on the net and make your own judgement

Orion II

First independent test data on ORION II, released 16 April 2006: "Noted receiver guru Rob Sherwood NC0B of Sherwood Engineering now ranks the ORION II as #1 of all HF amateur radio transceivers ever tested for close-in dynamic range, dating back to the 1970's. The original ORION is now listed as #2 overall to the ORION II".



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More mysterious antenna faults!

Felix Scerri VK3FUQ.

I'm starting to wonder if that fellow Mr 'Murphy' has taken up residence at my QTH, or maybe I've just been 'chosen' for lots of strange antenna related faults, but anyway here comes another one! At this QTH I have three separate inverted V dipoles for 80 m, 40 m and 20 m, all fitting in the backyard with 'reasonable' separation between all three antennas. This matter of physical separation is relevant, as will be evident later.

As I have a number of separate receivers and tuners here in the shack, I often make use of any of these inverted V dipoles as random length 'receive' antennas for feeding into various receivers, a practice that works fine. The fault: Going back about a year or so I had noticed the increasing presence of 'crackles' when using two of these inverted V dipoles, and mainly evident when using my 40 m antenna, although the 20 m inverted V dipole was affected to a lesser but still annoying degree.

It was quite intermittent, but the problem seemed to be much worse on windy days, indicating something possibly mechanical was the basic cause. However that fault was very hard to find. Over some months I either thoroughly tested or replaced everything on that antenna and transmission line, and everything checked out OK on test, but the fault remained! After one weekend of more (futile) tests, but with a determination to ultimately find the real cause, the answer was found to

be terminals on the centre feedpoint intermittently contacting the (metal) supporting mast, when the inverted V dipole was pulled up to full height via its pulley and support rope.

However, I had much earlier considered this possibility, and discounted it. Why? Simply because the terminals were covered in a substantial layer of silicon sealant and were well insulated (or so I thought). Even more strange was the fact that the 40 m antenna was absolutely faultless on transmit, with nary the slightest suggestion of SWR variation or shift, and no noise either on its intended band of operation! In the end, completely covering the exposed wire terminals at the centre feedpoint with heatshrink has completely overcome the problem and all noise as well, much to my relief!

As was also mentioned previously, my separate 20 m inverted V dipole was also affected by the same 'crackling', and it is obvious now that the noise being 'generated' on the 40 m inverted V dipole was also being 'induced' or coupled on

to the 20 m inverted V dipole as well. This in itself made it quite difficult to diagnose which antenna was actually faulty; although it was always felt that the 40 m inverted V dipole was affected a little more by the intermittent 'crackling', but not by much! This experience shows that 'unwanted coupling' can indeed take place between separate antennas, even when it is thought that the physical spacing and separation is considered adequate for minimal 'unwanted coupling', as I thought it was!

After the fault was finally rectified, it was recalled that when the 40 m inverted V dipole was first installed many years ago, the feedpoint connections were indeed covered with small lengths of rubber tubing, but with the passage of time, they had fallen off. In retrospect, replacing them at that time would have saved a lot of tedious fault finding now! Still, it was a most interesting fault and I'll definitely know what to look for next time!

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Cape Bruny

continued from page 22

after visiting in 1792. We must have looked like explorers ourselves. Our vehicles still carried the mud from a horse endurance ride safety checkpoint job the previous weekend. Heavy rains and flooding in several parts of Tasmania over the days leading up to it had created quite a mud bath. The familiar trip down North and South Bruny Island to Cape Bruny ended with a welcome from Andy and his charming XYL Beth.

John VK7ZZ quickly established himself in his campervan at the base of the lighthouse with an IC-706MkIIG, LDG Z100 tuner and both a wire to the lighthouse halyard and FAMPARC multi-band whip on his vehicle.

Stu VK7NXX with XYL Bev, Peter VK7TPE with Maureen, and Roger

VK7ARN took the soft option and moved into the Assistant Keeper's cottage with all the comforts of home. A 12 metre mast erected on the site of the original station mast had an off-centre fed dipole strung between it and another mast above the cottage. The operating position in the cosy cottage kitchen had another Icom IC-706MkIIG with AT-108 tuner.

For good measure, Peter set up a third IC-706 with an AH-3 tuner in his vehicle in the visitors' car park with a long wire to Andy's anemometer mast.

Not the best of propagation with lighthouse contacts being confined to Australia and New Zealand. Of the 38 Australian and two New Zealand lights registered, we had contacts with 22 VK

and one ZL, some on multiple bands.

Over the weekend we were visited by Gary VK7GJD and Michelle on Saturday and Chris VK7FCDW with Liz on Sunday. The weather was unusually fine through the weekend, Sunday being exceptional with wall to wall blue sky providing distant vista to snow capped peaks in the west, the rocky islets of Pedra Blanca and Eddystone Rock on the horizon to the south and Tasman Head and the Friars to the East. Our trip home was uneventful, other than a flock of sheep on the road, a stop at the Hothouse Café for coffee and arriving just in time to see the ferry, full to capacity and leaving early and us with an hour to wait for the next one!

ar

Hamming it up in Centennial Park

Brad Crowe VK2CEC.

After a walk in Sydney's Centennial Park one morning last August, Eddie VK2BEH suggested to several members of the Waverley Amateur Radio Society that:

It might be a good idea for those interested in health and fitness to meet at a kiosk in the park for breakfast on Sunday mornings. Centennial Park is a very pleasant venue with plenty of trees and bird life as a distraction from exercise instead of breathing traffic fumes. It also leaves one with a better sense of well-being after exercise.

That suggestion motivated two members to initially take up the invitation but to ride bikes instead of walking. It is now a regular Sunday amateur radio event for many more members (complete with their handhelds), and combines camaraderie, health and fun with amateur radio.

"I had been walking in Centennial Park for many years but never thought of suggesting it to others until recently", Eddie said. "Wish I had suggested it earlier since the Sunday morning exercise is enthusiastically attended by many members and has become a pleasurable social event for eyeball communication as well", he added.

Brad VK2CEC says, "For some, the walk to the park is their exercise while for others 'bicycle mobile' is their preference". Alan VK2TUI said, "Some other members and I already had bikes much in need of dusting off and of course being hams there is plenty of creativity employed in the mounting of HTs and antennas".

Centennial Park is located in the eastern suburbs of Sydney and is less than 5 kilometres from the CBD. It occupies more than 360 hectares. Within the park is a four kilometre bitumen bicycle track, a bicycle hire outlet and a good facility for breakfast and coffee. The group welcomes anyone interested in joining them in the park.

More information can be obtained via the Paddington 2 m repeater.

ar



Jim VK2JA, Brad VK2CEC and Alan VK2TUI with handlebar mounted handheld transceivers and headsets clearly visible



Eric VK2VE, Grant VK2TU, Doug VK2DCR, Eddie VK2BEH, Alan VK2TUI, Jim VK2JA and Brad VK2CEC.

Other regulars, not in the picture are Megan VK2FGGL, Alan VK2FALN, Lynn VK2FLTJ, Mathias VK2FMBH and Raffy VK2RF.

Quansheng TG-25AT VHF & TG-45AT UHF HH transceiver review

Jason Reilly VK7ZJA

Unless you've been a hermit for the last six months, it is a fair guess that you would probably see advertisements for various VHF & UHF handhelds of Chinese origin, available at ridiculously attractive prices. Maybe you have wondered if they are just too cheap to be of any use? Wonder no more, here we will see just what one brand of these handhelds can do.

Our subjects are the Quansheng TG-25AT and TG-45AT. Quansheng Electronics have their home in China, a country where there is a huge emerging demand for radio communications. Couple this with a manufacturing industry that is slowly shaking off the preconception that everything from China is 'cheap and nasty' and it would only seem natural that some indigenous designs for radios would emerge from that country. But are these Quansheng TG-25AT and TG-45AT handhelds truly indigenous in design? Perhaps not, there are rumours of a strong 'under the hood' resemblance to certain budget model Kenwood handhelds. But whatever the case may be, Quansheng have produced an excellent value radio. It would also appear that the TG-25AT and TG-45AT radios are the same under the skin as the Quansheng TG-K2AT and TG-K4AT radios as well, so this review may be equally applicable to them.

The first thing that strikes me when holding the Quansheng in my hands is how solid and rugged it feels, certainly far in excess of what you would expect at the price being asked. Measuring 100 mm H x 56 mm W x 38 mm D, not including the top knob or belt clip, the radio is a good, compact size. The top knob does not feel sloppy at all, and the antenna connector is a SMA male. Rubber grommets are evident covering the speaker and microphone connectors, the DC power inlet connector, and there are similar rubber gaskets sealing the electronics of the radio as well. The battery, with an integrated belt clip, forms the back half of the radio and is a design borrowed from Motorola, so a fellow ham tells me. A little bit of Kenwood, a little bit of Motorola – this radio certainly has some good pedigree in design at least.

So what are the features of the Quansheng? You can operate the radio in a VFO or memory mode, and if you do program memories, you will find that there is room for 99 of them. You can scan the memories too – but you cannot select which memories to scan, it is an all-or-nothing proposition. In VFO mode, you can also search for active frequencies. There is a CTCSS encoder & decoder available. Of course, a repeater offset facility is there, and you can program in a custom offset for those repeaters that do not use a standard offset. Frequency steps are changeable between 5, 10, 12.5 and 25 kHz. Power output is selectable between 5 and 1 watt. There is a handy key lock function. You can force open the fixed mute. Lastly, there is a voice annunciation feature in a female English voice whom many of the local hams affectionately refer to as 'Minnie' – and there is the facility to turn off the voice prompts, which is a welcome relief as Minnie only has one volume setting – LOUD! Minnie will also get most insistent when the battery nears exhaustion, saying "change the battery please" – until the battery does actually go completely flat!

In use, the Quansheng feels comfortable to hold, and the PTT action is positive. This is in contrast to the keypad which feels 'mushy' with little tactile feedback. Unfortunately, the keypad is the only way to change channels, alter the VFO, and just about every other feature, but we can forgive this minor problem given the price. Once you start to receive signals, you will notice that the audio qualities are superb! This is one of the nicest



sounding handheld radios I have had the pleasure of testing. The mute action is quick and clean, though lacks any form of hysteresis. The Quanshengs I tested were locked to the amateur bands of 144-148 MHz and 420-450 MHz, though it is possible to get the same unit from overseas sources that cover more generous portions of the spectrum, should you be interested in out of band reception.

The receiver itself is a dual conversion design, using a 21.4 MHz IF, and would appear to have quite good adjacent channel rejection characteristics. The

receiver is also astonishingly sensitive, my tests show about 0.18 uV for 20 dB quieting in the VHF version, 0.2 uV for 20 dB quieting for the UHF; you could reduce these figures by approximately 70% for a rough guide to 12 dB SINAD figures. However, such attributes as image rejection, cross-modulation handling and dynamic range would definitely be considered below average. Taking the receiver to a busy hilltop transmitter site resulted in a lot of problems being evident with the receiver – maybe not quite as many as my comparison receiver on the day, a Yaesu VX2r. However, taking the Quanshengs, both VHF & UHF, out for a drive in the suburbs and through the city revealed a very well behaved receiver in general. I would say that the only problems the average ham will have with them is when either in the CBD of very large cities, or when close by to another transmitter

– or if you are unfortunate enough to have a transmitter falling on an image frequency.

On transmit, the Quansheng has pleasant TX audio, and delivers 5 watts on high power, 1 watt on low. The CTCSS encoder and decoder both worked fine without any false decodes or dropping out. DTMF would have been nice to have, especially for IRLP contacts etc, but unfortunately we will have to make do without on the Quansheng.

Taking a peek inside at the circuitry, I would not have known I was looking at a cheap, mass produced Chinese product. The component placement, wave soldering of all the SMD components and general finish is excellent, very close to what I'd expect to see from any one of the better known manufacturers.

Included as standard with the Quansheng radios are a drop-in slow charger, a NiMH 1100 mAh battery with

spring loaded belt clip attached, and a flexible antenna about 16 cm in length. Did I mention the instruction manual? No? Perhaps this is best left unmentioned – it is terrible! VK7MX Bill has produced an infinitely more useful pdf guide to the Quansheng radios called “Quansheng Quirks” – I thoroughly commend it to you should you buy a Quansheng. Other accessories you can get include a car charger adaptor, spare batteries, speaker-microphones, and SMA female to BNC female antenna adaptors – also at very pleasing prices.

Bill and I have seen quite a few Quanshengs go into the hands of local amateurs, and generally speaking most are very happy with them; they are certainly getting a good reputation around these parts. The factory in China has also been forthcoming with supplying spare parts to effect repairs for those units that had suffered damage outside the scope of the 6 month warranty too, which is very reassuring. The Quansheng factory has also taken on board some suggestions from local hams on what they might do to improve their handhelds. The factory has just advised that it has implemented an Australian suggestion to abandon the simple drop-in charger in favour of an intelligent design that senses the state of charge and reacts accordingly. DTMF is another popular suggestion, and while no promises have been made, I do think that these requests and general feedback might well be considered.

I keep talking about ‘the price’ but have so far restrained myself mentioning ‘the actual price’. For \$100 (yes, Australian Dollars), you can have this radio and still get some change. At that price, this radio represents absolutely phenomenal value. It really is an excellent quality unit, even at twice the price. I think it would be ideal for Foundation licensees or those wanting a cheap handheld without all the extra fancy features.

Geoff VK6NX is the national importer and, for most of you, is the guy to contact if you cannot wait to get your hands on a Quansheng. I notice that he has advertised in Amateur Radio in the past. If you are in VK7 then Bill VK7MX is your contact for both supply and support. The Quanshengs come highly recommended by me; I am sure you will be tickled by just how well these radios work for the money!

Quansheng TG-25AT and TG-45AT Specifications

1. Frequency VHF 136-174 MHz, UHF 400-470 MHz
2. Same frequency/different frequency.
3. Initialization.
4. Channel step 5 k, 10 k, 12.5 k, 25 k.
5. CTCSS function.
6. Voice prompt.
7. Input frequency directly by keypad.
8. Display channel and frequency mode.
9. Monitor and scan function.
10. Switch power between ‘HI’ and ‘LOW’.
11. Auto battery saving function, extend the usable time of battery.
12. Low power alarm; when the power is low, it sends the sound signal to alarm you to change the battery.
13. Communication range; Normally it is 5 km, but sometimes it is affected by environment.
14. Earphone/microphone/auto-charger jack, convenient for answering and charging.

Channel spacing: 5 kHz, 10 kHz, 12.5 kHz, 25 kHz
 Operating voltage: 7.2 V DC
 Frequency stability: 5 ppm
 Antenna Impedance: 50 ohm
 Size: Not including antenna 113 mm * 54 mm * 36 mm

Transmitter

Output power (High/Low): 5 W or 1 W
 Current: < 1.6 A/1 A
 Modulation sensitivity: 12 +/- 3 mV
 Modulation distortion: <5%
 Maximum frequency deviation: <5 kHz
 Sub-audio distortion: 0.75 kHz +/- 50 Hz
 Spurious response radiation: <7 uV
 Modulation mode: 16 F3E
 Remnant modulation: <-35 dB

Receiver

Sensitivity: < 0.25 uV
 Silent sensitivity: < 0.25 uV
 Audio output power: 500 mW
 Audio distortion: <10%
 Modulation bandwidth: >+/- 5 kHz
 Spurious response rejection: >55 dB
 Selectivity: >65 dB
 Intermodulation: >60 dB
 Emphasis: >85 dB

Technical specifications

Frequency range: VHF: 136-174 MHz, UHF: 400-470 MHz
 Channel: 99

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FT-60R Dual band Handheld	\$269
VX-170 2m 5W handheld	\$199
FT-817ND HF-70 cm Portable	\$899
VX-2R Dualband H/H	\$239
FT-897D HF-70 cm	\$1149
FT-2800M 2 m Mobile	\$249
FT-7800R Dual band Mobile	\$399
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NEW IC-2820H Dual band Mobile	\$799
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TS-570SG HF-6 m 100 W+ATU	\$1799
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VK2

Tim Mills VK2ZTM

c/o vk2wi@ozemail.com.au

Clubs

Last month the *Central Coast ARC* celebrated 50 years since their inaugural meeting in October 1957. From their recent newsletter 'Smoke Signals' – some of their history. They were known at intervals as the Central Coast Amateur Radio Club, the Gosford Radio Club and the Central Coast Branch of the Wireless Institute of Australia. In March 1972 they reverted back to the 'Central Coast Amateur Radio Club' and in April 1988 added 'Incorporated'. 37 persons attended the inaugural meeting on Friday 18th October 1957 at the Gosford School of Arts Hall in Mann Street, Gosford.

The CCARC are well into their planning for the 2008 Field Day which is scheduled to be held at the Wyong Racecourse on Sunday the 17th February. Their field day is as old as the club. Prior to the present venue at the Wyong racecourse, they had been at the Gosford Showground and Gosford Sailing Club. Before the club was formed, the NSW Division had held field days at Wyong Golf Club which is near the racecourse. A pre field day dinner is being considered for the previous evening, Saturday 16th. This month they have their Christmas lunch function on Saturday 17th November at the 'DIGGERS' at The Entrance – contact Ray VK2HAY for details and bookings.

Besides the Central Coast having been a Branch of the NSW Division, the Newcastle region had the Hunter Branch. There was also the Blue Mountains Branch and Wollongong had the Illawarra Branch. Over time these branches became clubs in their own right.

It is now only a couple of months to the North Coast Expo on Sunday 20th January provided at Coffs Harbour by the *Mid North Coast ARC*.

Last month, the *St. George ARS* held their monthly meeting at the Telstra Museum in Bankstown. It is a great display of the telegraphic and telephonic past of this country. The museum was previously set up at Ashfield. They open on Tuesday and Wednesday and admission is by donation. Telephone 02

9790 7624. Email tmuseum@bigpond.net.au Similar museums are established at Hawthorn in Melbourne and Albion in Brisbane and work in cooperation with each other.

While taking about museums do not forget the *Kurrajong Radio Museum* operated by Ian and Patricia O'Toole. There is an extensive array of military and allied radios. Email vk2zio@yahoo.com.au or Google search 'Kurrajong Radio Museum'. Ian is always on the lookout for equipment for display. Before dumping that old piece of military or similar equipment check with Ian, he may have a home for it. Telephone 02 4573 0601.

The *ARNSW Home Brew Group* has been sponsoring the construction of an 80 metre AM transmitter. At the September meeting at Dural three members presented their efforts. As most readers will know, the monthly evening gathering of the group is conducted in the party room of McDonalds at North Parramatta. This fact has been picked up overseas and the details are doing the rounds of the email circuit. By the way, it is on the first Tuesday at 7 pm. There is a net on the third Tuesday evening on Sydney repeater 7000.

HADARC has Saturday 8th December set aside for a lunchtime picnic and barbeque at CherryBrook Park. They currently have underway a Standard and Advanced Licence course running until the end of the year. Contact Tony VK2BTL 02 9487 3383.

Manly Warringah RS – they meet Wednesday evenings at Terry Hills. Jeff VK4XJJ visit the club last month when he spoke about his recent walk from Spencer's Gulf to the Gulf of Carpentaria. Check out the Manly Warringah web site www.mwrs.org.au

Mid South Coast ARC recently fitted new beams to their VK2RMU 6700 Little Forest repeater. Reports requested to repeater@mscsrc.org

Summerland ARC have a Foundation course 10/11 November. Check them out at vk2src@sarc.org.au

WICEN [NSW] Inc recently held their AGM. They were seeking members to

fill the rolls of Secretary and Treasurer. Can you help? Check out their web site www.nsw.wicen.org.au

Amateur radio was represented at the recent open weekend of the Parkes Radio Telescope by the *Orana Region and Orange and District ARCs*. They had a busy time handing out material about themselves and the WIA.

ARNSW

With the administration now at the VK2WI Dural site, the postal address has become P.O. Box 6044, Dural Delivery Centre, NSW 2158. The existing Harris Park box will be retained until next April for the change over period. Those ARNSW members who have the post box address of 9410 will be advised of a new box address for this service. Those who would like to use this facility which provides an alternate callbook address to the home QTH details should contact the Secretary. The ARNSW Secretary, Brian VK2TOX, is usually in attendance at Dural on Tuesday between 11 am and 1 pm. The office phone is 02 9651 1490, the old 9689 2417 will be phased out but for the moment both are redirected to the Secretary or the message bank.

The FAX number is 02 9651 1661. The old 9633 1525 fax no longer exists.

A reminder about the last Trash and Treasure event for the year: This will be on Sunday the 25th of November – at Dural – starting about 10.30 am and will also be a mini field day, incorporating a club conference. It will have the Home Brew Experimenters gathering in the afternoon. For the latest - listen to VK2WI News.

Getting to the Dural site – 63 Quarry Road – by public transport on a Sunday can be achieved by taking a train to Pennant Hills station. The City train arrives at 10.06 am and the one from Hornsby at 9.48 am. Outside the station, catch the 637 bus which goes to Dural and Glenorie via Castle Hill. Ask for the Quarry Road stop which is just after the Old Northern and New Line Roads roundabout. A telephone call to the engineer's phone 9651 1489 will have

someone come and pick you up. Best to bring your mobile phone as there are few public phones left in the area. Ideally, pre arrange the pickup.

Work continues with the fencing at Dural. The front is completed and most of the western side has been done as these notes were compiled. That leaves the rear and east side to go. New entry gates are ready for installation.

VK2WI

Morning and evening transmissions of VK2WI News continue until the 23rd

December, then across New Year, there will be the usual morning only session.

The 60 metre 5425 kHz USB morning linking signal continues to fill the gap between 80 and 40. As mentioned last month, 5425 has identification requirements, which made it difficult to use while playing the VK1 WIA portion. This has been overcome to an extent by tasking the Engineer to look for suitable points to insert the ID. To date the VK1 WIA content has to be down loaded off site and brought along on tape. A recently installed all 'copper' telephone

circuit should provide ADSL level to be available on site to enable the function to be performed in-house.

There have at times been some difficulties sending news items to VK2WI by the vk2wi@ozemail.com.au email. Deadline is noon on Friday. An alternate address is available and could be used when in doubt. It is arnews@tpg.com.au A transcript of the weekly news is posted to the web site www.arnsw.org.au early in the week.

73 – Tim VK2ZTM.

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au Email: arv@amateurradio.com.au

D-STAR Digital

The interest in D-STAR, a digital voice and data mode for amateur radio, has been phenomenal and it will decidedly ramp up with the arrival of two dedicated repeaters.

A number of members have declared that they will give it a try only when the repeaters come on line and there are signs of a few 'clearing the shack' of analogue only VHF/UHF gear in preparation for a new purchase.

Jim Linton VK3PC

As is the nature of amateur radio, there are others who are satisfied with analogue telephony, CW or some of the other digital modes, but will not just yet see any need to also use D-STAR.

The waffle award is back

The Welcome Aussie Foundation Licensees or 'Waffle' operating award is available again after its initial debut that ended early this year.

The rules have not been changed: For VK stations, make 50 contacts with Australian Foundation Stations, while DX stations need at least 10. Any contact since November 2005 is valid.

Contact with the same Foundation callsign is permitted, provided this does not occur on the same day, unless on more than one frequency band. Repeater and IRLP contacts fall within the spirit of this award, as they require use of radio at each end of a contact.

Claims should include a log extract for the required contacts, plus payment of \$5, and be sent to Waffle Award, Amateur Radio Victoria, 40g Victory Boulevard, Ashburton 3147, Victoria, Australia.

Amateur Radio Victoria, which is making this operating award available, will keep it active until the F-Troop Photo Call at the Centre Victoria RadioFest on 10 February 2008.

continued next page



Icom (Australia) Managing Director, Takashi Aoki JQ1NFY/VK3FNFY and Amateur Radio Victoria President Jim Linton VK3PC with a D-STAR enabled hand-held transceiver.

News from...

VK3 continued

Upgrade class success

The five who were enrolled in the Standard Licence Bridging Course held in September worked diligently under the guidance of instructor Kevin Luxford VK3DAP/ZL2DAP.

The proven course runs four weeks on a Wednesday night at the Amateur Radio Victoria Office and all-day on a Saturday. The outcome relies not only on Kevin's instruction and mentoring, but those doing the course focused on their personal goal and what is required to reach it.

This time all in the course had previously attended our Foundation Licence weekend sessions, but the Bridging Courses are open to all provided they have already qualified for the entry level licence.

RadioFest planning

The organising committee for this major event met at Laanecoorie on Sunday 14 October, during a break in the inter-club BBQ attended by members of the Ballarat Amateur Radio Group, Central Goldfields ARC, Midland ARC and Amateur Radio Victoria.

Geelong Radio and Electronics Society (GRES)

The last three months have been most productive for our members. The main focus for this period has been on construction and education. Under the guidance of Graham VK3XGD, many members built a portable 4-element Yagi for the 2 metre band. This was a very popular project and some 20 antennas were constructed over two nights. These new antennas will be very useful for WICEN activities in the future.

We were contacted by a local primary school to see if we could assist with the teaching of electronics to grade six pupils. John VK3JCC coordinated these activities, assisted by club members, and two groups of students came to our rooms, each group having three practical sessions. During the three one-hour classes the students constructed a lie detector, a led flashing unit, and an FM wireless microphone. Pupils were heard to remark that "electronics was

The committee discussed the RadioFest's program, promotion, catering arrangements, logistics and the volunteer roster.

For bookings of second-hand sales tables and car-boot spaces, contact Nick Angelo VK3UCK via email vk3uck@hotmail.com.au phone 0448 653 201 or check out the website www.radiofest.amateurradio.com.au for more details, application form and conditions.

Full details of the second Centre Victoria RadioFest, to be held at the Kyneton Racecourse on 10 February, will appear in the December edition of Amateur Radio magazine – look for it.

Callbook & logbooks

Copies of the 2008 Callbook are available via mail order for \$29. Orders and payment please to Amateur Radio Victoria, 40g Victory Boulevard, Ashburton 3147. Credit card payments accepted via fax 9885 9298. Or they can be personally picked up on Tuesdays, 10 am to 2.30 pm, for \$22. Log books are also available – \$10, or mail order at \$13.

fun", and the school principal reported that after the first session the students returned to school "walking on air". It is hoped that in the future we can start an electronics club at the school. From this small beginning it is possible that we have sown the seed that will result in the flowering of many young engineers.

We also had two groups of scouts along for instruction in practical construction. Again under the guidance of John VK3JCC and club members, the scouts were helped to construct a wireless microphone. As these scouts had had previous instruction the unit they constructed was more complex than that built by the primary school children. It was originally thought that it would take them two evenings to complete the project. However they proved us wrong and were able to construct the three-transistor unit in just one session.

For our regular meetings we were

Volunteers, happiness & health

Being happy plays an important role in health and for many people it is found through volunteering.

An article in the Australian Health Promotion Association Newsletter lists the reasons why people volunteer, which include:

- Wanting to meet and help people
- Keeping active
- Increasing knowledge and skills
- For enjoyment or fun

Volunteering is often seen in terms of the benefits volunteers bring to an organisation or activity, but more recently there's increased awareness of the benefits to the volunteers themselves.

Sara Fernandez and Ray James, Mentally Healthy WA, Curtin University, report in the article that studies have found the majority who volunteer at least five times a year feel less stressed and have higher levels of well-being.

The bottom line is if you want to be happy, try volunteering. Amateur Radio Victoria has vacancies.

Rod Green VK3AYQ

fortunate to have had three guest speakers. The first was Dallas VK3DJ who brought along his home constructed portable HF antennas. Much interest was shown in the antennas particularly in the methods of construction. Next we had Peter VK3CFA who talked about the SSTV programs available. Many of our members are active on SSTV but the main focus of the evening was on the newer digital programs available. It looks as though we will see the transition from analogue to digital in the near future. Our last guest was Phil Hapgood who spoke about renewable energy. Phil is a regular speaker who visits us approximately every two years. He operates his own business installing solar and wind power systems. This time he told us about the advances made in wind powered generators. To complement his talk he had a wind turbine plus a slide show of actual installations. One

The Point Perpendicular Lighthouse Weekend 2007

Ross Masterson VK2VVV.
Photos by Rob McKnight VK2MT.

Twelve months in the planning, two of the oldest and most respected amateur radio clubs in New South Wales, an historic lighthouse just waiting to be relit, and a group of enthusiastic amateur radio operators is all that was needed to produce a most remarkable International Lighthouse and Lightship weekend for 2007.

Point Perpendicular Lighthouse is located on the Beecroft Peninsula at Jervis Bay. Maritime activities along the coast line and within Jervis Bay have occurred since the time of Captain Cook's landing at Botany Bay. Major shipping lanes exist along the coast and the Royal Australian Navy College HMAS Creswell resides in the Bay.

The ILLW station was manned by members of the Illawarra Amateur Radio Society VK2AMW and the Blue Mountains Amateur Radio Club VK2HZ. The lighthouse area consisted of the historic lighthouse, the new solar array lighthouse, and three lighthouse keeper's cottages, and of course a view to die for. The point sits 98 metres above sea level with a sheer cliff face straight down to the water. The historic lighthouse sits 21 metres above the surrounding land and 114 metres above sea level.

In the early part of the planning, the Illawarra Amateur Radio Society met with a group called Lighthouses of Australia. This volunteer group fosters the preservation of historic lighthouses in Australia. Lighthouses of Australia kindly agreed to pursue the possibility of lighting the old historic lighthouse and extinguishing the more modern solar



Jordan, presently studying for his 'F' call, and Jacob VK2FIXX, show their satellite tracking equipment.

light for the Friday and Saturday night of ILLW 2007. Many months of preplanning were required for permission to have the old light operational for this period due to the now incorrect 'character' sequence

of the old light compared to the new solar light.

The combined clubs members met at the lighthouse complex on Friday

continued next page

GRES continued

interesting point made by Phil was that there has been an increase in the number of solar arrays being installed on urban properties. They are fast becoming a status symbol, or if you like, a fashion accessory for the house.

Again this year we took part in the International Lighthouse and Lightship weekend. We once again set up a station at Aireys Inlet at the "Split Point" lighthouse. For readers not familiar with Victoria, Aireys Inlet is a small coastal town on the Great Ocean Road about 55 km from Geelong. We set

up stations on both HF and VHF. The antenna used on HF was a G5RV, one end of which was secured to the top of the lighthouse. There were many visitors to the lighthouse over the weekend which meant good exposure for both amateur radio and our society.

Our group of retirees continues to meet every Wednesday morning to work on club projects. This means that routine maintenance on the rooms can be carried out without interfering with our regular Thursday evening meetings. Also our computer group continues to meet on

the 1st and 3rd Friday of every month. We also conduct 2 weekly on air nets. The first is Monday evening at 2030 on 146.525 MHz FM. The second on Wednesday evenings also at 2030 Hrs on 3.63 MHz and is for those interested in swapping SSTV pictures. Both groups would welcome non club members to join in with them either for a chat, or to swap pictures. Visitors to Geelong are invited to our meetings either of a Thursday evening at 8 pm or Wednesday mornings about 9.30 am. The meeting rooms are at 237A High St. Belmont.

ar

morning and commenced setting up the temporary station. Two antenna towers were constructed. Tower one consisted of a six metre guyed pole with a 2 m/70 cm dual band vertical on top and horizontal Yagis for 2 m, 70 cm and 23 cm below. The other tower was a seven section twelve metre guyed mast with a 6 m vertical on top, 10/15/20 m tri-band Yagi below, with long wires and centre fed dipole antennas for 20, 40, 80 and 160 metres.

The Illawarra club's Coast Link 2 metre repeater network was used for liaison to guide visitors to the site and to keep the information flowing to club members of progress over the weekend. The club's IRLP node (6018) was also used to provide an avenue for amateur radio operators whose QTH was located away from the coast to have direct contact with the lighthouse station for liaison. The club also activated an EchoLink node from the site via Telstra's Next G network.

As the start time approached for the event, club members tuned antennas and tweaked rigs. During the event, fox hunts were set up to break the monotony of calling CQ during the rostered off periods. Satellite communications were also an entertaining part of the weekend with a couple of laptops continuously plotting their paths for the curious. Handheld radios and antennas were used for many satellite QSOs.

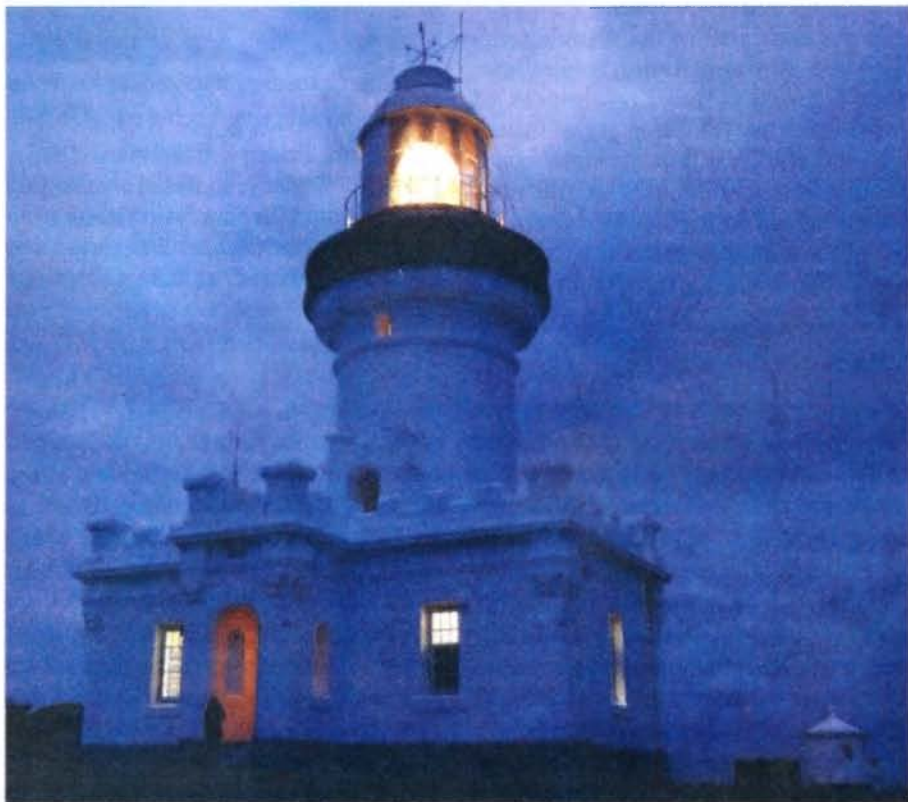
A short news story was shot by the WIN TV news crew depicting the lighthouse and the amateur radio station. This clip can be viewed on the Illawarra Amateur Radio Society's website www.iars.org.au or you can search for VK2AMW on YouTube.

About 100 members of the public assembled in misty weather conditions to see the historic light being lit on Saturday night. The streams of light emanating from the light itself were truly awe inspiring. Until you have seen a lighthouse up close, it is hard to imagine the sight! The two lighthouse keepers over the weekend were Ian Clifford and Garry Searle. They were both kept very busy with tours of the light and ensuring the continuity of service.

All in all, it was a fantastic weekend. Many contacts were made to other lighthouses in Australia and New Zealand along with lots more contacts to amateurs in many countries.



The magnificent Point Perpendicular lighthouse.



The Point Perpendicular lighthouse at dusk, with the light blazing.

An enlightening trip to the Williamstown Lighthouse and Time Ball Tower

Joe Chakravarti VK3FJBC.

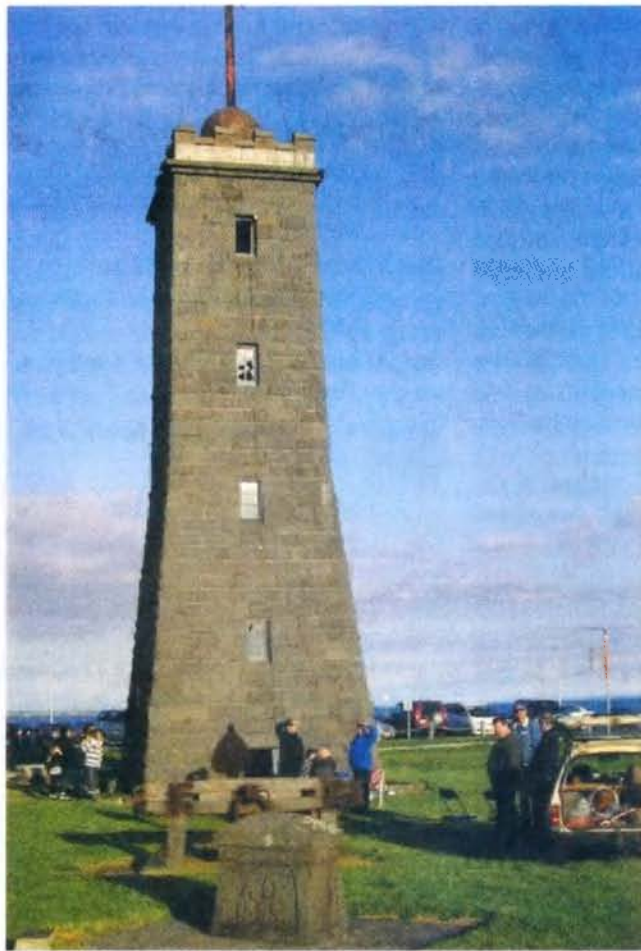
During the International Lighthouse and Lightship weekend (ILLW), I decided to visit the Williamstown Lighthouse and Time Ball Tower to see what the folks from Amateur Radio Victoria (ARV) were up to. They had activated VK3WI for the event and I had to check it out as I had never been part of an event like this before.

The weather was perfect and the kettle was on the boil, with a jar of coffee beside it, when I got there at 1630 hours. Terry VK3UP was hard at work logging for Michele VK3FEAT on a (mobile!!) TS-440S making contacts from a 4-wheel drive parked on the grounds of the lighthouse. The main station at the base of the lighthouse consisted of another Kenwood being operated by Graeme VK3ZGD (at the

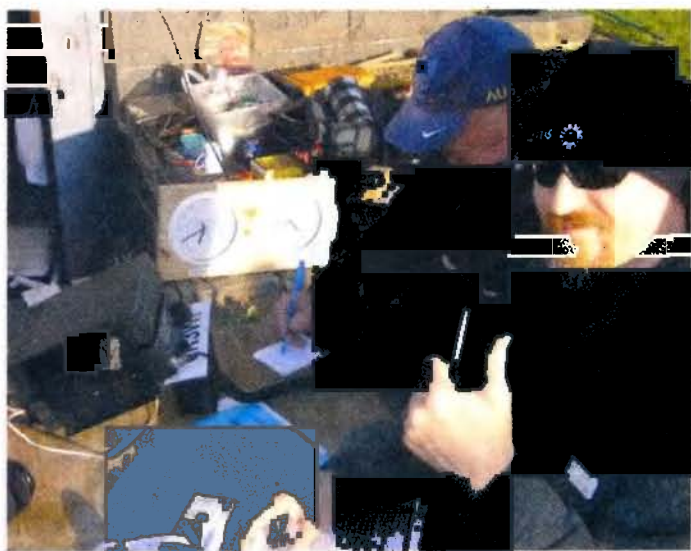
continued next page



Joe VK3FJBC adds a few QSOs to the total.



The Time Ball Tower and Lighthouse, at Williamstown in suburban seaside Melbourne.



John VK3FJRB does the logging while Graeme VK3ZGD works on building the QSO total.



Rosco VK4AQ

As many of our readers receive this edition of AR in their post, WIA Board members, Queensland Advisory Councillors and VK4 club representatives will have attended the annual President's Luncheon in Brisbane and will be up to speed on the Board's plans and strategies for the next twelve months. I will report on the Luncheon in next month's magazine.

I would like to see more input from southern clubs and I have to say that I am disappointed with input thus far. The success or failure of this column will depend upon the contributions from all clubs within the State.

TARC (Inc). A major highlight of the past month was the 18th Townsville Amateur Radio Club's Biennial Convention held in the surrounds of James Cook University. A record number of attendees enjoyed participating in a wide ranging series of lectures, trade displays, competitions and monster auctions. Then, of course, there were the much anticipated social gatherings over two nights at the Centenary Hotel in Pimlico.

Friday's Meet and Greet at the Centenary included the Official Opening of the Convention by MC Wally Watkins VK4DO. Many old friendships were rekindled and a host of first time "eyeballs" will turn into lasting friendships, I'm sure.

Saturday was a very busy time with trade displays offering all the beautiful bits of gear over which we drool. I was at the Convention in my role as QAC representative and had a WIA booth set up opposite Navcom's Yaesu and Icom stands where business appeared to be brisk all weekend. Likewise the stalls operated by antenna manufacturers TET-Emtron and KVK Antenna Systems always had a good gathering around them. Newcomer Standard Vertex dealer RDXG Communications had a very interesting Tri Band Spider Beam antenna atop a locally made tower on display which attracted much attention.

The future of WICEN in parts of Queensland was the platform for a thought provoking lecture presented by Bill VK4XZ during the forenoon. Following a lovely luncheon in the JCU Dining Hall, Professor Mal Heron gave a presentation dealing with *Radio Remote Sensing of Oceanographic Phenomena* such as sea state, currents and tsunamis which had the audience quite enthralled.

Don Dinnie VK4ZCQ then gave a very interesting lecture entitled *The Obscure History of Solid State from 1846 to 1946* which ensured much discussion late into the evening.

The Saturday night banquet at the Centenary Hotel was well presented

and well attended. The Tablelands Radio Group turned out in their Tuxedo T shirts and I am sure this will start a trend for future such dinner gatherings given the favourable comment received. Quips were fast and furious and it was just as well that the rather good-looking and buxom lass carrying a huge tray of fresh buns out to the tables had a fine sense of humour. The food was fine, the wine even finer and the friendship topped it all. The only downside was that the Cowboys were playing the semi finals at the same time and many a furtive glance was directed at the large screen TVs around the venue for a large part of the evening.

Presentations of trophies for the Homebrew and Craft competitions were made following the meal and included:

Technical Home Brew

- 1st Trevor Gregory VK4ZFC for a PIC based high accuracy LC Meter
- 2nd Max Riley VK2ARZ for a Visual/Aural Field Strength Meter
- 3rd Max Riley VK2ARZ for the Topsy Tester

Juniors U12 Section, Technical Home Brew

Michelle Wagele for a Lego Morse Sounder

Williamstown Lighthouse and Time Ball Tower

continued from page 35

time) with John VK3FJRB logging. John VK3ARK and XYL Jean VK3FJYL were already present and I heard later that they had brought around some of the famous EMDRC 'chilli sausages' for lunch. I then figured out why the whole place was buzzing with activity.

Jim VK3PC gave me a quick update on the progress made by VK3WI – apparently more than 300 contacts and more than 25 lighthouses up to that

point. And they still had the rest of the afternoon!

I decided to try my hand at the field station and with Jim logging for me I managed to add a VK2 and VK3 station to the list before handing it over to the next operator.

An inquisitive group of locals had gathered and I took the opportunity to answer some questions and hand out a couple of the familiar 'Calling CQ'

brochures. One of the locals even filled me in on the local history of the place. As I was leaving, I encountered John VK3FJRB getting ready to put in some serious time on the airwaves, having donned a hooded overcoat. I found out the next day that he was there till midnight before going home from an action packed ILLW weekend. Well done all.

ar

Technical Home Brew (with humour)

Ray Schinkel VK4NET for ROBOT – Ray's Outside B'cast Operating Tower.

Craft Home Brew

1st Evelyn Bahr VK4EQ for *A View from a Window* needlepoint

2nd Sheila Morrison VK4PAL for *Pearl Necklace*

Car Boot Sale Best Presentation

Roger Cordukes VK4CD for *Generators, Radios & Fresh Produce*

Ken Robertson Memorial Award
(for the amateur who, during the past two years has experimented, accompanied by efforts to educate others in the fields of VHF and UHF communications.)

John Roberts VK4TL

Several other presentations were made during the evening.

A monster auction went off extremely well and bidding was lively on a host of "mystery prizes."

I can safely report that all in attendance went home fully sated and were able to sleep well for the remainder of the evening.

The Convention was off to a flying start on Sunday morning with a lively car boot sale in one of the JCU car parks and then a very well attended lecture by Phil Grimshaw VK4KVK, where he gave an insightful presentation titled *Understanding and Customising the G5RV Antenna*. This lecture proved quite popular given that it ran about an hour over the allocated period with questions alone.

The Convention concluded with the Monster Auction in the University grounds following the lunch break. As usual, much treasure was available to the discerning bidder and I do not think anyone left empty handed — or disappointed.

Any undertaking the size of the TARC Convention just does not "happen" and all credit must go to TARC stalwart and human dynamo, Gavin VK4ZZ, and his team of dedicated supporters, and sponsors, who put in a superb effort to bring it all together. Well Done TARC and TARC Sponsors!

The Ipswich and District ARC conducted its Annual General Meeting on August 27 where the following office bearers were elected to guide the club through the next twelve months:

President: Mike Charteris VK4QS

Vice Wayne Bryce VK4AB

President:

Treasurer: John Edwards VK4IE

Secretary: Bob Beck VK4CPM

Station Rob Bryce VK4HW

Manager:

The Club is looking forward to a big year with a lot of work to do on the Clubhouse together with a host of WICEN events.

