

THE MAGAZINE FOR AUSTRALIAN RADIO AMATEURS

Volume 76
Numbers 1 & 2

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reviewed

plus

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National ATV FM 'Grand Slam' attempt

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Editor's Note:

Due to an unprecedented demand for space in this issue of *Amateur Radio*, a number of articles, including the annual *Amateur Radio 2007 Index*, some *Over to you* letters and *Silent key* obituaries have been held over, and will be published in the March issue of *Amateur Radio*.

We apologise for any inconvenience this may have caused, especially to those who have been waiting to see their contributions published. These will be included in the magazine in the very near future.

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Our Cover this month

The IC-2820H dual band FM transceiver, fitted with the optional board for D-STAR operation and GPS reception. See the review on page 14.
Photo by Peter Freeman VK3KAI.

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 \$8.00 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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Member of the

International Amateur Radio Union

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Editorial Comment

Peter Freeman VK3KAI

Welcome to the 2008 year

I trust that your festive season has been productive and renewing. This is often one of the regular times at which we make the effort to create an occasion to spend time with our extended family. The New Year has begun. So too, it seems, has the next sunspot cycle, according to the expert solar observers. This means that propagation on the prime HF bands will soon begin to improve, delivering many of those DX stations with a little less stress.

It is interesting how the ionosphere behaves. Many aspects are reasonably well understood – we can see this from the various ionospheric prediction services that are readily available via the internet, allowing those interested to anticipate when they may be able to work that DXpedition to the new country or the rare IOTA. On the other hand, there are many aspects that still evade a simple explanation. Examples of the unpredictable aspects of ionospheric behaviour have been readily observed on the six and two metre amateur bands over the last couple of months: just read the reports of the Es events in this month's VHF/UHF column, documenting just some of the long distance contacts via Es on both 50 and 144 MHz. Among the more notable contacts must be the contact from VK5 to ZL via Es - well done Brian.

As we have moved into the typical summer weather patterns, we have also seen examples of enhanced tropospheric propagation. Several openings on 2 m and 70 cm have been observed from the south-west corner of Western Australia across to South Australia, Victoria and Tasmania, and from ZL to VK2 and VK4. At times, it was frustrating to look at the reports on the vk-logger of stations being heard and worked from Melbourne, only to hear nothing in the Latrobe Valley, some 160 km further east. Perseverance does sometimes pay – I did manage to work some new squares and even into VK6 on one occasion on two metres.

Due to work and family commitments, I missed participating in two of my favourite contests: the Spring and Summer VHF/UHF Field Day contests. I did not miss out entirely for the Summer

event, as I did manage a few contacts. I hope that all who did participate in the summer contest made the effort to submit logs!

VK4 news column

Due to the lack of support from the mainly southern AR clubs in the state, Ross VK4AQ has decided not to continue as coordinator of the VK4 News Column. Ross thanks the couple of southern contributors who did make the effort to send information.

On behalf of the Publications Committee, I thank Ross for his work over the past months.

Drafting skills

Do you have both an understanding of electronic schematics and drafting skills? Familiar with the use of a good quality CAD package? The Publications Committee has been largely relying on one person to assist in the preparation of technical drawings to the stage that they are suitable for publication. We can publish some schematics as supplied, when prepared in some software packages. Others require redrafting, either because the drawings are not of sufficient quality or because the drawings do not have sufficient resolution to allow reliable reproduction in print. We are looking for someone to assist our current draftsman, Bill Roper VK3BR, with the drafting tasks. Bill is willing to help anyone interested in developing the skills needed to ensure that we can continue to present quality drawings in our magazine.

Amateur licence conditions and other matters

As you will see in the WIA News column, it is highly likely that the ACMA will soon make announcements regarding several issues regarding amateur radio: the revised LCD, outsourcing of some aspects of administration of call signs and the introduction of a Class Licence for visiting amateurs. Watch out for news of the outcomes of these considerations via the WIA News broadcast and the WIA website. All going well, we expect to have the key details in the next edition of AR.

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The WIA, the advocate for the amateurs

This issue of Amateur Radio includes a paper by Keith Malcolm VK1ZKM, "WRC and Amateur Radio".

Keith describes the way an ITU World Radiocommunications Conference works, including the preparatory work and the other groups that influence the outcome. He also reports on the outcomes of the last WRC, WRC-07 so far as the amateur service is concerned.

Please read what Keith has written.

While Keith does stress the ongoing nature of the work of the ITU and does identify the various organisations and groups that participate in that work, we need to remember the extent of the ongoing commitment of amateur organisations and individual amateurs that this process requires.

A couple of weeks ago I was writing a piece for the IARU Region 3 Newsletter and as I did so I thought about the extent of the commitment by so many in so many places, I began to wonder whether many of us really appreciated it.

Did we really understand the importance of the WIA in all of this?

As I have so often said, it is this advocacy role that is for me the ultimate reason for the WIA, and the reason why all amateurs should be WIA members. Yet we, as directors of the WIA, often have reservations about relying too strongly on that advocacy role when we are promoting the WIA. We fear it is all too remote and esoteric to attract members, rather we feel that we need to point to more direct benefits, such as the QSL service and the like.

The amateur service promotes and protects its interests at three levels - at the global level through the International Amateur Radio Union (IARU), primarily to the ITU, at a regional level through the three IARU regional organisations, which in our Region is IARU Region 3, and at a national level through the national radio societies, which in Australia is the WIA.

As Keith points out, as one WRC ends work on the next WRC starts. At a national level, since WRC-03, the WIA has participated in the Australian preparatory work for the WRC just ended,

primarily through two highly qualified and experienced representatives, Keith Malcolm and David Wardlaw.

And Keith was a member of the Australian delegations to WRC-03 and WRC-07, nominated and paid for by the WIA.

The IARU, the federation of national radio societies, including the WIA, primarily funded by the ARRL, is the amateur peak organisation and, as Keith says, a sector member of the ITU.

The IARU has a continuing involvement in the ITU preparatory work for a WRC, starting right from the conclusion of the previous conference. A small number of highly qualified people participate in the Conference Preparatory Meeting and the various ITU-R Study Groups, representing the IARU. The IARU has already participated in the first CPM for WRC-11.

The IARU does not only participate in work relating to agenda items that raise an amateur matter, but many other agenda items that could have consequential effects on the amateur service.

But as Keith also points out, the regional or sub regional groupings of countries are of growing importance. In our Region, it is the Asia-Pacific Telecommunity (the "APT") that in recent years has become an important block of votes.

The IARU has three regional organisations covering the same areas as the ITU Regions. The IARU regional organisation is responsible for representing the amateur service the best way it can before its regional or sub-regional groups of countries.

The WIA is a member of the IARU Region 3 organisation, paying an annual subscription in respect of each WIA member.

In Region 3 the APT has already started to convene meetings for the next WRC in 2011.

IARU Region 3 has participated in the APT meetings that were preparatory for the WRC last year. In fact, there were two such meetings in 2007, both in Bangkok.

IARU Region 3 also participated in specialist regional meetings, such as the ABU Preparatory Seminar in Malaysia in June 2007.

The competition for spectrum is very real, and the amateur service cannot rely on governments and commercial organisations to protect its interest unless it advances its case and participates at a technical level in the process that results in the decisions of a WRC.

That involves a number of skilled people in a number of countries. It involves organisations such as the IARU and its Regional organisations. Those organisations in turn depend on national radio societies such as the WIA.

But, as Keith points out, at a WRC it is critical that amateur specialists are members of national delegations. That again depends on the national radio society.

The WIA was not the only national radio society to provide an amateur expert to its national delegation. At WRC-07, NZART was represented by Peter Lake, and JARL was represented by Jay Oka. Joong-Geun Rhee was a member of the Korean delegation. In other Regions a number of other societies also had a member on their national delegation as the amateur expert. These included the delegations for the Netherlands, Canada, Norway, the United Kingdom and the USA, as well as the African Telecommunications Union.

The WIA is a member of IARU Region 3, pays an annual subscription and participates in its triennial conferences.

Region 3 participates in the Administrative Council of the IARU, the peak policy body of the IARU.

The WIA participates at a national level in the Australian preparation for a WRC and is part of the Australian participation in a WRC.

So, every member's subscription to the WIA allows the WIA to play a vital role nationally, and contributes to the IARU regional organisation that represents us at a regional level, and a very small part of that regional subscription is passed on to the IARU, which represents us at a global level.

2008 AGM announced

The WIA Board has announced that Broken Hill will be the location of the next AGM and associated activities.

The AGM last year at Parkes, built around the "Dish", was a great success, and the Board's aim is to make this year even better.

The "feedback" from last year made it clear that an interesting location away from a capital city was attractive to many members. Broken Hill offers better facilities with a greater capacity for participation. Broken Hill also has a history associated with radio, as a Royal Flying Doctor base and home of the School of the Air.

Because of other activities in Broken Hill earlier in May, the AGM will be a couple of weeks later than recent years, so keep aside the weekend of 24/25 May 2008 for Broken Hill and the WIA AGM.

Full details of this exciting event will be published soon.

New WIA Secretary

Following the sudden death of Chris Jones VK2ZDD in August 2006 Ken Fuller VK4KF almost immediately took over the position that Chris held as secretary of the WIA, on a purely temporary basis.

In fact, Ken has made an enormous contribution to the WIA, providing assistance in many areas including the restructuring of the National Technical Advisory Committee and tracking all the tasks to be completed.

WIA President Michael Owen VK3KI on behalf of the Board thanked Ken for his contribution to the WIA and his willingness to complete so many tasks initially undertaken as very short term solutions to an immediate problem.

Ken will formally retire as WIA Secretary on 5 February 2008.

The Board has appointed Geoff Atkinson VK3YFA as the new secretary.

Geoff has a technical background coupled with conducting a successful importation business in recent years.

ACMA to consider amateur outsourcing

A number of amateurs drew the WIA's attention to the ACMA's request for Expressions of Interest in providing certain functions for the amateur service, including the management of amateur examinations, the issue of certificates of proficiency and certain administrative functions in relation to callsigns.

The ACMA request required all Expressions of Interest to be lodged by 8 November, as was done by the WIA, and the Indicative Timing published by the ACMA in its Request indicated that the successful party lodging an Expression of Interest, as well as the unsuccessful parties, would be advised in December.

A number of members have asked the WIA whether its lodgement of an Expression of Interest was successful.

The WIA has been advised that because of other pressures the Authority will now consider the Expressions of Interest at its meeting on 7 February 2008 (previously advised as 24 January 2008).

It is likely that the ACMA Board will also consider at the same time the Determination to amend the Amateur LCD to give effect to the remaining matters identified in the ACA's Outcomes to its inquiry in the regulation of the amateur service as well as the Class Licence for visiting amateurs, a further step toward participating in the CEPT scheme for visiting amateurs.

The WIA will advise amateurs immediately it hears the result of the Authority's decisions.

Clubs interested in becoming D-STAR Clubs

Recently Icom Australia and the WIA, concurrently with the official opening of the Olinda D-STAR repeater VK3RWN, 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 each of the other state capitals.

When announcing the gift, the WIA said that it 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.

Two Clubs have expressed interest in serving the Sydney area as the WIA D-STAR Club, and before making a decision, the WIA invites any other club also interested in becoming the WIA D-STAR club to serve either Sydney or Brisbane to contact the Secretary.

The WIA has identified certain criteria which it considers important for the selection process, and asks interested clubs to supply as much information as possible as specified on the release published on the WIA website.

New look WIA website

Unless something unforeseen has happened, by the time this issue of AR has been distributed the new, up-dated WIA website (<http://www.wia.org.au>) will be online.

WIA director Robert Broomhead VK3KRB has been the driving force behind a much more modern looking, much more user-friendly website, and one where it is much easier to find what you need.

Many, many other people have contributed to the new site, providing new material and up-dating old material.

The WIA Board acknowledges their contribution.

Each affiliated club has been assigned a page on the new website so the club can provide club details and promote club activities. Each club secretary will be contacted and given login details so that the club's page can be up-dated.

Parts of the site may still be under construction, and will be marked as such.

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WRC and amateur radio

Keith Malcolm VK1ZKM

This paper outlines the relationship between World Radiocommunications Conferences (WRCs) and the Amateur Radio services and tells why participation in WRCs is important.

The hobby of amateur radio is controlled by national regulations (in Australia, by regulations administered by the Australian Communications and Media Authority (ACMA)) that are generally derived from the Radio Regulations of the International Telecommunications Union (ITU). These Radio Regulations are wide-ranging and form the basis for the international agreement regarding the management and use of the radio frequency spectrum for communications purposes. This agreement between the administrations (countries) that are the formal Members of the ITU is formalised through the Final Acts of the WRCs that are held from time to time. As such, the Radio Regulations have the status of a government to government treaty.

The WRC

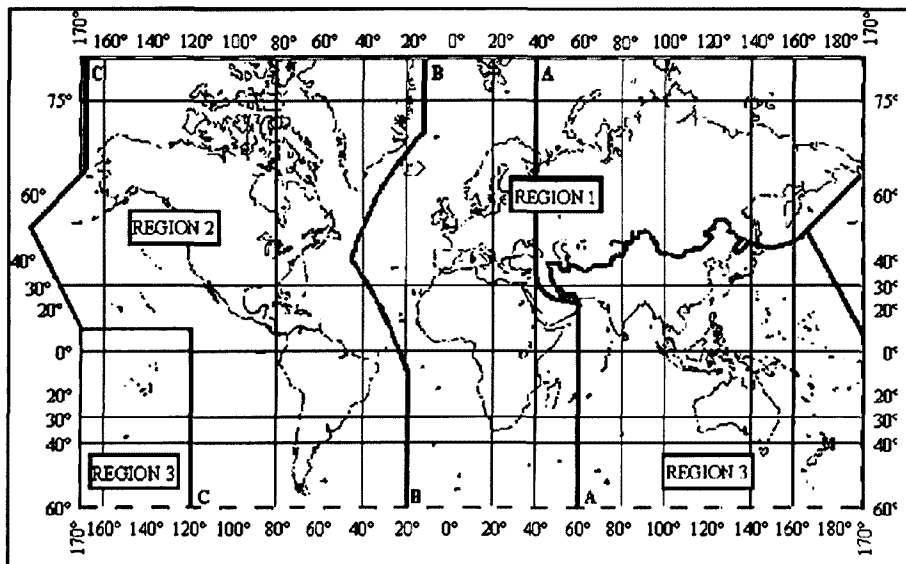
The WRC is an autonomous activity of the ITU (as befits its status as a treaty-level conference), but it is also associated with, and dependent on, the ongoing ITU Radiocommunications (ITU-R) study programme. The formal conclusion of each ITU-R study period is the Radiocommunication Assembly (RA) and it is convenient for the RA and WRC to be held in association with each other – with the RA occurring in the week preceding the WRC.

A WRC is a huge undertaking – WRC-07 was attended by more than 2800 delegates representing the interests of 164 of the 191 Member States that form the ITU. Holding a WRC is an expensive business for both the participants and for

the ITU. The ITU costs of running the WRC-07 are in excess of 5.7 million Swiss Francs. Of this amount, more than 3.3 million Swiss Francs is associated with document preparation (including translation of 11,800 pages of text into each of the 6 official languages and the printing of 9 million pages of documents) with the balance being the direct costs of running the Conference. The majority of delegates actually work with electronic versions of documents rather than paper copies, so this helps to keep the printing costs under some sort of control. For participants, the costs of attendance include travel and the need to live in Geneva for the four weeks of the Conference. The photographs gives some impression of the scale of a WRC.



A birds-eye view of a plenary meeting



ITU_Regions: World map showing ITU Regions (Courtesy ITU)

a right to speak in meetings. For this reason, it is important to have amateur operators as members of administration delegations to ensure that amateur interests are fully presented to the WRC. In this context, the IARU attends the WRC to provide information and assistance to delegates to present the amateur case and to coordinate positions on issues affecting the amateur service.

Preparation for and Participation in a WRC

Preparation for a WRC commences immediately following the conclusion of the preceding WRC, with the establishment of a Conference Preparatory Meeting (CPM). The task of the CPM includes the identification of issues needing to be considered so as to address the formal agenda items of the Conference. This includes the identification and assignment of tasks to ITU-R Study Groups. The CPM then gathers the results of the studies to compile its report to the WRC. This report forms the technical bases for the WRC and is effectively the "agreed facts" that apply to each agenda item.

The ITU is formed of the administrations that are the member states and all of its work is driven by contributions and proposals from the member states. Accordingly, any entity wishing to achieve an outcome at a WRC must make appropriate contributions to the work. This is most easily achieved through the meetings of ITU-R Study Groups, but can also be achieved by direct contributions to the CPM and to the WRC. A major difference is that only administrations can make contributions direct to a WRC, whereas all participants (including the IARU) can directly contribute to Study Group activities.

Australia, like many other countries, sets up preparatory arrangements that "mirror" the ITU-R activities. We have Australian Radiocommunications Study Groups (ARSGs) that match the ITU-R Study Group structure and we also have a WRC Preparatory Group to develop Australian positions and proposals to the WRC as well as compile the briefing document for participants attending the WRC. These processes are managed by the ACMA and the ACMA is currently working to establish the various groups needed for

A WRC has many agenda items to deal with (WRC-07 had 28 separate agenda items and sub-items), so has to adopt a "layered" approach to get the work done in the available time. The top layer, and final decision making element is the Plenary meeting of the Conference. The Plenary is the full meeting with all participants attending. The next level of the conference structure consists of a number of Committees which each deal with a broad range of related tasks. Committees then subdivide the task into Working Groups which, in turn, divide into Sub-Working Groups. Each Sub-Working Group (SWG) deals only with a single agenda item. The SWGs are the lowest formal layer in the structure. A SWG may form as many ad-hoc drafting groups as necessary to resolve its agenda item. A drafting group (DG) might deal with an issue as small as a single word or phrase in the event that an issue is particularly contentious.

The SWG and DG meetings are the places where the major part of the work is undertaken and the WRC outcomes are prepared. Unlike the higher-level meetings, which are scheduled such that only one or two meetings occur in parallel, there is little restriction on the timing of SWG and (especially) DG meetings and many SWG or DG meetings may occur at the same time. The Geneva Conference Centre provides about 20 meeting rooms and the ITU also has a number of separate meeting rooms of its own, so the potential for

large numbers of simultaneous working-level meetings is high. In addition, the low-level groups may hold only a small number of meetings before completing their task. This means that decisions to support or oppose proposed outcomes have to be made by delegates on the spot with little opportunity to consult stakeholders at home. For these reasons it is very valuable to have an expert participant at the conference as a part of the national delegation.

The ITU is an inter-governmental agency and has two groups of participants. One group is the administrations that are signatories to the ITU Constitution and Convention and the second group comprises commercial, scientific and international organisations that are associated with radiocommunications. The International Amateur Radio Union (IARU) is one of these second groups of participants that are known collectively as "sector members" to distinguish them from the administrations. The difference between the two groups is of significance only at a WRC – because the WRC is an inter-governmental treaty meeting, the sector members have only observer status and can submit only information papers to the WRC. Similarly, while sector members are entitled to attend meetings of the WRC, they can speak only if invited to do so by the meeting chair-person. By comparison, the delegations of administrations are entitled to submit proposals for the conference outcomes and also have

the coming study period and preparation for WRC-11. The WIA takes part in the Australian preparatory work and also contributes to the IARU preparatory work at the regional level. The WIA is an active participant in the work of the ARSG that handles amateur radio matters – resulting from the new ITU-R structure this will be ARSG-5, and also takes a lower level role in other ARSGs that have potential impact on the amateur service (including ARSG-1 dealing with spectrum management methods and techniques, and ARSG-6 which deals with broadcasting services).

The ITU divides the world into 3 regions and reference to the Radio Regulations will reveal that spectrum usage is quite often different in the three regions. A map showing the regions is attached. Australia is in Region 3 along with the other Asian and western-Pacific-rim countries. A recent development in ITU working has been the emergence and strengthening of regional or sub-regional groupings of countries. Such grouping is of particular benefit to smaller countries, but may also reflect other common interests such as multi-lateral cross-border frequency coordination needs. Australia is a member of the Asia-Pacific Telecommunity (APT) regional group and attempts to align Australian and regional views and contributions to study groups and WRCs. This sometimes means modifying preferred positions for the sake of reaching a regional agreement.

The ITU has 6 official languages (English, French, Spanish, Russian, Chinese and Arabic) and WRCs are conducted in all six languages. However, study groups and their working parties usually operate only in English. This situation puts countries such as Australia and New Zealand in a special, and sometimes difficult, position within our region. There is often an expectation that an English-speaking country will lead the regional position and there are times when this expectation can lead to problems if the preferred position is not the same as the common regional view. For this reason, it is also essential that the WIA is an active participant in the IARU preparatory work because this provides an alternative path to getting amateur service views into the ITU-R texts and, via the CPM Report, into the WRC documents.



Junior members of Australian delegation (centre of picture) in plenary meeting

A WRC achieves its outcomes through a consensus process which means that input contributions from administrations and regional groups are only starting points. In many cases, it is necessary for administrations and groups to adjust their positions and views as the conference work proceeds. One objective of the delegation brief document is to provide guidance to the delegates if the position on an agenda item needs to change during the conference. It is unlikely that the brief can cover all possible contingencies, so the best outcome can be achieved if a specialist representing the interests of each group (in our case the WIA and the amateur service) attends the WRC and is able to take part in the relevant working and drafting groups.

WRC-07 Outcomes

The outcomes from WRC-07 represent a mixed bag for the amateur service which, in some ways, reflects the effects of the working of a WRC.

The claim for an amateur service LF allocation was the sole subject of WRC Agenda Item 1.15 and represented the completion of an activity that commenced at WRC-03. Over the intervening four-year period, the IARU and national societies worked through the ITU-R study group process and through national and regional WRC preparatory activities to develop a technically sound basis for the proposal and to establish a broad swell of support for the

proposed allocation. This support was world-wide, and, although there were some differences in detail in the actual proposals submitted by administrations, at WRC-07 agreement to approve the new band was readily achieved.

There were two other amateur radio issues considered by WRC-07 – the further alignment of the 40-metre amateur band across the world and a claim for a 5 MHz band allocation. These objectives were included as a part of the proposals responding to WRC Agenda Item 1.13, but, unfortunately, were not achieved at WRC-07. Dave Sumner K1ZZ (IARU Secretary and ARRL CEO) has provided a succinct and concise commentary on these items in his editorial in January 2008 QST magazine. I can do no better than to quote Dave's words:

“The slight opportunity (and risk) was offered by another WRC-07 agenda item, a very complex one involving an unsatisfied requirement for additional HF broadcasting allocations between 4 and 10 MHz. The only amateur band in this frequency range is 7 MHz, and 7.0-7.2 MHz – having been dealt with at WRC-03 – was not up for discussion. However, 7.2-7.3 MHz was fair game, being an amateur allocation only in Region 2 and a broadcasting allocation elsewhere. During WRC-07 preparations the IARU successfully sought support for retention of the Region 2 allocation but was unable to identify any support for a further expansion of the amateur allocation in

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Regions 1 and 3. On the other hand, some administrations were receptive to an amateur allocation in the vicinity of 5 MHz. This was studied in ITU-R as a way of increasing the reliability of amateur emergency and disaster relief communications. Unfortunately, while the issue was kept alive by our European supporters until the very end of the 4-10 MHz discussions, support for an amateur allocation ultimately fell short – especially after the broadcasters were unable to achieve any improvement in their allocations.”

These unachieved objectives do not appear on either the provisional agenda for WRC-11 or the draft agenda for WRC-15 so the first task for the IARU and national societies is to work for the inclusion of these topics on the agenda of a future conference. David Wardlaw VK3ADW has noted that the proposal for an amateur LF allocation first emerged during the preparations for WARC-79, so there is some precedent for adopting a softly-softly, long-term approach to resolution of both the 5 MHz and 40-metre band issues.

Conclusion

So ended WRC-07 as far as the amateur service is concerned. However, completion of one conference merely signals the commencement of preparations for the next WRC. We can expect that the ACMA will commence the preparatory work early in 2008 and the WIA will be looking for interested members to join the preparatory work.

Keith Malcolm is a professional radio engineer and has represented the WIA with David Wardlaw VK3ADW at the preparatory meetings and then attended the WRC 07 as the amateur radio specialist on the Australian delegation nominated by the WIA and at the expense of the WIA. Keith previously attended WRC 03 on behalf of the WIA and in his former employment attended a number of WARC's and many ITU-R study group meetings over the period since 1984.

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Transverter controller

Dale Hughes VK1DSH.

This article describes a 28 MHz to 432 MHz transverter which uses an FT-7 HF transceiver, commercial (Hamtronics) transverter modules, a commercial (Mini-Kits) 432 MHz power amplifier and a home made control system. The emphasis is on the control system, as it can be used to control transverters using other hardware and systems that operate on different frequencies.

The advantage of using a transverter is that it can be tailored to a particular band, transmission mode or other operating preference. A well designed transverter can frequently out-perform commercial transceivers, and a single transceiver can be used to cover multiple bands that are well outside the range of the actual transceiver. Another advantage is that it may be considerably cheaper to build a transverter than to purchase a commercial transceiver for a particular band, especially if it is possible to use an older transceiver that can be obtained cheaply (for example an FT-7 or IC-202). Figure 1 shows the block diagram of the transverter, and most other designs would be similar.

The FT-7 transmits and receives signals in the 28 MHz band, between 28.000 MHz and 28.500 MHz. When the transverter is in the receive mode, signals at 432 MHz are mixed with a local oscillator running at 404.000 MHz, giving an output at 28 MHz which the FT-7 can receive. In the transmit mode, signals at 28 MHz from the FT-7 are mixed with the transverter 404.000 MHz local oscillator to produce a signal at 432 MHz which is then amplified and transmitted.

The control module does the following things:

1. Sequences the switching of relays between transmit and receive so that no damage can be done to any of the transverter modules.
2. Measures the VFO frequency of the FT-7 transceiver and converts the measured frequency to the 432 MHz transmit/receive frequency.
3. Inserts an 'over' signal in the audio stream to the FT-7 transceiver. This signal is either a 'K' in Morse code or a simple beep.
4. Can act as a Morse code 'keyer' or beacon.
5. Displays the voltage of the battery or power supply that is running the system.

It is important that the various relays and modules switch in the correct time relationship, for example, the transmit relay must be in position before the power amplifier puts out any power, and the transceiver must not transmit before the input relay has had time to switch from the receiver converter output to the transmit converter input. The design has four separate outputs that can be used to control various operations, and the time step between each output change can be easily controlled. The existing firmware sets the delay between each step in the sequence to 50 milliseconds. As already mentioned, the controller has four sequenced outputs and the transverter described uses only three outputs, the extra one can be used to switch a mast-head pre-amplifier if required. Table 1 describes the sequence of operation.

To make it easier to set the operating frequency (especially as the FT-7 has a fairly coarse analog dial), a frequency counter has been included. The value displayed is offset by the appropriate amount so that the displayed reading shows what the 432 MHz frequency actually is, that is, if the FT-7 frequency is set to 28.1 MHz, the FT-7 VFO is 5.4 MHz, but the controller shows a frequency of 432.1 MHz. The counter has a resolution of 500 Hz, but the

frequency is displayed to the nearest kilohertz.

It is common practice for weak signal operators on 2 m and above to use an 'over' signal when at the end of each over. This is especially true when conditions are marginal and each operator is unsure if the other has ceased transmitting. The 'K' at the end of each over can often be clearly heard when the voice signal is unintelligible. The controller inserts a 'K' in Morse code each time the 'press-to-talk' switch is released. For convenience, the controller also includes a Morse code keyer and beacon so that CW contacts can be easily had, or a beacon can be set up for distant stations to hear when signals propagation is occurring. The keyer accepts a 'paddle' type key and the keying speed is adjustable.

Figure 2 shows the transverter unit mounted on top of the FT-7 transceiver. Short cables at the back connect the various signals between the two units, except for the microphone connection which is at the front. The paddle for the CW keyer connects to the connector on the right hand side of the unit.

Indication of battery voltage is useful, especially when operating portable during field days. Figure 2 shows the front panel display of the unit.

Operator action	Function	Result	Time delay
Press mic' PTT	Switch S1 on	Relay RL1 switches from Rx to Tx	50 ms
	Switch S2 on	Relay RL2 switches from Rx to Tx	50 ms
	Switch S3 on	Not currently used	50 ms
	Switch S4 on	Activate FT-7 Press-to-talk input	50 ms
Talk		Transmit	
Release PTT	Send 'K'	Send 'K' in Morse code	
	Switch S4 off	Release FT-7 Press-to-talk input	50 ms
	Switch S3 off	Not currently used	50 ms
	Switch S2 off	Relay RL2 switches from Tx to Rx	50 ms
Listen	Switch S1 off	Relay RL1 switches from Tx to Rx	50 ms
		Receive	

Table 1: Transmit/receive sequence

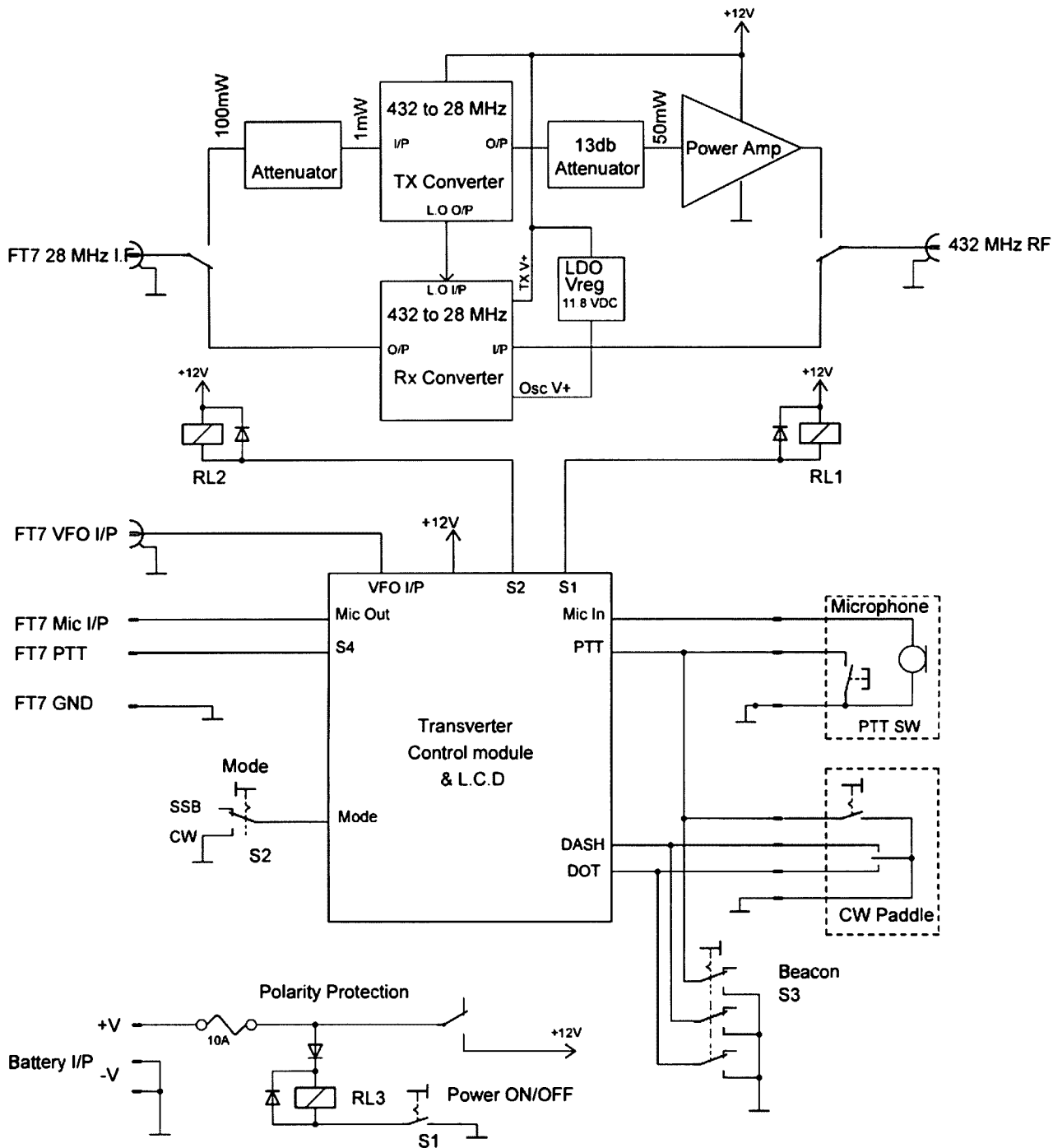


Figure 1: Block diagram of the transverter

Circuit Description

The control circuit uses a low cost Atmel AT90S8535 (or ATmega8535 with minor software changes) microcontroller to read the various input switches, perform the sequencing and output relay switching, frequency measurement, generation of tones for Morse characters and monitoring of battery voltage. The

circuit can be divided into two functional areas:

1. **Digital:** The input signals from the various switch inputs are handled by pull-up resistors and Schmidt triggers (U3) which generate logic levels for the micro-controller input ports. Output signals from the micro-controller (U5) ports to the control relays

are interfaced using a ULN2003 Darlington driver (U7). Frequency measurement is undertaken by an external 4 bit counter (U2B) and a 16-bit counter inside the micro-controller. The time-base for frequency measurement is derived from the 4.096 MHz crystal and a counter inside the micro-controller generates a 32 kHz pulse which

U4A and U4B divides by 128 to give a 250 Hz square wave at the output of U4A. The 250 Hz square wave gates the input signal so that the input frequency is counted for 2 ms every 4 ms. At the end of the count period, the external and internal counters are read and the value is converted to the 'on air' frequency. The crystal frequency was chosen so that convenient division ratios could be used in the various counters. Transistor Q1 converts the sine wave signal from the FT-7 VFO to a TTL level signal for the counter. (An RS-232 interface is also provided (U6) but it is not currently used.) The measured frequency, battery voltage and system status are displayed on a two line liquid crystal display. The display uses a four bit data interface and two control lines (enable and register select).

2. Analog: The analog section amplifies the signal from the microphone using a simple AC coupled amplifier (U9D) which is biased at half the supply voltage by U9A. When the 'K' signal, or Morse dots and dashes are required, the system firmware generates a sequence of sine waves from digital values output from the micro-controller ports PA0 through PA5 using a 6 bit 1R-2R digital to analog converter and amplifier U9B. A 6 bit converter uses 64 digital values to generate a sine wave from an internal look-up table. (1% tolerance resistors should be used for the 1R-2R network). The sine wave signal is filtered by a simple RC low-pass filter which consists of R28, R29 and C13. Analog switches (U10A and U10B) select whether voice or tones are sent to the output stage (U9C). The audio output signal is buffered by U9C and the level is then adjusted back to microphone (mV) level by resistors R41 and R42. The pull-up resistors on the outputs of U9B and U9D reduce the amplifier cross-over distortion by increasing the output stage bias current. Measurement of the system supply voltage is made using the internal 10-bit analog to digital converter and an external



Figure 2: The transverter unit mounted on top of the FT-7 transceiver.

voltage divider. The divider ratio can be trimmed to exactly 3:1 using R11. So that the measured voltage is accurate, a stable reference of 5.120 volts is generated by U8. The reference voltage can be adjusted to the correct value using R44. A 5 volt supply for the circuit is developed using a conventional 3 terminal regulator mounted on the control printed circuit board.

The system also includes polarity protection so that the unit cannot be damaged by incorrect connection to a battery or power supply. To achieve the best frequency stability, the local 404.000 MHz oscillator is powered by its own low drop-out voltage regulator. This ensures that the oscillator is always powered by a stable voltage source.

Construction

All of the modules are mounted in a metal case, with the receive converter and control module housed within their own die-cast boxes. The die-cast box in which the controller is mounted prevents any of the high speed digital signals causing any interference to other parts of the transverter. All signals into, and out of, the controller and receive converter are passed through either feed-through capacitors, or are carried in screened cables via coaxial connectors. The power amplifier is separately screened using an aluminium plate and is connected

via feed-through capacitors and coaxial cable. Due to the close proximity of all of the modules, extensive screening and good earthing is required, otherwise noise pickup and RF feedback problems are likely to occur. Small ferrite beads were placed over low-level audio lines to reduce any RF pickup.

Figure 4 shows the internal layout of the transverter showing the various modules. The transmit power amplifier is mounted behind the plate at the back of the enclosure. The transmit converter is the circuit board assembly that runs across the middle of the enclosure. The polarity protection relay is on the far left-hand side of the box, and the low drop-out voltage regulator is just visible on the far right-hand side of the enclosure adjacent to the receive converter.

Components

None of the controller components are difficult to source and the circuit could easily be built on 'Vero' board or similar if desired, however artwork for the control board can be supplied if required. For ease of use, the liquid crystal display was a large character type, with inbuilt back-lighting and it was obtained from Rockby Electronics (www.rockby.com.au). Source code for the controller can be supplied to interested constructors via the author.

There are many options for the transmit and receive converter modules.

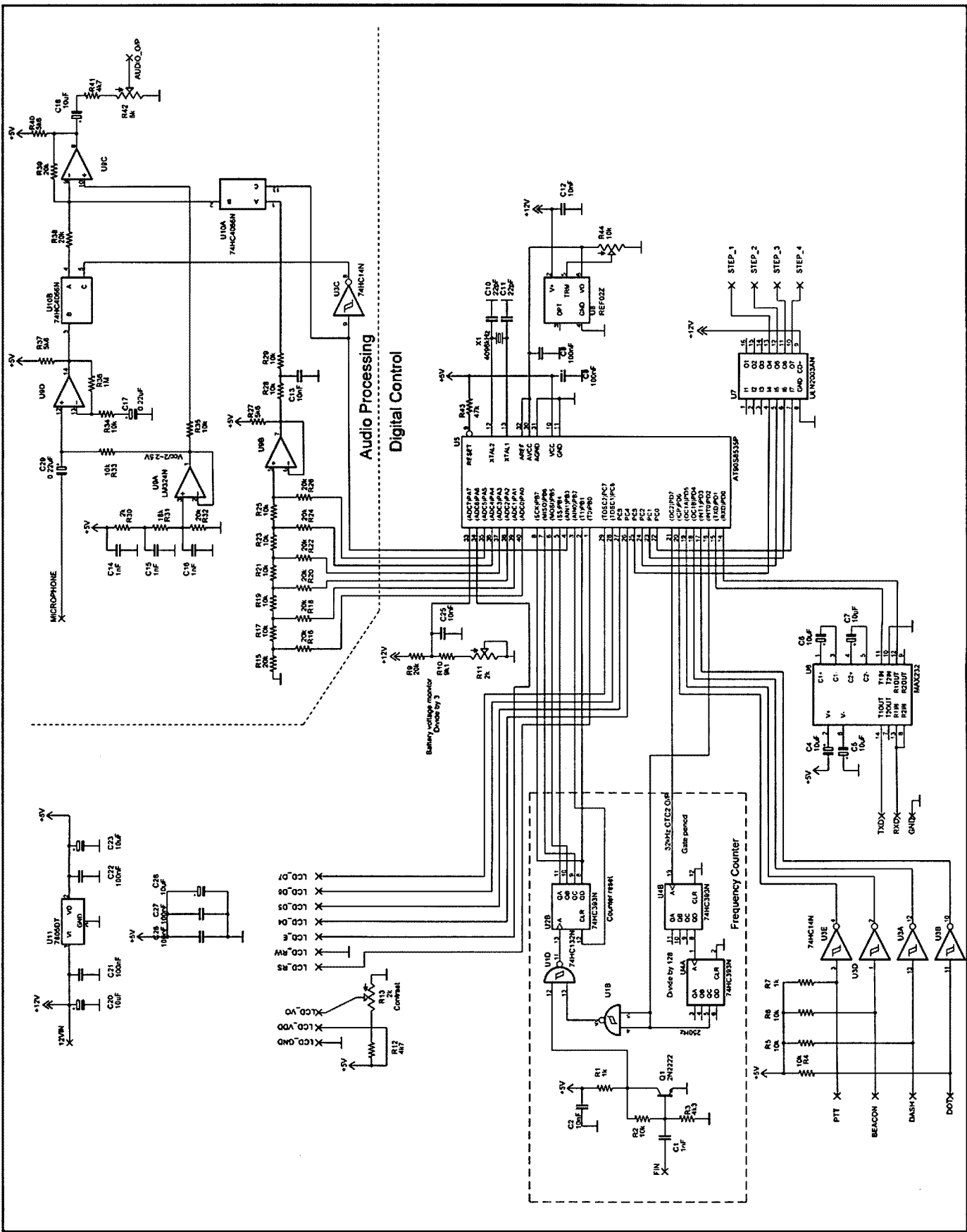


Figure 3: Schematic diagram of the controller module

The units used in this design were purchased at a field day and are quite an old design; however they work well in this application. There are many designs available on the web and in books such as the RSGB Radio Communications Handbook; these designs offer high performance and use modern components. A number of commercial designs can be purchased from vendors in this country (see www.minikits.com.au for various designs) as well as from overseas sources.

Conclusion

The design of a transverter controller has been presented; the design provides the user with a flexible sequencing system for controlling various parts of a transverter system. It also provides a number of operational conveniences which can be customised as required.

ar

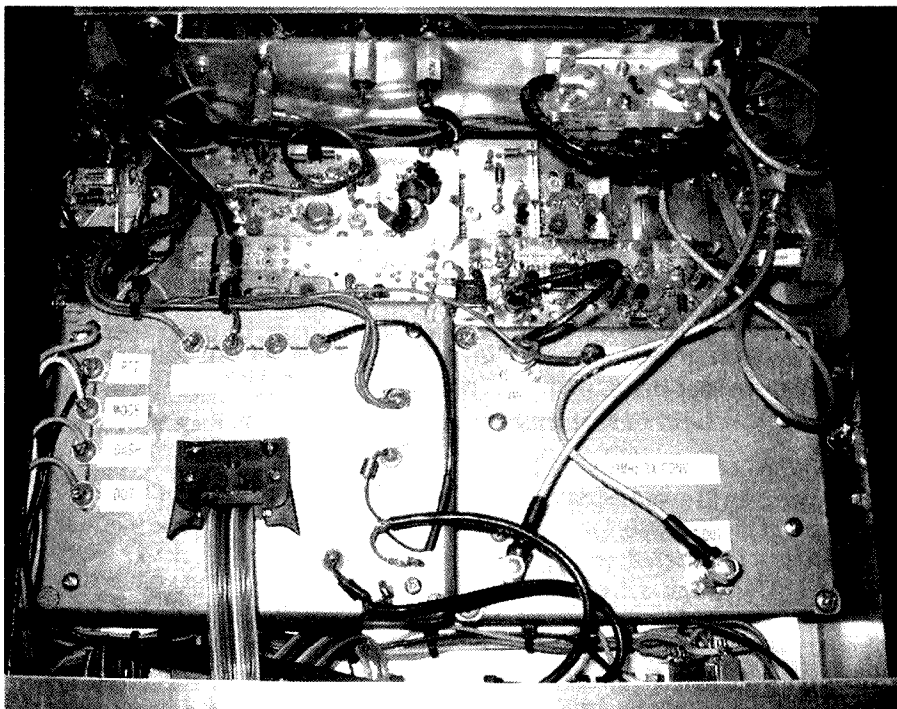


Figure 4: Internal layout of the transverter showing the various modules.

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- 11) Monitor function (input frequency)
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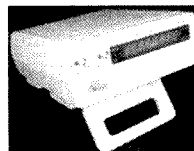


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Icom IC-2820H dual band FM transceiver

Peter Freeman VK3KAI

Are you in need of (or interested in) a dual band FM transceiver with D-STAR capability? Then you should seriously consider the IC-2820H. This feature packed transceiver gives you the option of adding D-STAR whilst having a host of features for normal VHF/UHF FM operations.

In line with recent reviews published in AR, this review will give the perspectives of one user of the IC-2820H transceiver. Any readers interested in a review which includes a full set of technical measurements should seek out a copy of the November 2007 issue of QST, published by the ARRL. The IC-2820H is reviewed on pages 74 – 77 of that issue.

The IC-2820H is the latest of a series of dual band transceivers from Icom, including the IC-2700H and the IC-2720H. Readers should note that I personally own and operate each of these earlier transceivers. As a result, this user did find it very easy to start using the review transceiver without referring to the Instruction Manual.

The review unit was supplied with the optional UT-123 installed. This module provides Digital/D-STAR DV (Digital Voice) mode and GPS capabilities. An IC-91AD handheld transceiver was also supplied, to enable some exploration of operations using the D-STAR DV mode. Whilst some comments may refer to the IC-91AD, this review will focus on the IC-2820H.

On unpacking, the two units were quickly assembled without the need to refer to the instruction manuals. The result was instant success – working radios in basic analogue FM mode. The author found it very simple to enter the required frequencies for local simplex and repeater operations into the appropriate VFO channels and to use both units. However, it should be noted that the transceiver is quite complex – it will probably require most new users to make several visits to the Instruction Manual to become familiar with all the operational features.



Photo 1: The Icom IC-2820H

IC-2820H features

The IC-2820H is a dual band FM transceiver covering the 2 metre and 70 centimetre amateur bands, with 50 W transmitter output on both bands. The transceiver control head has a large clear liquid crystal display which shows both receivers at the same time. The key features of the transceiver are:

- Diversity reception
- DV (Digital Voice) with GPS operation capabilities (with the optional UT-123 installed)
- V/V, U/U in addition to V/U simultaneous receive capability,
- Independent controls for both left and right receivers
- A separate controller for flexible installation

- A remote control microphone is included.

Comment will be made on some of these features later in this review.

Becoming familiar with the transceiver

Readers will have noted that, in some respects, the writer is not a good consumer – I opened the box and put the unit together without reference to the Instruction Manual. However, for any user that is less confident, the manual does have a very good “Quick reference guide” section near the front, which includes mounting and connection instructions and a quick guide to operation of the transceiver

– “Your first contact”. As you open the box, the first things that you see are the Instruction Manual and a small booklet - a Glossary of “Ham Radio Terms”. The glossary is available on the Internet (at http://w6trw.com/main/ham_radio_terms.pdf), courtesy of Icom America. The Glossary could be useful for many new amateurs.

The main body of the transceiver (the main unit) is very solidly constructed, with a die-cast chassis. There are several connection points and other features noticeable as the main unit is removed from the box. Located at the front are connections for the controller, the microphone, the GPS antenna, a data jack and a packet jack. Also clearly visible are two sets of indentations to accept the mounting magnets on the controller/display unit. At the rear of the main unit, the cooling fan is prominent, together with two SO239 antenna connectors. Only one of the antenna connectors can be used for transmitting – the other allows for the connection of a second antenna for diversity reception. Also at the rear are the DC power receptacle at the end of a short lead and two external speaker sockets.

Like many transceivers currently on the market, the IC-2820H has a controller/display head that can be mounted remote from the main transceiver body. One feature that is different from previous units in this series and from its competitors is that the control head attaches to a mounting plate or the transceiver body by the use of magnets. Even if you are planning to use the transceiver as a single unit, you are effectively remote mounting the control head. The transceiver is supplied with two separation cables: the 10 cm long OPC-1712 and the 3.4 m OPC-1663. Operation of the transceiver as a single unit requires the use of the shorter OPC-1712. When used as a single unit, there are cut-aways for the separation cable and microphone cable to exit (as required) from the front of the main unit.

If you have the UT-123 installed and wish to use the GPS capabilities, the controller will not sit on the front of the transceiver body if the GPS antenna cable is connected – you will need to remotely mount the controller. This characteristic is noted in the Instruction Manual.

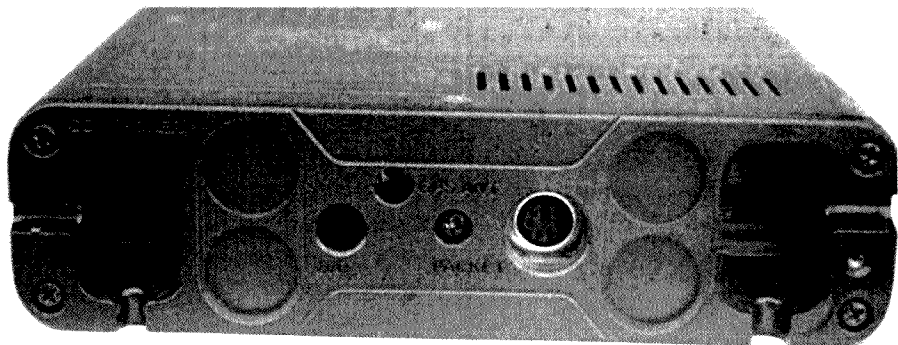


Photo 2: The view of the front of the main body of the transceiver, showing the various connectors and the two sets of magnet positions to mount the controller unit.

The controller has only a single connection, for the separation cable. As previously noted, the controller has two magnets on the rear to connect to any suitable surface or to the supplied remote controller bracket. The magnets are strong enough to hold the controller firmly, but not so firmly that it is difficult to remove easily. If mounting the controller on the main body, you can choose between two mounting positions, with the controller being up or down – the controller unit’s height is greater than that of the main unit. The use of magnetic mounting is probably the reason why there is no connection of the microphone to the control head – any pull of a microphone cord would be likely to detach the head from its mount. Given that the transceiver is most likely to be mounted with the control head remote to the main body, it is a little surprising that the microphone is not fitted with a longer cord, or that a microphone extension cable is not supplied as standard.

The controller display is a large 93 x 28 mm dot matrix LCD, giving a crisp clear display over wide viewing angles. The background colour can be varied from green to amber.

Specifications

The transceiver is primarily for FM and DV modes (with the UT-123 fitted), with AM available in receive only. Frequency coverage for the Australian model is listed in Table 1. The memory system provides 522 channels, including two call channels and 20 scan edge channels. Power supply required is 13.8 V DC +/- 15%, with current consumption of 1.2 amps on receive (muted) to 13 amps on transmit. The entire unit has a mass of approximately 1.7 kg, with overall dimensions of 150 x 58 x 220 (approx.)

mm (WxHxD) when configured as a single unit. Tuning steps can be set to 5, 6.25, 10, 12.5, 15, 20, 25, 30 or 50 kHz.

Table 1: Frequency coverage (MHz)

Transmit	Receive
144-148	(L): 116-549.995
430-440	(R): 118-173.995, 375-549.995, 810-999.990

Frequency coverage may be different on units not designed for the Australian market.

The receiver sensitivity in the amateur bands is specified as less than 0.18 uV in FM (12 dB SINAD) and less than 0.35 uV in DV (BER 1% with UT-123). Audio output at 13.8 V is more than 2.4

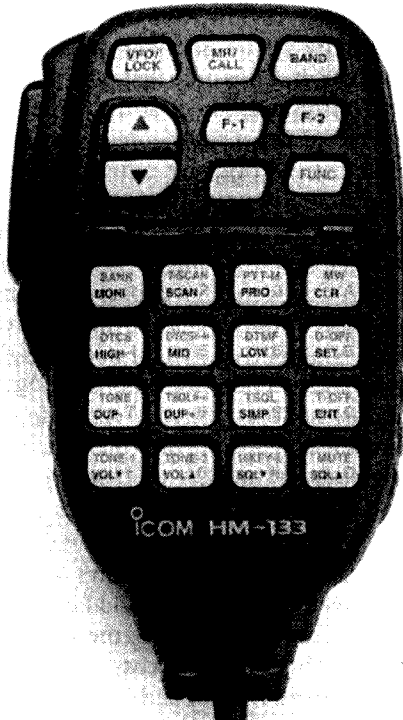


Photo 3: The supplied HM133 Remote Control Microphone – all controls at your fingertips.

W at 10% distortion with an 8 ohm load. The external speaker connections are 3.5 mm (1/8") mono (2 conductor) for an 8 ohm load.

Supplied accessories

The IC-2820H is supplied with the following Accessories:

- HM-133 Remote control hand microphone
- OPC-1132 DC power cable
- OPC-1712 Controller cable (10 cm)
- OPC-1663 Separation cable (3.4 m)
- Mounting bracket kit
- Microphone connector plate
- Remote controller bracket
- Microphone hanger
- Spare fuse

FM operation

In analogue FM mode, the transceiver performed extremely well. Having prior experience with Icom mobile dual band transceivers, it was very simple to get going and to use on-air, both at home and when mobile. In the short time available, I have not explored all the capabilities of this radio, but there are plenty of features to explore.

I have had some comments from others that the receiver does suffer from pager breakthrough. I did not experience any during my one long trip using the radio under review, but that trip was undertaken in the period just prior to New Year. It is possible that the level of pager traffic was lower at that time, as the issue of pager interference was one of interest. During my return journey through Melbourne from Geelong, I was listening with DV mode on the left channel and 70 cm FM on the right channel. One would not expect problems from pagers in DV mode, as the receiver would simply see the breakthrough signal and decode no valid data, and therefore not open the receiver mute.

I received good reports on transmit, using both FM and DV modes.

DV operation

One reason to consider purchasing this transceiver is the option of adding the DV voice mode by adding the UT-123 module. This allows access to the D-STAR system via 2 m and 70 cm.

However, being a new system, most will not have experienced this mode. Successful operation requires the appropriate equipment AND the correct

settings in the equipment. Chapter 5 of the Instruction Manual describes DV mode operation and settings in 24 A5 pages. Several different settings need to be made before a successful contact can be made, even in simplex mode. The descriptions in the manual are quite thorough, but successful implementation does require the user to read carefully and to remember several definitions. But this should not be surprising – most things that are new technology require us to learn the new procedures and definitions.

In addition to the Instruction Manual, several sources of information can be found on the Internet about the D-STAR system and its use. Of most use to Australians will be the Strictly Ham website (<http://www.strictlyham.com.au>) and the Australian National D-STAR Web Site (<http://www.dstar.org.au/>). Both sites have some quick guides on frequencies in use and a "D-STAR Get-On-The-Air radio configuration" guide. It is potentially confusing that the names used on different model radios may be slightly different for the same functional meaning. To most users, this should not be a problem if they are only using a single radio, for example the IC-2820H. This should not be much of an issue once the user becomes familiar with the D-STAR system, as the functional definitions are consistent. Once you are used to the system, it should be easy to remember the slightly different name of the function in a different radio – for example, the names are slightly different in the IC-91AD handheld.