Five of our members, Mike Charteris, John Edwards, Gary Neilsen, Bob Beck and Rob Bryce recently attended the two-day Assessors Course at the Gold Coast Radio Club, so they could undertake examinations for the budding Amateurs in the District. It is full steam ahead for Ipswich and District which is looking to grow the Club this year with lots of inquiries relating to the Foundation Licence.

Our meetings are held at the clubhouse at 10 Deebing Street, Denmark Hill on the 2nd and 4th Monday nights of the month at 7.30 p.m. All welcome. Coffee and tea are also put on by the Club free of charge. We look forward to seeing you there.

South Coast Amateur Radio Club (SCARG):

Congratulations to Jan Kavanagh from Tree Tops on the issue of her Foundation Licence VK4FJAN. Congratulations also to Bill VK4LC for being top of the Honour Roll in the WIA Open DXCC Standings.

SCARG Nets are conducted on 3605 kHz each Thursday at 1930 and on 147.800 MHz at 0900 daily.

The **Tableland Radio Group (TRG)** recently gathered at the Mareeba RSL for a lovely luncheon

where Eric VK4EDN and XYL Dulcie were esteemed guests. Those in North Queensland would know Eric as the stalwart Net Controller of the daily CW Gnarly Net on 80 m. The Group is planning a couple more of these functions in the lead up to the Christmas break.

Following the Group's successful ILLW at Cooktown in August, it has been decided that changes need to be made to the format prior to next year's event. Firstly, on the advice of the Cooktown Shire Council, the Group will be reducing the number of participants as, unfortunately, our success has been our undoing in that regard. Secondly, catering will be much more subdued and it has been decided that we will do more sitting around the poolside BBQ next year during the event lead up. Logistically this makes much more sense on such a long trip. However, change and "impromptu adaptability" are key features of amateur radio operators and the Group will take it all in its stride.

The Tablelands Radio Group has taken out the callsign VK4GHL on a permanent basis as of this month when it was decided that they would also incorporate this call into the many other activities planned for the next twelve months.



Evelyn Bahr VK4EQ Winner of Craft Home Brew (Needlepoint) with her creation

News from...

VK4 continued

Half a dozen TRG members ventured to Townsville to be part of the North Queensland Radio Convention and were impressed with the efforts of the TARC in putting together a great technical and social event. The product displays put on by Navcom, RDXG Communications, TET Com and KVK Antenna Systems were first class.

Present activity within TRG is focussed on getting better antennas and independent power systems in place and some members have invested in new transceivers in the last year. After Cyclone Larry paid the Far North a "close encounter of the extreme wind" visit, TRG members have become acutely aware of the necessity of having an ability to get on air after a major disaster and remain operational for an extended time without mains power. Most within the group are connected to, or changing over to, independent power supplies, notably heavy duty gel cells charged by solar power.

Tablelands Radio & Electronics Club (TREC): The AGM at TREC was held in the Club Rooms in Mable Street, Atherton, on Saturday 15th September where the following officials were elected for the next 12 months:

President: Trevor Gregory VK4ZFC
Vice Pres: John Roberts VK4TL
Secretary: Dale McCarthy VK4FDMC
Treasurer: Ron Goodhew VK4EMF
Committee: Jeff Cochrane VK4BOF
Stuart Dunk VK4SDD

A Foxhunt in November is the next scheduled outing for the club.

I look forward to an increased input from Queensland Amateur Radio Clubs for the Christmas edition of AR prior to the cut off date of 8th November.

Mareeba War Birds. During the RAOTC Old Rigs Contest between 0600 – 0800 UTC on 3rd November, Mareeba Warbirds Museum's Nick VK4YT will be operating using 65 year old WW II radio equipment as follows:

CW 7.020 to 7.030 MHz
AM 7.055 MHz

Nick is an avid restorer of WW II rigs and all of his work is on display at the Museum if and when you are next passing Mareeba aerodrome.

Central Highlands AGM report

Activities proceeded well with the AGM Banquet put together well by Dot, Dawn and helpers and the meat tortured into a cooked state by Gavin.

Next came the AGM chaired by Mark VK4KMR.

Mark welcomed everyone and said a special hello to those attending for the first time. Mark advised all that the first meeting to establish the club was held 20 years ago in Clermont.

There were still 3 original members with the club in the form of Mal VK4FVL, George VK4KAL and Mark VK4KMR.

Mark advised the meeting about the successful completion of the Central Highlands Repeater System UHF Linking project.

The following office bearers were duly elected:

President: Mark Robinson VK4KMR
Vice Steve Woods VK4SMW
President:
Secretary: Gordon Loveday VK4KAL
Treasurer: Dot Loveday
Technical Steve Woods VK4SMW
Officer:
Committee Harry Cox VK4LE,
Members: Roy Moore VK4YRO

The *Gladstone Amateur Radio Club* will hold its annual beach BBQ at Millennium Esplanade, Tannum Sands.

All are invited for a fun and relaxing afternoon, starting at 12:00 midday Saturday 3rd November. There will be a mystery auction and games as well as a few refreshing drinks in the shady picnic area by the beach.

For out-of-towners, just put in a call on 146.500 MHz or the repeater on 146.625 MHz for direction, or look for the clubs distinctive mud-crab banner.

RSVP gladstone_ar_club@yahoo.com.au

Justices of the Peace in Southern Queensland

GLADSTONE: Rick Wright VK4HWN
Justice of the Peace Qualified 4972 7147

SUNSHINE COAST: Amanda Winchester VK4HIP is registered as a Justice of the Peace, 3/148 Maroochydore Rd, Maroochydore 4558, Phone 5443 5708 (Outside school hours please)

Geoff Sanders VK4KEL is registered as a Justice of the Peace (Qualified) and is on telephone 5445 0280

VK7

remote places that there will probably be even more countries "discovered" for amateur radio purposes before long. DXing is a never ending quest. Our congratulations to an outstanding DXer: VK7YP.

2007 Sewing Circle BBQ

By the time you read this VK7's big day out will be upon us. The Fourth of November at the QTH of Ken VK7DY and Wendy VK7FWJS at Orielton - 30

km east of Hobart is the venue. Show & tell, homebrew contests, demonstrations, and much more will be the order of the day. Come along, meet new and old friends, bring the partners and family and your own picnic basket. See you there.

North West Tasmanian

Amateur Radio Interest Group

There have been a number of enhancements made to the club packet

Justin Giles-Clark VK7TW
Email: vk7tw@wia.org.au
Regional Web Site: reast.asn.au

Outstanding VK7 DXer

Congratulation to Peter Sykes VK7YP who is on the DXCC Honour Roll with 328 countries worked. Peter took up amateur radio on his retirement from the ABC and 20 years later succeeded in working all the recognised amateur radio countries with the last being Aves Island. Richard VK7RO comments that *there are so many amateurs poring over the maps and administrations of*

BBS and EchoIRLP nodes. These include enabling the reading of over 500 BBS bulletins via the web. The EchoIRLP nodes 6124 & 6616 can now be monitored by remote web access and using local DTMF access codes users can now access - local status, nightly broadcast news replays, weather reports, voicemail and random node call. Details can be found at: <http://www.vk7ax.id.au/nwtarig/>

The Monday night broadcasts have been changed and the Q5 Education

Hour program is now airing in a special 30 minute format. Broadcasts are played automatically on Monday, Wednesday, and Friday Nights via VK7RMD on 2 metres.

Northern Tasmania Amateur Radio Club

September 12 NTARC's guest speaker was Mr Kerrie Finch MLC who gave a most entertaining account of his time working within the ABC. Greg Todd VK7YAD and Norm Deitch VK7AC

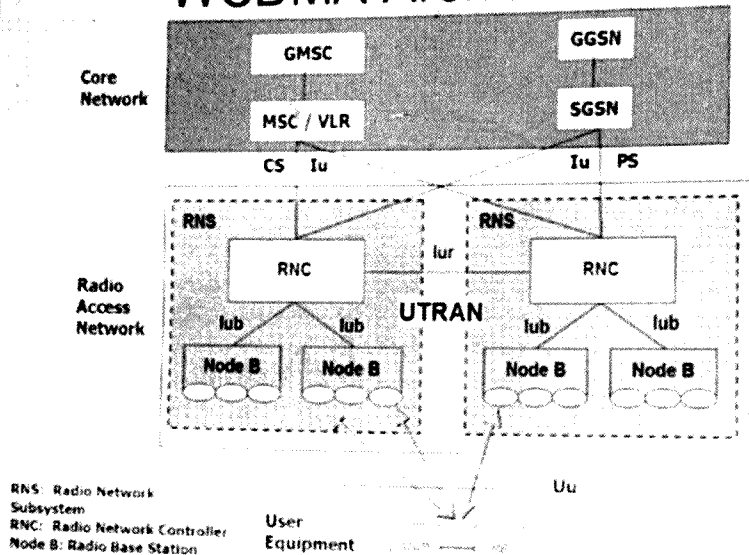
gave a talk on BPL and how it affects our hobby. The VK7RAA and VK7RWC link has been replaced by Joe VK7JG and it is now working very well, thanks Joe.

Radio and Electronics Association of Southern Tasmania

The first Standard licence upgrade course is in full swing with 12 participants and by the middle of November there will hopefully be many more standard licensees in the South. The REAST committee has after much discussion come up with five priorities for the club and are actively pursuing these. These focus on training, upgrading, more on air activities, greater promotion of AR and getting more females into REAST and radio. REAST's ATV experimenters' nights have been contacting clubs around Australia on IRLP and having inter-club rag-chews which have proved to be great on-air social nights.

REAST's October talk was given by Andrew Burt who is a Technology Specialist with Telstra on all things mobile wireless technology and especially the NextG network. Andrew took about 30 attendees through the different systems, their characteristics, protocols, limitations, and the impressive features this technology offers. This was a fascinating talk and thanks to Andrew I think attendees are much wiser about the new network Telstra is rolling out.

WCDMA Architecture



Part of the REAST NextG presentation.

VK5

Adelaide Hills Amateur Radio Society

Sadly we have to report that our President Jim VK5NB has become a silent key. He had a trip overseas earlier this year during which he visited a number of places of interest to amateurs, as well as participating in a gathering of his clan, but unfortunately almost from the time he returned he had been unwell. He gradually became more and more affected by an incurable condition and he died on Wednesday evening September 19th.

A minute's silence was held at the monthly meeting on the following

evening, and a number of members attended his funeral. He will be missed.

The lectures at that meeting were given by two of our members.

Rob VK5RG spoke at some length about the pluses and minuses of the G5RV antenna. He especially emphasised the need to use a balanced feed line with this antenna. The talk generated many questions.

Lyll VK5ZNB then spoke about the causes (and cures) of power line interference. He illustrated his interesting talk with a collection of insulators etc

Christine Taylor VK5CTY

and gave the audience a chance to see the damage present on some of them. Another talk that generated many questions.

If you are in Adelaide on the third Thursday of the month you are welcome to attend a meeting of AHARS. Please contact John VK5EMI or David VK5AMK. Both are QTH the callbook.

Don't forget the big Buy and Sell on 17th November.

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VK5ARC Lighthouse weekend at Point Malcolm

Graham Thomas VK5GCT

The South Coast Amateur Radio Club (SCARC) operated the Club station VK5ARC by activating the Point Malcolm lighthouse - AUS-247 (locator PF94nm). This light was constructed in 1870 and decommissioned in the 1930s, and is believed to be the only freshwater lighthouse in the southern hemisphere. Originally built to guide paddle-steamers through the 'Narrows' between Lakes Alexandrina and Albert, its current usage is to guide boats navigating the lakes.

As the lighthouse is on private land and in keeping with the requirements of the event, SCARC set up its portable operation on a nearby reserve within 500 metres of the light and its outbuildings. Mal VK5MH, John VK5FTCT and Graham VK5GCT used a borrowed 'pump-up' mast to mount the G5RV at about 8.5 metres at the apex with 6 metre support poles at each end. A Comet CHA-250BX vertical was also erected to provide an alternate antenna. Equipment used was a Kenwood TS-440S transceiver fed through a homebrew tuner. The efficiency of horizontal and vertical antennas was compared by conducting experiments on both 80 and 40 metres. The results are still being analysed. It will be no surprise to readers of this magazine that each proved far superior at various times.

Operation commenced at 1300 local time Saturday 18 August and continued until 1200 local time on Sunday, with a break for some much needed sleep. Some 123 contacts were made with 43 of these being with lighthouse stations in all VK states except VK8, and included 1 VI special event station on Montague Island.

The break down of contacts is:

VK 1 - 1; VK2 - 40; VK3 - 39; VK4 - 8; VK5 - 26; VK6 - 4; VK7 - 2; VI - 1.

This was SCARC's first foray into the Lighthouse event and the participants hope it is the first of many future SCARC involvements. We are grateful to the many stations that were both tolerant and patient. Friendliness and camaraderie were very evident which contributed to our euphoric feeling at the conclusion of a special weekend in many, many ways. This event clearly demonstrated the real spirit of amateur radio.



The Point Malcolm lighthouse



Mai VK5MH and John VK5FTCT hard at work.

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Contest Calendar November – December 2007

Nov	10/11	Japan International DX Contest	SSB
	10/11	Worked All Europe DX Contest	RTTY
	17/18	Spring VHF/UHF Field Day	CW / SSB / FM
	24/25	CQWW DX Contest	CW
Dec	1	RTTY Melee	RTTY
	8	ARRL 10 Metres Contest	CW/SSB
	22/23	OK DX RTTY Contest	RTTY
	26 to 13 Jan 2008	Ross Hull Memorial VHF Contest (VHF/UHF)	CW / SSB / FM

Welcome to this month's Contest Column

By the time that this edition of AR hits the mail boxes of WIA members, the Oceania SSB and CW contests along with the SSB leg of the CQWW DX contest will have taken place.

The international contesting season is in full swing, with national and international records up for grabs. Weeks

or even months of plans and preparations swing into action. LF will be taking the brunt of the traffic with the occasional sparkle of life on the HF bands to whet the appetite for anyone looking to augment their DXCC totals or to get that illusive IOTA island into the log.

The usual culprits have been hard at work with station preparations, with The Northern Corridor Radio Club in

Perth having erected some impressive hardware for Top-band. These guys spend so much time thinking about, planning and then building antenna systems for the various contests and other activities of the group members, I am surprised that they actually have time to get on the bands at all! But they do and they do rather well! The guys went 'bush' for the Oceania DX contest

TET-EMTRON

Antenna Manufacturers

New

Tet-Emtron Vertical Range

TEV-4 TEV-3 TEV-3 Warc

New Tet-Emtron Vertical Range

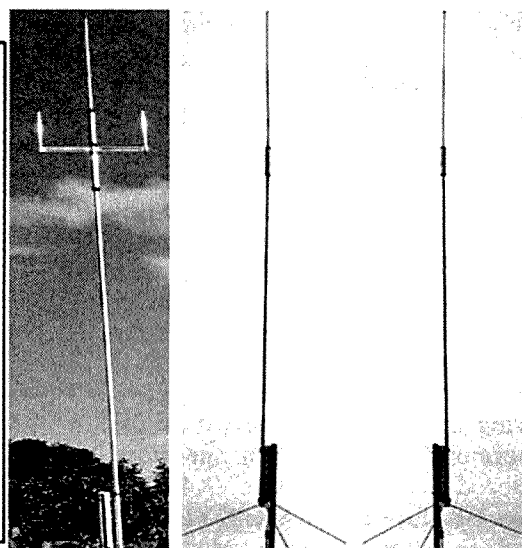
- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
- Light.
- Free standing—no intrusive guy wires.
- 1 kW PEP power rating.
- Can be ground mounted or elevated.

The new TET-Emtron Vertical range is designed with ease of use in mind. Tuning is done by the radials when the antenna is in its final position (where possible). The radials can either lay on the ground, be buried or hang from the elevated antenna. The antenna comes with a set of radials that has a resonant radial for each band. Further sets can be ordered from TET-Emtron if desired.

See the web site for more info and a complete dealer list.

40 Blackburn Street
 STRATFORD
 Victoria 3862 AUSTRALIA
 www.tet-emtron.com
 Email: rawmar@hotmail.net.au

Ph: 61 3 5145 6179
 Fax: 61 3 5145 6821
 ABN: 87404541761



Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW



Photo 1: Bill VK4ZD and Phil VK4BAA operating VK4WIL in the Oceania Contest. Photo: Laurie VK4CCC.

storm experienced in the area towards the end of the contest, anyway. However, on a brighter side, I did not manage to destroy the club beer fridge – as seems to be my forte on these occasions.

Photo 1 shows Bill VK4ZD and me in action at VK4WIL, on 80 m and 40 m respectively. Note, the lack of wall panelling in the shack – it really

is work in progress for the Club, but its taking shape nicely.

Never say never!

When a band seems dead, it might not be! I was fortunate to be in the operating chair for the final hours of the contest. The final 15 m ‘run’ was a little bit of a limp rather than a run as such, but it produced a myriad of prefix mults again and again. The band actually seemed dead until a few CQs went out. JAs by the dozen resulted and then propagation swung to UA0 and finally EU. Things were a little strange though, as a number of EU stations were called and initial data exchanged but then they simply disappeared completely before the QSO was completed.

I am told that the propagation was not too favourable to many areas of VK and that we in VK4 might have got the pick of the bunch – at least in Laidley anyway! John Loftus VK4EMM also reports that propagation on 15 m and 10 m was subject to rare openings and rapid fading with only a brief opening to EU, Italy and Austria. For John at least, 20 m provided an excellent opening to Europe in the two hours from 13:00 to 14:59 UTC. 40 m and 80 m offered periods of above average propagation through heavy tropical static and a wide band of electrical storm activity that moved across VK2 and VK4 call areas.

Oceania Contest

Some Sage Advice from the Guru
Martin VK7GN offers some advice for Phil VK3YB who asked the VKCC forum for assistance.

Martin responds:

The best piece of advice I had in my early days was to run on the highest band on which you can maintain a pile

up. However, the scoring system in the Oceania test tells us to almost do the opposite.

- *Oceania is a run contest for Oceania stations.*
- *S&P only while looking for a clear frequency for CQ (Unless of course you are power or antenna limited and even then you can find a bit to run on – the bands are not really crowded in the Oceania test so there are clear spots – perhaps not on 40!)*
- *You may work rarer DX searching and pouncing but you will not work more multipliers. Prefix mults means run for maximum score!!*
- *Operate on frequencies that do not end with zeros. If there are skeds or nets in Europe they will usually be on 14.210 or 14.220 etc.*
- *Oceania is a low band contest at this part of the solar cycle (do some 10 or 15 if living in the north but in the south get on and work some mults but concentrate on the lower bands where the northerners can get hit with bad tropical static).*
- *With 20 points for working the fellow next door it is worth a bit of wet noodle antenna on 160 to at least make a few.*
- *Make sure you understand all the rules – if you want to win read very carefully. Understand what is really meant by 120Px at the antenna etc.*
- *Expect the unexpected and never give up.*
- *Finally, contesting on the radio is no different from any other sport. Practice, practice and then try a bit of practice!*

You simply cannot get any better or more valuable advice than that – especially the last two points. I just wish that I had a “wet noodle” antenna that can produce the results like Martin’s! Thanks for the advice, Martin.

Have a look at the VKCC at www.vkcc.com and ask a few questions yourself – answer a few too!

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton

(leaving the sanctuary of the Club facilities behind) and had a great time – apparently they did some contesting while they were there, too.

Westlakes have also got the antenna bug (they’ve had it for a while actually!) and have a similar philosophy on club activities and contesting in general.

The bug seems to have skipped across this vast land and taken its victims at east and west coasts at VK6ANC and VK2ATZ – until recently.

Lockyer Valley Radio and Electronics Club VK4WIL

Nestling in the depths of the Toowoomba area of Queensland, the Lockyer Valley Radio and Electronics club have fallen victim to the rigours of the antenna beast. Bill VK4ZD and his XYL Diane have been busy at their shack just outside of Gatton. Much effort has been spent, not to mention a dollar or two, in getting their shack into shape for the contesting season. Two towers are now in the air with 20 m and 15 m monobanders atop, with a myriad of ingenious wires strewn into the trees on their 5 acre plot. Bill and Diane have been contesting as club call VK4WIL from the location for a while now with some good results in domestic contests and international ones too I believe.

The club callsign VK4WIL was active during the Oceania contest in Multi Operator format. Station operators included Trent VK4TI, Dave VK4NDX, Alan VK4SN, Diane VK4KYL, Bill VK4ZD, Andrew VK4HAM, Laurie VK4CCC and myself.

I was delighted to accept an invitation to participate in the contest as my own antenna real estate is, let us say, in its infancy. What was previously in the air, got blown to the ground by the severe

27th ALARA Contest Results

25/26th August, 2007

Marilyn Syme VK3DMS

Well this was the best number of logs we have ever had! It was great to have such a large number of OMs taking part (even though there were many more on air who did not send a log!), and of course the interest shown by the F calls was terrific. Everyone seems to have enjoyed the experience, so perhaps even more will join in next year.

A special mention must be made of the effort put in by Emma VK2FEAH. She is only 11 and conducted herself very professionally and managed a very creditable score. Well done Emma – you have a special award for the youngest ever to take part!

Westlakes Amateur Radio Club operated with all YL members, who also did very well. It was such a pity that quite a few OMs had not read the rules quite thoroughly, and were confused by a Club (which of course can only score three points for YLs only) operated by ladies. Hopefully this confusion will sort itself out by next year. Congratulations to Gerald VK2HBG who became top OM for the second year, while Marisa VK4FMAR put in a sterling effort to take out the top F call.

The top scores are extremely impressive, and show great dedication (and possibly a sleepless night!).

I must thank all those who sent in their

logs so early – my email was swamped. This was very good, as I left for a month overseas during September. I only had 16 logs to check when I arrived home – very welcome! The email facility seems to be very popular, and I certainly appreciate receiving them that way.

I did notice that the full signal report was not always noted – this is one of the rules, so please try to make your logs correct.

Now I guess we will all be preparing for another enjoyable Contest in 2008 on the last full weekend of August, which will be 30th & 31st. I'll hopefully catch you all again then.

Thank you everyone for making it such a wonderful Contest.

Catherine VK4VCH	2425	Top overall, Top phone, Top VK4 ALARA member	Central Coast ARC VK2AFY	143	
Pam VK2PAM	1917	Top VK2 ALARA member	Gail VK4FGLS	136	
Rosa VK2ANG	1880		Grahame VK3YCG	100	
Rosanne VK7NAW	1048	Top VK7 ALARA member	Gerard VK5ZQV	98	
Marisa VK4FMAR	829	Top Foundation licensee	Steve VK5AIM	93	
Lesley VK5HLS	729	Top VK5 ALARA member	Lyn VK4SWE	92	
Westlakes AR Club VK2ATZ	706	Top Club	Jeanne VK5JQ	88	
Gerald VK2HBG	566	Top OM	Marilyn VK7FMAZ	84	
Jean VK3FJYL	549	Top VK3 ALARA member	Justin VK7TW	74	
Mike VK3AVV	472		Collin VK3LO	74	
Dawn VK4FTBA	376	Top VK non-member	Elizabeth VE7YL	71	Top VE ALARA member
Pat VK3OZ	306		Susan VK3FXXX	70	
Tracey VK2FTBH	287		Tim VK7ATK	69	
Ralph VK2IRP	276		Alan VK8AV	65	
Emma VK2FEAH	271	Special Award	Minnie VE3DBQ	60	
Christine VK5CTY	231		Keith VK5OQ	59	
Margaret VK4AOE	214		David VK3FUEL	50	
Kerri-May VK3FDSD	212		Diana VE7XYL	18	
Tom VK4ATH	208		Bill VK2ZCW	15	
Neil VK4FHYH	201		John VK2ZOI	10	
Jenny VK5ANWp3	199		Peter VK2ZCU	5	
Dot VK2DB	193				
Christ VK2LCD	191				
Celia ZL1ALK	175	Top ZL ALARA member			
Gold Coast ARC VK4WIG	168				
Marilyn VK3DMS	167	CHECK LOG			
John VK3MGZ	156				
Muriel VK3KNM/2nd op.	146				

SUMMARY:

ALARA members	25 (inc. 4 DX members)
Non-member YLs	2
OMs	19
Clubs	3
TOTAL LOGS	49

ALARA

Christine Taylor VK5CTY

The Contest

Well, what a marvellous ALARA Contest. Propagation was the best it has been for years. There were people on the air all the time. There were a large number of new F calls, and lots of OMs joined in. There was even at least one Club heard all weekend.

The number of logs received by Marilyn VK3DMS before the closing date was the largest ever. She is delighted, even if it means more work for her.

In the last couple of hours several stations were heard with over 600 contacts, so the scores will be really high this year.

Thank you everyone for participating. Hope you enjoyed it and hope you will all be there next year, too

The results are published in this issue of *Amateur Radio*.

A visit to the North Queensland Radio Convention

With a couple of friends, I spent a week in Townsville covering the weekend of the NQRC Convention. We had a thoroughly enjoyable time. As southerners we enjoyed the balmy weather very much, and the hospitality was great.

The evening we arrived we put out a call on the local repeater which was answered by Gavin VK4ZZ. He joined us for a meal and then took us up to the

top of Castle Hill for an overview of the town before driving us to our cabin. It is unusual to have a hill in the middle of a town so you can see it spread out on all sides.

This prominent hill cannot be called a mountain. It is one metre too short. For a few weeks it was taller after the local school children built a cairn!! Unfortunately a storm blew away the stones before it could be renamed!!

After a couple of days sightseeing we were ready for the Convention, starting with an informal dinner provided by the club: lots of opportunities to meet people and take photos.

There were several ALARA members who are also members of the NQRC and by the end of the weekend there were two new ones as well.

There was plenty of activity during the Convention, with three lectures on the Saturday afternoon and another on Sunday morning plus a Car Boot Sale on Sunday morning followed by a Monster Auction in the afternoon. Not sure how many monsters were sold but I was delighted to find a small solar panel at the Boot Sale. This is now charging some nickel-iron batteries to run my hydroponics (No I do not have the hydroponics inside the house. It is in full sunlight and produces lovely fresh vegetables, but no strange grass!!)

The Convention was run within the grounds of the James Cook University where the canteen catered for lunches very

satisfactorily. The setting was truly tropical and deliberately kept as natural as possible so the radio amateurs were able to watch wallabies and brush turkeys foraging in the gardens and on the lawns. Of course the kookaburras

were amused by our antics!

There were craft activities for the YLs not interested in the lectures and a lovely drive to a tea room that has been opened in an old slab hut. Everyone had a good time.

The people attending the Convention came from all up and down the Queensland coast with a few extras, like us, from the other states. There was a table displaying the WIA goodies, and both Icom and Yaesu had their range of radios on show. To completely fill the needs of the amateur, Rob from TenTec and Bushcomm had a great array of antennas to choose from.

The photo has present, past and future ALARA members in it. It was something special to have a chance to meet them all.

A visit to Parkes

The WIA AGM at Parkes was so successful others have taken the opportunity to visit Australia's radio telescope.

Jean VK4FJYL and her OM spent a few days at Parkes recently and thoroughly enjoyed the experience.



Jean at Parkes



Jean operating VK2ARK Kandos



L to R back row: Sheila VK4PAL, Dorothy XYL to VK4DO, Michelle, Lyndall VK4MZ, Christine VK5CTY, Dawn VK4HER

Middle row: Evelyn VK4EQ

Front row: Joan VK4TVL, Jenny VK5FJAY, Joscelyn VK4JJ

Spotlight on SWLing

Robin L. Harwood VK7RH

All rather depressing, really!

This year is rapidly coming to a close and it is rather depressing. As you probably are aware, RAI Radio from Rome has discontinued broadcasting external service programming on HF after 77 years. It was one of the first shortwave broadcasters. Now they have opted for internet distribution and television instead of shortwave radio. It is unclear at this stage whether the shortwave relays of the domestic overnight service are continuing, although I have seen reports of news bulletins in various European languages continuing over MW and FM.

NHK Radio World from Japan also severely pruned their shortwave output on October 1st. They no longer broadcast to North America, Hawaii and the South Pacific and are also reducing their output to Europe but Africa and Asia continue to be their priority. There are now only three English broadcasts from Tokyo.

By now you are indeed aware of the changes in daylight saving within Australia. From 2008, there will be uniform changeover dates in Australia, with the exception of Queensland and the NT, that is from the first Sunday in October until the first Sunday in April. Our Kiwi friends will have an extra week because they instead opted to commence on the last Sunday in September until the first week in April.

Do not forget that North America and Cuba will be reverting to standard time on the first Sunday in November. The recent proposal of the Chavez regime in

Venezuela to change their standard time from UTC-4 to UTC-4.30 was postponed after Chavez himself was confused whether clocks were going backwards or forwards. It reminds me of the old tale we were taught when we were in primary school of King Canute trying to stop the tides from coming in by his express command and naturally failing.

The BBC World Service is 75 years old this year and throughout November they will have programming looking back over that period. "The Beeb" was the first station I found on shortwave, when I started in June 1956. I well remember hearing the General Overseas Service on 25 metres around 6 a.m. one Sunday morning and promptly being reprimanded for being out of bed and tuning on the Philips dual wave radio without permission. I was only nine at the time. It did not, fortunately, deter me from shortwave listening.

You may have come across All India Radio from Bangalore on a very unusual channel of 10330 kHz. This was primarily a feeder before the advent of satellite relays and gave an opportunity for DXers throughout the world to hear India on a clear channel. At the end of September, these relays were discontinued from Bangalore and switched to Delhi and to 9870. This new frequency seems to be a bad choice as it is in heavy use by various senders.

Well that is all for now and until next month, good listening.

ar

Plan ahead

**Ross Hull
Memorial VHF Contest
(VHF/UHF)**

**Boxing Day (Dec 26)
2007 to Jan 2008**

Centre Victoria RadioFest

at Kyneton, less than an hour
from Melbourne, Ballarat and
Bendigo, on

Sunday, 10 February, 2008

For sales tables and car-boot spaces
contact Nick Angelo VK3UCK 0448
653 201 or vk3uck@hotmail.com

More details at the website:
radiofest.amateurradio.com.au

ar



Jean at the WIA table

Then they went on to Kandos where Jean operated VK2ARK, a station run by the local radio group.

Jean also visited the WIA table which had a really extensive display of goodies.

Now Jean is at home busily studying with the intention of upgrading before Christmas.

Good luck, Jean.

ALARA Awards

I hope you are all giving Kathy VK3XBA a lot of work checking your list of contacts with which you applied for your new and beautiful ALARA Award.

This Award is available to OMs as well as to YLs, don't forget. All you need is 10 contacts with ALARA members from four different call areas.

Sponsorships

Did you contact one of the YLs you sponsor? Somehow it is a special thrill to actually speak to a sponsor. Shirley VK5JSH is thrilled to have managed this with all the YLs she sponsors during this special year for our sister association, CLARA. Some of the contacts have been on Echolink while others have been on air.

A reminder about the CLARA 40th anniversary challenge to make at least 40 contacts with different YLs in this year 2007. Shirley has certainly done this already as have several other VK YLs but if you haven't started yet, it is probably not too late to start now.

If you were not able to talk to your sponsor why not drop her a note, snail mail or email. I am sure she will be delighted.

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wla.org.au

Weak Signal

David Smith VK3HZ

Conditions are picking up and it's looking good for the coming season.

On 20 September, the Hepburn site indicated that there might be good conditions from northern Queensland to New Caledonia (FK8). At about 0600 Z, Kevin VK4ABP and Andru VK4KAY in Mackay reported hearing FK8 FM broadcast stations, and the FK8ZHA repeater up to S3. However, they were barely able to trigger the repeater and unable to raise anyone. Signals faded out by about 0900 Z.

The afternoon of 6 October saw the first VK to ZL contacts for the season. At 0430 Z, David ZL1BT reported hearing the Channel 5A TV from Newcastle. At 0445 Z, he worked Ross VK2DVZ on 2 m with signals up to S4. At 0530, ZL1BT worked VK2AMS (in VK2DVZ's shack) with signals now up to S9. Ron VK4KDD had gone out to his portable location at Clear Mountain near Brisbane. At 0730 Z, he worked ZL1BT giving a 4x1 report and receiving 4x4. Meanwhile, Nick ZL1IU had appeared. At 0735 Z, he worked VK2DVZ (5x7) and Steve VK2ZT (5x9). By 0753 Z, ZL1IU's signal had risen to S9+40 at VK2ZT's location, while ZL1IU was working VK4KDD (and presumably beaming further north). At 0807 Z, Wayne VK4WS worked ZL1IU and ZL1BT. VK4WS and ZL1BT then switched to JT65b digital and had an easy contact at around -18. By 0930 Z, the ZL stations had all retired to bed. The following morning (7 October), VK4KDD was again out at Clear Mountain and at 2210 Z, he again worked ZL1BT at up to S2.

The VK to ZL opening had some interesting propagation conditions. The weather chart showed a high-pressure cell off New Zealand with isobars forming an almost straight corridor between the north of New Zealand and the mid east coast of Australia. This provided the tropo enhancement. There was also a cold front coming through the Sydney area at the time, and all of the action was to the north of Newcastle. Steve VK2ZT was getting very strong

signals from Nick ZL1IU, even though Nick was beaming towards VK4. It seems that the signals were propagating along the front, enhancing conditions considerably.

VK1 Portable Operations

On the morning of Sunday 23 September, Ted VK1BL and Andrew VK1DA were operational from Mt Ginini ACT. The object was to test Ted's recently completed equipment for 23 cm and 13 cm in preparation for the upcoming Spring VHF Field Day (17/18 November) with the additional hope of making contacts into the Melbourne / Geelong area. They were running approx 30 watts on each band using a 3 m long loop Yagi for 23 cm and a gridpack dish for 13 cm. For liaison, they had 100 W on 2 m and 40 W on 70 cm into reasonable-sized antennas.

Charlie VK3NX was also out portable near Geelong with the hope of working back to Mt Ginini. However, nothing was heard of Charlie's signals, although Charlie reported hearing brief bursts.

Ted and Andrew did make some contacts on 2 m and 70 cm into Sydney and Melbourne. They also worked a station in Bathurst on 23 cm and some local stations.

Rob VK1ZQR tried valiantly to extract their 2.4 GHz signal out of the S9 WiFi hash in his area without success. Their location was to the south west of a wire fence surrounding the AirServices Australia compound which would have significantly reduced the signal towards Canberra.

They plan to do additional testing, so look for them during the November Field Day.

EME

Ian VK3AXH reports an interesting 2 m EME contact:

On September 26, I woke up at around 4:30 am and not being able to settle decided to see where the moon was. I set things going to find the moon about

10 degrees off moonset. After looking at the EME Logger, I saw a station calling CQ on 144.118 MHz. However, approximately 1 kHz higher I could also see quite a strong looking signal so I returned to 144.119 MHz to see who it was. RA6AX was just finishing a QSO with DL2NUD and as he registered -3db (big signal), I got all excited as it was the strongest signal I have ever seen off the moon.

At the end of his over I called him on CW for a minute and waited for any response. To my surprise he called me on SSB and we were able to easily exchange reports. At times he was up to 5/5 on my meter and I received 4/1. After a couple of overs and signing off with our 73s, we changed to JT65B for final 73 etc.

Ian suspects that RA6AX may be a club station using the station of RN6BN as they both use the same grid square (KN95). Ian has previously worked RN6BN at levels up to -6. RN6BN runs a monster station with 64 x 15 element H and V Yagis and a substantial amount of power.

Ian's setup consists of an IC-910H driving an AM17 amplifier feeding a 4x18 element array.

New Net

Ron VK4KDD reports that there is a new SSB activity net on 144.200 on Tuesday evenings from 1900 to 2100 EST. The idea is to create some weak signal activity in the evening, mirroring the activity that takes place in the mornings. Of course, aircraft continue to fly throughout the day, so Aircraft Enhancement can be used equally of an evening.

On a recent net, Glenn VK4BG in Hervey Bay worked Steve VK2ZT near Newcastle – a distance of over 800 km. Ron achieved a maximum distance of 640 km, working VK2IF, VK2ZT, VK2FPRG, VK4KK, VK4BG, VK4JMC and VK4HMR.

The only problem with operating in the evenings is that of TVI. If you have this issue, Ron has some suggestions for resolving it.

Friday 7/9	1285 MHz	Mt Coree to Orange (216 km)	P4
Friday 7/9	2415 MHz	Mt Ginini to Orange (241 km)	P3
Friday 7/9	3580 MHz	Mt Coree to Orange (216 km)	P4
Friday 7/9	5750 MHz	Mt Coree to Orange (216 km)	P4-5
Friday 7/9	10236 MHz	Mt Coree to Orange (216 km)	P3-4
Sunday 9/9	24150 MHz	Boorowa to Orange (120 km)	P3-4

Table 1

Log on to the VK/ZL Logger (www.vklogger.com) to see what is happening.

ATV DXpedition

Jack VK2TRF reports that he and Dan VK2GG had more fun than The Chasers on the APEC weekend, operating an

Mt Coree and then to a large hill near Boorowa for the 24 GHz shot. Dan, with Dave VK2TDN assisting, was near Mt Towac, just in the shadow of Mt Canobolas near Orange.

A quick summary of the contacts achieved is in Table 1.

Congratulations to all involved.

ATV Microwave DXpedition.

Jack, with Gary VK2UNI and Rob VK2RMP as helpers, was in the Brindabellas near Canberra on Mt Ginini and

New Optical Record

Further to last month, Clint KA7OEI and associates have extended the optical communications record to a staggering 278 km between two high (2900 m) mountain peaks in Utah. It took them several hours to align their transceivers, using an 8-inch telescope to spot the extremely weak red dot. The signal was not visible to the naked eye, and the voice was extremely weak.

Unfortunately, we do not have any line-of-sight locations in VK that are anywhere near that distance. 200 km is about as far as it goes here. So what that means is that the record is unlikely to ever return to VK, unless someone wants to go balloon mobile that is!

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

Steve VK2ZT, near Newcastle, recently ran some tests with a CW beacon on 2 metres, and Jim VK3II, at Westport, was able to use the waterfall program Spectran to establish there is a viable 856 km path. Following these tests, Jim suggested they try the Digital Mode JT65A and this produced good results with median signal levels varying from -15 to -20 dB. As a result, a number of stations have joined in and most weekday evenings there is now an active group of JT65A operators mostly on 2 metres checking out propagation in the South East of Australia. Many of these operators are new to the Digital modes. Stations involved include: Dave VK1DJA, Colin, VK2KOL, Steve VK2ZT, Jerry VK2APG, Matt VK2DAG, Mark VK2EMA, Bill VK2ZZF, Dave VK3HZ, Peter VK3SO, John VK3JT, Jim VK3II, Andrew VK3KAQ, Jim VK3ZYC, Phil VK4CDI, John VK4JMC, Ron VK4KDD, and Peter VK5ZLX.

The use of JT65A gives about 1.2 dB better performance than JT65B providing both stations are stable to within a few Hz over a transmission. Most operations are on 144.225 MHz with southerly stations transmitting first period. As the bandwidth of JT65A is just under 200 Hz, it is possible for a number of stations to use the same SSB passband by moving up or down a few hundred Hz. By use of the tolerance and freeze

facility on WSJT, one can then decode all other stations working on the frequency. Activity is normally coordinated on the VK-ZL logger: www.vklogger.com

One advantage in using JT65 in the evenings is that it is a constant amplitude mode and thus much less susceptible to causing TVI.

It is interesting to speculate on the type of propagation. Weak tropo-scatter is continuously available up to 800 km between single-Yagi stations running 100 watts and at the longer distances gives signal levels around -28 dB. Some of the stronger signals are probably aircraft enhancement, with some being only short period strong enhancement as experienced on SSB due to forward scattering, but there are also longer periods of weaker aircraft enhancement due to side scattering.

There is an advantage in using the latest version of WSJT, Version 5.9.7. With this latest version one can right click on the callsign of any station you decode and WSJT will automatically set up the correct QSO procedure for terrestrial reporting, including the two character dB signal reports.

Peter VK3SO and Bill VK3JT both have their rigs GPS locked and have at times noted frequency differences of up to 6 Hz which suggests that they are in fact using aircraft enhancement and picking up the Doppler Shift.

It has been found that a number of the

stations new to WSJT have had problems in decoding and the following is a useful checklist when one finds one can see a signal on the WSJT waterfall display which does not decode.

- Computer timing should be correct to within 2 seconds. The timing window of JT56 is not symmetrical as it is primarily designed around EME where there is around a 2.7 second delay. Thus, just because a station is copying you, it does not mean the timing is close enough for you to copy them.
- The mode must be the same as that of the transmitting station – normally JT65A for terrestrial contacts.
- Check the DF or difference frequency shown when WSJT attempts a decode and, if this is not the same as the frequency you see on the waterfall, use the tolerance and freeze facility to ensure decoding is restricted to the signal of interest. Tolerances as low as 10 Hz can be useful in separating a signal from a nearby birdie.
- Set the program to “Aggressive Deep Search” to provide maximum sensitivity.
- Set the “Sync” value to 0 to improve the prospects of gaining sync.
- WSJT uses two decoders: (1) called a Kotter-Vardy decoder that will decode any callsign or random

text (max of 13 characters) down to about -24 dB and (2) called the Deep Search decoder that will typically decode down to -28 dB but occasionally as low as -30 dB. The Deep Search decoder can only be used where the other station's callsign and grid square is included in the program's data base.

- Note that if the transmitting station has not correctly formatted a message then it will not decode with the Deep Search Decoder. The best way of ensuring that messages are correctly formatted is to use the latest version of WSJT and you

can then right click on the other station's callsign and the formatting will all be set up correctly. If the signal is stronger than about -24 dB it may still decode with the Kotter-Vardy Decoder but an incorrectly formatted message will be treated as text and only the first 13 characters of the message are received. If you are in fact attempting to send a text message rather than two callsigns and reports, this must be limited to 13 characters.

- Meteor pings can often affect decoding. If you can see the meteor ping on the waterfall display it is

often possible to set the tolerance to reject the ping.

- Use the AFC (Automatic Frequency Control) facility to compensate for frequency drift.

Steve VK2ZT and Mark VK2EMA have recently taken to EME using JT65b. Their grid square locations have brought about a fair amount of interest. Recently Steve worked over 10 stations in an hour.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland VK5BC

September was a very quiet month on 6 m with very few reports of any openings, the exception being 24th September when E openings were experienced across most of Australia. The equinox came and passed with only the Chinese TV on 49.750 MHz being heard on a few occasions, mainly in Northern Queensland. I guess being the bottom of the sunspot cycle this is to be expected, unfortunately with nothing unexpected occurring.

Early October: the band has shown some good sporadic-E activity, particularly down the eastern seaboard, as well as some good openings between VK5 and VK1, 2 and 4. Particularly good openings occurred on 7, 8 and 9 October with several contacts being made from VK4 to VK1, 2, 3 and 5, VK5 to VK1, 2

and 4 and VK7 to VK2. The VK6 beacon was also audible in VK2 and VK5 on the 9th October.

Much discussion (some very emotional) takes place between 6 m operators over the use of call channels. The band plan lists 50.110 MHz as the international call frequency and 50.200 MHz as the Australian call frequency. In operation though nearly all operators only call on 50.110 MHz. I monitor both call frequencies and have not heard one single CQ on 50.200 MHz in the last five years and for interest have made some CQ calls on 50.200 MHz without ever receiving a reply. From my point of view, you have to query the value of two call frequencies and I notice the same thing occurring on 10 m where operators only call on 28.490 MHz and rarely on the

local nominated call frequency of 28.390 MHz. After all, you are entitled to call on the international call frequency hoping that you may receive an international reply. The important thing though is once contact is established you move off the call frequency as soon as possible whether you receive an international or local reply. Alternatively if you call on the international call frequency (50.110 MHz) and the band is open locally and you expect a local reply nominate a frequency that you are going to listen for replies to your CQ (e.g. CQ CQ 6 m listening 50.155 MHz). At the end of the day, common sense should prevail and you should be courteous to other operators wishing to make calls. I think we have all been caught where we think we are only going to exchange a report but the conversation develops and we have not moved off the call frequency immediately and I am sure most would have been caught in the excitement of a rarer contact. If a contact is taking place on the call channel (particularly local) advise them politely that you wish to make a call and ask them to shift frequency.

I would be interested in your views in regard to the use of the call channels and the value of the local call frequency. As 6 m operators, we need to sort the issue out and establish good operating practice among all operators prior to the next sunspot cycle peak when international DX will again be available and seen as a priority.

Please send any 6 m information to Brian VK5BC at bcleland@pickknowl.com.au.

Coffs Harbour Radio Expo

Hosted by the Mid North Coast Amateur Radio Group

Sunday 20th January 2008

St Johns Church Hall,
Mc Lean Street Coffs Harbour

8.30am Start

Trade Displays, Disposals, Door Prizes, Club Displays, Home Brew Displays, Satellite tracking, Tower Displays

*Special new equipment
low prices on the day only*

Yummy hot food and cold drinks Entry \$5.00 per person

More info on www.mncarg.org or phone

Gary Ryan VK2ZKT 02 66552990

Gridsquare Standings at 25 August 2007

144 MHz Terrestrial

VK2FLR	Mike	113
VK3NX	Charlie	106
VK2KU	Guy	102
VK3KAI	Peter	84
VK2ZAB	Gordon	78 SSB
VK3HZ	David	77
VK3PY	Chas	70 SSB
VK2KU	Guy	69 SSB
VK2DVZ	Ross	68 SSB
VK3CY	Des	68
VK2TK	John	62
VK3EK	Rob	62 SSB
VK7MO	Rex	61
VK3QM	David	58 SSB
VK2EI	Neil	57
VK3BJM	Barry	55 SSB
VK3BDL	Mike	51 SSB
VK3ZLS	Les	51 SSB
VK3KAI	Peter	50 SSB
VK3WRE	Ralph	50 SSB
VK2KU	Guy	47 Digi
VK2ZT	Steve	47 SSB
VK3CAT	Tony	46
VK4TZL	Glenn	45
VK5BC	Brian	43 SSB
VK3VG	Trevor	41 SSB
VK4CDI	Phil	41
VK7MO	Rex	41 SSB
VK7MO	Rex	39 Digi
VK3KAI	Peter	36 Digi
VK4CDI	Phil	36 SSB
VK2TK	John	35 SSB
VK4KZR	Rod	35
VK3ZUX	Denis	33 SSB
VK6HK	Don	33
VK2KOL	Colin	32 SSB
VK2AMS	Mark	31 SSB
VK3DMW	Ken	31
VK3ZYC	Jim	31
VK3VHF	Rhett	29 SSB
VK2KRR	Leigh	28 FM
VK3CJK	Chris	28 SSB
VK2EAH	Andy	27
VK2TK	John	27 Digi
VK1WJ	Waldis	26
VK2TG	Bob	26 SSB
VK3ACC	Gordon	26 SSB
VK5ACY	Bill	26 SSB
VK3BBB	Brian	25
VK5BC/p	Brian	25 SSB
ZL3TY	Bob	24
VK3TLW	Mark	23 SSB
VK3YB	Phil	23
VK4EME	Allan	23
VK3HV	George	21 SSB
VK1WJ	Waldis	20 Digi
VK3BG	Ed	20 SSB
VK6KZ	Wally	20
VK3AL	Alan	18 SSB
VK3UDX	Geoff	17 SSB
VK4TJ	John	17 SSB
VK2EAH	Andy	16 SSB
VK4CDI	Phil	16 Digi
VK4EME	Allan	16 Digi
VK6KZ/p	Wally	16
VK3ZYC	Jim	14 SSB
VK3VHF	Rhett	12 Digi
VK2EAH	Andy	11 Digi
VK2EI	Neil	11 Digi
VK4EME	Allan	9 SSB
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 SSB
VK1WJ	Waldis	4 CW
VK4JAZ	Grant	2 FM
VK3QM	David	1 Digi

144 MHz EME

VK2KU	Guy	247
VK2KU	Guy	233 Digi
ZL3TY	Bob	233
VK3AXH	Ian	162 Digi
VK7MO	Rex	154 Digi
VK2FLR	Mike	120
VK4CDI	Phil	91 Digi
VK3CY	Des	70 CW

VK2AWD	Dave	52 Digi
VK2KU	Guy	39 CW
VK2KRR	Leigh	30
VK3VHF	Rhett	20 Digi
VK3HZ	David	19
VK3NX	Charlie	5
VK4EME	Allan	4 Digi
VK2DVZ	Ross	2
VK3AXH	Ian	2 CW
VK3AXH	Ian	2 SSB

432 MHz Terrestrial

VK2ZAB	Gordon	57 SSB
VK3PY	Chas	50 SSB
VK3NX	Charlie	49
VK3QM	David	47 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3HZ	David	36
VK2KU	Guy	34 SSB
VK3EK	Rob	34 SSB
VK3BJM	Barry	33 SSB
VK2DVZ	Ross	32 SSB
VK3CY	Des	32
VK3KAI	Peter	29
VK3BDL	Mike	28 SSB
VK3KAI	Peter	28 SSB
VK3WRE	Ralph	27 SSB
VK5BC	Brian	21 SSB
VK7MO	Rex	20
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2TK	John	17 SSB
VK3CAT	Tony	16
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK2ZT	Steve	14 SSB
VK3BG	Ed	14 SSB
VK4KZR	Rod	14
VK5BC/p	Brian	14 SSB
VK4CDI	Phil	13
VK4CDI	Phil	13 SSB
VK4TZL	Glenn	13
VK6KZ	Wally	13
VK2KOL	Colin	12 SSB
VK2KRR	Leigh	11 FM
VK3AL	Alan	10 SSB
VK3YB	Phil	10
VK2AMS	Mark	9 SSB
VK2TG	Bob	9 SSB
VK3BBB	Brian	9
VK3VHF	Rhett	9 SSB
VK3CJK	Chris	8 SSB
VK4TJ	John	8 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK2FLR	Mike	6
VK6DXI	Mirek	6
VK2KU	Guy	5 Digi
VK3HV	George	5 SSB
VK1WJ	Waldis	4 SSB
VK3KAI	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK3ZYC	Jim	4 SSB
VK4EME	Allan	4 SSB
VK3DMW	Ken	3
VK3VHF	Rhett	3 Digi
VK4CDI	Phil	3 Digi
VK2EAH	Andy	1 SSB
VK2TK	John	1 Digi

432 MHz EME

VK4KAZ	Allan	14 CW
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK4CDI	Phil	8 Digi
VK2SN	Sean	6 Digi
VK3NX	Charlie	5
VK3HZ	David	4
VK2KRR	Leigh	1
VK3AXH	Ian	1 Digi
VK3VHF	Rhett	1 Digi

1296 MHz Terrestrial

VK3QM	David	39 SSB
VK3PY	Chas	38 SSB

VK3NX	Charlie	36
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2KU	Guy	25
VK2KU	Guy	22 SSB
VK3EK	Rob	20 SSB
VK3KAI	Peter	20
VK3KAI	Peter	19 SSB
VK3KWA	John	19
VK2DVZ	Ross	18 SSB
VK3WRE	Ralph	17 SSB
VK3BDL	Mike	14 SSB
VK3HZ	David	14
VK3BJM	Barry	13 SSB
VK7MO	Rex	11 SSB
VK2TK	John	10 SSB
VK3BG	Ed	10 SSB
VK3UDX	Geoff	10 SSB
VK4KZR	Rod	10
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK4TZL	Glenn	6
VK3HV	George	5 SSB
VK3VHF	Rhett	5 SSB
VK3ZUX	Denis	5 SSB
VK3ZYC	Jim	5
VK4TJ	John	5 SSB
VK6KZ/p	Wally	5
VK2KRR	Leigh	4
VK3BVP	Shane	4
VK3YB	Phil	4
VK3ZYC	Jim	4 SSB
VK4CDI	Phil	4
VK6KZ	Wally	4
VK2KU	Guy	3 Digi
VK2ZT	Steve	3 SSB
VK3BBB	Brian	3
VK4CDI	Phil	3 SSB
VK6DXI	Mirek	3
VK2FLR	Mike	2
VK3CJK	Chris	2 SSB
VK3CY	Des	2
VK3DMW	Ken	2
VK3KAI	Peter	2 Digi
VK3QM	David	2 Digi
VK3ZYC	Jim	1 Digi
VK4CDI	Phil	1 Digi
VK5BC	Brian	1 SSB
VK7MO	Rex	1 Digi

1296 MHz EME

VK7MO	Rex	26
VK7MO	Rex	23 Digi

2.4 GHz Terrestrial

VK3PY	Chas	14 SSB
VK3QM	David	14 SSB
VK3NX	Charlie	13
VK3WRE	Ralph	10 SSB
VK3KAI	Peter	7 SSB
VK3EK	Rob	5 SSB
VK3HZ	David	5
VK3HV	George	4 SSB
VK6KZ	Wally	4
VK3BJM	Barry	3 SSB
VK3KAI	Peter	2 Digi
VK3VHF	Rhett	2 SSB
VK4KZR	Rod	2
VK2DVZ	Ross	1 SSB
VK3BG	Ed	1 SSB

VK3TLW	Mark	1 SSB
VK3ZUX	Denis	1 SSB
VK4TZL	Glenn	1

2.4 GHz EME

VK7MO	Rex	2 Digi
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3.4 GHz

VK3NX	Charlie	11
VK3QM	David	9 SSB
VK3WRE	Ralph	7 SSB
VK3KAI	Peter	6 SSB
VK3HV	George	4 SSB
VK6KZ	Wally	4
VK3EK	Rob	3 SSB

5.7 GHz Terrestrial

VK3NX	Charlie	12
VK3WRE	Ralph	9 SSB
VK3QM	David	8 SSB
VK3KAI	Peter	7 SSB
VK6KZ	Wally	4
VK3BJM	Barry	2 SSB
VK3EK	Rob	2
VK3HV	George	2 SSB
VK3KAI	Peter	2 Digi
VK6BHT	Neil	2 SSB
VK3ZUX	Denis	1 SSB

5.7 GHz EME

VK3NX	Charlie	8
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10 GHz Terrestrial

VK3NX	Charlie	11
VK3QM	David	11 SSB
VK3KAI	Peter	9 SSB
VK3PY	Chas	9 SSB
VK3WRE	Ralph	9 SSB
VK6BHT	Neil	9 SSB
VK3EK	Rob	5 SSB
VK6KZ	Wally	5
VK3HV	George	4 SSB
VK3HZ	David	4
VK3TLW	Mark	3 SSB
VK3ZYC	Jim	3 SSB
VK5ACY	Bill	3 SSB
VK2EI	Neil	2 SSB
VK3BJM	Barry	2 SSB
VK3DMW	Ken	2
VK3ZUX	Denis	2 SSB
VK7MO	Rex	2
VK3BG	Ed	1 SSB
VK4KZR	Rod	1
VK4TZL	Glenn	1

10 GHz EME

VK3NX	Charlie	10
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24 GHz

VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK3NX	Charlie	2
VK6KZ	Wally	2

474 THz

VK3CJK	Chris	3
VK3HZ	David	2
VK7MO	Rex	2
VK7TW	Justin	2
VK7HAH	Ben	1 Digi
VK7MO	Rex	1 Digi
VK7TW	Justin	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU, vk2ku@clearmail.com.au.

The guidelines (and the latest League Table) are also available on the website of the NSW VHF Dx Group at www.vhfdx.radiocorner.net - click on Gridsquares.

Next update of this table will close on 7 December 2007.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

AMSAT

Bill Magnussen VK3JT

ISS Supporting packet operations again

Regular packet operators will be pleased to learn that the Kenwood radio on ISS has again been turned on and configured to run packet radio operations. This happened in September and world wide activity has been reported. It seems a lot of people were waiting for packet operations to return to ISS.

GO-32 (TECHSAT-1B) and 9600 baud operations

Do you have your old 9600 baud gear gathering dust in a cupboard? Nostalgic for the halcyon days of the 9600 baud Surrey satellites? Why not dust it off and hook up to GO-32? It is there waiting and

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK
9 Homer Rd
Clarence Park SA 5034

Graham's e-mail address is:
vk5agr@amsat.org

it is carrying lots of traffic. Reports from USA and Europe tell of the PB queue being filled with call signs. Remember the days when UO-23 would be similarly active? I certainly do and there must be many a 9600 baud modem stored away with cables waiting for the right moment. Dig it all out and connect it all up again. You could be surprised.

Delfi-C3 launch delayed until December

The Delfi-C3 team has been informed by its launch broker that the launch of Delfi-C3 has been moved to December 2007. The two major factors that have contributed to the postponement of the launch are weather and the Indian launch schedule. The weather effect on the launch is the typhoon season in India, which lasts from mid-October until December. The launch schedule is dependent on mission priorities. In the meantime the Delfi-C3 team will continue to work on further testing parts of the satellite and preparing for the operations phase. As soon as more information regarding the launch of Delfi-C3 is available it will be added to the Delfi-C3 website. Delfi-C3 will have a telemetry downlink in the amateur satellite segment of the VHF amateur radio frequency band. Telemetry decoding software will be made available to participating amateur radio operators and universities which allows them to decode and display real time telemetry. This software will allow for uploading received telemetry data to the central Delfi-C3 ground station via the Internet for processing. The Delfi-C3 team would like to invite all interested radio amateurs to receive, decode and forward telemetry data to the Delfi-C3 ground station. Now comes the icing on the cake! Delfi-C3 carries a mode UV linear transponder. The satellite will be in telemetry only mode for approximately the first three months of the mission, after which it will be switched to transponder mode.

Delfi-C3 Frequencies:

Primary telemetry downlink: 145.870 MHz 1200 Baud BPSK AX.25 400 mW

Backup telemetry downlink: 145.930 MHz 1200 Baud BPSK AX.25 400 mW

Linear transponder downlink: 145.880 - 145.920 MHz (inverting) 400 mW PEP

Linear transponder uplink: 435.570 - 435.530 MHz

Transponder mode beacon: 145.870 MHz CW (10 dB below transponder PEP)

Delfi-C3 represents an opportunity for telemetry buffs to make a worthwhile contribution - and in a short while for SSB operators to brush up their mode-UV skills. Latest information will be found on the Delphi web site. Be sure to download a copy of the telemetry decoder when it becomes available. Get the old tracker going or maybe even think about going all the way with true-rule Doppler compensation. A number of software packages are available now that will do this and you have time to get it all going.

While we are on the subject

Dusting off gear and getting ready for P3E should be high on the list for experienced operators and newcomers alike.

When P3E is launched you can bet there will be a scramble to get gear up and running and to gain or to refresh experience in handling linear transponders.

Delphi - above - will give operators the opportunity to gain experience but you do not have to wait for it to be launched and serve its time as a telemetry-only device.

AO-7 is there right now. AO-7 was one of the early satellites amateurs had at their disposal. It served the amateur community proudly for a number of years and was instrumental in allowing many operators to get their first experience of a linear transponder. It differed from its predecessor AO-6 (which carried the first successful linear transponder) in that its orbit was something quite new.

It gave us our first taste of a high orbit - without being a HEO as such. AO-7's footprint astonished people at first, it

Thomas Debel VK4DEB

It is with sadness that I announce the death of Thomas Debel (Tom) VK4DEB who passed away in Atherton on Sunday 15 July 2007.

Tom Debel was born at the Atherton Hospital Queensland on 22 July 1923. He was educated in the small Tableland town of Kairi. He left school at the age of thirteen and joined the then PMG as a telegraph boy, working at the Kairi, Tolga and Atherton Post Offices.

He was called up for Naval service in May 1942 at the age of eighteen and after basic training he joined HMAS Warramunga as a telegraphist. He served for four years on the Warramunga and was present in Tokyo Harbour for the signing of the Japanese surrender. Tom was very proud of the friendships and experiences that were afforded him during his service. Those friendships lasted throughout his life.

After the war Tom bought a farm in Kairi and commenced poultry farming and was a founding member of the Far North Queensland Poultry Farmers Association. In 1950 Tom married Nola Austin and together they had five children and thirteen grandchildren.

Tom was an active member of the Atherton RSL and willingly gave time to speak with youth groups about his wartime experiences, around ANZAC day each year.

Tom passed his AOCIP in May 1993 and was granted the call VK4DEB.

He was a long-time and active member of the Tablelands Radio and Electronics Club Inc. (TREC). He held positions on the executive committee at various times.

He was a regular on the TRECNET and also on the Townsville WIT net where he would always give an accurate report on the Atherton Tableland activities.

Tom was a real gentleman and never thought badly about anyone. He had a great many friends and this was reflected at his funeral in Atherton on Thursday 19 July where approximately 300 people including local amateur operators attended. The Atherton RSL provided an honour guard.

Vale Thomas Debel VK4DEB – SK
*They shall grow not old, as we that
are left grow old:*

*Age shall not weary them, nor the
years condemn*

*At the going down of the sun and in
the morning*

We will remember them.

LEST WE FORGET

L Binyon

from *For the Fallen* 1914

submitted by Dale McCarthy VK4DMC



ar

Silent key

Les Cooper VK7LS

Family and friends mourn the death of Les Cooper VK7LS, who passed away on Tuesday, 31 July, 2007.

Les lived in Collinsvale, a small town just west of Hobart. At his passing he had been an amateur for over forty years, and was still an active member of his local radio club.

Submitted by his loving daughter,
Dianne Allen

Donald T M Connor VK2KJX

With sadness I report the passing of Don Connor VK2KJX, on Saturday 15 September 2007, at the age of eighty five.

After a recent return from Western Australia, Don had not been well. In fact, just a few days before his death, Don notified his club, the Central Coast ARC that he would not be available for net or call-back duties for a few weeks due to his illness.

Don was first licensed as VK2MJX

before upgrading to VK2KJX. He was active in Central Coast ARC activities during his sixteen years of membership, including being on the Newsletter team, being a keen field day worker and WIA News call-back team co-ordinator, just to mention a few roles.

Don will be missed by many fellow club members, and the hobby at large.

Vale Don VK2KJX.

Submitted by Leigh VK2KAL

DX - News & Views

John Bazley VK4OQ

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.

Email - john.bazley@bigpond.com

Well I know that some of our readers really do not like contests, but looking at them, (contests I mean!), purely from a DX point of view they are an excellent way of working rare countries on various bands. The two major DX events - CQWW SSB and CQWW CW are always held on the last full weekend of October and November respectively. For those not interested in either there is still 10, 18 and 24 MHz that remain, and in my opinion rightly so, contest free sections of the allocated spectrum.

Recently I have seen several references to the success of PSK under the poor band conditions that we have been experiencing for the past few months. Quite frequently 20 and 40 metres in particular have supported solid DX contacts on PSK when there has been no other activity at all. If you have not tried PSK yet, may I suggest that you consider that mode.

Talking of poor conditions gives me a suitable opportunity to once again highlight the IARU Beacon programme. A wonderful tool for judging propagation, if you do not have the details they are available at <http://www.ncdxf.org/beacons.html>

QSLs

Sad to say that Osten SM5DQC is now a Silent Key. He has been QSL Manager for 9Q1EK and 9Q1TB.

Now to planned DX activity:

OH0 A lot of activity is planned from here during CQ contests!

OH0Z, Aland Islands, will be on for the CQWW CW November 24-25, single operator, single-band 15 metres. The operator will be Ari OH5DX, who requests that all QSLs go via W0MM.

OH1JT will also be on from the Aland Islands in the CQWW CW single operator single band, possibly 80 or 20 metres. He has not decided band or callsign yet.

OH0AW will also be active, single operator, single band 40 metres. QSL via OH5DX.

OH0I will be the callsign used by Juha

OH9MM. Juha plans to operate single band, single operator on 160 metres. QSL via OH9MM.

T88 Francesco Di Michele I2DMI, and his wife Giovanna plan to spend their Christmas holiday in Palau. Frank plans to be QRV as T88RY on RTTY only from December 26th through January 1st. While there, he will be putting an emphasis on working Europe and North America in his spare time. He is looking for comments on propagation, which can be sent to t88ry@yahoo.com. In September, Frank will update his T88RY listing on QRZ.com including suggested frequencies. He will also have an on-line log search. QSL via I2DMI, Francesco Di Michele, P.O. Box 55, 22063 CANTU, ITALY.

T88WV will be participating in the CQWW CW contest November 24-25 with OH7WV operating. He will be single operator all band. He will operate casually for one or two days before and after the CQWW. QSL via OH7WV direct or bureau.

5X Nick G3RWF has planned a trip to Uganda in late November, including participation in the CQWW CW DX Contest. Look for 5X1NH from November 21st to the 30th. First from Kampala between the 21st and 26th and then in Western Uganda for the remaining days. Activity will mostly be on the low bands along with 12, 17 and 30 meters. He will be doing CW, SSB, RTTY and PSK. QSL via G3RWF.

3X G3SXW and the Voodoo Contest Group are going to 3X, Guinea, in November for a sizeable operation. Roger said, "We will move our one ton of equipment overland from Mali where we have operated as TZ5A for the past two years." The eight-man team this year is AA7A, G3SXW, G4BWP, G4IRN, GM3YTS, K4UEE, K5VT and KC7V. The 3X callsigns are not being reported yet. QSL the contest operation via G3SXW and individual 3X callsigns to their home call. The Voodoo group will be multi-multi with monoband antennas for all six bands and kW amplifiers. "This time we will be immediately beside saltwater, a real luxury!" AA7A

and KC7V will do some EME for several days before the CQWW CW contest.

XF4 Mexicana de Radio Experimentadores (FMRE) President Carlos Levy XE1YK announced he and three other XE ops have obtained permission from the Mexican Navy to visit and operate from Socorro Island, Revillagigedo (XF4), by the year's end in celebration of FMRE's 75th anniversary. Joining him will be Pepe XE2MX, Eduardo XE2YW and Manuel XE1VVD for an expected 30 day operation. The XE Navy will be providing transportation to and from the islands. The expected dates are November 15th to December 15th. A detailed schedule is expected to be announced soon. Plans are to use the calls 6E4LM and XF4YK.

P40 Kay K6KO will be on from Aruba as P40K from November 28th to December 18th. QSL via WM6A.

C6 C6AKX, the Bahamas, will be in the CQWW CW with KE7X operating low power. He will be single operator single band 20 m. QSL via WA4WTG. His inclusive dates are November 18th to the 26th November.

A35 Kingdom of Tonga I received the following e-mail from VK2CCC:

Operation will take place between 19 November - 26 November 2007. Call yet to be confirmed. Ops: LY1F. QSL route: via VK2CCC. The main operation is expected from Tongatapu group, OC-049. Focus on low bands, CW Operation will include CQ WW DX CW Contest. Expedition photos & info will be posted on my website www.qrz.it/ly1df

C56 C56JJ will be on the air again from November 30th until December 7th. Operator Jan PA4JJ says he will probably have an on-line log this time on his Web site, <http://c56jj.pa4jj.nl>

HK0 San Andreas Tom K3WT, Vlad N0STL, Bill W0OR and Ron N0AT will be active as HK0/homecall from San Andreas Island (NA-033) from 19th November until 27th November. They will participate in the CQWW DX CW Contest as 5J0A (Multi-Single). QSL 5J0A via W0JAR, others via home calls, direct or bureau.

C9 Wayne W5KDJ will be active as

Geoffrey A Warner VK2HJ

It is my sad privilege to advise of the passing of Geoff Warner VK2HJ on 21 August, 2007, at the age of 92.

Geoff was born at Wyong on 4 December, 1914. He was educated at Wyong Public School, and Newcastle Church of England Grammar.

He developed an early interest in wireless, then coming into popular use. He left school at 16, and took odd jobs, mostly in the area of wireless set servicing, and as a projectionist at the local cinema. As well, he had undertaken study for the Amateur Radio Operators Certificate and, in 1930, became one of the youngest amateur radio operators, with the callsign VK2CK. The licence fee paid was 25 cents.

In later years he was the prime instigator in establishing the event we all now know of as the Wyong Field Day.

In 1934 he gained his First Class Commercial Radio Certificate. Shortly thereafter, in 1935, he joined Guinea Airways Limited, initially at Lae and later Wau, before joining Amalgamated

Wireless Australasia (AWA) in Port Moresby in 1937.

During this period he met Lillian Joyce Lewis, whom he married in 1939, and they produced two daughters Helen and Rosemary, who survive him.

In 1946 he was employed by the Overseas Telecommunications Commission (OTC) where he served in various areas, including some co-operative involvement with NASA during the moon landing program, until he retired as manager of the Bringelly Radio Receiving Centre in December, 1979.

After his retirement Joyce and Geoff settled in Camden. Joyce passed away in May 1995, after a long illness.

Geoff remained at the same address until 14 August last, when he had a serious fall, which resulted in his admission to Campbelltown Hospital, and his passing just one week later.

He will be sadly missed by all who came to know and respect him.

Vale Geoff VK2HJ.

C91KDJ from Mozambique from 15th November until 28th November. He will operate on 160-10 metres CW (maybe also RTTY), with a focus on 160 and 80 metres. QSL via home call. Logs will be uploaded to LoTW. Further information at <http://www.tdxs.net/c91kdj.html>

VP2E Andy DL5CW and Marina DM5YL will be active from Anguilla (NA-022) from 8th November until 26th November including CQWW CW Contest. Probably their call signs will be VP2EDL and VP2EDM. They plan to operate mostly CW (Andy) and RTTY/PSK31 (Marina) on the HF bands. QSL via home calls, direct or bureau.

XU7 Retu OH4MDY/XU7MDY reports that XU7MDY is again QRV, 24 October to 12 November 2007. Modes are CW/SSB and perhaps PSK31. QSLs only direct via OH4MDY. The address is okay in qrz.com. CW activities are planned on following frequencies: 1822, 3502, 7003, 10105, 14007, 21007, 24897 and 28020 kHz.

Happy DXing!

Special thanks to the authors of *The Daily DX (W3UR)*, *425 DX News (1IJQJ)*, VK2CCC and G3SXW for information appearing in this month's *DX News & Views*. For interested readers you can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

ar

Are you managing the estate of a 'Silent key'?

Please save any QSLs for the National QSL collection, but first contact:

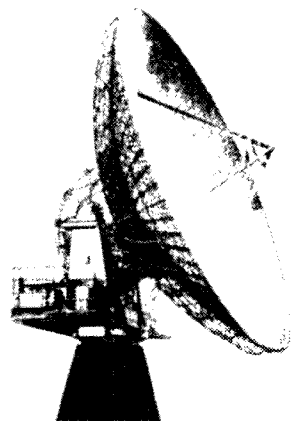
The Hon. Curator,
Ken Matchett VK3TL
on (03) 9728 5350
or email: wlaqslcollection@wia.org.au

Rare DX, special call-signs prefixes and suffixes, pictorials and pre-war QSLs are needed.

Let us save something for the history of amateur radio.

VK2HJ

EX. VK2CK (1930)



GEOFF WARNER
7 Hopeon Ave.,
Camden,
Australia 2570

KEEPS AUSTRALIA
IN TOUCH WITH THE WORLD

Submitted by Frank D. Barsanti VK2FDB.

Hamads *classifieds* **FREE**

FOR SALE NSW

- AR8 wartime comm Rx in good working order, converted to 240 V ac. Offers wanted. Brian mndleech@bigpond.com
- TELEGRAPH BOOKS: 1). *Morsum Magnificat* Collection, Issues 20, 21, 24 and 26 to 87. Mint condition in plastic folders a total of 65 magazines now out of print, \$350. 2). *Wireless for the Warrior*, Volume 1, Wireless Sets No 1- 88, by Louis Meulstee, mint in plastic cover. \$25.00. 3). *American Telegraphy* and *Encyclopedia of the Telegraph* by William Maver Jr 570 pages, mint \$65.00. 4). *The Telegraph. A History of Morse's Invention and Its predecessors in the USA*, by Lewis Coe 184 pages, mint \$30.00. 5). *History, Theory and Practice of the Electric Telegraph* by George B Prescott 512 pages Excellent condition \$30.00. 6). *Your Gateway to Packet Radio* by Stan Horzempa. \$10.00. 7). *Packet Users Notebook* by Glynn Buck Rogers \$10.00. 8). *Prime Packet radio made Easy* by Buck Rogers \$10.00. 9). *Ritty Today* by Dave Ingram \$20.00. 10). *The Dawn of Australia's Radio Broad Casting* \$5.00. 11). *The Year Book of Wireless Telegraphy and Telephony*, heavy 930 pages very old book open to offers... 12). *ABC Telegraphic Code Fifth Edition 1901*, water damage to outside covers, heavy 1400 pages. Open to offers. 13). Hi Mound Parts HK-702 Morse Key offers. 14). Icom carry cases for IC-xGAT hand held radios, 2 of in protective covers brand new \$15.00 each. 15). *Instant Morse* CD ROM by the RSGB Morse Teaching Program and more \$15.00. 16). *Ham Stories* by Robert W. Betts \$20.00. 17). *McElroy, world's champion radio telegrapher* by Tom French, 155 pages excellent condition \$45.00. 18). *Morse Key Arm Tensioners* by D.J. Goacher Descriptions of the various styles of spring used in the manufacture of Morse Keys. \$50.00. Buyer to pay for Postage as some books are rather heavy. This is a private collection of Telegraph

Books and I also have around 500 keys, hand and semi auto for sale. Stephen Smith VK2SPS, phone H 02 9456 0130, M 0415-559-784, email Vk2sps@froggy.com.au

• YAESU FT-7100M dual band VHF/UHF 50/35 W, Rx 108-999. Remote head, 262 memory, CTSS/DCS. Hardly used, looks as new, in original box \$450. VK2AYC. 02 9583 2056

• DRAKE L7 amplifier + manual, very good condition. Still 1 kW output. Price \$1900. Buyer collect preferred. AUTEK Research VA1 antenna analyst. Price \$230 plus postage. Tom VK2OE, 3 Buller St, Bonalbo NSW 2469, wojiech.tomczyk@education.nsw.gov.au (preferred contact).

• OZI-POLE portable dipole kits complete and ready to assemble. Covers 40 - 6 metre bands (80 m add on under test) and is ideal for balcony use, clamped to a picnic table or pedestrian use. A great build-it-yourself project that you can use with pride from the MNCARG Inc. P.O. Box 505 Bellingen NSW 2454. Visit <http://www.mncarg.org/> or email mncarg@yahoo.com.au. Price \$99 + post.

WANTED NSW

• Early TEN-TEC Argonaut Tx/Tx, types 509 or 515, others except 516F. Phone 02 6677 9292, write VK2KSD QTHR, evenings best.

• FM board UI-9 to suite ICOM IC-707 txcvr or info of a possible source will be appreciated. Charlie VK2FDMJ 0243 584 549

FOR SALE VIC

• TS-480-HX tr 200 W ATU, \$1490. As new, must sell. Call VK3GMM 03 5985 2671.

• YAESU FT-680R (Serial No. OL030373) 6 m all mode transceiver with manual. Included in price 6 m J-pole antenna & 6 m pre-amp. \$220

ono. Telephone Ian VK3YIC 0409 217 101. Email lanrob@ncable.net.au

• FREE: American TELREX 5 element tribander beam 20, 15, 10 m with rotator and emotor model 1102 MXX to be removed from Nally tower. Valda VK3DVT 03 9592 6236

WANTED QLD

• KENWOOD TS-440s for spare parts. Advise cost and postage. VK4KKN 07 4973 6949 or email kknbarry@lizzy.com.au

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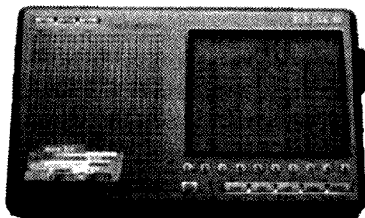
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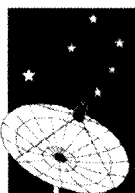
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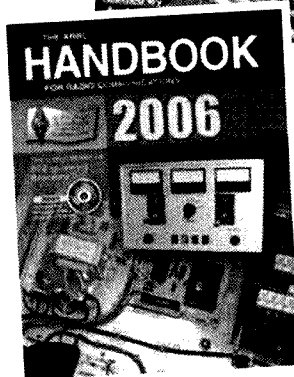
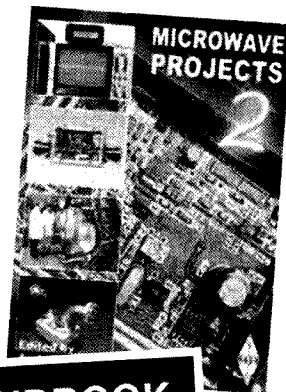
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Email newsletter, on request, via president@vk1.ampr.org
- VK2 VK2WI: Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.600, 147.000, 438.525 and 1273.500 MHz.
Plus regional relays on 5.425 MHz USB (morning). VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 1030 and 2000 local, on 3.615, 7.085, 10.130, 146.700, 147.250 and 438.075 MHz.
- VK4 VK1WIA: Sunday 0900 local via HF and major VHF/UHF repeaters.
- VK5 VK5WI: Sunday 0900 local, on 1.843, 3.550, 7.140, 28.470, 53.100 AM, 146.900 (SE), 146.925 (CN), 147.000 and 439.975
- VK6 VK6WIA: Sunday 0930 local, on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120, 50.150, 146.700 and 438.525 MHz.
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- VK7 VK7WIA: Sunday 0900 local, on 1.840 AM and 3.570 MHz and on major repeaters.
VK7 regional news follows at 0930 local, on 7.090 and 14.130 MHz, and on major repeaters.
- VK8 Sunday 0900 local, on 3.555, 7.050, 10.130 and 146.900 MHz.

Note that many clubs broadcast the WIA News via local VHF and UHF repeaters. Check the News section of the WIA website.

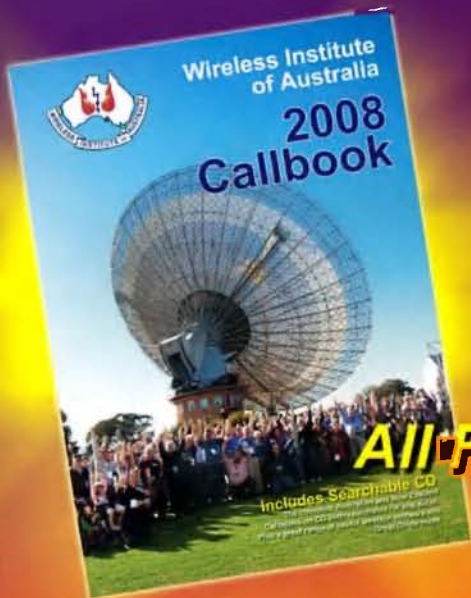
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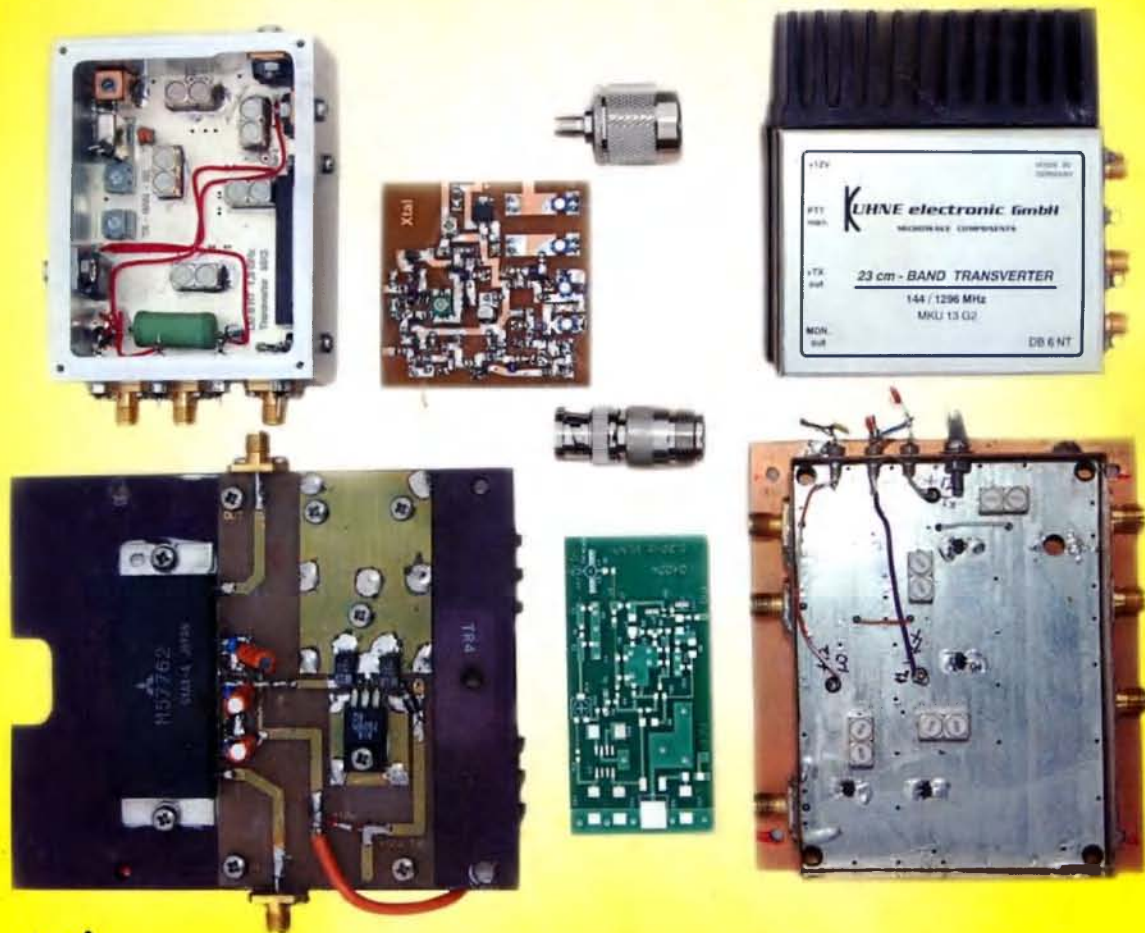
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Our Cover this month

The key components required for 23 cm, build your own or ready to go. Photo by
Peter Freeman VK3KAI. See the article commencing on page 34.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back issues

Back issues are available directly from the WIA National

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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 an additional \$2 for each additional issue in which the article appears).

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Peter Freeman VK3KAI

Season's Greetings

The members of the Publications Committee (PubCom) wish everyone a safe and happy festive season. The past year has been busy, yet it seems as if the last Christmas/New Year season was only a short time ago.

As we head toward the end of this year, many amateurs' minds turn to the performance of their station, especially those interested in VHF, UHF and microwave bands, as summer will hopefully bring with it enhanced propagation. Of course, do not forget the Ross Hull Memorial Contest, commencing Boxing Day and running for approximately three weeks, and the Summer VHF/UHF Field Day Contest on the last weekend of the Ross Hull.

Callbook 2009

"What is he doing?" I hear you say – "the 2009 Callbook? The 2008 volume has only just been published!" Well yes, but publications such as the Callbook take considerable planning.

PubCom would welcome constructive feedback on the 2008 Callbook, so that we can plan ahead for the 2009 volume. Design of the 2009 Callbook will start in March, so we need your comments soon. We are seriously considering creating a single central database for much of the information published in the Callbook, as such a database would hopefully eliminate potential errors by a contributor sending in the wrong version of the information. Of course, some information will always be out of date in such a printed publication – callsigns will change, club committee members change because an AGM occurs between the closing date for the Callbook and its actual release date. This is part of modern life, but we believe that many prefer to have a printed resource to needing to refer to the Internet on a regular basis, where information might be expected to be able to be kept up to date.

In addition to comments on the Callbook, PubCom hereby calls for Expressions of Interest for persons willing to be part of an editorial subcommittee to assist the Callbook Editor in preparing the 2009 Callbook. Some members of this subcommittee might be located close to Melbourne, but

with modern communication methods such as email, this is not a necessary prerequisite. We would be particularly interested to find a person to oversee the design and production of the master CD version of the Callbook. Anyone interested in participating can forward their written Expression of Interest to the Secretary of PubCom, Ernie Walls VK3FM. Ernie can be contacted via email at armag@wia.org.au or by mail via the WIA office.

Photographs for covers

We always welcome the submission of good quality photographs for consideration for publication in AR, the cover of the Callbook or any other publication that we might consider. Readers are reminded of the hints for photographs that were published in the Editorial in the August 2007 issue of AR.

"Over to you" contributions

I do welcome your "Letters to the Editor", which we publish under the "Over to you" banner. Of course, I exercise my right as Editor to publish or not – but if space is available, I usually publish.

I have received several contributions of the past months regarding BPL or PLC communications. Given that we have a WIA Working Party monitoring BPL activity in Australia, I believe that we do not gain much by publishing such letters in AR. I would urge all readers concerned about the real and future potential impacts of BPL technology deployment to lobby their local Federal politicians, especially as many may be new following the election. Political pressure is one way in which we may influence decisions.

No January issue

As has been the practice for the past couple of years, there will be no separate January issue of AR – it will be combined with the February issue. We plan to have it into our distribution system in late January.

Have a safe holiday season.

73

Peter VK3KAI

ar

Being a director of the WIA

This issue of Amateur Radio has the annual notice calling for nominations for directors of the WIA.

Over the past year the current directors have, on a number of occasions, exchanged views on what it means to be a WIA director and whether particular skills are needed for the future.

Naturally, while there is broad agreement, each director has his own slant on the question and so, while I try to synthesise the different views, please accept this as a personal view.

I think it is worth raising the whole question because I am sure that anyone considering nominating will think about what he or she can contribute to the WIA and then, when members are asked to vote, they will consider what each candidate can contribute, and hopefully look to a Board of directors with synergistic skills and experience.

The WIA Board does not meet personally very often, perhaps two or three times a year. Accordingly, the directors communicate sometimes by phone and mainly by email, more or less on a daily basis. That means that you do have to be able to express yourself adequately in writing. The monosyllabic response does not contribute much, and the point of exchanging views is to try and ensure that all points are properly considered.

And, you also have to read a lot. Much of what has to be read is dry, regulatory stuff. Certainly not scintillating! That is because the directors are asked to provide input on many policy issues, whether it is a draft Determination, a Request for Expression of Interest, responding to a discussion paper on issues that may have an impact on the Amateur Service, or just a report on an area where the WIA is represented. Much of the important work of the Board is involved in things that are not the fun of amateur radio, rather what many find much less interesting.

In addition, while each director may take a special responsibility for particular matters, such as contests or QSLs, the WIA relies on people who are appointed as coordinators or managers to look after those areas.

On the other hand, a director who takes

responsibility for a matter has to ensure that the matter is brought to finality. You not only need the time to deal with the daily emails, but also to complete particular tasks you undertake.

But at this time the WIA is really facing challenges that may well determine its future. The retention of the ACMA examination management function and the other issues that hopefully will be raised by the ACMA outsourcing do affect where the WIA will go for the future.

We may, as a result of these matters need to consider whether the present premises can meet our needs, on what basis could the WIA undertake the as yet not fully defined outsourcing tasks, what financial commitment can we make, and how is it all to be managed.

Does that help identify the skills and experience that the WIA needs on its Board?

Actually, what the Board needs is a mixture of skills.

In my view, underlying the Board's approach to virtually every question, the economics of publishing a book or magazine, the management of the ACMA amateur qualification examination system, indeed the whole question of ACMA outsourcing, taking responsibility for the financial outcomes of the company, the subscriptions we charge, the insurances we seek, all involve a mixture of managerial, accounting, financial, commercial and other skills. The WIA would not be served by a Board made up solely of accountants any more than it would by a Board of only communication engineers.

Yes, of course we want true amateurs. But a mix of technical, managerial, commercial and professional experience and skills at Board level means that the WIA is better equipped to meet the challenges of the next period.

Does it matter from where people come?

One of the criticisms of the WIA structure before it became a single national body was that policy was determined by people representing a particular state or territory. It was said

a position could be based on what was seen as being in the best interests of a group, rather than in the best interests of amateur radio as a whole. Today no director represents a particular group or area. Each director must act in the best interests of all members.

So, in one sense, it just does not matter from where a director comes.

But it is obviously important that the Board has a mix of directors from different areas. I am sure that if all directors came from metropolitan Sydney or Melbourne, they would have little understanding of the perceptions and needs of amateurs in other areas. The Board benefits from a mix.

It has been suggested that a thick skin is also needed.

Unfortunately, there is some truth in that. The Board cannot act to please all members at all times. If 80% of amateurs supported a Foundation licence during the consultation process, then 20% were opposed. Some of those who disagreed with the introduction of an entry level licence continue to disagree with the WIA working to make it work successfully, sometimes in an antagonistic way.

Some would like the WIA to be some sort of Spectrum Police. The WIA cannot take that role. Those who do not accept that position can also be antagonistic.

Above all else, the WIA must continue to attract new members. A director must be prepared to go to meetings and events where the WIA can be promoted.

Being a director of the WIA is nothing like being a member of a tennis club committee, where there is a monthly meeting and all correspondence is read out, every payment is discussed, and every issue like whether the club can afford better biscuits is discussed.

Being a WIA director means a lot of time, a lot of effort, a lot of reading and a lot of writing.

But, as the WIA faces new and real challenges, if you have the skills and experience and the time and the interest, then it can be totally satisfying, because you are working to secure the future of amateur radio.

WIA Director resigns

Robyn Edwards VK6XRE was elected a director of the WIA in 2006, taking office at the conclusion of the WIA Annual General Meeting held on 6 May 2006.

Unfortunately for the WIA, Robyn will be moving to New Zealand in the near future, and so has given notice of resignation with effect from 1 December 2007.

The Board has accepted Robyn's resignation with regret, recording formally in its Resolution the Board's gratitude for Robyn's contribution to the WIA.

On the nomination of Robyn, the Board has appointed Eddie Saunders VK6ZSE as a director to fill the vacancy caused by Robyn's resignation with effect from 1 December 2007.

Eddie is the VK6 Regional Advisor on the National Technical Advisory Committee and is well known in VK6 amateur circles.

Eddie takes the balance of Robyn's term of office which ends at the conclusion of the Annual General Meeting to be held in 2008, but he will be eligible for election in 2008 and has indicated that he will stand.

Icom gives 5 more D-STAR repeaters to the WIA

Just over a month ago, the WIA announced the gift from Icom (Australia) Pty Ltd of a D-STAR repeater to be located at Olinda in the Dandenong ranges, to serve the greater Melbourne area.