Having initially set up the required definitions and other settings in both the IC-2820H and the IC-91AD handheld, I tried the DV mode across the room – success for simplex operation. The next challenge was to listen to the Mount Dandenong repeater VK3RWN. Reception was initially adequate. Some digital artefacts were observed, probably as a result of low signal strength, phase distortion due to multipathing, or both. This result occurred when the IC-2820H was connected to a small vertical antenna mounted just above the gutter of the house, which had been adequate for local communications.

The next morning I moved a small 4 element Yagi into vertical polarisation. Once pointing toward the repeater, better signals were heard. The path to

the repeater is a little over 100 km in length and crosses several ranges of hills. The predicted coverage map for the VK3RWN port C (146.9125 MHz) repeater indicated low signal strength was expected into the area around home. Having checked all the required settings and listened for a while, I successfully made contacts via the repeater. In FM mode, it is difficult for me to achieve a fully quietening signal into the co-located FM repeater. In DV mode, both transmitted and received signal reports were excellent. Whilst simply monitoring the repeater, stations were heard calling into Darwin and to and from overseas nodes via the Internet connected system. Again, received audio was generally excellent, with occasional "blips" when errors in the digital decoding occurred.

Several simplex DV contacts were made with Ralph VK3WRE, located approximately 20 km away with several obstructions in the path. Ralph was using the IC-91AD connected to an external gain vertical. Signals from Ralph were fine, even when running the handheld at low power.

In addition to DV voice communications, other operations such as low-speed data communication, brief message transmission, digital APRS (GPS-A), DV voice message storage and an emergency operating mode are possible. As a newcomer to the D-STAR system, I will not report on the system further at this time. As Editor, I would welcome an article for publication on the D-STAR system from a more experienced user.

The D-STAR system appears to be undergoing further development, as well as implementation into other capital cities (working systems are currently installed in Melbourne and Darwin). It will be interesting to explore the capabilities of the D-STAR system as time allows.

GPS functions

The UT-123 module includes a GPS receiver and antenna. The manual notes that the antenna is not waterproof, so it is not suitable for mounting outside the vehicle or house. I placed the antenna on the sill of the shack window. The receiver quickly acquired signals and located position. The GPS position data can be included in each DV transmission, using the GPS-A mode. The IC-2820H



Photo 4. Close up of the controller showing one of the GPS position display options at a location close to the author's home.

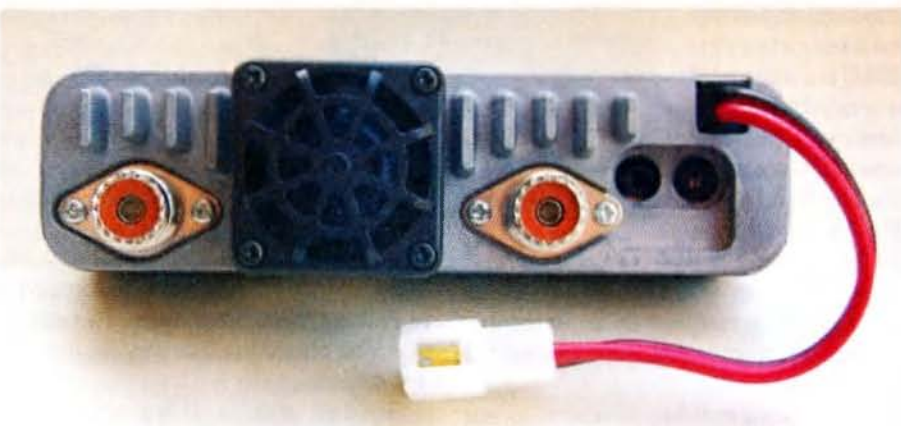


Photo 5: View of the rear of the main body of the transceiver. The antenna socket at the left is the main Tx/Rx antenna. The cooling fan is obvious. The centrally located antenna socket is for "Diversity Reception" (see text). The two small sockets near the DC lead at the right hand side are the two external speaker sockets.

can also be set to sound an alarm if another DV/GPS user's transmitted position is close to your location. The display can also show the position, distance and bearing to another station's location, regardless of the location of the other station, local or in a far off land. Whilst similar to some features of APRS systems, it is only the GPS location data that is transmitted. I understand that a free software application tool is available to port the GPS-A data from the D-STAR system to APRS software applications such as UI-View, allowing station position to be displayed on appropriate maps.

The transceiver can send the GPS data in NMEA format to the Data port, allowing its use by software packages on a connected computer or for use by an APRS packet TNC. In the latter case, the TNC could be connected back to the IC-2820H via the packet port and transmitted as APRS packets using FM mode.

Memories

The transceiver has a total of 522 memory channels, including 20 scan edge memory channels (10 pairs) and 2 call channels. The memory channels can be organised into a total of 26 memory banks. Each memory channel can be programmed with the operating frequency, duplex offset and direction, subaudible tone encoder or tone squelch, its tone frequency and skip information (for scanning operations).

Whilst all this information can be set using the controller head or the remote control hand microphone, it is much simpler to manage these functions using the optional CS-2820 software package and the OPC-1529R programming cable or OPC-478 cloning cable. It is relatively simple to install the software, connect the cable, switch on the transceiver and read the data already loaded. It is a good idea

continued next page

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Silent key

Gordon Sutherland VK2ZSG

It is with deep regret that I advise the passing of Gordon Sutherland VK2ZSG, of Newcastle, NSW. Gordon passed away on Sunday 14 October, 2007, and his funeral was held at Broadmeadow on Thursday 18 October, 2007. A large number of Newcastle radio amateurs attended.

Gordon was born on 27 September 1925, at Waratah, NSW, and he lived in Newcastle all his life. He served his apprenticeship at BHP during World War II. After the war he joined the PMG Department as a technician at Mayfield. He stayed with the PMG until his retirement.

Gordon had many hobbies, mainly amateur radio, steam trains, and a passion for music. He obtained his amateur licence in 1960 and was active mainly on two metres with a home brew AM transmitter, but he also operated on six metres and 70 cm. Gordon liked building electronic test equipment and kits.

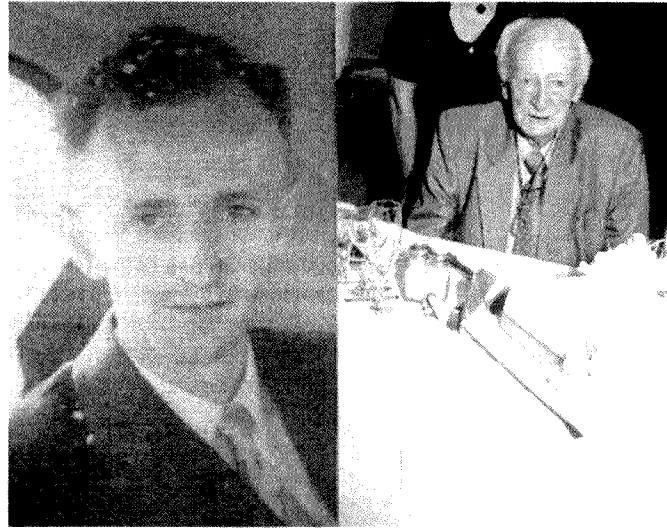
Gordon was a long time member of the Hunter Branch of the NSW Division of the WIA, later changed to the Hunter Radio Group. He held a number of committee positions with the group including Social Secretary, President for 30 odd years and Patron, and was honoured with Life Membership. Gordon also conducted the long running Monday

night Hunter Radio Group broadcast as well as the Tuesday night RTTY broadcast.

Another of Gordon's passions was producing and presenting a radio program on the local university radio station 2NUR. He had a very extensive library of 78s, LPs and CDs covering the Big Band era of the 1920s through to the 1950s.

Steam Trains was another passionate hobby which resulted in an extensive library of steam trains from around the world.

I met Gordon when he came to our house to install a telephone in the 1940s. Later when I became interested in amateur radio, I attended the Hunter Branch monthly meeting at Tighes Hill Technical College where Gordon was in attendance. We struck up a long time friendship. I went to Gordon's shack in the 1950s to hear the ABC experimental FM broadcast station located at the PMG building at Gore Hill in Sydney. Gordon



had built a VHF converter and receiver to pick up these broadcasts. The station was later closed to make way for regional TV stations.

Gordon was well known in the Newcastle area with the local racing fraternity, attending Newcastle race meetings and maintaining the public address system.

During Gordon's retirement years he kept up his interest in amateur radio and his other passions.

He is survived by his wife Ada and two sons, Grahame and Raymond.

Submitted by Rodney C. Prout VK2CN, Secretary/Treasurer, Hunter Radio Group.

Icom IC-2820H dual band FM transceiver

continued from previous page

to save this information, just in case you make a major blunder. Otherwise your option is to do a complete reset and start again. It is easy to set up the variety of memory channels and then banks in the software. You can also change a number of other transceiver settings within the software. Once you are happy, save the file and then transfer the data to the transceiver. Switch the transceiver off and then back on to activate the new configuration. Simple!

Other features

There are a number of other features in the transceiver. I will not attempt to

describe them all. Interested readers will find the promotional brochures and Instruction Manuals available for download on the Internet with some simple searching.

Some may find the band scope function of use – it allows you to watch conditions near the receiving frequency and visually assists in finding other stations. The transceiver also includes an automatic attenuator. The Receive Diversity function allows for a second antenna to be used on receive – the transceiver compares the signal strength from the two antennas and automatically selects the stronger signal.

Conclusion

The IC-2820H is a highly capable dual band FM transceiver. Once you add the UT-123 module, you gain DV mode capability and are therefore able to access the D-STAR system network, if in range of a D-STAR repeater. The transceiver is certainly a significant investment, with the current street pricing of \$795.00, and the UT-123 at \$319.00. After having the transceiver for almost three weeks, I am seriously considering making that investment.

Thanks to Icom Australia for the loan of the IC-2820H, the IC-91AD, and the required software and data communication cable.

ar

The ¼ wave squid pole antenna

Dallas Jones VK3DJ.

I love operating portable. Getting down by the beach, out in the bush or sitting in a paddock, hooking up an antenna and calling CQ is just so satisfying.

Often, as soon as you call CQ and announce you are 'portable', stations are keen to work you. Portable stations also seem to be popular when there is a bit of a dog pile or during contests. So long as you can make yourself heard you will be kept busy! Making yourself heard means lots of power or a good antenna. Now for most of us running a linear on the front seat of the family sedan is a little unlikely and hard on the battery, so the best option (as is always the case) is an efficient portable antenna.

I have spoken to a few people recently who have used a 'squid pole' as a support for an antenna in various ways. I thought I would try and get it to work as simply as possible. The squid pole antenna is the ideal project for Foundation licence holders or anyone who would like to get out and work some portable DX.

There is nothing new about the physics behind the squid pole antenna. It is just an interesting way to make a lightweight, portable, inexpensive antenna that gets out surprisingly well. Since getting my call five years ago, I have built a number of portable antennas, from mobile whips to wire dipoles and even a freestanding full-height aluminium 20 metre vertical. Each had exactly the same basic design requirements. They had to be:

- simple and easy to make.
- relatively low cost to build.
- quick and easy to erect.
- built from readily available components.

The squid pole antenna meets all of these basic design requirements. Plug it into your rig and operate within its parameters and you get good results. I have built mine to operate on 80 m, 40 m, 20 m and 15 m. Those of an experimental disposition could readily modify this antenna for other HF bands. I am currently working on 160 m but more on that another time.

As its name suggests, this antenna is based on a 'squid pole'. This is an

8.4 metre long, telescopic, fibreglass fishing pole of the type which is readily available from good fishing or sports stores for about \$40. The squid pole collapses into itself to a length of about 1 metre, making it extremely portable. There are slightly shorter poles available (7.5 metres), a bit cheaper. These are OK too, just leave the top wire the same length and shorten the bottom wire to suit the smaller pole.

15 and 20 metres

The 15 and 20 metre band antennas are simple ¼ wave verticals operated either against the vehicle body as a ground or an elevated ground plane.

For 15 metres, cut a length of stranded hook-up wire 3.280 metres long and suspend it from the top of the squid pole. Extend the pole only as much as needed. The centre conductor of the coax is connected to the wire, with the braid going to a good earth on your car via a short connection. I made a connector bracket to connect my hook up wire and my earth wire to. I can then connect my coax to it and run this to the rig. Alternatively you could extend the pole to its full height and use another three or four wires of the same length as the vertical radiator as an elevated ground plane.

For 20 metres, it is exactly the same as the 15 m version, only cut the wire to 4.830 metres and extend the pole accordingly. Use either the car for the earth or an elevated ground plane with each wire also 4.830 metres long.

For either band, once the antenna is constructed, check the SWR and trim back the radiator length until the minimum occurs at the band centre. The bandwidth will be sufficient to cover the entire band without adjustment.

40 and 80 metres

Full-sized ¼ wave verticals for these bands would be impractical for portable

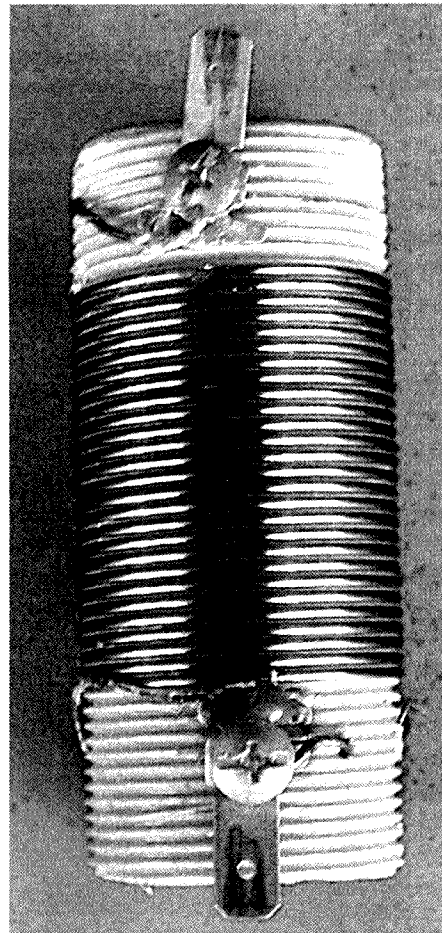


Photo 1: The 40 metre loading coil.

work, so loading coils are employed to resonate the antenna at the desired frequency. The loading coils are placed at about ¾ of the distance up the pole which helps keep the antenna's efficiency reasonably high compared to base loading.

For 40 metres, the first thing to do is wind the loading coil. The coil inductance needs to be approximately 22 µH. I wound mine using 28 turns of 1.0 mm enamelled copper wire on a threaded piece of 32 mm diameter electrical conduit approximately 65 mm long. See Photo 1. I made a couple of plastic washers and fitted them into the conduit so as the centre of the coil is located 6.6

continued on page 22

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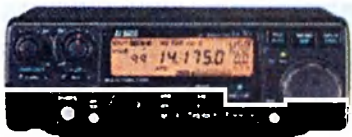


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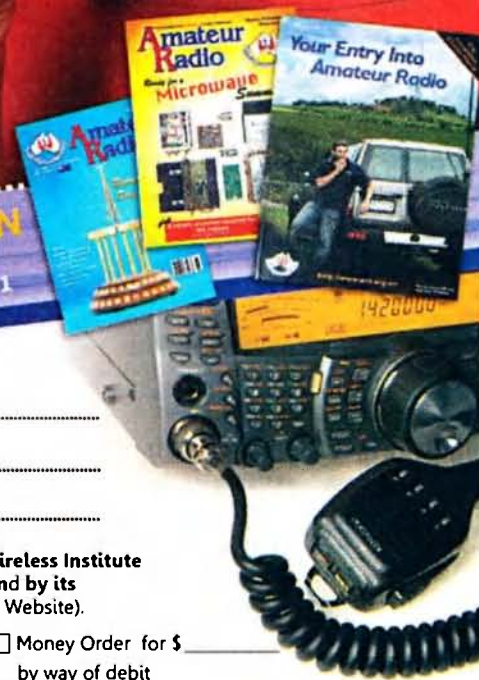
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m from the bottom of the squid pole. The wire below the coil is 6.17 m long and is loosely wound around the pole to keep it from flapping about. Above the coil is a wire about 2.17 m long, which provides sufficient capacitance to resonate the antenna at the desired frequency. The length of this wire is trimmed back until resonance is achieved as indicated by the SWR minimum. When adjusting the antenna resonance for each of the bands, make sure this is done out in the clear, away from trees and buildings. Connections are made using mating spade lugs on the loading coil terminals and the wire ends. You can use banana sockets and plugs if you choose.

As with the higher bands, the car body provided the earth connection. Wire radials become unwieldy for a portable antenna on 40 m and lower bands.

The feed point resistance measured 37 Ω at resonance. This comprises the antenna's radiation resistance, loading coil loss and earth resistance loss. Of these, the earth resistance will be the largest and will vary depending on the conductivity of the soil beneath the vehicle as well as vehicle size. A low feed point resistance indicates lower earth losses and a more efficient antenna. An antenna coupler or broadband transformer can be used to bring the feed point to 50 Ω . The antenna's bandwidth is about +/- 60 kHz at the 1.5 SWR points.

For 80 metres, as with 40 metres, the antenna is loaded with a coil to achieve

resonance. The loading coil position is the same but of course more inductance, about 77 μ H, is required. I wound mine using 49 turns of 1.0 mm enamelled copper wire, close wound on a piece of 50 mm electrical conduit, 70 mm long. See photo 2. I recommend winding a couple of extra turns (originally I started with 52 turns) and removing one at a time as required to bring the antenna close to the desired resonant frequency. Removing turns raises the resonant frequency. Like the 40 m coil, I made a couple of plastic discs and fitted them into the conduit to hold the coil in the correct spot on the squid pole.

On 80 m, this antenna's bandwidth is relatively narrow at only +/- 15 kHz at the 1:1.5 SWR points. Because I wanted to cover the entire band, including the DX window, I chose to tune my antenna to 3.8 MHz and added a small tapped base-loading coil to bring the resonant frequency down in overlapping increments (see below).

The same bottom wire as 40 m is used on 80 m. I used a similar length top wire, which I then trimmed to resonate the antenna. The feed point resistance measured 30 Ω at resonance when my vehicle was parked over very conductive ground. As with 40 m, an antenna

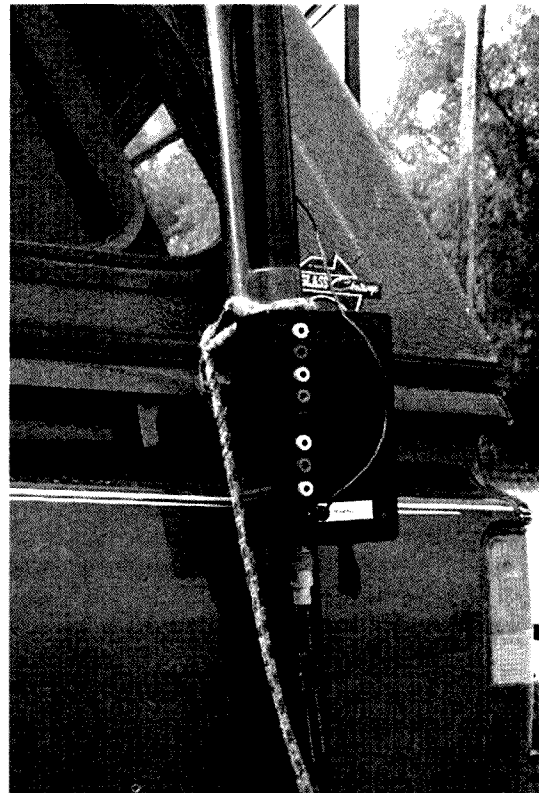


Photo 3: Tapped coil box for 80 metres.

coupler or matching transformer would bring this to 50 Ω .

An important consideration for both the 40 and 80 metre antenna set-ups is the wind loading on the squid pole. The pole will take a fair amount of strain but I found in strong wind the antenna became more horizontal than vertical! The larger and heavier the coil and the closer to the top, the more it will be blown around.

Silent key

Rob Apathy VK1KRA

After a battle with cancer, Rob Apathy VK1KRA, past President and Federal Councillor for the ACT Division of the WIA, died on 7th August 2007. He was aged 72.

He was first licensed as a novice soon after it became possible in the late 70s. He was a keen HF operator and extended his interest to the VHF bands as soon as he could. He also enjoyed operating in the field and was an enthusiastic member of many field events run by the Canberra group, on HF and VHF bands. He led the Canberra WICEN group in the 80s. As Federal Councillor for VK1, he was a delegate to several

WIA Federal Conventions on behalf of the ACT Division and participated with enthusiasm and energy.

While he was qualified in Psychology, Rob's professional career spanned from psychology and remedial therapies to computer systems development among others. He was also a member of the Army Reserve.

His hobby interests included amateur radio, astronomy and radio astronomy but he had an enquiring mind and curiosity about a wide range of subjects. He was the coordinator of a successful moon bounce operation at the University of Canberra in 1995, celebrating the 100

year anniversary of Marconi's first radio transmission and reception.

He also coordinated a number of Amateur Radio Astronomy projects involving both the VK1 WIA division and the Canberra Amateur Astronomy community. In 1978 he was the team manager for Ken Warby's successful water speed record on Blowering Dam (see www.kenwarby.com) and played a major part in the development of the CREST emergency CB radio monitoring service.

Our sympathy is extended to Rob's family.

Submitted by Andrew Davis, VK1DA

Guying the antenna with polypropylene string should be considered if this is a problem.

There are numerous variations that you can do with this basic design. Running elevated ground radials above the vehicle will reduce losses attributed to poor coupling of the vehicle to ground. Of course, anything extra you add to the antenna will complicate setting up and maybe the portability of the antenna. At the moment, I can set up the 80 m antenna and be on air in five minutes, so adding a few ground radials may improve things but you will need more space and more time. Experiment with it and decide what is best for you.

Tapped coil box for 80 m

This consists of a small coil inside a plastic 'jiffy box'. See photo 3. The required inductance of about 12 μ H is achieved with 25 turns of 0.5 mm enamelled copper wire wound on a threaded 32 mm former. The coil is tapped at 8 points, which are brought out to 4 mm banana plug sockets mounted on the wall of the box. The taps are at the 12th, 14th, 16th, 18th, 20th, 22nd, and 24th turns.

As mentioned above, for 80 m the antenna is resonant at 3.8 MHz. Inserting the base loading coil with the tap set to the first position brings the resonance down to about 3.7 MHz. Each further tap drops the resonance in overlapping increments of about 30 kHz, allowing



Photo 4: Operating 40 metres near Ouyen.

coverage of the entire 80 m band.

I have done some testing around Victoria and without exception this antenna arrangement has proven to return very good signal reports on all bands. A friend of mine, Gavin VK3VTX, is touring Australia and we built one of these for him to take on his trip. So far, reports are encouraging with S8 and better being common.

Photo 4 shows me operating on 40 m on a farm near Ouyen. Reports on the day were 5/9 to VK2, VK3 and VK5, despite the obviously poor ground conductivity in this region. Photo 5 shows my complete portable HF kit.

Many thanks must go to my friends at the Geelong Amateur Radio Club, who have put up with my relentless talk about the 'squid pole' antenna. Special thanks go to Chas VK3PY, who started me off on the squid pole journey mid way through last year and has since been a regular sounding post.

If you decide to build one, good luck with it, it is not difficult and it is very rewarding.

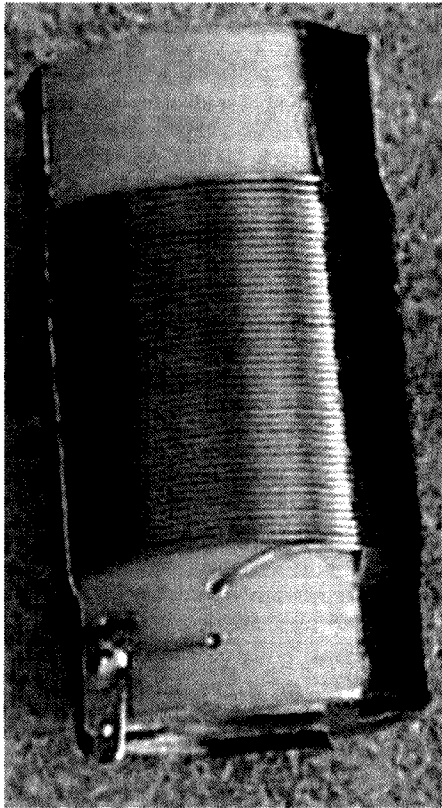


Photo 2: The 80 metre loading coil.

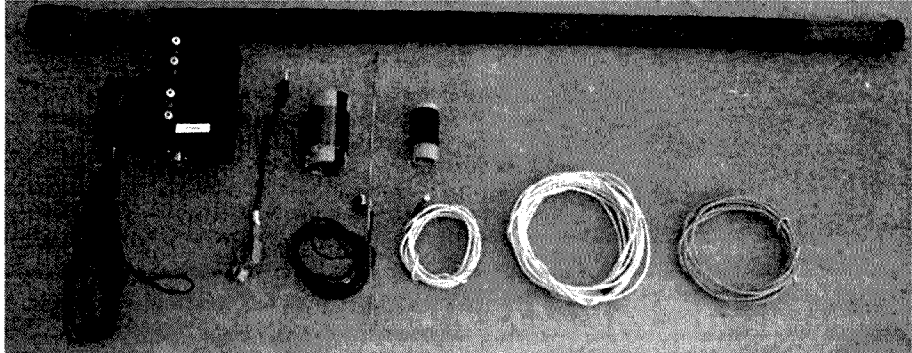


Photo 5: The complete portable HF kit.

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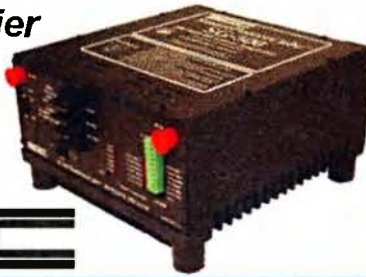
Amateurs (and others with material to contribute) are invited to submit titles and outlines for topics to be presented at **GippsTech2008**. Presentation slots can be brief (5 – 10 minutes) through to one hour. Anything longer – you will need to justify!!

Presentations can be formal or informal, or display. We use a lecture theatre for the formal (and semi-formal) presentations. Displays are open during coffee/tea breaks and after lunch. Potential presenters are welcome to contact the Chair of the Organising Committee, Peter VK3KAI (vk3kai@wia.org.au), 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.vk3bez.org/>

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From one of the world's leading switching power supply manufacturers comes this charger, one of more than 2000 various pieces of Mean Well equipment that facilitate power world-wide to the medical, communications, military and automation sectors. In the TTS philosophy of reliable quality for less, we offer this state of the art battery charger. 14.4 V 24.3 A. 3 stage charging, simple switch between 90-132VAC and 180-264VAC, remote on/off, fan cooled, many protections.



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Spotlight on SWLing

Robin Harwood VK7RH

Worth celebrating...

December turned out to be a very interesting month. Several historic radio anniversaries fall during this month, including the first public demonstration of wireless telegraphy, by Sr. Guglielmo Marconi on 11th December 1896 in London. Then on December 12th 1901, Marconi and his team transmitted across the Atlantic Ocean, from Poldhu, Cornwall to St. Johns, Newfoundland. The receiving equipment was crude by today's standards but it did happen and as they say the rest is history.

Another anniversary was celebrated on 19th December. The BBC World Service commenced on that date in 1932 and the publicity machine certainly reminded their worldwide audience of that. However, shortwave no longer features prominently in their output. They prefer to stream their audio either by podcast or via online streaming. As well, the BBC World Service is available over 500 stations on FM. For example, the BBC commenced broadcasting in St. Petersburg and Moscow, through a partnership with a local broadcaster. However it came unstuck after the coverage of domestic events upset the Russian authorities. Then inexplicably, the BBC decided to reduce or curtail Russian language transmissions in October because they felt people could access the Beeb via the Internet. There is another irony: The Russians and their CIS partners are only too eager to relay BBC programs in other languages via shortwave, provided they are not for Russia or the CIS.

Radio St. Helena came and went and, again, we had no propagation. Listeners in Europe and North America were able to hear the SSB signal on 11092.5. Unfortunately there was nothing here. But I will let you into a big secret. I did hear it! OK, I confess, I cheated by using an online receiver in Cornwall. Yes they are back, but in a private capacity by invitation only. Signals from RSH were there but not outstanding. The modulation was up and down and audio from incoming telephone calls sounded better than from the studio mike. The

music was also clear. Only regret I have is not being able to hear it direct and claiming a new country.

Malcolm VK5BA wrote to me about receiving DRM here in Australia, after recently purchasing a DRM demodulator for his receiver. He naturally wanted times and frequencies audible here in Australia. John VK4BJ recommends the following web link for information on the latest availability of DRM. It is <http://home.arcor.de/carsten.knuetter/drm.htm> Also you could try www.drmx.org Radio New Zealand International does provide consistent DRM signals into Australia. You can check out their status at www.rnzi.com Radio Australia has also been experimenting with DRM from Brandon QLD on 9660 in our local evenings but VK4BJ has been unable to resolve any audio.

Trevor VK4ZTV wrote to me that he was hearing an unidentified station on 15665 from 0300 to 0700. It is broadcasting continuous music of Asian variety with no identifications. It turned out to be the infamous "firedrake jammer". Yes, Trevor, it is based somewhere in China, probably from multiple sites and it is easily found, usually against an external sender broadcasting to China.

I also noted that the Sydney-Hobart yacht race communications net on 6516 experienced severe interference in the evening hours from a broadcaster on 6518. It came from a station in North Korea, trying to avoid South Korean jammers. Both sides routinely jam clandestine broadcasts from one to the other. Listen to how effectively the North jams South Korea on 6348 and the South jams the North on 4450 and 4120. Also there was severe QRM on 6516 from the Chinese wide frequency radar station on Hainan Island. The latter also wipes out the lower end of our 40 metre band at night.

Well that is all for now. Hopefully the sunspots will resume and dramatically improve propagation. Until next time the best of 73 and good monitoring.

de VK7RH

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 80 dB 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
Email: jenlex@vicnet.net.au
Phone: (03) 9548 2594
FAX: (03) 9547 8545

AMSAT

Bill Magnussen VK3JT

ARISS Upgrade – an appeal

A note from Stefan VE4NSA:

A short time ago, two ARISS antennas for L/S band were installed on the European Space Laboratory Columbus. The Columbus module will be delivered to the International Space Station by a Shuttle mission in 2008. These antennas and associated equipment will allow us to work with and through the ISS on L and S band. This will be just fantastic and opens up great opportunities for Amateur Radio on the ISS. ARISS-Europe and its chairman Gaston Bertels ON4WF have done a tremendous job getting this done with the help of many others. Significant funds were raised by folks all around the globe and ESA (European Space Agency) has taken on a major portion of the cost. However, the project still needs to raise funds. Please

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

go to: <http://www.ariss-eu.org/columbus.htm> and make a donation.

73, Stefan VE4NSA.

The ARISS project is of importance to all satellite operators. The multitude of modes and frequencies that have been made available to us all is worthy of our support. ISS is a regular visitor to our skies in VK. It affords us the opportunity to hone our skills in many areas of operation and this new addition will extend this to practice for the forthcoming high orbiters. Please support this appeal.

ANDE Competition.

Did you copy the last (or close to last) telemetry frames from the ANDE-MAA satellite (Nav Oscar - 61)? ANDE is getting close to de-orbiting as this column is being written and it will be well and truly burned up by the time you read this copy. The competition may however still be open and it would be a great credit to any telemetry buff to have copied ANDE's last frame. Similar competitions have been run before and VKs have traditionally done well. Any takers for the crown on this occasion?

Six-monthly review of Ups and Downs

As in previous instances, this review will deal only with amateur radio satellites that are currently fully or mostly operational in our part of the world. There will be times when a particular satellite may not appear due to some usually short term problem. For more up to date information refer to the appropriate web site on the internet. It is quite impossible to keep a list like this absolutely accurate, all of the time. The CubeSats and/or educational satellite packages still tend to dominate the list but their status can change at no notice at all. Some could have re-entered by the time you read this column. Many have not been activated on the ham bands as yet. These tiny satellite packages are often designed and built by University or College students and usually focus on data collection in some specific area of science. The presence of their

telemetry beacons 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 world-wide 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.

To save space only those satellites that are listed by reliable sources as operational will be included in the list. The day to day situation is probably best followed on the AMSAT-NA bulletin board as even the AMSAT-NA web site cannot hope to remain abreast of day to day happenings. 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 web-site has more information. The list is in order of Oscar number where possible.

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
– 2 m

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>

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>

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 switch 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 - 67Hz PL tone

Digital Downlinks: 435.150 MHz FM 38k4 Digital, Pacsat Broadcast Protocol (PBP), 435.150 MHz FM 9k6 Digital, PBP

2401.200 MHz FM 38k4 bps, AX.25

Digital Uplink: 145.860 MHz FM 9k6 Digital, PBP

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/>

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/>

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/>

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/>

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 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
KD5PLB

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/>

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>

ar

TET-EMTRON

Antenna Manufacturers

New Tet-Emtron Vertical Range

- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
- Light.
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- 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.

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STRATFORD

Ph: 61 3 5145 6179
Fox: 61 3 5145 6821

Victoria 3862 AUSTRALIA

ABN: 87404541761

www.tet-emtron.com

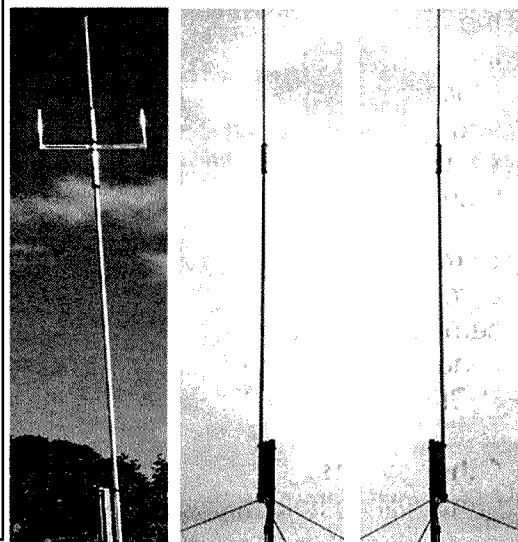
Email: rawmar@hotmail.net.au

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

CENTRAL COAST FIELD DAY

WYONG NSW - SUNDAY 17 FEBRUARY 2008

Once again the largest and longest running amateur radio field day in Australia is being held at Wyong on the NSW Central Coast.

Commencing at 9.30 am, the day will feature the major radio equipment importers in Australia and the State's main retailers.

There will be exhibitions by many clubs and groups.

As usual there will be a large flea market area available for car boot sales.

Entry: Adults \$10.00 each

Children (under 12) FREE

Gates open 6.00 am for parking and traders admission. Trading and exhibitors area opens at new time of 9.30 am.

Plenty of on-site parking is available before the exhibitors and traders area is open.

Venue: The Field Day is held at the Wyong Race Course, Howarth Street, which is off the Old Pacific Highway, Wyong. Follow the arrows to the site or seek info from our info and talk-in service. The Wyong station which is serviced by trains from Sydney and Newcastle is 5 minutes from the venue. Rail bus services may replace some trains.

Seminars: Throughout the day commencing at 10.00 am a series of seminars on a range of subjects will be conducted with two seminars focusing on D-Star.

Other events: Other activities such as fox-hunts will be held throughout the day

Info and talk-in: On both the Saturday afternoon / evening and Sunday morning an information and talk-in service will be provided on the club's 2 metre repeater, 146.725 MHz using the call sign VK2AFY/P.



D-Star: A major feature of the day will be the NSW launch of D-Star. ICOM Australia will be establishing a working D-Star repeater at the venue and will have a fully operational system on display with their experts available to discuss all aspects of this new medium. All the new D-Star radio equipment will be on display and available for purchase from several of the retailers attending.

Raffles: Throughout the morning a raffle for valuable donated prizes will be conducted by the club.

Displays: In addition to the radio displays, there will be a Craft Display for the YL's and a woodworking display.

Catering: Free tea and coffee will be available in the new "chat area" on the second floor of the stand. Hot and cold food will be available from two outlets in the site on the day with the bistro area opening early.

The Central Coast Field Day is conducted for amateur's radio and electronics enthusiasts by the Central Coast Amateur Radio Club Inc.

Contact fleldday@ccarc.org.au or Phone 02 4340 2500 for further information .

DX – News & Views

John Bazley VK4OQ

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

Email: john.bazley@bigpond.com

Well 2007 certainly ended on a high note from a Dxing point of view. The promise of activity from Bouvet – 3Y0E, the announcement by ARRL of an ‘all time new one’ FJ Saint Barthelemy Island and activity from Palestine E4.

NEW DXCC ENTITY. The ARRL DXCC Desk is pleased to announce the addition of St Barthelemy (FJ) to the DXCC List, making the island entity number 338 with an effective date of 14 December, 2007. Cards with contacts dated December 14, 2007 or after will be accepted for DXCC credit. New card submissions for St Barthelemy will not be accepted until January 1, 2008 in order to allow time for administrative adjustments.

The ARRL DXCC Desk has also approved all of UA4WHX’s third DXpedition. This was his African, Middle East and Indian Ocean junket, which took place between 2005 and 2007. The following calls are good now for DXCC: 3DA0VB, 4K0VB, 4L0B, 5H3VMB, 5R8VB, 5X1VB, 5Z4/UA4WHX, 7P8VB, 7Q7VB, 9J2VB, 9U0VB, 9X0VB, A25VB, C91VB, D20VB, D60VB, J20VB, OD5/UA4WHX, ST2VB, V51VV and Z2/UA4WHX. Vlad and at least one friend have begun to hand write confirmations, which are now beginning to show up in mailboxes. Several Russian DXers have already received their QSLs. Remember patience is needed as he worked around 310,000 QSOs!

FJ: Saint Barthelemy Island. This operation by Martti OH2BH and Olli OH0XX used the callsign FJ/OH2AM by both operators to avoid duplicate contacts. They had three verticals on the beach for 17, 20 and 40 meters CW and SSB. QSLs should be addressed to OH2BN. Further interesting detailed information is available on <http://www.dailydx.com/barthelemy.htm>

The FJ and E4 operations have highlighted the effectiveness of CW under poor band conditions (Particularly the FJ operation when conditions between St Barthelemy and VK were very poor indeed – a point realised by Martti and Olli who on 40 metres took several standbys for VKs only, allowing a few

of us to work them, when under normal circumstances, we would not have stood a chance of breaking the European pile up.) Similar standbys were also made by the E4 boys. So, it does appear that at long last Dxpeditions are realising that VK & ZL do have, at times, problems working the long haul DX. Another interesting point of both operations was staying on one band – on one mode – for 24 hours. You knew that at some time conditions would ‘peak’ even if it was only to S3!!! The FJ in particular peaked on 40 when the propagation programmes reported ‘no opening’!

5T: DL7ZZ is planning a DXpedition to Mauritania next year. The group, consisting of Rich DK8YY, Rene DL2JRM, Ralf DL3JJ, Ingolf DL4JS, Dan DL5SE, and Andi DL7ZZ will be in the capital Nouakchott, near the Atlantic Sea, between March 16th and 30th. They will have enough space for their antenna systems, especially for the low bands. Plans are to have three stations, two with amplifiers. They will have a VI60 vertical for 160 metres and a V80 vertical for 80 metres. Two phased verticals will be installed for 40 metres. Two beams will be used for 10-28 MHz, plus a ground plane for the digital station. A Web page is being setup for this operation at www.5t2008.de This will include an on-line log search, which will be updated daily via the Internet or Pactor. The team is looking for financial contributions. You can email them at info@5t2008.de QSLs for this operation can go via the bureau or direct via DH7WW, Ulrich Moeckel, Muldenstr. 1, 8304 Schoenheide, GERMANY.

3B8: Dom M1KTA will be in Mauritius as 3B8/M1KTA from March 1 to 16, 2008. Plans are to be active on most of the HF bands, mostly on the digital modes and SSB. He plans to participate in the Commonwealth Contest.

YJ: Trent VK4TI is considering a trip to YJ0 in March, 2008. He asks for operators interested in a week or two of DX from a good contest location to contact him.

JD/M: Masa JA6GXX was heading back to Marcus Island (Minami Torishima) from December 12th to

27th. He took with him a new FT-2000D with 200 watts. Masa planned to erect several antennas for the low bands including a 160 metre vertical and 80/40 duo band dipole. He was operating as JD1BMM mostly on the low bands. Please remember this was not a DXpedition but he was QRV in his spare time. He prefers QSLs go via the JARL QSL bureau, however if you need a direct card please include IRC. Do not send green stamps. The address JD1BMM (not JA6GXX) on QRZ.COM is the correct route. The JD1BMM QSL is the standard size of a JA QSL (15cm x 10cm) so make sure your self addressed envelope (SAE) can handle this. Masa also plans to be QRV from Marcus Island in late February through mid-March 2008.

V4: Mike W1USN, Bob AA1M, and Scott W1SSR, will be operating from St. Kitts (V4) starting February 28 and into March 2008. They will be using CW, SSB and PSK on 160 to 10 meters. QSL via CBA.

SOUTHEAST ASIA TRIP: Pete SM5GMZ will be back to Thailand, Cambodia and East Malaysia from January through April. His work will come first, but he will be active on the amateur radio bands as much as he can in his spare time. Expect him to operate as HS0ZFI, XU7ADI and 9M6/SM5GMZ. Activity from Brunei is also being planned. QSLs via home call, direct or bureau.

HQ8R is the Swan Island (NA-035), Honduras, callsign for an operation March 15-23, 2008. The operators will be WQ7R/HR9, KC4CD/HR2, HR2DX, HR2DMR, HR7REA, HR2J and HR2PAC. They plan to operate two phone stations, one CW station and one digital modes station on RTTY and PSK31, a total of four stations. The 10 operators will be on 160-10 m. They have a Web page at www.hondurasdx.com QSL via HR2RCH, Radio Club de Honduras, P.O. Box 273, San Pedro Sula, Cortes, HONDURAS.

As reported earlier, Wilbert ZL2BSJ will be moving to The Netherlands. He has received his new call. It will be

continued on page 46

WIA DXCC Standings January 2008

(337 entities)

Mai Johnson VK6LC

Callsign Countries

DXCC Ex.(337)

Callsign	Countries
VK4LC	337/384
VE6VK	337/374
VK5WO	337/370
VK6LK	337/362
VK3AMK	337/356
VK6NE	337/353
VK3QI	337/351
VK3AKK	337/350
VK2FGI	337/343
VK3DYL	337/343
VK3SX	337/343

Honour

Roll(328)Phone

VK4UA	336/371
VK6HD	336/362
VK7YP	336/341
VK3EW	335/341
VK3TZ	335/339
VK1ZL	334/338
VK2AVZ	333/344
VK6APK	333/338
CT1EEN	332/336
VK4SJ	329/331
VK3EUZ	329/330

General listing:

Phone

VK3YJ	327/333
VK6ABS	327/327
VK2UK	323/328
VK4LV	320/322
VK6LC	317/319
VK6RO	313/320
DL2AWG	309/309
PY2DBU	308/315
VK4AN	304/311
VK4EJ	302/304
VK4QO	301/306
VK3KE	298/301
VK3PA	298/299
9V1RH	297/303
JA3EY	296/300
VK2CSZ	294/297
DL1TC	294/295
VK3DU	292/301
VK2CA	292/292
VK7TS	285/286
VK6ANC	286/290
VK4BAY	287/290
VK3JMB	285/285
VK3UY	264/266
JA7MGP	260/260
VK2XH	257/257
DL3ASJ	256/256
VK8NSB	255/255
VK8DK	253/254
DL6MRS	252/252
VK6DU	249/252
VK2FHN	246/246
VK2AU	235/235
VR2XMT	235/235
VK4DMP	227/228
UA6LDD	225/226
VK3DVT	206/209
VK6RZ	203/206
VK7JAB	198/198
VK2RO	176/178
VK2EJK	176/176
9A2KL	172/175
VK6EH	170/170

Callsign Countries

DL9UBF	165/165
DL6USA	162/162
VK5EMI	160/160
VK7LUV	160/160
SV1EOS	157/157
JA6KTY	156/156
VK6HZ	151/151
VK2SPS	143/145
VK2QV	141/141
VK3JXO	141/141
VK3DQ	138/152
VK8LC	138/138
OK1ZSV	136/136
VK4FNO	134/134
SV1XV	130/131
WA5UA	128/128
VK4VIS	127/129
VK5ATU	126/128
VK6ZAI	125/125
CU3AAT	125/125
SV1UT	123/123
DD2MON	110/110
XV2LC	110/110
VK3CML	109/109
VK9RS	107/107
VK6ISL	106/106
AX4EJ	105/105
8Q7LC	103/103
SV1GYG	102/102
SV1FTY	102/102
RA3NS	102/102
VK5JAZ	100/100
VK2HOT	100/100
HS1NGR	100/100

DXCC Ex.(337)CW

Position Vacant

Honour Roll (328)

CW

VK6HD	336/357
VK3QI	336/348
VK5WO	335/351
VE6VK	333/360
VK6RZ	324/329
VK3AKK	320/325
VK4XA	306/333
VK4LV	301/308
9V1RH	297/303
VK4AN	296/302
CT1EEN	294/294
VK6AJ	292/304
VK6MK	249/252
VK3DQ	243/270
RD3AF	233/233
VK3KE	224/224
VK6RO	221/223
VK7TS	219/219
VK3PA	215/216
DL7PA	203/203
VK2AR	184/187
VK2GR	181/188
PY2DBU	181/183
VK4CXQ	174/174
DL8UVG	171/172
SP9ADV	168/171
DK6AP	168/168
DL6USA	165/165
VK4UA	151/164
VK3AMK	150/152
DL1TC	133/133
DL6UGF	126/126
VK6DU	125/127
DJ4BG	121/212

General listing: CW

Callsign Countries

T94VT	108/108
9A2KL	103/103
DL3GDS	102/102
SP9FY	100/100
VK6LC	100/100

DXCC Ex. (337)

Open

VK4LC	337/384
VE6VK	337/382
VK5WO	337/374
VK6HD	337/364
VK3AMK	337/356
VK3QI	337/352
VK3AKK	337/350
VK3SX	337/343

Honour Roll (328)

Open

VK4UA	336/373
VK3EW	335/341
VK3OT	334/348
VK2AVZ	333/344
CT1EEN	333/337
VK3UY	333/336
VK6RZ	330/336
PY2DBU	328/343

General listing:

Open

VK6RO	327/334
VK4AN	325/333
VK4LV	325/333
VK2UK	323/328
VK6LC	318/320
VK4DV	316/331
VK3KE	303/306
DL1TC	302/303
VK3PA	298/299
VK7TS	295/296
PY2DBU	294/298
VK2CA	291/291
VK6ANC	288/292
9A2KL	280/283
UA6LDD	279/280
VK6DU	277/280
VK8NSB	256/256
VK3DQ	255/284
VK6MK	255/258
VK2FHN	249/249
DL8UVG	228/233
DL9UBF	206/208

WIA Data files are now linked to this page i.e. 110/110 denotes no deleted entities

110/112 denotes 2 deleted entities.

WIA financial members can now claim one (1) free award certificate per membership year including two (2) DXCC updates only.

If your callsign is not listed it means you have not updated in the last 5 years or your WIA membership has lapsed. To re-join the WIA DXCC program you must be a financial WIA member and a complete new DXCC

Callsign Countries

DL6USA	201/201
SP9ADV	200/203
VK2AR	196/199
VK2GR	184/191
VK4CXQ	179/179
DL8UGF	161/161
SV1EOS	161/161
VK5ATU	158/160
VK3VB	153/155
VK6HZ	151/151
VK3JXO	146/146
VK2SPS	144/145
SV1XV	142/144
ON5SPA	127/127
VK2WL	124/126
VK5DC	117/118
NOMSB	117/117
VK9RS	111/111
VK2AJE	109/109
OE1HMC	105/105
UA0IGV	103/103
VK2AWD	102/106
VK5CO	100/106
VK5GX	100/101
VK1AI	100/100
RA3BZ	100/100
DL1APX	100/100

General listing: Data

VK3EBP	253/255
VK3KE	205/205
VK4AN	151/151
DL4ARJ	120/120
ON5SPA	111/120
CT1EEN	110/110
VK3AMK	100/102

Gen-listing 6 m

Open

VR2XMT	154/154
VK4FNO	141/141
CT1EEN	110/110
VK6JQ	103/104
VK4CXQ	101/101

Gen-listing: Satellite

VR2XMT	112/114
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Gen-listing 2 m

Open

Position Vacant

General listing: SWL

DE2DAD	100/100
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submission is required.

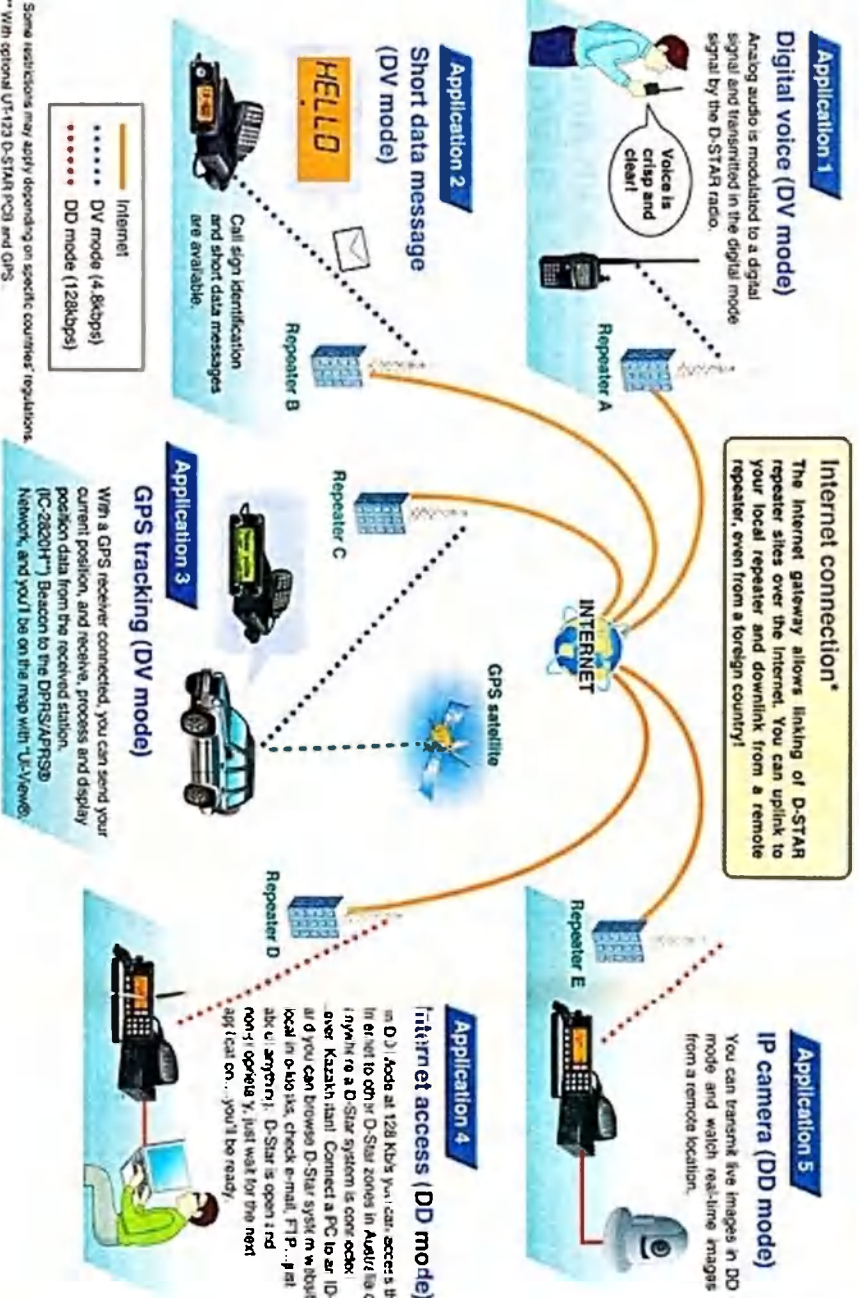
The next closing date for DXCC Standings is 30th June, 2008 with a revision to "add FJ Saint Barthelemy separation dated 14.12.2007. Entities increased to 338/58".

Awards information and downloadable files are available on our WIA website: <http://www.wia.org.au/awards/> or email to: awards@wia.org.au
Mail: WIA Awards Manager
PO.Box 196, Cannington,
Western Australia. 6987.

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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 hear crystal clear communication via a handheld or mobile radio to city, country to country? Would you like to send SMS, type with DTMF, track position data, find your friends or track their progress on U/V-view? Maybe you are part of WIN2EM, needing to integrate voice and data modes real time... Stand by, please and pictures real time at 128Kbps, E-Mer-D-Star!



Application 1

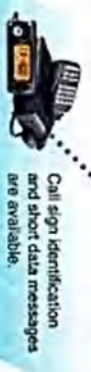
Digital voice (DV mode)
Analog audio is modulated to a digital signal and transmitted in the digital mode signal by the D-STAR radio.



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 2

Short data message (DV mode)
Call sign identification and short data messages are available.



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/APRS Network, and you'll be on the map with U/V-view.



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)*
DL123 mode at 128 Kbps you can access the Internet to other D-Star zones in Australia or anywhere in the world. D-Star system is covered over Kazakhstan. Connect a PC to an ID-1 and you can browse D-Star system websites, local in the local, check e-mail, FTP, and more. D-Star is open to non-operators, 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 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-view. With the "D-STARINZ" 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.

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.

ALARA

Christine Taylor VK5CTY

Greetings for 2008

The New Year is upon us. ALARA wishes all our members and their families a very Happy 2008. Did Father Christmas bring you all the radio goodies you were hoping for? Hopefully the answer is yes. If it is not, well there is always next year.

End of year happenings for 2007

In VK5, the November Buy and Sell is always a big event in the ALARA calendar. We 'man' the food stall and have a great opportunity to chat as well. As usual there were plenty of helpers for the stall and plenty of time to take a break for some socialising.

The photo shows some of us that day and included our "VKthrive" member, Marilyn VK3DMS who loves to come down for the weekend to Adelaide, which is almost as near geographically as is Melbourne.

In VK3, the monthly luncheons are continuing and growing in interest. A photo of the November gathering illustrates this well. There are also regular Thursday evening skeds on VK3REC 2-metre repeater at 8.30 ESST, so even if you cannot attend the luncheons, do join in the local chat sessions. Contact Jean VK3FJYL for more information.

Colossus loses the code breaking race

For the many people interested in the code-breaking efforts accomplished at Bletchley Park (Shropshire) during

WW2, this item reprinted from the BYLARA (UK YL group) newsletter will be of interest.

The rebuilt Colossus Mark 2 at Bletchley Park lost the race to decipher an encoded Lorenz transmission from Germany.

Hourly transmissions commenced on the morning of Thursday November 15th but propagation was poor.

Despite the best efforts of the Milton Keynes Amateur Radio Society, clean copy was not received until after 5.00 p.m. local time.

The Bletchley team loaded the message into Colossus on Friday morning, and managed to decode it by lunchtime. But they were beaten to the punch by German amateur Joachim Schuth. He received good signals much earlier and used his own specially-written software.

News of the decode reached the Bletchley team on Thursday evening. The BBC website reports on this event at: <http://news.bbc.co.uk/1/hi/technology/7098005.stm>

The January issue of Radcom contains a report on the Colossus Mark 2 and the cipher challenge.

What a shame that propagation was poor, rather than that poor decoding affected the result. The one thing we as amateurs cannot control is, as always, the quality of the propagation at any particular time. Nevertheless, congratulations are due to Joachim Schuth for his achievement. Modern computing and software skills have made many things possible. We tend to take it all for granted, don't we?

Do you remember the attempt in 2001

to reproduce the very first Marconi transmission across the Atlantic from Poldhu in Cornwall to St Johns in Newfoundland? That was ruined by the modern world, not propagation. There is so much electronic 'noise' in the world today that the tiny signals sent across the ocean in the experiment were swamped.

Did you participate in the Canadian Challenge?

If you did, and you made more than 40 YL contacts – by any mode, CW, voice, HF, VHF, Echolink, or Packet, - during the year 2007, you are eligible for a certificate.

Just submit the list of contacts and the mode, and send it to Kathy VE3GYL either by snail mail at Kathy Steels VE3GYL, 444 Jellicoe Crescent, London, Ontario N6K 2M5, Canada or by email at ve3gyl@gmail.com

The contact had to be made between Jan 1st 2007 and Dec 31st 2007 and the list of contacts has to be submitted before March 31st 2008.

We hope you enjoyed making the contact and will continue to talk to those YLs for many years. That is certainly the hoped for aim of the Challenge.

A clever idea and an interesting one. Thank you CLARA.

(Editor's note: Christine has advised that discussion has occurred regarding an extension of the Challenge period so that the required number of contacts can be made. Check for the latest news via the ALARA Net.)

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Some of the ALARA YLs: Tina VK5TMC, Christine VK5CTY, Marilyn VK3DMS, Jenny VK5ANW (sometimes portable VK3)



The VK3 girls

National FM ATV 'Grand Slam' attempt

Dan, Joyce VK2GG

On the weekend when the heads of governments were gathering in Sydney for the APEC Summit, two ATV teams were venturing west for an attempt on five or even six National FM ATV records. If we had set up microwave dishes in Sydney that weekend, we would have been arrested as possible terrorists!

Between us, Jack VK2TRF and I already held records on three bands: Jack and I for 6 cm and 3cm, and Jack and Nick VK2ZTY for 13 cm. How would 23 cm, 9 cm and 1.2 cm go added to those, along a 240 km near line of sight path? Going begging was a possible 'Grand Slam' attack on four existing national FM ATV records, and the possible setting of two more, including 24 GHz!

Early on Thursday morning, Jack VK2TRF and Garry VK2UNI headed for Mt Ginini near Canberra. Dan VK2GG headed for Mt Canobolas near Orange, in the inner west of NSW. The trip had been the result of 12 months planning. An earlier survey trip to Mt Canobolas had found a near perfect location with good clear air southward. A back-up location had been catered for, as well as a second back-up location, ear-marked for the relatively untried band, 24 GHz. We had, of course, to build transmitters and feeds, test them across other test paths, and to cope with unforeseen events like one exciter failing a week prior to our departure, and two video invertors not producing acceptably stable video even on the day. Also, we had failed to achieve two-way contact on two bands!

As I did some preliminary testing from Mt Canobolas, some VK1 hams on the Mt Ginini repeater were surprised that I was getting into Canberra from 240 km away on a handheld!

Early on the Friday morning, we proved that Mt Ginini was far too populated by trees to be useful on any band other than 2.4 GHz. P2-3 pictures were received on the 241 km path. Jack, Garry and Bob VK2MRP then proceeded to Mt Coree, where conditions were more favourable, and all 5 FM bands from 23 cm to 3 cm were able to be logged with pictures on all bands being at least P4. Dan had been joined at Mt Canobolas that morning by Dave VK2TDN and his XYL. As well as assisting on ATV, some 23 cm FM voice



Photo 1: Dan VK2GG and Peter VK2YGM work on the 10 GHz antenna.

was being successfully experimented with from several locations. Dave has a varactor diode transverter, which works very well on FM. Jack and Garry were also joined by Bob VK2MRP, who said he thoroughly enjoyed himself. Bob obviously likes Tim-Tams – the obligatory ATV snack!

The following day, Jack VK2TRF, Garry VK2UNI and Bob VK2MRP drove to Boorowa, which is almost exactly in the same line of fire as Mt Coree, but

is only 120 km from Mt Canobolas. 24 GHz ATV was attempted, but no pictures were seen. There were storms in the path, and rain was threatening at Canobolas. We decided to try again on Sunday. Jack had found that their access up to the top of the hill at Boorowa was blocked by a chained and padlocked gate. Fortunately, the chain was one which could be lifted over the post!

What a beautiful day was Sunday 9 September! Wall to wall blue sky, with



Photo 2: The VH2TRF 2.4 GHz station, on Mount Ginini.

no clouds on both ends of the link. We set up for 24 GHz ATV – nothing for 4 hours! Peter VK2YGM and new wife Irene had joined me at Canobolas. We had been both watching the same cloud in the centre of the path from each end - that was weird! Jack actually was able to see the TV towers on Mt Canobolas, such were the clear conditions. The humidity was checked via internet, and it was discovered that it was dropping from 70-80% to something like 50%; looking promising! Still nothing until about one o'clock, when Jack announced that he was receiving our carrier full-scale. Wow! Virtually P5 pictures were then received, with conditions apparently worsening for the reception on Canobolas. P2-P3 pictures failed to dampen our elevated spirits! We had done it, not only on the five bands from Coree to Canobolas, but on 24 GHz, which had proved a very tricky band. Our dishes had a beamwidth of a little over one degree! Rain makes reception almost impossible, and humidity also attenuates the signal.

Grand Slam?

More like an ATV Marathon! Many thanks to Dave VK2TDN, Garry VK2UNI, Bob VK2MRP and Peter VK2YGM. Where next? More ATV on 47 GHz? EME? Narrow band?

Equipment used was:

- 23 cm Tx: Mini-Kits exciter, 50 W PA, 16 el Yagi; Mini-Kits 20 W PA into slot/plate (splash) fed 1.2 m dish.
- 23 cm Rx: G1MFG receivers with G6ALU ATV Controller, Mini-Kits (VK5EME) pre-amp.
- 13 cm Tx: G1MFG exciters, 20 W



Photo 3: Jack VK2TRF at the 24 GHz station

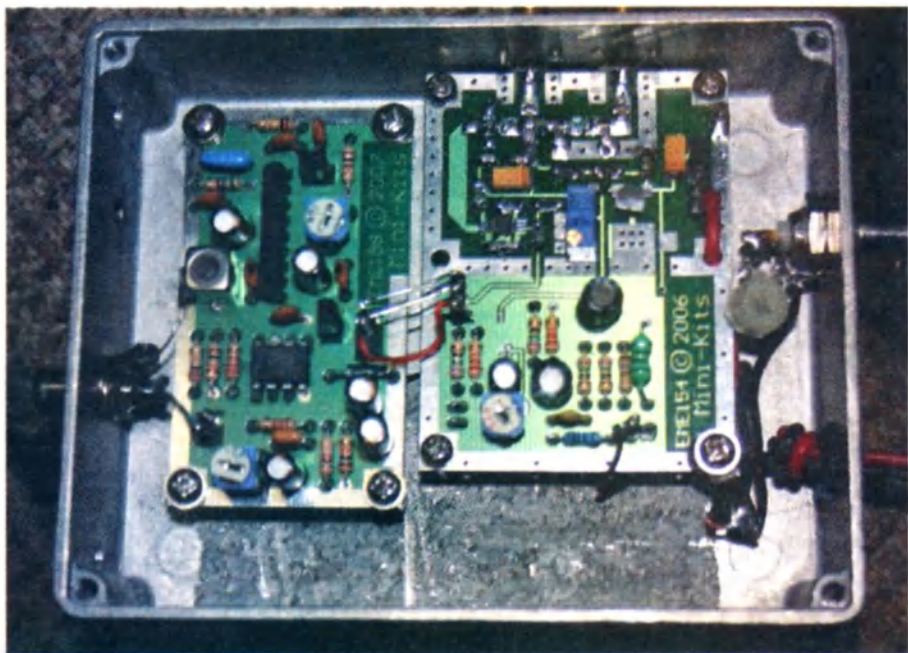


Photo 4: The Mini-Kits 1.2 GHz transmitter.



Photo 5: The plate/dipole feed for 3.5 GHz.



Photo 6: The VK2GG signal from Mount Canobolas, as received by Jack VK2TRF on Mount Ginini.



Photo 7: Jack VK2TRF with his Range Rover and assorted equipment on Mount Coree.

PA, gridpack antenna, modified Conifer feed.

13 cm Rx: G1MFG receivers, home brewed signal strength meters.

9 cm Tx: Mini-Kits (VK5EME) exciter with VK5EME 3X multiplier into 40 W Toshiba PAs, slot/plate (splash) fed parabolic dishes.

9 cm Rx: C Band extended LNB (Mini-Kits) into G1MFG receivers, G6ALU controller.

6 cm Tx: A/V sender into 8W PA; 1.2m dish fed with penny feed. Other end same exciter/PA with modified gridpack antenna (30 dB).

6 cm Rx: A/V receiver (Jaycar) from same antennae.

10 GHz Tx: G1MFG exciter, DB6NT (Kuhne) X 4 multiplier, penny fed 1.2 m dish; other end same with 1 W DB6NT PA into 60 cm dish.

10 GHz Rx: LNBs, G1MFG receiver, G6ALU controllers, penny fed dishes.

24 GHz Tx: Microwave Radio Gunn (50 mW) into 60 cm dish with penny feed.

24 GHz Rx: DB6NT (Khune) LNB with G1MFG receiver, G6ALU Comtech ATV controller, 60 cm dish with "penny feed".

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More than a fox hunt!

A big welcome and invitation for all to attend the

60th Urunga Radio Convention

at Urunga. (Easter long weekend 22nd and 23rd March 2008)

From its early days where it started at the DOO MEE boat shed (where the Anchors Restaurant is now) by Peter Alexander VK2PA, Crieff Retallick VK2XO, and others, the convention is steeped in early history and has been

run continually as a premier Fox hunting field day, Brian Slarke kept it going for many years with a small band of helpers, come along and meet your old friends, many still attend,

We hope to make the 60th Convention

something special, Urunga is a beautiful place for that break away, so come along and enjoy our hospitality.

Check out the web page. <http://users.tpg.com.au/goldy2/index.htm>

Ken Golden VK2DGT
Sec. WIA. Urunga Radio Convention. Inc.

Hello and greetings from VK2 for 2008. The notes for the December issue apparently missed the deadline so where applicable they will be included this time.

Clubs

The Blue Mountains ARC have just celebrated their 50th anniversary which included the special event call sign VI2BMARC50. On 9th February, they will hold a celebratory dinner. They hold weekly nets at 2000 with HF on Tuesday on 7120 kHz, November to March, and 3543 kHz, April to October; VHF on Wednesday, also at 2000, on VK2RBM 147.050 [+600 kHz with 123 Hz CTCSS].

This month is the annual Central Coast Field Day at the usual venue, the Wyong Racecourse, on Sunday the 17th. On the Saturday evening there is a dinner at the racecourse. Their first recorded field days were held in the 1930s with the 1931 event having a cricket match on the Wyong Racecourse. In 1932, there was a dinner with 150 in attendance. After WW2, they held some at the Gosford Sailing Club and the Gosford Showground before the move back to Wyong.

The Waverley ARS has a seminar planned for Saturday morning, the 23rd February to learn the tricks and tips of the VX-7R handheld. Registration by email vk2faln@vk2bv.org Their web site

is vk2bv.org or phone contact to Simon VK2UA on 02 9328 7141.

The Taree and District ARC meet on the first Tuesday of the month in the library rooms of the Taree TAFE College, in Montgomery Crescent, at the western end of Victoria Street. The region has two permanently linked two metre repeaters, on which a net is conducted Monday at 1930 hours. Look for club call sign VK2FRE. Exams are available on request and the contact is Mark VK2AMS on 02 6551 0126 or email to vk2fre@wia.org.au Their web page is www.users.bigpond.com/darsoncomp/

The Illawarra ARS meet on the second Tuesday evening in the Industrial World Visitors Centre, Springhill Road, Coniston. The Society sponsor eight FM voice repeaters, as well as APRS digipeaters, packet BBS and Morse beacons. EchoLink node 326276 operates on VK2RBZ 147.300 and IRLP node 6018 is operational on the Coast Link Repeater Network. Details on their web site www.iars.org.au For club members, they have a free loan library of books, video and CDs.

The Oxley Region ARC recently acquired an enclosed car trailer which is being overhauled and fitted out for field operations and promotional aspects. Their general meeting is the first Saturday afternoon of the month and informal evenings on the second and fourth Fridays at the Port Macquarie SES building in Gordon Street. Start planning now for their annual field day on the June long weekend. Web site www.orarc.org

Summerland ARC has their AGM this month on the 10th. They also have exams scheduled for 9/10th February. Contact points for exams are by email at either draymont@nrg.com.au or iangray@ceinternet.com.au

Fisher's Ghost ARC meets on the last Wednesday of the month in Campbelltown. They have exams scheduled in conjunction with Liverpool and District ARC for early March. Check them out at www.fgarc.org

Snowy Mountains Amateur Club has a 2 metre SSB net – 144.150 MHz

Saturday evening from 2030 to 2130 hours local.

Manly Warringah RS meet every Wednesday evening at the Warringah Volunteers Services centre at Terrey Hills. Details on the web site www.mwrs.org.au, or telephone the club on Wednesday evening on 02 9450 1746 or call on their 146.875 repeater.

The Hunter Radio Group resumes their Monday evening news net – VK2AWX – at 1930 hours with highlights from both VK1WIA and VK2WI. Their meetings resume this month on the second Friday evening. For exam assessments, contact Grahame VK2FA on 02 4954 8688.

HADARC resume their meetings for the year on Tuesday the 12th and then on the fourth and second Tuesday evenings. Their web site www.hadarc.org.au/ or call Neale VK2CNI on 02 9477 2061.

The Radio Veterans Group, who meet on the third Thursday morning, resume this month. They are now meeting at the VK2WI Dural site. St. George ARS have also resumed their monthly meetings for the year and this month was also their AGM.

With Easter next month do not forget the Urunga Convention over Saturday and Sunday. It will be the 60th annual event.

The ARNSW Homebrew Experimenters Group plans a display again at the Wyong Field Day. Pay them a visit. They meet on the first Tuesday at Parramatta, have a net on the third Tuesday evening on repeater VK2RWI 7000 and gather at Dural following the T&T on the last Sunday of the odd month.

ARNSW

Members of ARNSW are reminded that there will soon be a call for nominations for the next Council. Also the AGM is approaching. Dates had not been advised as these notes were prepared. All operation of ARNSW is now based on the Dural site. The old Parramatta contact points have been closed. The phone has been cancelled and the post boxes will not be continued when they come up for renewal in a couple of months. For your

Wishing health and prosperity to all radio amateurs for 2008

From the

Oxley Region Amateur Radio Club Inc.

Do not forget to book early for the Queen's Birthday Weekend in Port Macquarie, June 7 & 8, 2008.

Port Macquarie Field Days

Programme details soon in club news, broadcasts and the club web-page: www.orarc.org

60th Urunga Radio Convention 2008

The 60th Urunga Radio Convention will be celebrated this Easter 22nd and 23rd March 2008, Saturday and Sunday, with Fox Hunts and convention activities on both days, quizzes, raffles, trade tables available, pre loved gear, etc.

Why not make it a break from your busy lifestyle and slow down a bit at quiet restful Urunga – “where the rivers meet the sea”, the longest running fox hunt convention in Australia.

The social gathering for the Saturday night will be in the Senior Citizens Hall. We hope to make this something special so do not miss out.

Come and meet some of your old friends, many still attend, a good time is always had by all.

This is the longest running Fox Hunting field day in Australia, from its small beginning at the Do Mee Boat shed and Ocean View Hotel (a good

excuse for a rag chew) to the best and most cunning Fox Hunts, mobile and pedestrian, which have evolved over the years to the popular format we have today.

The Radio Convention is always well attended. All are welcome (see Ken VK2DGT at the convention).

The 2007 convention went off without a hitch, Adam Scammel VK3YDF winning the “Jack Gerard Memorial Award” and also the “Brian Slarke Memorial Award” overall for two days.

Venue: the Senior Citizens Hall, Bowra Street, Urunga.

Ken Golden VK2DGT

Sec. Urunga Radio Convention. Inc.

Email: krgolden46@hotmail.com

Ph. 02 66523177

Web: Urunga Radio Convention: [http://](http://www4.tpgi.com.au/goldy2/)

www4.tpgi.com.au/goldy2/

(or search engine)

Fox hunt Results Urunga Radio Convention 2007

Saturday:

3.5 MHz.	1st	Brian Ackerly VK3YNG
	2nd	Chris Williams VK2YNW
2 m Peds.	1st	Adam Scammel VK3YDF
	2nd	Rodney Somerville VK2URK
Junior 2 m	1st	Laura Austin
	2nd	Cameron Williams
2 m mobile	1st	Adam Scammel VK3YDF
	2nd	Craig Martin VK2ZCM
2 m talk in	1st	Geoff Pages VK2BYY
	2nd	Adam Scammel VK3YDF

Sunday:

Urunga Scramble	1st	Graham Obrien VK2FA
40 m Fun event	1st	Geoff Pages VK2BYY
Junior 80 or 2 m	1st	Cameron Williams
	2nd	Laura Austin
2 m Mobile	1st	Chris Williams VK2YNW
	2nd	Adam Scammel VK3YDF
2 m Peds.	1st	Adam Scammel VK3YDF
	2nd	Brian Ackerly VK3YNG
2 m talk In Peds.	1st	Adam Scammel VK3YDF
Jack Gerard Memorial Award (3 events):		Adam Scammel VK3YDF
Brian Slarke Memorial Award (overall 2 days):		Adam Scammel VK3YDF

records, the new postal address is P. O. Box 6044, Dural Delivery Centre, NSW 2158. The telephone is 02 9651 1490 into a message bank. The freecall number for country members remains 1 800 817 644. FAX is 02 9651 1661.

The next Trash and Treasure is scheduled for Sunday 30th March.

Operator provided slow Morse transmissions are made on Tuesday and Thursday evenings at 2000 local under the call VK2BWI on 3550 kHz. Automatic sent Morse from VK2WI on 3699 kHz outside broadcast hours.

VK2WI

The 23 cm repeater has been troublesome of late and is out of service while its future is considered. It has had a good innings. It was commissioned on the 12th November 1989 during a microwave field day at the Dural site. It is based on a pair of transceivers donated by DSE. Not a bad run for equipment that has been powered up for almost 20 years. The 40 metre AM service has been replaced with the callback SSB transceiver to overcome the AM getting into a control system. A more remote antenna and rerouted feed line is planned.

2007 VK2WI News Sunday morning and evening sessions have ended on a high note. There was just over 100 hours of transmissions with 6354 callbacks logged. An average of 130 callbacks for the two sessions; with the lowest day being 100 to the highest of 156. There were 51 morning transmissions resulting in 4753 callbacks, an average of 91, the lowest 73 to the highest of 116. The evening had 48 transmissions; fewer logged in but well used by those who missed the morning. 1601 callbacks, from a low of 19 to a high of 52. There is always a larger audience than the callbacks received. Reports by email are most welcome.

The Dural HF service on 5425 kHz USB has been issued a new call sign by the ACMA. This is VKE580 to help identify the Sunday Morning News transmission. This is a transmit-only service, as callbacks can only be received on amateur bands.

News for the broadcasts should be sent by email with a Friday deadline to arnews@tpg.com.au. The text of the VK2WI News can be found on www.arnews.org.au

73 – Tim VK2ZTM.

VK3

D-STAR is the star

Joe Chakravartti VK3FJBC

On the eve of the 2007 election, 23rd November, members of Melbourne's Eastern and Mountain District Radio Club had anything but politics on their minds. For the masses waiting for the doors to open at the Whitehorse Centre for the official launch of D-STAR, the big question was not Howard or Rudd, but rather whether they were going to win the jackpot and walk away with a brand new D-STAR radio.

The parking lot of the Nunawading Civic Centre was overflowing with cars; the rather well-appointed meeting room of the centre packed with well over 120 people waiting to hear about the new D-STAR technology, drinks and nibbles on standby, gallons of hot water for tea and coffee and cool drinks on the side, two screens and two laptops set up for presentations, three video cameras for capturing the moments of the evening, four in-house paparazzi hovering around, a couple of Icom ID-1 radios setup for a demo, a D-STAR ready Icom IC-2820H hooked up to a Diamond X-200 resting in the corner of the room.

The occasion - The official launch of "Digital Smart Technologies for Amateur Radio" (D-STAR) by Icom, to talk about

the role and relationship between Icom and WIA, the proposed roll-out plan for deployment of this new technology to the Australian amateur radio market and finally to mark the beginning of the EMDRC's role as custodian of VK3RWN - the first D-STAR repeater in Melbourne. This was presented to the WIA by Icom and was setup by a team who had burned the midnight oil on many an occasion to ensure that device kept up with expectations.

The evening got underway with a quick welcome address by Club President, Bryan Pliatsios, who handed over to Paul Bannister, National Sales Manager for Icom. He talked about the developments that had taken place over the past year and the D-STAR repeater deployment strategy, product pricing and looking forward, i.e. the opportunity for Icom to work with WIA to establish a national network in 2008, music to the ears of all radio amateurs interested in the possibilities that D-STAR offers.

WIA President Michael Owen VK3KI was next on the podium to pay tribute to Icom's efforts and to acknowledge the exciting times ahead for all amateurs. He promised to keep it short as the "exciting" stuff was just ahead, referring to the practical demonstration that was to follow. Michael introduced Peter Willmott VK3TQ of Icom as "Captain D-STAR", a nickname earned by Peter due to his association with the D-STAR project.

Peter then presented an overview of the new technology with information

about how the network had been embraced by the United States, Japan, Europe and other countries. He also talked about the challenges faced with setting up the repeater and acknowledged the assistance of several amateurs who worked with Icom to make it all happen. He took the opportunity to thank people in the D-Star installation team, Steve VK3JSR, Allan VK3FALL, Peter VK3TQ, Matt VK3FGIB, Robert VK3KRB, Richard VK3JFK and Cameron VK3MIR for their help in organising and installing the new D-Star repeater VK3RWN. Apparently, some members of the team worked well into the night on certain occasions. Also included in the thank-you list were D-STAR Team sponsors: Icom, AA Radio, JRD Communications, RFI Industries, Strictly Ham, G & C Communications and the WIA for their support with this project.

The arrival of Richard Hoskin VK3JFK marked the start of the "technical stuff". Richard, with extensive training and knowledge of the technology behind D-STAR, shared with the group the finer details of programming of the radios for usage on the network. He pointed out the subtle, but important differences of the new technology in comparison to existing technology. The audience learnt about how users could be "called" by programming their call signs into the rig, how to access the repeater, how to hang up and finally, how the "gateway" could be used for interstate and international contacts. The aspect of registrations on the D-STAR website was addressed and it was announced that registrations would now be possible on <http://www.dstar.org.au/> for access to the gateway. The start of the D-STAR practical demonstration had the audience glued to the big screen, watching the feed from one of the three video cameras pointed at the screen of the IC-2820H. The



Ross Keogh VK3MY (aka-Slim), our antenna mast.

audience was able to relate to Richard's earlier commentary which tied in nicely with what was being done on the screen. A contact followed with John VK8HF in Darwin through the VK3RWN repeater and as the words "Welcome to Darwin" flashed on the screen of the IC-2820H from VK8HF, it marked the official launch of the D-STAR gateway in Australia. The highlight of the contact (besides the crystal clear audio) was Ross VK3MY holding the Diamond X-200 in his hand to help achieve the desired signal strength!

The long awaited EMDRC raffle bucket then made an appearance and one could have heard a pin drop as the ticket was drawn. It turned out that David VK3FUEL was the lucky winner of an IC-2200H with the rest of the crowd wishing that there were at least a dozen more (similar) prizes so that they were in with a chance of winning. Now David is probably hitting the books in order to do

the big upgrade so that he can actually use the IC-2200H for D-STAR contacts.

Then came question time, after which everyone took the shortest route to the excellent spread at the back of the room.

Many coffees and eyeball QSOs later, an eventful evening for the EMDRC ended. A truly memorable one for the club history book.



Captain D-Star, Peter Willmott VK3TQ, with a demo in action



An excellent turnout – over 120 people



EASTERN AND MOUNTAIN DISTRICT RADIO CLUB INC.

WHITE ELEPHANT SALE

Great Ryrie Primary School
Great Ryrie Street Heathmont
Doors open at 10:30 AM
Entry \$6.00 per head

Sun March 9 2008

Table space \$18.00 - 6ft,
\$20.00 - 8ft
(inc entry for one person)
For Bookings call
Colin VK3KWM on
0414 879 682
or email
wes2008@emdr.com.au
by 6th March

Hundred of
components,
pre-loved radios,
test gear,
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Talk in on VK3REC



147.175 MHz

Soft drinks, hot dogs, hamburgers on sale.
Free tea and coffee.

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CANTERBURY RD

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

Hope you all had a good festive season and started off the New Year 2008 well. The Centre Victoria RadioFest Organising Committee has had its final meeting and announced that all is set for a bumper event at the Kyneton Racecourse on Sunday 10 February.

Since the main advertising occurred in Amateur Radio magazine in December there has been even more interest shown by individuals and groups wanting to participate.

The Australian Veteran Radio Society, Bendigo Astronomical Society and the Historical Radio Society of Australia have now joined the list which includes the Wireless Institute of Australia, WICEN (Vic), ALARA, FAMPARC, Scout Radio and Electronics Service Unit and the Royal Australian Corp of Signals Museum.

The program has several innovations this year. They include a Constructors' Cavalcade to showcase home-brewing and kit-building, an Antenna Measurement Range for 2 m, 70 cm and 23 cm on the centre of DX activity for those bands, and the National Launch of D-STAR.

There will also be an informal

RadioFest Dinner on Saturday 9 February at the Kyneton Bowling Club, 61-79 Mollison Street Kyneton, from 7 pm.

More details about the family friendly RadioFest with its free children's face painting, playground and picnic area can be found at radiofest.amateurradio.com.au

Tickets go on sale at 9 am and the turnstiles open at 10 am. A hot breakfast is available from 8.30 am. Hot and cold food and drinks catered by the Kyneton CFA Auxiliary. Free tea and coffee available all day.

This is now Victoria's biggest event of its type, a collaboration involving Amateur Radio Victoria, the Central Goldfields ARC and Midland ARC.

Strong education activity

In his annual report, our Education Team Leader Barry Robinson VK3JBR has advised that in 2007, Amateur Radio Victoria had 17 assessment sessions, 12 weekend Foundation Licence classes and two Standard Licence Bridging Courses.

While the total candidates for the year

exceeded 100, on par with the previous year, there was a reduction in Foundation candidates when compared with 2006.

Enrolments for the next Foundation Licence courses and assessment weekends on 16-17 February and 15-16 March are now being taken. Inquiries to Barry Robinson VK3JBR on phone 0428 516 001 or arv@amateurradio.com.au

In another development the education resources (get your licence) section on the Amateur Radio Victoria website has been expanded. There are now two online trial tests for each of the Standard Theory, Advanced Theory and Regulations.

Office reopening

The office at 40g Victory Boulevard, Ashburton reopens on Tuesday 5 February. It has for sale the 2008 Australian Callbook that contains a wealth of reference material essential for any radio shack.

Copies can be mail ordered by sending payment of \$29. Payment by credit card can also be accepted via fax 9885 9298. Or they can be purchased over the counter for \$22. The popular log books can also be purchased for \$10 or by mail order at \$13.

Eastern Zone Amateur Radio Club (Inc)

Chris Morley VK3CJK

2007 was a busy year for the club, with our regular monthly meetings well attended. Club members presented talks on a variety of topics, with the level pitched at enlightening our current and potential Foundation amateurs. In July, the annual GippsTech conference was held, as has been reported earlier in AR. At around the same time as the conference, two other significant tasks occurred.

Around a month before the conference, we decided to establish a new website, as we had been experiencing some difficulties with the old site. We established our own domain name and

our Treasurer Damien VK3HGY (now VK3BUG) undertook most of the work in creating the new site – thanks Damien. The new club website can be found at <http://www.vk3bez.org/>

We also learnt that the new owners of the buildings in which our club rooms were located wished to charge us significant rent – we had previously enjoyed the sole use of the space at no charge, thanks to the generosity of the previous owners. A search of possible new venues resulted in us moving much of the club equipment and library into storage. Some equipment, such as the club WICEN portable repeater, went to

the home of the appropriate committee member. Many members assisted with the move, which was completed in less than four hours. We began a relationship with the Churchill/Hazelwood Guide Group, which sees us using the hall once a month and for other events, such as Assessment events, for a small fee. It is hoped that we can make arrangements in the coming months to assist the Guides where we can provide the expertise and/or man-power.

The change of venue also required a change of meeting day, as the Guides were using the hall on our previous day of the week. We now meet on the first

Thursday of the month (except January) at 1930 hours. A map showing the hall location can be found on the Club website – look under “About VK3BEZ”.

The year ended with informal discussions amongst members over a pizza supper. Many new members were very happy: on the weekend prior to the final meeting, we held a Foundation training and assessment event. The event attracted eight candidates from around the Latrobe Valley and South Gippsland. With a team of helpers and Assessors, the weekend went off very well. On the Sunday, we had three complete assessment teams, with an extra Assessor also on hand. On the Sunday morning, all but two candidates successfully completed the assessment tasks. We

also had one candidate completing the Standard Theory component, having previously completed the Regulations assessment. One of the unsuccessful candidates arranged to attempt the assessment again on the Thursday evening, prior to the commencement of the monthly meeting. On this occasion, he was successful. As you can imagine, everyone at the meeting congratulated the new amateurs, who by now are all on-air and learning more about our diverse hobby.

GippsTech2008 announcement

The Eastern Zone Amateur Radio Club (Inc) is pleased to announce

GippsTech2008. This year the event will be held on Saturday July 5 and Sunday July 6. This event has a well-recognised reputation as the premier technical conference in VK, focussing on techniques applicable to the VHF, UHF and microwave bands, especially for weak-signal contacts. In addition to the Conference, a Partners' 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 2007 will be prepared so that they are available for sale during this year's event. Previous years' Proceedings are available – see the web site for details.

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

One of the problems faced by the committee of any club is that of providing a program that is both educational and entertaining for the members. This is a daunting task for a club that meets monthly, but a monumental task for a club like ours that meets weekly. It is to the credit of our committee that they have satisfied both of those requirements. A review of the year just passed has revealed just how diversified the syllabus items and club activities have been. From within our ranks talks and demonstrations have been given on a range of topics. These included printed circuit board manufacture, soldering and safety when servicing valve radios.

On the practical side, members constructed antennas for the two metre band. Two different antennas were made, the first an omni directional vertical, and the second a four element Yagi. We held for the first time a competition to see who could build the best crystal set. This was very popular and members are looking forward to a similar competition in the future. Another evening that proved home brew is still alive was a show and tell. Members brought along their latest project and gave a brief description of it. Projects ranged from test equipment,

to microcontroller projects and we even had an in-car (mobile) computer system. We had four guest speakers for the year. Their topics were: HF communication, digital and analogue SSTV, portable HF antennas, and renewable energy. As well as activities held in the club rooms, we also had two excursions for the year. The first was to the army military radio museum. The second was to a factory where sheet metal was cut using computer controlled carbon dioxide lasers. Members also participated in the John Moyle Field Day, and the International Lighthouse Lightship weekend.

Education and training was another very busy area. We had groups of Scouts and Guides along with pupils from a nearby primary school. These different groups were guided through the construction of a number of electronic projects. In addition to these classes, there were classes held for those who wanted to gain formal qualifications in amateur radio. As a result, there were another 35 Foundation and Standard licences issued for the year.

As we are the sole occupiers of our club rooms, we are in the fortunate position to be able to open the rooms

more than once a week. Apart from the normal Thursday evening meetings, the rooms may be open up to four times per week. Our group of retired gentlemen has continued to meet every Wednesday morning. This group works on building maintenance and also restoration of vintage radios. News of this has spread by word of mouth and it is not unusual for a member of the public to call in for assistance with old radios or appliances that they are trying to repair. The computer group continue to meet on the 1st and 3rd Friday of the month. These meetings have a loose structure being informal, but are of benefit to anyone who has a computer problem. This group have been responsible for finding solutions to many computer related problems.

So, looking back over the year it can be concluded that we had a most successful year. The program for the next half year will be just as interesting and diversified. Visitors to Geelong will be welcome at our meetings which are held at 237A High St. Belmont Geelong at 8 pm local time every Thursday evening. Or perhaps you may like to visit on Wednesday mornings from 9:30 am until lunch time at the same address.

Centre Victoria RadioFest

Amateur Radio Victoria / Central Goldfields ARC / Midland ARC

**Sunday 10
February
Kyneton**

If you only attend one radio event this year it should be the Centre Victoria RadioFest. The biggest of its type in Victoria and the only one supported by all the major commercial traders.

Plenty of bargains too in the huge second hand market area. Three vintage broadcast receivers will also be available for tender, their photographs appear on the website.

Learn about the D-STAR digital voice and data mode with two expert presentations using Icom equipment plus information hand-outs.

RadioFest is a family friendly event with an interesting program:

- VHF/UHF antenna gain measurement range – BYO antenna
- Mini-lectures - PicAStar and Small Space QTH Antennas
- Terry Murphy's Dipole Factory
- Wireless Institute of Australia
- WICEN (Vic) portable emergency comms
- Annual F-Troop photo call
- Home-brew equipment show n' tell
- Scout Radio display
- Australian Ladies Radio Amateur Association
- Club and group displays
- Information about how to become a radio amateur



Second-hand market place and car-boot sales alley. 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 drawn for a Yaesu/Vertex FT7800, Icom IC-91AD D-STAR transceiver and other prizes.

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

Don't miss this major event and great social occasion for everyone with an interest in radio communications.

Tony Collis VK3JGC

Geelong Amateur Radio Club – The GARC

2007 VHF – UHF Spring Field Day

It is a notable achievement that the Geelong Amateur Radio Club has won the VHF – UHF Field Day, in the multi operator class, from 1991 to 2006, with the exception of 1992 where they were credited with 2nd place.

The 2007 Field Day event in this class is significant for two reasons, the first being that the factored score submitted this year of 4,878 is twice that of the 2006 total. The second is that this was achieved by working every nominated band from 6 m to 3 cm, even though the 6 m operation only contributed circa 2% to the overall score. Cherry picking on the high multiplier bands, with the limited time frame allowed, was not and never has been for the GARC a strategy in this highly competitive Field Day.

The station operators were David VK3QM, Chas VK3PY and Charles VK3NX.

The submitted log book (Table 1) shows that from midday on the 17th of November to midday on the 18th of November operating from the Barabool Hills, the following results were achieved in the multi-operator section:

Amongst the notable contacts were:

- VK3BJM/P2 in QF25 on 2 m, 70cm and 23 cm and both heard each other on 13 cm although an actual QSO did not take place.
- VK1CEA, a club station, in QF45 on 2m and 70 cm.
- VK5AKK and VK5NY in PF94 on 2 m.
- VK7CEJ in QE38 on 2 m.

Repeaters

VK3RGL on VHF, 147.000 MHz with a – 600 kHz shift, is operational but in the process of being upgraded by Ken VK3NW.

VK3RGL on UHF, 439.575 MHz with a - 5.000 MHz shift, is operational;

both RGL repeaters are located on Mt. Anakie.

VK3RGC on VHF, 147.125 MHz with a + 600 kHz shift is currently not operational, from Montpelier. When Lee VK3PK is working on the controller, it will be possible to have IRLP working for brief periods.

Workshops

Three well attended construction evenings have taken place recently covering:

- Building of the Squid Pole antennas for the HF bands, on 80 and 40, designed by Dallas - VK3DJ.
- The building of VK3PK's RIG MASTA units for sale at the Ballarat Hamfest; these units plug into the CAT sockets on the popular ICOM, Kenwood and Yaesu transceivers and provide direct frequency input with automatic ARS shifts and the appropriate modes in line with the Australian Band Plan.
- A number of Doppler DF modules were assembled under the watchful eye of Peter VK3ZAV for "Fox Hunting", using AX25 to enable real time location of targets using triangulation. During this first session, the antenna switching units were built, requiring the main boards and antennas to be completed at home.

Presentations during November:

Short vertical antennas

Chas VK3PY and Dallas VK3DJ gave

a presentation on the design of short, related to actual wavelength, vertical antennas and the effects of the positioning of the loading coils and capacity hats on radiation efficiency, using computer modelling tools to visualise the end designs.

Computer modelling of antennas

Gerhardt VK3HQ gave a presentation on the use of MMANA – GAL in the design of antennas. This computer program provides two and three dimensional plots of the antenna performance including its gain, F/B ratio and SWR over a bandwidth of your choosing. This program is available for downloading from the GARC website <http://www.vk3atl.org/>

Using multimeters

Chas VK3PY gave a presentation on the use and interpretation of electrical measurements taken with analogue and digital multimeters, and David VK3QM demonstrated an old style bridge ohm meter with a 'magic eye' tube tuning mechanism.

Back to basics

A three day bush session starting on the 30th of November, at the Dereel shack owned by VK3DJ. Those in attendance were VK3DJ, VK3VLH, VK3JGC, VK3FWGR, and VK3HQ. There are



Photo 1: Chas VK3PY at the operating position

Frequency	6 m	2 m	70 cm	23 cm	13 cm	9 cm	6 cm	3 cm
Contacts	21	69	54	33	14	1	1	1

Table 1

News from...

no mains gas, water or mains electrical facilities available; you use what you bring.

This time we had to share the accommodation with a number of unwanted guests: Huntsman spiders, bush flies and mosquitoes. Having applied all the advertised repellent guards, it was evident to us that the insects do not watch TV, as they continued to plague us!!

One of the main attractions of Dereel is working in an 'electrical interference free' environment, this however can lead to some frustration for whilst it is

possible to copy a readability 5 signal at signal strength 0, regrettably the same cannot be said of the received contact's environment.

Working on 2 m with a mobile whip it was possible to copy VK7s and the occasional VK5 via their repeaters as there was a considerable lift occurring. HF Band conditions however were disappointing, limiting 10 m contacts to VK2 and VK4 on FM via the 10 m repeater and VK9 on SSB. Operations on 20 m were little better with the best

contacts with A7IRM and VR2AJ on SSB. This however allowed considerable time for anecdotal yarns, 'bloke talk' and the consumption of red wine and cheese!

The GARC Net

The GARC net is held on Wednesday nights at 8:00 p.m. using the VK3RGL repeater on 147.000 MHz, hosted by the club president Ian VK3VIN using the club call sign VK3ATL. Non club members are welcome to join in.



Photo 2: Outside the Dereel shack: From left to right VK3DJ, VK3HQ, VK3QM, VK3VLH, VK3FWGR

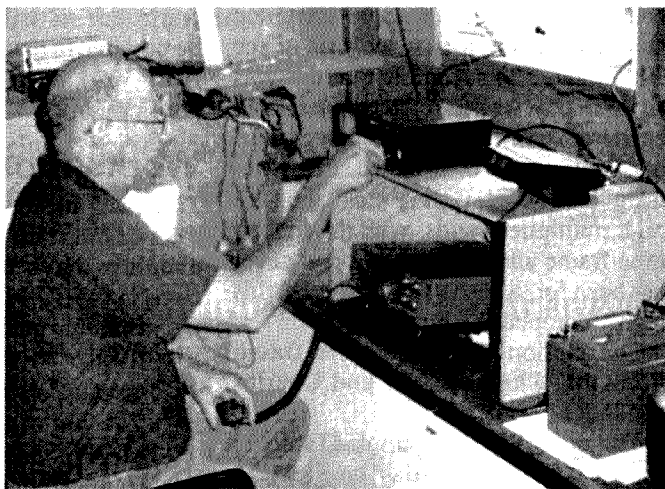


Photo 3: Dallas VK3DJ/p operating on the HF bands with the FT9800 providing 2 m coverage

Silent key

Alan Percival West VK4DWK

Alan West passed away quietly at the Royal Brisbane & Women's Hospital, Brisbane, Queensland, on Tuesday 20th November 2007 at 9.15 pm with loved ones present, he was 94 years old.

He was born on the 31/07/1913 in Perth WA. At the age of 20 years in 1933, he met his future wife Irene, aged 16 years. They married 3 years later and went on to have 6 children plus one adopted daughter, 18 grandchildren, 22 great grandchildren and 8 great great-grandchildren.

Even though they had 4 children by 1942, dad joined the RAAF and was a sergeant in the 31st Beaufighter Squadron in the ground crew and was posted first to Darwin during the attack and then to Moretai. After the war he

settled in to family life again and to learning more. During this time he developed a desire to get into amateur radio which over the years became a passion. But due to family needs he was not able to really acquire decent equipment until 20 years ago. By that time he had hearing difficulties, so it was hard for him to enjoy his achievement to the maximum, but looking at his list of contacts, I am very pleased and proud of what Dad did achieve.

It was very frustrating for Dad for the last 2 years: he was finally able to have the ultimate of equipment, but not to able to enjoy it, but he was always trying up to the last and will keep trying in his radio shack in Heaven.

Robert M. West (son)

DX – News & Views

continued from page 30

PE7T. So QSL cards for ZL9BSJ/p and ZL2BSJ should be sent to PE7T.

WSUE is no longer the QSL manager for 9VIYC. The correct QSL manager is N5ID.

QSL 5L2MS - The first direct cards for 5L2MS (October 2007) are arriving. Henk, PA3AWW would like to remind that one USD does not cover return postage expenses and those direct requests will be processed via the bureau.

Special thanks to the authors of The Daily DX (W3UR), 425 DX News (11JQJ) for information appearing in this months DX News & Views.

Interested readers can obtain from W3UR a free two week trial of The Daily DX from www.dailydx.com/order.htm

ar

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

AHARS had a busy end-of-year, as always. We had our Construction night in November, followed closely by the Buy and Sell. Both of which were great successes.

Graham VK5ZFZ brought along all the components and a very comprehensive set of instructions for members to make Gizmo 1. Gizmo 1 could be tuned, so when you had finished construction you could take it to Graham for testing.

From then on it was 'heads down, tails up' as everyone "had a go". Most members did complete the device and

most of them tested successfully, but a few were going to be completed in a little more privacy, at home.

A few days later the "BUY AND SELL" was held on a brilliantly sunny day. This was the day friends met again after a year's break. The "wall-to-wall" crush and the noise level indicated, as usual, that everyone was having fun.

Three door prizes were allotted. Everyone was pleased when one of the hardest workers before and after the Buy and Sells, won the first one, (photo attached).

PLEASE NOTE – The VENUE and the FORMAT of the 2008 BUY AND SELL will be bigger and better in every way. The committee has been busy finding a larger venue with more parking and more room inside as well. We plan to have an area for "chitchat" and an area where we can have a couple of mini lectures, as well.

We may have a barbecue lunch as well as the usual pies and pasties provided by ALARA so we hope the whole event will be more enjoyable in every way.

WATCH THIS SPACE FOR FURTHER INFORMATION

To complete the year we had our End of Year Luncheon in mid December. Apart from the weather which complicated the seating arrangements the luncheon was pronounced a success by all who were there. The food was very good and the company was incomparable. The Christmas season was ushered in successfully.

AHARS wishes everyone a good 2008 and hopes to see you at our meetings. If you are visiting please contact John VK5EMI or David VK5AKM for more information about the regular meetings on the third Thursday of each month

Neville Campbell VK7NC

Neville Campbell VK7NC died mid December 2007. He was 95.

Neville became interested in radio as a schoolboy in Scottsdale in the 1920s, building a crystal set. After moving to Hobart, he was apprenticed as a jeweller and continued his interest in radio, building valve receivers.

Neville discovered amateur radio in 1931 and became thoroughly addicted.

In 1934 he started using the five metre band and later, on 20 metres, had the first beam antenna in Tasmania - a W8JK. The mast of the antenna came down the chimney of his room and he rotated it manually.

Following service in the RAAF during the war, Neville continued building transmitters, receivers and beam antennas until the advent of SSB and commercial transceivers.

Neville's jewellery background made him an excellent workman and his homebuilt equipment was a delight to see. There is a beautiful automatic Morse key made by Neville in the Max Loveless Collection.

Ric VK7RO

"Woody" John SBY Woodburn VK3AGD

1921 – 2007

Woody obtained his Amateur Licence soon after WWII. At his farm near Dunkeld in Western Victoria, he was a very active DXer on his home built transmitter and multiple long wires, as well as locally on 80 and 40, and later on two metres AM. He helped establish VK3RWZ on Mount William. He was a keen WIA supporter in the VK3 Western Zone, coaching many new "hams" before the new system was established. He was also a dedicated fire brigade operator and member of the pioneering Westmere Group net.

Woody was an outstanding Boy Scout leader and top class yachtsman, winning many races on the Western District lakes and on the sea off Warrnambool and Portland.

He is survived by his brother Bill and children Tom, Wendy and Jane.

Submitted by life-long friend Tony Wilson
VK5AWD (ex VK3WB).



Photo 1: Jeanne VK5JQ proudly showing off her finished Gizmo 1.



Photo 2: The three prize winners for the Buy and Sell. L to R: Ron VK5RA, the Bushcom representative and Keith VK5OQ.

VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

February is Annual General Meeting month with NWTARIG's AGM on Saturday February 2, REAST's on Sunday February 10 at 11 am at the Domain Clubrooms and NTARC's on Wednesday February 13 at 7:30 pm at Allenvale TAFE College, Block B. It was great to see our weekly broadcast callback number increasing in 2007 by a further 12.7% over 2006. Congratulations to VK7 for coming second in the Remembrance Day contest 2007.

VK7 Sewing Circle Aids Solomon Islands

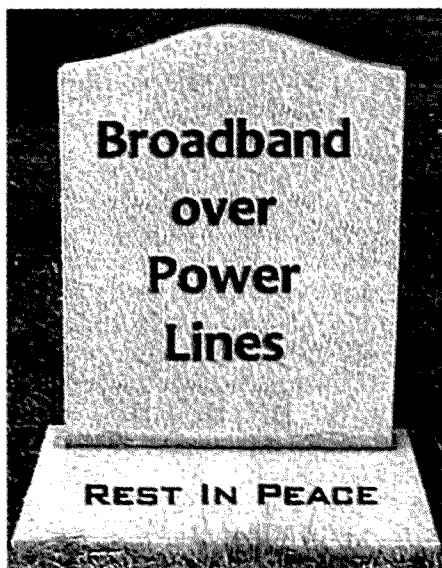
Back in June 2007 AR, we reported the great work that the VK7 Sewing Circle Net did in raising funds to help the islanders on the tiny Island of Simbo, in the Western Province of the Solomon Islands following the tsunami. The Sewing Circle has learnt that houses have been rebuilt, cooking utensils replaced, gardens to grow crops re-established and life is getting back to normal. With even better news that not all the funds were needed to re-establish housing and the unused balance has been used to start a small store on the island to supply Islanders from Simbo and surrounding islands with essentials they cannot grow or obtain on the Island. Makes you really appreciate what we take for granted. Great work to the Sewing Circle Net participants.

Meet the Voice BBQ 2008

The Sewing Circle Net will again be sponsoring the "Meet the Voice" event in the Ross Caravan Park on Sunday April 6, 2008. Last year was such a success that the same format of a guest speaker and then BBQ will again be run this year. Mark your diaries and we look forward to seeing you.

RIP BPL

On 27th November 2007, Aurora Energy announced it was abandoning its Broadband over Powerlines trial in VK7.



The press release stated that Aurora spent \$2M of tax payers money on the trial and commented they would be re-focusing on the provision of fibre optic services and that the BPL trial would be stopped in the next six months. This is great news for VK7 amateurs.

Athol Johnson Contest

After an absence of some 25 years, the Athol Johnson Contest makes a comeback on Saturday February 16, 2008 from 10 am to 6 pm EDST. This is a VHF/UHF contest with extra points for mobile operation and contacts with F-calls. There is also the inaugural John Grace Perpetual Trophy for the foundation licensee with the highest accumulated score. Take a look at: <http://reast.asn.au/events.php#AJContest> for more details.

North West Tasmanian Amateur Radio Interest Group

The December 1st NWTARIG meeting was very well attended and following the short business meeting, there was a demo from Jim VK7JH on the subject of Packet Radio including all aspects of AX25 Packet Radio and the VK7NW BBS and VK7AX gateway. We welcome Mark

Rapley VK7FMPR who recently passed his Foundation Licence assessment.

Northern Tasmania Amateur Radio Club

November 14 saw Mark Nightingale give a talk on radio station 7LA and the move to FM operation. A great show thanks Mark. December 12 was the annual pilgrimage to Myrtle Park with many braving the elements. A good show by all accounts. We welcome new Foundation licensees: Rebecca VK7FBEC, Malcolm (Rebecca's father), Anthony VK7FAMH, Yvonne VK7FYM and Luke.

Neil VK7TTT could be labeled a superman given his Christmas time tumble from his quad bike breaking his arm in three places and gashing his leg requiring 12 stitches. Neil managed to right his quad bike and ride 15 kilometres to get help. A number of amateurs came to his rescue, thank goodness! Take it easy Neil.

Radio and Electronics Association of Southern Tasmania

We welcome the following Foundation licensees: John VK7FJGM, Scott VK7FSCO and Ben Smith VK7FBGS (Ben is only 10 years old). We also welcome the following new Standard licensees: Tom VK7NML, Derek VK7MAX, Robert VK7MAG, Roger VK7HMH, Chris VK7HCH and Len VK7HAJ. We also welcome the following Advanced licensees who have upgraded: Graeme VK7GAJ and Brian VK7BDW.

December 9, 2007 was our End of Year BBQ and we had a great attendance. The big event at the BBQ was the antenna draw. Many attendees put their name in a hat for one of nine Moonraker AT318 Autotune Mobile Verticals and the control boxes. A great social day and the weather was perfect. See you at the AGM and we will have more of those Moonraker antennas on offer!

ar

Contest Calendar for February 2008 – April 2008

Feb	2/3	Mexico International RTTY Contest	RTTY
	9/10	CQWW RTTY WPX Contest	RTTY
	9	Asia-Pacific Sprint	CW
	9/10	RSGB 160 Metres Contest	CW
	16/17	ARRL International DX Contest	CW
	22/23	Russian PSK WW Contest	PSK31
	23/24	CQWW 160 Metres Contest	SSB
Mar	1/2	ARRL International DX Contest	SSB
	8/9	RSGB Commonwealth Contest	CW
	15/16	John Moyle Field Day	CW/SSB/FM
	22/24	BARTG RTTY Contest	RTTY
	29/30	CQWW WPX Contest	SSB
April	5/6	SP DX Contest	CW/SSB
	5/6	EA WW RTTY Contest	RTTY
	12/13	Japan International DX Contest	CW
	12/13	Yuri Gagarin International Contest	CW
	19	Holy land DX Contest	CW/SSB
	19	TARA Skirmish Digital Prefix Contest	PSK
	19/20	YU DX Contest	CW/SSB
	26	Harry Angel Sprint	CW/SSB
	28/29	Helvetia Contest	CW/SSB
28/29	SP DX RTTY Contest	RTTY	

A belated Happy New Year to all for 2008

It is the time of year that one is stuffed full of turkey sandwiches, turkey salad, turkey curry, the turkey list seems endless – surely the remains of such fowl is now a distant memory (unless you have stuffed the freezer full of it!) and contemplations now focus upon the contesting season. There are whispers of Cycle 24 now kicking-off a few spots on the sun so hopefully Santa has brought you that radio gear that you wanted – have you been a good boy or girl??

ANARTS 2007 Contest Results

The Australian National Amateur Radio Teleprinter Society (ANARTS) Contest took place some time ago now and the results of the contest are eagerly awaited

by devotees. The ANARTS contest has something of a chequered history and the 'original' contest manager, Colin Davies, relinquished the role to ANARTS Secretary/Broadcast Officer Pat Leeper VK2JPA.

Pat has not forgotten the contest and has been busying herself with producing the results. Pat does not have any contest history to hand as this is her first tentative step into the world of contest management, but Pat has also hit upon a myriad of problems which have had a consequential knock-on effect on the contest results. Pat advises that she is working hard to complete the mammoth task and will issue the data very soon. The workload has been increased somewhat however, by entrants not submitting the correct data for adjudication. Using the latest version of software often helps greatly in this respect, but Pat also comments that the

CQ zone of the station contacted is not always being recorded.

ANARTS is the only Australian RTTY contest, so why not give it some support in June and see how you go....? I am planning to enter this year as my RTTY gear should arrive (hopefully!) at the 'BAA QTH in time for some fun.

Spring VHF-UHF Field Day 2007 Results

The results and write-up for the Spring Field Day are published in this month's AR. It is great to see another good turn-out for the contest, with stations competing in multi and single operator categories and as well as categories for field day style and home operation. VK2FRBS and VK4FJON appear as the only 'F' calls to submit an entry – nice going Gents! 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.

Commonwealth Contest

Beru, otherwise known as the Commonwealth Contest, will be taking place on 9th and 10th March 2008. In keeping with the cricketing traditions presented for the first time in 2007, it is proposed to organise a Commonwealth Team Contest along cricket team lines, to run in parallel with the normal Commonwealth Contest. This is again intended as a 'fun' event, although it (somewhat naturally!) also attracts some fierce competition.