D-STAR is a digital protocol developed by the Japanese Amateur Relay League (the JARL) and stands for Digital Smart Technologies for Amateur Radio.

Now Icom and the WIA, concurrently with the official opening of the Olinda D-STAR repeater VK3RWN, have announced the gift by Icom of five further D-STAR repeaters to the WIA so that a D-STAR repeater will be able to serve the metropolitan areas of each of the other state capitals.

The experience in Melbourne has been used as the basis of formulating what is really a cooperative effort between a club, its individual experts, the WIA and Icom.

The WIA will consult with people in each state capital including the appropriate Advisory Committee to identify a club or group of clubs, supported by people with the necessary RF and computer skills, able to provide a suitable site and supply the ancillary equipment.

Icom will provide the D-STAR repeater and provide general assistance, and will maintain and repair the repeater on a warranty basis for 6 years.

The WIA will license the repeater and will meet the reasonable cost of broadband connection.

The agreement between the WIA and Icom that forms the basis of these arrangements makes it clear that each D-STAR repeater shall be open to all amateurs.

The WIA acknowledges with gratitude Icom's generous support.

WRC 07 concludes

The 2007 ITU World Radio-communications Conference ended on 16 November 2007, and Keith Malcolm VK1ZKM, the WIA nominee on the Australian delegation, is home after four very tiring weeks in Geneva, Switzerland.

The amateur service was allocated a new secondary band 135.7 to 137.8 kHz, with a one-watt E.I.R.P. power-limit.

Australian amateurs should be pleased with this LF allocation. In 1978, when Australia was one of the countries proposing the enlargement of the family of frequencies available to the amateur service by new bands at 10, 18 and 24 MHz at the WARC to be held in 1979, Australia also proposed to the Conference Preparatory Meeting an LF band around 200 kHz. Because of the fierce opposition of a number of countries, including the USA, that proposal was abandoned.

The proposal for a new secondary band at 5 MHz failed, despite a valiant effort from the CEPT to have a footnote inserted.

Similarly, the proposals for an agenda item for an amateur allocation at 5 MHz (and 50-54 MHz in Region 1) did not make the list for WRC-11.

The proposal for an amateur allocation of 15 kHz in the band 415-526.5 kHz is on the provisional agenda for WRC-11.

WIA President Michael Owen VK3KI said that all Australian amateurs should be very grateful that someone with the skill and experience of Keith was available and willing to represent them at the WRC-07.

WIA submits

Expression of Interest

ACMA has published a Request for Expression of Interest for the "provision of certain statutory functions and administrative services associated with" amateur radio.

The "certain statutory functions" and "administrative services" are the provision of amateur qualification examinations, the issuing of certificates of proficiency and certain, largely undefined, functions in relation to the issue of callsigns.

The WIA has been providing the examination management function since 1992 in accordance with a Memorandum of Agreement.

The ACA Outcomes of the Review of Amateur Service Regulation published in May 2004 proposed that the management of the examinations, callsigns and the issue of certificates of proficiency be undertaken by a single external body.

The WIA regards its examination management role as critical, particularly since the restructuring of the Australian amateur licences, and the introduction of qualified Assessors as part of a new approach to its amateur qualification role.

The WIA has lodged its Expression of Interest before the closing time, Thursday 8 November 2007.

That submission has involved a number of people, particularly Fred Swainston, the WIA Nominated RTO, Ron Bertrand, and all of the Directors and the Secretary who all reviewed and contributed to the Expression of Interest.

The Authority has indicated that it will advise the successful and unsuccessful parties in December.

WIA President Michael Owen VK3KI said that he would like to thank the members who noticed the ACMA advertisement of the Request and drew the attention of the WIA to it, and all who contributed to this most important submission.

The Wireless Institute of Australia

ACN 004 920 745

Election of Directors Call for Nominations

Pursuant to clause 14.1 (c) of the Constitution the WIA Board has determined that the election of directors shall be conducted by postal ballot.

Robyn Clare Edwards was a director to retire at the conclusion of the next Annual General Meeting but has given notice of resignation as director with effect from 1 December 2007. The Board has resolved to appoint **Edwin Robert Saunders** a director for the remainder of the term of office of Robyn Clare Edwards.

Accordingly three directors retire at the conclusion of the next Annual General Meeting which will be held at a time and a place to be announced but not later than 31 May 2008, namely Philip John Wait, Trevor Milton Quick and Edwin Robert Saunders. Each is eligible for re-election and Philip John

Wait and Edwin Robert Saunders have offered themselves for re-election to two of the three vacancies.

Nominations are called for from others also seeking election as a director of the WIA.

A director must be a voting member of the WIA and must hold an Australian amateur radio licence.

Any person wishing to nominate as a candidate for election as director of the WIA must deliver or cause to be delivered to the Returning Officer by not later than 31 January 2008:

A statement signed by the candidate signifying his or her willingness to be a candidate for election as a director together with;

- the full name, age, occupation and callsign of the candidate, and

- such other biographical details or other information as the candidate wishes to accompany the ballot papers, but in all not exceeding 250 words.

Delivery to the Returning Officer may be made by hand when the WIA national office is open at:

Suite 10, 229 Balaclava Road,
Caulfield North,
Victoria 3161

or by mail to:
PO Box 2175
Caulfield Junction,
Victoria 3161.

Nominations received by facsimile or by electronic means cannot be accepted.

David A Wardlaw, VK3ADW
Returning Officer

Passed with flying colours!!

This some of what Jason Reilly VK7ZJA had to say about our radios last month in AR

.. solid and rugged ...comfortable to hold...the audio qualities are superb! This is one of the nicest sounding handheld radios ...The receiver is also astonishingly sensitive, ...On transmit, the Quansheng has pleasant TX audio, and delivers 5 watts on high power, 1 watt on low.the circuitry general finish is excellent...quite a few Quanshengs go into the hands of local amateurs, and generally speaking most are very happy with them...The factory in China has also been...supplying spare parts...for those units that had suffered damage outside the scope of the 6 month warranty too, which is very reassuring. The Quansheng factory has also taken on board some suggestions from local hams on what they might do to improve their handhelds...(and) has implemented an Australian suggestion to abandon the simple drop-in charger in favour of an intelligent design. .

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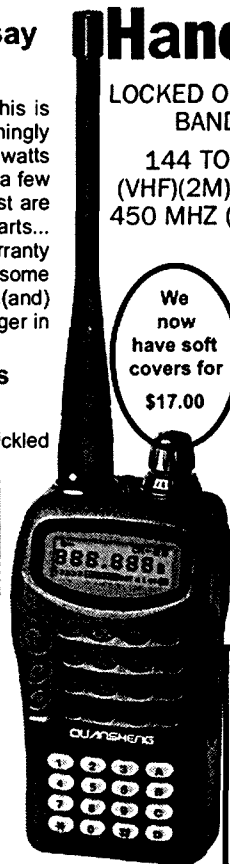
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- 9) Channel spacing: 5KHz, 10KHz, 12.5KHz, 25KHz
- 10) Keypad lock
- 11) Monitor function (input frequency)
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- 13) Frequency Modulation
- 14) Auto power save
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|---------------------------|------|
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| Speaker Microphone | \$12 |
| Car Charger Double outlet | \$12 |
| Headset/Microphone | \$8 |
| SMA to BNC Converter | \$5 |
- (Please note that items ordered separately from the radio incur \$5 shipping charge)



A simple superhet receiver for 160 metres

Drew Diamond VK3XU

Interest in 160 metres continues to grow apace. Just why there should be such a surge in activity is perhaps not difficult to understand. It is a challenging band. You have to know your subject in order to get good results. Night time propagation offers fascinating but variable possibilities, where long-haul DX is worked regularly only by the keen operator who has studied the band, and honed operating skills and station equipment to explore the rather peculiar characteristics of 'Top-Band'. Daytime ground-wave working is another attraction. An (usually home-made) AM transmitter of moderate power, possibly 20 to 100 W into a reasonably effective vertical antenna, will put out a signal that can generally be heard right across (for instance) Melbourne and surrounding districts. Locally, the long running 11 am 'Coffee Break' session is increasingly well attended.

An ordinary broadcast band radio can be 're-tweaked' to allow coverage up to perhaps 1.9 MHz, but sensitivity may not be sufficient to permit reception of weaker signals. Nor is there provision for demodulation of SSB and CW modes.

Offered here are plans for a superhet receiver that covers 1.75 to 1.95 MHz. Sensitivity is such that a 0.5 μ V signal is plainly audible. Detected AM signals have very good fidelity and an (optional) internal BFO allows for SSB and CW reception. A useful amount (about 30 dB) of AGC range is provided by the MKT484 AM radio chip. The set operates from a nominal 6, 9 or 12 V dc supply, which may be from a battery or a regulated mains power supply unit. Peak current demand rather depends on audio volume, but is typically about 50 mA. Although by no means 'contest-grade', this delightful little receiver should nevertheless provide a simple and replicable entry to Top-Band listening.

Circuit

Experimenters will remember the ZN414 AM radio chip, which unfortunately is no longer available. A workable replacement is the Rapid Electronics (UK) MKT484 (Reference 1), which provides amplification, AGC and AM detection all in one TO-92 three-leaded

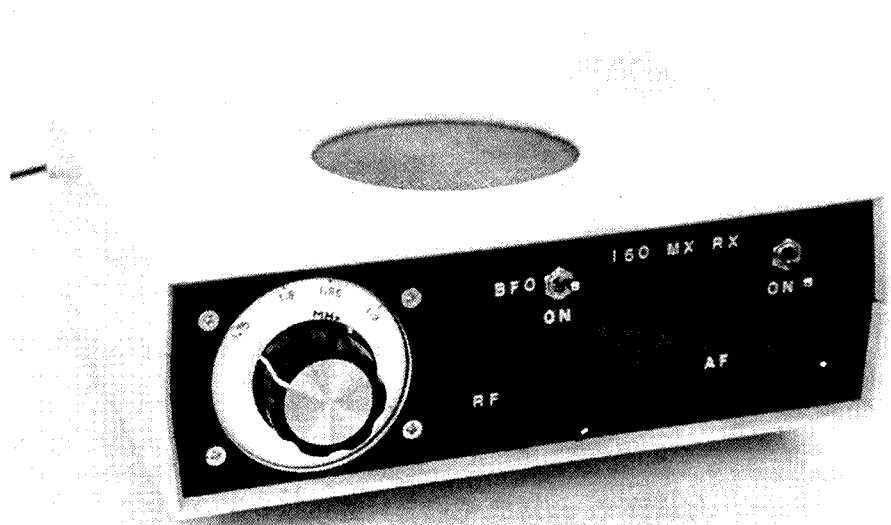


Photo 1: The simple superhet receiver for 160 m.

package. Numerous patterns have been published for broadcast band use (see Reference 2 for a typical example). The chip is good to about 3 MHz, so it admirably suits, and greatly simplifies, a 1.8 MHz application.

A popular NE602 (see Figure 1) serves as the mixer whose on-board oscillator further reduces component count (compared to a discrete component job). We only need to tune over about 200 kHz, so input selectivity is provided by a simple two-resonator band-pass filter (thus dodging the need for frequency tracking considerations) using stock 22 μ H chokes as inductance elements. The NE602 is responsive up to 500 MHz, hence the first 22 μ H coil is arranged to be effectively in series, and with capacitors in shunt with the input offers substantial attenuation to unwanted HF and UHF signals.

Selectivity, about 8 kHz wide, is provided by two ordinary 'transistor

radio' type IF transformers coupled as shown, and presented to the input of the MKT chip. Intermediate frequency (IF) shall be 470 kHz so that, when the BFO is on, the 4th harmonic will be $4 \times 470 = 1,880$ kHz, thus placing the harmonic outside our band. Residual IF signal exists together with detected audio at the output of the MKT484, so a rather large decoupling capacitor (100 nF) is recommended by the chip maker. Additionally, a 1 mH (1,000 μ H) choke was found necessary at the input of the LM386 audio amplifier chip (the MKT484/LM386 combination tends to become regenerative or 'super-sensitive' if insufficient decoupling is employed).

Construction

The prototype receiver is housed in a Dick Smith plastic case measuring 200 x 65 x 160 mm. A suggested 'paddyboard' style circuit board layout (Reference 3) is pictured in Photo 2 and Figure 2.

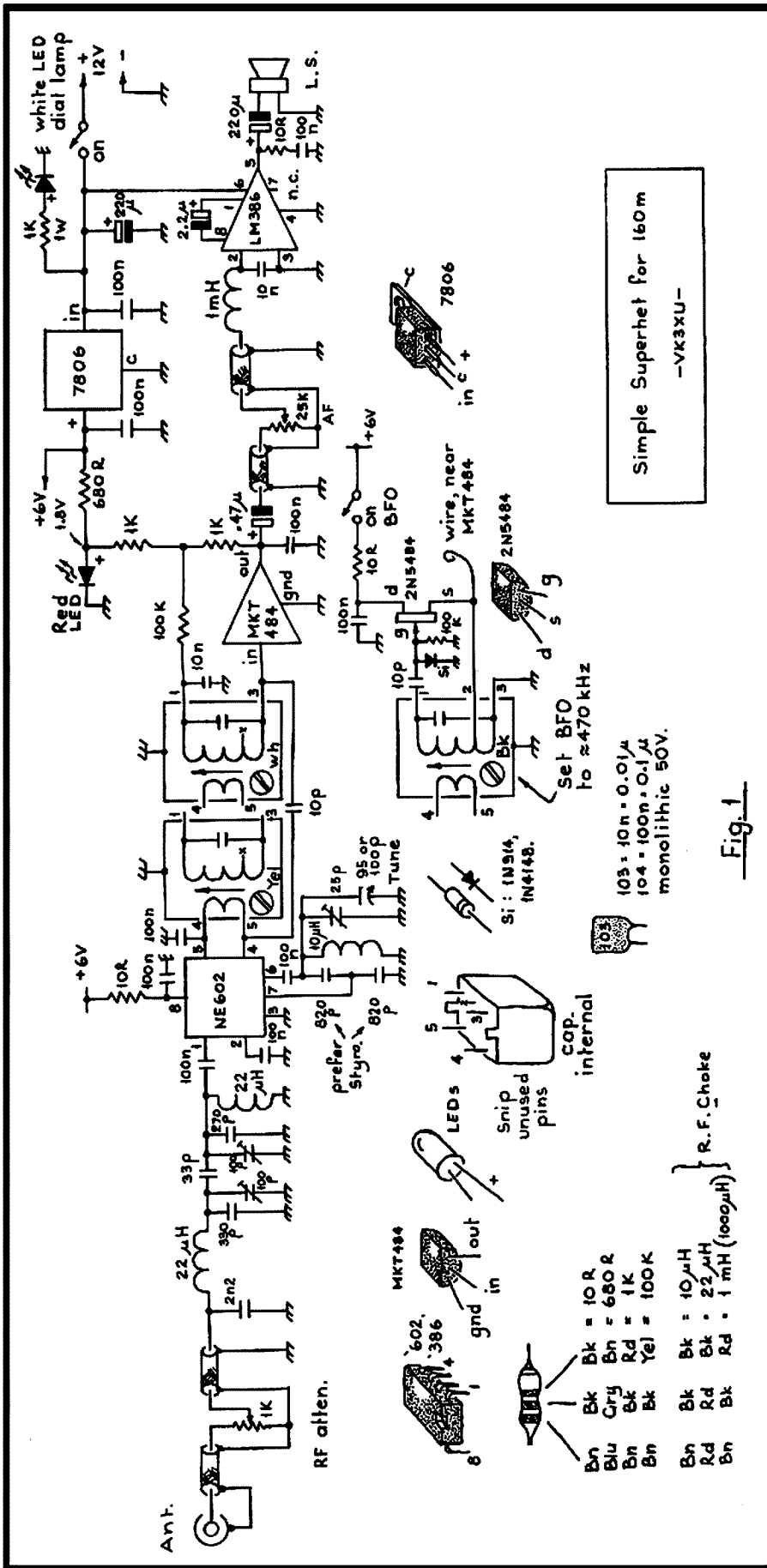


Figure 1: Schematic of the 160 m simple superhet receiver.

The NE602 (or SA602 or NE612) and LM386 are fitted into IC sockets that, in turn, are soldered upon the copper side of 19 mm x 4-strip 'substrates' of Vero board. Remember first to separate the pins each side of the Vero with a shallow (junior) hacksaw cut. Take care when soldering the sockets that the pins do not poke right through and short to the ground foil. The substrates are super-glued (sparingly), copper side up upon the main circuit board.

All unused IF transformer pins should be snipped to prevent them shorting to the ground foil or to adjacent pins. Carefully bend the required pins to permit their connection to 'paddyboard' islands.

For a tuning range of 200 kHz, the oscillator variable capacitor should have a maximum capacity of 95 (like the MSP of the prototype) or 100 pF. The stability of the trim capacitors normally on offer is unimpressive, so I have used a Philips 25 pF 'beehive' air trimmer for the oscillator. Ordinary ceramic 100 pF trimmers are adequate for the input filter. The 820 pF caps should be mica or 'styroseal' (see Parts below).

Every constructor has their own ideas about dials, so just a few words. A 6:1 planetary drive is mounted upon an aluminium plate, which in turn is fixed to the front panel with four 3 mm x 25 mm countersunk screws and spacers (visible in Photo 2). The dial is a 49 mm diameter disc of opaque 3 mm Perspex. I suggest removing the gloss by rubbing with fine emery, thus preparing the dial disc for later calibration using fine pencil markings.

For the dial window, an exact-fitting disc of three mm clear Perspex is machined to 50 mm diameter with a slight taper, or bevel, so that it is a neat bung fit in the front panel. The suggested flexible coupler is simply a length of 1/4" (6.35 mm) inside diameter rubber fuel hose, held captive with two ordinary pliers operated hose clips. The dial is illuminated from behind with a white LED, arranged so that it radiates through a hole in the aforesaid aluminium plate. The LED and 1 kΩ 1 W dropping resistor may be soldered to a suitably sized and segmented piece of circuit board,

- Bk = 10R
- Bk = 680R
- Bk = 1K
- Bk = 100K
- Bk = 10µH
- Bk = 22µH
- Bk = 1mH (1000µH)

- MKT484
- 602
- 386
- LEDs
- Snip unused pins
- caps. internal
- R.F. Choke

Set BFO to ≈470 kHz
103 = 10n = 0.01µ
104 = 100n = 0.1µ
monolithic 50V.

Fig. 1

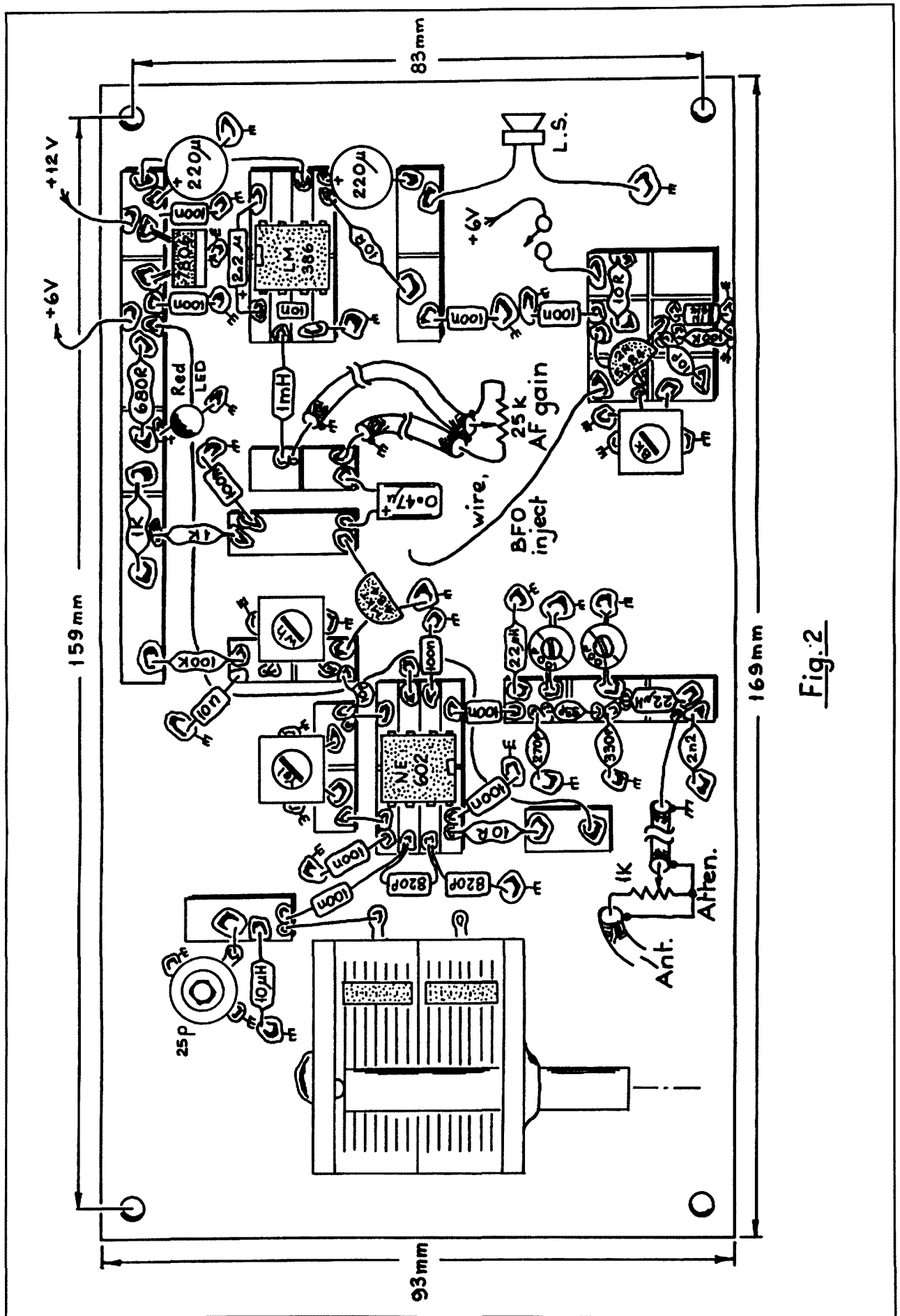


Fig.2

Figure 2: A suggested component layout on the "paddyboard" circuit board.

which in turn is held in place by the two uppermost screws.

If it is required to operate the set from a 6 V supply, simply omit the 6 V regulator chip, and connect pin 6 of the '386 to +6 V.

Operation

Inspect your soldering for quality and accuracy. Look especially for solder bridges between Vero tracks and clean up with solder-wick as necessary. Check that all polarised components are correctly oriented.

Apply power. The LEDs will glow. With the gain potentiometer fully clockwise, you should hear just a soft hiss, indicating that the set is 'gainy', and probably working. For initial adjustments, the ideal instrument is a frequency counter and high-impedance (CRO) probe. Carefully connect the probe tip to pin 7 of the NE602, then adjust the 25 pF trim capacitor so that the oscillator is adjustable (with the tuning

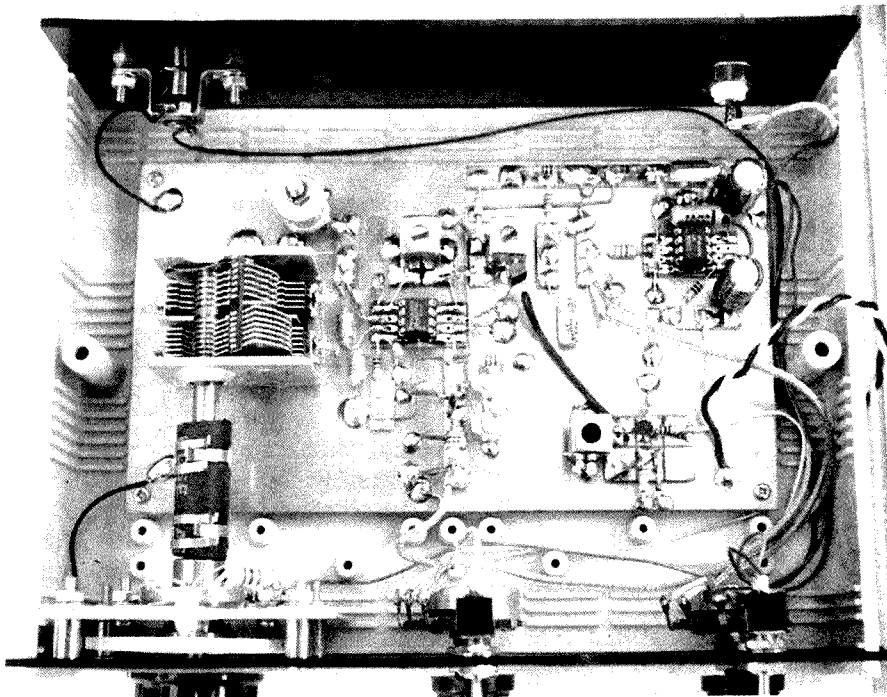


Photo 2: Inside view of the simple superhet receiver for 160 m.

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tuning capacitor) between about 2.220 and 2.420 MHz.

Switch on the BFO and apply the frequency counter's probe to the source of the 2N5484. Then adjust the black BFO slug so that 470 kHz is generated. The BFO injection wire should be positioned (initially) about 10 mm from the MKT484. Listen to the hiss from the speaker, and adjust the yellow and white slugs to bring the IF frequency on to 470 kHz. You should hear a perceptible increase in hiss when these are peaked.

Connect a signal generator, if available, set to deliver perhaps 20 μ V at 1,850 kHz, modulated 50 % at 1 kHz, then carefully peak the two 100 pF trim capacitors of the input filter for maximum signal (BFO off). When the set is properly adjusted you should be able to easily hear less than 0.5 μ V between 1,750 and 1,950 kHz. Without a generator,

the same adjustment can be done using signals or noise from an antenna. When optimised, the set should sound (perhaps surprisingly) lively.

With the BFO on, carefully position the injection wire so that the gain (background noise) just begins to reduce. This will be found to be about right for SSB and CW detection.

Parts

It happens that most of the components for the prototype were purchased from my local Jaycar store, including MK484 chip; ZK8828 IF transformers (coil set of four LF1050), 100 pF trim capacitors; RV5722 10 μ H choke (coil); LF1522 22 μ H choke; LF15263 and 1 mH choke LF1546. However, similar suitable items are also available from our usual suppliers, including Altronics, DSE (the plastic box is a DSE P/N H2505),

Semtronics, Rockby and Electronic World. Additionally, 820 pF styroseals, 25 pF Philips 'beehive' capacitors and 3 mm Perspex may be purchased from Electronic World (Ph 03 9723 3860). NE602 (or SA602 or NE612) chips may be mail-ordered from several of the US mail order suppliers. I always receive good service from Ocean State Electronics (www.oselectronics.com).

References and Further Reading

1. www.datasheetcatalog.com
2. "The "Practical Wireless""; I. Liston-Smith, G4JQT, *Practical Wireless*, June 2003.
3. "'Paddyboard' circuit construction - revised"; *Amateur Radio*, May 2005.

Photos: Andrew Diamond.

ar

Silent key

John Roberts VK1ZX

John Roberts VK1ZX, ex VK1ZAR died on Thursday 15th March, aged 76.

Ed Penikis VK1VP, Ted Pearce VK1AOP and Andrew VK1DA attended the funeral. We had all been on various committees in the past with John, including the Canberra Radio Society in the 1950s and 60s and the VK1 Division of the WIA from the 70s. John held various positions on committees through the years but due to his financial background many would remember him holding and competently carrying out the treasurer's role for many years. We used to hold all committee meetings at members' houses so quite a number were held at his house and we all became well known to his family.

At the funeral three of his grandchildren presented a very moving and affectionate summary of his life. They focussed on his dedication to his family but also mentioned Amateur Radio as one of his main hobby interests. He also had a long interest in shooting and was a proficient wood and metal worker. He also enjoyed lapidary and polished stones as an interest. He was particularly caring for his children and grandchildren, making sure they could achieve the

best possible and helping them by showing them and teaching them skills in bushcraft, woodwork, metalwork and other interests.

John's widow Margaret thanked us for attending. I spoke briefly with one of his daughters and she was pleased to hear some of my recollections of events I remembered involving John, including his efforts to pass the Morse exam and his participation in Ross Hull, Remembrance Day and John Moyle Field contests.

John was a keen radio amateur and would have been more active on the air but for his family commitments which were number one on his list.

In the late 60s John was posted to New York with the Department of Treasury to take up the post of duty programmer for the New York office of the department. The tasks of this job included computer programming and, thanks to John's own skills, minor hardware repairs. When I coincidentally applied for the same job about 6 years later, he immediately briefed me on some of the tasks I might encounter in the course of the posting.

John was a very capable handyman and was able to fabricate many small parts

needed for repair jobs around the office and the home, sometimes improving on the design in the process.

While in the US he was very active on six metres and came back to Australia with a renewed interest in that band. Several years running in the 70s he brought his high power (at that time) transceiver (the Swan 250) and a six element beam for six metres up to Mt Ginini for the John Moyle Memorial National Field Day contest. The beam had a boom length of about 24 ft from memory and made quite an impressive setup.

John held a limited licence for many years but worked steadily on his Morse proficiency. It was great to see him succeed in passing the 10 wpm test and gaining the full licence he had always wanted. Once he had HF access, he put up an HF beam and had a great time working DX on those bands.

More recently he suffered a stroke and battled leukaemia.

John will be remembered well by his radio friends.

Submitted by Andrew Davis VK1DA

Editor's note: This was submitted in early May, but missed being published.

A 160 metre power amplifier using a single low cost MOSFET

Leigh Brown VK3TOQ

This article describes a linear power amplifier for 160 metres using a single MOSFET device. My radio only puts out a maximum of 2 W, so I needed a power amplifier to rise above the ambient noise. I decided to use the IRFP460 MOSFET as it was the biggest device around and very low in cost. I first thought of using push-pull but found that one was enough.

I have used a Pentium 4 heatsink and fan to cool the MOSFET. When placed fan down, the heatsink is insulated, so no washer is required and the MOSFET is bolted directly to the heatsink with a little grease. The fan is continuously powered by the 12 V bias supply. All components are mounted on some copper sheet including the MOSFET source. No circuit board is used. The construction method is simply to solder the ground ends of every component to the copper ground plane as close as possible to the MOSFET.

One big problem with any RF power amplifier is finding suitably rated capacitors. All the capacitors in the drain circuit and output filter should be mica or porcelain, both of which are very difficult to obtain. The voltage rating should be 400 to 630 V DC. Polystyrene or polypropylene capacitor types will work but polyester types sit there and get hot so should not be used. Similarly any ceramic types that I tried got very hot with the currents involved. I ran out of suitable mica types so the drain tuning capacitors ended up being multiple 150 pF 400 V types that did not get hot when in use after extensive testing. The drain capacitance was increased until the waveform began to look like a sine wave.

All the bypass capacitors in the input stage were polyester and most of these were 1 μ F as I had them and they functioned well at the low powers in this part of the circuit. The bypass capacitor at the output transformer was a 10 μ F polypropylene block capacitor as I had it and it was easy to mount on the copper sheet. Similar bypass types can be purchased from all the local suppliers. Multilayer ceramic types will also work in the bias circuit. The value of the bypass capacitors is not that critical. As most capacitors of this size are 100 V rating, they are suitable.

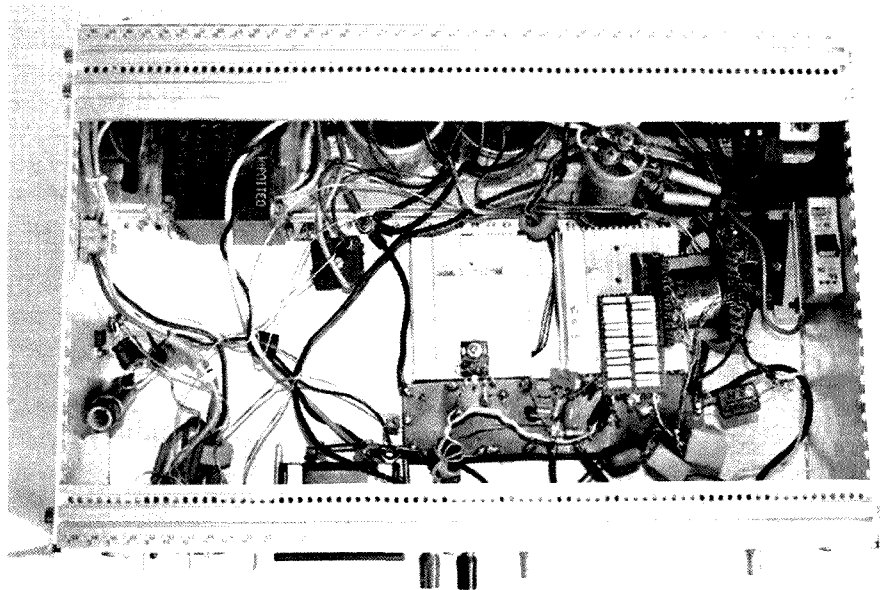


Photo 1: A view of the underside of the unit.

I found that the amplifier should be initially powered with a 5 A 35 V current limited supply during setup and tuning. The temperature compensation is via three 1N914 diodes in series, glued with epoxy to the MOSFET case. The quiescent current is set to 100 mA by the trimpot. See Photo 1 for a suggested layout to the amplifier. Refer to Photo 2 for a suggested layout of this amplifier front panel on a nineteen inch rack case.

The transformer cores were all available locally. I wound them with multi-strand wire. I had a limited quantity of Teflon covered wire which worked well. PVC covered multistrand wire should work at this frequency. The output transformer could be a little tricky to obtain but may be obtained from old computer power supplies. I obtained mine new some time ago.

The following is a list of important parts with local suppliers:

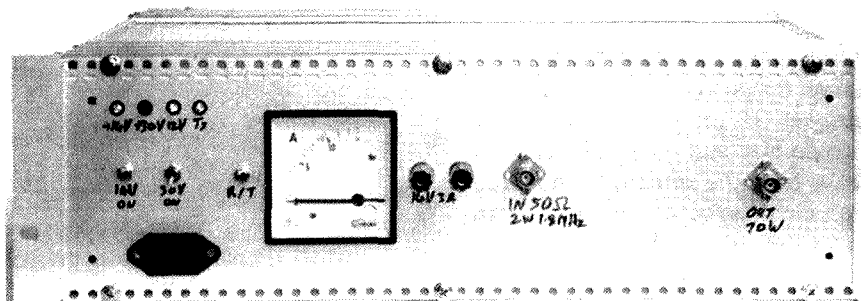


Photo 2: The front panel.

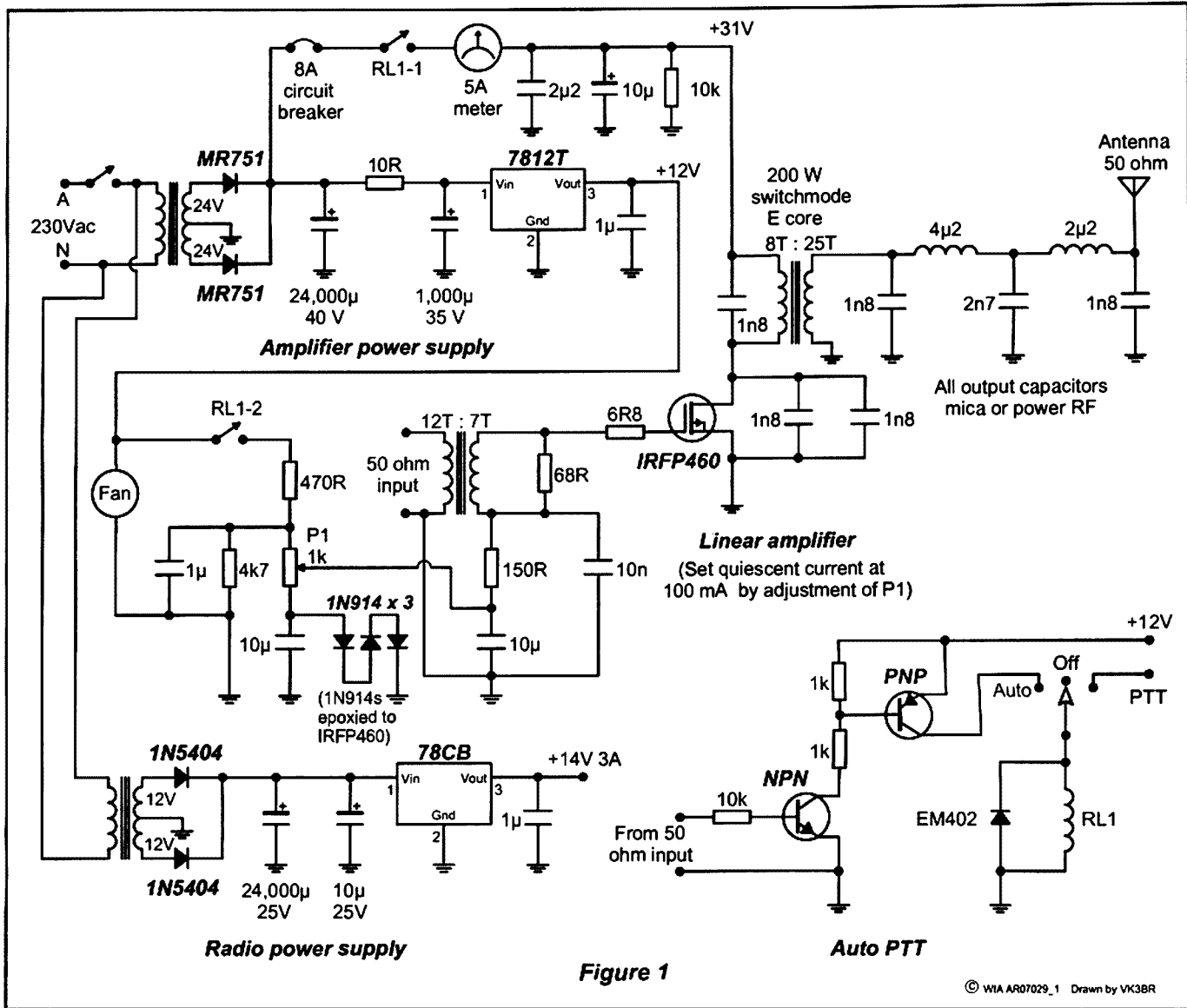


Figure 1

© WIA AR07029_1 Drawn by VK3BR

- Input toroid Jaycar LO1230 18 x 10 x 6
- Output Transformer 200 W switchmode E core with 1.2 mm airgap centre leg. 52 x 50 x 14 mm
- Filter choke 4u2 26 T Amidon T 80-2
- Filter choke 2u1 21 T Amidon T 80-2
- MOSFET Rockby 31915
- IRFP460

I have added a power supply to power the radio as it was an easy addition. I have also added an input RF detector to turn on the power to the amplifier. A changeover RF relay is not necessary as with no bias and no supply, enough RF leaks from the antenna to the radio through the unpowered MOSFET. Two bleed resistors are used to drop the bias and main supplies to zero when not used to allow the RF through the MOSFET. Refer to Circuit 1 for details of the amplifier.

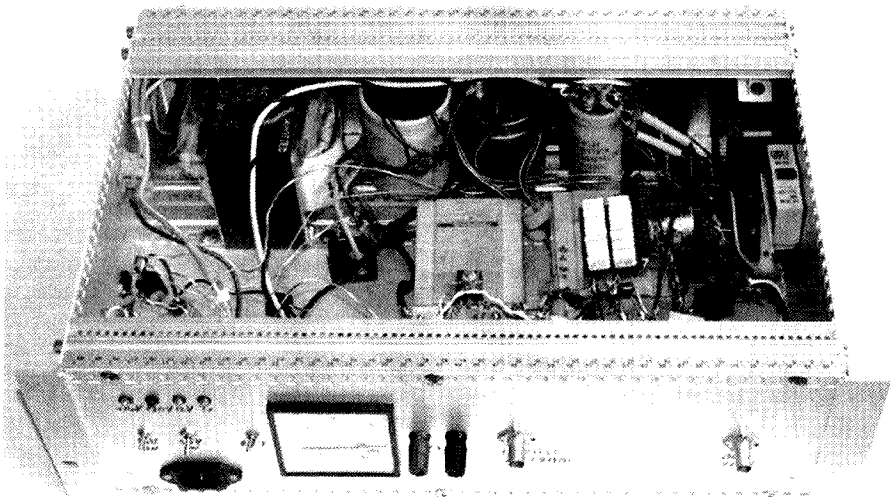


Photo 3: A view of the front panel and inside of the unit.

I simply built a single low cost MOSFET amplifier to find out what could be achieved and I obtained best performance at 1.2 W in for 60 W out.

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HF antenna 'realities'

Felix Scerri VK4FUQ

There is an old saying in ham radio circles that goes, 'Nothing makes an antenna work better than putting it up higher'! I am rapidly coming to the opinion that a more true statement has never been said! Over the last year or so, one distinct impression I have gained resulting from my many seemingly diverse evaluations with simple one element antennas is that, especially when only moderate mast height is available, at least with all 'typical' horizontally polarised antennas such as dipoles, inverted Vs and full wave loops (mounted vertically), performance is better with increased mast height.

This is possibly expected, however an aspect related to this obvious reality is the notion of antenna 'effective height'. In the excellent book by L A Moxon, *HF Antennas for all Locations*, the aspect of 'effective height' is mentioned more than once, and it is interesting to note that certain antenna types (full wave loops when mounted vertically, to be specific) are handicapped more markedly in this respect, depending on the physical configuration and loop shape. My own observations (sadly) confirm this, based on many regular contact signal strength observations. In many cases the signal strength differences are not all that great, however there is no doubt that the 'higher' antenna always wins out in general terms, and almost without exception, on DX paths.

Speaking of full wave loops specifically, it is sadly apparent that the Delta Loop, when erected as a triangle (with the apex up), does indeed suffer from considerably reduced effective height (as noted in the Moxon book, Reference 1), although the negative effects of this can be offset somewhat by additional mast height, where this is practical. This is actually a little sad as the Delta Loop is a favourite loop configuration of mine and it does have some very useful virtues, such as a high degree of noise cancellation. However it must be grudgingly conceded that comparisons between a Delta Loop (apex up) and a Quad loop erected at the same 'top' height have shown that the Quad Loop is slightly, but consistently better overall, presumably mostly because of slightly greater 'effective height'. A pity!

The single Quad and Delta Loops inherently have a slight signal 'gain' over a dipole, with the gain of the Quad shape being slightly greater than the Delta (Reference 2). Interestingly enough, incidentally, based on my own observations, greater antenna

'effective height' would appear to be more advantageous and more valuable in practice than this slight antenna 'gain' (that old proverb again!). Again in the Moxon book, the simple inverted V dipole is given considerable praise and is recommended as an antenna with maximised 'effective height' and therefore better performance, despite the unity gain profile of the simple inverted V dipole (Reference 3). Again, my own long term observations confirm this recommendation.

With a mast height of slightly over ten metres available to me (on the 20 metre band), it is my feeling that my simple inverted V works best overall based on long term signal strength observations, with the Quad loop, at the same top height, being a (very) close second. It is indeed gratifying that such a simple, easily erected antenna works so well. Perhaps it is just me, but I have always had the belief, possibly incorrect, and expectation that something a little more complex should be better. Perhaps it is not necessarily so! Additional complexity does not always result in improvement, at least with simple single element antennas at 'lowish' mast heights (and other things in life too!)

Years ago, a fellow amateur in our local area extolled to me the general excellence of his simple inverted V dipole. At that time I remember being a little sceptical, but in hindsight I suspect he was right, and the basic reason probably came down to increased 'effective height' more than anything else, along with a basically very good antenna design, as I have since found myself. It pays to never lose sight of the all important basics! The lesson is then, if mast height is limited, then it is probably best to go with a simple antenna like a horizontal dipole or inverted V dipole where one can take advantage of optimised 'effective height'. Real antenna 'gain' is great to have, but it is

essentially wasted unless greater mast height is available to do it justice (at least on HF)!

References

- 1 L.A.Moxon, 'HF antennas for all locations', *RSGB*, pages 152, 153.
- 2 Dr James L Lawson, *Yagi Antenna Design*, chapters 4-11, 4-12.
- 3 L A Moxon, 'HF antennas for all locations', *RSGB*, pages 164, 214.

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Putting metal radios into plastic cars

Warren Stirling VK3XSW

Some time ago I came into possession of a Codan 8528B HF radio, together with a matching mobile auto tuner, the 9350, which had the rigid mobile antenna and spring base fitted. To make matters more intriguing, this particular unit is the remote model, intended for (mostly) vehicle installation. All the original brackets and cabling were included, even the power cable, although not an appropriately rated fuse-holder. Some research led to the local Codan agent who supplied what, he assured me, is the standard Codan automotive fuse-holder. This less-than-subtle unit (although it is way more discreet than the 9350 tuner!), came with matching fuses.

Installation planning

Having all the parts of the Codan HF radio together, my attention turned to the intended installation. The only real problem was that my car, while reasonably recent, was not intended to have anything retrofitted to it.