The format for the Commonwealth Contest 2008 team competition is virtually identical to last year's competition, although the Oceania multiplier that we and the Kiwis benefited from has been reduced slightly, to give the rest of the Commonwealth a better chance. Seeing as us antipodeans (VK and ZL that is) beat the rest of the Commonwealth in 2007, I would say that they need as much help as they can get!

Steve VK6VZ is the Australian team organiser once again. Steve has the dubious task of Team selection for VK, and advises: *A good way to go this year is to look at the top 14 Australian scores in the Commonwealth Contest 2007 and first offer these operators the chance to be in the team for this year. These would make up the team of 11, plus three reserves. If any of these 14 cannot take part this year (or do not wish to), then their place will be offered to the competitor with the next highest score.*

This seems the fairest way of choosing a team - and encourages those who would like to be part of the team for 2009 to put in the best possible score for 2008.

On the basis of the above, the initial proposed 2008 team would consist of:

1. Kevin VK6LW (5335 pts)
2. Barry VK2BJ (5045 pts)
3. John VK4EMM (4860 pts)
4. David VK2AYD (3835 pts)
5. Steve VK6VZ (3495 pts)
6. Mike VK6HD (3055 pts)
7. Vlad VK2AEA (3050 pts)
8. Alan VK6BN (2920 pts)



Photo 1: Raj VK4FRAJ in the shack of Dad (Eddie VK4AN). Photo by VK4AN.

9. George VK4XY (2845 pts)
10. Les VK4BUI (2805 pts)
11. Keith VK4TT (2770 pts)

Reserves

1. Karl VK2KM (2690 pts)
2. David VK2NU (2605 pts)
3. Russ VK4XA (2585 pts)

Teams will again be drawn from Australia, Canada, New Zealand, United Kingdom and the Rest of the Commonwealth. See www.beru.org.uk for further details. I am sure that VK can put in a good appearance in the contest and give 'em a good run for their money!

Heard VK4AN lately?

If not, it would be best to have a QSO sooner rather than later. Why? Is Eddie ill? Not to my knowledge and hopefully not, but Eddie's son VK4FRAJ Raj has plans which involve Eddie's shack so Eddie might find himself on the sidelines for a contest or two! It has got to the stage where Eddie and Raj now have a roster drawn-up to see who gets 'air time'! Raj has been licensed since June 2007 and has a passion for CW, contesting, chasing DX and JOTA. I worked Raj in CQWW CW in November last year and had a splendid QSO on the key on 15 m. Raj called me at the tail-end of a bit of a pile-up and, as contest stations should do, I slowed my sending speed to match the station calling. Thing is, maybe I did not need to bother, as although I slowed from more than 30 WPM Raj had got my call correct at contest speed – not

bad going at all. Raj is the ripe old age of 12 and has plans to get more air time as homework and chores allow. So, if Eddie wants to use his shack, Raj is highly likely to get a few more chores allocated in 2008.....

The photo shows Raj on 40 m, firmly ensconced in Eddie's chair with Eddie relegated to camera duties. Best get used to it Eddie! How long will it be before Raj catches-up with his Dad with DXCC entities I wonder?

CQ WW 160 metre CW Contest 2007 Results

VKs only (Call\Score)
VK6VZ/6 26,978

Thanks for flying the flag Steve and well done on a good score. This contest, and indeed its SSB counterpart, generally takes a little bit of real estate to put a competitive station together as the antenna/s need to be large and as high as you can muster. For working DX (multipliers in this contest requires DX to be worked) a low angle of take-off is required but the height for a dipole at a halfwave on 160 m is a daunting task. In order to get a low angle take-off from the antenna, hardware such as a four-square antenna system plus radials would be good, along with a selection of beverage antennae for receiving through either man-made noise or tropical storms. These antennae are not small items and are not a simple matter to make effective either! Steve has spent a great deal of time and effort on his 160 m station and

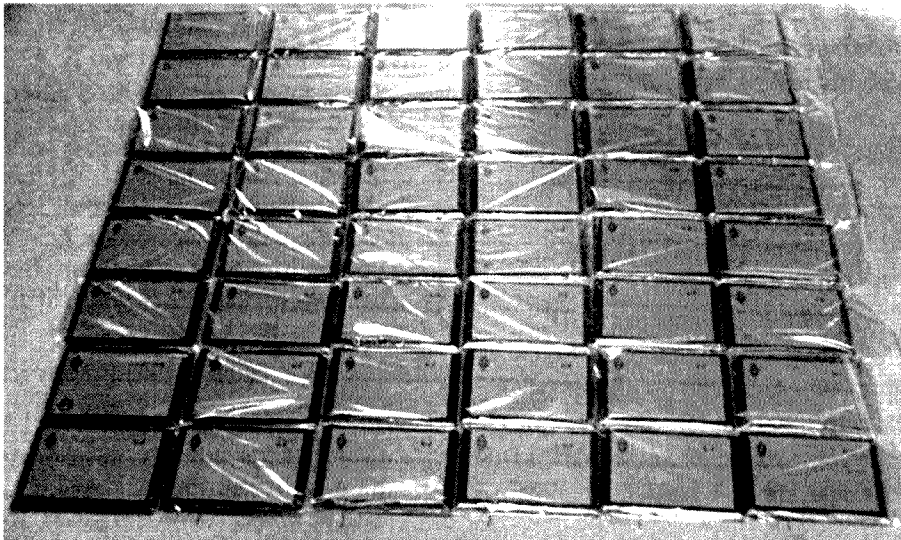


Photo 2: Oceania Contest Plaques await shipping to their recipients. Photo by ZL1AZE.

Mirek VK6DXI, Martin VK7GN, Brian ZL1AZE, Wilbert ZL2BSJ and Geoff ZL3GA.

HST 2008

“HST” stands for High Speed Telegraphy. The ARI (Italian radio amateur association) recently announced that from April 23rd to April 26th 2008, the 6th International High Speed Telegraphy Championship HST2008 (High Speed Telegraphy) in Pordenone (Italy) will take place during the 43rd edition of Radioamateur Fair. More details at <http://www.hst2008.org>

The tests involve callsign recognition utilising RUFZ XP and pile-up simulation using Morse Runner and feature entry categories for all ages. Not everyone’s cup of tea particularly, but it is interesting to see the proposed software for the championship. This software is freely available on the internet and can be used to sharpen-up pile-up skills and general reception under less than perfect conditions.

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

has had a keen interest in the band for quite a while now.

country section with 11 QSOs!

Oceania contest - A Plethora of Plaques

The plaques for winners of the Oceania Contest should be safely in the hands of their recipients by now. Photo 2 shows the plaques being assembled ready for shipping to those fortunate enough to be awarded the honour. It is no mean feat to collate the results and dispatch these awards, so it is of great credit to the Contest Committee which consists of Tony VK3TZ, Phillip VK2FHN,

Frequency wise, the band is not the widest on LF making receiving an even more skilful task with being full of contesting stations from around the globe if conditions allow. The contest requires multipliers from the sum of countries worked and W/VE multipliers worked, but the band plans around the world for Top Band do not tend to align greatly with DL not being permitted above 1850 kHz for example, so unless you choose a good spot on the band you could run the risk of missing certain country multipliers. The BY radar also took its toll during the contest with reports from Japan of trouble whilst trying to work EU and NA. Top Band is not the only amateur radio allocation to suffer from this aspect, with 40 m and 80 m also experiencing periodic problems in VK.

CQ WW 160 metre SSB Contest 2007 Results

VKs only (Call\Score)
VK9DNX 680

An interesting result this one. The callsign appears to have an incorrect prefix for Norfolk Island. I always thought that it was VK9N and not VK9D, possibly as a result of a typing error on the licence document. I have no idea as to the actual reason or even if it was an error as such. If I recall correctly, the team consisted of Germans on a short visit to the island for some contest fun and relaxation. They won this Oceania

Exchange difficulties

My name is Lars Ippich DL8TUX/VK3LAR. I am a German exchange student living in Shepparton, Victoria since the middle of July until the end of April 2008.

Unfortunately, living with my first host family did not work out and my exchange organisation and I had trouble to find a new family without having me to move over 80 kilometres.

But then Jacek VK3TJS offered me a stay in his house until November. He cannot host me any longer, because his oldest daughter comes back from university then and needs her room back. But hosting a nearly complete stranger for more than three months

without getting paid anything is a great example of ham spirit I think. And he is even supporting me in every possible way by trying to show me as much of this part of Australia as possible and encouraging me to do different activities.

I would like to thank Jacek and his family for this when I leave them in November and thought it might be a good idea to do this in the *Amateur Radio* magazine. What do you think about it?

73 de Lars DL8TUX/VK3LAR

(Editor’s note: By now, Lars will have moved on. My apologies for the delay in having this OTY item published.)

Over to you

John Moyle Field Day Contest 2008

Presented by Denis Johnstone (VK4AIG/VK3ZUX)

15 - 16 March, 2008

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: jmfd2008@wia.org.au and you can 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, 16-17 March 2008.
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.
 - d. Digital modes – RTTY, Packet, PSK31, etc will be trialled this year. Scoring: 2 points per contact irrespective of band.
6. Home and SWL single operator entries may be either 24 hour or 6 hour, all modes, all bands.
 - a Phone, CW, or All modes;
 - b HF, VHF/UHF or All Bands.
 - c. Digital modes – RTTY, Packet, PSK31, etc will be trialled this year. Scoring: 2 points per contact irrespective of band.

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 300 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 e-mailed jmfd2008@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: Microsoft Excel or 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 National 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, applies 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 not 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 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 a single or multi operator station.
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 three 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 etc, my home phone number is (07) 4723 4229, and my snail mail and e-mail address is as shown in the Log Submission section above.

Denis Johnstone (VK4AIG/VK3ZUX)

Silent key

Ron Sieber ex VK4KN

I first met Ron about 40 years ago at Mitcham in South Australia, where he then lived and ran a small-goods factory for a local butcher chain. He had become interested in amateur radio and attended the VK5 Division of the WIA.

I may have been running the VK5 weekly broadcast at the time, as I cannot remember the actual dates, but I expect that may have been how we initially came into contact.

Ron was one of my first students around the kitchen table and he went on to pass the AOCPE and operated enthusiastically on six metres for some time with the callsign of VK5ZCE.

Ron and wife June later decided to re-

locate to Alice Springs with their young children, where Ron continued with his trade, took up the call-sign of VK8ZQ and met John VK5YY, in Flight Service at the Alice Springs airport.

Following a period in the Territory, Ron and XYL moved back to Brisbane from where they had originally set out. The callsign then changed to VK4KN and we contacted as often as conditions would permit for some years.

Ron passed away while on a visit to friends south of Brisbane on 31 October 2007. A friend and another amateur thus joins the ranks of the Silent Keys.

I am indebted to Ron's son Ray for passing on the sad news.

Murray Burford VK5ZQ.

RD Contest 2007

Peter Harding VK4OD

Individual

HF Results

HF Multi Op

Open 2-2-3

Call Sign	Score
VK2ATZ	1660
VK1ACA	604
VK3SAT	555
VK2AMW	349
VK6SH	164

HF Multi Op CW

2-2-2

Call Sign	Score
VK2ATZ	206

HF Multi Op

Phone 2-2-1

Call Sign	Score
VK2ATZ	1450
VK2WIA	807
VK7AC	541
VK7OTC	428
VK3BJA	274
VK2BV	185
VK3CNE	37

Receiver Only

2-1-4

Call Sign	Score
VK6ABM	74

HF Single Op

Open 2-1-3

Call Sign	Score
VK7GN	920
VK3YXC	861
VK1DA	574
VK2AYD	476
VK7TW	269
VK4BUI	258
VK4FRAJ	254
VK5UV	253
VK2IO	187
VK4JRO	182
VK1WX	179
VK3JS	177
VK2BOR	174
VK4HTM	173
VK4TJ	155
VK7FWAY	140
VK5WO	128
VK5TFR	115
VK4FLR	109
VK7RR	109
VK1XYZ	104
VK6KPA	80
VK5XE	79
VK4ZA	78
VK6JB	72
VK6CB	71
VK2YW	70
VK3TWO/6	69
VK3ECH	61
VK3KYF	58
VK3FNBL	48
VK3MOU	46
VK2XF	44
VK1HMS	43
VK6XC/P	42
VK1KBN	34
VK1DSH	33
VK4FK	32
VK3FCLS	31
VK6RZ	24
VK3AKT/MM4	22
VK2XTC	21

VK4IW	20
VK4ZPP	15
VK7QP	14
VK6BDO	12
VK3ZGP	10
VK2JNA	6
VK6PMY	4
VK6MRS	2

HF Single Op

CW 2-1-2

Call Sign	Score
VK2AWD	354
VK4LV	318
VK5ATU	292
VK2BHO	222
VK5UM	172
VK1WJ	122
VK2BCC/MM	102
VK6AJ	82
VK4XY	74
VK6AFW	72
VK7EE	56
VK2II	56
VK3TX	50
VK2RJ	42
VK7RO	40
VK3GDM	34
VK4RE	28
VK4CEU	15
VK2YA	12
VK2MGM	10

HF Single Op

Phone 2-1-1

Call Sign	Score
VK4ZD	740
VK4VCH	547
VK3HGC	533
VK5KXC	527
VK4PTO	525
VK5SN	424
VK5BC	375
VK3DDU	347
VK3BKU	336
VK4CAG	328
VK1KLW	287
VK7YBY	266
VK3AV V	245
VK2BHG	227
VK5ZDW	222
VK2LCD	209
VK4KAD	208
VK4FTBA	201
VK2BAM	200
VK3AHY	191
VK5AR	191
VK2VKV	189
VK3KMB	182
VK7KC	180
VK2DM	180
VK3IO	179
VK7HIM	170
VK5DK	170
VK2ZCM	166
VK7CK	163
VK2FREK	160
VK3ADW	160
VK4WIG	154
VK2ENG/QRP	144
VK2ZPT	141
VK7HLE	138
VK6ARA	135
VK4TE	132
VK7HK	128
VK5YX	119
VK2ASU	112
VK5HBG	110
VK6CSW	109
VK5ZQV	109
VK5AJW	108

VK2JAM	108
VK5ZIG	108
VK3ALA	108
VK3AWN	105
VK3AMW	104
VK4AWL	96
VK3SAY	91
VK6ADI	90
VK7HDM	85
VK5FAAF	84
VK5RV	80
VK4DX	78
VK3ASU	77
VK7CEJ	75
VK5ZDB	73
VK6NWK	71
VK2ZZ	70
VK1EY	68
VK4BTW	68
VK4PJ	61
VK6CG	60
VK3JK	58
VK3KQB	58
VK2EI	54
VK5OV	54
VK2UVP	53
VK6JEE	49
VK5ALX	48
VK6LXU	48
VK6AB	48
VK3HBA	44
VK7ZGK	43
VK7NCW	42
VK6ZA	42
VK4ADW	37
VK3YAZ	36
VK2JH	36
VK4GLC	35
VK4DBJ	34
VK5LL	34
VK6AR	33
VK6KRC	33
VK6MJS	32
VK5HLS	32
VK6JP	30
VK5HO	30
VK7JGD	30
VK7RM	27
VK3FR	26
VK5AEY	26
VK7VH	25
VK4FGLS	25
VK3DS	23
VK2XT	23
VK1WJ	21
VK2FDAS	21
VK5TW	20
VK6DAT	20
VK3DY	20
VK4ZW	19
VK5RK	19
VK6MM	19
VK5OQ	18
VK4YNF	18
VK5BWA	17
VK4JM	15
VK6ARG	15
VK4JJ	15
VK1KEP	14
VK2ZQX	14
VK6COM	14
VK4ZBV	13
VK6YOY	13
VK5HAE	13
VK5OF	13
VK6SN	13
VK1ZCM	12
VK3NWJ	12
VK4ZJ	12
VK8FLUX	10
VK3KRB	10
VK6FZUK	9

VK6RRG	8
VK4OD	8
VK4AA	8
VK4VY	8
VK4VW	8
VK4SWE	6
VK6GL	5
VK4HOL	5
VK6JRC	3
VK6JO	2
VK6LOT	1
VK6HWF	1

Individual

VHF Results

VHF Multi Op

Open 1-2-3

Call Sign	Score
VK6ZLZ	248
VK1ACA	47

VHF Multi Op

Phone 1-2-1

Call Sign	Score
VK6WIA/P	336
VK6WIE/P	336
VK6WH/P	336
VK6SCS/P	333
VK6FIVE/P	331
VK6LZ	302
VK3BJA	275
VK6OTN/P	249
VK3ER	89
VK3CNE	86

VHF Single Op

Open 1-1-3

Call Sign	Score
VK6BDO	649
VK6RRG	644
VK3TWO/6	342
VK7TW	185
VK6HIM	170
VK8HIM	170
VK6RZ	145
VK4KY	138
VK3KE	125
VK1DA	92
VK7FDAE	78
VK6NX	66
VK1HS	54
VK7RG/1	54
VK6MRS	43
VK6FXYL	39
VK6PMY	37
VK6XC/P	14
VK6NX	2

VHF Single Op

Phone 1-1-1

Call Sign	Score
VK6KAD	417
VK6KY	386
VK6LXU	385
VK6GO	384
VK6AHR/P	336
VK6CSW	311
VK6FREQ	300
VK6MHZ	300
VK5AKK	283
VK4AML	255
VK7HDM	230
VK6YOY	225
VK6HGR	214
VK6JP	214
VK6KHZ	212
VK4AR	203
VK6MM	198
VK4ZBV	170

VK7ZGK	162
VK6FLUX	152
VK7KEG	152
VK5BC	152
VK6CN	141
VK5AVQ	140
VK3WT	129
VK6DAT	129
VK6ARA	128
VK6COM	124
VK3AAK	120
VK6FZUK	115
VK7RR	114
VK7FMBX	103
VK6PT	100
VK4ZW	97
VK3BGS	96
VK6RO	89
VK3JK	85
VK5ZKK	82
VK6CRO	81
VK6ARO	81
VK6SIX	80
VK6MJS	76
VK3NWJ	76
VK6TS	75
VK6AB	64
VK7HLE	63
VK1DW	63
VK6AJL	62
VK6KFD	60
VK6HKW	57
VK7RM	57
VK1BP	53
VK6SH/P	51
VK6SAA/P	51
VK5RV	50
VK3FRST	48
VK5ZB	46
VK3KRB	46
VK4ZA	45
VK1EY	43
VK6AR	43
VK6FTIM	43
VK4GLC	40
VK1DSH	39
VK5BUI	34
VK6LOT	32
VK3AV V	31
VK3KK	31
VK6KG	31
VK6SN	30
VK1KLW	29
VK6HK	27
VK4JAZ	27
VK6ALU	27
VK7HK	25
VK6HWF	24
VK4OD	23
VK4AA	23
VK6FANT	23
VK6JEE	23
VK7JGD	23
VK6FPAT	20
VK3XH	20
VK4FNQA	18
VK5OF	16
VK3XJU	15
VK6ABM	14
VK5ATQ	13
VK1ZCM	12
VK1WJ	11
VK7VH	10
VK5HBG	8
VK4VY	8
VK6JO	7
VK6ARG	7
VK2EI	7
VK5AEY	6
VK3HBA	5
VK2ZCM	3
VK6MOD	2

Spring VHF-UHF Field Day 2007: Results

Contest manager: John Martin VK3KM

The Spring Field Day was well supported. Propagation was average and weather was quite variable, but there were plenty of contacts to be made. Logs were again very readable and well presented – thanks to all for making it an easy job to check through the logs.

Thanks to entrants for their careful observance of the rules. But I would repeat my usual request to all stations - please use those tuning knobs! All stations are asked to keep clear of

designated DX calling frequencies. The recommended contest calling frequencies are 50.150, 144.150 etc, but it is logical to spread out and tune around rather than making a queue on the one frequency.

The winners of the five sections were: Gavin VK3HY, Michael VK3AAK, the Lara crew of VK3UHF, the SERG station VK5SR, and Matt VK2DAG. Congratulations to these winners, and to all who took part.

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											
VK3HY	G. Brain	QF32	116	651	815	792	-	-	-	-	2374
VK4OE	D. Friend	QG62/63	48	306	455	648	480	-	-	430	2367
VK4JMC	J. McPherson	QG62	101	561	660	568	-	-	-	-	1890
VK5NY	R. Bowman	PF94	286	603	150	336	-	-	-	-	1375
VK2FRBS	R. Simon	QF57	-	489	430	-	-	-	-	-	919
VK2AMS	M. Swannack	QF68	60	240	295	168	-	-	-	-	763
VK2EAH	A. Hood	QF57	-	222	295	-	-	-	-	-	517
Section B: Single Operator, 8 Hours											
VK3AAK	M. Coleman	QF01,02,11,12	-	435	560	688	-	-	-	-	1683
VK3UBM	M. Borthwick	QF11,12,21,22	-	237	380	432	540	-	-	-	1589
VK3ECH	R. George	QF13	44	318	295	552	-	-	-	-	1209
VK3BG	E. Roache	QF13	44	291	295	552	-	-	-	-	1182
VK3BJM/2	B. Miller	QF25	-	276	225	264	-	-	-	-	765
VK2JDH	D. Hardy	QF57	105	255	365	-	-	-	-	-	725
VK5OQ	K. Gooley	PF95	149	132	210	176	-	-	-	-	667
VK3YFL	B. Dunkley-Smith	QF22	46	240	230	-	-	-	-	-	516
VK2EAH	A. Hood	QF57	-	183	240	-	-	-	-	-	423
Section C: Multi Operator, 24 Hours											
VK3UHF	LUMEG (1)	QF21	91	747	965	1240	740	210	210	670	4873
VK1DA	(2)	QF44	103	600	760	966	340	-	-	-	2771
VK1CEA	(3)	QF45	84	600	750	840	350	-	-	-	2624
VK1BL	(4)	QF44	71	582	645	616	480	-	-	-	2394
VK3ER	EMDRC (5)	QF22	186	759	700	744	-	-	-	-	2389
VK2MA	HADARC (6)	QF56	119	663	540	536	-	-	-	-	1858
VK4WAT	TREC (7)	QH22	83	318	310	376	-	-	-	260	1347
VK5AR	(8)	PF94	156	348	390	184	-	-	-	-	1078
Section D: Multi Operator, 8 Hours											
VK5SR	SERG (9)	QF02	147	360	505	544	440	210	210	330	2746
VK3AXH	(10)	QF12	71	363	455	640	320	-	-	-	1849
VK3FRC	FAMPARC (11)	QF21	111	654	485	376	-	-	-	-	1626
VK2MA	HADARC (6)	QF56	95	414	420	472	-	-	-	-	1401
VK3BJA	GGREC (12)	QF21	97	306	230	256	-	-	-	-	889
VK5AR	(8)	PF94	59	225	350	176	-	-	-	-	810
VK1YBQ	(13)	QF44	60	240	270	-	-	-	-	-	570
VK3HJV	(14)	QF01	-	255	285	-	-	-	-	-	540
Section E: Home Station, 24 Hours											
VK2DAG	M. Hetherington	QF56	114	714	695	896	-	-	-	-	2419
VK2DVZ	R. Barlin	QF68	-	531	450	560	-	-	-	-	1541
VK2EI	N. Sandford	QF68	36	483	455	-	-	-	-	-	974
VK2KOL	C. Hadland	QF56	-	396	565	-	-	-	-	-	961
VK4ZDP	D. Purkis	QH32	137	276	280	216	-	-	-	-	909
VK4AR	G. Ryan	QG62	103	177	290	-	-	-	-	210	780
VK2BHO	J. Hodkinson	QF55	86	300	390	-	-	-	-	-	776
VK3TPR	P. Roberts	QF22	-	279	305	-	-	-	-	-	584
VK3ECH	R. George	QF23	21	138	160	-	-	-	-	-	319
VK3CEM	F. McCowan	QF22	-	252	-	-	-	-	-	-	252
VK4FJON	J. Cockinos	QG62	-	126	120	-	-	-	-	-	246
VK2ZQX	J. Watson	QF59	-	99	-	-	-	-	-	-	99

Awards

Malcolm K. Johnson VK6LC
WIA Awards Manager.

WIA Multiband DXCC Program annual "DXer awards" 2007

This new annual award was introduced in June 2005 and has only been running three years and we have now 17 stations certified. We encourage all other members to have a go and join this program.

For this period we have four WIA DX members that have top tallies for 9BDXCC, 5BDXCC, and 3BDXCC.

They are:

9BDXCC – VK:

David McAulay VK3EW of Cranbourne, Victoria. Top tally of 2214 countries over 9 Bands.

5BDXCC – VK:

Allan Meredith VK2CA of Broken Hill, NSW Top tally of 848 countries over 5 Bands.

5BDXCC – DX:

David Rankin 9V1RH of Faber Hills, Singapore. Top tally of 752 countries over 5 Bands.

3BDXCC – VK:

Gwen Tilson VK3DYL of Mt. Waverley, Victoria. Top tally of 578 countries over 3 Bands.

WIA Awards Program 60th Anniversary 2007

MultiBand DXCC Program 1st September 2005

The "WIA 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 31st December each year.

It can only be awarded to the same person once in every three years and all

awards will be judged on performance, participation and spirit towards the Multiband DXCC Program.

Certificates:

These are truly outstanding, colourful and have a world class identity. All of these awards are graphically designed for

A4 with a thickness 200gsm Colortech. They are produced and donated by the Awards Manager.

All awards will be approved by the National Board of Directors, signed by the W.I.A. President and the Awards Manager.

WIA MultiBand DXCC Program. January 2008

	Callsgn	2 m	6 m	10 m	12 m	15 m	17 m	20 m	30 m	40 m	80 m	160 m	Bands	Total	Average
1	VK6HD			305	283	322	311	332	312	331	315	246	9	2737	304
2	VK3QI			293	283	309	297	336	314	302	247	117	9	2498	278
3	VK3EW			276	231	304	254	328	137	292	284	106	9	2214	246
4	CT1EEN		110	294	290	324	305	328	146	243	183		9	2203	245
5	VK4AN			238		257	127	304	104	230	107		7	1367	195
6	VK5WO			155		153	106	254	109	225	134		7	1136	162
7	VK3PA			135		145		269	109	178	230		6	1066	178
8	PY2DBU			199	125	187	104	276	102				6	993	166
9	VK8LC			121		154		307		196	145		5	923	185
10	UA6LDD			169		190		191		189	148		5	907	181
11	VK3TZ			184		197		263		139	115		5	898	180
12	VK2CA			166	103	208	116	217					5	810	162
13	9V1RH				149	173	139	154		137			5	752	150
14	VK3KE			115		183		292		118			4	708	177
15	VR2XMT		154			127	162	172					4	615	154
16	VK3DYL			114		168		296					3	578	193
17	VK4QO			136		158		244					3	538	179
18	WA5UA			102		106		128					3	336	112
	Averaged		132	189	206	204	192	261	167	215	189	156	6	1182	191

Spring VHF-UHF Field Day 2007: Results (continued from previous page)

- | | | |
|--|---|--|
| (1) Lara UHF-Microwave Experimenters' Group: Chas Gnaccarini VK3PY, David Learmonth VK3QM, Charlie Kahwagi VK3NX | Rose, VK2BCD Steve, VK2FMAM Paul, VK2HKJ Kirsty, VK2FEAH Emma, VK2TTP Peter, VK2FDIW Dave, VK2FJLW Jessica, VK2ZJG Josh, VK2FALMAlex, VK2FRDW Rod, VK2HMS Mick, VK2HRX Compton, VK2FTEC Taylor, VK2PIZ George | (10) VK3AXH Ian McDonald, VK3IDL Ian Lloyd, VK3AIG John Kennedy |
| (2) A. Davis VK1DA, C. Davis VK2DO. | | (11) Frankston & Mornington Peninsula ARC: Roy VK3GB, Gerard VK3GER, David VK3EW, Stjepan VK3TSN, Andrew VK3MUD |
| (3) Andy Sayers VK2AES, Russell Manning VK1JRM, Dale Hughes VK1DSH, Sean Barwick VK1SSB, Tom Green (SWL). | (7) Tableland Radio & Electronics Club. John Roberts VK4TL, Dave West VK4ADW, Trevor Gregory VK4ZFC, Dale McCarthy VK4DMC. | (12) Gippsland Gate REC: Albert VK3BQO, Helmut VK3DHI, Phil VK3YB, Kerri-May VK3FDSD, Ivan VK3ARV, Doug VK3KMN, Bruno VK3BFT, Pat VK3OZ. |
| (4) Ted Garnett VK1BL, Greg Parkhurst VK1AI | (8) Alan Raftery VK5AR, Andrew Russell VK5ZUC, David Clegg VK5AMK. | (13) Hauke Wunderlich VK1YBQ, Al Long VK1PAR, Charles Muller VK1ZCM, Waldis Jirgens VK1WJ. |
| (5) Eastern and Mountain District Radio Club: VK3QI Peter Forbes, VK3VF Jonas Sadauskas, VK3WT Max Chadwick, VK3WWW John Bramham | (9) South East Radio Group: Colin Hutchesson VK5DK, Tom Aubrey VK5EE, Andrew McKinnis VK5KET, Ian Bishop VK3FNBL, Mathew Williamson VK5HMW | (14) Paul Brown VK3HJV, Gary Smith VK3LCD |
| (6) Homsby & District ARC: VK2TPK Peter, VK2DAY Rod, VK2STG Mal, VK2ANG | | |

ar

Weak Signal

David Smith - VK3HZ

It's been a very good summer so far with lots of extended openings and many records being reset. Sporadic E openings on 2 m commenced in earnest around the middle of December and have continued to at least mid-January, livening up the Summer VHF/UHF Field Day in the process. On the tropo side, things have been almost as active, with openings across the Bight between VK6 and VK3, 5 and 7 and several between ZL and VK4, 2 and 3.

On the evening of November 23rd, weather conditions were ideal for an opening across the Bight. At 1126Z, Ian VK3AXH in Ballarat worked Bob VK6BE in Albany. At the eastern end, the opening extended well into Gippsland with Phil VK5AKK in Adelaide working Ralph VK3WRE in Traralgon on 70 cm. Peter VK3TPR worked Karl VK7HDX on 2 m with 59+ reports. Peter VK3KAI in Churchill then worked Bob VK6BE on 2 m.

The following morning, conditions between Adelaide and northern Tasmania were still excellent. Peter VK5ZLX worked Paul VK7BBW with S9+ signals and reported that the VK7RAE beacon was extremely strong. Mike VK3AAK reported hearing the VK6RST 70 cm beacon near Albany, and also worked VK5ZLX on 23 cm. The VK6s finally arose and VK6JR worked VK5NY and VK3AAK. VK6BE worked inland to Trevor VK3VG in central Victoria. VK7BBW and VK7HDX reported hearing the 2 m VK6RST beacon weakly. VK3AXH worked VK6JR. Jim VK3II reported hearing the Perth 2 m beacon and then worked VK6AO. That evening, there were still some good conditions between Adelaide and Perth, but they faded away as the night fell.

Unfortunately, I was away for most of December during the meatiest part of the Es activity, but Ron VK4KDD made a good summary of the happenings:

On 18th December, finally the Es have started on 2 m.

It was 9.35 am local time in Brisbane when I called CQ on 144.1, having the 6 m rig on as well. I heard VK7CEJ

coming back to my call. I called on 2 m, he replied on 6 m. I called again on 2 m, but now like this: "CQ 2 metres, CQ 2 metres, this is VK4KDD". Bingo, this time VK7CEJ got it and the sound came out of my 2 m speaker. Signals came up from S3 to S9 when QSO was complete.

From then on things started to move quicker and one station after another made it into the log. Very short contacts where made, just time for callsign and report before they disappeared into the noise.

VK3 started to come in – VK3WRE, VK3PY, VK3UHF.

Back to VK7 – VK7FWAY, VK7MO.

Then to VK5 (this opening would last for more than 2 hours) - VK5ZK, VK5BC, VK5BZK, VK5NY, VK5ACY, VK5EME, VK5DK, VK5DL, VK5UK.

Finally another VK7 made it into the log – VK7XGW and VK7CEJ heard.

December 19th was pretty much a replay of the previous day, but with lots of excitement in other parts of the country. First openings from North VK4 to VK3 and VK7. Then the Es came down along the VK4 coast, from Rocky, McKay to Hervey Bay finally to Brisbane. VK3 and VK5 and VK7s were worked, pretty much the same stations as yesterday with a few new ones around. A notable contact - VK7MO to VK4BKP at 2429.6 km.

On the VK Logger, I noted that in the south of the country, 2 m had opened between VK5 and VK6 on ES. VK6WG worked VK5NY, VK5EME and possibly more. Was it possible for a VK4 to VK6 contact via double hop Es? I started calling towards VK6.

VK2DAG, who was also on the Logger, followed the plan and also called, his situation made difficult by heavy Ch 5A QRM. Then VK2DAG reported voices on 144.130. At 0332Z, he worked Wal VK6WG – a distance of 3146 km and new VK2 record. He even had time to exchange QTH info and Merry Xmas with Wal. However, his record was not to stand for long.

Steve VK2ZT who was following the Logger from work, thought it might be a good idea to head home for a break. At 0335Z, he worked VK6BE – a distance of 3207 km, resetting the VK2 record once again. (Later update – Bob VK6BE was not sure of Steve's callsign and so he may not claim the VK6 record for that contact).

But the excitement was not over. VK6HK in Perth appeared on the Logger, while VK1ZQR and VK1BG commenced calling to the west on 144.1. At 0442Z, VK6HK reported that he heard a "BG" on 100 signing with a whistled "K". At 0501Z, VK1BG reported that he got clear copy of the VK6HK callsign. At 0514Z, VK6BE worked VK2ADB who lives very close to the VK1 border. Unfortunately, nothing further was heard, so no VK1 to VK6 QSO was achieved.

The following day – December 20th

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

—was again lively. The band opened from VK5 to coastal VK2. VK5NY reported strong VK2s. VK5EME, VK5DL and others worked Ross 2DVZ. VK5DL reported VK2AH 55 (829 km), which might not have been Es. ZL looked promising, but did not happen.

December 21st and yet another day of Es. 6 m was strong to ZL, and NZ FM stations started to appear. At 0015Z, ZL1AVZ was worked by VK2ZT and VK2DVZ via Es. In VK4, the MUF did not peak high enough. Otherwise, a relatively quiet day.

December 22nd and more Es from VK5 to VK2 and VK1. That was the 5th day in a row with Es. VK1VP worked VK5NY and VK5BC. VK5NY also worked VK2BHO and was heard by VK2DAG and VK2ZT, but gone before a contact was made.

December 23rd was a difficult day for Es on 2 m. The MUF went up and down several times during the day, but just a little short for Es on 2 m. The evening had already started and then there was a report about 500 km short skip on 6 m in VK2. At 0920Z, VK4BG worked VK7JG.

December 29th brought a day of records for ZL and I think the best Es we have had so far. The 2 m band was open from early morning to late evening from coastal VK2 to mid VK4 to far north VK4 with openings to VK5.

ZL was open to far north Queensland. At 0035Z, ZL1IU worked VK4FNQ — a distance of 3171 km. VK4DMC worked ZL1CN for a new ZL record of 3549 km.

My best DX for the day — walking in the street in front of my house as pedestrian mobile with the FT817, 5 W and 1/4 wave telescopic vertical. Worked VK4FNQ in Charters Towers (1050 km) receiving a 58 report.

Thanks to Ron VK4KDD for that very comprehensive report.

Further to the new ZL to VK record, Dale VK4DMC in Atherton sent the following:

During the recent 2 metre openings, I worked ZL1CN located in Wellsford, NZ. Murray ZL1CN contacted me a few days later and said that the contact was a NZ VHF record and also the VK/ZL record distance worked (3549 km).

Conditions on the day were excellent and I owe a big thank-you to John VK4FNQ who rang me to let me know that the band was open to ZL and

Southern VK areas.

Station details are: IC-7000 + 200 W linear into an 11-el Yagi at 8 m above ground.

Continuing on, December 30th brought a Tropo opening across to ZL. David ZL1BT was hearing Channel 5A at increasing strength. At 2130Z, he worked Steve VK2ZT and later VK2TK and VK2DVZ on 2 m. Meanwhile, Andrew VK1DA who was holidaying near Batemans Bay, had casually called CQ to the east, unaware of any opening. Imagine his surprise when Nick ZL1IU responded to his call, sounding like a local. Other contacts were ZL1SWW to VK2DVZ (5/5) and ZL1AVO to VK2ZT.

On January 2nd, there was some action across the Bight to VK6. The Albany 2 m and 70 cm beacons were audible in Melbourne from about 2000Z. At 2250Z, Bob VK6BE worked across to Mark VK5EME and Jim VK3II on 2 m. At 0030, Mark worked Wal VK6WG on 2 m and 70 cm. At 0057, Andrew VK3KAQ worked VK6WG on 70 cm. That evening, the enhancement was still present and at 1220Z, David VK3QM worked VK6WG on 2 m.

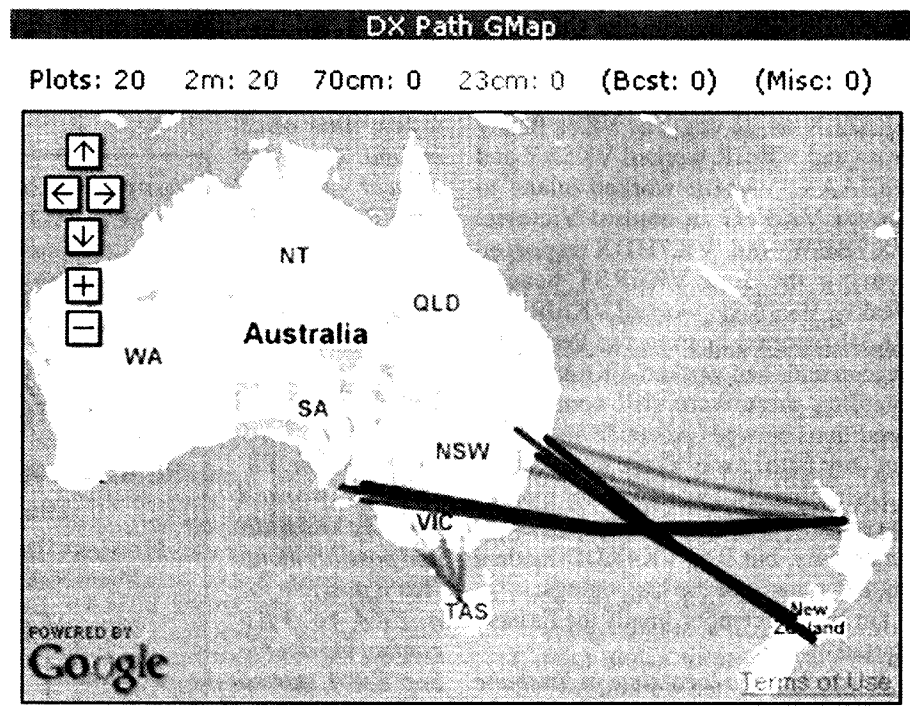
The following day, the band was still open across the Bight, and conditions intensified as the day wore on. At about 0100Z, VK6WG worked VK5BC/P and VK5DK on 70 cm and VK5AKK on 23

cm. By 0400Z, Wal was so strong in Adelaide on 2 m that he was heard off the back of the beam by VK5EME. With beam facing in the correct direction, VK5EME worked VK6WG on 70 cm with S9++ reports. That evening, signals were still strong. At 1000Z, VK5DL worked VK6BE on 2 m and VK6WG on 70 cm. At 1100Z, VK5NY worked VK6BE on 2 m (5/9) and VK6WG on 70 cm. VK5ZK also worked VK6WG on 70 cm. VK5RU reported still hearing VK6WG on 23 cm at 1200Z.

Meanwhile, at around 0330Z, there was a brief Es opening from VK4 to VK3 and VK7. VK4KDD worked VK7CEJ and VK4WS worked VK3ZYC, VK3XPB and VK3AFW.

January 8th saw another opening across to ZL, this time to the south island. Bob ZL3TY in Greymouth was hearing Ch 5A in Newcastle and pagers. At around 0200Z, he worked VK2ZT (5/9) and VK2AH (3/1) on 2 m. At 0420Z, he worked VK2DVZ (5/5), VK2KOL (5/3) and VK2ZT again, still at 5/9. At 0530Z, he worked VK2FZ and VK2ZCV (5/4) before the opening faded out.

January 9th dawned promisingly with early reports from ZL of VK2 FM broadcast stations being heard via Es. Tropo conditions across VK3 were also very good, with Terry VK3ATS in Mildura reporting hearing the VK7RAE 2 m beacon in northern Tasmania. He



The SPOT map from the VK Logger.

then worked VK7HDX (917 km). At 2300Z, the Es then opened strongly between many stations in Brisbane and Adelaide. Phil VK5AKK reported working VK4WS, VK4KK, VK4XRA, VK4ASB, VK4OE, VK4ARN, VK4ARS and VK2ADY in a little over an hour. Brian VK5BC/P worked VK4s WS, ARN, XRA, OE, APG, ARS, KK, JMC, KR and VK2s ZT, ADY. Meanwhile, ZL had opened strongly to VK2 with ZL1BT reporting 2 m contacts with VK2ZT (5/8) then later VK2DVZ (5/9+20) and VK2DAG (5/9+40). VK2ZT also reported hearing VK5BC. Ross VK2DVZ reported that ZL signals seemed stronger when he was beaming at Adelaide. Brian VK5BC/P at Corny Point takes up the story:

A little after 0130Z, out of the noise on 2 m comes David ZL1BT calling CQ. David is 5/9 and an easy contact at a distance of approx 3402 km. Several other VK5s including VK5AKK, UK, GF (on a vertical!), DL and EME work him. At times, at this QTH, he peaked an unbelievable 20 over S9 and at one stage went QRP (2.5 W) and was still 5/1. In between the mayhem, VK2s were popping in and out and I worked VK2ZT and VK2DVZ. David ZL1BT was a good signal for about 30 minutes.

Approximately 1 hour later the band came to life again with Steve ZL1TWR in Katikati calling CQ at 5/6. Again a good contact was had at a distance of approx 3482 km (I think a VK5-ZL record). Following this contact I worked VK2ARA and VK2KOL and VK1BG.

There has been some discussion as to the mode of propagation from VK5 to ZL. A VK2 station reported hearing both sides of the VK5/ZL contacts. ZL1BT reported that, at one stage, VK2DVZ was S9+20 when pointing Adelaide, but only S5 pointing ZL. There is no doubt that there was Tropo enhancement between VK2 and ZL. However, given the strength of some signals, there was also probably Es from VK2 to ZL. From VK5 to VK2, it was Es. The SPOT map from the VK Logger shows an interesting pattern.

However, the day was not yet over – we have only got to lunchtime. The Tropo enhancement starting moving south and ZL3s started appearing in VK2. At 0210Z, Bob ZL3TY in Greymouth reported working VK2ZQX, VK2ADY (Tamworth) and VK2DVZ on

2 m. VK2DVZ also worked ZL3AAU, ZL3MH, ZL3NW and ZL3OC. At 0310Z, Rex VK7MO in Hobart worked ZL1BT (5/5) – 2440 km. At 0549Z, ZL3TY reported hearing the VK3RGI 2 m beacon in Gippsland. At 0600Z, he worked VK3HZ in Melbourne on JT65a digital (-10). No voice contact was made although signals peaked strongly during the digital contact. ZL3TY then worked VK3VHF and VK3EK, both in Gippsland. Bob's CW was audible in Melbourne for nearly half an hour. By 0630Z, the opening had gone.

10th January – the tropo opening from VK to ZL was still present, but initially much weaker. Contacts were generally fairly marginal but widespread, between stations in VK2 and VK4 to ZL1, 2 and 3. However, at 0530, Nick ZL1IU was heard very strongly by Rex VK7MO, while attempting a digital-mode contact. They made contact on SSB with 5/9+ reports. Rex reported that Nick's signal was at S9 levels for almost 3 hours. Later that day, there was again a strong Es opening between VK4 and VK3, 5 and 7. Many stations at each end enjoyed some very loud signals.

Summer VHF/UHF Field Day

The Summer VHF/UHF Field Day over the weekend of 11/12 January has just happened, and it was good to see strong participation from stations both in the field and at home. It was good to hear people moving quickly away from the 150 calling frequency, leaving it free for others. Several distant, single-operator stations (VK3BJM/2 and VK1DA/1) nominated liaison frequencies away from 150 where they would call and the strategy seemed to work for them with many more contacts logged than on the Spring Field Day. On Saturday afternoon, a sporadic-E opening on 2 m added to the action, with stations working from VK1, 2, 3 and 5 into VK4.

Andrew VK1DA had an interesting time on Mt Ginini:

I would like to thank all the other field and home stations for participating in the weekend's operations, even if the field day contest was at times merely a distraction from the 2 m DX. My total score was 197 - roughly double my previous single operator score.

The contest opened for me when my mobile rig monitoring 2 m heard Ed

VK1VP working a VK4 while I was still setting up the antennas just after midday. After putting up the 2 m and 70 cm beams, starting the alternator and setting up the IC-910, I joined in for the first 20 contacts, 6 of whom were VK4s.

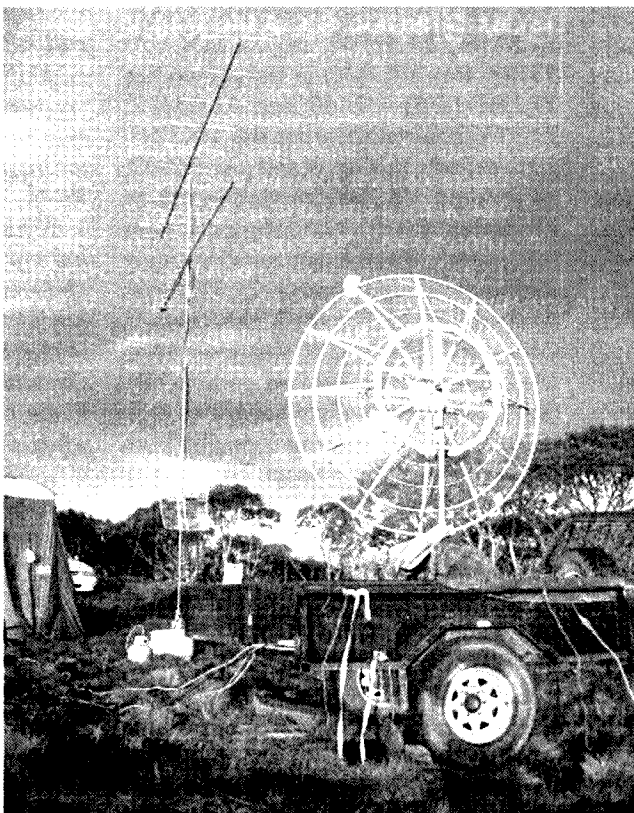
(While working the VK4s in this period, a couple of tough looking characters turned up in their 4WDs, having fearlessly braved the rough road to reach this distant point for their day's expedition. They asked "where is that bloke coming in from" and shrugged when I named a Queensland location. I told them this was on 144 MHz but they weren't impressed. You can't please everyone all the time.)

My log shows a gap from 0325 till 0512, which was the period when I put up the remaining antennas and the tent just in time for the rain to start, followed by some rather close thunder with nearby lightning strikes. This situation worsened to the point that I sealed up the tent, leaving nothing connected to anything, got into the car and drove down the hill 200 m to get away from what felt to me like a precarious situation. I stayed away until the strikes were occurring on more distant hills and didn't seem to be so near to me. Even so it took a while for me to believe it was safe to reconnect the radios, but in the meantime I assembled the other gear, moved other stuff into the tent and generally finished setting up.

The weather stayed mild and the sky was fairly clear at midnight when I stopped for the night, disconnected all antennas and the power cable, turned off the power and lights to get some sleep. At 2 am, I realised the lightning from the west was lighting up the top of the tent and I studied it with some interest through the side window. At 2:30 I decided that maybe the car was a better place to be. The storm arrived around 2:45 and put on quite a big display with the nearest strike apparently being about 3 seconds away. The storm passed over or around Ginini and the area to the east was well lit for a while. Finally went back into the tent around 4:30 and at 5:30 decided to get up and start the day's operations. Filled the tank and it lasted over 6 hours, only to run out when making the final contact of the day with Barry VK3BJM, after the field contest ended.

My radio impressions:

- using a smaller 2 m beam (8 el) didn't seem to make any difference to contacts made
- I think my plan to use 180 as a liaison frequency did work well.
- on 1296 I had a rather small Jaybeam 12+12 element slot Yagi and expected to work only the locals - but was delighted to make several contacts with Adrian VK2FZ in Sydney and Robbie VK3EK in Bairnsdale. I did hear Barry VK3BJM's keyer sending dits but given the power differential and the weak signals we didn't attempt a two way contact at the time.
- made good contacts with VK3BJM/2 near Balranald on 2 m and 70 cm - skeds assisted by microwave communications (mobile phones)
- had a problem with my 2 m rig (IC-271H) and fortunately I had taken a backup rig. It's a long drive (72 km, about 80 minutes each way) to go home to get spares from this



The VK1DA Field Day Setup (Note the Dark Clouds)

- location.
- use of calling frequencies for contacts did not seem to be as much of a problem, but that may be because I didn't spend much time on the calling frequency. I did hear

some people making contacts and complaining about QRM from people calling CQ.

I would support doing away with calling frequencies for contests. It's a contest. Let people work out for themselves what the big knob is for if they can't hear anyone. The rules could simply remind people to observe the band plan and to avoid established DX calling frequencies for contest operation.

Beacons

From Mark VK5AVQ:

Good news - the VK5VF Adelaide beacons have received a great Christmas present - a new home not far from the previous site. At this stage there are still formalities, but we are confident enough to announce that it's looking good.

The short-term intent is to get 2 m and 70 cm up temporarily for the "DX season", with a more permanent mast to be installed over the longer term.

A late note - the beacons were heard on 15 January.

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

Digital DX Modes

Rex Moncur - VK7MO

This year, the British Astronomer, Alastair McBeath, forecast a "great year" for the Geminids meteor shower with a peak at 1645 UTC on 14 December. This meant a number of hardy souls got up at 3.00 am (and for Queensland this was 2:00 am) to try for special meteor scatter contacts on two metres. A number of contacts were made from VK1, 3 and 7 to the South Island of New Zealand with the longest being from Rhett VK3VHF to Bob ZL3TY over 2074 km. The furthest ping copied was from Wayne VK4WS to ZL3TY at 2322 km. Overall it is estimated that the Geminids produced about 5 times as many pings as normal background.

Gavin VK3HY was one of the participants: I operated FSK441 on 144.230 MHz from 05:30 local time on Saturday morning and was greeted on the VK/ZL logger by Wayne VK4WS

with 'Good afternoon Gavin' so I'm guessing he and others may have started a few hours earlier. There was quite a bit of activity with many loud pings and numerous burns. It was certainly a well above average morning. I completed FSK441 contacts with VK4EME, VK4WS, VK4JMC, VK2ZT, VK2KOL, VK1WJ, VK2AWD and VK2FZ. I had not worked VK2KOL or VK2ZT previously so that was a bonus.

I didn't participate in the earlier attempt to work ZL because there is a little hill, not far from where I live, called Mt Dandenong, in the way. I have worked ZL on 2 metres tropo but MS seemed a little optimistic.

Sunday morning was back to normal - the meteors shower seemed to have moved on.

With lots of tropo and sporadic E

openings on two metres over summer, a number of stations have made JT65 contacts prior to the openings being good enough for SSB. VK3VHF and David VK3HZ to ZL3TY. Steve VK2ZT, Colin VK2KOL and Rex VK7MO to ZL1BT. The practice across the Tasman is for ZL to transmit first on 144.225 using JT65a.

VK3VHF has his 1296 MHz station operational and made his first contact to southern VK7 with VK7MO using JT65.

Welcome back Doug VK3UM, who surprised many with an appearance during a FSK441 meteor scatter session - such that one VK4 rang Doug to warn him a pirate was using his callsign.

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 slow start, the summer sporadic E season got into full swing from Dec 13th. Although there were some days where the band opened all day when most states and ZL could be worked, the season did not seem to reach the heights of the 2006/2007 season with far less openings to VK6 and ZL. The season was made more interesting with several Pacific stations being active and worked from most states of VK and ZL.

From VK6, Graham VK6RO reports a reasonably quiet season with good openings on the 18/19th December to VK2, 3 and ZL and on the 29th December to far north Queensland when VK4AQ, VK4FNQ, VK4DB and VK4BEG were worked.

Paul A35RK operating from Lifuka Island, OC-169, grid locator AH20te (part of the Tonga group of Islands) was much sought after from both VK and ZL and was first worked by Kerry ZL2TPY on 28/11/07 on SSB and then in VK by Steve VK3OT, John VK4FNQ and Kevin VK4BKP on 3/12/07 on CW. The most distant station worked by Paul was John VK6JJ on the 31st December, a distance of 6970 km. Paul regularly monitored the band and openings occurring on 15 days from late November to early January. Table 1 is a summary of Paul's log up



Paul in his shack.

to 2nd January 2008.

Paul was running 100 W from a Yaesu FT-857 and using a 4-el Yagi on a 3 m boom. It just shows what can be achieved with multiple-hop sporadic E when there is a station out there monitoring the band. Thanks Paul for your great efforts and time - you were a new country on 6 m for the large percentage of those who managed to work you.

Another station of interest from the Pacific area was Tony 3D2AG who was operating portable from Rotuma (north of Fiji), grid locator RH87mm. Tony worked Phil VK2FHN on the 23rd December on CW and then several VK/ZL stations on the 30/31st December on CW and SSB. This included VK1, VK2, VK3 and VK4s (from Cairns

to Brisbane) and Garry VK5ZK, Roger VK5NY and Brian VK5BC/p (Corny Point).

Doug VK9ZLH from Lord Howe Island also made a couple of appearances, notably on the 17th November when he was very strong into VK5 working several stations. Richard VK5UK reports Doug being 20 over S9. Doug also worked into VK3 and VK5 on the 27th December.

Keep monitoring the beacons and call channels as many openings occur well into March.