The first step was to explore the car in order to find out where the four parts of the radio system (fuse holder, radio unit, control head and auto tuner) would fit. The final placement was almost entirely dictated by a process of elimination. The radio unit had to go in the boot as it would not fit under any of the seats. The control head went in the centre driver's console because there was no place on the dashboard to mount it, and the fuse-holder went as close to the battery as it could be mounted. The auto tuner ended up at the rear of the car (although there are legal limitations on where an object of that size can be placed if it is in the driver's field of view).

The next step was to find out if I could run the power cable from the battery at the front of the car to the radio unit in the boot. This was the largest power cable I have ever seen connected to a mobile radio but after several hours of increasingly frustrated investigation and inventive cursing, I found what must be the only possible route for it.

With the power cable run planned, closer inspection of the car brought me to the conclusion that custom-made brackets would be the only way to go if I was going to defeat the intentions, unwitting though they may have been, of the car's designers. A trip to see

the parents was planned, with the ulterior motive of getting assistance in the design and fabrication of the brackets from my father, a retired toolmaker and paranoid metal basher. A few man-days or so later the brackets were tested for fit and then I had them powder-coated.

Installation details

Photo 1 shows the radio unit mounted in the boot using the original radio bracket and the first of four custom brackets, which is bolted through the floor of the boot. The transparent plastic sheeting is there to direct water away from the radio unit if the boot seals leak (thanks for the tip, Roger). The braided cable you can see in the background (top right of Photo 1) earths the radio unit to the car body, as the Codan bracket supports the radio on plastic runners and so cannot provide a reliable low-impedance electrical connection. A note for some of the younger amateurs and also some of the designers of the more recent radios: the big black shape you can see at the top of the radio, with the horizontal fins, is called a heat-sink – it is a passive way to get rid of heat. You do not often see them on modern radios, where fans that

can fail tend to be used.

The control and RF cables from the radio to the auto tuner are protected by a split, corrugated plastic tube, available in several sizes from any automotive electrician. They exit the boot through a conveniently placed blind grommet to the right of the radio and are routed past the fuel filler pipe in the passenger rear wheel-well, along a rail under the boot and onto the custom-made tuner bracket. This bracket also provides a solid earth point for yet another earth braid (visible in Photo 2) which runs from the base of the 9350 auto tuner to one of the mounting bolts for the tuner bracket. While some of the bolt heads have surface rust evident, there is none on the threads or the earth braid, thanks to the prior application of a ridiculous amount of Vaseline.

Photo 2 shows the lower part of

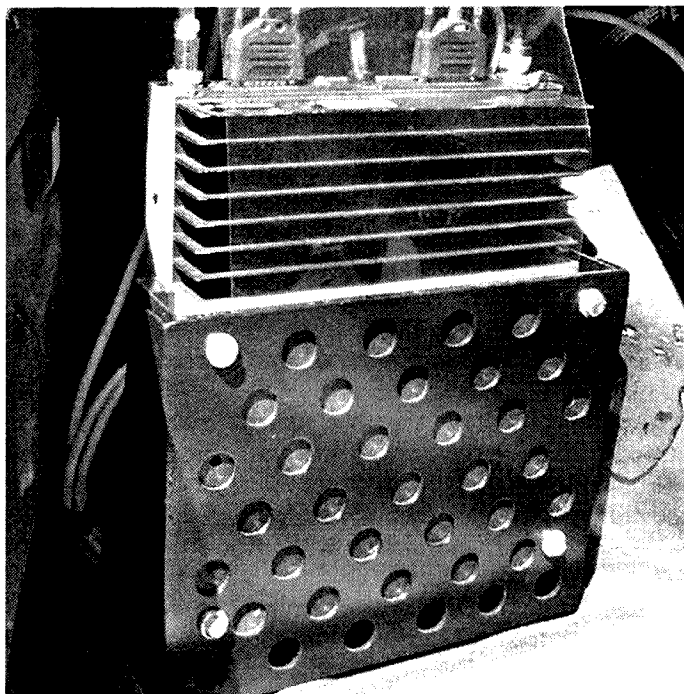


Photo 1: Codan 8528 radio mounted in car boot.

the auto tuner, with the control cable terminating in a military-style multi-pin connector, above the RF cable fitted with a PL259. Both these connections have been weatherproofed with self-amalgamating tape. Of interest will be the padlock at the bottom of the picture; the tuner mounting stud provides a hole for a padlock, so of course I have used one. You can not see the large nut that screws onto this mounting stud because it has a deep steel shroud around it to make its removal more difficult.

The remote control unit is mounted in the centre console as shown in Photo 3. The two Philips head screws mount the third custom bracket, going through the plastic of the console and into a metal plate behind. The shape of the bracket allows the driver to see the front panel of the control unit (although not while driving) and the pocket in the centre console can still be used, most often as somewhere to put the microphone. The speaker for the Codan radio is mounted in the front passenger foot-well at the top of the kick panel, where it is out of the way of intruding feet. The control cable from the radio unit in the boot, which was run in with the power cable, enters the cabin under the front passenger door sill cover, and runs under the front passenger seat to the control head.

The power cable was run in with some difficulty, requiring several more hours of disassembly effort and even more inventive curses concerning the previously cursed car designers. This cable run starts at the radio unit, follows the manual boot release cable into the car cabin at the passenger-side C pillar (the pillar at the corner of the rear windscreen) and continues down to the rear door sill (after removing the rear seat). Removing the front and rear interior door-sill covers showed a nice easy path for the cable to run, at least as far as the bottom of the A pillar in the front passenger foot-well. At any point where the power cable passed near a sharp metal edge I shrouded it with plastic cut from a milk container, which is easily obtained and works well for cable protection.

Removing the glove box and the plastic kick panels in the foot-well let me run the power cable to a large rubber grommet where part of the wiring loom for the dash exits the cabin. To get at the outside of this rubber grommet merely required jacking up the car, removing

the passenger front wheel and the splash guards inside the wheel-well, and

Having run the power cable as far as the battery, the fourth custom bracket was fitted using two existing bolt holes, and the hefty fuse-holder was installed. The wiring to the radio unit and the positive battery terminal was shrouded in more of the split, corrugated plastic tube, but of a smaller size. The Codan fuse-holder is made from bakelite, to resist the heat found in engine bay, which makes plastic fuse-holders brittle, crumble and fail.

The negative battery connection for the radio was fitted off with a soldered lug of the appropriate size. The lug was then installed under the bolt that anchors the main negative battery cable to the car body, NOT directly to the battery (with yet more Vaseline applied to the lug and the bolt thread). The reasoning for this is as follows: if the negative battery lead goes high resistance for any reason, the starter motor current will try to find another path to the car body. And if the nicely grounded radio is the only path, then a very large current will flow through the radio for as long as it takes it to go open circuit.

Results

So after some investigation, careful planning, four custom-made brackets and a couple of man-days of labour, the Codan HF radio was installed in the car and working. The original rigid Codan whip works really well at keeping mobile flutter to a minimum as it does not flex very much, even with the spring base. The problem I have with it around town (and at home where I have a carport) is the height needed to

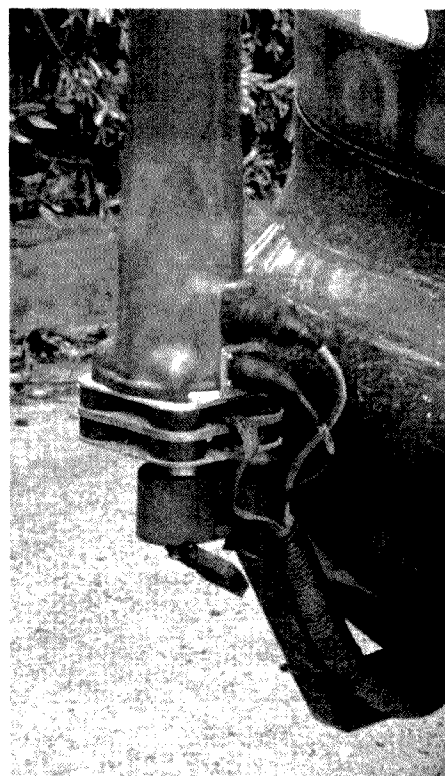


Photo 2: Codan 9350 auto tuner mounted on car.

clear the whip, the top of which is 2.94 m above ground level. To overcome the clearance problem, I obtained a very flexible stainless steel whip and had a base made that fits the 9350 auto tuner. This is still tall, at 2.52 m from ground level to the tip of the whip but, being very flexible, it bends easily when low flying carports, car parks, trees and so on are encountered. Mobile flutter is higher, unfortunately, due to its flexibility.

One unintended benefit that I have found - it is easy to find my car in a carpark; just look for the whip!

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Photo 3: Codan remote control head mounted beside driver.

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Cliff Bilston VK3CB

My story starts back in the mid to late 1970s, with an interest in communications. I was keen to understand more about it as I spent a lot of time in the outback of Australia.

I should also say that as a wild pig hunter, and keen photographer, spending many hours in the outback, radio was a big part in communications for hunting purposes. A good friend and hunter, in the town of Ballarat where I lived at the time, said we should try these CB radios out in our 4 x 4s while flushing pigs out of thick scrub; which would make it safer! We would be able to inform one another of our location and if any pigs were heading in our direction. So, we did.

By now you will be saying where is this going?

Well, one time while we were flushing pigs from heavy cover, our Winchester 30-30's firing shot after shot, while we also communicated with one another on the CB, and where, to the outside

world it must have sounded like all hell had broken loose, a voice came over the radio saying, in a very American voice, 'Man, that's the wildest hog hunt I have ever heard'.

Well, after a long chat we wrote to one another, where he asked me to do my amateur radio exams, and also sent a lot of information about the hobby. I wrote back informing him that I would have a good look at the hobby, but was unsure if it was for me as I had no background in electronics. The rest, as they say, is history.

With the help of a number of amateurs from the Ballarat Radio Group I made it through to get on air. I joined the ranks of amateur radio as VK3PAF. And within six months of obtaining my novice call



Cliff with the impressive UDSA-CA certificate

I had worked all states in the USA with 10x10 numbers, worked 200 countries and had this radio bug well and truly. After a lot of hard study, and obtaining a pass in the full call examination, I changed my call again, to VK3CCB. In later years I made the change to my 'vanity' call, VK3CB.

I thank the local Ballarat amateurs for all their help, notably Stan Widgery VK3SE SK, Bob Terrill VK3BNC, Ian McDonald VK3AXH, and the tutors from the club classes who all had a hand in helping me.

I was talking to another amateur in the town where I lived, Geoff Smith VK3ADB. He said to me that I should try and do this...it was the CQ Counties Award Record Book. I looked at it, and at the number of counties, and shook my head. It would only be a dream if I could work them all, I thought, and in the draw the book went for many years. It came to light one day and I said 'I CAN DO THAT', and I subsequently did. I now



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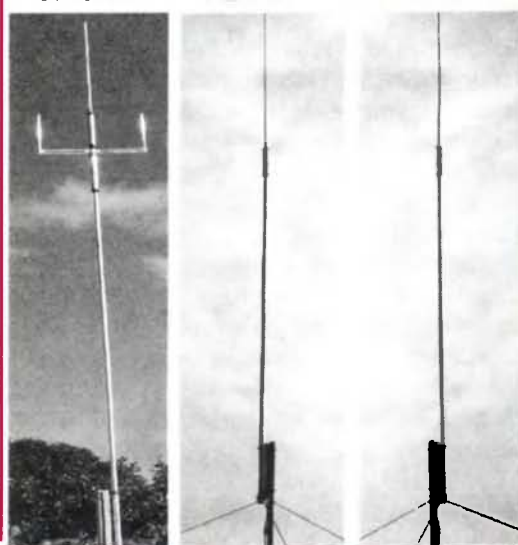
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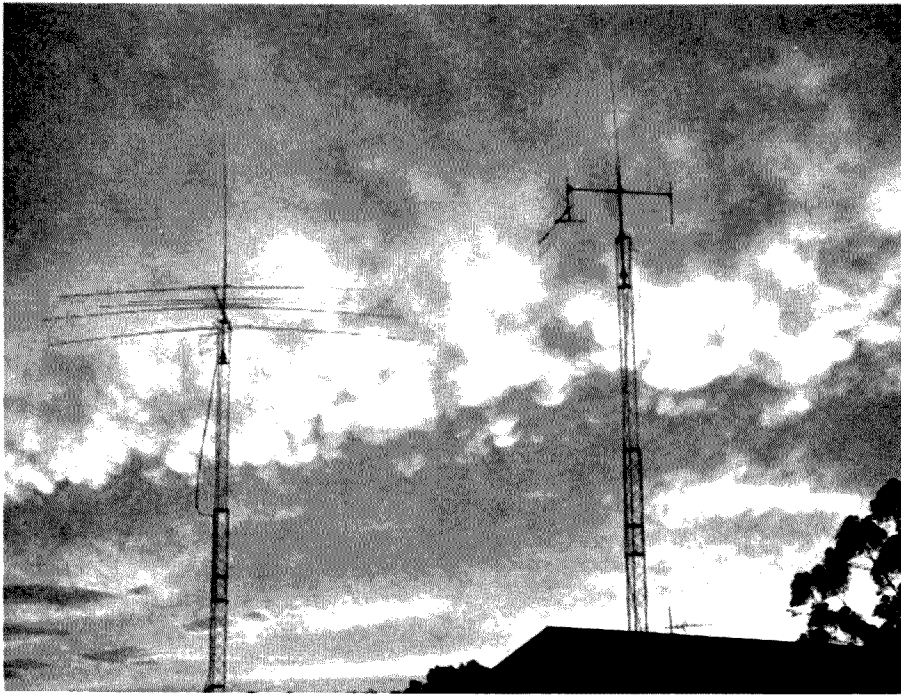
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POWER RATING	1 kW	1 kW	1 kW



A view of the antenna farm at VK3CB, with an impressive sky

As I have indicated, my shack wall has many awards posted, and I have many, many more in folders. I have always liked to take on a challenge if it was placed in front of me, and county hunting just looked like a good challenge to me, and this most impressive award takes pride of place on my shack wall and stands out head and shoulders above the rest.

I should point out at this time, my renewed interest in the fabulous awards of the WIA are in my sights for wall space in the near future. I think the new design of these awards is second to none.

Over the years I have lived in several locations; Ballarat, Warrenheip, just outside Ballarat, Warragul in west Gippsland, and Sebastopol and Dereel south of Ballarat. Both the locations of Warrenheip and Dereel have had large areas of land to put up antennas and towers. At my present location I have two Nally towers, one for HF and the other for VHF and UHF.

My shack is inside the home, and contains a Yaesu FT1000MP and IC735 for HF, and a Kenwood TR751A all mode VHF, Icom IC-281H FM, five Philips FM900s and several handhelds for both VHF and UHF.

My HF antennas are a Werner Wulf HB35C and dipoles for 160, 80, 40, 30, 17 and 12. The tower for VHF and UHF has verticals for both bands, as well as a bay of four beams on UHF, and four 11 element beams on VHF to go up, as well as another 11 element beam for repeater use. I also have a vertical for UHF CB for the fire watch during summer as most of the farmers in the district use this band.

My shack has a wrap around console to hold my radios and computer, along with controls for rotators, power supplies and all the odds and ends one thinks may come in handy in the shack. I can walk around behind the console to work on coax and power. I also have an earthing system along the back of the console.

In finishing I must say, as I have done for the past twenty-five years, 'Amateur Radio is like a big bowl of fruit', with so much to choose from, you will never get sick of one thing. And the friendships that are forged throughout the years make your life much richer. 73.

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have USA-CA # 1078. It was a task of mammoth proportions in that I had just over 8,000 contacts to confirm the 3,077 counties required at the time.

This achievement is a very difficult thing to do from this part of the world, as our QSO window to the USA is so small, and but for the mobiles on 14.336 MHz and the return rate of MRCs (Mobile Reply Cards) it would take many, many years to achieve. The county net is run by the Mobile Amateur Radio Awards Club, which also provides a nice wall plaque and award. I would recommend the net to anyone wishing to try and work all counties.

MARAC has a site that you can get the required information from: countyhunter.com

It has many pages of information on where the mobiles will be and what county they will be giving out. The mobile net is very strict on how you make calls, so listen for a while to get the idea, and then make yourself known to them.

The goal of obtaining the 'United States Of America' County Award, which is sponsored by CQ, the amateur radio journal, is the jewel in the Crown. This beautiful award takes pride of place on the wall, among many other awards, in my shack. I'm not saying it is easy, it is not. But when you have reached the

goal and it hangs on the wall, you have a real sense of achievement.

This award has made me many friends in the USA, and a number of them have stayed with us while here in Australia. I must say that it was good to have a number of amateurs from around Australia help out with information and friendship, while themselves working for the award. Some of these amateurs included June VK4SJ, Bernie VK4EJ, Graeme VK5AQZ, Rex VK3MW, John VK6NZ, and the late Jim VK4BS. They were a friendly bunch of dedicated county hunters.

To work the counties it is necessary to use mobile reply cards, which is a multi contact QSL card that the mobile stations sign as correct when you fill one in and send it to them direct or through a QSL manager, as I did. I must say thanks to all the stations that returned my cards and gave me the counties. Most of all I would like to say thanks to Bob Devine KC6AWX, who was my QSL manager, for all his help and support in the way he wrote out and helped me with my MRCs. Bob is a true amateur and a fine gentleman, and his support when I was so ill was a breath of fresh air; as we say here, 'Goodonya' mate. Bob is also the ARRL QSL manager for the 6 area in the USA.

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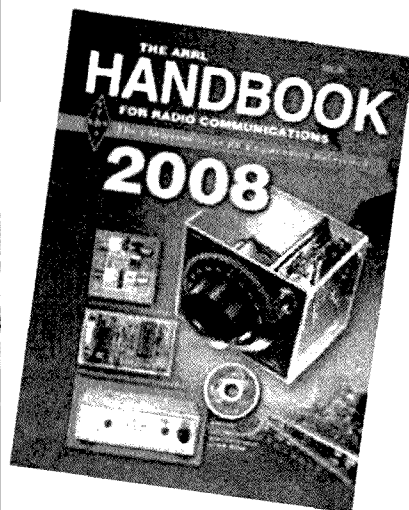
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Peter Hughes VK6HU honoured on JOTA weekend

Bob Bristow VK6POP

Peter Hughes VK6HU became a Scout in Cunderdin, Western Australia, in 1939, 9 years before I was born. He has been a Scout continuously since, in a large variety of roles at local, state and national levels.

On the Saturday evening of the JOTA-JOTI weekend, Peter's family, scouting colleagues and friends gathered at the Western Australian Scout Communication Centre in East Cannington in Perth's south eastern suburbs, to recognize Peter's contribution to Amateur Radio in Scouting.

Peter was the WA JOTA Coordinator from 1969 to 1985, and JOTA Coordinator for Scouts Australia from 1985 to 1996, and is still a member of the WA Scout Communications and Technology Team.

In recognition of Peter's contribution to Amateur Radio in Scouting, the Chief Commissioner of Western Australia, Mrs Susan Mitchell, renamed the centre the 'Peter Hughes Scout Communication Centre' at a short ceremony after an informal barbecue dinner.

Peter said he felt honoured at receiving this recognition from his peers.



Photo 1: Peter Hughes VK6HU and Bob Bristow VK6POP.

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'ARRISS presentation to Salt Creek Primary School

Tony Hutchison VK5ZAI

Last month the tiny school at Salt Creek on the Coorong of South Australia received a certificate from ARISS Australia, presented to them by the National ARISS Coordinator, Tony VK5ZAI. The certificate was to commemorate their live link-up with astronaut Suni Williams on the International Space Station and was accepted by Principal Luke Rcmfry and all twenty two students at the school.

Luke said he would like to express his utmost support for the ARISS (Amateur Radio on the International Space Station) program that has enabled the students to experience a once in a life time opportunity and talk in real-time to an astronaut aboard the International space Station. The certificate will hang on the wall as a constant reminder of the special occasion that took place back in April 2007.

The certificate was designed by

Shane VK4KHZ, and has the ARISS logo patch at the top with the ISS expedition 14 and Shuttle flight STS-118 patches beneath. Below this is listed the names of all the students that took part and the others who helped make the linkup such a success.

ARRISS is a program made available at no expense to schools and youth groups world wide for the purpose of stimulating the minds of young people in the fields of amateur radio, science and technology. The program is sponsored by NASA, the ARRL and the AMSAT Corporation and is managed



by a dedicated group of Amateur Radio volunteers. Enquiries about the program should be directed to vk5zai@amsat.org.

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- Australian Ladies Radio Amateur Association
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Second-hand market place and car-boot sales alley. To book tables or spaces contact Nick Angelo VK3UCK Email: vk3uck@hotmail.com phone 0448 653 201.

Also see the website radiofest.amateurradio.com.au for an application form and conditions.

Catering: Hot and cold food and drinks catered by the Kyneton CFA Auxiliary. Hot breakfast available before the gates open. Free tea and coffee available all day. Or bring your own lunch to enjoy in picnic style. Free children's face painting and playground.

Entry tickets \$10: Go on sale at 9am with gates opening at 10am. Free entry to children aged 12 and under. No pets or alcohol.

Door prizes: Entry tickets go into the draw for a D-STAR radio and other prizes - conditions apply.
Venue: Kyneton Racecourse, Campaspe Place (off Beauchamp St), Kyneton. Only 50 minutes from Melbourne and an hour from Ballarat and Bendigo. Plenty of free parking.

Info and talk-in: Mt Macedon 2m repeater VK3RMM 147.250MHz from 7.30am to 10.30am on the day.

Email: radiofest@amateurradio.com.au

Info: www.radiofest.amateurradio.com.au

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A Class-E CW transmitter for 1.8 MHz with VFO and QSK

Drew Diamond VK3XU

From correspondence received, it appears that the class-E AM/CW transmitter (Reference 1) has aroused considerable interest. One valid criticism, however, is that only crystal control was provided. 160 m can get rather busy at night, and crystals (other than 1.8432 MHz) are rare and/or expensive, so a VFO would be a great advantage.

Furthermore, on CW, it is much better operationally if the user can listen on the frequency between words and characters - as they are sent - by using solid-state break-in, or 'QSK'.

Offered here, based largely on the previous effort, is a dedicated CW transmitter pattern that addresses the above-mentioned shortcomings, that may be built simply as described here, or parts of it 'grafted' on to the original AM/CW model.

Output power is adjustable between 0 and 25 W (nominally) into 50 ohms. Harmonics are measured at greater than 50 dB below fundamental. Frequency range is from 1.800 to about 1.875 MHz. The robust class-E power amplifier can withstand extreme load mismatch (including accidental short or open-circuit load) for reasonable periods without damage.

Circuit

So that the VFO may run continuously, and thus avoid any warm-up drift between 'overs', the oscillator operates at twice the output frequency, 3.600 to 3.750 MHz. Hence, the VFO signal cannot be heard on the operating frequency during receive periods.

Output from the 2N5484 VFO buffer (Figure 1) is applied to the clock input pin 3 of a 4013 J-K flip-flop chip, wired to divide by 2. The diode clamp moves the 6 V p-p sine signal (from the buffer) fully into the positive region, thus driving the 4013 without need of a Schmitt trigger. The divider must wait for a low at the (S)et input, pin 6, in order to output a 1.8 MHz square-wave at pin 1.

An NE555 timer chip performs the transmit/receive (T/R) timing function. On key closure, the low presented to the (T)rig input, pin 2 of the '555 causes a high to output at pin 3, which is applied to the base of a 2N2222 (to invert the high, to low, required to enable the

divider) at pin 6 of the 4013. The same high from the '555 is also applied to the base of a 2N2222 in the T/R circuit, thus turning off the second 2N2222, which disconnects (turns off) the two routing diodes, thereby effectively isolating the receiver's input from the transmitted signal and the antenna.

Key activity is also applied to the base of a 2N3638 keying transistor. When base current flows via key closure to ground, +6 V is supplied to the PA bias pot (which also functions as a power output control) and the 74HC04 driver chip, five gates of which are paralleled to supply sufficient drive to the gate of the PA MOSFET. A 220 nF capacitor between base and collector of the '3638 provides a nicely shaped ramp of about 3 ms rise and 10 ms fall, for crisp, click-free keying.

Immediately keying (sending) stops, and between words and some characters, the '555 timer will 'time-out' (determined by the 1 M resistor and 470 nF capacitor), whereupon the T/R will re-connect the antenna to the receiver's input.

The class-E PA and low-pass filter

(Reference 5) are identical to that used in the AM/CW transmitter of Reference 1. Efficiency for the prototype is 93%, where 30 V DC @ 0.9 A produces 25 W RF output. The curious are pointed to References 1 to 4 for a description of class-E operation.

Construction

The home-made aluminium chassis/cabinet pictured in Photo 1 measures 70 x 265 x 225 mm HWD. The bottom chassis panel functions as a heat-sink for the BUZ90A PA MOSFET (very little waste heat is generated).

The power supply, VFO, and driver/PA T/R are each accommodated upon 'paddyboard' (Reference 6) circuit boards. Suggested layouts are shown in Figure 2. However, any preferred construction style will serve, provided that signal carrying component leads (e.g. coupling and by-pass capacitors, etc) are reasonably short, and the general plan illustrated in Photo 3 is followed.

A rectangular hole, 12 x 18 mm, should be provided in the RF board so that the



Photo 1: The Class-E CW transmitter for 1.8 MHz.

continued on page 26

BUSH POLE

Portable or fixed base 10 metre long HF vertical. The antenna collapses down to 6 x 1.8M sections of 6000 grade aluminum tube.



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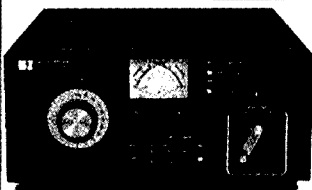
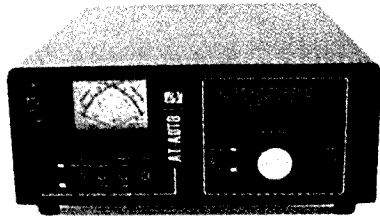


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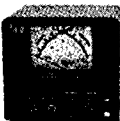
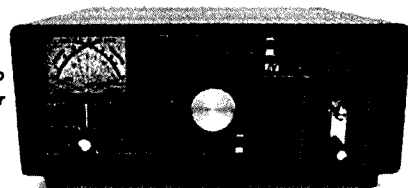
The BT1500A is a dual-roller balanced L antenna tuner that fills the void for a matching network up to 1500 watts pep for balanced line antennas. The BT1500 utilizes only 2 controls to operate for tuning with two direct-coupled precision ceramic roller inductors. Palstar took the AT1500BAL and reengineered it, reintroducing it as the BT1500A balanced antenna tuner.

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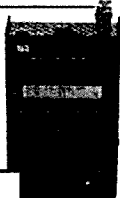
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The PM2000A Watt meter measures and displays forward power, reflected power, and SWR simultaneously on it's dual movement meter system in the frequency range. Accuracy is assured because the WM150 has a true shielded directional coupler. QST found that the Palstar WM150 is the only wattmeter that has true Active Peak Reading. The PM2000A is the next generation of watt meters from Palstar.

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The Zm30 is an automated micro-controlled SWR antenna analyzer with a 8 bit micro-controller with a precision low power DDS signal generator. It also includes a self-calibrating reflectometer and displays SWR at selectable frequencies from 1 Mhz to 30 Mhz. It measures: SWR, impedance, reactance, inductors and capacitors, transmission lines, stubs, Q, and resonant frequency. There is a serial port for field upgradable software. Battery operated. As on all Palstar products the front panel is powdercoated.



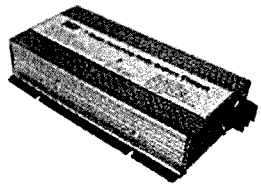
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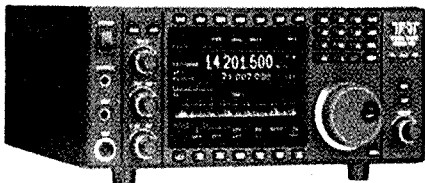
Orion II

First independent test data on ORION II, released 16 April 2006: "Noted receiver guru Rob Sherwood NCOB of Sherwood Engineering now ranks the ORION II as #1 of all HF amateur radio transceivers ever tested for close-in dynamic range, dating back to the 1970's. The original ORION is now listed as #2 overall to the ORION II".



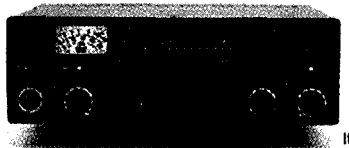
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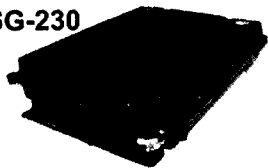
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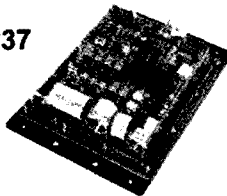
SGC

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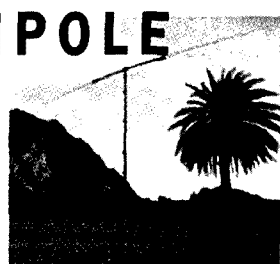
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BUZ90A may be attached directly to the bottom panel. Include a silicone washer and the usual hardware. A solder tag is mounted under the 3 mm hex fixing nut for the drain connection.

The 4013 and 74HC04 chips may be fitted into appropriate IC sockets, which in turn are soldered to suitably sized pieces of Vero board. Remember first to cut a shallow slot (junior hack-saw) along their length to separate the pins each side of the Vero 'substrate'. Avoid poking the socket pins right through (so as not to short to the board foil). These are super-glued (sparingly - no glue on items that must take solder) upon the RF circuit board as shown.

The drain choke coil is 47 turns of 1 mm (#18 B&S) ecw wound upon a 65 mm (approx) length of ordinary 9 mm diameter ferrite rod/loop-stick material. The start and finish of the winding may be secured with a cable-tie fitted over the coil at each end.

The two compression mica trim capacitors will need suitably sized holes in the RF board, and corresponding holes in the bottom panel (which allows, if desired, adjustment of these with the top cover fitted).

VFO and buffer should be accommodated in an RF tight box measuring 50 x 55 x 80 mm HWD made from soldered-together single-sided circuit board, as pictured in Photo 3. A 3 mm brass nut may be soldered into each corner for affixing the lid. Brass or bronze shim metal 'fingers' should be

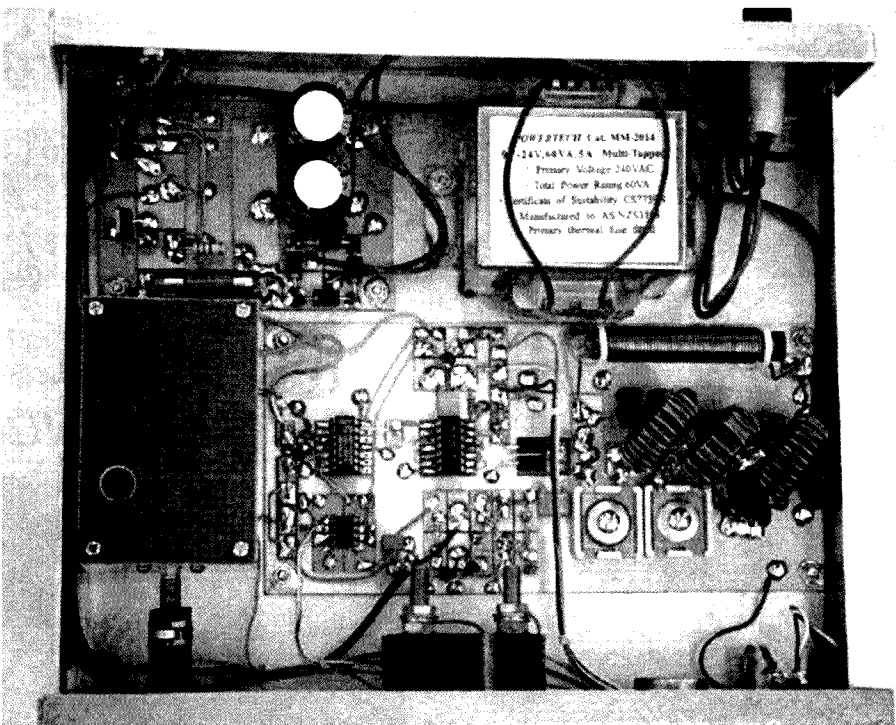


Photo 2: Internal view of the Class-E CW transmitter.

soldered to the box walls in four places to ensure reliable electrical contact with the lid.

The variable capacitor may be any well-made part with a range about 3 - 25 pF (see Parts below). Ordinary 'ugly' construction is quite suited to oscillator work and, provided that lead lengths are short and components are mounted rigidly, your oscillator should be remarkably stable.

The VFO coil is 52 turns of 0.4 mm ecw wound tightly upon a 40 mm

length of common 7.9 mm diameter 'Kilometrico' pen barrel. This material is easy to work and has been found, in numerous examples, to provide good mechanical stability, and low loss for oscillator coil applications. Drill a 1 mm hole across the former's diameter, as shown in Figure 1. The source tap (a twisted 'pig-tail') is at 12 turns from the 'earthy' end. The coil may be fixed to the VFO board with a blob of hot-melt glue.

continued on page 30

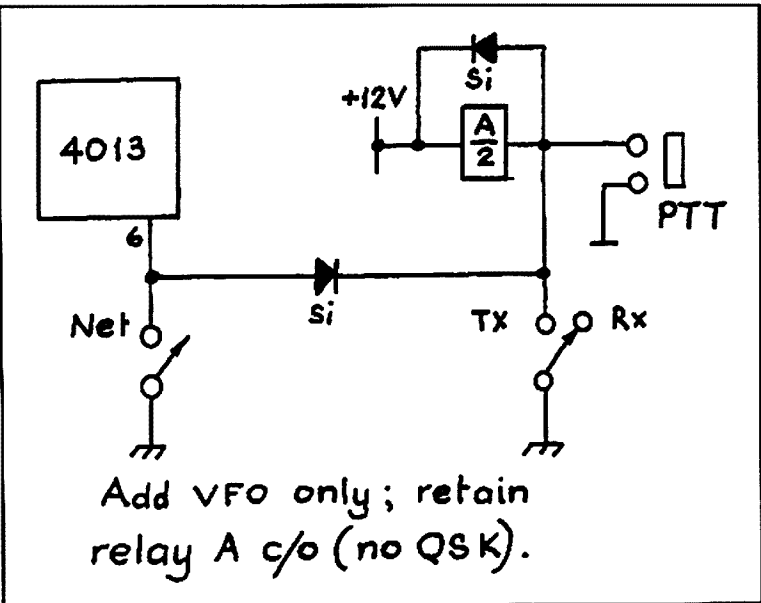


Figure 3: (see text).

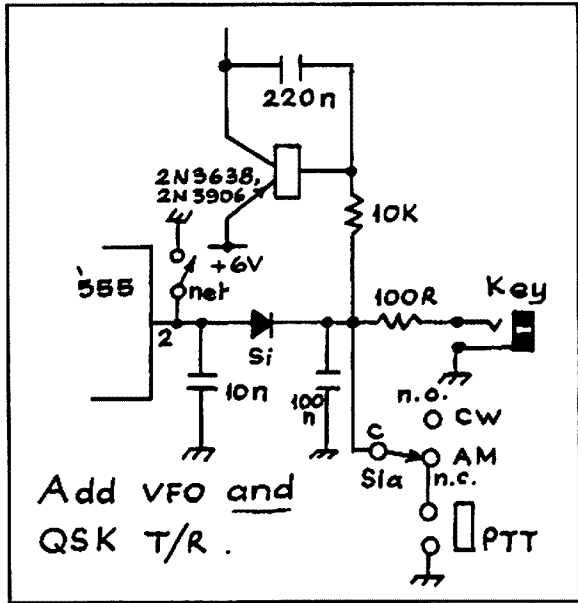


Figure 4: (see text).

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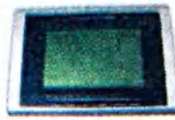
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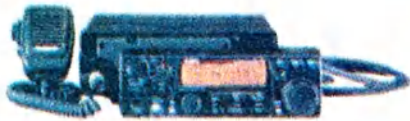
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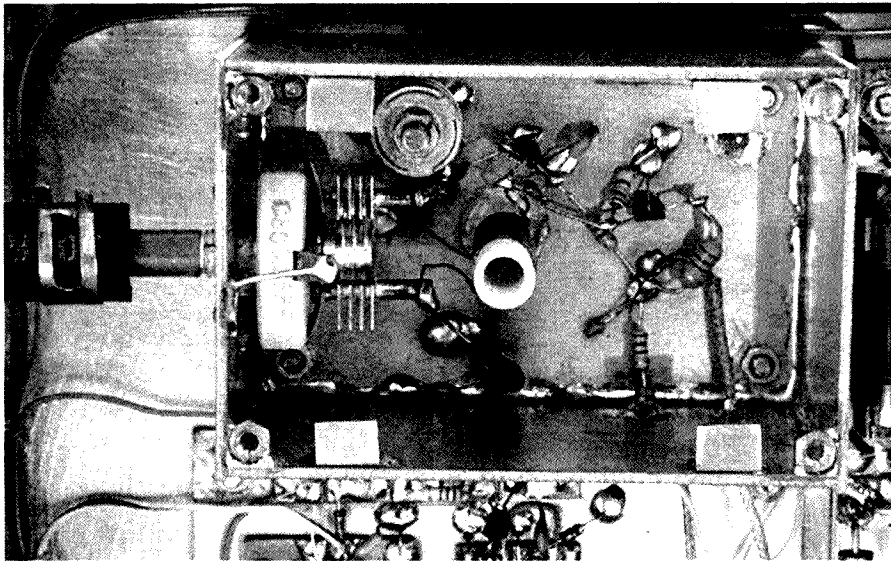


Photo 3 : The VFO assembly.

All wiring on the 240 V AC mains side of transformer MUST be suitably covered to prevent accidental contact. Include a 500 mA 'slow-blow' fuse in the line side.

Modifying the Original Model

Figure 3 illustrates how the original model (Reference 1) may be modified to allow the VFO to be added (but retaining the ordinary relay A change-over), and Figure 4 shows the changes needed when VFO and QSK are fitted.

Operation

Carefully inspect your wiring and soldering for quality, accuracy, and absence of solder 'bridges' (between Vero tracks). Double check for correct polarity of all polarised devices: ICs, electros, diodes, regulators, transistors, FETs, etc.

It would be prudent to first verify the supply rails. Remove the 2 A PA fuse from the power supply board. Apply mains power and check that you have (about) +33 (no load), +12 and +6 V DC where indicated.

If an oscilloscope is available, close the key and observe the signal at the gate of the BUZ90A. You should see a (perhaps raggedy) square-wave of about 6 V p-p. Some salient signal wave-forms are shown on the circuit to aid in any necessary trouble-shooting.

With the VFO cover in place, adjust the 25 pF trimmer so that 1.801 MHz

is generated with the variable cap at full mesh, and about 1.875 MHz at the high end.

Replace the 2 A fuse. Connect a suitably rated 50 ohm dummy load/power meter to the output. Also hook your X10 oscilloscope probe to the output connector. Set the 5 k 'Pwr' potentiometer to about half travel. Close the key, whereupon drain current (ID) should rise, and some power output should be indicated. Turn the Pwr potentiometer fully clockwise, then adjust the series tuning and load compression capacitors for maximum indicated output which should be 25 to 30 W. If you want maximum efficiency, increase the capacity of the series tuning capacitor for about 0.9 A drain current, or about 25 W output.

With the 'scope time-base at (say) 0.2 μ s/division, observe a clean sine-wave output signal. Connect a 50 ohm termination to the RX connector. With the 'scope at greatest sensitivity (say 5 mV/div), check that the T/R circuitry is working, in that little or no signal is present at the RX connector.

Verify CW keying by setting the 'scope for ~10 ms/div and observing a nicely ramped keyed wave-shape, free of blips or spikes (you may notice a smidgen of 100 Hz ripple, which is quite acceptable).

Parts

All of the ordinary components are available from our usual electronics suppliers, including Altronics, Electronic

World and Jaycar. The mains transformer should have a secondary of 24 or 25 V AC @ 2 or 2.5 A, such as a Jaycar M 2014 (generic 2167L).

Capacitors marked '10 n' and '100 n' and are 50 V monolithic types. The capacitor between the PA drain and the T/R circuitry should be a 100 nF, 250 V AC polypropylene.

My Arco 500-1450 pF compression trimmers, P/N CTM-309, were mail-ordered from Surplus Sales of Nebraska (www.surplussales.com). For best efficiency and stability, fixed capacitors marked 's.m.' should be 500 V silver mica types. These may be ordered from Antique Electronic Supply (www.tubesandmore.com).

Siemens BUZ90A MOSFETs (P/N is 12329) may be purchased from Rockby Electronics (www.rockby.com.au).

The three Amidon T106-2 toroids may be ordered from any of the suppliers regularly listed in the Hamads of *Amateur Radio* magazine.

As mentioned, the 3 – 25 pF variable capacitor for the VFO must be first-class. An English Jackson Bros or 'Polar' would be ideal. The trim capacitor should be an air dielectric type, such as a 25 or 30 pF Philips 'beehive' (please contact the writer by 'phone [03 9722 1620] or letter if you cannot locate a suitable variable capacitor).

References and Further Reading

1. "An AM/CW Transmitter for 1.8 MHz with Class-E P.A."; *Amateur Radio*, June 2007.
2. "Class-E RF Power Amplifiers"; N Sokal, WA1HQC, *QEX*, Jan/Feb 2001.
3. Experimental Methods in RF Design; W Hayward et al.; *ARRL*, pp 2.31, 2.32.
4. "High Efficiency Class-E Power Amplifiers"; D Rutledge et al.; *QST*, May-June 1997.
5. "Low-pass filters for solid-state linear amplifiers"; K Shubert, WA0JYK, *Ham Radio*, March 1974.
6. "'Paddyboard' Circuit Construction - Revised"; *Amateur Radio*, May 2005.

Photos: Karlen Dockrey
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Spotlight on SWLing

Robin Harwood VK7RH

2007 has been a mixed bag. More international broadcasters have abandoned shortwave for either streaming on the Internet, establishing FM relays within metropolitan regions or ceasing HF altogether.

Now VOA is going to close their Morocco relay site at Briech at the end of March. It is unclear whether Morocco will take over the senders but the IBB, the parent organisation of the VOA, has indicated that the site will be completely vacated by next December. It was rather ironic as the 2008 edition of Passport to World Band Radio had a section on the former international zone of Tangier, which was returned to Morocco in 1959.

The Moroccan relay is heavily used by the IBB to broadcast into the Middle East and the former Soviet Union and the announcement stated that there would be no reduction in programming as other sites would take over.

Felix VK4FUQ wrote me and said:

Mary thanks for your ongoing "Spotlight on SWLing" column in AR magazine. I have to admit that general shortwave listening and I go back a very long way and despite the march of technology. I still find something wonderful about having a good (and working) communications receiver. These days, along with my Yaesu FT 900 transceiver, which has an excellent general coverage receiver—I also possess a second hand, but mint condition Yaesu FRG-100 communications receiver which is excellent in just about every way. When I am in the shack it is the receiver that I use for general short-wave listening. I also own one of the DEGEN DE-1103 'World Band' portables. It is one hell of a receiver! Such amazing receiving performance for such a small package. Just perfect for portable use.

Now being in my mid 40's, I still remember the glory days of short-wave long before the internet was even thought of! It is nice to know that at least some of the international short wave broadcasters of those days are still around, but sadly many have left the short-wave bands forever. I still have fond memories of the musical signature tune broadcast by Swiss Radio

International before all their short-wave transmissions, a distinctive sound sadly no longer heard on the short-wave bands. I remember back to the early 1970s when Radio Australia had a very extensive short-wave service with target areas into Europe, North America and elsewhere around this planet and not just geared towards the general Asia/ Pacific area as it is today.

Curiously enough there are still some similarities with programming of the early 1970s. In those days their morning program in the English language was called 'A Brighter Day', if I remember correctly. Today they have 'The Breakfast Club'. Technology has certainly radically changed from the early 1970s but having said that, to my ears anyway the general programming seems vaguely familiar in general terms. I was quite pleasantly surprised to hear a week or so ago, on Saturday afternoon a program that I last heard as a adolescent back in the late 1970s. It was the 'DX Partyline' program broadcast on HCJB Australia. Their evening transmission on 11.750 MHz is always very strong here into northern Queensland. Does anyone remember the 'DXer's Calling' program broadcast on Radio Australia many years ago? I remember reverently listening to it, as all the times and frequencies were read out.

I guess technology must evolve but I hope that we never quite lose good old fashioned short-wave broadcasting in 'Amplitude Modulation'. Even to a Hi Fi addict like me the sound of AM on the short-wave bands is still quite enthralling, but then again I am a fan of vinyl records too. Just call me a traditionalist! — Felix VK4FUQ in Ingham, Queensland.

His email evoked memories of that very distinctive music box interval signal from Switzerland and that Swiss chronometer and the Swiss music which came towards the end of the English segment. Sadly those days are gone. I recently read how standards gradually slipped from when the BBC newsroom announcers had Oxbridge accents. Some of today's accents are difficult to follow.