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

ar

**John Moyle
Memorial Field
Contest
15 – 16 March
(see page 52)**

AREA	CONTACTS	CALLSIGNS WORKED	
VK1	1	1	VK1VP (SSB)
VK2	63	36	16 CW, 47 SSB
VK3	27	16	10 CW, 17 SSB
VK4	46	27	18 CW, 28 SSB
VK5	21	10	7 CW, 14 SSB
VK6	1	1	VK6JJ (CW)
VK7	1	1	VK7JG (CW)
VK8	1	1	VK8MS (SSB)
VK9	1	1	VK9ZLH (SSB)
TOTAL VK	161	94	53 CW, 108 SSB
ZL1	5	4	1 CW, 4 SSB
ZL2	8	4	1 CW, 7 SSB
ZL3	21	10	12 CW, 9 SSB
ZL4	2	2	1 CW, 1 SSB
TOTAL ZL	36	20	15 CW, 23 SSB
FK8	1	1	FK1TK (SSB)
3D2	3	1	3D2AG/p (1 CW, 2 SSB)

Table 1

Hamads classifieds **FREE**

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• YAESU FT-7100M dual band VHF/UHF 50/35W, Rx 108-999. Remote head, 262 memory, CTSS/DCS. Hardly used, looks as new, in original box \$450. VK2AYC. 02 9583 2056

• OZI-POLE portable dipole kits plus 80 m add on coils will be available at the Radio Expo in Coff's Harbour and also at Wyong 2008. Look for the Radio Supply Pty Ltd stand at Wyong. A build-it-yourself project that you can use with pride from the M.N.C.A.R.G. Inc. P.O.Box 505 Bellingen NSW 2454. Visit <http://www.mncarg.org/> or email mncarg@yahoo.com.au. Price \$99 + post.

WANTED NSW

• Circuit diagram of ICOM dual band transceiver IC-3200A and IC-706. Laurie. Email jordans@speedlink.com.au or VK2ALV. QTHR

• WW 2 122 Hand Book or copy of same. Contact Brian mdleech@bigpond.com.

• For YAESU FT-101ZD: 1x Radio frequency Drive Gain VR3b 5k(A), 1x microphone Gain VR3a 5k(B). Contact John ZL3TR or Stephen: 0419 494 417, stephenhaynes.gc@bigpond.com

• Signal Generator. Minimum coverage on fundamental 120 kHz to 150 MHz. Must be in good working order. John Bennett VK2SIG, QTHR. email: macben2@bigpond.com

FOR SALE VIC

• TELSTRA V580a 5.8 GHz Digital Answering Machine with Cordless Handset, brand new - still in box - \$90 ONO. Tom Davie VK3BBZ QTHR Armadale 3144. 0418 323 434 or tomdavia@bigpond.net.au

WANTED VIC

• WEATHER STATION, hardwired not wireless, working order with manuals and software. John VK3YFG ph 03 9740 9172.

• I've never tried 6 m. I don't have gear for it. In desperation I want to give it a go. Therefore I am interested to buy a TRX that includes 6 m. all modes. Vintage is no worry. Nothing fancy or expensive. Alan VK3KZ. QTHR. Phone 03 9439 5825

• ICOM IC-RM2 Remote control programmer/

scanner for IC-701, (also matches IC-221 & IC-245). Bill VK3BCW. QTHR. Phone 03 98537830 or e-mail: willwill@bigpond.net.au

FOR SALE QLD

• YAESU FT-767 GX, KENWOOD TS-670 txcvr, Coax Relay. KINGS VHF-UHF connectors and hardline bits, bulkhead connector 8122 and 4CX1500, a poor handbook and mike. Paul VK4DJ tel 07 4775 7998

• Five HF fibre glass untuned helical whips. Dick Pietrala VK4OP ndpiet@bigpond.net.au

• CODAN Mobile H.F. outback radiophone, Type 8528, S/No. B5110 with amateur option (3.5 to 29.7 MHz) and RFD5 emergency call. Matching CODAN automatic tuning whip antenna Type 8558, S/No.D3785, remote control head, cables, microphone, speaker and handbook. All for \$950. Ken Riding, VK4CKR, QTHR, 07 5529 1646, 0412 615 317, Email kwr@optusnet.com.au

• TET-EMTRON HF Yagi antenna TE-43 4-element triband yagi, 9 m long elements. Cost \$1100, Sell for \$500. KENPRO KR-400 Rotator, comes with wiring and azimuth in good condition \$200. Will sell antenna, rotator and short mast for \$600. ASTRON RS 35M Power Supply 25 Amp continuous, 35 amp surge dim. 5 X 11 X 11" weight 27 lbs. Current and voltage meters, hardly used, perfect condition, \$220. UNIDEN HR2510 10 metre amateur radio transceiver. 26 MHz - 29.999 MHz coverage, AM, FM, USB, LSB chip-switched. Comes with manual, microphone, bracket and power cord, \$300. Contact: Jonathan Dimond (ex-VK4DJD) Email: jonathan@jonathandiamond.com, phone: 03 9016 3506

WANTED QLD

• CW FILTER YAESU XF-455M601-01 as used in FT-757 & FT-650 (possibly others). Ray VK4BLK QTHR, email vk4blk@tadaust.org.au

FOR SALE SA

• 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

FOR SALE WA

• Vintage restored 1950/1960 British 'PANDA CUB' transmitter (35 - 40 W), which covers 160 to 10 m AM/CW (807 PA modulated by a pair of 6L6s), paired up with a restored BC-348R receiver (from a Flying Fortress or a Liberator bomber) and a relay-controlled TR system. Get yourself a post-World War II ham radio station! There are manuals for both radios and spare valves for the Panda Cub, plus a lovely-looking crystal microphone on a stand. \$650 for the lot. Contact Steve, VK6VZ by email at vk6vz@arach.net.au

• YAESU FT-1000D classic 200 W HF transceiver - as used by many of the world's top DXers. Read the reviews of this radio at: <http://www.eham.net/reviews/detail/210>. All modes on 1.8 - 28 MHz amateur bands, plus general coverage receive and sub-receiver. Stacked with optional accessories over the basic FT-1000 - high stability VCO, 500 Hz CW filter in the sub receiver, BPF-1 bandpass filter and 2.0 kHz, 500 Hz and 250 Hz third IF crystal filters in the main receiver, giving dual crystal filtering at 2.4 kHz, 2.0 kHz, 500 Hz and 250 Hz bandwidths. The radio is also fitted with the International Radio 'Tuning Upgrader' which provides variable-speed tuning, depending on how fast you tune the radio. The radio is a late model (serial number 5M4490069) and comes with the latest firmware (version 6.0). It has the famous W8JI noise blanker and key click modifications, which have been installed by a professional RF engineer. Complete with MH-1 microphone, user manual and technical service manual. Excellent condition. Photos are available on request. \$2,300. Steve Ireland, VK6VZ email: vk6vz@arach.net.au

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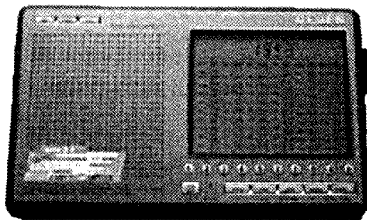
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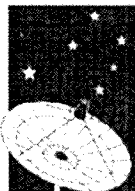
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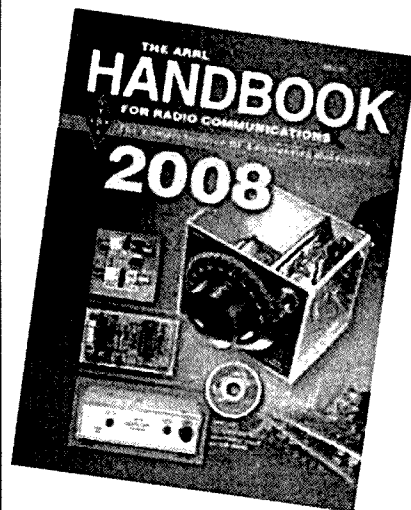
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Email newsletter, on request, via president@vk1.ampr.org
- VK2** **VK2WI:** Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.600, 147.000, 438.525 and 1273.500 MHz.
Plus regional relays on 5.425 MHz USB (morning). VK1WIA news is included in the morning.
- VK3** **VK1WIA:** Sunday 1030 and 2000 local, on 3.615, 7.158, 10.130, 146.700, 147.250 and 439.800 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.
Repeated Sunday, 1900 local, on 1.865, 3.564, 146.700 and 438.525 MHz. Country relays on major repeaters.
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.
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.

Platinum for VK2FMYL

Norma O'Hare VK2YL.



Frank M0AEU presenting Michelle VK2FMYL with her Platinum Scouting 100 plaque on the steps of Sydney Town Hall on 29 December, 2007

Michelle VK2FMYL was personally presented with her **Platinum Scouting 100 Award** on the steps of Sydney Town Hall by Frank M0AEU recently. Michelle was the first VK to receive this level of the award, as well as the youngest in the world.

To gain the platinum award, Michelle had to gain 250 points by contacting amateur radio Girl Guide and Scout stations.

The award was organized by Frank M0AEU to celebrate 100 years of world Scouting and was conducted throughout 2007. Frank decided to deliver Michelle's award personally as he was travelling to Australia to attend an international Rover Moot.

Michelle is a leader with the Baulkham Hills Explorer Guides and also gained a Bronze certificate for her Guide unit by conducting a radio sleep over for the girls earlier this year. They were the first Girl Guide unit to gain a Scouting 100 award in the world.

Further information about the Scouting 100 award can be found on the internet at <http://www.scouting100award.org>



Michelle VK2FMYL and the Baulkham Hills Explorer Guides with their Bronze Scouting 100 certificate, at their AGM on 26 April 2007

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Our Cover this month

A prime Field Day site? The view from the site chosen for the Spring VHF/UHF Field Day by Roger VK7ARN, John VK7ZZ and Garry VK7JGD on the Western Tiers, showing the VK7WCN mast supporting a 2 metre Yagi, a 2 m/70 cm listening antenna, a 6 metre Yagi and a 70 cm Yagi. The view is looking out to the north, at an elevation of 975 metres. Photo by John Gardner VK7ZZ.

Contributions to Amateur Radio
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Editorial Comment

Peter Freeman VK3KAI

Amateur licence conditions

As expected, the ACMA Board approved the documents associated with amendments to the amateur Licence Conditions Determination. In time, there should be an updated single document published, incorporating the amendments into a single document. As I write this, it can be somewhat confusing for someone trying to decipher the regulations, as you need to refer to several separate documents.

Please take the time to read the summary of the changes that appears elsewhere in this issue.

The other awaited change that was approved at the same ACMA Board meeting was the establishment of a Class Licence for visiting amateurs. Brief details of that licence are given in the WIA News column in this issue. Why is this change important for Australian amateurs, as opposed to those visiting our shores? It marks an important step towards having reciprocal rights with the CEPT licence system, as noted by Michael Owen VK3KI in his Comment column. This should eventually make it much simpler for Australian amateurs visiting Europe.

I urge you all to read Comment, News and the article by VK3KI on the LCD amendments.

Field Day contests

It seems to be Field Day contest season. We had the Summer VHF/UHF Field Day contest in the middle of January and should expect to see the results soon. Coming up this month is the John Moyle Memorial National Field Day contest. Many are now referring to this contest as the "John Moyle" or the "John Moyle Field Day" – many in today's society are lazy with names.

This long-standing contest promotes activity from the field. It is open to home stations and field stations, each operating in separate sections. The rules were published in last month's issue of AR (see page 52) and are available on the WIA website.

If you have the chance, why not make the effort to try field operations? Even if

you are only sitting in the motor vehicle or set up a very simple station, lots of fun can be had by working the better equipped field stations. Many clubs put significant effort into this contest, so some big signals can be heard on the VHF, UHF and microwave bands. Even if you can only get on-air from home for part of the contest, your contacts will be appreciated by the field stations.

The other type of Field Day

Now that the festive season has passed, we seem to be into the season of that other type of Field Day – the "hamfest" events are coming up thick and fast. In VK3, this year the season kicked off with the Centre Victoria Radiofest at Kyneton, which has moved to early February for 2008. The following weekend saw the Central Coast ARC event at Wyong. I am sure that both events will have been successful – despite the Wyong event being impacted by wet weather. The week after Wyong saw the event in Healesville, then a short gap to the EMDRC event on the second weekend in March. Of course, there are other similar events around the country, offering plenty of opportunities to get together and catch up with friends and to survey the new and pre-loved equipment on offer. I am sure that we will receive reports on many of these events in future issues.

I have also heard some people referring to their plans to attend what is perhaps the biggest of this type of event – the Dayton Hamvention held in May in Dayton Ohio. That is one event I would like to visit again – I managed a visit to the 2001 event. Visitor numbers in that year were down a little on the previous year, with around 21,000 attending! It is an amazing event, with a huge inside area packed with mainly commercial vendors and almost the entire car park around the stadium buildings taken up by the flea market vendors, offering a huge array of equipment. And there are other very significant overseas events, especially the Tokyo Ham Fair and the event at Friedrichshafen. Perhaps one day....

73

Peter VK3KAI

Important Decisions

In the "News" page this month there is news of three major matters affecting amateur radio addressed by the ACMA at its formal meeting on 7 February last.

One was the amendment to the amateur LCD, which is described in some detail in a separate article in this issue of AR.

The second was the WIS's successful expression of interest in relation to the outsourcing of certain services, including the provision of examination management services, the issue of certificates of proficiency and the management of call signs and has been selected to provide those services on ACMA's behalf.

The third is the issue of a class licence for visiting amateurs, the Radiocommunications (Overseas Amateurs Visiting Australia) Class Licence 2008.

The class licence allows an amateur visiting Australia to operate an amateur station in Australia for 90 days after each entry to Australia.

The class licence provides for five levels of privilege, depending on the overseas qualification of the visiting amateur. The levels of privilege range from what is the equivalent of the Australian Advanced licence to what is essentially a low power FM voice transceiver – a handheld operating between 146 and 148 MHz.

The overseas licences and qualifications are listed in a table on the ACMA website, the 'Table of Equivalent Qualifications and Licences' and against each listed overseas licence or qualification is the level of privilege granted by the class licence.

It has been the dream of many for a long time for the amateur licence to become, as Dick Baldwin W6RU, for a long time ARRL Secretary and later President of the International Amateur Radio Union, used to put it, just like an international driving licence.

Then, in 2003, when Article 25 of the ITU Radio Regulations was reviewed by the World Radiocommunications Conference of that year, a new provision was put in as follows:

25.9B § 5B An administration may

determine whether or not to permit a person who has been granted a licence to operate an amateur station by another administration to operate an amateur station while that person is temporarily in its territory, subject to such conditions or restrictions it may impose

The purpose of that was to encourage administrations to allow visiting amateurs to operate without having to obtain a local licence. That was important because the Radio Regulations otherwise provided that a licence from the administration being visited was required.

The provision is not of assistance in Australia because our legislation, the Radiocommunications Act, requires all transmitters to be licensed, and the class licence is the solution to that requirement.

In fact, Australia has for many years been one of the most open and welcoming of countries so far as visiting amateurs were concerned.

Over the years many visiting amateurs have made favourable comment on the Australian approach, which was to enable the visiting amateur to visit the ACMA office at the port of entry into Australia, show the foreign documents, make a payment and walk out with a VK licence.

That ceased to be attractive when the ACMA shifted the amateur licensing function to Canberra and applications forwarding copies of documents and payment had to be sent in advance by mail.

Now the class licence allows the visiting amateur to operate without making any payment or obtaining an Australian licence, just using the home call followed by /VK followed by 'portable' and the location of the station.

Australia is not the first country to adopt such an approach. Already visiting Australian amateurs can operate in New Zealand and the USA on the basis of their Australian licence without doing more.

And the issue of the class licence should be the last step before Australian Advanced amateurs will be able to

operate while visiting those CEPT countries party to T/R61-01.

CEPT is the European Conference of Postal and Telecommunications Administrations and has harmonised telecommunications legislation between member countries and so facilitated obtaining operating permission for amateurs during visits.

CEPT has already approved the Advanced syllabus as compliant with T/R 61-02. Now, as Australia has introduced the class licence, which covers holders of the CEPT licences, Australia has requested that its Advanced licence be included in the CEPT T/R 61-01 table of equivalencies.

Until that final formality has been completed, Australian amateurs cannot operate in the European countries, including the UK, without a local licence. Of course, Australia still has reciprocal agreements with a number of countries, though in many today it is very difficult to get such a licence.

I am delighted that we are continuing to welcome visiting amateurs in such a positive way, and I know from the many queries we get, very many Australians are just waiting for the day the Australian licence becomes a CEPT T/R 61-01 licence.

Since 2004 the WIA has expressed its concern at the delay in addressing the outsourcing issue, implementing the balance of the regulatory changes identified in the Outcomes and proceeding with an application to become a party to CEPT T/R 61 01.

Now, all of those concerns have been addressed.

The WIA appreciates that each of these matters involved significant and complex work. The WIA records its appreciation of Mark Loney, Executive Manager, Pricing & Policy Branch, ACMA, who established the structure that enabled the matters to be addressed intensively and effectively, and gratefully acknowledge Alan Jordan and Andy Byrne who worked on the detailed implementation.

ar

ACMA announces successful amateur outsourcing candidate

The WIA has repeatedly expressed its concern that its role as the manager of the amateur examination system had no tenure and therefore it did not have the security to justify its investment in the system.

The ACMA published its *Request for Expressions of Interest* in providing certain functions for the amateur service, including the management of amateur examinations, the issue of certificates of proficiency and certain administrative functions in relation to call signs, on 15 October 2007.

The ACMA *Request* required all Expressions of Interest to be lodged by 8 November, as was done by the WIA, and the "Indicative Timing" published by the ACMA in its *Request* indicated that the successful party as well as the unsuccessful parties, would be advised in December 2007.

In fact, that timetable was extended, but at its formal meeting on 7 February 2008 the Authority decided that the Expression of Interest submitted by the WIA met all the criteria it had established, and accordingly it selected the WIA to provide those services to the amateur community on its behalf. ACMA and the WIA will now seek to finalise contracts for the supply of the services identified.

The work involved in finalising the contract and the implementation of the arrangements may take some time.

ACMA issues class licence for visiting amateurs

The ACMA has issued a class licence to allow visiting amateurs to operate in Australia for up to ninety days using their home callsign followed by the suffix VK, followed by "portable" and then the location of the station, without doing anything more.

It came into effect on 14 February.

There are five levels of visitor licence, three matching the Australian Advanced, Standard and Foundation licences, a VHF licence, and finally, in effect, a 146 to 148 FM licence.

The privileges of each level are set out in the class licence.

ACMA will publish on its website a table showing equivalencies to the Australian visitor levels for different overseas licences.

The class licence for visiting amateurs does not allow Australian amateurs to operate in the CEPT countries, but it is hoped that CEPT will on the basis of that licence soon decide to allow Australian Advanced licensees to operate in the CEPT countries, some thirty two countries, mainly in Europe, using their Australian callsign.

We hope that there will be an article in a future issue of AR telling how Australian amateurs will be able to use their CEPT TR 61-01 licence (as it is called) in the CEPT countries.

The WIA has been in regular contact with the IARU Region 1 representative on the relevant CEPT Working Group, and will pass on any news as soon as it is received.

It is hoped that a copy of the class licence will be available on the WIA website on either Monday or Tuesday 11 and 12 of February.

ACMA amends Amateur LCD

In May 2004, following extensive consultation the ACA (now the ACMA) published the *Outcomes of the Review of Amateur Service Regulation* (the Outcomes) and while the restructure of Australian amateur licences took place in October 2005, the bulk of the other changes foreshadowed were not addressed.

The ACMA has now made the *Determination to amend the Amateur LCD* to make the last of changes foreshadowed in the Outcomes.

The amendments to the LCD are quite extensive.

An article on page 6 of this issue of AR describes the changes, and a copy of the *Amending Determination* is available on the WIA website.

In a short time, usually three or four weeks, a consolidated version of the *Amateur LCD* will be published. Then all the changes will be incorporated into a single document.

Because of these changes and the changes to the conditions under which amateurs visiting Australia may operate, the ACMA website is being extensively altered.

Nominations for WIA Director close

By a notice published in the December 2007 AR, Returning Officer David Wardlaw VK3ADW sought nominations for WIA Director.

Three Directors resign at the end of the next Annual General Meeting, and were eligible for re-election. They were Phil Wait VK2DKN, Trevor Quick VK5ATQ and Eddie Saunders VK6ZSE.

Eddie Saunders had been appointed a Director by the WIA Board from 1 December 2007 on the resignation of Robyn Edwards VK6XRE as a Director, taking the balance of Robyn's term.

Trevor Quick had announced that he did not wish to stand for re-election.

On the close of nominations on the 31 January 2008, the Returning Officer announced that there were three nominations to fill the 3 vacancies.

Accordingly, as Phil Wait, Eddie Saunders and Ron Bertrand VK2DQ were the only three nominations, they will be elected unopposed for two years from the close of the next Annual General Meeting in Broken Hill on 24 May 2008.

Sydney D-STAR Clubs announced

The WIA has been advised by the Radio and Electronics Association of Southern Tasmania (REAST) that the club did not consider it had the resources at this time to establish a D-STAR repeater to serve the Hobart area, and so Icom Australia has agreed to donate that repeater to the WIA as a second D-STAR repeater to serve the large Sydney area.

The WIA, after consultation with Icom Australia, has announced that two clubs have been identified as D-STAR clubs to serve the Sydney area.

The two clubs are the Manly Warringah Radio Society (Incorporated), and the Illawarra Amateur Radio Society Inc.

WIA Director Phil Wait, in making the announcement, said "I am delighted that these two clubs, with their locations providing exceptional coverage to the north and south of Sydney and with highly skilled and experienced members are supporting this project."

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A “Paddyboard” substrate for popular 8-pin surface mount chips

Drew Diamond VK3XU.

Many popular chip types, such as the NE602, are now only readily available in a SOIC-8 surface-mount package. And many newer useful chips, such as the LM5111 gate driver, are only available as an SOIC-8 (small outline integrated circuit - 8 pin). This trend looks likely to continue.

Generally, these tiny parts would be difficult for the amateur to work with using ordinary soldering equipment. However (thanks to a bright suggestion from David VK3IS), it is quite easy to make a paddyboard “substrate” carrier to accommodate such chips.

At the right in Photo 1 is a 20 x 20 mm rectangle of single-sided circuit board. The pads are formed upon the copper side of the board by carefully placing shallow saw cuts so that copper is removed at appropriate places. Sufficient copper pad material is thus provided for connection of wiring and other components as required.

The substrate may be held in a modellers’ mitre box, which greatly aids in making clean, accurate cuts. In addition to the standard 90 and 45-degree slits, my mitre box has 60 and 65-degree slits, visible in Photo 2. The 65-degree slits (at the right-hand end of the box) are used for the SOIC-8 package.

An engineers’ protractor is an ideal instrument as an aid in marking your mitre box for two crossed 65 degree slits. New slits are added with a junior hack-saw. The two new planes thus formed intersect at the centre line of the box.

When preparing a substrate, the first cut, which divides the chip each side, is made with a ‘junior’ hack-saw (top in Photo 3). The remaining three cuts should be done with a modellers’ ‘back-saw’ (so-called because it cuts on the back stroke – lower in Photo 3).

Photo 1 shows an SOIC-8 chip and an ordinary 8-pin IC socket soldered upon substrates. The tip of a pair of bent long-nose pliers may be carefully rested upon the chip as a ‘holder downer’ third hand whilst the individual pins are carefully soldered. Using a magnifying glass, inspect your soldering for quality. Should a bridge (between pins) occur, simply remove the excess solder from the affected area with solder-wick, and solder again. The substrate may be super-glued to the main board in the usual manner, as described in Reference 1.

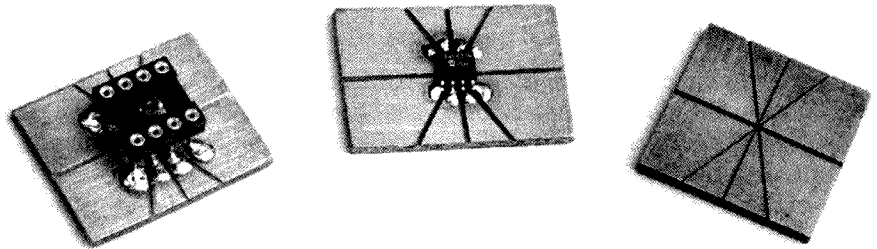


Photo 1: Substrates for 8-pin DIL socket (left), and SOIC-8 (centre). A prepared substrate is at the right.

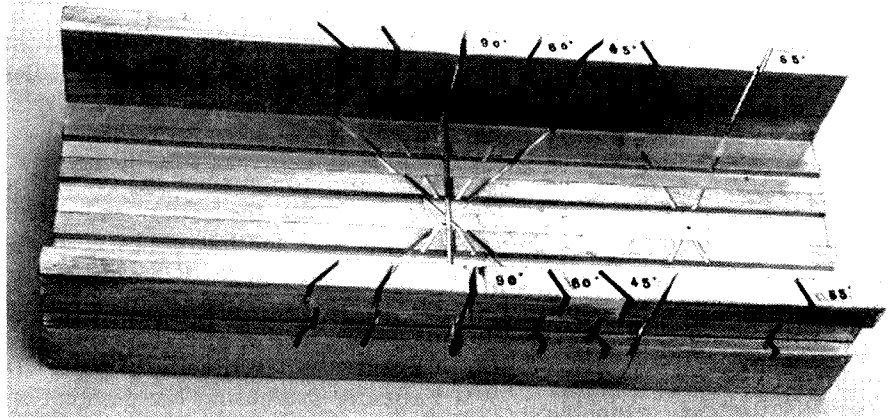


Photo 2: Modellers’ mitre box with additional 60° and 65° slits.

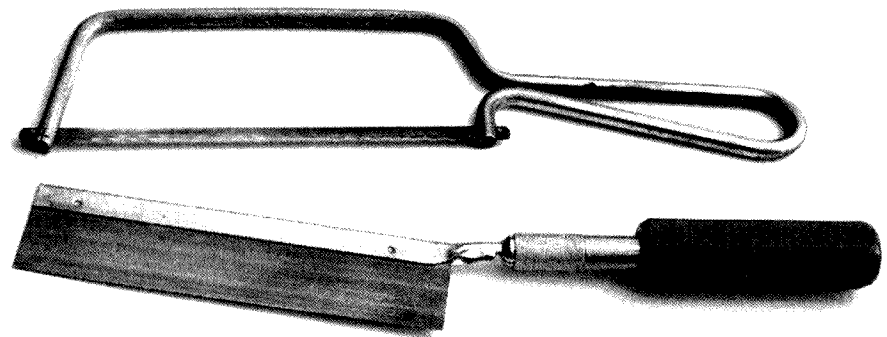


Photo 3: ‘Junior’ hack-saw (top) and modellers’ back-saw.

Tools

Mitre-box, back-saw and “junior” (Eclipse 14J) hack-saw should be available from your local model shop.

References and Further Reading

1. “‘Paddyboard’ circuit construction – Revised”; *Amateur Radio*, May 2005.

2. “Surface Mount Technology”; Sam Ulbing N4UAU, *QST*, April - May 1993.
3. “Homebrewing - Surface Mount Style”; Ed Kessler AA3SJ, *QST*, Feb 2004.
4. *Radio Communication Handbook*; RSGB, 8th edition. Ch 26.

Photos: Karlen Dockrey.

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The changes to the amateur LCD

Michael Owen VK3KI

In August 2003 the ACA published a discussion paper *A review of Amateur Service Regulation*. It took into account the changes made to the international Radio Regulations affecting the amateur services by the World Radiocommunication Conference in 2003, including the removal of Morse code as a treaty requirement for operation below 30 MHz. The ACA undertook extensive consultation with amateurs at meetings in 10 cities across Australia and received over 1,300 submissions as part of its review.

In January 2004, the requirement for a Morse code qualification to operate below 30 MHz in Australia was removed.

The results of the ACA review were published in May 2004, as the *Outcomes of the Review of Amateur Service Regulation* (the "Outcomes").

Then, in October 2005, the entry-level licence foreshadowed in the Outcomes, the Foundation licence, was introduced, with the existing licence categories consolidated into two categories, the Standard and Advanced.

Finally, the Authority has made an amending Determination to give effect to the remaining matters foreshadowed in the Outcomes, as well as introducing some new conditions.

The amending Determination, the Radiocommunications Licence Conditions (Amateur Licence) Amendment Determination 2008 (No. 1) that amends the Radiocommunications Licence Conditions (Amateur Licence) Determination No. 1 of 1997 (the "Amateur LCD"), will have come into force on the first moment of the day following its registration on the Federal Register of Legislative Instruments.

While the ACMA site will have the Amending Determination on its website, very soon the amendments will be consolidated into the single Amateur LCD by the Office of Legislative Drafting and Publication and it will only be necessary to look at the one document.

The changes

Formal Changes

A number of the amendments are formal, removing the references to the old licence categories of Intermediate, Limited, Novice and Unrestricted, previously left in the Amateur LCD to allow the transition to the new categories. Further changes substitute

ACMA for ACA. Other amendments do not change meaning but reflect current drafting conventions, for example, to no longer refer to the provision in the Radiocommunications Act giving the power to make the particular condition.

These amendments, while extensive and affecting headings as well as many provisions, are formal and are not further referred to.

The changes that are significant include the following (in no particular order):

Using the Internet

Even in the time since the release of the Outcomes, the variety and extent of the use of the Internet by amateurs has increased, with IRLP, EchoLink, D-STAR and even the control of remote transceivers.

Previously, section 11 of the LCD basically prohibited the connection of automated systems to a public telecommunications network. As is pointed out in footnotes, for the purpose of the amateur service, the Internet is considered to be part of a public telecommunications network.

As amended, section 11, together with the new sections 11A and 11B, now provide that Advanced, Standard and Repeater stations may operate automatically when connected to a public telecommunications network, including the Internet.

Section 11A (2) provides:

- (2) The licensee must not, directly or indirectly, connect the station to a public telecommunications network, unless the licensee has implemented reasonable measures to ensure that only appropriately licensed persons access the station to transmit a signal to another amateur station.

The provision recognises the reality that the licensee cannot guarantee that

only appropriately licensed persons access the station to operate a transmitter, and so this provision requires the implementation of reasonable measures to achieve that without imposing an absolute liability.

What are reasonable measures? Obviously that will depend on the circumstances of each case. If it is intended that a transceiver can be operated by amateurs generally through the Internet, measures to ensure that the person seeking to operate the station is licensed, such as verification of identity and of licence before the person can do so, and before appropriate password access is granted, as is done with EchoLink, would seem reasonable measures.

It may be that the new provision reflects what is already done.

Sub-section (3) defines the term "appropriately licensed person" as a person "holding a licence that authorises that person to operate a station using the frequency and emission mode of the station being accessed."

A warning required

Not foreshadowed in the Outcomes is a provision applying to Standard and Advanced stations (not Repeater stations), section 11B.

The operative provision of section 11B is:

- (2) If a licensee connects a person from a public telecommunications network to the station, whether manually or automatically, the licensee must:
 - (a) advise the person being connected that his or her transmissions may be overheard by other persons; and
 - (b) advise the person being connected to disconnect if he or she does not wish to proceed with the connection.

The note to the section explains why that provision is there. Section 7 (1) of the Telecommunications (Interception and Access) Act 1979 creates an offence to intercept a communication passing over a telecommunications system. By section 6 (1) of that Act *interception of a communication passing over a telecommunications system consists of listening to ... such a communication in its passage over that telecommunications system without the knowledge of the person making the communication.* By the further definitions of the Act, "telecommunications system" includes the communication transmitted by the amateur station, as the communication is not carried solely by radiocommunication. The offence is "listening", without either disclosing or acting on what is listened to, so long as the person making the communication does not know that he or she can be heard.

The obligation is imposed on a licensee who connects a person (not necessarily a licensed person) from a public telecommunications network, which could be a "phone patch" or a connection

over the Internet. If the obligation had been imposed on a Repeater station, then a D-STAR gateway station could be regularly "connecting a person from a public telecommunications network" to the station, and the obligation would be unrealistic. And a Foundation station cannot make such a connection.

While it can safely be assumed that a licensed person would be fully aware of the fact that any amateur transmission can be listened to by others, the requirement is not restricted to a licensed person, as referred to in section 11A (2).

The point is that it really does make sense for an amateur allowing a non-amateur to communicate through an amateur transmitter to ensure that the non-amateur does understand that whatever is said may be lawfully listened to by other people.

International third party messages

The Amending Determination revokes Section 5 (4) of the LCD.

That provision required a bilateral agreement between Australia and the

foreign country before third party messages could be exchanged between amateurs of the countries. WRC 03 removed that requirement from the ITU's Radio Regulations, leaving it for each administration to decide what messages its amateurs could exchange.

The section revoked provided:

- (4) A licensee must not transmit messages to an amateur station in a foreign country, on behalf of a third party, unless the government of that country has made a special arrangement with Australia for the transmission and reception of messages, on behalf of third parties, between amateur stations in Australia and amateur stations in that country.

Now a note to section 5 of the LCD makes it clear that while an Australian amateur station may transmit a message on behalf of a third party to an amateur station in another country, the amateur in the other country will be bound by that country's regulations, and may not (except in the case of emergencies or

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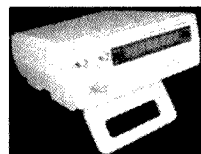
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disaster relief) be permitted to exchange such messages.

This change may prove to be very important in emergency communications, and practices for such communications.

The change gives full effect to the intent of the change made in 2003 to Article 25 of the Radio Regulations.

Encoded transmissions

To now, section 8 (3)(a) of the Amateur LCD required “a carrier wave” emitted from an amateur station to be subject to “intelligible modulation”, that is transmissions encoded for the purpose of obscuring meaning were not permitted.

To give effect to the changes made to Article 25 of the ITU Radio Regulations at WRC 03 and to give effect to the policy considerations identified in the Outcomes, section 8 (3) is now qualified to be subject to a new subsection 8 (3A), which provides:

(3A) The licensee must not operate an amateur station to transmit signals that are encoded for the purpose of obscuring the meaning of the signals, except for:

- (a) signals exchanged between an amateur station and a space station in the amateur satellite service for the purpose of controlling the operation of the space station; and
- (b) signals exchanged between an amateur station and an unattended amateur station for the purpose of controlling the operation of the unattended amateur station; and
- (c) intercommunications when participating in emergency services operations or related training exercises.

The phrase “encoded for the purpose of obscuring the meaning” is important. Many signals are encoded, but the code is in the public domain. The section uses the phrase used in the ITU Radio Regulations, and looks at purpose to determine whether the encoding is subject to the section.

While section 3A (a) reflects an exception accepted at WRC 03, and section 3A (b), allowing encoded control signals of an unattended amateur station seem obvious, section 3A (c) is important in recognising the reality of emergency communications.

Special call signs

Because the call sign is a licence condition set out on each amateur licence, there was no legal basis on which the call sign could be altered for special events unless the licensee was issued with a new licence for the relevant period the special event call sign was to be used. The Amending Determination now provides a basis for the “AX” call sign to be used for special occasions.

The Amending Determination amends the LCD by making the existing provision, section 2 (2) that provides *However, if a condition in this Determination is inconsistent with a condition specified in the licence, the condition specified in the licence applies* now subject to the new section 8 (1A), which is as follows:

(1A) The licensee of an amateur station (other than an amateur beacon station or amateur repeater station) may, on the following days, substitute the prefix letters VK in the call sign printed on the licensee’s amateur licence with the prefix letters AX:

- (a) 26 January;
- (b) 25 April;
- (c) 17 May.

The Note to the subsection points out that 26 January is Australia Day, 25 April is Anzac Day and 17 May is World Telecommunication Day.

What is unclear is how another event can be celebrated, for example, the use of special call signs for at least a period during 2010 to mark the centenary of the WIA as the oldest national radio society in the world.

“Operate”

The existing section 9 (1) of the Amateur LCD provides that *The licensee must ensure that an amateur station is operated at all times by, or under the supervision of, a qualified operator, unless the station is a repeater, beacon or using an automatic or computer controlled mode.*

The words in section 9 (1) “or under the supervision of” are deleted, so that the station must be “operated” by a qualified operator, or, now, a “qualified person” “in attendance at the amateur station”, subject to the exceptions.

A new exception is added to this list of exceptions – “an amateur station at a remote location.”

So, and importantly, section 9 (1) becomes:

9 Control of equipment at an amateur station

(1) The licensee must ensure that an amateur station is operated at all times by a qualified operator or qualified person in attendance at the amateur station, unless the station is:

- (a) an amateur repeater station; or
- (b) an amateur beacon station; or
- (c) an amateur station using automatic mode (including, for example, packet mode and radioteletype mode);
- (d) an amateur station using computer controlled mode (including, for example, packet mode and radioteletype mode); or
- (e) an amateur station at a remote location.

A “qualified operator” is essentially a person holding the appropriate Australian certificate of proficiency, but the new “qualified person” is, by a new definition, “... a person who holds an overseas qualification equivalent to the certificate of proficiency for a qualified operator.”

The other changes to this provision must be looked at in the context of the new definition of the word “operate”.

The definition of “operate” now makes the circumstances in which a person other than a “qualified operator” or “qualified person” may “operate” an amateur station.

The word “operate” is used throughout the Radiocommunications Act, for example the primary offence by section 46 is to “operate a radiocommunications device” without a licence. The word is not defined, and must be given its ordinary and natural meaning.

Certainly, to cause a transmitter to transmit or to cease to transmit must be to “operate” the transmitter.

Then, if through an Internet connection, an amateur in another country causes an IRLP node station in Australia to transmit, or through a D-STAR gateway station causes the D-STAR gateway repeater in Australia to transmit, who is “operating” the Australian transmitter?

And, certainly, Australian amateurs do want to be able to allow others to “speak” on their station, or to train potential amateurs on their station.

All of this is now addressed in the definition of “operate”, and various other changes.

That definition starts with the general and then defines those particular actions that are excluded, and does so in relation to specified stations, either Standard or Advanced stations or Repeater stations.

The definition must be read carefully and is as follows:

In this Determination:

operate means take an action to control the operation of the amateur transmitter, other than:

- (a) in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, that is done in the presence of and under the supervision of a qualified operator or qualified person, to activate by switch or voice a microphone connected to a transmitter, when the operation of the transmitter:
 - (i) is limited to causing the transmitter to transmit or to cease to transmit; and
 - (ii) is otherwise controlled by the

qualified operator or qualified person; or

- (b) in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, that is done in the presence of and under the supervision of a qualified operator or qualified person, to control the operation of a transmitter while being trained or examined for the purpose of becoming a qualified operator; or
- (c) in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, to activate by switch or voice a microphone connected to a transmitter through a public communications network if:
 - (i) the action is limited to causing the transmitter to transmit or to cease to transmit; and

(ii) the operation of the transmitter is otherwise controlled by a qualified operator or qualified person present at the transmitter; or

- (d) in relation to an amateur standard station or an amateur advanced station, for a station which receives radio signals from a second amateur station and automatically retransmits those signals by radio — an action taken by the operator of the second amateur station if that action causes the retransmitting station's transmitter to only transmit or to cease to transmit; or
- (e) in relation to an amateur standard station or an amateur advanced station, for a station which receives signals through a public telecommunications network from a second amateur station and automatically retransmits those signals by radio — an action taken by the operator of the second amateur station if that

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action causes the retransmitting station's transmitter to only transmit or to cease to transmit; or

(f) in relation to an amateur repeater station:

- (i) which receives radio signals from a second amateur station and automatically retransmits those signals; or
- (ii) which is connected to a public telecommunications network which receives signals from a second amateur station and automatically retransmits those signals;

an action by the operator of the second amateur station that causes the first station's transmitter to only transmit or to cease to transmit.

The effect of these amendments and the new definition is to allow a person who is not "qualified" to "talk over" a Standard or Advanced amateur station, and allows the training and assessment of potential amateurs using Standard or Advanced stations, and the "operation" of the Australian station by another Standard or Advanced station by an Internet connection.

Foundation licensees cannot operate (that is, 'control' as opposed to 'use') a repeater station.

As is pointed out in the formal Explanatory Memorandum in respect of the Amending Determination:

"... the definition of operate clarifies the responsibilities of amateurs 'operating' through another, unmanned amateur station (usually an amateur repeater station). Amateur repeater stations receive radio signals from a second amateur station (or a station connected to a public telecommunications network which receives signals from a second amateur station) and automatically retransmit these signals. The definition of operate explicitly excludes an action by the operator of the second amateur station that causes the first station's transmitter to only transmit or to cease to transmit. For all other actions, responsibility for the operation of the repeater station is placed on the amateur operating the second amateur station."

In this context, new section 27A (1) makes it explicit that:

The licensee of an amateur licence (amateur foundation station) must

not authorise another person to operate the licensee's amateur station if the other person is not a qualified operator or qualified person.

The section uses the word "operate" which means operate as defined. It should be noted that the acts excluded from the general definition of the term do not apply to Foundation stations.

In the "conditions" for an Advanced station a new section 12A provides:

The licensee of an amateur advanced station must not authorise another person to operate the station if the other person is not a qualified operator or qualified person.

An identical provision (section 22A) is inserted into the conditions for a Standard station.

But, again, the conditions use the word "operate" as defined, which excludes from the general definition defined acts and these are applicable to Standard and Advanced stations.

Other changes affecting Foundation stations

At long last, the LCD will limit the output power of a Foundation station to 10 watts in all permitted modes.

However, other restrictions are now made clear. In addition to section 27A (1) quoted in the context of "operate", sections 27A (2) and (3) provide:

- (2) The licensee of an amateur licence (amateur foundation station) must not operate an amateur station using automatic mode or computer controlled mode.
- (3) The licensee of an amateur licence (amateur foundation station) must not operate an amateur station that is directly connected to a public telecommunications network.

The note to this section does make it clear that a Foundation station may be indirectly connected to a public telecommunications network through a gateway operated by another licensee.

Emergency communications

A number of amendments relate to (and better facilitate) emergency communications.

Section 5 (1) of the Amateur LCD

is amended by deleting the word "natural" before the word "disaster" in the provision:

The licensee must not solicit a message that is to be transmitted on behalf of a third party unless the message relates to a disaster.

A new section 8 (2A) applies to stations "participating in emergency services operations or related training exercises" and provides:

If a network of amateur operators is participating in emergency services operations or related training exercises, for transmissions relating to those operations or exercises, the licensee must ensure that arrangements are in place for at least 1 station in the network to transmit the call signs of the stations participating in the network:

- (a) at the beginning and end of a transmission or series of transmissions; and
- (b) for a transmission or series of transmissions that lasts for more than 30 minutes — at least once during each period of 30 minutes; and
- (c) by voice (using the English language), by visual image or by an internationally recognised code.

The term "emergency services" is defined in section 3 (1) to mean:

... services provided by an organisation established in a State or Territory for purposes that include the provision of services during an emergency.

The existing rules as to the use of call signs, effectively requiring every station to identify every other station and giving its own call sign every 10 minutes, in sections 8 (1) and (2) of the Amateur LCD are made subject to the new subsection 8 (2A).

New rules relating to the use of repeater stations

A new section 8A is inserted into the Amateur LCD by the Amending Determination.

While the concept may not be perceived as new, the effect of the new section is to impose a legal obligation on the licensee to ensure that he or she only

operates through a repeater where the repeater's output frequency is allowed under that person's own licence. The new section is:

- (1) The licensee must not operate an amateur station to transmit a signal to another amateur station, through an amateur repeater station, if the licensee is not authorised under the licence to transmit on the repeater output of the amateur repeater station.
- (2) The licensee must not operate an amateur station to transmit a signal to another amateur station, through an amateur repeater station linked to a second amateur repeater station, if the licensee is not authorised under the licence to use the repeater output of the second repeater station.
- (3) The licensee must not operate an amateur station to transmit a signal to a second amateur station through a third amateur station if the licensee is not authorised under the licence to transmit on the third amateur station's transmit frequency.

The note to the new section 8A is important, and states that a licensee may transmit a signal over a repeater link, whether or not the licensee is authorised to transmit on the repeater link frequencies.

Spurious emissions

A new provision "Spurious emissions limits for an amateur station" is included in the Amateur LCD. In the Outcomes the ACA said "The ACA will continue to impose limits on the purity and stability of emitted frequencies, and maximum power limits on amateur stations in accordance with the ITU's requirements for transmitting stations, including amateur stations. The ITU requirements ... will be included in the remade Amateur Determination."

- The new provision is as follows:
- 7. (1) The licensee must not operate an amateur station if the emissions of the station include spurious emissions that are not attenuated below the power of the wanted emission supplied to the antenna transmission line by:
 - (a) for frequencies less than 30 MHz — the lesser of:
 - (i) 43 + 10 log (PEP) dB; and
 - (ii) 50 dB; or

- (b) for frequencies above 30 MHz — the lesser of
 - (i) 43 + 10 log (P) dB; and
 - (ii) 70 dB.
 - (2) In subsection (1):
 - P means mean power in watts supplied to the antenna transmission line.
 - PEP means peak envelope power in watts supplied to the antenna transmission line.
- These limits are the limits for the amateur service in Appendix 3 of the Radio Regulations.
- Some older commercial equipment may not comply with these requirements.

Interference

Section 7 of the Amateur LCD is amended so that it now reads: The licensee must not operate an amateur station if its operation causes harmful interference to radiocommunications.

Previously, rather than the word "radiocommunications", the phrase used was "a service provided by another station".

"Radiocommunications" is defined in section 6 the Radiocommunications Act widely as follows:

- (1) For the purposes of this Act, radiocommunication is:
 - (a) radio emission; or
 - (b) reception of radio emission;
 for the purpose of communicating information between persons and persons, persons and things or things and things.
- (2) The reference in subsection (1) to communicating information includes communicating information between a part of a thing and:
 - (a) another part of the same thing; or
 - (b) the same part of that thing;
 - (as, for example, in the operation of a radar device).

It is considered that the change encompasses some situations that may not have been covered by the previous language and is now consistent with the definition of "harmful interference" in the Australian Radiofrequency Spectrum Plan, which defines "harmful interference" as something which occurs to a radiocommunications service, not "a service provided by another station."

Conclusion

Not every change to the Amateur LCD is described in this article, and all licensees are urged to carefully read the Amending Determination to check for changes that might affect their operation, for example, operation on 50.0 to 50.3 MHz may be affected by the six additional translator stations that have an input on VHF channel 0.

The changes are the last of the changes resulting from the ACA review of the amateur service. Not all the changes originally proposed have been given effect to, with the ACMA retreating some time ago from the power limits identified in the Outcomes.

In their totality, the removal of the Morse code requirement for operation below 30 MHz, changes to the licensing structure, in particular the introduction of an entry-level licence, and now these changes represent a significant up-dating of the structure and regulation of the amateur service in Australia.

ar

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A cheap 15 amp switch-mode power supply for 13.8 V

Robert Broomhead VK3KRB

Altronics has a 13.8 volt 15 amp switch-mode power supply (the M8260) which has been seen on sale for the bargain price of \$99 (normal catalogue price of \$149 in one-off quantities). After having purchased one, I did the usual checks to see how suitable it would be for use with my radios. It turns out it was designed for use with standard size VHF and UHF radios and comes with a set of brackets to join the radio to the power supply.

Drew Diamond had also purchased one of these units and has done some tests looking for RF emissions that may interfere with HF reception. If I recall correctly, he said at the meeting of the local club that he found a few birdies on his HF radio but that they should not be a problem for most operators.

What concerned me about my new power supply was the noise produced by the cooling fan, it was a powerful cooling fan and quite noisy. It has two modes of operation; it could be switched on full time or it could be operated by a thermistor in which case it would switch on for 5 or 10 seconds every minute as is needed when the supply becomes warm. I found these intermittent bursts of noise to be even more annoying than having the fan running all the time.

So I performed a simple modification and put an 82 ohm 1 watt resistor across the red fan control switch (the one that controls the fan, NOT to be confused with the black mains switch). The result is that the fan now gently purrs away and keeps the supply cool. I have carried out some tests with the supply under 15 amp load for five minutes and the thermostat did not need to switch in to run the fan into high speed mode. A very satisfactory result!!

Caution PLEASE NOTE:

- 1) This (and any other) modification will void your Altronics warranty.
- 2) This is a mains operated device, never ever remove the covers with mains power connected, or operate the unit with the covers removed.
- 3) If you are not 100% confident with undertaking this modification, then please do not even attempt it, get some assistance from someone who is experienced.

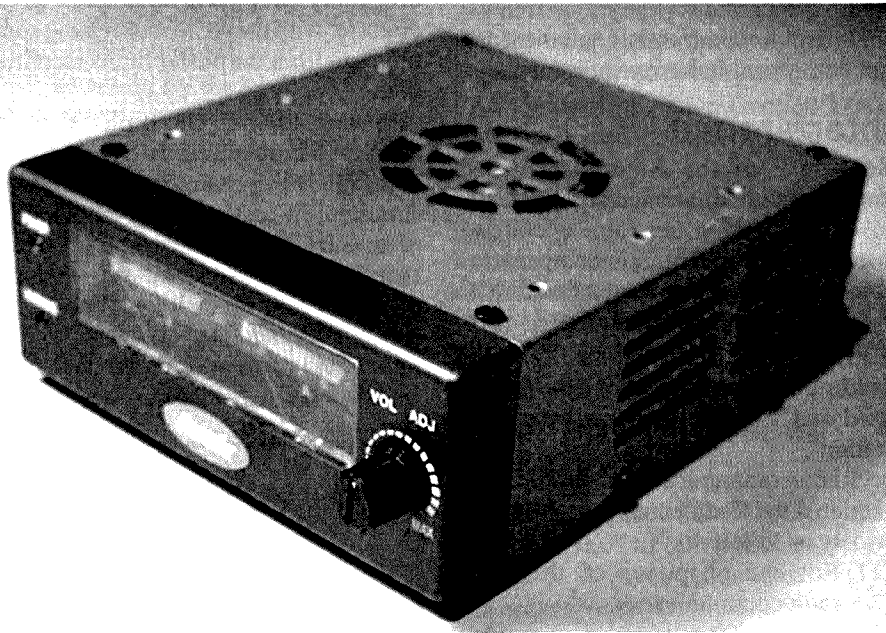


Photo 1: (right) Front view of the switch mode power supply



Photo 2: Rear view of the switch mode power supply

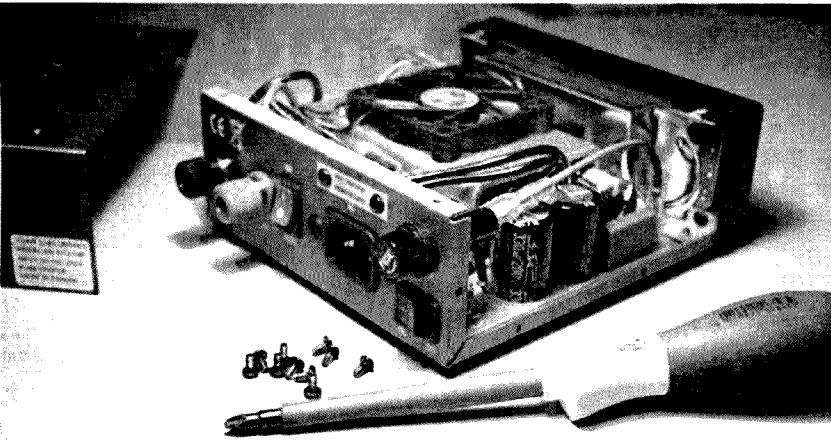


Photo 3: The unit with its top cover removed

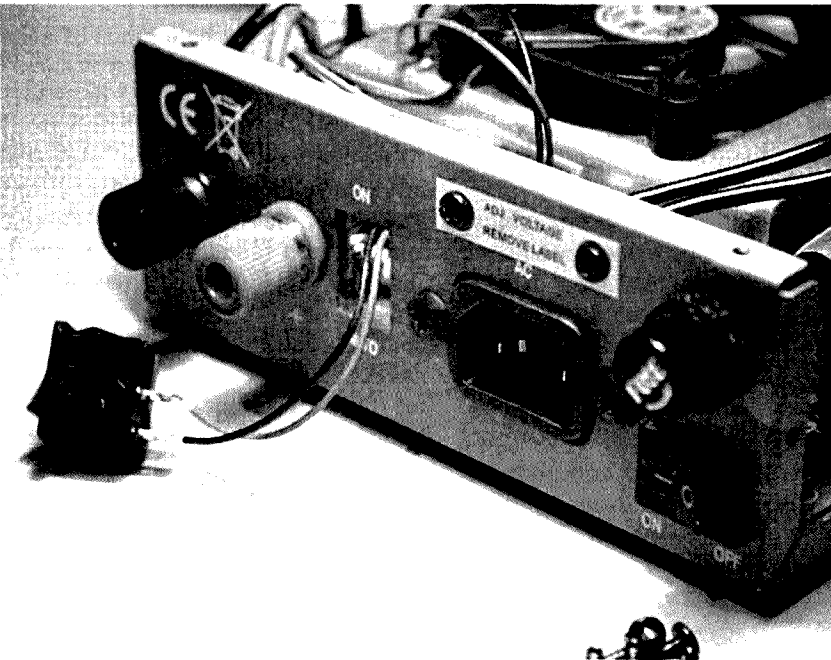


Photo 4: The power switch carefully removed

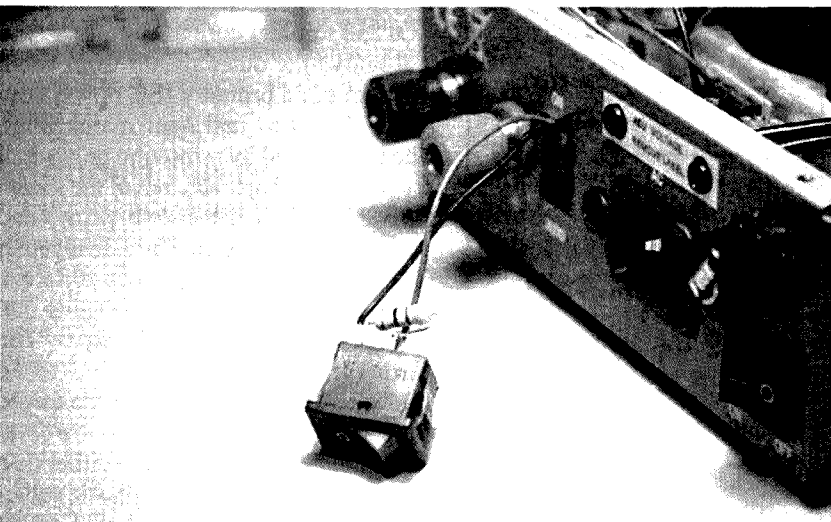


Photo 5: The 82 ohm resistor added across the fan control switch (see text)

Photos by the author.

ar:

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Quieting a switch-mode power supply

Drew Diamond VK3XU

A number of radio and electronics suppliers offer a neat little generic low-priced, switch-mode power supply unit (SMPSU), whose output is nominally 13.8 V at up to 10 or 15 A. SMPSUs (SMs) are smaller, lighter, cheaper, cooler and more efficient than conventional transformer type supplies. Unfortunately, they also have a reputation for producing radio noise.

A switch-mode PSU is essentially a 20 - 200 kHz square-wave power oscillator which, if not adequately filtered, incidentally injects rich harmonic energy back into the mains supply, and/or into the load. The H-field (leaked magnetic flux) surrounding the PSU may also directly affect nearby receiving equipment. A technical writer once quipped that SMs were invented by an accountant (another called them “an invention of the Devil”).

My sample model has a minimal amount of filtering on the mains (or line) side, and in the positive output lead only of the PSU, perhaps sufficient to allow an ordinary broadcast receiver in the same house to hear Radio National. But we amateurs routinely listen for signals right down in the microvolt region, which makes SMs a less than ideal device for powering radio equipment in small-signal work.

Another rather unfortunate characteristic of some SMs is their behaviour when the current limit is reached - they shut down completely. The user must wait some seconds before re-applying primary power. An internal fan is included which operates automatically to cool the internal power devices. So, acoustic fan noise is another issue.

Notwithstanding these shortcomings, it is possible to greatly reduce the amount of conducted radio noise by fitting additional filtering in the mains input side, and in the positive and negative DC output leads.

Mains input filter

There are usually two components contained in the noise emanating from the mains power connector. They are ‘normal-mode’ (i.e. a noise voltage occurring between the active and neutral

conductors), and ‘common-mode’ (noise voltage of about equal phase and amplitude on both conductors with respect to earth ground). Fortunately, the job of reducing both kinds of noise may be tackled in this instance by simply adding a ready-made mains or ‘EMC’ filter.

The series inductive element universally used within EMC filters is a clever device called a ‘current compensated inductor’ (Reference 1, Chapter 9, and Reference 2, page 28.11), in which a ferrite toroidal core has two identical contra-wound coils, so the net magnetic flux created in the core by the line (or load) current will be very small. It is thus possible to use a core without an air gap, yet maintain a high impedance to noise currents without saturation effects due to the line (or load) current.

The EMC filter may be accommodated in a plastic ‘jiffy’ box measuring 130 x 67 x 44 mm, pictured in Photo 1. A useful amount of additional common-mode rejection may be had by winding the active (line) and neutral wires upon an LO1238 toroidal core as follows:

Remove the outer sheath from about 600 mm of an ordinary IEC power cord (discarding the usual 3-pin mains plug). The job is eased by removing only small sections of perhaps 100 mm of the sheath at a time. Wind the brown (Line) and blue (Neutral) wires side by side together upon the toroidal core, about 10 loops, which are connected to the (L)ine and (N)eutral tags of the EMC filter. The earth (green-yellow) wire, cut to an appropriate length, by-passes the toroid and connects directly to the centre earth pin of the filter. Remember to either tie a knot in the cord, or attach a plastic cable-tie to prevent the cord from being pulled out. The toroidal core may be fixed to the bottom of the box with a blob of hot-melt glue (silicone would also serve).

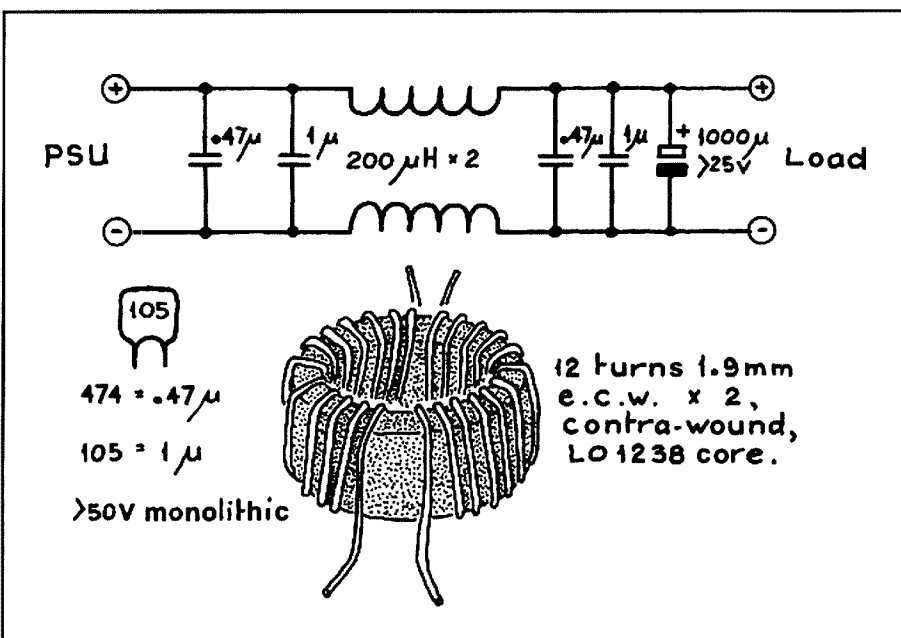


Fig 1 – Circuit diagram of the DC output circuit

DC output filter

Residual harmonic energy upon the DC side may be substantially removed by passing both the positive and negative output leads through a compensated series inductor, which acts in the same manner as described above for the line filter's inductor. The 200 μH coils (Figure 1) are wound upon an LO1238 toroidal ferrite core in opposite directions, so there is no net magnetic flux due to direct current flowing through the coils. Core saturation, or reduced effective inductance, is thus avoided.

The circuit is shown in Figure 1. The 0.47 μF and 1.0 μF capacitors should be low-inductance monolithic types, 50 V working. These, and the toroidal coil, may be accommodated upon a 40 mm x 70 mm rectangle of double-sided circuit board, pictured in Photo 2. The 'lands' may be formed by equally dividing the rectangle top and bottom with a hacksaw cut, down and across.

Measure the exact spacing of your SMPSU's terminals and drill holes in the board accordingly. A similar pair of holes at the opposite end is made to take binding-post terminals to suit your equipment set-up (19 mm [0.75"] spacing is suggested, as this fits ready-made twin-banana type plugs).

It is vital that upper and lower lands be connected together. Drill a 1.5 mm hole in four places (avoiding terminals) so that #16 B & S tinned Cu wire (Cu is the shorthand chemical symbol for copper) may be passed through and soldered each side.

For the coil(s), wind on 12 turns of 1.9 mm enamelled Cu wire for each leg of the coil. Note that they must wind in opposite directions, as depicted in Figure 1.

Reduced fan noise

For the sample model, when current demand is above about 5 A, the fan will automatically cut in, and thus cycle on and off according to demand. If this irritates you (and the idea of voiding the warranty is not a problem), the following modification is suggested by Robert Broomhead, VK3KRB (see the separate article in this issue, on page 12).

Locate the 45 degree C thermal cut-out switch, which is mounted upon the heatsink immediately next to the fan. Carefully solder an 82 or 100 ohm 1 W

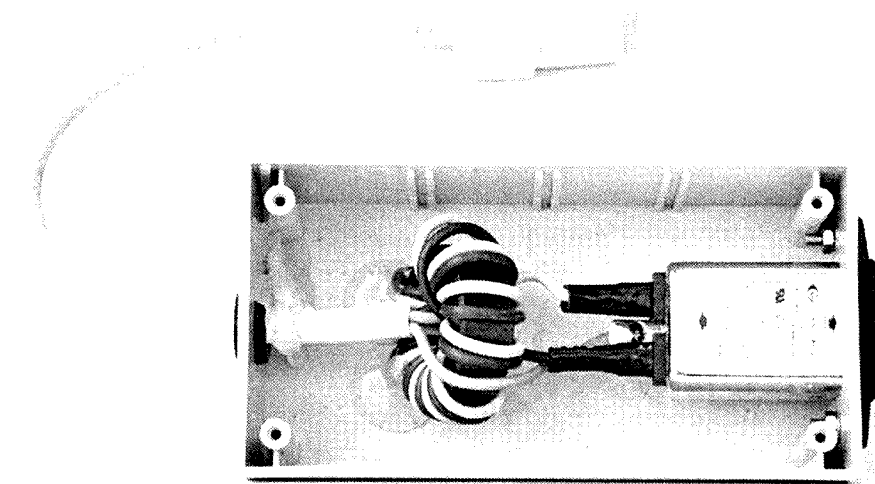


Photo 1 – Additional mains filter, inside view.

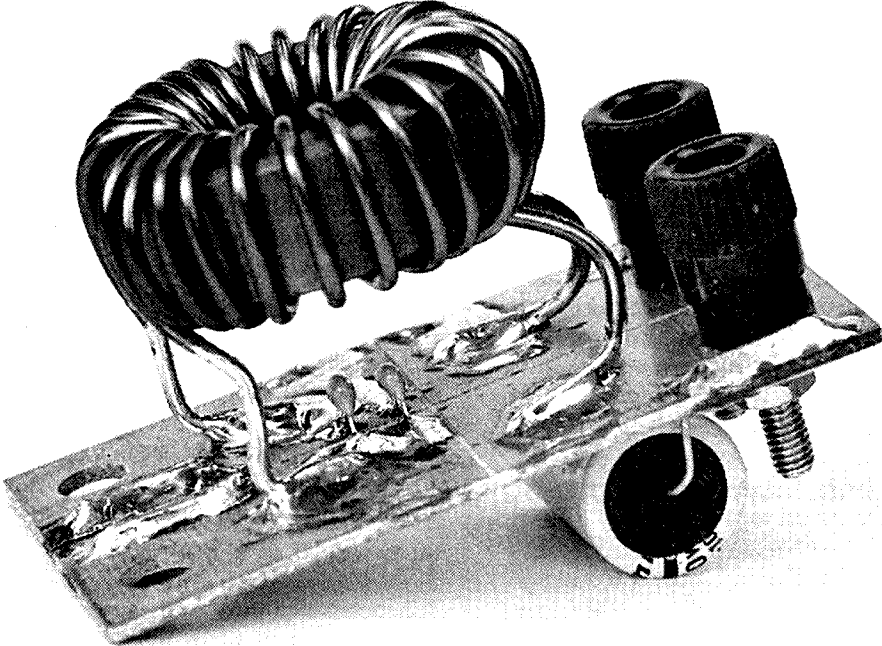


Photo 2 – DC filter

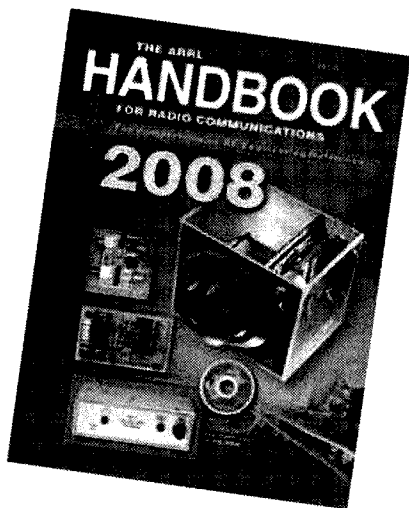
resistor across the tags of the cut-out, taking care that sufficient clearance exists between the resistor and the heatsink, and also the cover (when replaced).

With this addition, only 6 V is applied continuously to the fan motor, and so it quietly ticks over, making much less noise, whilst very adequately cooling the power devices such that the thermal switch only needs to cut in and apply full voltage to the motor during heavy demand periods.

Before and after

It is suggested that your transceiver (or other equipment) be first operated from the PSU without additional filtering fitted. Carefully note the strength of any rough, wobbly noise signals created by the PSU. When the mains and DC filters arc installed (Photo 3), it should be found that these are considerably reduced in strength, or eliminated, particularly if your HF antenna has a matched coax, or truly balanced feed-line.

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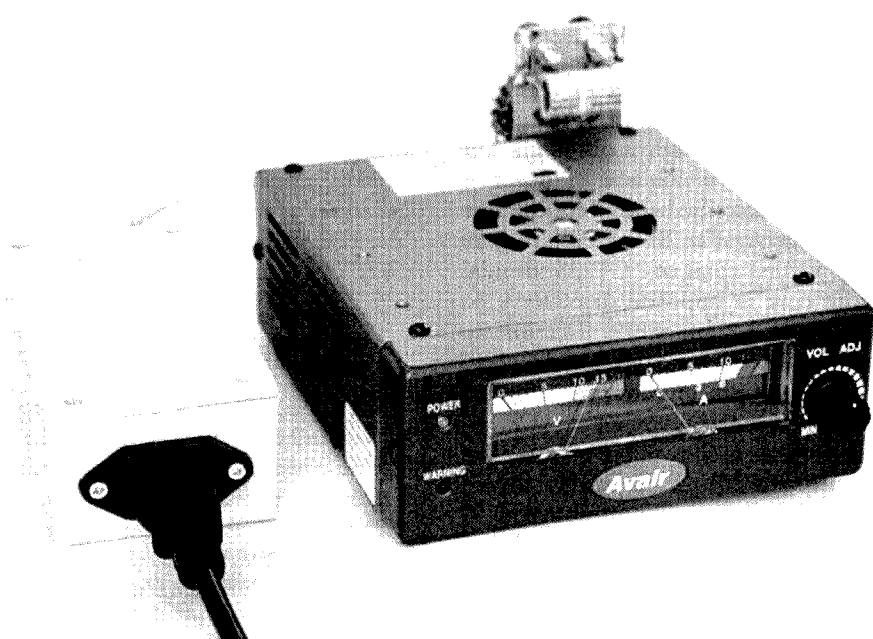


Photo 3 – Mains and DC filters installed.

Conclusion

Although SMPSUs are not ideal (in this writer's opinion) for use in a small-signal radio environment, it is highly likely that their attractive price and small size will cause many amateurs to use them to power transceivers and other equipment designed to operate from a nominal 13.8 V DC supply.

Tests upon a typical PSU indicate that noise conducted from the mains and DC side may be simply and cheaply reduced to an acceptable level, thus allowing small-signal work to occur.

Parts

It happens that most of the components for the prototype filters were purchased

from my local Jaycar shop, including jiffy box, HB6023; EMC filter, MS4003; toroidal cores (packet of 2), LO1238; and capacitors. Similar suitable parts are also available from our other suppliers, including Altronics, DSE and Semtronics.

References and Further Reading

1. *Switched-mode Power Supplies In Practice*; O Kilgenstein. John Wiley & Sons.
2. *Radio Communication Handbook*; 8th edition, RSGB.

Photos: Karlen Dockrey
ar

**John Moyle
Memorial Field
Day
15 & 16 March**

Spotlight on SWLing

Robin Harwood VK7RH

SW in a maelstrom of hate

2008 is really flying by and so much has been happening. Conditions are slowly improving yet it is obvious that the usage of HF is very much on the decline, especially by the broadcasting sector. Radio Sweden has decided to discontinue German language broadcasts after many decades and the future of other languages is uncertain. It may be following other Scandinavian nations in abandoning shortwave altogether.

For many years, Radio Station Tikiyh Okean was aimed primarily at the huge Russian Pacific fishing fleet. It was based in Vladivostok. This station disappeared at the end of January and so did its website. A similar station used to be based at Murmansk: Radio Atlantika, serving that vast oceanic region. I guess that it was no longer commercially viable with the decline in fishing fleets.

The A-08 season will commence at 0100 Z on the 31st of March, coinciding with the introduction of summer time in most of Europe and into Asiatic Russia.

This period lasts until the last Sunday of October. Australasia usually goes off Summer time on the same date but this will no longer be the norm. We actually put our clocks back on the first Sunday in April and we resume DST on the first Sunday in October. This will be three weeks earlier for NSW, Victoria, SA and WA and we will now have a uniform changeover date. NZ has opted for the last weekend in September, which means they will have an extra week of daylight saving.

Africa continues to dominate the news with an escalation in inter-ethnic strife, leading to civil wars. Kenya plunged into this abyss in late December, following the presidential election. These conflicts seem to have had their genesis in the

troubles in Rwanda and Burundi in 1994, yet these troubles may have deeper roots. We have been horrified at the senseless slaughter of innocent people, caught up in this maelstrom of hate.

People have been increasingly relying on shortwave radio stations because the local media has been silent on what has happened, either due to censorship or the senders being destroyed in the conflict.

Hate stations have been heard stirring up inter-ethnic conflict, particularly in Kenya, contrasting to the mainstream media. Efforts to find a political solution seem to have stalled and the African refugee crisis has worsened.

Civil war has also broken out in Chad, which borders Sudan. This seems to have its roots in the ongoing Civil war in the Darfur region of that large nation. Chad was easily heard here in Australia on 4905 but studios in N'djamena, the capital, were destroyed in the fighting and the channel has been silent since.

Africa will still rely on shortwave for

some time because the communications infrastructure is so poor. The Internet is virtually non-existent in sub-Saharan Africa and people rely heavily on news from Radio France International (RFI), the BBC World Service, or Channel Africa, formerly Radio RSA. The VOA has built senders in Botswana and on the former Portuguese island of Sao Tome. However Africans prefer listening to stations which concentrate on local issues rather than on those further afield.

Well that is all for March. Do not forget you can send me your news and views to vk7rh@wia.org.au Alternatively via snail mail to 20/177 Penquite Road, Norwood, Tasmania 7250.

ar

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/CR/DVD. The High Pass filter cuts in at 50MHz. This filter has 80 dB 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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How to use taps to make internal screw-threads

Drew Diamond VK3XU.

There are numerous applications in radio and electronics construction work where it is necessary to make tapped holes in brass, aluminium and steel. The most common contemporary metric screw sizes in our craft are probably 3, 4 and occasionally 5 mm.

In engineering trades, it is usual to have sets of three kinds of tap for each size. These are tapered, intermediate and bottoming (or 'plug'). However, in our work, unless we are threading 'blind' holes, we can generally make do with just a tapered tap for each required size. A 3 x 0.5 mm and a 4 x 0.7 mm tapered tap are shown in Photo 1. The second number refers to the thread pitch - or distance between crests.

To make a threaded hole, the job is first drilled to 'tap' diameter in the exact spot required - see Table 1 (derived from Reference 1). It is good practice to follow with an exact screw diameter (e.g. 3 mm) drill as a 'counterbore', to a depth of only two or three threads. Figure 1 illustrates how the 'counterbore' aids in ensuring that the tap starts truly in the hole.

Our tap is fixed into a tap holder. Three common types are pictured in Photo 2. At top is an 'American' tap wrench, middle is a simple home-made wrench, and bottom is a P&N 'T-bar' tap holder.

The method is illustrated in Figure 2. The operation is eased with a drop of lubricant inserted into the hole. There are various trade fluids, such as 'Rapid Tap™'. However, ordinary transmission fluid, or sewing machine oil, works well for steel, aluminium and brass. Begin by carefully turning the tap clockwise, not more than half a turn, with a gentle downward pressure. Then - and this is an important point otherwise tap seizure or breakage will occur - each time the tap is advanced, turn the tap anti-clockwise a similar amount. You may see and/or feel a slight click as the tap is backed-off. This is the chip, or swarf, being broken from the wall of the hole as the thread is formed. Naturally, the tap must be maintained at right-angles at all times. Do not tap 'under power' - breakage is almost guaranteed.

As an aid to maintaining rightness,

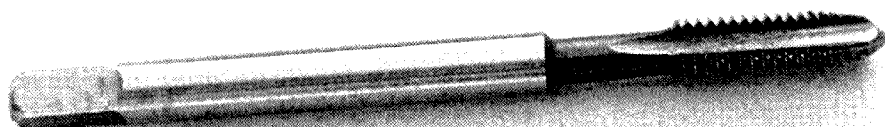


Photo 1

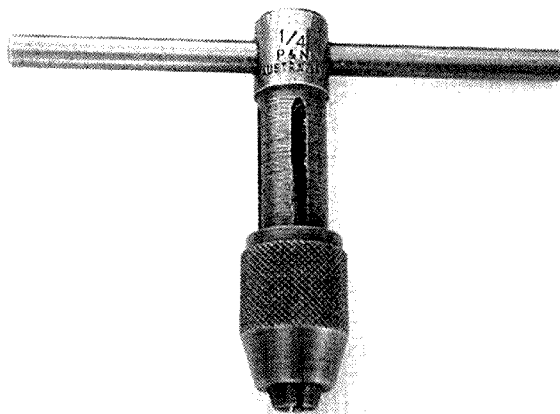
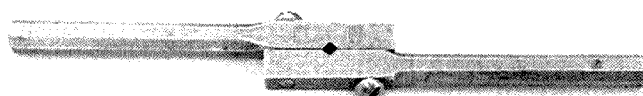


Photo 2

consider fabricating a set of tapping aids. These are simply suitably sized pieces of mild-steel or brass rod, centrally bored so that the tap is a slide fit in the hole

(Reference 2). Photo 3 shows the job fixed in the brass jaws of my vice. When the tap is withdrawn, any burrs may be

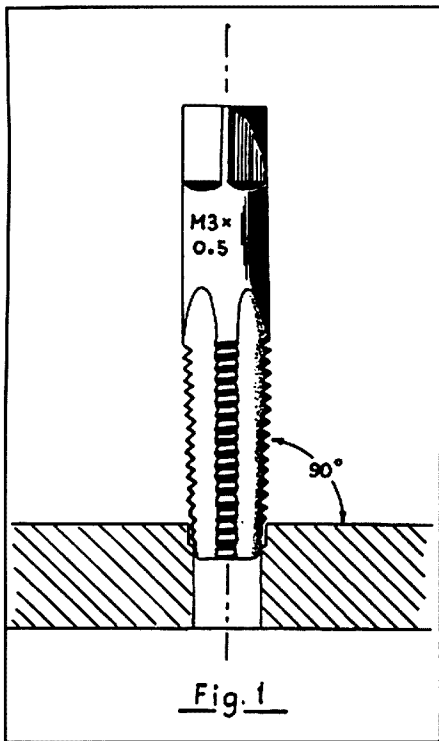


Figure 1 (refer to text)

cleaned up by lightly counter-sinking the hole.

Tap suppliers

3 and 4 mm taper taps, and a T-bar holder are available from Jaycar. Also, engineers' tool suppliers and fastener merchants (e.g. Cost Less Bolts and The Bolt Bloke) usually stock a large range of metal-threading tackle.

References and Further Reading

1. Drills, Taps and Dies; Tubal Cain. #12 in the Nexus Workshop Practice Series.
2. Model Engineering - A Foundation Course; P. Wright. Nexus Books (an excellent text, with much of relevance to radio/electronics metal-work practice).

Photos: Karlen Dockrey.
Table 1

Screw Size	Pitch	Tap Drill	Alternative
mm	mm	mm	
3	0.5	2.5	#39
4	0.7	3.3	#30
5	0.8	4.2	#19

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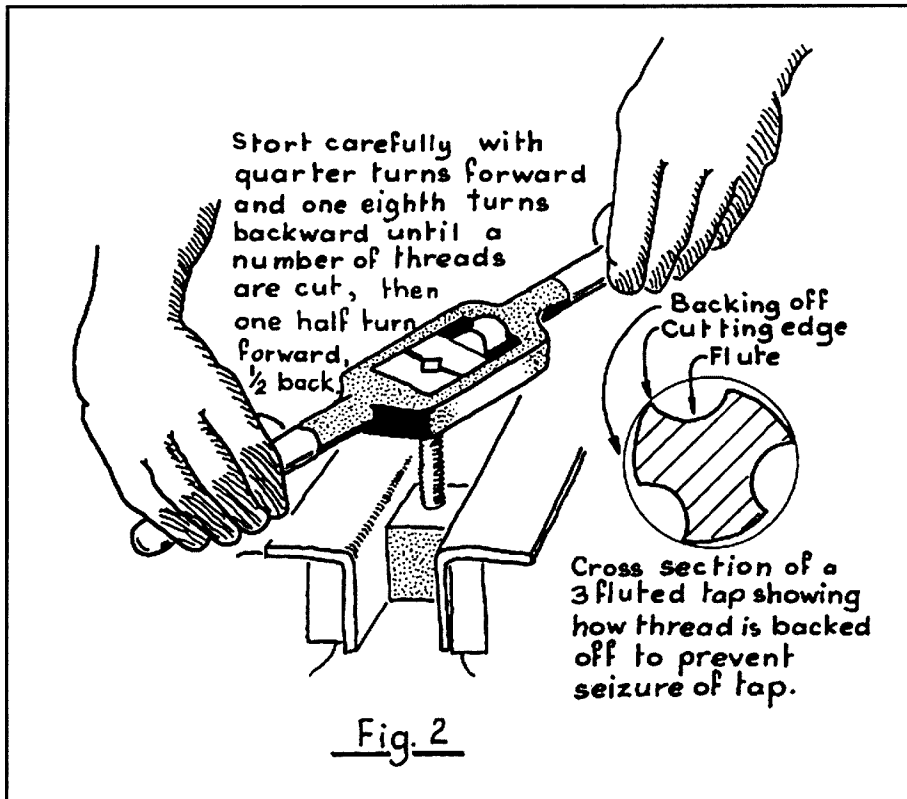


Figure 2 (refer to text)

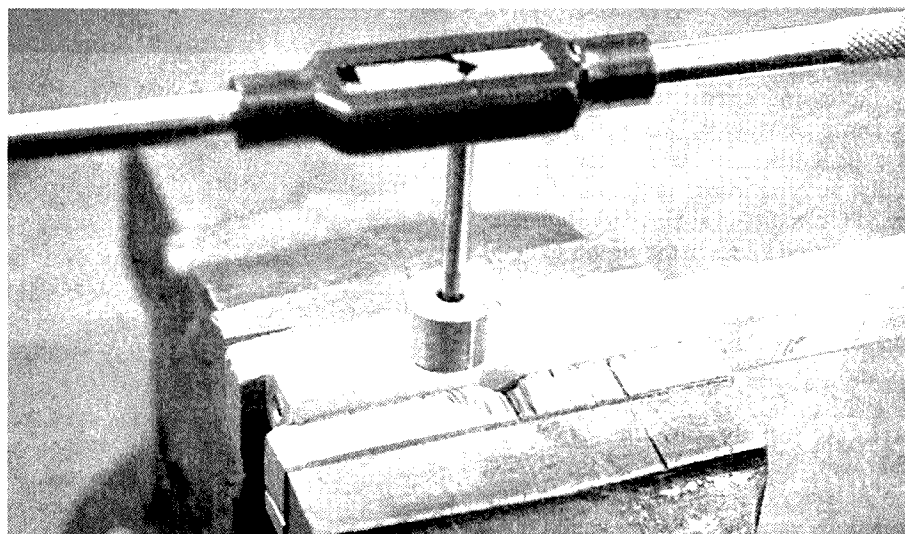


Photo 3

More than a fox hunt!
**A big welcome and invitation for all
 to attend the
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 March 2008)**

Equipment review

The Palstar AT1KP 1200 W antenna tuner

John Morrissey VK3ZRX

Looking at purchasing an antenna tuner? Here is one which could be worthy of your consideration. Rugged, easy to use, and efficient, it is in the upper echelon of antenna tuners.

As with other reviews, this one reflects the observations of one user of the AT1KP HF/6 metre tuner, made by Palstar.

Many designs of antenna tuner (ATU) have appeared over the years, some good, some not so good. For an unbalanced tuner (that is, coax in and coax out) one of the 'classic' designs was the original 'Universal Transmatch' described by Lew McCoy W1ICP, way back in the July 1970 issue of QST. This design, which was the mainstay of ARRL handbooks for many years, was overtaken by the so-called Series-Parallel Capacitance, or SPC, circuit which added an extra capacitor to obtain higher transmitter harmonic rejection by increasing circuit 'Q'. This design by Doug DeMaw W1FB also appeared in a generation of ARRL handbooks. Sadly, nothing in life is free, and while the SPC circuit did achieve its objective, the increased losses in the circuit sparked the search for something better.

Of more recent times, many published and commercial designs have been based around the 'T' circuit. And so is the Palstar AT1KP. It is probably worthwhile exploring (briefly) how the 'T' circuit operates, before we look further at the Palstar which uses a particularly ingenious variant on the classic 'T'.

First, let us look at the 'T' circuit in Figure 1. Pretty simple – just a capacitor (C_1) in series with the input, then a shunt inductor (L) to ground, then another series capacitor in the output side. So how does it work?

This is where Figure 2 helps. If we split the circuit in half, with double the inductance ($2L$) in each half, we can see that we have a pair of 'L' networks – one at the input, the other (backwards) at the output.

The 'L' circuit has the useful property in that can transform a relatively low



Photo 1: A view of the Palstar AT1KP antenna tuning unit.

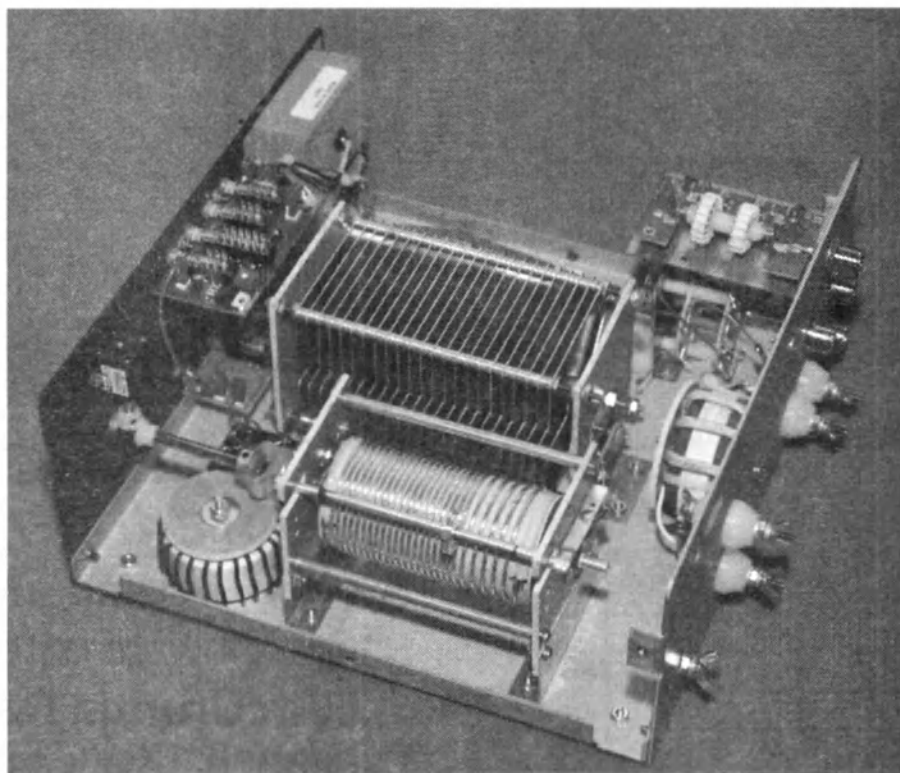


Photo 2: An overall view of the insides of the antenna tuning unit.

impedance at the input to a much higher impedance at the output. This can be shown mathematically, or at a hand-waving level can be deduced from the behaviour of a parallel tuned circuit with a small series resistance. I will leave this to you!

So, the input 'L' section has transformed the input (which we want to be 50 ohms) up to some much higher value – maybe a couple of thousand ohms. Of course, the 'L' section works in reverse too, to transform a high impedance to a lower impedance. And this is just what the output section does. In this case, the output impedance is something other than 50 ohms – it is whatever the impedance is that we wish to match at the end of the coax. While we have discussed the operation of this circuit with nominally resistive input and output impedances, in practice (with suitable choice of components) it can match a wide range of reactance as well.

But the AT1KP, while it uses a 'T' circuit, is different, and this is where the clever bit comes in. As noted above, 'T' circuits use three elements – two variable capacitors and one variable inductance. All are necessary to give a wide tuning range. Such a design takes some skill and practice (not to mention sometimes perseverance!) to 'walk' all the adjustments towards a perfect match. With 3 knobs to twiddle, this can take some time!

In the AT1KP, the two capacitors are ganged together in a differential arrangement. Most people would have come across the usual two-gang variable capacitor – with this, both sections of the capacitor have the same value, increasing or reducing at once. With a differential capacitor, when you turn the knob, as one section increases, the other reduces. But wait, there is more than just reducing the number of knobs!

Not only are there only two adjustments, the controls interact considerably less than is usual with most other circuits. This is not to say they do not interact – just that it is not such a problem as usual. Why is this? Let us look at how it is used.

To tune up an antenna, you start by setting the 'C' knob to about midrange (the manual suggests some starting settings for each band), then find resonance by varying the 'L'. With the 'C' setting midrange, the impedance at the output is the same as the input.

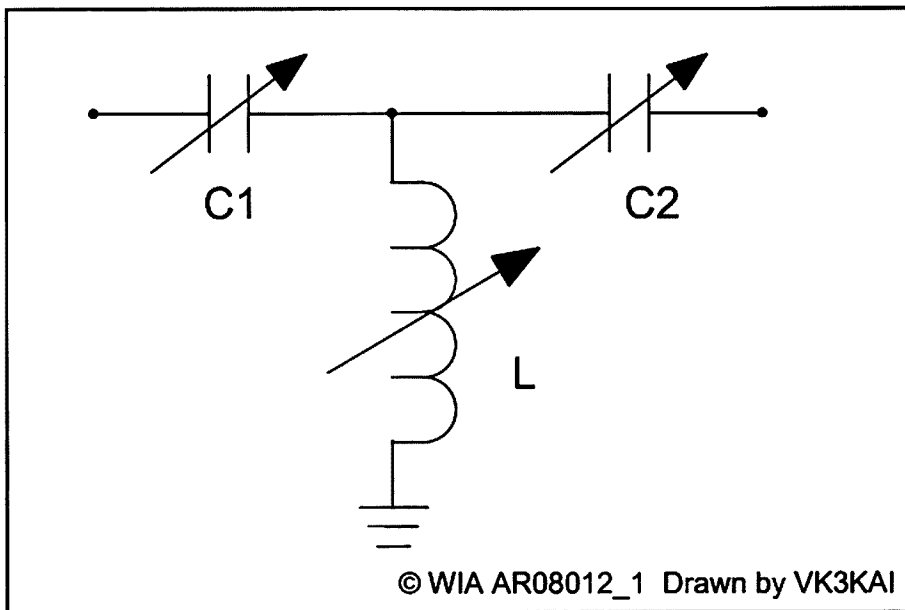


Figure 1: A simplified version of the T circuit of the antenna tuner.

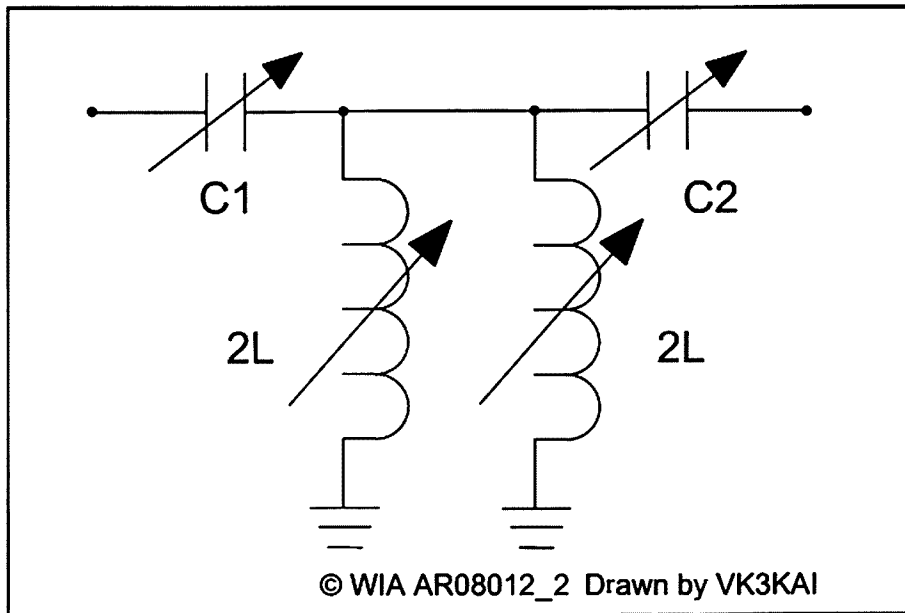


Figure 2: The T circuit can be shown to be equivalent to a pair of L networks.

Now comes another clever bit. Because the impedance transformation depends on the relative value of the two 'C's, varying the 'C' knob works to change the impedance transformation of the whole circuit. And, because the two 'C's are differentially ganged, turning the knob doesn't change the resonant frequency of the whole circuit by much, making it much easier to 'walk' the two adjustments towards the best setting.

I am used to tuning up with an old homebrew 'Ultimate Transmatch' circuit, which operates virtually the same as a 'T' with three adjustments which all interact pretty savagely. Compared to this, the

two adjustments on the AT1KP were little short of a revelation! Fast, easy, and smooth are descriptions which come to mind.

With all of this description of its operation behind us, let's look at the beast itself.

The AT1KP comes very securely packed in a large cardboard box, well surrounded by packing. The device itself is not exactly small, and will need a reasonable area (over 300 mm square) on your operating desk. It is no lightweight, either; one Palstar product comes with the proud description "built like a tank" on the box, and I have to

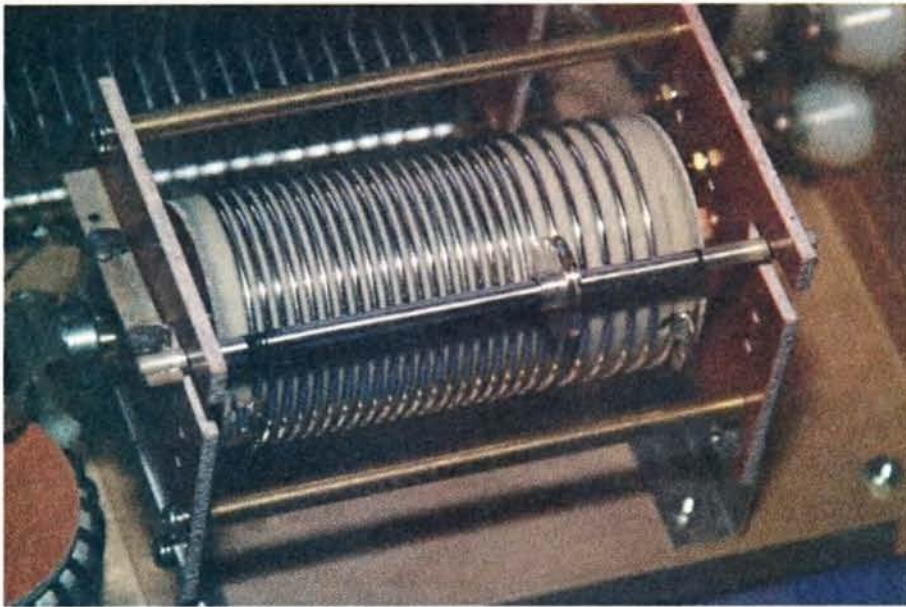


Photo 3: Close up of the roller inductor.

concur this applies to this tuner too! The chassis and case are built of heavy gauge gold aluminium, and look as though you could stand on them without doing any damage. (I do not recommend you try, though!) (Editor's note: The Owner's manual notes that the "chassis and top cover is 11 ga. (.090) aluminum (sic) that has been chem.-film treated in gold color (sic)." The .090 dimension would be in inches, equivalent to approximately 2.3 mm.)

The AT1KP is rated at 1200 W PEP (800 W CW), over quite a wide range of antenna impedances and over the frequency range 1.8 to 54 MHz. It is

also quite flexible, with provision for switching between two antennae, plus a third output for a dummy load or another antenna. Other positions of the function switch allow 'straight through' operation to either antenna or the balanced line outputs, which are also provided for, via a high power balun. The AT1KP does need 12 V DC for some metering functions, the meter lamp and for a relay to switch in some extra "L" for 160 metre operation. The manual notes that a suitable 12 V plug pack is supplied in the US but that does not seem to apply here (Editor's note: TTS Systems advise that they discard the 110 VAC plug pack

that is supplied with the unit from the US, thus avoiding possible damage. The unit is supplied with an appropriate DC connector. Given the quantity of units sold locally, buyers could purchase a plug pack, if required, at the same cost as TTS Systems. If TTS Systems supplied the plug pack, the local price would increase by the cost of the plug pack.)

I tried tuning some known 'difficult' loads (well outside the specified range) and the AT1KP had no problems matching them to 50 ohms – although I must admit I only checked this at 100 watts. Higher power would of course cause higher voltages and currents which increase the stress on tuner components considerably, so if you try really nasty loads at high power, you are on your own! I also checked the circuit losses by measuring the power delivered to my 'difficult' load – suffice to say, losses were quite low and were substantially less than my venerable homebrew 'Ultimate Transmatch'. So, no worries there.

Lifting the lid for a peek inside shows a neat layout with high quality components. Of particular note are the wide-spaced dual differential capacitor and the substantial silver-plated roller inductor. The balun is also very substantial (used if you wish to feed a balanced line) and the selector switch is everything you could wish at this power level. This is a well built tuner! The SWR measuring bridge is located at the input to the tuner; the meter has switchable power and SWR ranges, and the cross-needle meter (nice touch, Palstar) can be set to read average or peak power, with a useful selection of power ranges.

Correspondence with the local supplier reveals that all the variable capacitors and roller inductors used in their tuners are manufactured in house by Palstar.

Conclusion

Overall, my impression is that the Palstar AT1KP is a well built, heavy duty tuner built with good quality components. It has sufficient flexibility for most purposes and having only the two adjustments makes it easier to operate than most. With current pricing of \$630 it is a significant investment, which should give good service for many years.

Thanks to TTS Systems of Tyabb for the loan of the AT1KP for the review.

All photos by the author.



Photo 4: Close up of the differential dual gang capacitor.

AT1KP 1200 W manual Tuner



Differential capacitor tuning, 2 stators, 1 rotor. 2 controls to precision tune, ceramic body roller inductor and high power balun. Peak and Peak Hold dual cross-needle metering.

- 1200 watts pep • 160m to 20m (1200+/-j1200), 10m to 15m (1000+/-j1000) • Output to both balanced and un-balanced lines • 20 ohms to 1200 ohms Impedance matching range • 6 position mode switch for multiple antennas • Backlit Crossneedle metering (wall transformer inc.)

REVIEW PAGE 20

NEW

PALSTAR R30CC Shortwave Receiver

This SWL receiver performs with no overloading in the front end. Says one fan "I think this [R30] is one of those not too well known jewels that is already a precious commodity to those who own one." A high quality compact high performance radio capable of receiving multimode in the 100Khz to 30 Mhz spectrum. Strong signal handling, high sensitivity and dynamic range to eliminate intermodulation interference. 100 programmable memories. The 10 AA cell internal battery pack gives portability and endurance away from the mains.



SGC SG-500 Power Cube HF Amplifier

An HF linear amplifier ideal for high power operation in portable, mobile and base station situations. It can deliver up to 500W CW or PEP with as little as 35W drive. Fully automatic bandswitching and RF detect PTT. It uses one of the most advanced self protection systems on the market to provide maximum stability and reliability FCC Certified.

Visit our web site for further details or call for a brochure.



Orion II



Made in Japan* stamped on back panel is not a pre-requisite to buying a high performance HF transceiver. In fact very few or if any of these Asian units can equal the performance of this receiver built in the shadow of the Great Smoky Mountains in the USA.



*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*.

Call or email us for a full spec sheet

Read the full specs and reviews on the net (e-ham) and make your own judgement

Mean Well PB 360P-12 battery charger

This is the ideal charger for communications power systems. It maintains the battery at a steady 13.8 (adjustable) float voltage while having boost capability of delivering up to 24 amps when needed. Both 12 and 24 volt versions are available. There is built in protection against over current, over temperature and reverse polarity. Perfect for use in Motor Homes, Base Stations, and Small Vessels. No noticeable RF interference.



"NO NOTICEABLE RF INTERFERENCE"

We supply RF cables terminated with professional grade connectors to suit your application. Call for a price

AMIDON POWERED IRON and FERRITE CORES
Coaxial Cables and Connectors

SCRUB POLE
Portable or fixed base
10 metre long HF vertical

The antenna collapses down to 6 x 1.8 m sections of 6000 grade aluminum tube.

It is protected with a durable powder coat finish in a pleasing grey/green color.

The natural resonance is in the 40 metre amateur band. It can be easily tuned to other bands using optional coupling units or an auto tuner.

Call us for additional specs



A 160 metre AM transmitter using pulse width modulation

Leigh Brown VK3TOQ

I wanted to build a transmitter but did not want to build a high voltage device as they are potentially dangerous and the parts are hard to obtain new. I saw this PC motherboard PWM power supply controller that can work down from 2 MHz so I obtained some samples. Please refer to the National Semiconductor data sheet for LM2720M for more details. The device requires an oscillator four times greater in frequency than the carrier for push pull.

I built the low power section on a printed circuit board but some constructors may be able to improvise. I used low cost parts that are readily available except for the mica capacitors and these may be found in the junk box. The output transformer is made from four ferrite tubes or toroids and worked well. I also had good success in using a ferrite switch-mode E core as the transformer in earlier versions. I wound the transformer with multi strand Teflon wire as I had it but PVC multi strand hook-up wire should work at this frequency.

The PWM controller has an inhibit pin (pin 17) and I use this to enable the transmit function. At 14.2 V supply this device can produce 30 W out. If you only have a 12 V supply this will still work but at a lower power output. I used an adjustable voltage regulator to produce 14 V DC at 6 A. In the photograph of the unit most of the area is taken up by the power supply and only a small area is that of the transmitter. It can be made small.

The output filter ideally should be built in a tin can to be really effective. The output filter consisted of four 15 μ H chokes in parallel as they were readily available from my supplier and they worked. I also used toroids for the filter. All the filter capacitors have to be mica as other capacitor types tend to get hot at the currents used. Best filter performance was obtained with the output elliptical filter which has the pass frequency of 1.84 MHz and a stop frequency of 3.68 MHz and 5.52 MHz. I have also included an optional two stage PI filter which uses less critical components.

An oscilloscope is the best piece of test equipment to use for fault finding. During setup, the potentiometer is adjusted initially to 2.5 V for an even mark space ratio at the output transistor

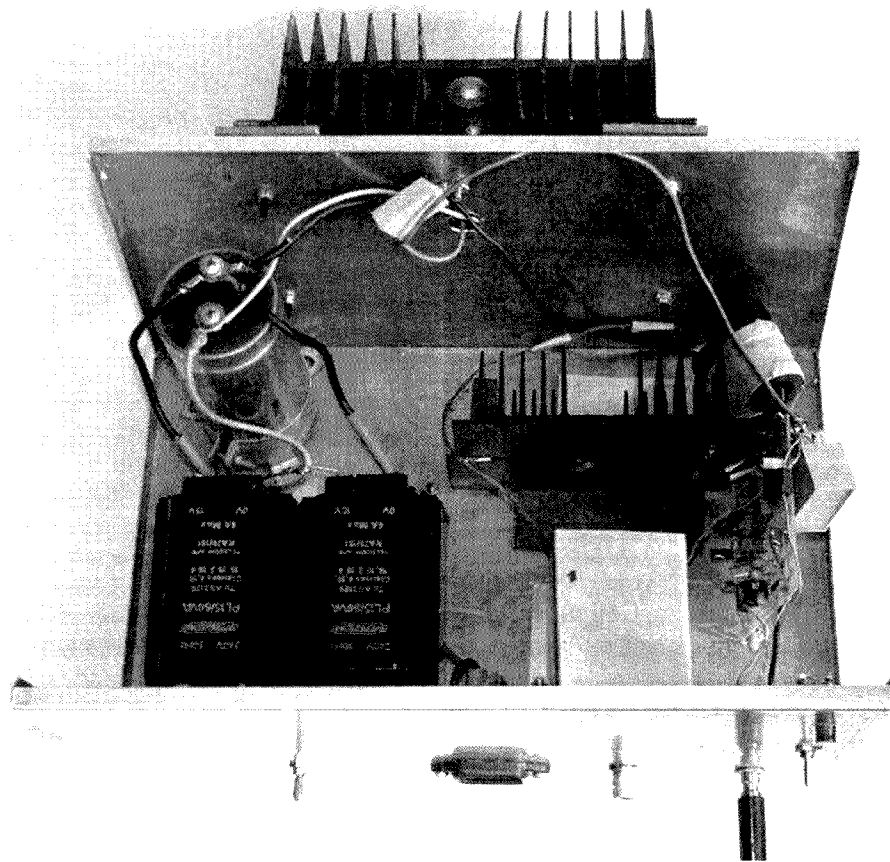


Photo 1 Top view of the transmitter, inside the case.

drains and then for useful power at the output. A current limited supply is necessary when setting up this device as both the transistors can turn on together, a feature that can make life difficult.

The unit cannot use low output microphones but many people use pre-amplified microphones which use compression and limiting and these will work best with this transmitter. I found that I have to talk close to the low cost handheld microphone that I use, which was an alarm panel version.

The output transistors, MTP3055E are 12 A 60 V MOSFETS that are

low cost and readily available from two or three suppliers. Note that they are not the very common NPN power transistors with a similar part number. Larger MOSFETS were not used due to the dramatic increase in cost and much larger gate capacitance which results in drive transistor over heating. I had much trouble with the drive transistors as some are reverse polarity (EBC versus CBE) and some versions had too much gain to be switching transistors. I ended up testing all transistors with the multimeter HFE tester looking for a gain between 120 and 190. Backward transistors or

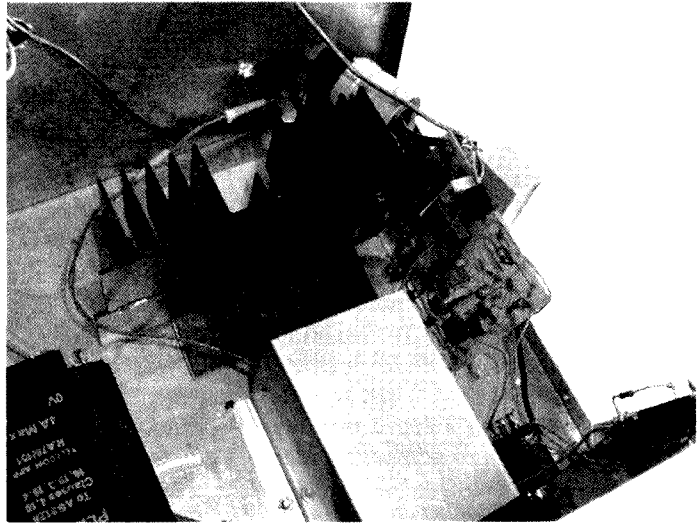
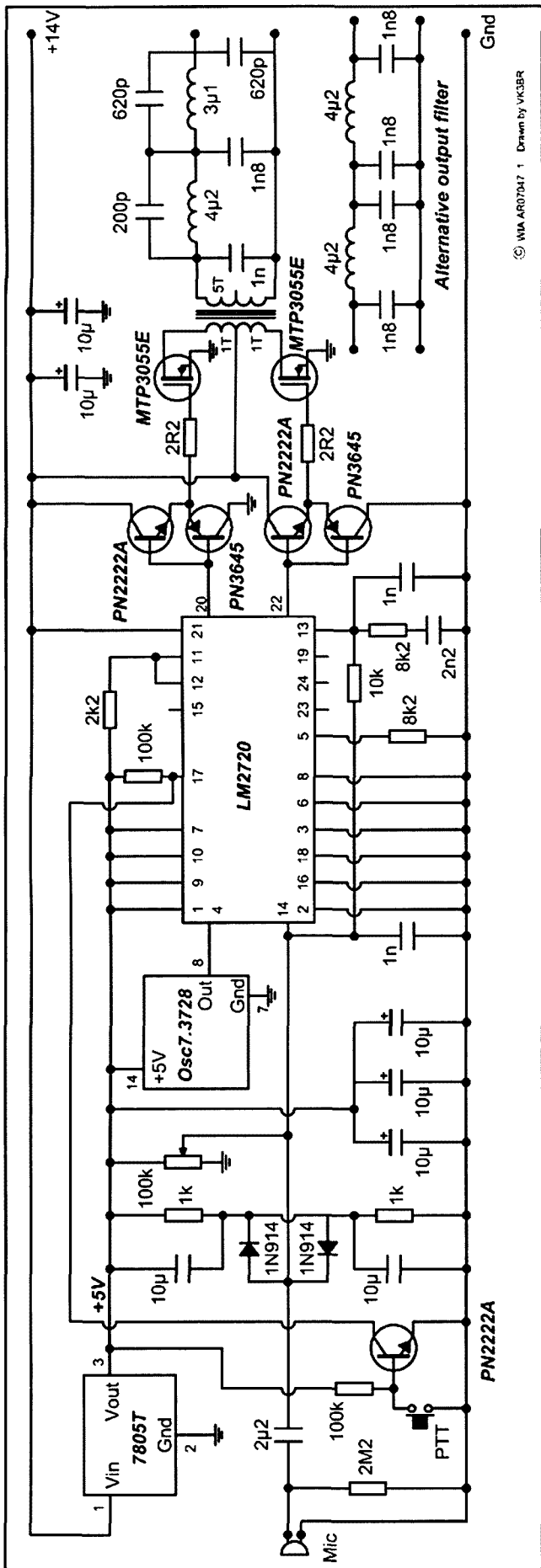


Photo 2. A close up of the board.

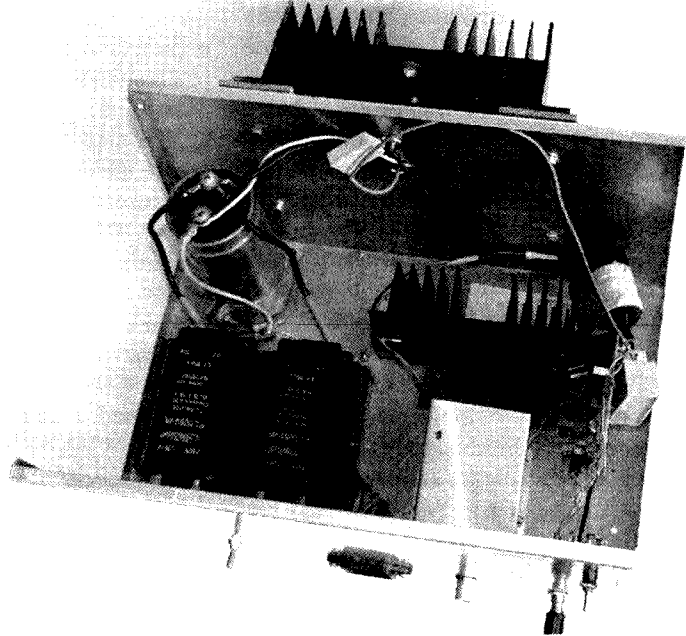


Photo 3. An alternate top view of the transmitter, inside the case.