Just when one thought shortwave broadcasting had died, political turmoil

in Pakistan resulted in a military coup with all independent media closed. Naturally this led to a huge demand from electronic stores for portable shortwave receivers as people were hesitant about purchasing satellite dishes for television. Broadcasters increased their programming in Urdu and other languages spoken in Pakistan to cater for the demand for news and information.

A few weeks prior to the Pakistan crisis, Myanmar, (Burma), also erupted in unrest. This led to an increased output in broadcasts from international broadcasters and also from the clandestine Democratic Voice of Burma, based in Norway. Myanmar is often heard on 5770 around 1200 UTC. The clandestine station naturally has an irregular schedule but has been reported in the 16 metre band.

I recently heard an unusual station on 7540 at 2030. It broadcast distinctive Middle Eastern music continuously with few announcements. I could not identify the language at first but just before they signed off at 2057, It identified as "Denge Mestotamya". PWBR and other online sources confirmed this as a Kurdish clandestine station operated by the PKK. This terrorist group has been for some time trying to form an independent Kurdish homeland around south-eastern Turkey, north-western Iran and north-eastern Syria. Recent terrorist incursions into Turkey saw that nation threaten to enter the autonomous Kurdish region of Iraq to destroy the PKK bases. This threatened the regional stability in an extremely volatile region.

Denge Mestotamya apparently broadcasts from Moldova, which is next to Romania, from a 500 kW sender, which explains why the signal is so strong in this region. I can also hear it in our local evening at 1230 on 11530 with identical programming to that heard later on 7540.

Incidentally the VOA also broadcasts in Kurdish on 7475 from 1900 to 2000 from Sri Lanka.

That is all for this month and this year. All that remains is to wish you Seasons Greetings and hope that the Sunspots will increase next year. Currently they say there are no sunspots at all!

73 de VK7RH

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Microwaves 2:

The 23 cm band and transverter topology

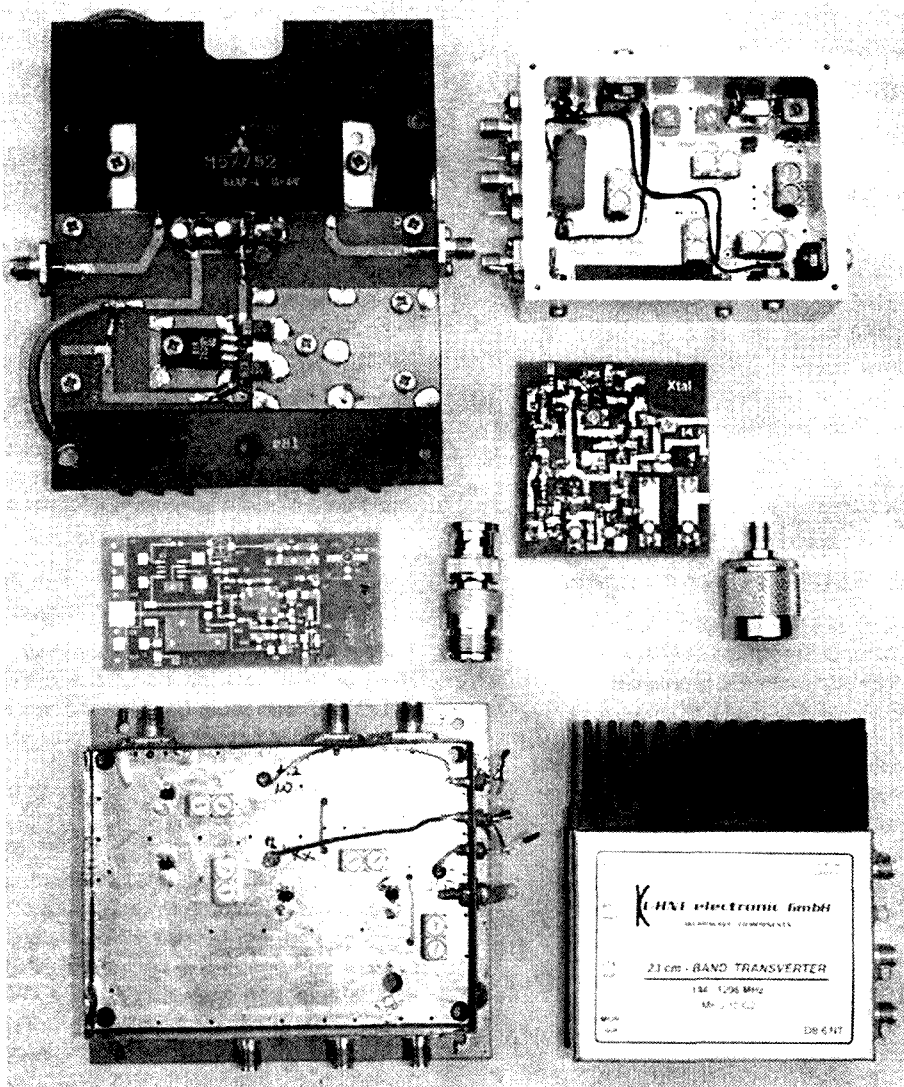
Peter Freeman VK3KAI

23 cm: the first microwave band

Whilst technically classified as UHF, the 23 cm band (1240 – 1300 MHz) is commonly referred to as the first amateur microwave band. This band is allocated to Radiolocation & Radiolocation Satellite as Primary services, with Amateur and Amateur Satellite as Secondary. The key segments to note are the narrow band modes at 1295 – 1297 MHz, with the primary frequency being 1296.1 MHz, amateur satellites in 1260 – 1270 MHz, and FM operations at 1293 – 1295 MHz, with repeater output frequencies located 20 MHz below the input frequency. The band plan shows 2 ATV channels, each wide enough for AM or FM operations.

Over the years, the Japanese equipment manufacturers have produced equipment for this band. The only current models available in Australia offering this band are the TS-2000X from Kenwood and the IC-910H from Icom, if you fit the optional 23 cm module. Both of these radios are multimode, offering FM, CW, SSB and RTTY. Earlier models include the IC-1271, IC1275 and IC-970, the FT-736 (again, with 23 cm as an optional module), and a variety of FM only units, both mobile and handheld. Note that relatively few of these various radios were imported into Australia, so it can be hard to find second-hand units. One area of possible expansion is in digital communications, with Icom offering their D-STAR equipped radios for sale in the US and recently launched in VK. These D-STAR radios allow traditional narrow band FM as well as high speed digital voice and data communications.

As mentioned in the first part of this series, it is feasible to run a tripler from



The key components required for 23 cm, build your own or ready to go.

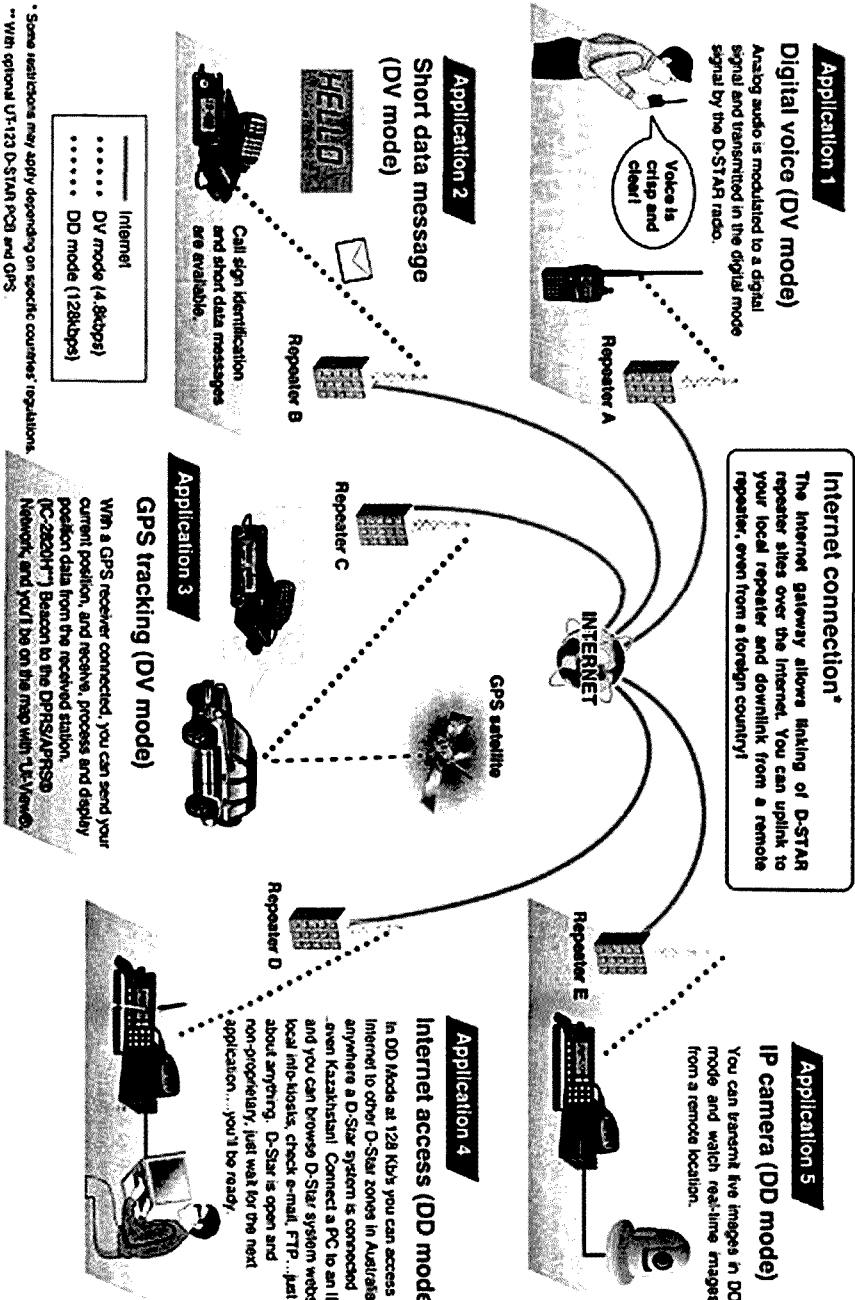
(Cover photo)

Clockwise from bottom left: A completed Mini-Kits transverter built by VK3KAI, the pcb for a low noise amplifier, a home-brew 15 W amplifier, a completed DB6NT 13G2 transverter kit built by VK3KAI, a local oscillator chain almost ready to tune up, and a complete ready-built DB6NT 13G2 transverter. For size comparison, SMA to N and BNC to N adapters are included either side of the LO board.

Photo by Peter Freeman VK3KAI.

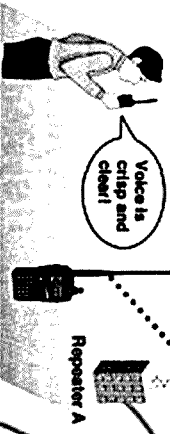
Five Examples of Having Fun with D-STAR

Have you ever thought how you could access the Internet via amateur radio?
 What would it be like to hear crystal clear communication via handheld or mobile city to city, country to country?
 Would you like to send SMS, (type with Datalink), track position data, find your friends or check their progress on U-V^{iew}®?
 Maybe you are part of WICEN, needing to integrate voice and data modes real time... Send voice, files and pictures real time at 128Kbps. Enter D-Star!



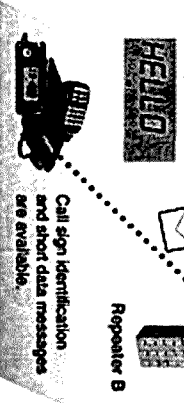
Application 1

Digital voice (DV mode)
 Analog audio is modulated to a digital signal and transmitted in the digital mode signal by the D-STAR radio.



Application 2

Short data message (DV mode)



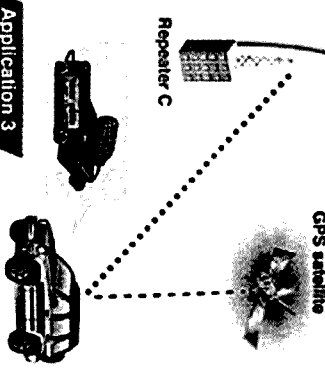
Internet connection*

The Internet gateway allows linking of D-STAR repeater sites over the Internet. You can uplink to your local repeater and downlink from a remote repeater, even from a foreign country!



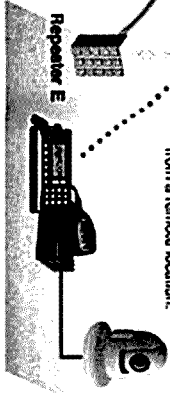
Application 3

GPS tracking (DV mode)
 With a GPS receiver connected, you can send your current position, and receive, process and display position data from the received station. (OC-2820H*) Beacon to the DPRS/APRS® Network, and you'll be on the map with U-V^{iew}®.



Application 5

IP camera (DD mode)
 You can transmit live images in DD mode and watch real-time images from a remote location.



Application 4

Internet access (DD mode)*
 In DD Mode at 128 Kbps you can access the Internet to other D-Star zones in Australia or anywhere a D-Star system is connected - even Kazakhstan! Connect a PC to an ID-1 and you can browse D-Star system webpages, local info-banks, check e-mail, FTP... just about anything. D-Star is open and non-proprietary, just wait for the next application...you'll be ready!



Frequently Held Myths About D-STAR GET THE FACTS!

"D-STAR only works on 1.2 GHz."

Low-speed DV D-STAR voice and data works just fine at 144 and 430 MHz. 1.2 GHz supports the bandwidth needs of high speed DD data. Choose the technology that satisfies your needs.

"There's no difference between D-STAR and packet"

Even D-STAR's lowest speed is competitive with the highest-performance packet systems available today. D-STAR's simultaneous digital voice and data at 4800 bps is beyond the capability of any packet technology. Hi-speed D-STAR systems are ten times faster than the highest packet speeds.

"D-STAR is no different from IRLP or Echolink®"

VOIP systems like IRLP and Echolink® are only capable of routing voice signals. They don't support data exchange at any speed. Calls targeted to a specific user are not possible by any amateur technology except D-STAR.

"D-STAR is just a digital party line!"

The ability of D-STAR repeaters to route data and digitized voice worldwide sets it apart from a single party line. Sophisticated D-STAR controllers and gateways implement modern telecommunications functions in an amateur package.

"D-STAR is a replacement for broadband home internet"

Truly a fantasy! D-STAR can connect a user to the Internet, true, but all of the amateur radio restrictions on commercial activity still remain in place. D-STAR will provide the tools for a lot of great amateur innovation, but it's not intended to replace Internet providers.

"D-STAR won't work with APRS®"

Except for the ID-1, All D-STAR radios can do DPRS when connected to a GPS receiver. The exciting thing is, with D-STAR being an open protocol, software experimenter, Pete Lovell AESP, has written a program that interfaces DPRS to APRS® and sends the converted APRS data to your APRS IS gateway. This means you can see all the new D-STAR stations on U-V^{iew}. With the "D-STARINC2" application, any D-STAR repeater with a gateway can send DPRS CAIRIS data to the APRS Internet system. The D-STAR team will be implementing this interface in Australia.

"I'll be locked into Icom equipment forever."

While Icom is the first manufacturer to support D-STAR, any manufacturer or amateur can use the JARL standards to create equipment - transceivers, repeaters, and gateways - compatible with the D-STAR system. As the D-STAR system grows, look for other manufacturers to join the fun.

ICOM Demand Reliability and Performance, Insist on ICOM!

For more information call ICOM Australia on (03) 9549 7500 or find your local authorised dealer at www.icom.net.au

* Some restrictions may apply depending on specific countries' regulations.
 ** With optional UT-123 D-STAR PCB and GPS

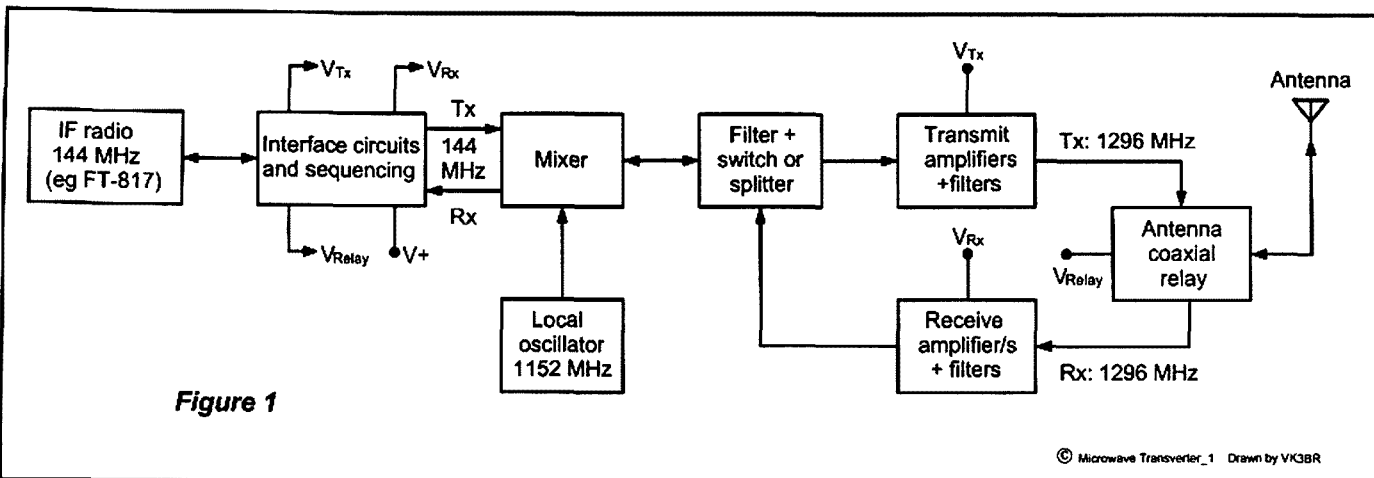


Figure 1: One typical configuration for a microwave band transverter.

the 70 cm band as a transmitter for CW and FM operations. On receive, one could use either a scanner receiver or a receive converter to a lower frequency. To operate on SSB, the options are to purchase a commercially produced radio, such as the TS-2000X or the IC-910H with the 23 cm module, or to build or buy a transverter based system. I will explain the basics of transverter operation shortly.

Before we consider transverters, let us look at antennas. At 1296 MHz, a quarter-wave is only 5.8 cm! This would make for a very inconspicuous antenna (although with not very much gain). A Yagi with a boom of 1.5 m has a gain of approximately 15.5 dBd, for one of the more modern designs such as the DL6WU or DJ9BV series. An antenna with equivalent gain at 144 MHz would be about 14 metres long. A grid-pack style parabolic reflector of 900 mm height, such as the larger units used in various locations for the MMDS Pay TV systems some time ago, would have a gain of approximately 20 dBd with an appropriate feed fitted. Larger parabolic reflectors will have greater gain when appropriately fed.

Of course, we must consider how to connect the radio or transverter to the antenna. Whilst the short wavelength means that higher gain antennas are feasible, feedline losses increase with frequency. The commonly used "low loss" feedline for HF and VHF, RG-8, has 28 dB loss per 100 m! LDF4-50 has 8.7 dB loss per 100 m and LDF5-50 has 4.9 dB loss per 100 m. Clearly, one should use the best cable you can find and/or afford, and aim to keep feeder runs as short as possible. It is important

to remember that whilst the feed line loss means less of the transmitter power makes it to the antenna, it also means a significant degradation of receiver system performance – each decibel of loss means an additional decibel increase in noise figure, limiting receive capability in weak signal conditions.

What can one expect from this band? Under typical flat conditions, stations in the Latrobe Valley regularly make contact on SSB with Rob VK3EK in Bairnsdale over a path of approximately 120 km. During Field Day operations, contacts to well beyond 200 km are usual and much greater distances are regularly worked. With the aid of tropospheric ducting, stations in the Sydney region work into New Zealand. The current VK record for the band is across the Great Australian Bight – in excess of 2450 km.

Transverter topology

For most of the microwave bands, the current basic technique is simply an extension of the heterodyne system. The significant difference is the intermediate frequency (IF) that is used. A transceive system using this architecture is commonly referred to as a transverter. For the microwave bands, the most common IF is 144 MHz. The basic topology of a transverter is shown in Figure 1, showing how this works for the 23 cm band.

The IF system is often a complete transceiver in its own right, typically a multimode two metre band transceiver operating at low transmit power settings. An interface unit will enable control of levels and provide sequencing of control voltages.

On transmit, the 144 MHz signal is fed to a mixer together with a local oscillator (LO) signal. In our example system for 23 cm, we mix 144.1 MHz with a LO of 1152 MHz. The main outputs of the mixer will be the sum and difference of the LO and IF frequencies – 1296.1 MHz and 1007.9 MHz. Of course the difference frequency in this example (approx. 1008 MHz) is not a desirable output. Therefore, we need to follow the mixer with an appropriate filter – one that will pass the desired frequency (1296.1 MHz) and reject all others, including the LO signal that may feed through the mixer. Following the filter, we simply amplify the desired signal to required power level using amplifiers suitable for the mode of transmission being used. If we wish to use SSB and other compatible modes, the amplifier will need to be linear (class A or AB), not one running in class C. On receive, the signal from our antenna is fed to a receive preamplifier and filter and then to a mixer. The mixer is also fed with the LO signal and again gives us outputs similar to what we saw in transmit mode – sum and difference of the RF and LO signals to give us the required IF signal (144 MHz) in addition to an undesired image output (2448 MHz). The mixer may be common to both transmit and receive pathways or separate mixers can be used in each.

If we wished to operate only CW or FM, we could use a simpler technique on transmit. We could generate a transmit signal at 432 MHz and apply that signal to the input of a tripler. The output would be 1296 MHz. The tripler will give an output level of about one third of the input signal. We will need to filter the

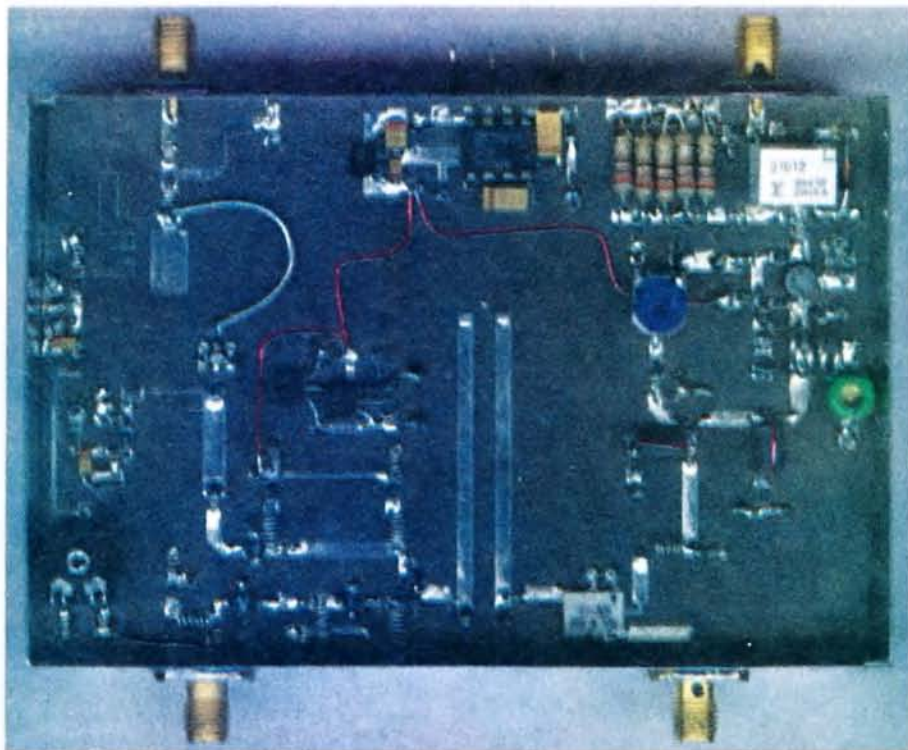


Photo 1: The G3WDG011 23 cm transverter. (Note this kit is no longer available)
 Photo by Charles Suckling G3WDG.

output and possibly amplify the output of the filter. For receive, we would use a similar line up as the receive side of our transverter, but with a LO set to 864 MHz if we wish to receive on the 70 cm band. However, note that we would need to set up the 432 MHz radio correctly, as the frequency translations are different

in transmit and receive modes. Another technique that would work is to use a PLL system to control an oscillator at the required RF frequency to generate the CW or FM signal. PLL systems can also be utilised to generate the required LO signal for our transverter, but we must be careful to ensure that signal is sufficiently stable and has low phase noise so as to not degrade the quality of the transmit and receive signals. Other techniques are also possible, but we may come back to describe them later in this series.

If we wish to use reasonable power levels on transmit, together with low noise preamplifiers on receive, we must also include a sequencer and/or IF interface into our system to ensure reliable

operation without damage to system components. The sequencer will control the timing of the supply of voltage to the different system components – the receiver will be switched off before the transmit chain is supplied with volts. The transmit-receive changeover relay will be also activated before the transmit chain, ensuring that the relay has completed its changeover before power appears from the transmit chain. The converse applies when we switch back to receive. Failure to use a sequencer can result in the destruction of the receive preamplifier active device, damage to the changeover relay and/or damage to the transmit amplifier.

Sourcing a transverter for 23 cm

A number of designs of transverter are available for 23 cm. Several sources also have units available for other bands as well. Sources include DB6NT in Germany, SSB Electronics and Down East Microwave in the US. The kits or complete units from DB6NT are of high quality, but of course the costs are higher. Other designs are available – you can do your own searching through the Internet.

For VK amateurs, it is hard to go past the excellent kit available from Mini-Kits in South Australia. Mark VK5EME has an excellent transverter kit available that is easy to assemble and get on air. The design incorporates high quality helical filters. As well as the basic transverter kit, you will also need a Local Oscillator kit and a Sequencer or IF Interface kit. One should also consider a power amplifier and an LNA kit. To round out the system, a good quality RF coaxial relay is also needed.

Transmit power options

Unfortunately, as we go higher in frequency, RF power becomes more expensive to generate. This is primarily due to the cost of active devices, regardless of your preference for solid state or vacuum tube amplifiers. In addition to the amplifier kit from Mini-Kits, another reasonable source for a solid state amplifier at present is via Alan Devlin VK3XPD. Alan operates a business called RF Resale in Melbourne and currently has some surplus amplifiers that he has modified to operate on 23 cm. He has stocked a simple amplifier

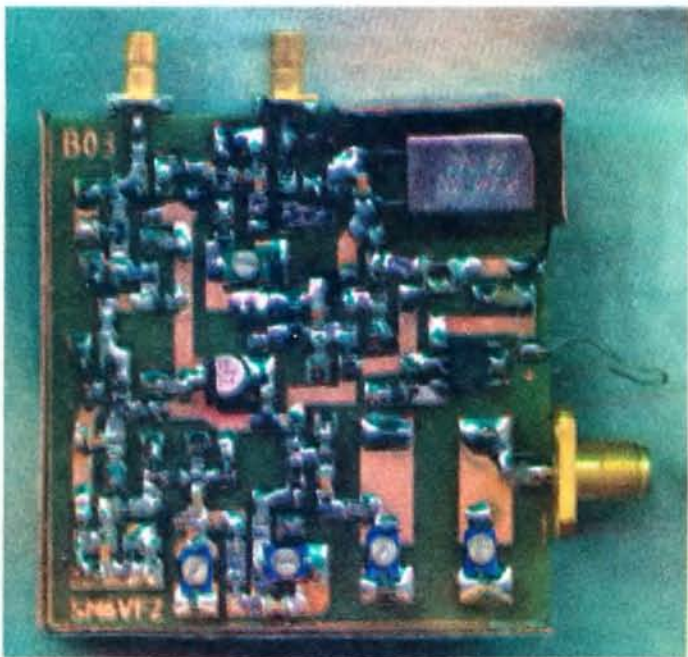


Photo 2: A surface mount local oscillator by Daniel SM6VFZ.
 Photo by Daniel Uppström SM6VFZ.

needing only milliwatts of drive (straight from the transverter) to achieve 3 to 4 W output. If you have 1 W of drive available, that can easily be boosted to 15 W on a 13.8 V supply, or around 30-50 W if using a 24 V supply, using another of Alan's amplifiers. He also has a higher gain version of this second amplifier needing only milliwatts of drive, but these require a 24 V supply.

For higher power levels, one can consider combining multiple solid state amplifiers. The more usual route is to build (or buy) a cavity amplifier with a 7289 (2C39A) triode or similar vacuum tubes. Of course, this means high voltage supplies, consideration of cooling techniques, switching considerations and, of course, a very good understanding of RF safety issues. A single 7289 amplifier, with water cooling, can easily generate 100-150 watts of RF. At 1296 MHz, 100 W fed into a 1.5 m diameter parabolic dish antenna, via a feed line with a loss of 0.5 dB, generates a peak EIRP of over 20 kW!

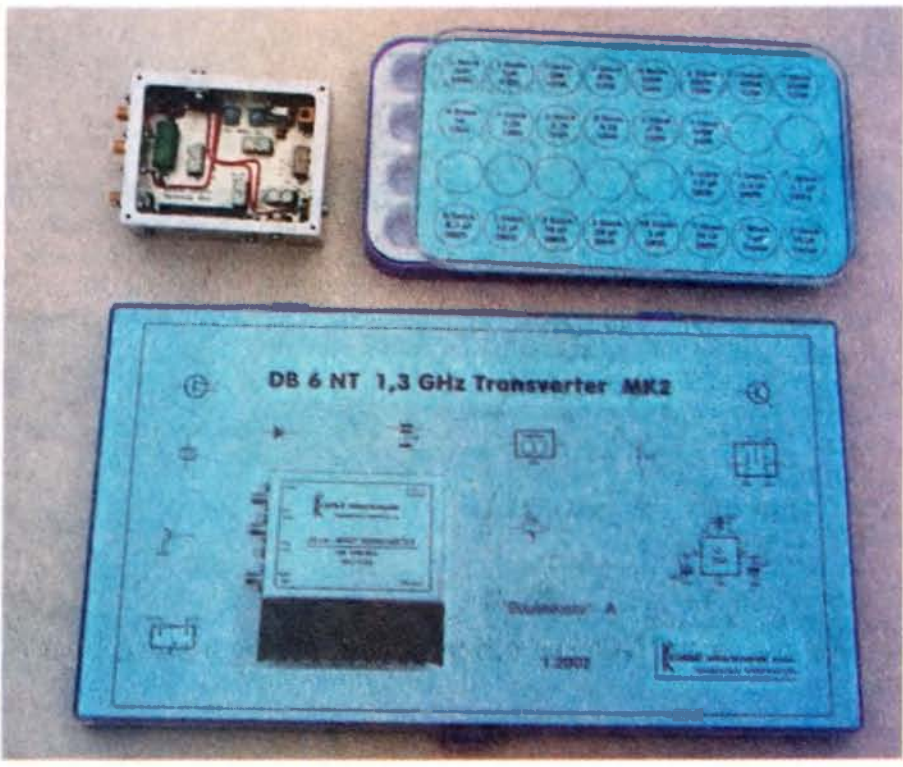


Photo 3: The DB6NT kit comes very well packaged. The completed unit packaged in the optional precision milled case is at top left.

Getting on air

Once you have done your reading and purchased the parts, you will want to put the kits together and get on-air. During the acquisition and construction phase, be sure to ask for advice and, if needed, assistance from others already on the band. How do you find them – ask around at the local club or chat with some of the amateurs who listen on the weak signal end of the 144 and 432 MHz bands. Even if the person you first talk to is not active on 1296 MHz,

most will usually know the appropriate people for you to contact. Check that the gear is all working properly and then try it out. You may need to catch your local active amateurs on a lower band first, but most are usually happy to QSY to higher bands.

Good luck! If you are interested in the VHF /UHF contests, there is another good reason to become active on 23 cm – the band multiplier makes each contact more valuable!

Web sources:

- Mini-Kits: <http://www.minikits.com.au/>
 - RF Resale: <http://www.users.bigpond.com/alandevlin/index.html>
 - Kuhne Electronics (DB6NT): <http://www.db6nt.com/>
- Unless otherwise acknowledged, photos by the author.

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Yarra Valley Amateur Radio Group Inc.
 C/o P.O. Box 346, Healesville, Vic, 3777

WHITE ELEPHANT Sale

Sunday 24th February, 2008
 10am to 2pm
 Healesville Memorial Hall
 Maroondah Highway, Healesville

For further information:
 Steve VK3TSR
 0418 103 487

Coffs Harbour Radio Expo
 Hosted by the Mid North Coast Amateur Radio Group

Sunday 20th January 2008

St Johns Church Hall,
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 8.30am start

Trade Displays, Disposals, Door Prizes, Club Displays, Home Brew Displays, Satellite tracking, Tower Displays

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VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

Season's Greetings

A reminder that the office at 40g Victory Boulevard, Ashburton, will close on Tuesday 18 December and reopen Tuesday 5 February. During the break urgent matters will be given priority while office-bearers work on financial statements and the annual audit.

On behalf of the Amateur Radio Victoria Council – Barry Robinson VK3JBR, Ross Pittard VK3FCE, Peter Mill VK3APO, Keith Proctor VK3FT, Terry Murphy VK3UP and myself, compliments of the season to all and best wishes for a Happy New Year.

The Secretary, Ross Pittard VK3FCE advises members that the Annual General Meeting will be held on Wednesday 21 May, at St Michael's Hall, corner Victory Boulevard and High Street, Ashburton, commencing at 8 pm.

Notices of Motion for the meeting close 2.30 pm on Tuesday 19 February. A further notice of the AGM and details of the business items to be discussed will be included in an annual report to members.

Guides enjoy JOTA

The 50th JOTA seemed to have increased activity on air this year compared with previous years and everyone declared it a great birthday occasion.

Amateur Radio Victoria responded to a request by the Dandenong Valley Region Guides who were camped at Rowville in Melbourne's south-east and eager to be part of JOTA.

Our Events Coordinator, Terry Murphy VK3UP, and Michele Grant VK3FEAT set up VK3WI portable much as they did for the International Lighthouse and Lightship Weekend in August.

Terry VK3UP says after a quick survey of the area it became obvious that a shelter-shed was an ideal operating position and a suitable tree nearby supported an inverted vee dipole antenna. The main equipment was a Kenwood TS-440S plus 2 m/70 cm radiated by a dual band vertical.



Guides enjoyed JOTA during their weekend camp

All was ready for a 3 pm start on the Saturday and after a brief explanation of how the radio worked and what to expect on air, the participating Guides threw themselves into JOTA.

The camp had other activities too but JOTA held its own against the competition and had a string of Guides enjoying the experience. An invitation was accepted to return and do it again in 2008.

Centre Victoria RadioFest (CVR)

Now the biggest amateur radio event of its type in Victoria, CVR promises another family-friendly and interesting program at Kyneton on Sunday 10 February.

A major feature will be D-STAR

with product displays and expert demonstrations of the ins and outs of this revolution in amateur radio. The mini-lectures are back, as well as Terry Murphy's Dipole Factory, Club Corner, Scout Radio, WICEN portable emergency communications and F-Troop photo call.

Among the new activities are a VHF/UHF antenna gain measurement range (BYO antenna) and historical broadcast radios for sale by tender. All major commercial traders will be there plus second-hand sellers with some tempting items on sale.

The Organising Committee of this joint venture by Amateur Radio Victoria, Central Goldfields ARC and Midland ARC, plus a team of volunteers from the three organisations, look forward to seeing you there!

A full page advertisement in this edition of *Amateur Radio* magazine has more details and contact information.

VK3 Outwards QSL Bureau

The end of the year dispatch of QSL cards overseas has been sent for those registered users who had deposited cards

with the VK3 Bureau which continues to provide its high level of service.

Recent changes announced by the WIA took effect on 1 December. This means that WIA members can post their outwards cards to the WIA Outwards QSL Bureau, PO Box 3073, Teralba NSW 2284, or they may continue to access the VK3 Outwards QSL Bureau at 40g Victory Boulevard, Ashburton.

The VK3 Outwards QSL Bureau will continue to receive pre-sorted cards for registered users, either individuals or bulk lots from radio clubs, under the established guidelines.

Cards received from overseas QSL Bureaux by the VK3 Inwards QSL Bureau will also continue to be provided to registered users, mostly through a network of club-based distribution points.

News from VK3 Clubs

Joe VK3FJBC

EMDRC IRLP and Echolink "Mythbuster" Session a huge success

A few months ago, the committee of the Eastern and Mountain Districts Radio Club were sitting around the fire discussing what could be the topic for in-flight entertainment at the October 19th coffee-shop meeting. After about three minutes of brainstorming, it was decided that a session on IRLP and Echolink was in great demand.

Just as you attempt to stifle the yawn at the mention of IRLP and Echolink, here is why the EMDRC decided that the members may possibly be interested in being lectured on the virtues of IRLP and Echolink. There are many people who use IRLP and Echolink occasionally and probably think nothing of it. After all, once you know how to use it, it is just like turning on a light switch...or is it? What if you did not know how to use it and did not have anyone who you could ask? What if you are new to the hobby and do not know how to use it or are too shy to ask anyone? What if you know how to use IRLP and Echolink and want to know more about their features and settings? What if you are a Foundation licensee and want to use these modes? What if the EMDRC had two resident experts who knew these subjects like the back of their microphones? Well, that is exactly what happened. So was born the idea of the IRLP and Echolink "Mythbuster" session. The "Mythbuster" term was used because one of the main

reasons for this exercise was to bust some "myths" about how IRLP and Echolink can be used.

After much publicity (a big thank you to Amateur Radio Victoria, the EMDRC webmaster and the mailing list coordinator for their quick responses), the event attracted a minor traffic jam in the club rooms. You would be forgiven for thinking that it was a ham fest and not just a club meeting. The resident experts David Byrne VK3DRB and Perrin Trease VK3XPT gave the audience a live demo of IRLP and Echolink. It was only standing room for some as a crowd of about seventy people had gathered which even included some overseas visitors!

The audience was treated with historical information about IRLP and some fascinating insights into David's 2 metre node and its features. Then came a guide to using the website and how to interpret the information it contains. The club was blessed with high speed internet access for the evening courtesy of a 3G wireless modem from a local service provider so this made a live viewing of the website possible. This was followed by a live QSO with a station in the United States using David's Yaesu handheld and a barrage of questions from the audience.

Then came the Echolink session. Here again, the audience got to learn a few interesting things – like only about

20% of Echolink users actually use a computer to hook up with the system! This was followed by a guide to the website and a QSO between one of the laptop computers and the handheld. Then, just to "bust" a few more myths, the computers were shut down and the handheld tuned in to a local Echolink frequency. After having keyed in a node number for a friend, David's handheld was used to communicate with this station that was also on a radio. Look ma! No computers! The audience also witnessed how HF communications were made possible by one of the Echolink Links which was connected to a HF transceiver. Other features such as how to "join" in to a conference, how to change system settings, how to configure firewalls and how to set up an Echolink node kept the audience responding with lots of questions.

After a few eyeball QSOs with unseen voices and many cups of coffee, the curtain fell on an action packed coffee shop meeting. A few days later, the EMDRC received requests from other clubs to "borrow" our resident experts. They hope that the IRLP and Echolink "gurus" are consulting their diaries to find some time. A big thank you to David and Perrin for taking the time off from their busy schedule to give us an insight into these subjects and making the evening a huge success.

continued on page 45

VK9WWI, Willis Islets, North Cay

September 22 – October 3, 2007

George Wallner AA7JV and Tamas Pekarik HA7RY

This was intended to be a simple “personal” DXpedition that would be combined with diving and spear-fishing. Equipment was chosen as the minimum required for meaningful low band operation. The budget was also moderate, relatively speaking.

The location

Willis Islets are located around 16.5 degrees S and 150 degrees E, off the east coast of Australia, about 500 km east of Cairns. The group contains three islets; South Islet, Mid Islet and North Cay. There is a meteorological station on South Islet, which is manned by four weather observers. This is by far the most easily accessible islet. Mid Islet is seven km north of South Islet, about 300 metres across and covered with low, scrubby vegetation. North Cay, a low sand cay about 1.5 km long and 300 m wide, is located eight kilometres further to the north of Mid Islet.

We decided to locate the station on North Cay. As far as was known, nobody had operated from North Cay before and it appeared large enough for a sizable beverage with an east-west orientation.

Access to North Cay is difficult because of the surrounding coral reefs, which at low tide uncover. We were able to find a wide enough channel in the coral (about 1.5 m wide and winding!) for the dinghy, at the west end of the cay. Through this channel we ferried the gear ashore, which was off loaded on a narrow sand spit at the western end of the cay. This is where we set up the station: on the western tip of the cay, just where the sand spit joins it.

Willis – especially the North Cay – is a tough place to operate from. There is nothing on the island except birds. No hotels, no water, no power, not even a tree! You can not keep a boat on station nearby because of the rough conditions. You are on your own.

The equipment

Our equipment consisted of an Icom IC-746 Pro, an SG-500 solid state 500 W amplifier, an SG-235 auto tuner, and an MFJ manual tuner. All equipment



Photo 1: George and Tamas at the VK9WWI operating site



Photo 2: The 20 metre fibreglass pole supported the 160/80 m antenna. No problem with a ground plane here!

was powered from four 12 V car batteries which were charged by two 30 A chargers powered by a 1.5 kW Honda generator. Logging was done on a lap-top, which was also connected to the rig (a must for efficient DXpedition operation and subsequent QSL-ing!). We also had an Icom IC-706 with an AH-4 tuner as a back-up. Not a "big-gun" expedition set up!

We had a single tent with a tarp for awning, under which we placed the operating table with all the gear piled on it, and under it. We had minimal amenities. (We did not have hordes of hired labourers to set up a tent city, and antenna farm.) Fuel for the generator was carefully calculated at 100 litres. Although Tomi was constantly worried about us running out of fuel, we finished up with about 20 litres left – enough for a day of operation. We did not have internet access, although we had a satellite phone, which worked about 5% of the time. For communications we had amateur radio!

We operated under some difficult conditions; the tent was cramped and was constantly flapping in the brisk breeze that never seemed to let up. This caused serious QRN! We had difficulty copying weak stations on 160 even with noise cancelling head-phones on. For an entire day and night we endured a storm that almost flattened the tent; we used driftwood to shore it up. Making regular trips to the generator – which was sited about 150 metres away for reasons of noise – was no fun either in the blowing rain. It appeared that we had technical problems, but really we were just very busy; the two of us had to keep things going and operating at the same time.

There was one technical problem that hampered our operation. Our PA, a 10 year old SG-500, had a slow T/R switch, which cut the first dot of a call off when operating high speed CW, causing many repeats and the need to reduce sending speed.

The antennas

For antennas we had one 12 and one 20 metre SpiderBeam fibre-glass pole, with home made galvanized-steel bases. We set up the 20 metre pole on the sand spit, with an inverted L that was cut for 1.825 MHz, with the "horizontal" wire being held by the 12 metre pole which was set up on the island about 100 metres to

the east. The wire could be lowered for 80 m operation. We added 12 elevated radials of between 10 and 30 metres long and about 0.7 metres above the sand, with some extending into the water. We also added a 2 metre long ground rod; the sand appeared to be wet there at all times, so it may have done some good. At high tide the entire sand spit, including the base of the antenna, was under water. We believe that the location of this antenna was about as good as it could get; surrounded on all sides by sea water, or standing in sea water at high tide. Looking at the EZNEC model of this antenna one would think that on the higher bands the antenna would perform poorly, with too much high angle radiation, but the log proved otherwise. Sea water seems to make vertical antennas work very well – or at least does not make them work poorly.

We set up a second vertical on the 12 metre pole for the higher bands, but as it turned out, we kept using the larger antenna on these bands out of convenience. This pole, however, turned out to be very useful for the Pennant receiving antenna we erected later.

Receiving antennas

One goal of the operation was to activate VK9W on 160 metres. During the short planning phase we sought the advice of experienced 160 m operators and previous DXpedition members regarding receiving antennas for the low bands. Interestingly, the advice fell into two distinct categories, almost evenly divided. One group stated that on a remote location like Willis there would be no need for separate receiving antennas because of the absence of man made noise. The other group stated that receiving antennas are a must because of likely noise from tropical thunderstorms and the Chinese "Dragon" HF over-the-horizon radar, which has one of its operating frequencies in the 160 m band. As it turned out, both groups were right. On some nights the Tx antenna worked fine, on other nights the lightning crashes made listening on the Tx antenna painful. More on this later in the Operation section.

During the course of our ten day operation, we erected two receiving antennas. A pair of Pennant antennas was loaned by W8UVZ. One of these, aimed at North America, was installed

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on the second day. For supports it used the 12 metre SpiderBeam pole and a newly erected driftwood bamboo pole. The centre of the antenna was about five metres above ground. It worked fine for the NA direction, drastically cutting noise of lightning crashes. Still, the antenna produced very weak signals, even with a K9AY pre-amplifier (which was loaned by Gary K9AY). On the fourth day we built a 140 m long beverage antenna, laying in a 80 degree direction (EENE); not perfect for North America, but that was the best we could do given the shape of the island and the desire to stay far from the salt-water. The beverage worked so well that a couple of days later we cannibalized wire from the short vertical and extended it to 220 metres. A strange thing occurred at that time. The antenna, which in its shorter form did not pick up noise from our generator, which was about 60 metres to its side, now was picking up generator noise. (Be aware of these new generators with "inverters"!)