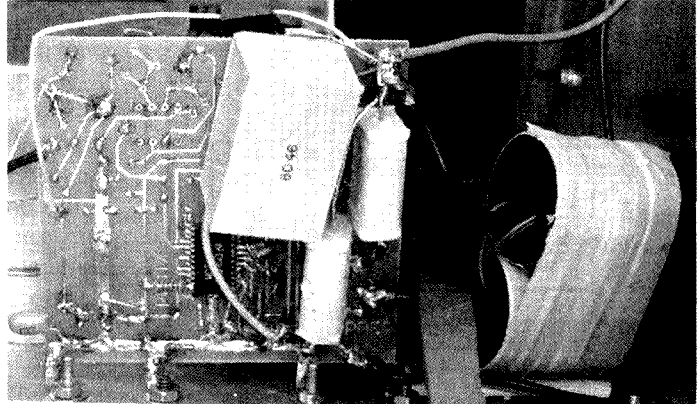


Photo 4. Another close up of board.

LEFT: Figure 1 The circuit diagram.

continued next page

Over to you

Foundation licence privileges

The recent ruling of the ACMA that Foundation licensees cannot use digital voice modes may not be popular, however I agree with it. The Foundation licence is an entry level qualification, in part, designed to enable licence holders to get their feet wet before advancing to a higher grade of licence. It can be argued that the Foundation licence privileges are generous and provide adequate and significant scope for experimentation given the standard of competencies required for this grade of licence. Some readers will recall the relatively limited privileges that applied to holders of the Novice licence when this was first made available in the mid seventies, and yes, I know times have moved on. I am a supporter of the Foundation licence.

Bruce R Kendall VK3WL

Editor's note: Bruce also included a long item regarding on-air behaviour. It may be published separately, if space is available.

Bridge climb

Regarding the September issue of AR: Sorry to steal Victor Hee's (VK2KVH) thunder, but I climbed the Bridge at age

83½ years. I would not mind betting others older than me have done it too!

Steve VK2ZP
(Former VK1 WIA President)

Equipment reviews

I take umbrage at the aspersions cast by Brian VK2GCE in "Over to you", AR November 2007.

I worked forty and a half years as an analytical chemist, contributing to, or producing reports on everything from poo to perfume.

My old boss used to say: "*All we do is humbug, the only real test for anything is how it performs in the REAL world.*"

Take the "Humble Chocolate Cake"; we could produce an indigestible report a thousand pages long, detailing the test results to the appropriate Australian Standard, the Cook's resume and testimonials, a soil analysis of the area where the cocoa beans were grown etc, ad nauseam.

The REAL test of the "Humble Chocolate Cake" would be to sit down, on a warm spring morning, with a few friends, a pot of Earl Grey Tea and the apprehensive cake.

After the tea and cake have been consumed, a consensus could be arrived

at and dissent to that consensus noted in any report produced.

Would you rather sit in on the morning tea, if only by proxy, or try to digest the thousand pages?

M R McLellan VK2TTI

I refer to the letter in "Over to you" of November 2007 by Brian VK2GCE.

I am not writing on Brian's comment about the review, which has been done in the Editorial in the same issue and makes a lot of sense to me. I wish mainly to comment on the human aspects of the letter.

Neither the editorial policy makers nor the reviewers are machines, they are human beings just like you and me, capable of all the emotional reactions of which we are all (including Brian) fully aware. Brian's letter was at best unkind, at worst downright insulting to the reviewers. I believe nothing could be more likely to make a volunteer say: "Why do I bother? than needless, uncalled for aggression, which anyway is rarely productive.

Sure we all need to be prepared for criticism; it is a spur to improvement. But let it be done with consideration toward those involved.

David Bell VK3FGE

A 160 metre AM transmitter using pulse width modulation

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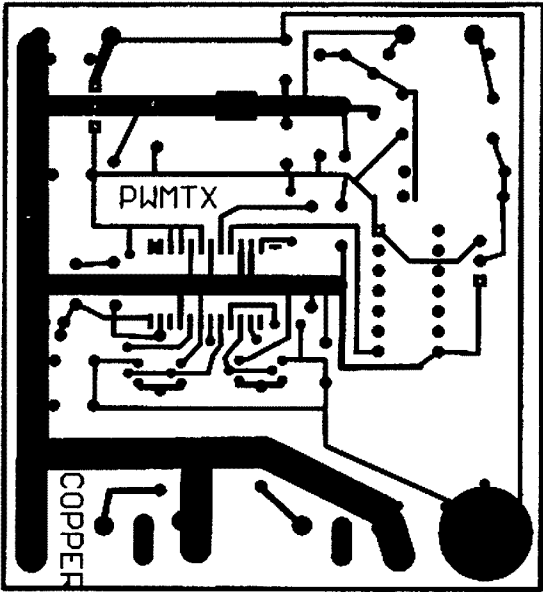


Figure 2 The PCB board.

incorrect switching types resulted in smoke and in one case the transistor melting. This simple part of the construction process took considerable time to sort out.

The LM2720M four phase PWM controller IC is only available in surface mount but this is a large package and can be hand soldered easily. It is mounted on the underside of the single sided PCB. This part is in current production and can be obtained from National Semiconductor directly.

I used an 80 uF photoflash capacitor from a disposable camera as it has very low ESR for the power supply filter. I found that I also had to use a 10 uF polypropylene capacitor to bypass the power input directly at the output transistors.

Here is a parts list and possible suppliers of major components:

LM2720M	National Semiconductor
7.3728MHz oscillator	Rockby 10250
PN2222A	DSE, Rockby
PN2907A	DSE, Rockby
MTP3055E MOSFET	DSE Z2132, Rockby
Transformer:	
4 X ferrite tubes 25 OD 14 ID 20 mm long	Sifor, Rockby
4x15uH choke 1A	Rockby 23979
Limited mica caps	Rockby, otherwise junkbox

I have described a simple novel 160 m AM transmitter made from low cost readily available parts. The device can be made very small with care because it does not use any modulation components.

ar

Experts say we are not yet at the point when the new Sunspot cycle (#24) will start to make a notable difference to HF propagation, despite some false starts. As conditions improve, so the higher bands will start to improve, easing pressure on the lower frequencies. It will also be a bonus for those stations with large beams for 20 metres and above. It will be good to hear 10 m open again, a wonderful DX band for simple antennas and low power. Despite the poor conditions, the bands are still producing some rare DX.

DXpeditions: Already this year, we have had a DXpedition to FJ by F6EXV and JR2KD, and also Cocos Island and Ducie Island DXpeditions will have taken place. To come are Clipperton Island, Rwanda, Spratly and Djibouti and other surprises still to be announced.

DXCC news

These operations have been approved for DXCC credit: 6E4LM Revillagigedo 2007 Operations, FJ/OH2AM Saint Barthelemy 2007 Operation, TN6X Republic of The Congo 2007 Operation, TN9Z Republic of The Congo 2007 Operation, TT8PK Chad 2007 and current 2008 Operations, XF4YK Revillagigedo 2007 Operations, XF4YW Revillagigedo 2007 Operations, YK9SV Syria 2007 Operation.

OH2BN, on behalf of "The FJ/OH2AM QSL Management Team", says cards should have been printed by January 15. Processing of direct requests were then to begin immediately. The envelopes are ready to go. 23,340 QSOs were made with 11,730 individual DXers. QSL requests are expected for 100 percent because of the close DXCC Honour Roll submission date: March 31. The team planned to make out all QSLs received during January which were to be released during February. The group has offered to put the entire log on Logbook of the World but LoTW technicalities mean the log will not be available there until May, after this year's Honour Roll deadline.

9X: On 11 January, the Rwanda Utilities Regulatory Agency issued an amateur radio licence (9X0R) to EA5RM, and a DXpedition is being planned in a couple of months time. "RURA is

trying to establish amateur radio rules in Rwanda with the help of Peter, 9X5SP", EA5RM says, "that within a few months ham radio activities will start to be more usual from this country". EA5RM and his team are grateful to RURA General Director and Peter 9X5SP for their help and cooperation. Full details available at www.9x0r.com Questions and comments can be sent to 9x0r@9x0r.com

ZD7X (KC0W) moved to St. Helena in September 2007, planning to remain for several years, but he will be leaving the island in April 2008. He plans to spend the majority of his last few months as ZD7X on 75/80 metres, CW and SSB. Look for him around 3502 kHz CW and in the DX window on SSB (plus/minus QRM). In recent weeks he has been on the majority of the HF bands. QSL via W0MM, direct or bureau.

Ed Sawyer NIUR plans a DXpedition to the Spratly Islands for March 22nd-30th. Ed is a veteran of operations from A52UR, XX9TEP, C6ARS, PJ2E, FP0GXV and 9M6A. Also going along to the Malaysian Layang Layang Island Resort will be Ed's YL, Christine KB1PQN, on her very first expedition. Focusing on the most needed bands in North America and Europe. they will use an Icom IC-706 and Yaesu FT-897D, each 100 watts, no amps, and a Force 12 Sigma - 40XK and vertical dipoles for 160, 80 and 20 as the antennas. The 9M licence application and Navy permissions have been lodged with help from Doris 9M6DU. The web page has a nice aerial photo of the island: www.nlurspratly.com. QSL via K2RET, Bob Tomkovich, Jr., 405 Hemlock Dr., Lanoka Harbor, NJ 08734 USA.

Trent VK4TI states that the YJ0AX DXpedition for CQ WPX SSB Contest to Vanuatu in March is on. Trent, along with VK3TZ and VK4VCC, plans activity on 3.5 to 28 MHz. QSL via N3SL.

SP3GVX, Marek has been back to the Polish "Henryk Arctowski" scientific station on King George Island, South Shetlands (AN-010) since November 2007, and will stay there until late 2008. Expect him to be active as HF0POL when his workload permits. QSL via SP3WVL. Logs will be uploaded to LoTW.

BOSNIA-HERZEGOVINA: In August the ITU granted a request from the Ministry of Communications and Transport of Bosnia and Herzegovina (BiH) to replace T9A-T9Z with E7A-E7Z. The change was made initially on a provisional basis and was confirmed by the 2007 World Radiocommunication Conference to be effective from the 17th November 2007. The change was announced in Sarajevo on the 18th December. Amateur Radio station licences with E7 prefixes will be issued beginning in January 2008, and other prefixes will be phased out.

K9WZB, Garry Fisher, and his wife Sharon, K7WZB, will be operating from Aruba as P40ZB, April 16-24. They plan to be on 40, 20, 17, 15, 10 and 6 m CW, SSB and RTTY. QSL to K9WZB.

TU5KG (FT5XR and FT5WN), Gildas, is on a fishing boat in the southern Indian Ocean. He has been QRV from the boat in his spare time as FT5XR/MM. Gil was in the waters around Kerguelen Island until about February 15th. From then to March 15th, he will be fishing around Crozet Island. From about March 15th to April 15th back around Kerguelen Island. Gil might be QRV from the island of Kerguelen as FT5XR sometime around March 15th. This will probably be a 24 hour +/- operation. QSL all of Gil's activities via F4EFI.

E4/OM2DX: Mike/OM2DX, Steve/OM3JW, Rudy/OM3PC and Miro/OM5RW made nearly 30,000 QSOs (6653 SSB, 21749 CW and 1048 RTTY) during a recent 7-day operation from Bethlehem, Palestine. "Why they had not spent more time on SSB" — "Doors to Palestine are pretty much open for anybody and every other expedition will spend much more time on SSB than on CW. When the local licensed operators come on air it will be again SSB only".

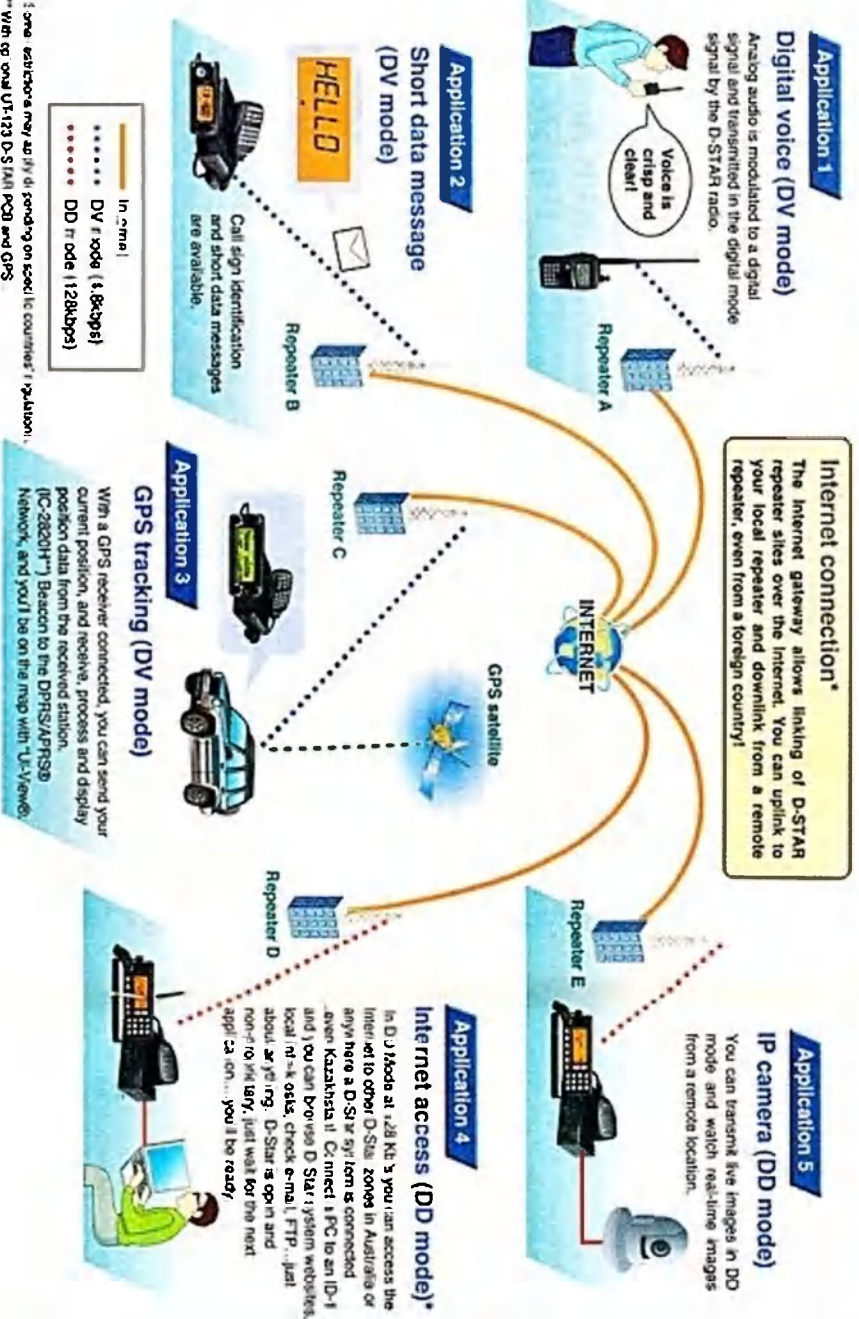
Happy DXing!

Special thanks to the authors of *The Daily DX* (W3UR), *425 DX News* (11JQJ) 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

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 Web Chat @, link position data, find your friends or check their progress on U-View? 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

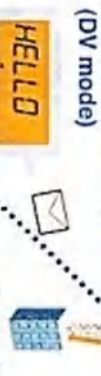
Digital voice (DV mode)

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)



In DV mode:
 ●●●●● DV mode (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!



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/APRS Network, and you'll be on the map with U-View!

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 DV 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 networks, 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!

- FACT** 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.
- FACT** 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.
- FACT** 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.
- FACT** 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.
- FACT** 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.
- FACT** 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 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-View! With the "D-STARINC" 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.
- FACT** 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.

ICOM Demand Reliability and Performance, Insist on ICOM!

* Some restrictions may apply depending on specific countries' regulations.
 ** With optional UT-133 D-STAR PCB and GPS

Clubs

The Urunga Convention over Easter Saturday and Sunday will be the 60th annual event. Details of the event received coverage in last month's AR, on page 39. Get your fox hunt gear ready now; book your accommodation and practice to give the VK3s a good run. Check out via the various contact details given last month or seek out Secretary Ken VK2DGT.

Oxley Region ARC has a new venue for their monthly general meeting on the first Saturday afternoon and the informal evenings on the second and fourth Fridays, the function room of the Port City Bowling Club in Owen Street, Port Macquarie, on the ocean side of the CBD, above Town Beach. They previously met in the SES headquarters in Gordon Street. The SES will soon be moving to their purpose-built new headquarters, which does not have provision for external groups to meet. Call in to their two metre nets on one of the local repeaters – Sunday morning and Wednesday evening. Visit the June long weekend annual Field Day. Regular Foundation and Standard courses are held in Wauchope and Port Macquarie. Register by mail to ORARC, PO Box 712, Port Macquarie, NSW 2444.

The Mid South Coast ARG for some decades operated their VK2RMU 6700 repeater from an elevated site, inland from Milton. However, early this year the site owner rescinded approval, advises MSCARC Secretary Stuart VK2LSB. The equipment has been withdrawn and the service is currently off air while an alternate site is sought.

The Mid North Coast ARC conducted a great 'Expo' on January 20th at Coffs Harbour. There was a good attendance of traders and various service organisations filling the hall to capacity. 120 registrations were recorded, advises organizer Gary VK2ZKT. The group is very active throughout the year with regular meetings, education facilities, developing amateur radio related kits and establishing repeaters, the first of which will be on 70 cm, to be followed by 2 metres and a 6 metre access point. There is talk of another 'field day' in Spring.

The Orange and District ARC has an expanding interest in APRS. They are in the process of setting a digipeater on the nearby Mt. Canobolas to increase the coverage of the network in western NSW. They recently held an antenna building weekend in preparation for the John Moyle Field Day. The club meets monthly on the first Friday evening in the RAAF 29 Flight clubrooms at 64 Warrendine Street, Orange at 7.30 pm., advises Secretary Bob VK2MRP. Email secretary@odarc.org The web page www.odarc.org or mail to P.O. Box 1065, Orange, NSW 2800.

The Taree and District ARC resume their meetings on the first Tuesday evening at Taree TAFE. Last month, while the TAFE was closed, they met at Old Bar. One of their repeaters is VK2RRE. For many years they have publicised its existence by a sign displaying the callsign and frequency mounted beside the Pacific Highway. You can observe it when travelling south towards Taree from Port Macquarie. It is starting to become invisible now the drought has 'broken' and the small trees in front of it are growing well.

The Waverley ARS was formed in 1919. Next year will be their 90th anniversary and they are seeking to contact past members who may like to be involved in the event. Check out vk2bv.org or call Simon VK2UA on 02 9328 7141. Their annual auction will be Saturday 21st June.

Tamworth Radio Club Inc meet on the first Friday evening at the Tamworth Oxley Scout Hall, Cartage and Hall Street, Tamworth. They operate repeaters VK2RTM near Nundle on 146.750 and VK2RMO near Manilla on 146.850. In Tamworth, there is VK2RAA on 439.375. They also run a Home Hosting program. Details via telephone 02 6765 9052 or check out the web site www.trci.org.au advises John VK2HUP, their Publicity Officer.

ARNSW

ARNSW has advised that their AGM will be held on Saturday 12th April 2008 at the previously used venue – the

Ryde Eastwood Leagues Club – at West Ryde, with a 10 am start. The reports and meeting details will be distributed by post or email later this month.

Ninety eight years ago this month, a meeting was held in Sydney, by 'Experimenters' who were having problems with the 'authorities' over the cost of the licence fee. They formed an 'Institute'. That meeting grew into the NSW Division and the WIA that we have today. Forty years ago in early July 1968, permission was granted to establish repeaters. The first planning meeting was held in Wodonga, in September of the same year.

There will be a Trash and Treasure at Dural on Sunday morning, 30th March. In the afternoon, the Home Brew and Experimenters group will have their meeting.

Alan VK2ADB and Ross VK2ER provide the live Morse training transmissions on Tuesday and Thursday evenings respectively at 2000 local as VK2BWI portable on 3550 kHz. They welcome callbacks after the sessions.

VK2WI

New entry gates were installed at VK2WI last month. The two three metre wide gates will allow normal entry by one being open, or when there are T&T events or when a long vehicle like a crane/cherry picker needs to enter, both can be opened. The gates are set in from the recent erected new front fence with angled panels each side to join the fence and gates. The existing circular driveway also assists directional traffic flow.

It is time to prepare the second quarter roster for the morning and evening VK2WI News sessions. This period is from 6th April until 29th June. Those interested in helping on the team should contact the roster coordinator John VK2JJV. Call VK2WI during the news session 02 9651 1489 or the office at other times 02 9651 1490 or an email to arnews@tpg.com.au If you still have some stamps, you can write to ARNSW, P. O. Box 6044, Dural Delivery Centre NSW 2158.

73. Tim VK2ZTM.

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

Ash Wednesday Anniversary

It is a quarter of a century ago that Victoria and South Australia were gripped by wildfire on 16 February 1983, resulting in the loss of 75 people and widespread damage.

The combination of a drought, gale force winds, temperature in the 40s and low humidity created ideal conditions for the rapid spread of fire. Multiple fires broke out and firefighting services were quickly overwhelmed.

There were radio amateurs around Victoria providing emergency communications. WICEN Victoria until then had been a relatively small group providing mainly support communications for a few community events.

Ash Wednesday changed that. WICEN not only responded to the bushfire disaster but then actively engaged in the disaster recovery phase by providing vital inter-agency communications.

WICEN gained respect and renewed recognition. The Communications Minister Neil Brown was in praise of its voluntary contributions. It was called and gave evidence to the Miller Inquiry into Ash Wednesday.

The radio amateurs involved in the 1983 disaster had continued a tradition that began with the Black Friday Bushfires in 1939, involved Darwin's Tropical Cyclone Tracy in 1974, Newcastle Earthquake 1989, the Bogong Fires 2003 and on many more occasions.

New Licence Conditions

The ACMA has signed off the Radiocommunications Licence Conditions (Amateur Licence) Amendment Determination 2008 and other documents relevant to amateur radio.

Please take the time to read the information that is available on the Amateur Radio Victoria website and elsewhere. A new Licence Condition Determination (LCD) consolidation

will be issued later. Each amateur licensee is expected to be aware of the contents of the LCD.

RadioFest No. 2

A truly wonderful social occasion is probably the best way to sum up the Centre Victoria RadioFest at Kyneton on Sunday 10 February.

Almost 700 attended the event which also this year attracted more commercial traders, second-hand sellers, club and organisation displays and activities.

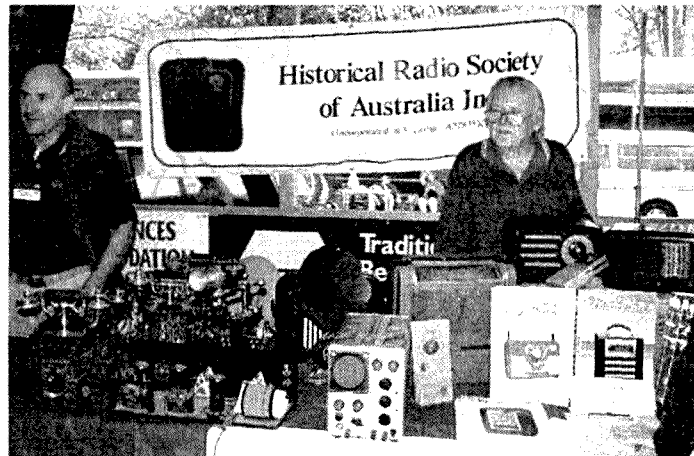
The 2 m, 70 cm and 23 cm antenna test range mounted by Peter Cossins VK3BFG and Phil Gardener VK3GMZ was extremely popular. Instead of running two hours it went double that time. The results are posted at www.radiofest.amateurradio.com.au

The two Icom D-STAR lectures and presentations by Peter Willmott VK3TQ and Richard Hoskins VK3JFK had 110 people attend who were keen to learn more about this new technology.

The PicAStar software defined radio users enjoyed meeting each other, a group shoot and lecture from Paul Engler VK3XDE. There are now 30 builders in VK3 and they have a weekly net on 3.655 MHz Mondays at 8 pm local time.

The Club Corner displays, Terry Murphy's Dipole Factory, antenna guru Phil Grimshaw VK4KVK mini-lecture and Charmain's children's face-painting were all interesting.

The Voice of the RadioFest, Bruce Lees VK3FFF, did many roving mike segments during the day and 'called' the prize draw with tickets drawn by Monika Crockett VK3FMON.



One of the "Club Corner" stands at Centre Victoria Radiofest

The door prize draw included lucky ticket holders John Coombes VK3UO winning an Icom IC-91AD D-STAR transceiver while Lia Pittard is now the proud owner of a Yaesu/Vertex FT7800 VHF/UHF transceiver.

Clearly noticeable were the smiles on everyone's faces both when they first arrived at the RadioFest and when leaving at the end of the day. Several interstate visitors told us on the day and via email that trip was well worth it.

Thank you to everyone who participated, particularly the Event Team of volunteers from Amateur Radio Victoria, Central Goldfields and Midland Amateur Radio Clubs.

Foundation Licence Classes

Enrolments for the next Foundation Licence courses and assessment weekends on 15-16 March will close soon. Inquiries to Barry Robinson VK3JBR on phone 0428 516 001 or arv@amateurradio.com.au

Membership Inquiries

It is easy and affordable to join and support Amateur Radio Victoria. Membership for two years is \$30 Full or Associate Member and \$25 Concession. Email us for a membership application form or download one from the website.

Geelong Amateur Radio Club – The GARC

Tony Collis VK3JGC

2008 Summer VHF – UHF Field Day

This took place over a 24 hour period in the Barrabool Hills in January. The picture below taken by David VK3QM shows the multitude of dishes and Yagis used by the team during the contest using the call sign VK3UHF.

The submitted log book shows that from midday on 12th January to midday on 13th January, the following results were achieved in the Multi Operator Section:

Frequency	50 MHz	144 MHz	432 MHz	1296 MHz	2.4 GHz	5.7 GHz	10 GHz	24 GHz
Contacts	47	72	51	30	9	6	14	2
Power	100 W	200 W	200 W	60 W	25 W	<60 W	0.5–15 W	3 W

With the multipliers for Locators activated, Locators worked and band multipliers applied to the contacts, a provisional score of 5,608 was achieved.

Once again the station operators were David VK3QM, Chas VK3PY and Charles VK3NX.

Amongst the notable contacts were:

- Two contacts on 24 GHz into Melbourne.
- VK3BJM/P in QF15 near Mildura on 2 m and 70 cm

- Contacts were established with VK1, VK2, VK3, VK4 and VK5 but not VK6 or VK7 this time.

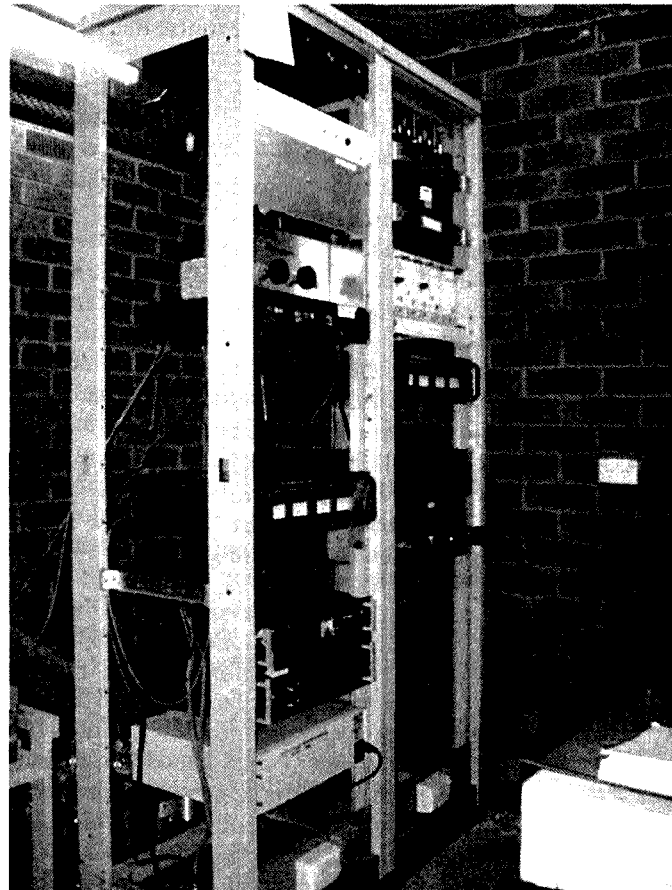
The weather during the field day period was windy but quite pleasant from an operational stand-point. Time was also spent checking the theory that the number of contacts achievable was inversely proportional to the amount of red wine consumed; the jury is still out on that issue and it is believed that it will take several more field trips, significant personal sacrifice and dedication to substantiate this theory.

The GARC Net

The GARC net is held on Wednesday nights at 8 pm using the VK3RGL repeater on 147 MHz, hosted by the club



Chas VK3PY, standing, and Charles VK3NX operating



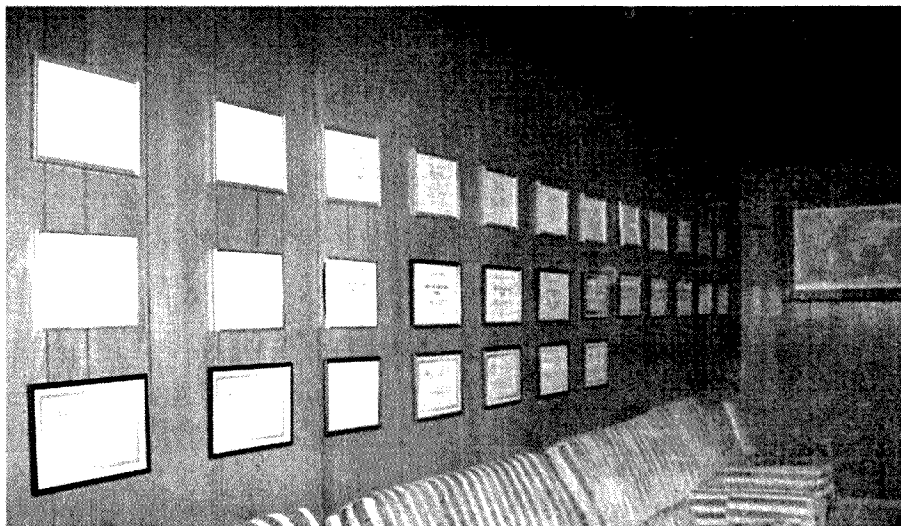
GARC installation at Mount Anakie for the beacons and repeaters

president, Ian VK3VIN, using the club call sign VK3ATL. All are welcome to join in.

The Club Website

The web site at www.vk3atl.org has recently undergone a complete re-build through the efforts of Peter VK3ZAV and Shane VK3FSRG and offers, amongst other facilities:

- A project page covering current club activities
- A very useful link page to web sites with specific amateur radio content
- Downloads for designing antennas by computer and access to EchoLink
- Contact details for those members of the public wishing to further their interest in amateur radio.



The above picture shows the GARC Field Day certificates in the club house lounge

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The annual barbecue was held at a different venue this year. The venue was pronounced a good choice. We went to a small green area created by one of the local service clubs, next door to the Bridgewater mill, in the Adelaide Hills.

The area was large enough for us to put up some tents for shelter, although there were also several very large trees to provide shade for most of the day, but small enough to keep us all together as a unit. There was an electric barbecue, so the danger of open fires and the possibility of a fire ban day was eliminated.

The day and the venue were voted a success. Of course there were some radios on show, but there was a lot of social exchange too.

A special evening lecture

When the committee was told Professor Mike Underwood was to be in Adelaide for a day, arrangements were rapidly made to have him talk to us about his small antennas. Many amateurs have

been following the discussions in Radcom over some time, between the proponents and opponents of small antennas for small spaces, so there was considerable interest.

Despite the short notice, there were

nearly a hundred amateurs from all the radio clubs in the metropolitan area of Adelaide, present at 7.00 local time on Monday 4th February.

They were not disappointed. The lecture was well prepared, interesting

CALL FOR PAPERS

Amateurs (and others with material to contribute) are invited to submit titles and outlines for topics to be presented at GippsTech2008. Presentation slots can be brief (5 – 10 minutes) through to one hour. Anything longer – you will need to justify!!

Presentations can be formal or informal, or display. We use a lecture theatre for the formal (and semi-formal) presentations. Displays are open during coffee/tea breaks and after lunch. Potential presenters are welcome to contact the Chair of the Organising Committee, Peter VK3KAI (vk3kai@wia.org.au), 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.vk3bez.org/>

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News from...



Some of the group at the picnic: Clockwise from the left: not known, Jim VK5JST, Steve VK5AIM, Keith VK5OQ, Norm VK5JNL, and John VK5EMI (President AHARS). Photo by Lyle VK5ZNB.

and controversial. There is little doubt that a number of experiments with loops and hairpins will be brought along to future radio club meetings all over the city.

One point Mike G3LHZ emphasised is that he is only interested in heuristic results. To you and me that means he is only interested in results achieved by experimenting and testing. Much of the argument against small antennas rests on hearsay and long-held but not proven beliefs rather than because people have

built them and tested them in the field.

If the antennas work for us as we were shown they work in the UK, there could be an application for amateurs who need to move into retirement villages where they are not permitted to put up masts.

No doubt more will be heard of this topic in the future!

There is a link from the AHARS website (<http://www.qsl.net/vk5bar/>) to the full lecture given by Mike G3LHZ for those who are interested.

RAAF SIGNALS & RADAR ASSOCIATION OF SA

The annual luncheon will be held on

Thursday 17 April 2008

12 noon for 1230 lunch

(Please 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 14/4/2008:

Secretary:

Ray Deane VK5RK Phone 8271 5401

Assistant Secretary:

Ron Coat VK5RV Phone 8296 6681

Ray Deane
Honorary Secretary

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ICOM IC-756PRO3 \$4199
HF / 6 m Deluxe Transceiver



KENWOOD TH-D7AG \$699
Dualband Hand/held with TNC



KENWOOD TH-F7E \$499
Dualband H/held with wide RX



KENWOOD TS-570 SG \$1799
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VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

VK7 QSL arrangements changes

The WIA board has approved the following changes to member QSL services. The major change in VK7 is the request for WIA members to forward their outwards QSL cards direct to the WIA Outwards QSL Bureau at Teralba. The address is: WIA Outwards QSL Bureau, P.O. Box 3073, Teralba NSW 2284. The inwards QSL cards arrangement will not change with local QSL managers receiving cards from the WIA Inward QSL Bureau and distributing them to WIA members. For more information check out the information at: <http://reast.asn.au/contacts.php#qsl>

Grote Reber Dedication

There is now a new visitor centre and museum that has been established adjacent to the University of Tasmania's radio telescope facility at Mt Pleasant, near Hobart. It was dedicated to the memory of the world's first radio astronomer, Grote Reber, who lived the second half of his life in Tasmania. Grote was a radio amateur and was responsible for building the world's first purpose-built dish-type radio telescope in the US in 1937. He moved to Tasmania in the 1950s and began observations in 1955 with a one square kilometre antenna array north of Bothwell on a wavelength of 144 metres. The museum will be open to the public, by appointment only, from early March.

Meet the Voice BBQ 2008

A reminder that the Sewing Circle net is again hosting the "Meet the Voice" event in the Ross Caravan Park, on Sunday April 6, 2008, starting 10:00 am. The format will be a guest speaker then a BBQ as well as many eyeball QSOs. Mark your diaries and we look forward to seeing you.

North West Tasmanian Amateur Radio Interest Group

Al K6YRA and Bunny W6BUN visited Burnie in January and were hosted by Jim VK7JH. A quick tour of the NW and a check of band conditions as Al

is a mad keen DXer. Unfortunately, the bands were dead and just as the cruise ship disappeared over the horizon, 20 m opened! NWTARIG held its AGM on Saturday 2nd February 2008 at Ulverstone where it was reported that membership had increased slightly to 41 and the following office holders were elected:

President: Tony Bedelph VK7AX
Vice

President: Ivan Ling VK7XL

Secretary: Steve Bush VK7EQ

Treasurer: Shirley Hardstaff
VK7HSC

Executive: Keith Winkler VK7YBP

Northern Tasmania Amateur Radio Club

Thanks to Brian VK7RR and Joe VK7JG for their work on the broadcast link between VK7RIN and VK7RAA and thanks also to Karl VK7HDX and Jason VK7ZJA for lugging the water bottles up to the top of Mt Arthur to top up the batteries. On ya Guys! Rick VK7HBR, with the assistance of Tony VK7AX,

has been trialling nightly broadcasts via his EchoLink node on 145.425 MHz in the Launceston area. There is a different program each night of the week from 7:30 pm. Callbacks are much appreciated.

WICEN Tasmania (South)

Saturday 16th February saw the WICEN crew providing safety checkpoints for the Southern Tasmanian Endurance Riders' 20, 40 and 80 km rides in Southern Tasmanian forests. Planning for Targa Tasmania 2008 is well underway with the course this year being run mainly in the North and North West. The event is from April 15 to 20. If interested in helping out, please contact the Targa Communications Officer - Administration - Roger VK7ARN.

Radio and Electronics Association of Southern Tasmania

Thanks to Dave VK7DM, Roger VK7ARN and the team of helpers who

continued on page 38



The author interviewing Andreas IK1PMR on ATV. (Photo by VK7XDY)

The ALARAMEET in Tasmania

Have you sent off your expression of interest? If so, you should have received a lovely booklet from the Tourist Bureau showing you all the interesting and beautiful places to see in Tasmania.

Susan has also now calculated the cost of the various sections of the MEET and asked for a deposit so she can start making firm bookings. It is all coming together. I do hope you will be there.

A number of us are already planning to travel over to the island on the "Spirit of Tasmania" on the Wednesday night. Some will have caravans, some will not, but we will be able to start our ALARAMEET early, that night. The caravanners and some of the other travellers are planning to see something more of Tasmania, so are planning to be there for an extra week or fortnight. Whatever your plans are, there is likely to be someone else going the same way. It should be an experience to remember.

For more information contact Susan VK7LUV on the special ALARAMEET email address vk7luv_susan@yahoo.com.au or write to her at PO Box 81 Ulverstone Tas. 7315.

A Saturday Luncheon in VK3

On February 1st nine YLs and a number of OMs met for lunch in Tooradin. By all accounts a good time was had and arrangements were made for the next luncheon in a different venue.

Each special lunch is arranged by a different YL, so the travelling is shared around. What a good idea to allow us to see another part of our state! Jean VK3FJYL arranged the first luncheon and Pat VK3OZ arranged this one in Tooradin.

The VK3 girls have informal morning teas on a weekday as well as the larger weekend lunches like this one. It is great to see this social activity growing now that the Foundation licence has brought more people into the hobby.



The VK3 Luncheon. L-R Susan VK3FXXX, Claireen VK3KMB, Jean VK3FJYL, Pat VK3OZ, Jenny VK5AWN/3, and Dianne VK3FDIZ. Sitting down are Maree VK3SAT, Naree and Pam VK3NK. Maree and Claireen are new ALARA members.

Welcome Maree and Claireen.

The regular lunches in VK5 continue

The number at the monthly lunches varies between five or six and as many as a dozen but there never seems to be a lack of topics for discussion.

We meet at the Museum on North Terrace in the city where we have a table booked for us each month at noon. There is no need to let anyone know you are

coming, just turn up there will be a place for you. If any YL is visiting VK5 on the second Friday of the month, please come to the Museum at midday.

If you are to be in Adelaide at some other time of the month, please contact Jean VK5TSX, our state representative, or me, Christine VK5CTY QTHR in the Callbook and phone book: we can usually arrange for some of the YLs to go to town for lunch to meet you.



The VK5 Luncheon: Two of the regulars, Maria VK5BMT and Meg VK5YG

The CLARA Challenge continues

The CLARA Challenge has been extended so you now have till the end of March to catch those extra YLs to make up your forty contacts for the Challenge. The details of who to send your entry to were published in the previous edition of AR so do take advantage of the extension and join in the fun.

This is a different and interesting way to celebrate the forty years of CLARA's existence. Hope you have had fun whether you have used only the traditional HF and VHF modes or have tried out Echolink as well.

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: 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.

A significant SK for VK5 and for ALARA

On 25th January Denise VK5YL became an SK. She had had her licence for many years, firstly while she was living in Canberra where she was given the callsign VK1YL. After a break when she and her OM David VK5RN were in the US, Denise was given the callsign VK5YL when she returned to Australia and came home to her birthplace.

After ALARA was formed in 1975 in VK3, Denise was one of the first VK5 YLs to join, along with Myrna VK5YW and Lorraine VK5LM. Jenny VK5ANW followed these three as soon as she passed her exams, all joining in 1976.

Denise worked with and met many of our most prominent scientists when she was in Canberra but she changed track to become a mathematics teacher after she came home to VK5.

Some years later when Meg (who has had several callsigns), a teacher at the same school, passed her first amateur exam, Denise immediately signed her up as a member of ALARA. Denise was a regular attendee at the ALARA Birthday lunches and often joined others when there was a visiting YL in town.

She will be sadly missed by her friends in and out of ALARA

Coming events

April has two important DX Contests. The Thelma Souper Memorial Contest is on April 5th and 6th. The contest is an 80 metre contest only, run over the Saturday and the Sunday from 0800 – 1000 Zulu.

You may use voice or CW and the aim is to make as many contacts with ZL YLs as possible during those hours.

There is a bonus station, ZL6YL, at random periods and on random frequencies. Contact with the bonus station works as a multiplier if you work it, as does any WARO member who has already worked at least 10 different stations.

Both YLs and OMs may work each other, one contact being permitted in each half hour period.

The details of scoring and application are listed in the ALARA Newsletter or on the web.

Do have a go. A number of the WARO YLs participate in the ALARA Contest, so let us reciprocate.

There is another contest for YLs on the same weekend (April 5th and 6th) if you are a CW operator, and a section of the same contest the following weekend for SSB operators. This is the DX to North America YL contest. All bands within the time span 1400 to 0200 Zulu are permitted. This is another interesting opportunity to meet YLs on air.

Lastly, please do not forget our AGM on the first Monday in May at 1000 Zulu on 80 metres. See you on the fifth.

Editor's Note: In the last issue, the ALARA column had a story on "Colossus loses the code breaking race". I have received a note from one of our UK readers (Rod (Nobby) Ashman G4JVJ) that Bletchley Park is in Buckinghamshire not Shropshire. Thanks for the note Rod.

ar

VK7 continued from page 36

have installed the new RFI Collinear antennas on both VK7RHT at Snug Tiers and VK7RAD at the Domain. The ATV Experimenter's nights on Wednesdays at 7:30 pm have seen some great subject matter presented over the holiday period, with many people coming up to the Domain and seeing what ATV on 444.25 MHz is all about. We were privileged to have Andreas IK1PMR and Claudia IK2LEO from Italy one night. It is great to see BPL kit starting to be removed from poles around Hobart and the bands returning to their usual state.

The REAST AGM was held on February 10 and it was standing room

only in the clubrooms with about 40 people attending and I thank everyone for their support over the last six years. The office holders for 2008 are:

President: Clayton Reading
VK7ZCR

Vice-

President: Gavin O'Shea VK7HGO

Secretary: Danny Moss VK7HDM

Treasurer: Scott Thomson
VK7FREK

Committee Ben Short VK7BEN and

Members: John Slevin VK7HJS.

ar

Silent key

Maria Tadin VK7KMT

It is with deep regret that we announce the passing last week of Maria Tadin VK7KMT.

Maria was active a few years ago and is survived by Radovan, Stefan and Tash.

Our sympathy goes out to Maria's family.

Vale Maria.

Charles VK7PP

Denise Allison Robertson (nee Haslam) VK5YL

Denise was the first VK1YL then VK5YL, having gained her licence in 1956. She was an early member of the Australian Ladies' Amateur Radio Association and will be remembered by amateurs for her enthusiasm for our hobby and her proficiency as an operator. She also encouraged newcomers to amateur radio by giving them CW practice sessions, taking part in community events to promote amateur radio and by her enthusiasm. In the days before she held a licence she learnt Morse Code so that when her husband David VK5RN was overseas, she could receive messages from him.

In her younger days Denise played hockey at a state level, was a very good high board diver and was still swimming in Masters Games until a few years ago. Her B.Sc. in Mathematics and Physics from the University of Adelaide was followed later by M.Sc. in Mathematics in America. She and David worked at the Weapons Research Establishment until he transferred to Canberra, where she assisted Sir Mark Oliphant who was working in the field of Nuclear Physics. Later, when Sir Mark was Governor of S.A., they were guests at Government House on several occasions.

I was fortunate to be her colleague for about 20 years on the staff of an

independent school where she was the senior Mathematics teacher. She was highly regarded by staff and students for her dedication to bringing her students to the highest possible competency in Mathematics. As a member of the Mathematics Association of S.A., she set and marked a special annual examination for advanced students. She also enjoyed being part of the extra-curricular music activities of the school. Many of her top students were also studying music at a high level. The two interests seem to go together. On retirement, she and David belonged to a Seniors orchestra/ band and enjoyed providing music to various groups. School swimming sports days always saw Denise in the water for the staff/parents event.

Denise had a fund of anecdotes about her family and their pets - especially their large dogs! She was a loving and dedicated mother to her two sons. If she had one regret, it might have been that her husband David was so much taller than she, and installed radio equipment



on a shelf too high for her to see or reach some of the controls!

Her many friends across Australia and overseas miss her cheerful, cheeky, entertaining conversations, and the twinkle in her eye as she related her experiences. You were a "young lady" in every sense of the word, Denise.

Meg Box VK5YG

Jim McLachlan VK5NB

James Allan McLachlan VK5NB passed away on Wednesday, 19 September, 2007, aged 70.

Jim had a number of hobbies, including vintage car restoration, amateur radio, and vintage radio restoration. At various times he held administrative positions in most of the clubs associated with his hobbies.

He was a member of the WIA, served two terms as State President, and also time as Vice-President. He ran the book sales for the Division, significantly contributing to the funds needed for a number of progressive projects, including the refurbishment of the Burley Griffin Building when it became Division headquarters.

At the time of his retirement, Jim was

manager of the Radio Lines division of Telstra in Adelaide. Due to his professional experience with tower installation, he frequently led, or assisted with, the erection of many amateur towers in the state.

Jim joined the Adelaide Hills Amateur Radio Society in 2000 and immediately became a significant worker and leader in projects, later becoming Vice-President and, at the time of his death, President.

Geoff Voller G3JUL noted that, on his frequent visits to England, he was an honoured guest at meetings of the Echelford Amateur Radio Society, and the associated CW Appreciation Society. The latter had a weekly lunch meeting, where Jim's input was always very well received.

Rob Gurr VK5RG, Trevor Quick VK5ATQ, and Peter Holland from the Historical Radio Society of Australia, all recall Jim as a forward looking, progressive thinking leader of amateurs, and a very dedicated and talented restorer of older radio equipment. They described him as a happy person, who looked for a positive outcome from every event. The hard decisions were made, then on with discussion of what to do next.

Sincere 73 from us all.

Condolences to Jim's wife Heather, and the McLachlan family.

Contributed by John Elliott VK5EMI, with input from Rob Gurr VK5RG, Trevor Quick VK5ATQ, Peter Holland and Geoff Voller G3JUL.



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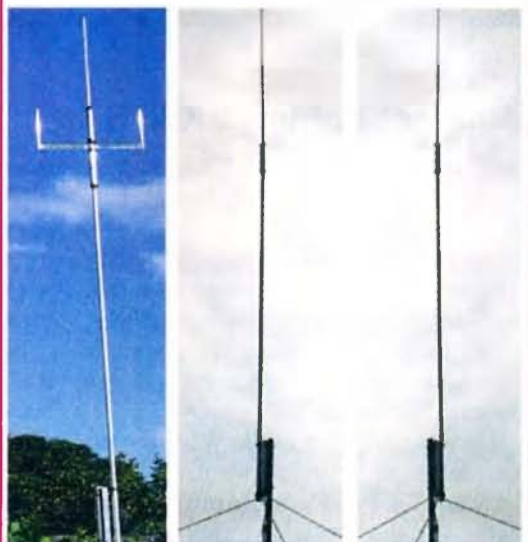
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Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or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

Contest Calendar for March 2008 – May 2008

Mar	1/2	ARRL International DX Contest	SSB
	8/9	RSGB Commonwealth Contest	CW
	15/16	John Moyle Field Day	CW/SSB/FM
	22/24	BARTG RTTY Contest	RTTY
	15/16	Russian DX Contest	CW/SSB
	29/30	CQWW WPX Contest	SSB
April	5/6	SP DX Contest	CW/SSB
	5/6	EA WW RTTY Contest	RTTY
	12/13	Japan International DX Contest	CW
	12/13	Yuri Gagarin International Contest	CW
	19	Holy land DX Contest	CW/SSB
	19	TARA Skirmish Digital Prefix Contest	PSK
	20	YU DX Contest	CW/SSB
	26	Harry Angel Sprint	CW/SSB
	26/27	Helvetia Contest	CW/SSB
	26/27	SP DX RTTY Contest	RTTY
May	10/11	CQ-M International DX Contest	CW/SSB
	10	VK/Trans-Tasman 80 metres Phone Contest	SSB
	24/25	CQ WW WPX Contest	CW
	24	VK/Trans-Tasman 80 m CW Contest	CW

Welcome to this month's Contest Column

Commonwealth Contest – an update

Beru, otherwise known as the Commonwealth Contest, will be taking place on 8th and 9th March 2008. In keeping with the cricketing traditions presented for the first time in 2007, it is proposed to organise a Commonwealth Team Contest, to run in parallel with the normal Commonwealth Contest.

Steve VK6VZ, the Australian team organiser, advises that the new team competition rules limit team headcount to ten operators. Hence the team now looks like:

1. Kevin VK6LW (5335 pts)
2. Barry VK2BJ (5045 pts)
3. John VK4EMM (4860 pts)
4. Steve VK6VZ (3495 pts)
5. Mike VK6HD (3055 pts)
6. Alan VK6BN (2920 pts)
7. George VK4XY (2845 pts)
8. Les VK4BUI (2805 pts)
9. Keith VK4TT (2770 pts)
10. David VK2NU (2605 pts)

Reserves

1. Russ VK4XA (2585 pts)
2. Karl VK2KM (2690 pts)
3. Rob VK6HG (2020 pts)
4. Phil VK2ANU
5. Alan VK8AV

I am not in a position 'antenna wise' to make a bid for the Team this year, but rest assured, once I get myself sorted out I will be trying-out for a Team placement in 2009. The contest requires a slightly different approach to antennas and

bonus/multiplier planning and it makes an interesting difference to be competing as part of a geographically widespread team. Why not have a go in the contest and try for a team slot for yourself?

CQWW WPX SSB Results

The results were issued a little late for the February AR and they may already be known to most, but they are worth including anyway as the stations

Callsign	Section	Score
VK3TZ	All Band	424,386
VK3KE	All Band	110,385
VK2BCQ	All Band	15,174
VK6DXI	40m	503,174
VK4EJ	Low Power, All Band, Single Op	548,723
VK2AEA	Low Power, All Band	149,962
VK4FJ	Low Power, All Band	40,698
VK3FM	Low Power, All Band	37,128
VK4XES	Low Power, All Band	29,795
VK2KRM	Low Power, All Band	2,370
VK4DMP	Low Power, 14	30,704
VK1KBN	Low Power, 14	4,251
VK4NEF	Low Power, All Band, Assisted	221,328
VK2KDP	Low Power, All Band, Assisted	29,939
VK6ANC	Multi-Op, Two Transmitter	4,526,434

concerned put in an excellent effort putting VK on the world stage.

It is great to see VK6ANC in the multi-operator category, reaping the rewards of all their hard work and planning of the antenna farm that they have spent a considerable time putting together. Contesting is evidently alive and kicking in WA and long may it continue.

RD Contest Results

Typo

I recently received a letter from Gerald VK2HBG. Gerald advises that his callsign was incorrectly printed in the results of the RD contest last month as VK2BHG. Sorry Gerald! I have passed your letter on to the contest manager, Peter Harding VK4OD, so that amendments can be made as required.

CW – To Skim or Not to Skim

What on earth is skimming CW I hear you ask? I asked the same thing initially, but there is a new bit of software out there that tries to do just that.

CW Skimmer is a piece of software available at www.DXAtlas.com which may change the approach towards CW for some people. Rather like a band scope on some of the radios available on the market today but with the ability to identify signals and not just display their existence on a band, the software enables the operator to simultaneously monitor a wide selection of band for CW signals in pictorial format. Given sufficient noise-free environment and a computer able to number-crunch at the appropriate speed, CW Skimmer will concurrently display multiple callsigns and associated frequencies along with information sent by the sending station.

Linked to the radio audio outlet via the soundcard of your computer, the software listens in to the available bandwidth and displays anything that it can 'hear'. As with most software like this, a filter of some description prior to the software enhances readability greatly. Another facility is to click on the station of interest to move your radio's frequency to home-in accordingly. Searching for DX seems to be a point

and click exercise – do we need VFOs anymore? Of course, the 'old fashioned' way will still be available, but the software is powerful enough to do most of the donkey work.

For example, using the software and configuring a SoftRock (Software Defined Radio hardware) to work off the first IF of a receiver, would enable a powerful method of displaying CW data in a format in a similar vein to that of a second operator looking for multiplier stations. Dependant upon QRM/QRN and signal strength, the software might easily become confused but with sufficient filtration it enables signals near the noise floor to be displayed and decoded.

So, how could the resultant data be utilised by contesting software? Maybe the software could take the information and produce a list of stations in a predefined order such as:

1. Double multipliers and multipliers
2. Longest distance
3. Strongest signals
4. Continent preference

Maybe it could be coupled to the radio in such a way that it could move up and down the bands looking for signals so that an alert could be flagged to the operator that a particular band is opening.