The generator was located about 100 metres from the operating position and about 200 metres from the main antenna. Its power cord was curled into chokes at several points and it was grounded. This configuration eliminated some early noise pickup. The extended beverage, however, was now picking up generator noise; but it also produced much better signals, especially on 160 m, and the noise was easily removed by the receiver's noise blanker, so we decided to stay with this new configuration. The beverage worked very well for us for the rest of the operation. It was very good on 160 metres and it was superb on 80 metres. Its directivity was so sharp that on 160 metres we could switch between working Japanese and North American stations just by switching antennas and doing away with the need to listen up 5 kHz to get away from the large number of Japanese stations calling! The beverage just simply cut them off, except for the very loud ones. (I had missed KL7FG calling several times, until I switched to the vertical, on which he was S9!) For Europe, which started coming in the early morning hours, we removed the loading resistor, turning the beverage into a bi-directional beverage, which, despite its poor orientation, was still much better than the Pennant or the main antenna. An interesting point to make here; beverage antennas rely

on poor ground and are reputed not to work on small islands or close to the sea. Our beverage was running parallel to the shore about 30 metres from the high tide water line and over sand that was about three metres above the high tide sea level (five m at low tide). The sand was dry in that area and very likely a poor conductor.

Operations

This being a "private" DXpedition, we did not start out with any major goals, except to work on 160 metres and to make as many QSOs as possible. Tomi HA7RY did most of the high band operation, and George AA7JV did most of the low band operations.

It became quickly apparent that our main antenna was working very well. We were often able to work with only 100 watts and still remain in control of the pile-ups. North American stations, especially on 80 metres, were also strong, well into the early morning hours.

It did not take long to find out that we were being sought after. The pile-ups, especially on 40, 30 and 17 metres, were big. Being close to Japan, the Japanese stations were numerous and loud. Fortunately, they were also well disciplined, which allowed for a reasonable QSO rate. The same can not be said for the rest. While the US stations were relatively well behaved, many European stations were unruly. It is worth pointing out that the QSO rates were much higher when propagation was mostly to Japan. This was largely due to the more disciplined operators, who instead of causing QRM waited their turn and timed their calls correctly.

Worse than undisciplined operators were those who could not hear us at all, but kept calling regardless. The DX station can quickly tell when somebody can not hear him and is just calling based on DX Cluster data. Such an operator not only makes a fool of himself but also causes substantial QRM to the detriment of everybody. Essentially he denies the DX to others while he is unable to get it for himself! This is one area where national organizations could do a lot more to educate operators.

Although it is important to call a DX persistently, it is important to time the calls well and to listen between calls. In fact listening is the most important part of getting a rare DX station. To know

when the DX is listening, it is important to discern his operating pattern. Calling him whilst he is transmitting, or working somebody else, will get you nowhere. We could instantly identify the experienced operators who were often able to get through on their first call, which was well timed and on a well chosen frequency. You can do that only by listening for a while and learning the pattern of the DX! Big antennas and multiple kilowatts will not do that (although they help).

Dead bands?

When we arrived on Willis our first impression was that the bands were dead. North American or European stations can not imagine how dead the bands can be so far from civilization. One could have easily thought that there was no propagation. Once we sent a few CQs, however, first a few stations would appear, and then when we were spotted on one of the DX clusters, all hell would break loose, and suddenly a previously dead band would be boiling with calls from many areas. Suddenly, propagation would go from zero to excellent (despite the bottom of the sunspot cycle).

The first night

We arrived at North Cay during the early afternoon of September 22. After we ferried the gear ashore, we set up the tent and one antenna mast. We were planning to complete setting up next day, to be ready by the evening of September 23 for Top Band. Tomi, keen to get going, spent the first night on the island and operated with a temporary set-up.

(I believe that he was also keen to get off the boat which was rocking and rolling widely in the large unprotected waters south of North Cay.) Tomi was using a piece of sloping wire tied to the tip of the 12 metre SpiderBeam pole, fed via a manual tuner, running 100 watts off a 12 V car battery. Logging by hand on pieces of cardboard (he had left his computer on board), he was able to make 450 QSOs, working through the night, mainly on 40 metres. As it turned out, this was a much welcomed part of the operation, as later we were concentrating on 160 and 80 metres at night.

160 m operation

We spent September 23 setting up the station. The inverted L went up, we installed radials, got the generator going

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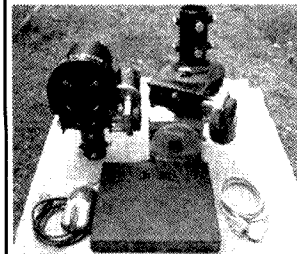
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speed should be between 12 and 25 wpm, neither faster, nor slower! The problem with slow speed is, in this part of the Pacific anyway, that there are a number of beacons that can be heard across the 160 m band and these beacons transmit at about 5 wpm. I believe them to be long-line fishing beacons, as they constantly change, drifting with the currents and are removed at intervals. They are easy to separate from calls provided the calls are at higher speeds. Speeds faster than 25 wpm are difficult to copy due to lighting noise or the Chinese "Dragon" triggering the noise blanker, which in turn can obliterate high speed dots.

Again, if you can not hear the DX do not call! This is especially true for 160 metres, where the above mentioned problems are compounded by the QRM of out-of-synch calls launched at random.

One misconception about 160 metres is that a station should focus on its ability to receive. This is only partially true; you must be able to hear the DX, but one station's Tx signal is the other station's Rx signal and when you start out with a weak Tx signal, you will simply not be heard. If you want to do DX on low band, you have to have a decent Tx set-up, in addition to the ability to hear. It is simply a matter of signal-to-noise ratio and the noise is a given.

Operations on other bands

80 metres was a strong and reliable band for us. Both North American and European stations were loud, as were the Asian stations. The beverage proved to be very useful on 80 metres, as this band was also affected by lightning noise.

40 metres was dominated by the Japanese, as well as the European stations most of the time. The Chinese "Dragon", however, seems to be centred over the CW portion of the band and creates very substantial interference. A good noise blanker seems to be able to deal with it, but signals get degraded.

30 and 20 metres performed as expected.

17 metres was the most reliable daytime band! It was often open to Japan, Europe and North America at the same time.

(and moved it to get rid of its noise) and set up the logging computer, alongside a myriad of other small things. We were ready by 6:30 PM local time and tuned the radio for 160 metres. It was going to be one of those magic nights that probably occur once in a life-time.

Our first CQ was answered by JA7FUJ at 0838. A long string of JA and North American stations followed. At one point we had to listen 5 and 6 kHz up to hear the North American stations. The first European station was UA4DX, two hours ahead of any other European (I had repeatedly copied him as VA4DX - not wanting to believe that the band would already be open to Europe). The North American stations started to fade out after their sunrise at 1400 and European stations started to come in long strings. Altogether we made 430 QSOs on top band that night.

Signals from both North America and Europe were strong and clear, with little QRN. We did not have a receiving antenna up yet; we were using the inverted L for receiving. The Dragon was also quiet. Indeed, 160 metres had the feel of 80 metres on a very good night. At that point I was convinced that those who suggested that there was no need for a separate receiving antenna were right and things would be easy. The next night proved the need for separate receiving antennas; in the early evening hours lightning crashes were so strong that they were painful through the headphones. Eventually we gave up on top band for a while and QSY'd onto 40 metres for a couple of hours. By then Top Band had quietened down (the thunderstorms must have dissipated) and we had a decent night of operation. Next day, we installed the Pennant, which then proved its value during the next two nights, after which the beverage took over and we rarely used the Pennant any more.

Altogether we made 1200 QSOs on top band

A couple of observations are due. When calling a DX on 160 metres, unless you are very confident of your full size array and kilowatts, you should send your call-sign two or three times. Due to noise, weak signals and QRM, it is common that the operator picks up only part of a call-sign each time it is sent. A lot of time was wasted by repeatedly asking stations to resend their call-signs. Sending

15 metres opened at times to Japan, with a few Europeans mixed in.

12 metres had a few surprise openings to Asia, when stations were very strong.

10 metres: no QSOs. Hey, you can only do so much with a single station!

Final QSO Count

Band	CW	PH
160	1211	0
80	1556	49
40	1478	7
30	1139	0
20	1174	733
17	1767	556
15	703	142
12	221	97
Total: 10834		

Note that the totals do NOT include duplicate QSOs, of which we had a lot!

The 'Dragon'

The Chinese HF Over-The-Horizon (OTH) radar, called 'Dragon', is a real menace to HF amateur radio! It degrades 160 and 40 metres substantially. It also appears that its main transmission frequencies are intentionally centred on amateur bands; perhaps these bands are seen as the least important and poorly defended. Hopefully, they are still in a testing phase and once they are operational they will use it less frequently. We also hope that the practise does not spread to other under-developed military hopefuls, who may see HF OTH radar as a cheap alternative to AWACS!

Summary

We would like to thank all those who contacted us. We also appreciate the efforts of those who tried but did not make it into the log. We know that a lot of people wanted more 40 m operation, digital modes and so on. Please understand that we tried to be even handed, but with a single station, and two people doing everything, you can not make everybody happy.

Overall we are content with our operations. We are especially happy with our 160 m results. They show that when receiving conditions are good, and the interest is there, a relatively modest station can do a lot on Top Band.

ar



Photo 3: A view of the antenna supports and camp site



Photo 4: The generator was placed well away from the tent

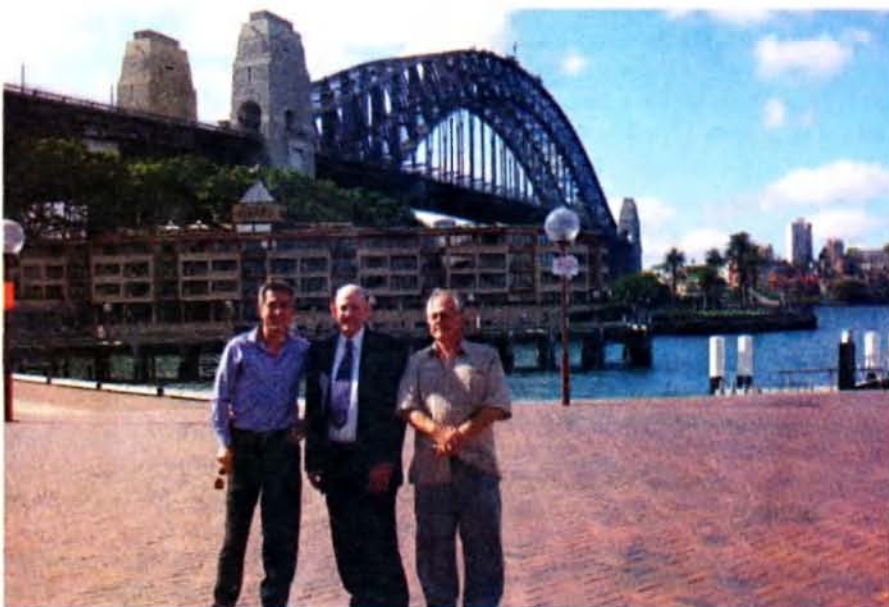


Photo 5: Tomi HA7RY and George AA7JV had an enjoyable eyeball QSO over lunch with Allan VK2GR on their return to Sydney from the VK9WWI Willis Islets North Cay DXpedition

Geelong Amateur Radio Club – The GARC

Tony Collis VK3JGC

GARC prides itself on the diversity of activities undertaken by its members, beyond conventional radio communications.

As a member of Lee VK3PK's micro processor group at the GARC, David Haggart VK3VLH was until recently VK3FCAT, graduating earlier this year to his Standard licence.

At the time of the National Robotics competition, David was a student at the Bellarine Secondary School where he undertook a project to build a heavy weight robot capable of playing soccer.

The sponsors of the project were Google, The Ford Motor Company and Wiltronics, with Gee-Tek of Geelong providing the high intensity LEDs required. The construction of the Robot started in December 2006 and was completed at the end of June 2007 ready for the Victoria state competition on 4 July 2007.



The 3 kg robot playing soccer

David won first prize for his entry together with an award from Deakin University recognising the complexity of the design and its operational capability.

David then went on to the Australia wide finals held at the Gold Coast Exhibition Centre for a two day event on 1st and 2nd of September 2007, where he came Fourth in the National finals.



Rosco VK4AQ

Compiled from own and contributed resources.

2007 Queensland Presidents' Lunch

The Queensland Advisory Committee continued the tradition of an annual Presidents' lunch at the Geebung RSL Club on 13 October 2007.

The lunch was attended by the presidents or other representatives of some 17 clubs from the Atherton Tablelands in the North to the Gold Coast in the south, with members of the Queensland Advisory Committee, WIA President Michael Owen VK3KI, WIA Vice President Ewan McLeod VK4ERM and WIA Secretary (and with Pat Fuller, organiser of the lunch) Ken Fuller VK4KF.

Michael gave a report on the current WIA activities, including interesting



statistics in relation to new amateurs, the distribution by State of Foundation licensees, the age and gender distribution of Foundation licensees and the number up grading.

It was generally agreed that the number seeking to up-grade was very encouraging and there was considerable discussion of the best means of attracting new amateurs.

Vice President Ewan McLeod gave a brief report on current developments in the WIA's role in emergency communications.

The next day, Sunday 14 October, Michael, Ewan and Ken were guests of the Ipswich and District Club, welcomed by President Michael Charteris VK4QS and other members for a very pleasant barbecue, and again, a report on WIA activities from Michael.

The Ipswich club has encouraged membership of the WIA by meeting the membership fees of some members, then recovering it by small regular payments.

Ipswich & District Radio Club

From Mike VK4QS

Some time ago, on July 28th this year, the Ipswich & District Radio Club played host to what is hoped to be an on-going social event called the "Inter-Club-BBQ".

This saw members of the Brisbane Amateur Radio Club, City of Brisbane Radio Club as well as the Lockyer Valley Radio Club come together at the Ipswich and District Radio Club for a day of social exchange as well as a beaut BBQ to top it all off. There was even a Boot Sale with equipment changing hands and happy faces all round.

Special guests for the day included Gerry Millward, the head of ACMA for Queensland, Northern Territory and the Kimberleys, and Ewan McLeod VK4ERM, Vice President of the WIA.

It is fair to say that a great time was had by everyone and the BBQ was a true success as nothing was left to spare at the end of the day.

It is hoped that this event will lead to a series of Inter Club BBQs in south

east Queensland area so that we might gather and get to know each other face to face instead of just being a voice behind a call sign. In early 2008, the BARC will be organising a similar event and we look forward to the gathering with great interest.

On Sunday October 14th, members of the Ipswich & District Radio Club played host to the President of the Wireless Institute of Australia, Mr. Michael Owen VK3KI.

This followed a successful Presidents' Lunch on the previous day that was held at the Geebung-Zillmere RSL Club, which was attended by Presidents and Committee members from as far north as Townsville.

Each year it has been the tradition that, on the Sunday after the Presidents' Lunch, the President of the WIA has been invited to one of the Radio Clubs here in Queensland.

In previous years Michael has attended the Sunshine Coast and the Gold Coast for a most enjoyable day with their members. This year the focus had a more Westerly approach with members from the outer Western clubs from as far away as Dalby and District being invited to attend a somewhat Western Clubs BBQ with the benefit of meeting Michael and catching up with the latest WIA News.

We were graced with a mild spring day with a slight breeze, which made for an excellent atmosphere in which to relax. By noon the BBQ was fired up under the watchful eye of "Cook for the Day" Rob Bryce VK4HW. With steaks and drinks all round we lazed the hours away with much discussion about amateur radio in general.

After lunch, Michael was kind enough to enlighten those present with the latest WIA news about the success of the Foundation Licence, and to emphasize the importance of "New Blood" by way of this excellent introduction to our wonderful hobby.

To this end, here at the Ipswich Club, some five members attended the recent Assessors Course on the Gold Coast, and they are currently awaiting their certificates. Michael also stressed the importance of our representation at WRC

2007, and what it meant for us as amateur radio operators here in Australia.

Following this, all and sundry were happily assembled for a photo shot, with Michael Owen. It was after this that the President of the Ipswich Club, Michael Charteris, VK4QS, on behalf of the club members, thanked Michael for his visit and presented him with the lovely and distinctive "Ipswich Pride Pin" together with an "Honorary Vice Presidentship" of the Ipswich and District Radio Club.

So ended one of the most enjoyable days the Ipswich and District Radio Club has ever had in the past 45 years of existence. Our members thank Michael for visiting our club and trust he might return one day in the very near future.

Ipswich & District AGM, held on August 27th 2007

Office bearers for the upcoming year include:

President: Mike Charteris VK4QS
Vice President: Wayne Bryce VK4AB
Treasurer: John Edwards VK4IE
Secretary: Bob Beck VK4CPM
Station Manager: Rob Bryce VK4HW

The Club is looking forward to a big year with a lot of work to do on the Clubhouse as well as a host of WICEN events.

A group of five of our members, Mike Charteris, John Edwards, Gary Neilsen, Bob Beck and Rob Bryce recently attended the two day Assessors Course, held at the Gold Coast Radio Club, so they could undertake examinations for the budding amateurs in the District.

It is full steam ahead for Ipswich and District, which is looking to grow the Club this year with lots of inquiries for the Foundation Licence.

Club meetings are held at the clubhouse at 10 Deebing Street, Denmark Hill, on the 2nd and 4th Monday nights of the month at 7.30 p.m. and all are welcome. Coffee and tea are also put on by the Club free of charge. The club looks forward to seeing you there.

APRS – South East Queensland

From Peter Schrader VK4TGV

It has been recently determined that the APRS digi-peater network in SEQ requires a re-examination.

This mode has too much potential to let the network go custard apple shaped, so in the interests of developing this mode further all interested parties are encouraged to join the Yahoo group created for this purpose.

The link is <http://groups.yahoo.com/vk4aprs> This group contains valuable information for configuring your APRS station, along with ongoing discussion to improve and expand the network in South East Queensland.

Central Highlands in Central Queensland

Gavin VK4ZZ advises that a new repeater was recently added to the Central Highlands radio network.

Roy VK4YRO, Tony VK4HOG and Steven VK4SMW went to Mt Seaview to complete the installation of the repeater on the frequency 146.975 MHz.

It has an output of 50 watts and is fed into a large four bay offset dipole array.

Controller, Roy VK4YRO, extends his thanks to Rob VK4HW and Andrew VK4OX for their tireless efforts in getting this station up and running. An APRS is also located at this site.

Dalby and District Radio Club

On the weekend of 1st and 2nd of December, the Dalby and District Radio Club will be camping out at the Chinchilla weir.

This will include a camp oven cooked tea on Saturday night and a BBQ lunch on Sunday.

The usual car boot sale and a short club meeting will be held on Sunday morning.

Members and visitors are invited to go along and join in the fun.

Tablelands Radio Group

A very busy and successful month of activity, from both the amateur radio and social scenes, was reported by Mike VK4MIK.

Many experimental antennas are being assembled within the group and these will be put to the test in a range of activities planned for the next six months. Antenna

trials will be conducted during contests and on a couple of camping expeditions that are currently on the drawing board for after the wet/cyclone season.

A "Great Mates Luncheon" attended by 16 members of the group was held at the Barron Valley Hotel in Atherton at the end of October and another is planned for December. The very cohesive TRG tries to visit a new eatery every six weeks or so.

Next month I hope to be able to report on an initiative from the Ipswich Club on a novel approach to improving WIA membership within the State.

Finally, another point of interest that all amateurs should be thinking about, now, is the 100 years of Amateur Radio in Australia: the anniversary comes up in three years time, if my memory serves me correctly.

There are local thoughts of possibly producing a "coffee table" book, of very high quality, covering the 100 years.

It behoves upon every amateur in the country, particularly the old timers, to start thinking about this event and sorting back through their archives for suitable material so that, if the venture does come about, everything is not left until the last minute.

VK5

Christine Taylor VK5CTY

Adelaide Hills Amateur Radio Society

By the time you read this, the big event of the year will probably be over. If you were not at the Buy and Sell on 17th November, you will have to wait till next year.

The meeting in November was a construction night at which everyone built a "Gizzmo" under the tutelage of Graham VK5ZFF.

These nights are usually lots of fun but quite testing especially for those with eyes that have 'been around for a while', nevertheless a good time is had by all.

The October meeting was another interesting talk by someone who had

worked behind the scenes in the world of espionage. Without giving away any secrets we were given an insight into some of the techniques and the problems associated in keeping our nation secure. He had some tales to tell about the different problems and conditions encountered in the various countries he had visited. Fortunately, as we were assured, the changes in equipment in the world of communications is a constantly changing one, so it is unlikely that much of his knowledge would be of use today, even though it is not many years since he retired. Only those in daily contact

can keep right up-to-date. However, the motto, because it is new it is not necessarily better, does apply. It is not always better, merely different.

As always, we had 60 plus at the meeting and expect as many to try their hand at construction at the next meeting.

Information is always updated on the AHARS website www.qsl.net/vk5bar/ The 2008 calendar for the start of the year is there: if you expect to be in Adelaide, so keep an eye on it.

SEASON'S GREETINGS TO EVERYONE

News from...

Assessor training update

John Elliott VK5EMI – Convenor

The second Assessor training session for VK5 took place over the weekend of 4th – 5th August, at St. John Hall, Unley, under the capable control of Fred Swainston.

Participants came from far and wide; from Cowell on the Eyre Peninsula, from Port Augusta, and the Riverland, as well as the wider Adelaide metropolitan area.

Fred led them through the many complex issues that assessors will face with their work.

“This was not what I expected”, stated one participant, “but in fact better and more useful to me”.

Best wishes to the new assessors – may you find plenty of examinations to assess!



WIA VK5 Assessor training group, 2007.

Standing (L to R): Fred Swainston VK3DAC, Jim Walford VK5AJW, Malcolm Gardner VK5MJ, Kevin Zietz VK5AKZ, Tony Hughes VK5KAT, Leigh Turner VK5KLT, Steve Baker VK5UQ, Norm Lee VK5JNL, Robin Devore VK5ATT.

Sitting (L to R): Graham Holman VK5GH, Peter Horgan VK5BWH, Steve Mahony VK5AIM, Barry Williams VK5ZBQ.

Thanks to the WIA, Fred Swainston VK3DAC and Peter Reichelt VK5APR for their essential part in the running of this important event.

AHARS John Moyle Memorial Field Day 29.03.2007

As they have done for several years, AHARS went to a 30 hectare, Mallee scrub covered property near Swan Reach for the Field Day weekend. There is a two-storey shack built by Geoff VK5TY and Christine VK5CTY (and friends) which provides sleeping quarters for the

amateurs and plenty of space outside in which to erect antennas and set up field stations.

There are antennas already on the property, but none of them are used during the Contest. Some of the four towers are used as anchor points for

the wire aerials. All the contest aerials are erected either late in the afternoon preceding the contest or on the morning of the contest.

In 2007 one of the participating amateurs, Rufus VK5YO had a GPS unit with him with which he plotted the location of each of the portable stations. He superimposed these on a Google Earth map of the block to produce the image that accompanies this article.

The 80 metre station, the 10 metre and the 40 metre station were under gazebos, the 20 metre station used an existing shed but the 15 metre station was erected just under the trees. The rig for this station was an FT-857D with gel cell batteries as



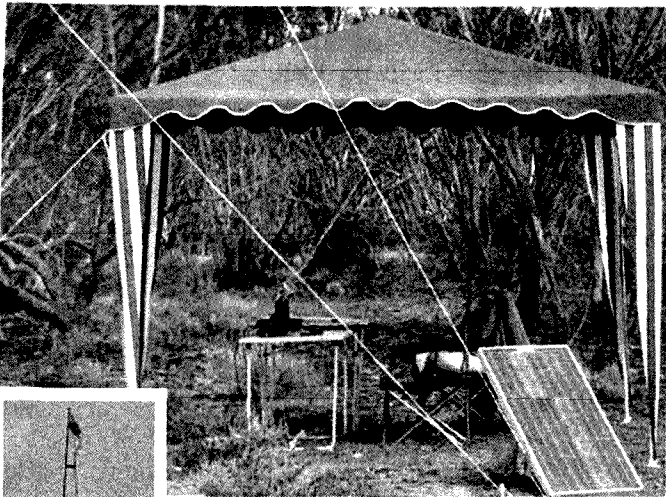
The proud operator of the 80 metre rig, Karsten ZK5ZKT, who worked all through the night for a massive score



The 10 metre station set up by Robert VK5ZHW with a special ground arrangement. Not sure how effective it is as few contacts were made on 10 metres – normal situation



The 80 metre rig



Above: The 40 metre station ready to go.
Left: the 40 metre aerial with balun and vee beams

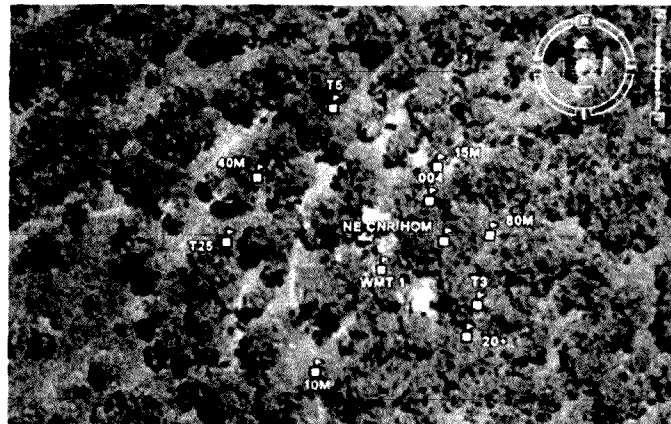
the power supply.

For 10 metres, a dipole was erected anchored at the centre to T3, and at the ends to some trees. For 10 metres we used a long wire anchored to WMT at one end and a tree at the other end. Ladderline fed from this aerial and a matching length of wire provided a

ground. Unfortunately we had no contacts on 10 metres, though a few stations were heard talking to each other.

For 40 metres, a collapsible mast with two sets of guy wires supported the centre of an inverted Vee aerial and powered by solar boosted batteries.

The 20 metre rig, a Kenwood TS-43x was fed from a dipole supported at one end by a wooden pole erected on the morning of the contest with the other end tied to T3. A Dewton tuner and pre-charged batteries completed the



The Google Earth picture with the rig locations plotted

equipment.

A G5RV antenna was used for 15 metres, suspended from trees.

The permanent aerials on the block are described here just for information.

T5 and T25 have wires running from them to the windlite tower, WMT. The vee enclosed by the wires is aimed at the UK and Europe, fed by a homemade ladder line through the window of the shack for use on 20 and 40 metres. A permanent G5RV runs between the windlite tower and T3 for use on 80 metres.

VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au

Regional Web Site: reast.asn.au

Congratulations to Rosanne VK7NAW for being the top VK7 ALARA member in the ALARA contest.

Hayden has commissioned a new 70 cm repeater in Huonville, South of Hobart. Callsign is VK7RCH and frequencies are 438.575 MHz RX and 433.575 MHz TX. No tone is required.

JOTA was a great success in VK7 with at least eight stations provided by radio amateurs. In the North, Tony VK7YBG and team provided a well equipped station on Scout Island in the Tamar River. Thanks to VK7s HDX, ZCF, FMWT, TTT, ZJA, XGW, AN, YUM, YAD, ZPE, HAM and FYBG for

helping with this station. In the North West at Paton Park, Wayne VK7FWAY, Ivan VK7XL and Tony VK7AX manned the station VK7SDL.

The South was well covered. At Glenorchy, Danny VK7HDM manned the station. Ray VK7VKV manned the station at New Norfolk. At The Lea Scout camp Roger VK7ARN, Chris VK7FCDW and John VK7ZZ operated VK7SAA. At the Howrah Scout Hall, Thomas VK7FDAE, Allan VK7FWAG and Rosanne VK7NAW operated VK7OTC. At the Snug oval, Scott VK7FREK and Bruce VK7MDB operated VK7GGA and have introduced

a "Chatterbox Award"! At the Blackmans Bay Scouts, Rod VK7TRF, Mark VK7FMDF, Gary VK7JGD and the author manned VK7SBB and this included communication over red light for the cubs on Saturday night.

I alert interested people to a new VK7 BPL video titled "Are you ready for BPL in your neighbourhood" which is now available on YouTube. This complements the existing VK7 virtual tours of Mt Nelson and North Hobart that together have been viewed over 16,000 times. Go to youtube.com and search for BPL and Tasmania.

November 4 saw the Sewing Circle

News from...



Blackmans Bay Cubs with light communications during JOTA

BBQ at the QTH of Ken VK7DY and Wendy VK7FWJS at their property at Orielton. 80 people attended with about 50 being amateurs. There were homebrew competitions for the F-Troop amateurs, amateurs and XYLs. There was vigorous trade at the trading tables. The Terry Wilson VK7HTW (silent key) Award was presented to Sam VK7FBMX for services to amateur radio in VK7. Brian VK7KBE presented the Sewing Machine award to the most loquacious amateur on the Sewing Circle net, which for the coming year is Jerry VK7EE. The big hamper of goodies was won by Vince VK7VH. From those I have spoken with it was a great day. A big thank you goes to Ken & Wendy and all their helpers.

North West Tasmanian Amateur Radio Interest Group
Congratulations to Keith VK7YBP who is now a WIA Learning Facilitator in the North West. Congratulations also to Bill Kitson who has passed his regulations and is off on his grey nomads tour of VK. 1250 MHz ATV experimentation is taking place between Ivan VK7XL and Tony VK7AX, with tests on 2.4 GHz links planned to follow shortly.

Northern Tasmania Amateur Radio Club

The October meeting was at the Mt Barrow Interpretation Centre where almost 40 crammed into the shed. The weather was extremely kind with much story-telling and reminiscing done. The BBQ and fire raged into the night and a great time was had by all.



Some of the VK7 Sewing Circle BBQ attendees

WICEN Tasmania (South)

The newest club in VK7 is WICEN Tasmania (South) Inc., which aims to establish and maintain a core group with a voluntary public service and emergency radio capability of the highest possible standard and to work with the broader radio interested community (not exclusively Amateur Radio) to extend that capability.

Radio and Electronics Assoc. of Southern Tasmania

Congratulations to the following people who have successfully completed their Standard Licence theory: Derek VK7FINE, Robert VK7FROB, Roger VK7FRMH, Chris VK7FCBH, Tom VK7FDAE, Graeme VK7FGJW, and Len Gay. By the time you read this, they

will be on the air as Standard licence holders. The author is now a WIA Learning Facilitator for the REAST club.

REAST's November presentation was by Brian VK7RR on his remotely controllable amateur station. Brian outlined the SteppIR antenna, an automatically adjusting HF beam and a key element of his station. Brian then explained the hardware and software that enables him to remotely control his station. This was a very impressive demonstration of state-of-the-art internet technology and equipment and a practical demonstration of its capability. Thanks Brian.

ar

Silent Key – Crosby Green VK7CR

It is with deep regret that we announce the passing of Crosby Russell Green VK7CR.

He was a very active amateur in the 60s and 70s with a beautifully crafted voice (VK7 Canada Radio).

When the Southern Branch of the Tasmanian Division of the WIA used to meet on Liverpool St, Hobart, Crosby was the WIA Librarian for many years.

Crosby unfortunately has not been heard on the air for many years.

Vale Crosby.

(Brian VK7RR & Richard VK7RO).

Season's Greetings to all

The committee and all the members wish everyone a Happy Christmas and New Year. Enjoy your family, enjoy your holidays if you take them now, and enjoy your/our great hobby.

It has been a good year for ALARA and for amateur radio. We have many new amateurs and ALARA has gained many new, enthusiastic, YLs. Our Contest was one of the best ever and propagation seems to be improving so maybe we are coming out of the bottom of the sunspot cycle.

The coming year promises to be another good one with better propagation conditions and so many new amateurs.

Planning 2008

Please put the ALARAMEET in Ulverstone on your list for September 12-15 2008 if you are a caravanner or even if you are not. The weekend starts with an informal dinner on Friday evening, then two days of interesting tours and meals in interesting places with lots of time to talk in between, and ends with the formal handing over of the ALARA banner to the next co-ordinator and the announcement of where we will meet in three years time.

However, there is a lot more than that to the ALARAMEET. You can put faces to the voices you hear on the air, you and your OM and family share in the wonderful friendship and leave looking forward to the next time you will meet.

Most people meet a few days before the weekend and often plan to stay on and do some more touring after the ALARAMEET.

The co-ordinator for the ALARAMEET in Ulverstone is Susan VK7LUV so contact her for more information. Her email address for the ALARAMEET is vk7luv_susan@yahoo.com.au

Tina VK5TMC is hoping to arrange some cheaper fares on the ferry from Melbourne. If you are planning to travel that way with or without caravan, please contact her by email on rtclogg@optusnet.com.au re dates etc. Fortunately the lower costs are available

for those who are unfortunate enough to have to pay non-concession fares, but the numbers will all help to know if she can make this arrangement. Please do contact her as soon as you have made your plans.

In October 2008, there will be an international YL Meet in South Africa. This MEET will be held in a number of venues which will give us an opportunity to see something of this exotic country. It will run from 3rd – 18th October.

It will be possible to be in Ulverstone from 12th to 15th September, see something of the beauties of Tasmania and still be able to join the international YLs in South Africa!!

What a great way to spend your time! I hope some of you will do just that.

The people to contact about South Africa are Janet ZS5JAN or Vee ZS6ZEN through Yahoo Groups. If you use Google it will find the site.

If there are other YL Meets the information will appear here in future months.

Do take the chance to meet other YL amateurs and enjoy the friendship. (Hint – the OMs seem to enjoy the Meets as much as the YLs)

Changes to our website

Unfortunately ALARA had a problem with the server for our website, as a consequence of which all our data was lost. Ben, harmonic of our energetic editor, Dot VK2DB, has spent hours and hours working to get the site up and running.

When it all happens it will be better than ever, with an email that will get all your wonderful news to me almost as soon as it happens, well, as soon as you write it out for me. Keep looking for the "new look" ALARA site!

A new Net for the VK3s

A VHF net on the VK3REC repeater, 147.175 will be run each Thursday evening from 8.00 pm local time.

We hope that some of the newest and some of the older (in terms of the length

of time you have held your licence!!) YLs will join in.

We wish them luck. There is an active core group in this area so listen out if you can hear this repeater.

If you are an OM, you will also be welcome but the net is mainly for and to encourage the new YLs.

Did you participate in JOTA?

I am sure some of you will have assisted your local scout or guide group at JOTA this year but no-one has sent me any information or photos.

It would be very unusual for there not to be some YLs showing the flag for our share of the radio activity and I am certain you know who they are. Well done everyone who took their gear to the scout hall and helped the young people to "talk to the world". Even in these days of internet and VOIP it is still special to talk one to one to someone on the other side of the world, especially if you contact another scout group when you can compare notes.

Congratulations are in order

Meg VK5YG was persuaded to enter some photographs in her local Show. To her surprise (but not so surprising to her friends), Meg won two First prizes, three second prizes and three third prizes. Yes, there were a lot of other entries which did not win! When the YLs were told about her wins and shown the photos it was clear that her artist's eye had helped a great deal. Meg only took up painting and drawing on her retirement but she has shown much skill and has won quite a number of prizes in painting exhibitions but this was the first time with photos.

Well done Meg.

SEE YOU HERE IN THE NEW YEAR

Information – and how to find it

From time to time I am asked for clarification or expansion on some terms or acronyms that appear in the column. After all, how is a newcomer to know if they have a critical need for say a 'bias-tee' or a set of azimuth/elevation rotators and some auto-track software? What on earth is 10 GHz anyway?

In a column such as this it's a fine line to tread between boring the more experienced members of the satellite community with repeated explanations on the one hand and satisfying newcomers' thirst for knowledge on the other.

The whole amateur radio satellite field is awash with descriptive terms, technical jargon, acronyms, special interest groups, new and unfamiliar terminology. That is the nature of the

beast and it is a situation by no means confined to amateur radio satellites.

Each new satellite launched, while having a lot in common with its siblings is nevertheless an entity in its own right. It might carry ground-breaking technology, or just different technology. It could have a whole sub-set of unique terms, modes, frequencies and timer-schedules.

To explain all these terms as you go along would fill several pages in each issue of the magazine.

As it turns out, it would also be quite unnecessary. To show how easy it is to re-invent the wheel, bore everyone to distraction and give yourself unnecessary work, let me illustrate.

Some 20+ years ago, I wrote a year-long series of monthly articles for AR magazine entitled "*Getting Started in Amateur Radio Satellites*". It was not the first nor will it be the last such series to reach print.

Since that time, I have often been asked to upgrade the series and each time I have given it some thought. But when I have gone back and re-read the text with a view to an upgrade it struck me immediately how much the scene has changed, and a total rewrite would be necessary.

There are two things wrong with that idea. I just do not have the time or energy any more, and more importantly, it has been done already.

The same applies to including explanations each time a new term is used. It has been done before in publications that are available either in print or on the Internet. So let us look at a few resources that could be considered fundamental for anyone thinking of trying out satellite operation.

The internet is a wonderful resource but it can also be very frustrating. Web sites come and go. Unsubstantiated information is at best of doubtful value and often just plain wrong.

Web sites are only useful if they are maintained and that takes time and effort. After a disappointing search of various AMSAT organisations world-wide I had

to admit that most informative links led back to the AMSAT-NA web site.

That is great from the point of "one-stop-shopping" but it does nothing for local flavour.

There are exceptions, Tony Langdon's first-class site, <http://www.vkradio.com/> is well worth a visit for an Australian perspective on the whole satellite scene. (Tony's name will reappear below). One of his efforts appears on the AMSAT-NA web site.

The AMSAT-ZL web site has a comprehensive list of frequencies and modes which can be printed out for a handy quick reference. European sites were disappointing as many are either outdated or just provide links to other sites. I found very little of interest to newcomers.

The American web sites and publications are quite different. Both beginners and experienced operators are well catered for with a variety of publications to fit every budget.

The fine ARRL publication, *The Radio Amateur's Satellite Handbook* by Martin Davidoff K2UBC has been mentioned many times before in this column.

This monumental work is a great source of practical, down-to-earth experience combined with all the necessary theory required to understand what is going on in this field. It is the first book I reach for even after 40+ years in satellites if I need clarification.

If you visit the AMSAT web site www.amsat.org and follow the prompts, you will come across a number of publications that answer just about every question a newcomer could have.

Getting Started with Amateur Satellites by Gould Smith WA4SXM is such a work. It is similar in purpose to my 20 year-old effort in bringing the reality of satellite operations to newcomers.

Such a work has to tread a fine line between being comprehensive yet not being too off-putting and scaring people off with too much terminology, too quickly.

The reality is that the terminology needs to be mastered and that's where reliable,

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK
9 Homer Rd
Clarence Park SA 5034

Graham's e-mail address is:
vk5agr@amsat.org

authoritative reference material comes into the picture.

There are many other publications on the AMSAT-NA web site which are aimed at the newcomer, including one with a decided Australian flavour by our own Tony Langdon VK3JED.

Tony's contribution is entitled "Working your first Amateur Satellite". Now there's a title sure to attract attention from beginners. Armed with the right selection of such works, the newcomer can find their way around the terms encountered. The outlay is nominal, most publications can be downloaded directly from the AMSAT site as PDF files and printed out to make up an excellent, cheap reference library.

They will stand you in good stead if you decide to climb up that steep "J"-curve of learning the art of amateur radio satellite communications – or even if after a brief try-out you are perhaps convinced that satellite operation is not for you, they will still be a valued addition to your amateur radio library.

Before the internet was so all pervasive, print media held sway. Information was passed around in newsletter format and via HF radio nets. The whole scene was simpler and everyone was a beginner.

John Branegan's (GM4IMH) heroic series of "Satgens" on packet radio ran from 1989 to 2001 when John was forced to finish at number 648 due to failing health. Satgens were eagerly awaited each week. They can still be Googled and are well worth bookmarking.

Graham Ratcliff's *AMSAT-Australia* printed newsletter ran for an amazing 180 monthly issues, that is 15 years of locally flavoured news for all levels!

It is difficult to keep up that level of commitment, in the face of dwindling general interest, waning membership and the rise of the internet.

My advice to newcomers is do not panic, help is available.

Assemble a real, printed library of material as noted above.

Seek advice on which sites are reputable. The internet is a good servant but a terrible master.

Finally – do not be afraid to put out some cash and buy one or two important publications. Martin's epistle comes immediately to mind.

The next few years, in particular 2009-10-11, promise to be bumper years for amsat-ers. They should see the launch of some long awaited high earth orbiting amateur radio satellites. That is certain to usher in a new phase of interest and spurt of activity similar to that which followed the 1983 launch of Oscar-10.

Most present day satellite operators will never have experienced a high earth orbiter. If you are a newcomer to satellites you have enough time to learn by doing on the low earth orbiters now available.

Give it your best shot and be ready for the renaissance of the next few years.

A new class of amateur radio satellite

During the earliest days of AMSAT, the various classes of amateur radio satellites were still being defined.

Terms like Low-Earth-Orbit (LEO) etc. came into being almost overnight. Back then the prospect of a High-Earth-Orbiter (HEO) was not even on the wish list.

The early beacon-only satellites were called Phase-1. The next "phase" to come along were LEOs with transponders and a degree of control. They were classified Phase-2. As the HEOs came to reality this stage was referred to as Phase-3.

To complete the overall classification system two more were added .

They were definitely in the "dream" category. Phase-4 or geo-stationary/geo-synchronous was the first to be envisaged. Lack of funding caused these plans to be shelved back in the 90s. Karl Meinzer and his "dream-team" then came along with the concept of Phase-5, a satellite which would break free of Earth's gravity and head off to Mars with lots of scientific stuff on board.

So there we had it, Phase-1 to Phase-5. The cycle was complete. The AMSAT-DL team have made remarkable progress with P5A but the dream of a Phase-4 geobird was still way down the list.

Not any more. Things have been happening. Rick Hambly W2GPS, AMSAT President, along with Bob McGwier N4HY, AMSAT Vice-President of Engineering, recently made public the results of some behind-the-scenes negotiations.

AMSAT has been in consultation with Intelsat regarding an application of an Intelsat platform carrying our amateur radio satellites into geosynchronous orbit. Phase-4 may yet live!

Engineering studies, funding studies and other negotiations are continuing at this point. Nothing is set in concrete as yet, but according to Bob *There is enough in place at this time that AMSAT needs to begin planning engineering work and possible construction of a geosynchronous payload so we are ready if Intelsat says they have a ride for us.*

More on this exciting new project next month. It promises to be a hot topic in the meantime. Questions like *How many such satellites?* and *Where will they (it) be placed?* will surely be early ones to be considered.

Satgen321 In Orbit Pt5 The Sun by GM4IHJ 20 May 95

Recent satgens have considered satellites orbiting the earth, where it was acceptable to ignore the mass of the satellite, and the effects due to other bodies. When a satellite orbits far from earth, or, we consider the orbit of a planet or moon, these short cuts are no longer permissible. For this reason therefore the calculation of the orbit takes a somewhat different form from the solution of NASA 2 line Keplerian elements used for near earth satellites. The mathematics employs a roughly similar format but Ephemeris data replaces NASA 2 line elements.

Equally important. When we get away from the earth, orbit periods become months and years, not minutes. This becomes obvious when we start with the Epoch time of the Ephemeris data. Because of the long time periods involved it is common practice to set the Epoch at some cardinal point in time Eg noon 1 Jan 1900 or, noon 1 Jan 2000. Orbits in deep space do not suffer from the spasmodic drag factors present in low earth orbits so predictions can be kept reasonably accurate over many years, with even the perturbation due to the big planets Jupiter and Saturn being amenable to simple correction. So if your software has Ephemeris data for Epoch noon 1 Jan 2000 it should be good, unchanged, for the next half century

Typical Ephemeris Data - for the Earth orbit around the Sun

Epoch 1900 Jan 0.5 = noon 1st January 1900 (julian days start at noon....

A typical clip from the Satgens series by GM4IHJ (SK)

DX – News & Views

John Bazley VK4OQ

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352, email john.bazley@blgpond.com

Looking back I see it was in November 2005 when I commented on “the on-line logs” and the giant steps taken by the KH7 Kure Island DXpedition. I am, of course, referring to the huge amount of data available to amateurs working the Kure DXpedition. They had problems, but as I stated in November 2005 these will be solved and this type of facility is here to stay. Well it has taken two years to surface again, this time with some original improvements. I am referring of course to the recent 3B7C operation and their ‘on-line log’. The ‘Green Squares’ of KH7 were replaced by ‘Red Squares’. Confirmation of a QSO being indicated by a white ‘tick’ in the appropriate band/mode square. Clicking on this Square displayed the operator at the time of your contact! But that is not all.

A superb addition to the log data was available by clicking on your CQ zone number. Immediately you had displayed the number of QSOs already in the 3B7 log from your Zone, analysed band by band and the time of the maximum number of contacts. If you were missing a band, instantly you could see when the majority of amateurs in your zone had worked the 3B7. This is an excellent refinement and the team are to be congratulated on this addition. Congratulations are also due to the VKs who ‘topped’ the list in Zone 29 –VK6HD and for Zone 30 – VK3GK.

So what is happening on the DX front?

FH. FH1LE is the new callsign for F4RPW, Alain, now that he lives fulltime on Mayotte. He has been there for three weeks and is getting his gear sorted out. He hopes to have the station operational this week. He will start out with a 4BTV vertical and his FT-897 rig running 100 watts. He will be on SSB and maybe CW if he can get in a little practice. He also plans to get on PSK31 and RTTY with a Microham interface box. And, he has a KT-34 beam, the latest upgrade, but has to work out some issues with the small space he has to work with at his QTH.

VK9W. On their return from the VK9WWI, Willis Island “North Cay” DXpedition, Allan VK2GR was fortunate to have lunch with Tomi HA5RY and George AA7JV. During the boat trip out

from Sydney, George said that they had to stop at Mackay for engine repairs and provisioning, which resulted in further logistical issues to get Tomi and the equipment down from Cairns.

On Willis Island they used an 160 m inverted L antenna at water level with elevated radials, several of which were lost with the changing tide. This antenna was used for all bands with an automatic antenna tuner. For reception on 160 m they used a Pennant, a 200 m long Beverage and pre-amp together with filters to reduce QRM from strong, relatively local signals. The QSO count during the 10 days of activity was 10,834 with 1,211 of these being on 160 m. Allan said that Tomi and George may be back in this area for another ‘rare one’ (Mellish Reef?). Many thanks for the email, Allan.

(Editor: See the article in this issue.)

3D2 Rotuma. Tony 3D2AG/FO5RK reports that his trip to Rotuma is now scheduled from 15 December to 20 January. He will be active on 10-80 metres SSB and CW, plus digital modes if local power conditions allow him to use a computer. Tony will use Spiderbeam antennas, solar panel and/or a generator and no linear amplifier. QSL direct to 3D2AG or FO5RK (see qrz.com). Updates will be available at <http://www.3d2ag.fr.tc/>

C9. Rodrigo CT1BXT will be active as C91R from Mozambique until August 2008. His preferred mode is RTTY. For the time being he is active on 20 metres with 100 watts and a dipole, but he hopes to put up a five band beam for 10, 12, 15, 17 and 20 m. QSL via home call.

J5. A number of ops, mostly from the January 2007 XT2C DXpedition team, will be QRV from Guinea-Bissau this coming January. They will activate J5C from Bubaque Island (AF-020) from January 10th to 21st. Team members include F4AJQ, F6AML, F5JSD, F5VHQ, F8BJI, F9IE, F2VX, F2JD, F8BUI, F4TTR, F5PED, F5TVG, N2WB, N6OX and OE8KOK. Plans are to have five stations, with four amplifiers QRV 24 hours a day. Activity is expected on all bands on CW, SSB, digital modes and SSTV plus 29 MHz FM. They will be using verticals on 80 and 160 metres

and beams on the other bands. QSL this operation via F5TVG.

T30. Toshi T30XX (JA8BMK) left Tarawa, West Kiribati and is back in Fiji and QRV as 3D2WW for a few days before heading back home to Japan. Apparently his amplifier broke and Toshi was unable to fix it or have the company send him a new amp. He plans to go back to West Kiribati and then go on to Central Kiribati (T31) in December 2007 or January 2008, says Ken JA8CDG. Toshi will also take a new 160 metre antenna with him to T30 and T31. QSL both T30XX and 3D2WW via JA8UWT.

PZ. The 4M5DX Group is organizing a DXpedition to Suriname, to take place in the first half of January 2008. A multinational team of skilled and experienced operators is being gathered and plans are to have three stations active for 10 days. They will operate, as PZ5YV, on all bands (160-6 metres) CW, SSB and RTTY. Team members will be: Olli OH0XX, Spiros SV8CS, Pedro HK1X, Alex YV5SSB, Ramon XE1KK, José YV5TX, Diego LU8ATX, Pasquale YV5KAJ, and Ramon PZ5RA. Financial assistance is requested to offset the costs: for further information, please visit: <http://pz5yv.4m5dx.org/> Full colour QSL (direct or bureau) via IT9DAA.

9Q. Democratic Republic of Congo: John SM5DJZ is the new QSL manager of 9Q1TB and 9Q1EK, after their last manager SM5DQC passed away. Direct QSLs should be sent to: Jan Hallenberg, Vassunda Andersberg, SE-741 91 Knivsta, Sweden. The logs will still be uploaded to the LotW and online logs are still available at: <http://www.logsearch.de>

As the year draws to a close we hope we can look forward to better conditions in 2008!! So Happy Christmas and New Year – Happy DXing!

Special thanks to the authors of The Daily DX (W3UR, 425 DX News (I1JQJ) and Allan VK2GR for information appearing in this months DX News & Views.

You can obtain from W3UR a free two week trial of The Daily DX from www.dailydx.com/order.htm

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Contest Calendar December – February 2007/2008

Dec	1	RTTY Melee	RTTY
	8	ARRL 10 metres Contest	CW/SSB
	22/23	OK DX RTTY Contest	RTTY
Jan	26 to 13 Jan 2008	Ross Hull Memorial VHF Contest (VHF/UHF)	CW/SSB/FM
	5/6	ARRL RTTY Roundup	RTTY
	12/13	Summer VHF/UHF Field Day	CW/SSB/FM
	26/27	BARTG RTTY Sprint	RTTY
	26/27	REF Contest	CW
	26/27	UBA DX Contest	SSB
	9/10	CQWW RTTY WPX	RTTY
Feb	16/17	ARRL International DX Contest	CW
	23/24	REF Contest	SSB
	23/24	UBA DX Contest	CW
	23/24	CQWW 160 m Contest	SSB

CQWW CW 2007

At I write this, preparations are underway in the BAA household, not for Christmas, but for the CQWW CW contest.

Mother Nature has been harsh again, seemingly increasing gravity around my ailing loop on 40m and weakening the trees around the house so as to cause the 160m dipole to come crashing down along with the loop's main support. But, as they say, when the going gets tough, the tough get going – and that's exactly what's planned for the 'BAA household as the thought of stringing all that wire back into the trees only to have it tossed onto the floor again simply doesn't appeal at the moment.

So instead, we're off to ZL for the CQWW CW Contest to the QTH of Gary ZL2IFB, an old friend from Blighty. With ZL6QH still off air due to having the builders in, Gary was at a loose end for the contest. A few emails later, arrangements are formed to allow a girly shopping trip for partners whilst Gary and I do the contest as two single band single operator entries.

A lesson learnt long ago, was to make arrangements for 'the other half' whilst radio fun was being had, else the 'brownie points' pixie runs away with all the goodies and leaves the unsuspecting contester in the lurch when the next contest comes along.

CQWW SSB 2007

The SSB leg of CQWW was at Andy VK4HAM's QTH using Trent's VK4TI callsign as a multi-single entry, with Trent, Andy, Dave VK4NDX and myself.

Andy's tolerant wife made a bee-line for the exit over most of the weekend, leaving strict instructions along the lines of: "All these wires and things WILL be gone soon, won't they?"

Andy, an insurance professional, didn't need a crystal ball to gauge the future if compliance wasn't absolute. He sagely smiled and said "Of course" - a wise man indeed. Andy's life insurance policy rests safely for a little while longer.

Photo 1 shows Trent VK4TI in action during the contest, doing his best to log fast and accurately as well as manage the pile-up of stations calling. Pile-up management is an acquired skill honed over time to cope with the many callers – some of whom are significantly less disciplined than others.

Suburban back yards are not always the best for multi-transmitter contesting as the antennas are positioned close to each other and cause inter-band troubles. This occasion was no exception, with assistance rendered by Alan VK4SN with a loan of the coaxial stubs made for the VK4WIL get-together for the Oceania DX contest a few weeks prior.

Alan's skills were put to the test and were faultless, with the stubs diminishing the inter-station hash considerably. We had all manner of equipment failures: with PCs getting upset with legal limit RF levels and Trent's amplifier spitting the dummy after a few hours.

The station was effectively a single-operator entry from then, as the multiplier station was not used concurrently with the run station. Additionally, with TVI problems on the LF bands, we were left to concentrate on 10 m, 15 m and 20 m only for the contest. 10 m proved to be something of a surprise as the band opened to JA and UA0 at the beginning of the contest and resulted in well over 200 Japanese callsigns being logged within the first hour. The opening lasted for a number of highly productive hours after which, I was lured from the operating chair by our illustrious host offering beer, as he wanted to operate. 10 m however had other thoughts and died immediately – at least that's what Andy claimed. A quick QSY to 15 m had the log being heavily populated again in fine fashion.

Sunday was harder work than Saturday, with band conditions changing for the worse in VK4 at least and Murphy visiting the equipment. We finished with around 1600 QSOs and just under

1 million points, so the record books remain untouched from our efforts at least. However, we had some fun and made plans for future endeavours during 2008.

Contesting - Is your software up to the challenge?

With CQ WW CW approaching, it is worth trying these quick tests with the software you use:

Enter a callsign, say VK4BAA, into the callsign field and press "Enter" (or Insert or F5 or F5+F2 according to your software requirements) to start the callsign (or call + exchange) sending process.

1. Hit 'escape' (or whatever abort sending key your software specifies). Does the sending stop *instantly* i.e. not after a buffer has emptied?
2. During sending, you notice the typo or copying error - correct the last letter 'A' (before the software has reached that part of the callsign) to B. Is the callsign now resent correctly?

If the answer is 'NO' to either question, then maybe you should consider a change to better software which will increase speed and efficiency when handling a pile-up of callers. A simple test, but an effective one none-the-less.

2007 Round-Up

The last year has been an interesting time for contesting. It is my anniversary as your humble scribe in November, and 2007 has been memorable as the arguable bottom of the sun spot cycle. Some think 2006 was the bottom whilst others think we've only just arrived.

Whichever view you hold, 2007 has certainly been focussed towards the LF bands with a more myopic eye on HF from time to time. CQWW tends to bring the bands alive when you least expect it, adding credence to the view that 10 m is often open but nobody is there to take full advantage of it.

The VK Contest Club (VKCC) has blossomed from its humble beginnings in 2004, towards a national contesting orientated group for VK licence holders across the country. VKCC members (it is utterly free, by the way) have been active in national and international contests throughout the year and have taken full advantage of using the VKCC forum to discuss topics of interest and to meet

friends both old and new.

Home grown contests have seen a healthy participation increase generally with the bands alive with VK calls during RD, Field Days, John Moyle and the like. F calls are no exception to this, with many taking part in contests for the first time in 2007 and reportedly loving it.

The Oceania Contest and the Commonwealth Contest (aka Beru) continue to put VK on the world stage, allowing VK to be the focus of the world for a period. Many rotators in the northern hemisphere crept into virtually unknown territory and beamed long or short path to VK to get those elusive callsigns into the log. Next year will see a continuation of the Beru approach for country teams competing for dominance over the other areas of the now somewhat diminished British Empire.

It's my humble opinion that contesting in VK is coming along nicely: it's vibrant and healthy; it continues to attract increasing domestic and international participation and continues to enhance the VK profile globally. There are areas for improvement. The simplification/clarification of the rules for some contests, or even the introduction of a Region 3 Field Day contest suite similar to that now enjoyed by stations in Region 1 might be considered as focus areas.

A shopping list for Santa

Top of my list for Santa has got to be a jumbo-sized box of sun spots. Next, would be a QRM removal button that removes people who think they can just call CQ anywhere they like on a band without the courtesy of listening first to

the frequency for potential occupancy.

I'd like to see single letter suffixes for VK calls that allow contesters to close the competitive gap on our brethren overseas, in addition to contest specific power limit enhancements for the same reason. The latter two items seem to be emotive issues that often raise the cry of elitism by the few in the name of the many. It appears to me that because some people don't want a particular facility, they work hard to stop others from having it. Work in progress, definitely, but I'm not holding my breath!

For the 'BAA household, well, me at least, the biggest item on the list is for a QTH of our own in 2008 so that we can finally put down some roots and start to think about that big tower that I've always had a hankering for. I wonder how big Santa's sleigh is....?

That's all for 2007

I wish you and your loved ones the very best for 2008. Stay healthy, stay safe and have a tune around the bands when a contest is in full swing. You never know, you might just give it a try and get bitten by the contesting bug. Maybe start the New Year off with participating in the Ross Hull Memorial VHF Contest and take it from there. May you multiply often and produce a huge log!

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton



Photo 1: Trent VK4TI handling the pile-up during CQWW SSB

Ross Hull Memorial VHF-UHF Contest 2007 - 2008

John Martin VK3KWA, Contest Manager

The next Ross Hull Contest will run from December 26 to January 13. Logs will be due by February 4.

The annual Summer VHF-UHF Field Day will be held over the closing weekend of the Ross Hull Contest. Field Day contacts may be included in your Ross Hull log, provided each station you work appears in your log only once per band per day.

There has been a relaxation of the rules on serial number exchanges for contacts made using M/S or short-lived Es openings: callsigns plus two other digits will be accepted for contest purposes.

The Contest

The WIA maintains a perpetual trophy in honour of the late Ross A. Hull and his pioneering achievements in VHF and UHF operation. The name of each year's contest winner is engraved on the trophy, and other awards may be made in the various divisions of the contest. The contest is open to all amateurs.

Duration

0000 UTC Sunday 26 December 2006 to

2400 UTC Sunday 13 January 2007.

In Eastern Summer Time, that is 11 a.m. on December 26 to 11 a.m. on January 14.

Sections

A: VHF - UHF (50 MHz through to 1296 MHz), non-digital modes.

B: Microwaves (1296 MHz and above), non-digital modes.

C: Digital Modes, all bands.

Digital modes are defined as those in which the decoding of the received signal is done by a computer. Entrants may submit logs for one or more sections.

General Rules

One callsign and one operator per station. You may claim one contact per station per band per UTC day. Repeater, satellite and crossband contacts are not permitted. No contest activity is permitted below 50.150 MHz. In Sections A and B, entrants making contact on recognised DX calling frequencies should not occupy these frequencies for prolonged periods. All rulings of the contest manager will be accepted as final.

Valid Contacts

For Sections A and B, entrants must exchange RS (or RST) reports plus a serial number. Serial numbers need not be consecutive. For propagation modes such as meteor scatter or short-lived sporadic E openings, exchange of callsigns plus two further digits is sufficient. For Section C, exchange callsigns plus two further digits that cannot be predicted by the other station.

Scoring

Scoring will be based on the best seven (7) UTC days nominated by the entrant. Each contact will be scored as follows:

For 2 metres and above, one point per 100 km or part thereof (i.e. up to 99 km: 1 point, 100 - 199 km: 2 points, etc).

For 6 metres only, contacts below 1000 km: as above. Contacts from 1000 km to 2400 km, 2 points regardless of distance. Contacts over 2400 km, 20 points regardless of distance.

The band multipliers are:

6 m	2 m	70 cm	23 cm	Higher
x 1	x 3	x 5	x 8	x 10

Logs

Logs must cover the full contest period and contain the following for each contact:

- Date and UTC time.
- Station location (if operating portable).
- Frequency and callsign of station worked.
- Reports and serial numbers sent and received.
- Approximate location or grid locator of station worked.
- Estimated distance worked and points claimed, including the band multiplier.

Separate scoring columns for each band would be helpful.

Cover Sheet

Logs must be supplied with a cover sheet containing:

- Operator's callsign, name and address.
- Station location (if different from the postal address).
- Section(s) entered, and a list of the UTC days to be scored.
- 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.

Please use the following format for your scoring table. If you wish you can cross-check by adding the daily totals across the table, but please make sure that you include the separate band totals.

Date	6 m	2 m	70 cm	23 cm	etc
Day 1	xxx	xxx	xxx	xxx	xxx
Day 2	xxx	xxx	xxx	xxx	xxx
etc.	---	---	---	---	---
Total	xxx	+ xxx	+ xxx	+ xxx	+ xxx
					= xxx (GRAND TOTAL)

A sample cover sheet and scoring table has been included in the postings on WIA web sites and the VK-VHF e-mail reflector. Copies can also be obtained from the email address given below.

Penalties

Minor errors in distance estimates or calculations may be corrected and the score adjusted. Prolonged use of recognised DX calling frequencies (especially when the reports indicate strong signals) may incur a scoring penalty. Inclusion of any false log entries will lead to disqualification.

Entries

Paper logs may be posted to the Manager, Ross Hull Contest, 3 Vernal Avenue, Mitcham, Vic 3132. Electronic logs can be e-mailed to vhf-contests@wia.org.au The following log formats are acceptable: ASCII text, Office 97 or Office 2000 RTF, DOC, XLS or MDB.

Logs must be received by Monday 4 February 2008. Early logs would be appreciated.

Note on Calculating Distances

Absolute accuracy is not required. You just need to know whether each station is above or below the nearest multiple of 100 km, so you can use a compass to draw 100 km circles around your location on a map. A more accurate method is to use six-digit Maidenhead locators and a computer program that can be obtained by emailing the address given above. (The program has been updated to version 3.)

Summer VHF-UHF Field Day 2008

John Martin VK3KWA, Contest Manager

The SUMMER VHF-UHF Field Day will be held over the weekend of January 12 and 13. The rules are very little changed from last year. Please note two rule changes that were first adopted for the Spring VHF-UHF Field Day in November 2007:

1. Stations may enter both the 24 hour and 8 hour sections, but only if the station actually operates for more than 8 hours.
2. Changing locations: It is not in the spirit of the contest for grid-hoppers to set up more than one station and move between them. The rules now make it clear that not only the operator but also the station must be moved when operating locations are changed.

Please note also the rule on the use of DX calling frequencies. Where possible, contest activity should focus on the recommended contest calling frequency.

Dates

Saturday and Sunday January 12 and 13, 2008.

Duration in all call areas other than VK6: 0100 UTC Saturday to 0100 UTC Sunday.

Duration VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Sections

A: Portable station, single operator, 24 hours.

B: Portable station, single operator, 8 hours.

C: Portable station, multiple operator, 24 hours.

D: Portable station, multiple operator, 8 hours.

E: Home station, 24 hours.

If a single operator station operates for more than 8 hours, the station may enter both Section A and Section B. If the winner of Section A has also entered Section B, his log will be excluded from Section B. The same applies to multiple operator stations entering Sections C and D.

General Rules

A station is portable only if all of its equipment is transported to a place which is not the normal location of any amateur station. Operation may be from any location. Stations may change location during the Field Day provided the station is dismantled and reassembled each time it moves. You may work stations within your own locator square. Repeater, satellite and crossband contacts are not permitted.

One callsign per station. If two operators set up a joint station with shared equipment, they may choose to enter Section A or B as separate stations under their own callsigns, or Section C or D under a single callsign. If they enter Section A or B, they may not claim contacts with each other. Stations with more than two operators must enter Section C or D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

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 if necessary.

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 location in a different 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 locator square in which your station operates, plus 10 points for each locator square worked, plus 1 point per contact. Multiply the total by the band multiplier as follows:

6 m	2 m	70 cm	23 cm	Higher
x 1	x 3	x 5	x 8	x 10

Then total the scores for all bands.

Logs

Logs should cover the entire operating period and include the following for each contact: UTC time, frequency, station worked, serial numbers and locator numbers exchanged, points claimed.

Cover Sheet

The cover sheet should contain the names and callsigns of all operators; postal address; station location and Maidenhead locator; the section(s) entered; the scoring table; and a signed declaration that the contest manager's decision will be accepted as final.

Please use the following format for your scoring table. In this example the operator has operated from one locator and worked four locators on each band:

Band	Locators Activated	+	Locators Worked	+	QSOs	x	Multi pplier	=	Band Total
	(10 points each)		(1 point each)						
6 m	10	+	40	+	40	x	1	=	90
2 m	10	+	40	+	30	x	3	=	240
70 cm	10	+	40	+	20	x	5	=	350
Overall Total								=	680

A sample cover sheet and scoring table is available on the WIA web site. Copies can also be obtained from the e-mail address given below.

Entries

Paper logs may be posted to the Manager, VHF-UHF Field Day, 3 Vernal Avenue, Mitcham, Vic 3132. Electronic logs can be e-mailed to vhf-contests@wia.org.au. The following log formats are acceptable: ASCII text, MS Office 2000 (or earlier) RTF, DOC, XLS or MDB.

Logs must be received by Monday, January 28, 2008. Early logs would be appreciated.

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Weak Signal

David Smith VK3HZ

On 11th November, a large high-pressure cell moved into the Bight causing excellent conditions across the south of the country.

On the morning of the 11th, Brian VK5BC and Phil VK5AKK both reported hearing the VK6RST 2 m and 70 cm beacons on Mt Barker near Albany. As per usual, the 70 cm beacon was a lot stronger than the 2 m one, due to the higher power and directional aerials used on 70 cm. Rob VK6JRC, who had just moved to the south coast of WA was watching the reports on the VK/ZL Logger with interest. He takes up the story:

"I only moved the Thursday before to my new QTH at Denmark - approx 50 km west of Albany in WA.

I had seen the Hepburn charts on Friday and commented to others over here that the conditions could be good on the Sunday.

The day was spent unpacking moving boxes and some work out in the garden. I checked my e-mails around lunchtime and saw that stations in Albany & Bunbury had received the WIA News Broadcast via the 146.900 MHz Mt Gambier repeater. VK Logger also had stations receiving the Mt Barker (WA) beacons, about 50 km north of me.

In the afternoon I had to make a trip to the hardware store to pick up some supplies. On the way out I noticed my portable 2-element Moxon antenna on top of a box in the carport. On the spur of the moment, I picked it up and put it in the car, deciding that I would detour via the beachfront car park on the way to the hardware store to see if there was any propagation about on 2 metres.

To my surprise, I could hear the Mt Gambier beacon (144.550) at 4x1 with the antenna on the ground, which came up to about 5x2 with the antenna at head height. I also spoke to a couple of locals on the Albany repeater who had been working into repeaters in VK5 and VK5s had been working into the Albany repeater.

In the true spirit of amateur radio, I put the trip to the hardware store

on the backburner and headed straight back home and found my IC-910 and power supply in the removalist box. I also found my 8-element 2 m Yagi and 11-element 70 cm Yagi in the carport and a 6-foot length of aluminium tubing to use as a mast. The only thing I could not find was my coax cable, but rummaged through a box and found several RG58 coax patch leads as well as several coax adaptors to make up a 3 or 4 metre cable!

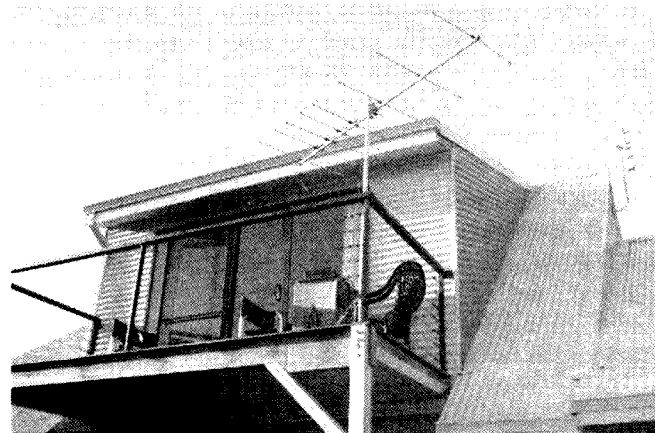
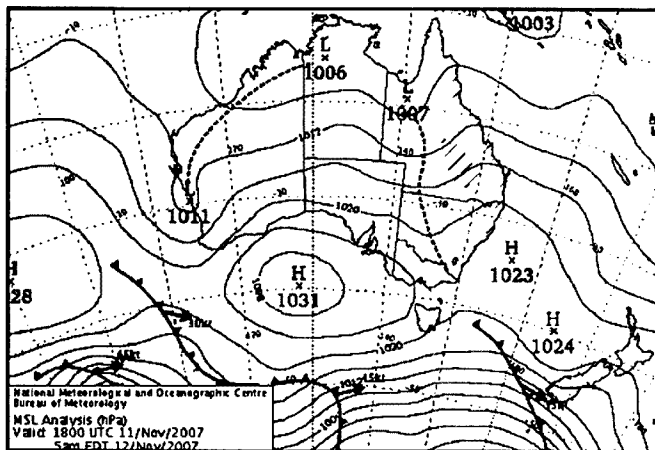
Fortunately, the house we have moved to is 2 storeys, with a balcony on the top floor and a not too bad take off to the east.

The 2 m Yagi was set up attached to the pipe and tied to the balcony rail. The 70 cm Yagi had to sit on the balcony rail, as I did not have another set of clamps and only a 1 m long patch lead. The IC-910 was setup on a cardboard removalist box with a deck chair on the balcony. It was definitely a very temporary (and portable setup).

The power was switched on and I tuned into VK5RSE on 144.550 (5x3) and 432.550 (4x1). I then put out a call on 144.100 MHz and made my first contact with VK5AKK. After that, I had a pileup to work and unfortunately I did not have a logbook handy to record all of the contacts.

Other stations contacted throughout the afternoon and evening in no particular order included:

VK5BC, VK5NY (5x9+ on 2 m) also worked on 70 cm, VK5DK, VK3AXH, VK3AAK, VK3HZ (Also worked on 70



cm 5x1 - 2500km on a handheld Yagi!), VK3II, VK3KAQ and VK3KSD.

There may have been others, so please accept my apologies if I have missed anyone, but my logbook keeping is shocking!

Many stations are keen to try and work me on 23 cm. I do have the 23 cm module in the IC-910 and a 60 watt VK3XPD amplifier, but still need to arrange an antenna and get everything operational.

I hope to have some antennas for 2 m & 70 cm at least up in the next couple of months. It will not be anything too large as I am living in a house supplied by my employer and I have to tread a little carefully with the landlord!"

So, it was a very warm welcome to the south, and VHF DX, for Rob. It's good to see some more stations active in southern VK6.

All this was happening on the evening of 11th November. While Rob was busy, others were also having fun. Bob VK6BE in Albany managed to work to VK3AAK, VK3II, VK5BC, VK5DK and VK5AKK.

Meanwhile, the eastern end of the duct appeared to be moving to the south. Adelaide stations were working into Tasmania with VK5BC working VK7LCW at 1100Z. However, barely an hour later, the Adelaide stations were barely above normal levels in Melbourne, while the VK3 to VK7 path was very good. Karl VK7HDX reported that, at 1310 Z, he heard the VK6RST 2 m beacon – a distance of 2677 km. However, despite much calling, no contact was made.

The following morning brought more good conditions. Peter VK5ZLX reported hearing the VK3RGI 2 m beacon in the Latrobe Valley, and the VK7RAE 2 m beacon in northern Tasmania. The VK6RST beacons were still strong into Melbourne and beyond. The duct at the VK6 end appeared to have extended further west, with the Perth repeaters being heard in VK5 and VK3. The Hepburn chart clearly shows the duct running almost directly from southern VK6 to southern VK3.

At 2045 Z, Wayne VK6JR in Yallingup on the western tip of southern WA worked into Adelaide to Phil VK5AKK (5x4) and Roger VK5NY (5x2). Roger's signal later got to 5x9. Don VK6HK in Perth reported hearing the VK5RSE Mt Gambier 2 m beacon at 5x3.

The duct then worked its way into VK3. At 2200 Z, VK6JR worked Trevor VK3VG in central Victoria (5x1). He also worked Andrew VK3KAQ in

the Dandenong Ranges to the east of Melbourne – a distance of 2764 km. Wayne was having power supply problems, so could only muster 10 watts. Hence, he only received a 3x1 from Andrew, but returned a 5x1.

Bob VK6BE had re-appeared. He worked VK3VG, VK3II, VK3AAK, VK5BC and VK5ZK. Wally VK6WG in Albany also popped up and worked Phil VK5AKK and Brian VK5BC on 2 m and 70 cm. An attempt with Phil on 23 cm was unsuccessful. Wally also worked Andrew VK3KAQ on 70 cm. Wally's signal on 70 cm was still well over S9 in Adelaide an hour later. At 0444 Z, Colin VK5DK reported working Wally on 70 cm with a 5x7 report. However, by that evening, the duct had moved on.

Spring VHF/UHF Field Day

The Spring VHF/UHF Field Day has just finished and it was pleasing to hear many stations out in the field. Ron VK4KDD reports:

"I was portable in Byron Bay (top of NSW) at a site with excellent take off to the north and south – and a view to kill for!

Had a slow start - missed the first 2 hours of the contest, and later had to move antennas because of interference from a commercial transmitter site. But when all the lessons were learned, it went smoothly and the station performed very well.

I managed 55 contacts (SSB only) on 2 m, 70 cm and 23 cm. All contacts were tropo - could not see much aircraft going on. Signals were there pretty much all the time.

On 23 cm, there was quite a bit of activity. I worked Steve VK2ZT (500

km) and about 4 other VK2 stations, into Toowoomba, and also VK4EME close to Gympie. The antenna is only a single 17-element Yagi, which sounds big, but is only 1.3 m long.

70 cm was doing better than expected, with mostly better signals than 2

m. This was not so strange because I had 6 dB more antenna gain, with the same 400 W as on 2 m.

Ended the contest after an 18-hour day - 4.5 hours in the car (380 km), 2 hours setting up site, 1.5 hour packing and 10 hours for the contest."

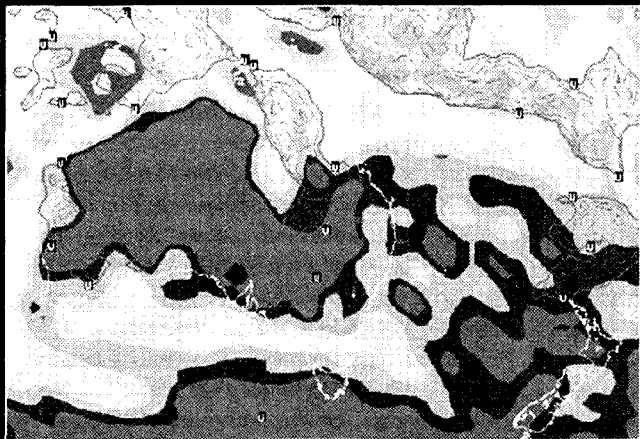
Ron also mentioned that, during the contest, Glenn VK4BG worked Norm VK3DUT – a distance of 1467 km. Glenn also heard several other southern stations – VK3ACC, VK2FZ and VK1BG – in what may have been a burst of Sporadic E.

One disappointing aspect of the contest was the operating procedures employed by some of the stations. The general trend seems to be the use of a contest calling frequency of 150 on each band. While this is fair enough, and the way the VHF/UHF bands operate during non-contest times, it can be seen as the lazy person's way of contesting – merely prop on the frequency and wait for someone else to call. And as for most calling frequencies, the concept can be easily ruined if people do not move off that frequency to continue their QSO. Many times, strong local stations would take up residence on 144.150 and have a long drawn-out series of contacts, blocking the frequency for others. This is particularly annoying for stations perched on distant hilltops, as they often cannot hear the call frequency hogs, and their weak calls go unheeded.

So, if you must use the "calling frequency" method, please QSY as soon as you establish contact with another station. It would be fair for other stations to give a "reminder" to those not following this practice. Also be aware that the bands do not finish at 200. Spread out to minimise interference to other locals – there is plenty of space. Only 6 m is limited to operation above 50.150. On all other bands, there is only a "recommendation" to stay above 150, but operation below 150 (except for the DX call frequency - 100) and above 200 is permitted.

Ultimately, we should all start using our VFOs to good effect. Find yourself a frequency – 5 kHz increments work too – and call CQ. If the majority start operating in this manner, then we should all get higher scores and those distant stations will get more business – providing you swing your beam in their direction, but that's another challenge.

Hepburn Tropo Index Valid 1800 UTC Sun Nov 11 Australia-NZ
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1296 Operations

Barry VK3BJM near Kyneton reports some success in his attempts to work into Canberra on 23 cm:

"I have completed the 2x RA18HI213G PA that Chas VK3PY has designed, and it is now fitted to my transverter and making about 60 W on 1296 MHz.

This Monday morning (at 2237 Z 7/10/07), I first worked Ian VK1BG then Chris VK2DO on 1296.150 MHz, at our first attempt. Surprising how good signals were; my initial RS exchange with Ian was 51 both ways, with amendments to 53. I sent Chris a 51 (with QSB - the aircraft was moving away by then) and received a 53. I was also heard by Rob

VK1ZQR, apparently, who called me but was not picked out by myself at the time (Rob is running a little less power than Ian or Chris).

All this on the first attempt, and a single aircraft pass, to boot! Looking forward to getting the pre-amp up to the masthead, and seeing how much better that makes things. Only running a single 39-element DL6WU Yagi at present; like to improve on that in the future."

Beacons

Tim VK2XTT – BMARC President - reports some good news about new beacon construction:

"The Blue Mountains Amateur Radio club is in the process of constructing

beacons for 2 m, 70 cm, 23 cm and 13 cm. The beacons will share a common GPS-locked frequency standard and broadcast 1 pps CW to stand out from all the RFI carriers.

The primary, GPS-locked, 10 MHz oscillator has been constructed and is awaiting tests. A prototype beacon controller has been constructed and is currently being tested. The 13 cm beacon is partially constructed - PA back to first tripler - and is awaiting tests. Parts for 2 and 70 have been acquired.

With a little luck we might have a beacon or two on air by Christmas."

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

Welcome to Paul VK4APN, who is operational on 2 metres Meteor Scatter with FSK441 from Cairns in North Queensland. To date, pings have been copied from Paul by Wayne VK4WS in Brisbane, John VK4JMC in Laidley and Steve VK2ZT in Newcastle (1880 km). While a QSO is still to be completed, this is a good start and it is great to have a station operational in Far-North Queensland on meteor scatter.

Welcome also to Peter VK3TPR in Melbourne who is operational on JT65a on 2 metres. Peter has a good signal into Hobart peaking -15 dB.

Rex VK7MO, Justin VK7TW and Ken VK7DY have been experimenting with light (474 THz) using JT65a with a 36 photo-diode light receiver that has produced a 14 dB improvement in performance over a single photo-diode. With this, Ken has copied Rex 5 days in a row via cloud bounce over a distance of 27 km with signals peaking -14 dB.

Joe Taylor K1JT has released a version of WSJT with experimental modes called JT2 and JT4. JT2 is a very narrow-band mode that uses two-tone frequency shift modulation to achieve sync and phase modulation to transfer information. Tests conducted between Rex VK7MO and Jim VK3II indicate that while JT2 does work on 2 metres, there are times when it fails with even good signal levels. Joe Taylor advises that the decoder is still very basic and improvements may be introduced.

JT4 uses 4-tone FSK and comes with versions JT4a to JT4g with different tone separations. The wider tone separations are designed to cope with libration frequency spreading with EME on the microwave bands and could also be useful for auroral scatter. Tests show that JT4a works very well on two metres but at this stage it does not include a Deep Search Decoder and its performance is

limited to around -24 dB.

The prime motivation for JT2 and the narrower versions of JT4 is that with bandwidths of less than 10 or 20 Hz they permit a number of stations to operate within the same SSB pass band and thus could be useful for contesting. The wider tone-spacing versions of JT4 should be useful for 10 GHz EME. At this stage, however, neither mode is competitive with JT65. If you are interested in testing out these new experimental modes, Joe has a basic description and a status report on these experimental modes at:

http://physics.princeton.edu/pulsar/K1JT/JT2_JT4.TXT

and the program can be downloaded at:

<http://physics.princeton.edu/pulsar/K1JT/WSJT598.EXE>

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland VK5BC

October has produced a few good sporadic E openings but no reported openings to JA etc.

Norm VK3DUT near Bairnsdale reports a good opening to VK4 on the 9th October working VK4s OE, BLK, ADM, ARN, WS, AHW & 2YDC/4 followed by ZL TV on the 10th October. Then on the 26th October Norm reported the VK5RBV beacon but no contacts and on the 30th October worked VK4ARS and VK5BC with more ZL TV on 2nd

November along with the FK8 beacon and VK4 TV unusually late in the evening (1210 UTC).

Andrew VK4KAY at Mackay reports that 6 m has been poor:

"I have been in a 6 m drought, believe it or not. I have been out in my ute numerous times to see if I can get some openings away from the QTH. My QTH is about 5 km inland from the coast, so I have been driving to the beach to see if things are any better. Lots more F2 below

6 m but no E or F2 on 6 m".

Kevin VK4BKP from the same area reports working VK4TWR, JOO & BLK on tropo on the 4th October. On the 7th October Kevin worked Brian VK5BC, on the 8th worked several VK3's and VK1DJA and then on the 9th worked VK2s ZQ, BX, BHO & Rob VK1ZQR. On the 25th October Kevin worked Keith VK5AKM and Rob VK3XQ.

Brian VK5BC reports good openings

Continued next page

Hamads classifieds **FREE**

FOR SALE NSW

•YAESU FT-1550 2 m. FM mobile, with manual, microphone, mobile mount, etc. 50 watt output. The whole case is diecast aluminium, ensuring very good heat sinking. Used only twice and in mint conditions \$300.00. YAESU FC-20. HF/50 MHz Automatic Antenna Tuner. Two independent antenna output sockets. Mint condition, used once. I has manual and cables. Suits FT-847 and FT-100. \$350.00. Mirel VK2BOD 02 4333 1823

•KENWOOD TS-870 transceiver. Excellent condition, fully operational, no modes, comes with hand mike and power cable. Price \$1700 plus postage. AUTEK RESEARCH VA1 antenna analyst \$230 plus postage. Tom, VK2OE, 3 Buller St Bonalbo NSW 2469 wojlech.tomczyk@education.nsw.gov.au (preferred contact)

•Free to a good home: AMPEX 1 inch VTR Model VR7003. Sn 5104088. Early 1970s. It is in working condition. Located in Wagga Wagga NSW. Current owner doesn't want to see it go to the tip. You need to pick up. Contact John VK2YW on 02 6926 5471 AH.

•YAESU FT-ONE HF Tx/Rx Ser 2C020157 \$150; FT-221R 2m Tx/Rx Ser 6J091699 \$100; FL-2100Z HF Lin Amp Ser 2F090254 \$100; FP-107E AC Power Supply \$50; LEADER LSW-250 TV Sweep Generator 2-200 MHz \$30; LSG11 Sig Gen 120 kHz - 130 MHz (350 MHz harm) \$15; LDM-815 DIP meter 1.5 - 250 MHz \$15; TRIO CS-1560 Dual Ch Oscilloscope Ser 240017 CS-1560 \$30; VT-108 FET VOM \$10; EMTRON EPS-30 DC Power Supply 13.8V 10A max \$40; Alex Radford VK2LB 02 9808 1031 alexford@ozemail.com.au

WANTED NSW

•ARC5 Receiver, 3-6MHz, BC-454-B complete, doesn't have to be working, or under chassis parts T1, L15, C16. Required for rebuild, refurbishment projects. Richard L21211 QTHR 02 4998 1354 or email arjay1@aapt.net.au

WANTED VIC

•For Wireless Set No 11 Project No 2: an outer case for the unit, a receive aerial coil, (L1A, L1A'), a two pin plug for the PSU, a set of valve shields (8), a keying relay and a nameplate. Any chassis remnants for parts. Clem Jarvis VK3CYD, PO Box 285 Newborough 3825.

FOR SALE QLD

•Silent Key estate: Alan Percival West VK4DWK. Best offer the entire collection: YAESU FT-1000MP elite 200 W with power supply, still under warranty, DIAMOND CP6 multi-band vertical antenna (3.5/7/14/21/29/50 MHz, 5 kg), headphones, YAESU SP8 speaker, with accessories Earth stake copper clad steel, and cables. Set is complete. Purchased June 2005 hardly been used. (Paid just under \$6000.00 just for transceiver, power supply, speakers, stake, & antenna, alone). YAESU FT-2800m VHF transceiver with 15V 25A reg power supply, plus antenna, and accessories. Set is complete brought 14/06/2005 hardly been used. Paid \$638.00 just for transceiver and power supply on its own. Solar mains regulator. MANSON SPS9 250 regulated power supply. SWAN350. REALISTIC AX-190 communications receiver. 3 x YAESU FT-101B & FV-101 transceivers

& power supplies (1 only good for spares). DICK SMITH 75mm oscilloscope cat. Q-1286. 2 OSKERBLOCK Power/SWR meters. 2 x 2 metre antennas. 2 D/loads meters. 16 boxes of ass. cable, joiners, meters, valves, etc. Elizabeth dizzy-lizzys-dragonfiles@aapt.net.au or on 0408 476 749, north side of Brisbane.

WANTED QLD

•Grid dip oscillator; any make or model must work. Address QTHR. Email vk4krdav@bigpond.com

FOR SALE SA

•HILLS tower 8 m section 250 mm triangular lattice construction well galvan. with swivel base and winch, suitable for tiltover, \$145. John VK5ARL QTHR 08 8395 9848

•VK5JST Antenna Analyser kits. (see AR article May 2006) Get your nearest and dearest a great Christmas present, or just treat yourself. Will keep you occupied over the holiday period. A world class unit at a fraction of the cost. For more details see www.scarc.org.au; contact SCARC PO Box 333 Morphett Vale SA 5162, or email: kits@scarc.org.au

WANTED SA

I am looking for an Icom UT-84 tone encoder. If you have one for sale, please contact me on mobile 0403-285-940 or via email vk5jaz@hotmail.com. Hank VK5JAZ

FOR SALE TAS

•Used coax conn: Andrew cable plug(m) L44J*3; bulkhead socket(f) UG496/U; bulkhead through conn.f/f,UG1019/U; right angle adaptor,m/f, pasternack PE9205. Offers, Bob VK7ZRF QTHR, 03 6376 3477.

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- QTHR means the address is correct in the current WIA Call Book.
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The Magic Band – 6 m DX - continued

and contacts as follows:-

- 4th October - Ray VK4BLK
- 7th October - Kevin VK4BKP, Andrew VK4KAY, Ray VK4BLK, Frank VK4FLR & Gary VK4ABW
- 9th October - Neville VK2YO, John VK2BHO & Colin VK2BCC
- 25th October - Kerry VK2BXT, Mike VK2XQ, John VK2BHO, Gary VK2DJ, Ted VK2ARA, Brian VK2AH, Mike VK2BZE & Gerry VK2APG/m (this was from Brian's portable QTH, Corny Point PF85mc and lasted several hours)
- 30th October - VK2s BZE, BXT, DJ, BHO, AH, Doug VK9ZLH (Lord Howe Is) and Norm VK3DUT.

Two stations of interest to look out for this coming summer season: Doug VK9ZLH on Lord Howe Island has a 4-element Yagi and has already worked Trevor VK3VG & Brian VK5BC on the 30th October.

The other station is Paul A35RK from Lifuka Island, OC-169 Grid Locator AH20te (part of the Tonga group of Islands). Paul has a 4-element Yagi and runs 100 W and is actively looking for VK/ZL contacts.

In last month's notes, I failed to mention the 52.100 MHz call channel. Standard licensees only have access to 52-54MHz and this is the call frequency

listed in the WIA band plan for this portion of the band. I would suggest we should all monitor/scan this frequency as well as those in the lower portion of the band. I will add that 52.050 MHz is often used as the call frequency as well, particularly from ZL.

By the time this magazine is available, we should be well in the swing of our summer sporadic E season and hopefully this develops into a season as good as last year in December/January.

Please send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

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- VK1** **VK1WIA:** Sunday 1100 local, on 7.128, 146.950 and 438.050 MHz.
Email newsletter, on request, via president@vk1.ampr.org
- VK2** **VK2WI:** Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.600, 147.000, 438.525 and 1273.500 MHz.
Plus regional relays on 5.425 MHz USB (morning). VK1WIA news is included in the morning.
- VK3** **VK1WIA:** Sunday 1030 and 2000 local, on 3.615, 7.085, 10.130, 146.700, 147.250 and 438.075 MHz.
- VK4** **VK1WIA:** Sunday 0900 local via HF and major VHF/UHF repeaters.
- VK5** **VK5WI:** Sunday 0900 local, on 1.843, 3.550, 7.140, 28.470, 53.100 AM, 146.900 (SE), 146.925 (CN), 147.000 and 439.975
- VK6** **VK6WIA:** Sunday 0930 local, on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120, 50.150, 146.700 and 438.525 MHz.
Country relays on 3.582 MHz and major repeaters.
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Also in 'Realaudio' format from the VK6WIA website.
- VK7** **VK7WIA:** Sunday 0900 local, on 1.840 AM and 3.570 MHz and on major repeaters.
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- VK8** Sunday 0900 local, on 3.555, 7.050, 10.130 and 146.900 MHz.

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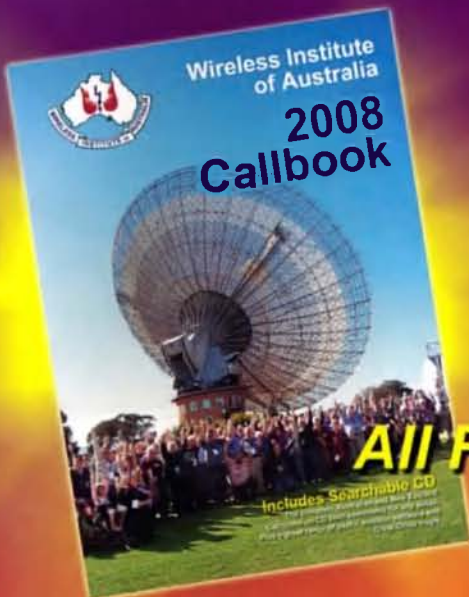
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