CW Skimmer is not free and a payment is required after an evaluation period has expired. Will it catch on? Possibly, within certain circles, but I have a feeling that most will not bother with it due to cost (not that it is particularly expensive) and the fact that for some at least, the dreaded computer has got in the way of direct human interaction with the radio once again.

The use of software such as this raises the question of 'Assisted' and 'Non-Assisted' categories of contest entries. If the computer is able to effectively be a second operator but without the physical presence of a human being, is the submitted log to be within the 'Assisted' or 'Non-Assisted' category? Does the software not act in a similar way to that of utilising Packet or other methodologies for gaining additional insight into alternative band activity and the locations of multipliers?

If 'Assisted' and 'Non-Assisted' categories are now to be blurred and software acts in a similar way to that of a second operator, I suspect that contest adjudicators are in for a hard time!

With software such as this coming onto the market, CW Contesting may well be a different game in the future. Some SO1R operators already view SO2R as an unfair advantage. For example, SO2R operators do a 72 hour contest (48 on radio1 and say 24 on radio2, listening to radio2 while radio1 is transmitting) while SO1R only does a 48 hour contest. SO2R is not for everyone, with very few having the physical, mental and concentration skills to do it. Maybe this software allows an alternative SO2R approach to be adopted, without the mental concentration aspect coming into play.

But where could this end? Could SO6R be a realistic possibility, with multiple radio/computer arrangements independently trawling the band for QSOs that earn the highest points after working the multipliers? How long will it be before the software calls the other station for us as well? Maybe we could set-up the station at the start of the contest; go to the pub and return later to see if we have 'won' the contest?

Will there be a last resort for those simply looking for the personal challenge in a competition? Spots, Skimmer etc. of course cannot be stopped or effectively policed simply for their obvious convenience.

We often hear that "technology is the name of the game" and it helps to maximize the score. For me at least, it is the pure personal challenge. Maybe, CW Skimmer allows the upper limit to be stretched a little bit more, raising the bar for us all? Maybe, it ultimately falls to the vagaries of the ionosphere to induce the element of challenge.

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

ar

Gridsquare Standings at 8 December 2007

144 MHz

Terrestrial

VK2FLR	Mike	113
VK3NX	Charlie	106
VK2KU	Guy	102
VK3KAI	Peler	85
VK3HZ	David	79
VK2ZAB	Gordon	78 SSB
VK3PY	Chas	70 SSB
VK2KU	Guy	69 SSB
VK2DVZ	Ross	68 SSB
VK3CY	Des	68
VK2TK	John	62
VK3EK	Rob	62 SSB
VK7MO	Rex	81
VK3QM	David	58 SSB
VK2EI	Neil	57
VK3BJM	Barry	57 SSB
VK3BDL	Mike	51 SSB
VK3KAI	Peler	51 SSB
VK3ZLS	Les	51 SSB
VK3WRE	Ralph	50 SSB
VK2ZT	Steve	48 SSB
VK2KU	Guy	47 Digi
VK3CAT	Tony	46
VK3VG	Trevor	46 SSB
VK4TZL	Glenn	45
VK5BC	Brian	43 SSB
VK4CDI	Phil	41
VK7MO	Rex	41 SSB
VK3II	Jim	39
VK7MO	Rex	39 Digi
VK3II	Jim	38 SSB
VK3KAI	Peter	36 Digi
VK4CDI	Phil	36 SSB
VK2TK	John	35 SSB
VK4KZR	Rod	35
VK2KOL	Colin	34 SSB
VK3ZUX	Denis	33 SSB
VK6HK	Don	33
VK2AMS	Mark	32 SSB
VK3DMW	Ken	32
VK3ZYC	Jim	31
VK3VHF	Rhett	29 SSB
VK2KRR	Leigh	28 FM
VK3CJK	Chns	28 SSB
VK2EAH	Andy	27
VK2TK	John	27 Digi
VK1WJ	Waldis	26
VK2TG	Bob	26 SSB
VK3ACC	Gordon	26 SSB
VK5ACY	Bill	26 SSB
VK3SBB	Brian	25
VK5BC/p	Brian	25 SSB
ZL3TY	Bob	24
VK3TLW	Mark	23 SSB
VK3YB	Phil	23
VK4EME	Allan	23
VK1WJ	Waldis	22 Digi
VK3BG	Ed	22 SSB
VK3HV	George	21 SSB
VK3II	Jim	21 Digi
VK6KZ	Wally	20
VK3AL	Alan	18 SSB
VK3UDX	Geoff	17 SSB
VK4TJ	John	17 SSB
VK2EAH	Andy	16 SSB
VK3ECH	Rob	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
VK2KOL	Colin	9 Digi
VK4EME	Allan	9 SSB
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 SSB
VK1WJ	Waldis	5 CW
VK2ZT	Steve	4 Digi
VK4JAZ	Grant	2 FM
VK3QM	David	1 Digi

144 MHz EME

VK2KU	Guy	268
VK2KU	Guy	255 Digi
ZL3TY	Bob	252
VK3AXH	Ian	185 Digi
VK7MO	Rex	154 Digi
VK4CDI	Phil	122 Digi
VK2FLR	Mike	120
VK3CY	Des	70 CW
VK2AWD	Dave	52 Digi
VK2KU	Guy	39 CW
VK2KRR	Leigh	30
VK2ZT	Steve	26
VK3VHF	Rhett	20 Digi
VK3HZ	David	19
VK3II	Jim	10 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
VK3NX	Charlie	50
VK3PY	Chas	50 SSB
VK3QM	David	47 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3HZ	David	37
VK2KU	Guy	34 SSB
VK3BJM	Barry	34 SSB
VK3EK	Rob	34 SSB
VK2DVZ	Ross	32 SSB
VK3CY	Des	32
VK3KAI	Peter	30
VK3KAI	Peter	29 SSB
VK3BDL	Mike	28 SSB
VK3WRE	Ralph	28 SSB
VK5BC	Brian	21 SSB
VK3VG	Trevor	20 SSB
VK7MO	Rex	20
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2TK	John	17 SSB
VK2ZT	Steve	17 SSB
VK3CAT	Tony	16
VK3BG	Ed	15 SSB
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 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
VK2EI	Neil	7 SSB
VK7MO	Rex	7 Digi
VK2FLR	Mike	6
VK3ECH	Rob	6 SSB
VK6DXI	Mirek	6
VK2KU	Guy	5 Digi
VK3HV	George	5 SSB
VK1WJ	Waldis	4 SSB
VK3DMW	Ken	4
VK3KAI	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK3ZYC	Jim	4 SSB
VK4EME	Allan	4 SSB
VK3VHF	Rhett	3 Digi
VK4CDI	Phil	3 Digi
VK2EAH	Andy	1 SSB
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi
VK4JAZ	Grant	1 FM

432 MHz EME

VK4KAZ	Allan	14 CW
VK7MO	Rex	10
VK4CDI	Phil	9 Digi
VK7MO	Rex	9 Digi
VK2SN	Sean	6 Digi
VK3NX	Charlie	5
VK3HZ	David	4
VK2KRR	Leigh	1
VK2ZT	Steve	1
VK3AXH	Ian	1 Digi
VK3VHF	Rhett	1 Digi

1296 MHz

Terrestrial

VK3QM	David	39 SSB
VK3PY	Chas	38 SSB
VK3NX	Charlie	37
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
VK3BJM	Barry	16 SSB
VK3HZ	David	16
VK3BDL	Mike	14 SSB
VK3VG	Trevor	12 SSB
VK3BG	Ed	11 SSB
VK7MO	Rex	11 SSB
VK2TK	John	10 SSB
VK3UDX	Geoff	10 SSB
VK4KZR	Rod	10
VK2ZT	Steve	8 SSB
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK4TZL	Glenn	6
VK3ECH	Rob	5 SSB
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
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 Oigi
VK2AMS	Mark	1 SSB
VK3ZYC	Jim	1 Digi
VK4CDI	Phil	1 Digi
VK5BC	Brian	1 SSB
VK7MO	Rex	1 Digi

1296 MHz EME

VK7MO	Rex	27
VK7MO	Rex	24 Digi

2.4 GHz

Terrestrial

VK3NX	Charlie	14
VK3PY	Chas	14 SSB
VK3QM	David	14 SSB
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

VK3NX	Charlie	17
VK7MO	Rex	9
VK7MO	Rex	7 Digi

3.4 GHz

Terrestrial

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

3.4 GHz EME

VK3NX	Charlie	5
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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	11
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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	11
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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
VK7MO	Rex	2 Digi
VK7TW	Justin	2
VK7HAH	Ben	1 Digi
VK7TW	Justin	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU.

The guidelines (and the latest League Table) are also available on the VK VHF DX Site at www.vhfdx.radiocorner.net - click on Gridsquares.

Next update of this table will close on or about 21 March 2008.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

VHF/UHF – an expanding world

David Smith VK3HZ
vk3hz@wia.org.au

Weak signal

David Smith VK3HZ

Following the bumper Christmas period, things have quietened down considerably. As expected, the last of the 2 m Es activity occurred in late January and the tropo activity has been nothing remarkable.

On the morning of January 18th, 2 m opened via Es over a relatively short path between VK5/3 and VK1/2. Between 0045 Z and 0120 Z, Garry VK5ZK in Goolwa worked VK1DJA (5/9), VKIOD (5/9), VK2DJ (5/8), VK2KOL (5/9), VK2DVZ (5/2) VK2ZT (5/2), VK2DJ (5/5) and VK2MJW (5/9). Colin VK5DK in Mt Gambier worked VK2ZT (5/7) and VK2DVZ (5/7). Just across the border in Nhill, Bill VK3LY worked VK2DVZ (5/7) and VK2KOL (5/9).

The following day (January 19th) saw about the last of the 2 m Es openings. At 0235Z, ZL1BT reported hearing the Newcastle Channel 5A sound up to S7. However, conditions were extremely choppy with signal in and out on about a 10 minute cycle. At 0300 Z, he

worked Steve VK2ZT (5/7). By 0400 Z, conditions had picked up with Ch 5A now S9+ and Sydney FM stations covering the dial – still very choppy though. VK2ZT worked ZL1CN (5/3) and ZL1AKW (5/2). VK2KOL worked ZL1BT (5/7). VK2FZ worked ZL1CN (5/3) and ZL1BT with signals peaking to 5/9+20 briefly. By 0430 Z, the opening had gone.

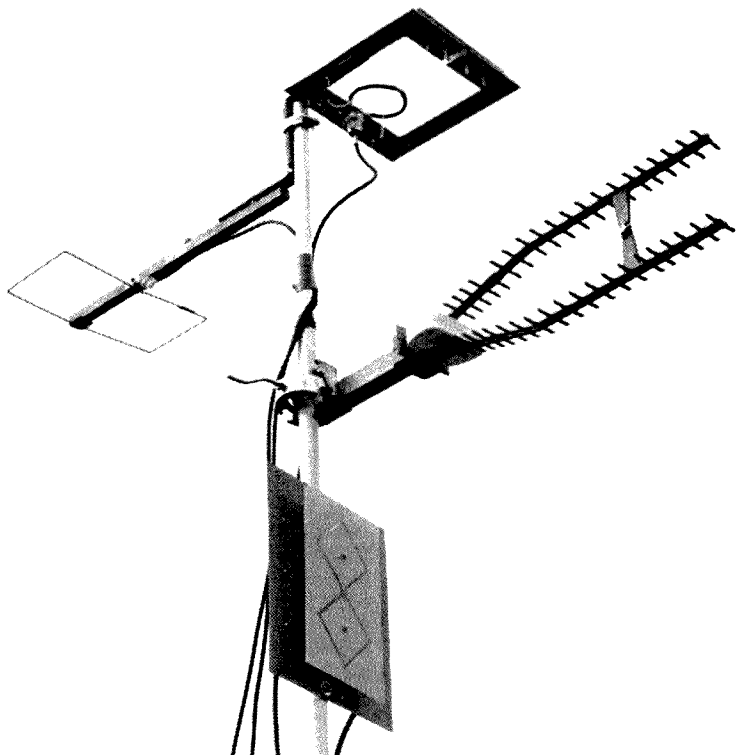
The morning of January 27th produced a good tropo opening across the south of the country. At 2100 Z, Phil VK5AKK in Adelaide reported hearing the Perth VK6RPH beacons on both 2 m and 70 cm. VK6RST near Albany was also present on 2 m. At 2200 Z, VK5AKK worked Don VK6HK on 2 m and 70 cm (5/1). Don reported hearing the Mt Gambier VK5RSE 2 m beacon at 5/3. He then worked Bill VK3LY and Kevin VK3WN in Ballarat (5/2). Kevin also worked Phil VK6ZKO (5/1). VK6JR was hearing both the Adelaide and Mt Gambier 2 m beacons. VK6HK reported

hearing VK3HZ in Melbourne, but no contact was made. Ian VK3AXH in Ballarat worked VK6HK (5/3), VK6ZKO (5/3) and VK6JR (5/2). Murphy had inflicted a power outage on Phil VK5AKK. When the power came back on, he was able to call in after the WIA broadcast on the Mandurah repeater. He also reported hearing the Bunbury VK6RBU 2 m beacon (5/2). Peter VK5ZLX reported that, during the morning, he had heard the VK7RAE, VK3RGL, VK5RSE, VK5VF, VK6REP, VK6RST, VK6RBU and VK6REP beacons, all at the same time.

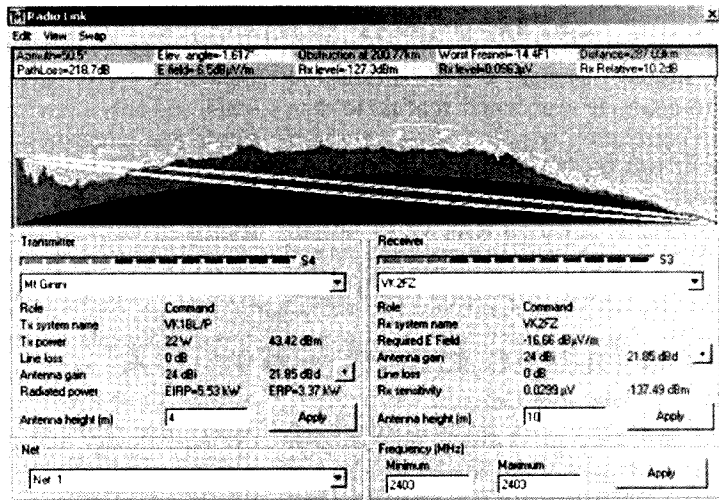
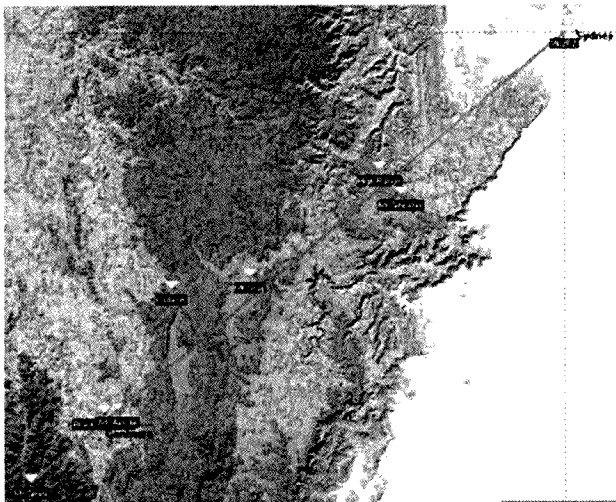
Rover Activity

During the Spring VHF/UHF Field Day, Mike VK3UBM did some roving work, mainly to give other field stations some extra activity. He sent in photos of his vehicle at one of his operating locations – outside the Shelford CFA shed in QF12 (watch that paintwork, Mike!).

His equipment consists of an FT-817



Mike VK3UBM and his roving equipment



Screen images from the "Radio Mobile" software path analysis for the path between VK1BL/p and VK2FZ on 2.4GHz

on 6 m, 2 m, and 70 cm plus MiniKits transverters for 23 cm and 13 cm. Of note is his unusual antenna setup (see photo). From the top, he has a 2 m "Squalo", 70 cm Loop, 13 cm Hills commercial "V-Yagi" WiFi antenna and 23 cm double-quad antenna.

New VK1 Microwave Record

Recently, there has been a surge of interest in the microwave bands in the Canberra area. Ted VK1BL, ably assisted by Owen VK1OD, was keen to see what they could do on 2.4 GHz.

Owen undertook some analysis of the path between Mt Ginini, 43 km southwest of Canberra, and the QTH of Adrian VK2FZ in inner Sydney. Using RadioMobile (an amazingly comprehensive radio-link analysis software package that, even more amazingly, is free), he found that there was a viable path between the two sites, 287 km apart. The path was far from line-of-sight, but well within tropo-scatter range. Signal strength predictions were S3-4.

On the morning of November 25th,

Ted and Owen headed up to Mt Ginini, which, at 1760 m ASL, provides a good vantage for a northeast path to Sydney, though growing trees are becoming a problem for microwave operation. The weather was clear and still, in contrast to Canberra which was shrouded in cloud.

A voice contact was made with both Adrian and Ted giving 5/1-2 reports - slightly below that predicted by RadioMobile. Signals were affected by a quite rapid and deep fade, and disappeared into the noise at times - characteristic of tropo scatter. Signals received at Mt Ginini often had a burble superimposed, much faster than expected from aircraft or mobile flutter. There was no sign of aircraft enhancement of the path.

The QSO established a new VK1 record distance (286.6 km) for the 13 cm band.

Plans are being developed for attempts over a much longer path into VK3, and the possibility of longer paths to the mid north coast of NSW is also promising. Contacts on higher bands, especially 3.3 GHz and 10 GHz are also being contemplated by an active group of

microwave enthusiasts in the region of Canberra.

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



Ted VK1BL on Mt Ginini

Digital DX Modes

Rex Moncur VK7MO

Welcome to Doug VK4ADC, who has been joining in the 2 metre FSK441 Meteor Scatter sessions. While still to complete a QSO, he has had copy both ways from VK3 and VK7.

Waldis VK1WJ has been exploring 20 watt meteor scatter on 2 metres

while his linear is off for repair. While the rate of contacts is much lower he is still completing one or two contacts each Saturday and Sunday morning over distances from 900 to 1400 km.

As a result of concerns that pings might be overridden by other

transmitting stations in the vicinity a test was conducted to establish how many common pings occur between John VK4JMC and Wayne VK4WS transmitting, and Bill VK2ZZF, Gavin VK3HY and Rex VK7MO receiving. To separate the signals, John transmitted a

shorthand 73 tone (2205 Hz) and Wayne an R26 tone (882 Hz). Both stations are at similar distances but are around 70 km apart. It was found that there was no correlation between pings in a half hour test during which over 50 pings were received. The test supports the conclusion of earlier tests where Adrian VK2FZ and Mike VK2FLR, only 1 km or so apart, transmitted and only a small

proportion of pings were common. These results suggest that for short pings, the meteor footprint on two metres is very small and only a few km across. For long burns, the footprint can be hundreds of km where stations several hundred km apart have reported the same burns. The trick with burns is that while two stations may overlap, one or other will start just prior to or finish just after the other and

the interference affect that causes burns to oscillate in signal level will not occur at the same time for both. Thus when you receive a burn it is often useful to manually click across the burn on the spectrum display to see if you can decode more than one station.

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

The Magic Band – 6 m DX

Brian Cleland – VK5BC

January was a great month on 6 m with very few days when the band was not open somewhere in VK/ZL. Many days all states could be worked with the band open all day and into the evening. Early February things started to quieten down but some openings still occurring for those still monitoring the band with the 11th February being another exceptional day. Paul A35RK continued to regularly work into VK/ZL with some other interesting contacts made to Malaysia, Guam, Indonesia and Japan.

John VK4FNQ reports that the band opened most days to Far North Queensland with the 18th, 19th and 20th January being particularly good days when most beacons in VK, ZL and FK8 were heard and most states and ZL worked. Brian VK5BC reports good conditions into VK5 on most days of January with good VK3 openings on the 8th and 16th and the MUF extending to 2 m on many occasions.

Paul A35RK was again very active

during January and it was surprising how often he could be heard in VK. He was able to work into VK/ZL on 15 days during December and 16 days during January during which time he completed many CW and SSB contacts, working a total of 56 stations on CW and 150 on SSB. During January Paul was able to work his 2nd VK6, Wayne VK6JR on CW. Table 1 below summarises Paul's December/January contacts up to and including the 31st January. Paul certainly added a new dimension to the summer season and a big thanks from all VK/ZL 6 m operators for regularly monitoring the band and being available for contacts.

A good opening from the Perth area occurred on 16th January to Indonesia. Peter VK6KXW reports, "Tonight was interesting (16/1/08), I had VK8RAS 5x5, VK6RSX 5x5 to 9 at 1214z with TV videos being heard from north on 48.240 MHz, multiple carriers mainly Sempah which was the strongest at S3/5 but no 9M2 audio on 53.740 MHz, 55.250 MHz

multiple carriers at -24 dBm. At no time did I hear or see on the waterfall 49.750 video carriers. VK2/SWL was at the time on the logger and in phone contact with Tony Mann, both tracking the MUF up, they were looking for 88.9 Singapore FM. While calling north, Wayne VK6JR came back to me on 50.110 (he is 200 km south of me). Not sure whether it was backscatter or direct, I belted outside to Armstrong the 3-el around. He came back to me again and some one else QRZed me. Fell off the chair, as it was YB1EHR in Bogor Java. So, Armstrong the flaming aerial again back up north and worked Chris, me 5x3 him 4x3. Equipment this end modest, 3-el Yagi, TS-2000 100W. Signals were USB on 50.110, 2x Es, 1,800 miles, no distortion /Doppler, and slow QSB. YB1EHR was also worked by several Perth stations including VK6RO, VK6IQ, VK6ZKO, VK6HK and VK6JR near Bunbury.

On 20th January, Mike VK2BZE heard the Guam AH2G beacon and was able to contact Joel KG6DX via Skype. Joel immediately came on air and completed a contact with Gerry VK2APG, but unfortunately Mike missed out. The Guam beacon was also heard on the 4th February by Russell VK4BEG, John VK4FNQ and Glenn VK7AB.

After several days where indicators from the north suggest that JA contacts may be possible. Finally Steve VK3SIX worked JR6EXN on 31st January who was also heard in Adelaide by Dave VK5/SWL. Garry VK5ZK reported hearing the JR6YAG beacon around the same time.

On 2nd February some interesting propagation occurred to Malaysia with John 9M6XMO in Kota Kinabalu being worked by Russell VK4BEG, Kevin VK4BKP Dale VK4SIX and John VK4FNQ all in far north Queensland

AREA	CONTACTS		CALLSIGNS		
	CW	CW	SSB	SSB	
VK1			3	2	
VK2	33	13	85	48	
VK3	13	9	37	24	
VK4	25	15	48	35	
VK5	12	3	26	13	
VK6	2	2			VK6JJ, VK6JR
VK7	3	3	3	3	
VK8			2	1	VK8MS
VK9	1	1	2	2	VK9NS CW&SSB VK9ZLH SSB
VK	89	46	206	128	
ZL1	1	1	4	4	
ZL2	2	2	8	4	
ZL3	15	5	15	10	
ZL4	1	1	4	2	
ZL	19	9	31	20	
FK8			1	1	FK1TK
3D2	1	1	2	1	2D2AG/P

Table 1

On-air behaviour

A matter that has been concerning me for several months is the anecdotal evidence of degradation of on-air operating standards and etiquette ESPECIALLY ON REPEATERS. Listening to THOSE local to my QTH, and the HF bands, I am disappointed at the STANDARDS. In particular, swearing and what some may deem as inappropriate blasphemous language. I am neither a prude nor a religious crank. I can swear and let off steam and frustration with the best of you. I find it offensive however to have to listen to fellow amateurs swearing, and using inappropriate language on-air.

For instance, I have an impressionable teenage daughter that I would rather not HAVE hear such language and associated conversations. Have users of such language considered the impression of our hobby that this type of behaviour may leave with non amateurs listening to such communications?

I urge all amateurs to read and follow the Amateur's Code, by Paul M Segal W9EEA.

(Editor: Bruce included the code here. Interested readers can find the Code in the WIA Callbook or on the Internet.)

Despite being written in 1928, the philosophy behind this code is, in my view, still applicable today. To think otherwise is tantamount to suggesting that the Magna Carta, written in 1215 and that underpins such things as the Australian, United Kingdom and US constitutions along with the latter's Bill of Rights, is no longer relevant due to its age.

Some months ago I heard a well known amateur and generally nice guy, from the south-west of Victoria swearing during a QSO through the Geelong two metre repeater and using language that some may say was 'taking the Lord's name in vein'. Matters of politics were also mentioned. He was challenged by an unidentified station about the appropriateness of his language and reminded of the regulations under which radio amateurs operate. The identified amateur concerned then spent the next 10 or so minutes trying to defend himself.

I recently enquired to the ACMA about this matter and received this response:

"Section 6 of the LCD covers broadly the use of an amateur station. Amateur radio is primarily about

self training in radio communications and technical investigations into radio communications. However it also provides for 'intercommunications'. Whilst most 'intercommunications' between amateurs is expected to relate to radio communications matters, intercommunications about other matters, such as motor racing, the weather, the dog, cooking, gardening, the family's health, red wine, religion and politics etc is not precluded.

The use of amateur radio to 'broadcast' information about those non radio communications matters is not permitted. Just what is permitted or not permitted needs to be considered on a case by case basis. The line between casual intercommunications about religion (not precluded) and use of amateur radio to broadcast a religious sermon or read texts from the Bible or Koran (not permitted) is sometimes very fine.

The use of offensive language is not specifically an offence under the Amateur LCD or for that matter the Radio Communications Act 1992. These matters are dealt with under conditions imposed by subsection 108 (2) (d) of the Act (seriously alarmed, seriously affronted or harassment etc)."

Regardless of what the current regulations specifically state, I do not wish to be exposed or to have family, friends or casual listeners to the amateur bands exposed to such conversation, . I hear enough of it on the euphemistically called adult time slot television programs. I do not wish to hear, nor wish others to hear, such base language and conversation amongst a group of people that in the main considers themselves to be educated. Before someone reminds me that if I do not like what I hear, I can switch off or tune to another frequency, think about the effects of bad on-air behaviour on the long term viability of our hobby.

Amateur radio used to be a place where one can have a good conversation with worthwhile people. If one wishes to participate in gutter-style conversation on air, there is another radio service perhaps better suited for such persons. I would rather see standards remain high than degenerate into mediocrity.

Bruce R Kendall VK3WL

ar

and Steve VK3OT in western Victoria. On the same day Steve heard 9M2IDJ who was worked by Mark VK8MS in Darwin. 9M6XRO was again worked by John VK4TL on the 4th February

The V73SIX beacon was reported as being heard John by VK4FNQ on 28th January and by Kevin VK4BKP on 4th February. Paul A35RK also reported the beacon on the 3rd February.

Jim VK9NS on Norfolk Island was also active in late January and worked many VK2, 3 and 4, and ZLs. Jim also worked Paul A35RK.

The FK8SIX beacon continued to be heard in most states throughout January but the only active station heard or worked was Michele FK8GX who was worked by Wayne VK4WS, Gary VK4ABW, Joe VK4TU and Steve VK3SIX. He was also heard by Brian VK5BC.

Meanwhile Joe VK7JG has had success working EME into Europe. Joe reports as follows:

"Worked Mick W1JJ on 27 November then Lance W7GJ requested a sked. We completed before the moon cleared the horizon on 29th November 2007. Since then on 1st December worked MM0AMW at -27. Then on the 26 Dec special event station FP0FRG at -30, the actual station was Gerard PE1BTX. I can work Gerard whenever he is active; he often gives me a SWL report when I am working other stations. Have a look at his WEB site you will be amazed at his equipment. On 26th Jan worked Ken G4IGO using my AX prefix for Australia Day. Also worked for the second time GM4WJA. John runs 600 W to a 6-el Yagi with no elevation. I also tried with EA3AKY.(Josep), I decoded him several times however due to his local noise we did not complete the contact." Well done Joe.

Conditions have quietened a little in early February but good openings have occurred on the 9th and 11th. On 11th February, the band was open most of the day to all areas of VK and ZL with excellent conditions between VK5 to ZL and VK6. Conditions also extended from ZL to VK6 with John VK6JJ, Graham VK6RO, working ZL2TPY, ZL3JT, and ZL3NW and ZL3ADT.

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

AMSAT

Bill Magnusen VK3JT

Important announcement

I have left the title box largely unaltered this month but keep your eyes and ears open. There will be changes shortly to the timing and format of the AMSAT-AUSTRALIA monthly nets. Tests are underway as we speak and details of new arrangements should appear in the next column. Paul VK2TXT of the OZsat group has been working on a new net meeting arrangement more suitable to both groups. The AMSAT-VK group will join forces with the OZsat group when the new arrangements are up and running. At this stage it looks like the HF net will remain as is. The new net will involve both VHF repeater linking and internet via Echolink. I hope to be able to publish full details in the April issue.

AO-16 back in service

The following message on the AMSAT-BB heralded in the return of AO-16 after a long absence. Over to Drew, KO4MA for the details.

Since AO-16 was recovered approximately 6 months ago, the command team has attempted to reload the satellite software almost a dozen times without success. Subsequently a series of memory tests were performed

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

(see first paragraph of column)

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

(see first paragraph of column)

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

which points towards a hardware failure which prevents restarting the spacecraft software successfully. This team included Bruce Rahn WB9ANQ and Jim White WD0E advising Mark Hammond N8MH as the primary groundstation. Mark put in many early hours during the multiple reloads and test sessions, with Bruce, Jim, and others advising. Thank you to all involved for your hard work. After the conclusion that the spacecraft computer system was damaged and as discussions about decommissioning were taking place, Jim recalled a series of low level commands included in the spacecraft design by Tom Clark K3IO during construction. One of these commands allows an uplink receiver to be directly tied to a downlink transmitter. The twist is that the uplink is regular FM, but the downlink via the BPSK transmitter is DSB (Double Sideband). Mark placed the satellite in this mode early (this) week and some testing was undertaken.

The satellite hears VERY well, and the reduced bandwidth by using either USB or LSB on the groundstation receiver allows for a very robust downlink. Tuning the downlink is just like on a linear transponder, meaning it is tight and with fast Doppler. Uplink tuning is not required, just as with the FM mode V/U satellites. QSOs were made between N8MH, WD4ASW, KO4MA, K5QXJ, and WA6FWF. My personal observations include being able to access and hear the satellite within one degree of the horizon, much lower than any other current bird for my QTH. This should be an easy satellite with omni antennas and a 70 cm preamp. With that explanation, I'm happy to open the satellite to general use on voice for a test period. Please submit reports either to the -bb or to ao16@amsat.org. The uplink is 145.920 FM, and the downlink is 437.026 SSB +/- Doppler shift. Please restrict your

uplink power to a reasonable level, and do not transmit without being able to hear the downlink. All the general single-channel guidelines apply. Enjoy this bird's new life!

Thanks to Drew KO4MA, for the above information.

I can verify the ease of operation of this bird. It only requires a watt or two to access it on two metres and the downlink is strong throughout each pass. I am using my old, trusted auto-track system with WiSP controlling a Kansas City Tracker and a KenPro rotator. I can regularly quiet the receiver with just 1 watt at AOS distances of 3000+ km. AO-16's footprint is wide enough to allow Perth to ZL contacts.

Operators have been delighted to witness contacts between Murray ZL3MH and Ron VK6AKI. They have a mutual window of some minutes when the orbit takes AO-16 over Adelaide. The double sideband downlink transmission is an interesting aside. The carrier suppression is more than enough but still allows you to hear a weak 'carrier' when the satellite is active. This is a very handy and welcome aid to tuning the signals. The Doppler-change can be quite severe in the middle of an overhead pass.

What do you need to come and join the fun on AO-16?

My satellite station has been a "work-in-progress" since Oscar-1 was launched in 1961. So it is not surprising that I find myself with a "high-end" antenna system: full auto-track, long switchable polarity CP Yagis with preamps mounted upstairs and high quality co-ax cable. After so many years of continual improvement you would expect something like that. But what about newcomers? What would be a minimum setup to allow you to work AO-16 or most of the other current LEO satellites?

For the moment let us just consider AO-16. The first thing to keep in mind is that it has a very sensitive receiver and for the most part it is operating in a noise-free environment. It takes very little power from your station to fully quiet the FM uplink receiver. Many postings on the AMSAT-BB suggest that at times even 10 watts is enough to overload it. Most operators will be able to generate 10 watts of FM on the 2 metre uplink frequency of 145.920 MHz. My own experience has shown that 10 watts FM into a ground plane antenna up in the clear is enough to make contacts. There will be times when the satellite's tumbling fades will make your signal QSB into the noise but you can still make contacts. There will be times when the bird is almost overhead that a hand-held and rubber duckie will suffice for the uplink but do not bother trying when the satellite is low on your horizon.

The down link is a little more difficult for several reasons. One, AO-16 is not a high power device. The signal on the ground is weak like all amateur radio satellites. We are not listening for the local repeater, and we have to contend with electrical noise and other interference. When AO-16 rises above the horizon it is about 3000 km away. Many stations report some worthwhile results with a simple ground plane but they would all acknowledge that a good pre-amp mounted at the feed point of the GP makes all the difference. A common cause of most difficulties that newcomers experience is the failure to realise the importance of this last point. It is stressed over and over in all articles written on getting started in satellite communications but still the prevailing attitude seems to be "Okay but I'll do that later". That is a real pity. 'Later' will not cut the mustard today and it almost certainly relegates your best efforts to mediocrity. The simple addition of a good low noise pre-amp at the feed point of the antenna can and will make all the difference. There – I have said it twice, I will leave it at that. I would call such a setup the minimum for any kind of encouraging results. No point in putting together a station if you are going to be disappointed with the results.

The second point in regard to operating AO-16 is that the downlink mode is not FM but double sideband (DSB). Essentially that is similar to AM but with the carrier very much suppressed. Do

not try to receive it on an AM receiver though. You will be very disappointed. You will need an SSB receiver switched to either USB or LSB, does not matter which. Newcomers sometimes find Doppler shift rather mystifying. Get used to it. It is a fact of life for all satellite operators. It is an artefact of the satellite's motion relative to you and all other stations using the satellite at the same time. It can be easy to cope with or sometimes quite daunting. It is related to frequency and changes in frequency.

The FM uplink frequency in the case of AO-16 does not need to be altered during a pass. Set it and forget it. The downlink is another story. SSB is sensitive to tuning errors and 70 cm means that Doppler shift can vary as +/- 9 kHz on an overhead pass. Early and late in the pass it is easy to keep signals in tune but towards the middle of each pass when the bird is closest to you, you will find your hand on the dial making continual adjustments to keep your own and everybody else's signals in tune. This comes easy with practice. These days there are a number of fancy ways of totally automating the tuning of both uplink and downlink but we are talking minimal stations here so the newcomer will need to cope with the Doppler variation by hand tuning. The (nominal) downlink frequency is 437.025 MHz. When you first hear the signal, it could be somewhere in the vicinity of 437.034 MHz. It will slowly fall, requiring you to tune lower as the pass proceeds. As the satellite comes closer you will notice the rate of correction needs to be increased until as it goes overhead, the frequency will be close to nominal and you are tuning the dial quite rapidly to keep things in line. As the satellite moves away you will need to tune still lower until as it goes out over your horizon your dial could read somewhere around 437.017 MHz. Now if all that sounds complicated – it is not really. Come on, try it. Start by listening (always a good move). Get a tracking program and learn how to use it. Get used to the feel of the downlink. Practice tuning for Doppler correction. It is easy after a while.

When you gain confidence try making a call. The satellite radio system is full duplex. That is, you can hear yourself on the downlink while you are talking. You can tell if you are on frequency. You do not need to "switch" from Tx to Rx,

leave the receiver run all the time and just grab the microphone when you want to call. You should hear yourself being re-transmitted from the bird. I find good quality headphones a useful accessory for pretty well all voice satellite work.

It will also help to physically separate the Tx and Rx antennas by several metres if you can. Again – there are fancy ways of filtering out any unwanted breakthrough but this is a minimal station we are considering and the problem is not critical. You will notice that the up and down frequencies are not harmonically related. It is designed that way. Duplex operation would be quite impossible if they were. So – when you look at it, getting going on AO-16 will be within the grasp of many amateurs regardless of experience or budget. Who knows – you might even get the bug and still be working the birds in 40 years time!

AO-51 still performing well

While we are on the subject of LEOs, at the time of writing the very favourable eclipse situation has allowed AO-51's "S" band downlink to be activated along with the more usual "U" mode downlink. For those unfamiliar with this terminology, read "S" band to mean 13 cm or around 2.4 GHz and "U" band to mean the 70 cm band. Reports have been coming in of good signals on the "S" band frequency. This would be a good time to get out the HEO equipment and dust it off in preparation for P3E.

The first thing you will notice is the rather extreme movement in the Doppler shift, particularly near the middle of each pass. With FM it is (sort-of) manageable but the new HEOs will probably exploit the many advantages of "S" band by using SSB most of the time. At 2.4 GHz, automatic Doppler correction will be pretty well essential for success over much of the HEO orbit and even when the bird is right out around apogee it will be a great advantage.

Now is the time to get familiar with this technique. The 'ante' has been 'up-ed' in terms of the original requirements for Doppler correction on the early digital satellites but the technology has moved on from those heady days. There is plenty of literature about and the hardware is simple enough once you get your feet wet. Follow the links on the AMSAT-NA web site and all will be revealed!

Amateur Radio

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Don Jackson VK3DBB

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WANTED QLD

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• Still available 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

WANTED SA

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Over to you

80 m whip

I am trying to contact either Don VK3DBB or a participant in the 80 m mobile antenna tests (Mobile 80 metre antenna tests, AR, July 2007. Ed.). Specifically I am trying to locate a design for the top performing home brew antenna.

80 m is one of my favourite bands.

Thanks in advance

Shaun VK2XPP

Don VK3DBB responds:

Regarding your query relayed from Shaun for the constructions details of the "reference" antenna used in tests I wrote about, I have now sourced some details

which may or may not be of much use.

I am sorry for taking so long to get back to you, but our group only meets once a month and because we had arranged for a change from the 2nd Tuesday to the 3rd Tuesday which occurred this month, it took a bit longer again.

The owner of the long antenna was very reluctant to talk in great detail. Prior to getting his permission to write the article for AR, I had to agree to include the statement in it that no correspondence would be entered into about the tests. I am not sure if email is correspondence, so here is what I managed to learn:

The total length is about 10 feet (approximately 3 metres).

About one foot (approximately 30 cm) from the base connector, there is a two inch (50 mm) diameter coil wound with 14 gauge (1.6 mm) enamelled wire, spaced one wire diameter apart. Connected to the top of this coil is a stainless steel CB whip about 8' 6" (approximately 2.6 metres) long. The whole is tuned for maximum efficiency on 3.605 MHz.

I hope this helps, but that is all the detail that I could obtain from the owner/builder of the whip.

Regards



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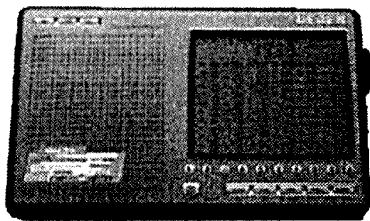
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Broadcast details

- 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, 7.158, 10.130, 146.700, 147.250 and 439.800 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 0900 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.
Repeated Sunday, 1900 local, on 1.865, 3.564, 146.700 and 438.525 MHz. Country relays on major repeaters.
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.
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.

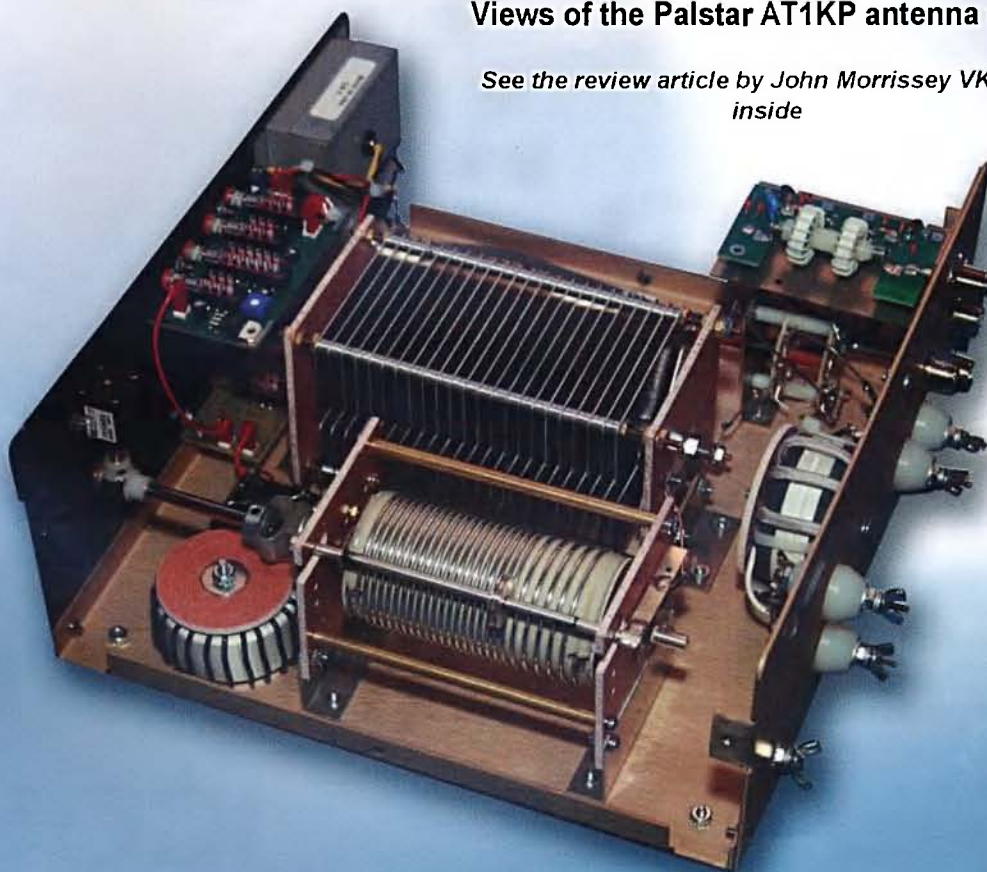
Note that many clubs broadcast the WIA News via local VHF and UHF repeaters. Check the News section of the WIA website.

The Palstar AT1KP antenna tuner



Views of the Palstar AT1KP antenna tuner

*See the review article by John Morrissey VK3ZRX
inside*



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Our Cover this month

The sculpture, "Bajo el sol jaguar" by Mexican Antonio Nava Tirado, is part of the Broken Hill Sculpture Symposium in the Living Desert Reserve, close to Broken Hill. The translation of the sculpture's title is "Under the jaguar sun", and is reportedly best viewed at sunrise or sunset. © *Phil Morley. Image from BigStockPhoto.com*
The WIA AGM on 24 and 25 May will be an opportunity to view this stunning work of art first hand. For other attractions and accomodation visit <http://www.visitbrokenhill.com.au/>

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 \$8.00 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

As you will see in both the President's Comment and in a detailed article on the process proposed for adoption, the issue of two-letter callsigns is about to take a series of steps towards resolution. For those interested, read both items carefully. There is also news in the article about the process for cases where an amateur with a two-letter callsign has become a Silent Key since the middle of 2006.

Contributions to AR

In this issue, I am finally able to publish an article that has been sitting in our article register for about two years. This was an unusual case, as we needed to await clarification regarding the issue of encryption of information in the LCD.

No, this is not the norm – most articles will take about three to six months to pass through the review and preparation process prior to publication. An article is first registered and then forwarded to one of the Technical Editors. Once the Technical Editor is happy with the text, any drawing will be reviewed and, if necessary, redrawn. The complete set of material then comes to the Editor for further review and publication – usually it is published when all others registered before it have been published, so that articles are normally published in the order that they are received. Occasionally, an article may be sufficiently topical or timely for it to be published more rapidly.

Cover photographs: AR and Callbook

We are always interested in receiving your contributions – not just articles, but also photographs that may be of interest to readers, and especially those that may be suitable for the cover of either AR or the Callbook. Guidelines regarding both articles and photographs are available from the AR magazine section of the WIA website, or via email from me. If in doubt regarding an image, forward a small version electronically, but indicate that the image is available in higher resolution. The higher the image resolution, the better the image will reproduce in the magazine or the cover. Even if we do not use the image immediately, we will consider it for future editions. Remember that we usually also have the Inside Back Cover available for good quality images

and/or short items accompanied by a good image.

John Moyle Memorial National Field Day

From reading some of the email discussion groups, it sounds as if there was some reasonable participation for the John Moyle Memorial Field Day Contest. I was busy with work tasks and did not find time to get on-air. Even if you only gave out a few numbers to nearby stations on VHF and UHF, remember to send in a log. There are usually many more stations who participate in any contest than who send in a log. You may end up with a pleasant surprise at your score, as you can never tell who else will, or will not, enter their log. You may score well. At the very least, your log will be useful for the Contest Manager when he checks through all logs entered.

Callbook preparation

The Publications Committee is currently commencing the task of assembling the next issue of the Callbook, with the goal of having it published by early October. The tasks involved are not particularly onerous, with the biggest job being proof reading the contributed material. We are looking for volunteers to assist in the Callbook preparation. You should have internet access and be able to edit documents using Word or an equivalent word processing package. We are especially interested in finding someone skilled in the use of the outlining features included in Word. We are specifically looking for someone to coordinate preparation of the electronic version of the Callbook. If you are able and willing, please contact me in the first instance.

The listing of callsigns is prepared from the database maintained by ACMA, so make sure that ACMA has your correct details. As all WIA affiliated Clubs now have editing rights to the club details on the WIA website, we will be extracting the club data from that source. Note that it will be the responsibility of the club to ensure the correct data is included. We should be able to include data regarding clubs that are not affiliated with the WIA, but they will need to submit their information at an earlier time. Watch for more news on the process in the next issue of AR.

ar

An end to the Two-letter Callsign Saga

In the December 2005 "AR", under the heading "ACMA Freezes Issue of New 2-letter Callsigns Across Australia", the WIA noted that with the new amateur licensing arrangements callsign groups allocated to the Advanced licence now included all groups previously allocated to the Unrestricted, Intermediate and Limited licences, and that callsigns with two letter suffixes were in very short supply, and because of the anticipated high demand for two letter callsigns, ACMA was not then issuing them until an equitable arrangement for their allocation could be put in place, and that "it was expected that these arrangements would be notified shortly."

The last statement proved to be optimistic.

Soon there was quite a debate going on as to the appropriate way to allocate the available two-letter callsigns. Some argued that it was right and proper that all Advanced licensees should have an equal right to the two-letters callsigns while others argued that only those with a Morse qualification should have the right, while others argued that the right to a two-letter callsign should depend on the number of years that an amateur licence had been held.

The WIA continued to press for a resolution of the issue, and by April 2007, a year ago, we quoted a formal letter from the ACMA, again explaining the reasons for ceasing to issue two-letter callsigns "while an equitable arrangement for their allocation was being developed." The letter said "It is therefore anticipated that procedures to resolve this issue will be in place by the end of June 2007."

Once again, the last statement was over-optimistic.

By August 2007, we were reporting a formal meeting between the WIA and the ACMA, where among the matters raised by the WIA was the delay in the issue or re-issue of two-letter callsigns.

While all this was going on, or rather, not going on, a new issue had emerged.

A number of amateurs holding two-letter callsigns who had sought to renew their licence late found that their callsign was no longer available to them (or any

one else) but had been quarantined by the ACMA.

While we must accept that the Radiocommunications Act imposes on the licensee of an apparatus licence the responsibility for renewing the licence, and there is no obligation on the ACMA to issue a renewal notice, it seemed to me that in a number of cases the amateur who had lost his callsign was able to show very good reasons why he had not renewed in time, and that it was fair and equitable that the callsign be re-allocated to him.

In fact, the Radiocommunications Act provides that the licensee may at any time during the period beginning six months before the licence is due to expire and ending 60 days after it expires, apply in writing to the ACMA for the licence to be renewed. I wonder how many amateurs are aware of this provision, or the extent to which the ACMA has drawn attention to it?

At long last this saga is coming to an end.

Following the decision of the ACMA that the WIA would undertake the amateur tasks to be outsourced, the resolution of the two-letter callsign issue has become the first matter to be addressed.

In this issue of AR you will find a statement setting out the proposed process for a ballot for the two-letter callsigns.

A copy of this statement is on the ACMA website, and another copy is on the WIA website.

I am very pleased to say that the ACMA has agreed to our request to review any case where an amateur has lost his two-letter call as referred to above, prior to the ballot process.

But do note that a new application for review must be made, even if a previous application has been lodged. Make sure that you include your ACMA client number, the licence number and the two-letter callsign that was lost in your application. If you know someone who may be affected, please do make sure that their attention is drawn to this process and the statement.

The details are set out in the statement,

under "3. Pre-Ballot review". Please read that very carefully. "Yes, I forgot", or "the ACMA's renewal notice did not arrive" (or was lost) is not a reason that will succeed. But look carefully at the examples of reasons that may be acceptable. And also, note that documentary evidence is recommended. That could be a medical certificate, an overseas itinerary or it could be a statutory declaration setting out the circumstances. I do strongly urge anyone who believes that they have a proper case to support it with documentary evidence.

The application for a review must be lodged with the ACMA by 30 April 2008. The decision is a decision of the ACMA, not the WIA, and so the application must be sent to the ACMA.

Also, do look at the next section in the statement, "Callsigns of deceased amateurs". Here the WIA should be advised of the death of any amateur who died on or after 1 March 2006.

Finally, may I say this:

The ACMA has asked the WIA to conduct a ballot for the callsigns and the method proposed to be used is set out in the statement and comment is invited.

The invitation to comment is an important and serious part of this process.

Do let us have your comment. Because in undertaking tasks such as this, the WIA is to serve all amateurs, not only WIA members, (and that is why a fee will be charged to participate in the ballot), membership of the WIA is not relevant to the evaluation of comments.

Agreeing with the process proposed is just as important as an alternative suggestion.

I have always thought that ACMA's original decision to quarantine two-letter callsigns was not the best decision that could have been made. I do think that with the agreement of the ACMA to review, when requested, the loss of a two-letter callsign before any ballot, a ballot open to all who are qualified will provide the most equitable solution to a matter that has concerned many people.

WIA Board meets

The WIA Board met in Melbourne on Saturday 1 March and Sunday 2 March 2008.

It was the first face to face meeting attended by new Director, Eddie Saunders VK6ZSE, and probably the last for retiring Director Trevor Quick VK5ATQ. Most of the work of the Board is carried on through email and phone.

During the weekend the Directors were joined for tea breaks and lunch breaks by Margaret Williams and Dianne Ashton from the WIA office, Graham Kemp from the WIA broadcasts and Fred Swainston, for the WIA's nominated Registered Training Organisation.

The Board reviewed all WIA activities and the present negotiations with the ACMA in relation to the outsourcing of certain functions.

On the financial side the Board was assisted by Evan Mudie, from the WIA's auditors, and Jim Baxter, retiring WIA Treasurer.

It was agreed that attracting new amateurs remained very important and looking to other parallel interests, such as boating, was seen as a useful approach.

The Directors discussed the WIA's requirement for premises at some length, and it was agreed that the present arrangements, with an office with inadequate meeting space, and with inadequate storage (the WIA pays for separate facilities) did not meet the organisation's present needs.

The arrangements for the WIA's AGM at Broken Hill were reviewed.

Board reviews Club Grant Scheme

At their recent meeting in Melbourne, the Directors considered the WIA Club Grant Scheme and made some changes for the Scheme in 2008.

In submitting their report to the Board in August last year, the Grant Committee commented on the lack of projects involving new technology or innovative projects, suggesting that the WIA should consider promoting innovations in special interest areas. The Committee commented that many clubs have an overwhelming focus on operating and maintaining repeater communications.

In September last year, the WIA Board requested comment on the Club Grant Scheme, particularly on the issues raised by the Club Grant Committee.

A number of the comments argued that the repeaters were at the core of many clubs activities, and should not be disregarded. A number commented on encouraging focused activities, seeking to attract new amateurs or new WIA members. The Scheme was generally supported.

The Directors carefully considered the thoughtful submissions that had been made, and were attracted by the suggestion made in a number of ways that there be two parts to the scheme, one encouraging innovation, the other supporting more usual club projects and activities. The Directors also thought that a limited number of grants were preferable to a large number of small grants.

Accordingly it was decided that the WIA will again conduct a Club Grant Scheme in 2008, this year with the total grant increased to \$6,000.

The Scheme will be broken into two parts, one part providing for up to three grants of up to a total of \$3,000 for useful but not innovative projects or activities, including projects involving repeaters or associated links.

The other part will be for projects or activities that are innovative, with provision for up to three grants up to a total of \$3,000.

The WIA Board is grateful for the thoughtful and helpful submissions received, as well as the helpful observations of the Grant Committee.

Details of the 2008 Scheme will be published shortly.

WIA Awards Program

The WIA Awards Program is seen as one of the world's best, thanks to retiring Awards Manager Malcolm Johnson VK6LC.

Managing the WIA Awards involves not only a great deal of administrative and organisational effort in validating claims for awards but also requires a good knowledge of DXing in applying the award conditions in a consistent and reasonable manner to maintain the integrity of the awards.

The WIA Board has now created an Awards Committee headed by the Awards Manager.

The Committee will bring together a group of experienced DXers, providing valuable assistance and guidance for the Awards Manager and adding credibility to the Program.

The WIA has appointed Michael Wright VK5ARD as the new WIA Awards Manager.

The members of the Awards Committee are:

- Martin Luther VK7GN
- Dale McCarthy VK4DMC
- David McCauley VK3EW
- Alex Petkovic VK6APK

The address for the WIA Awards Program is:

Awards Manager
WIA National Awards
PO Box 752
Roxby Downs
South Australia 5725
Australia

Brisbane D-STAR Club announced

At their recent meeting in Melbourne, the WIA Directors decided to identify the Brisbane D-STAR club.

Last November, concurrently with the commissioning of the D-STAR repeater to serve the Melbourne area, Icom Australia and the WIA announced the gift by Icom of 5 further D-STAR repeaters to the WIA so that a D-STAR repeater can be commissioned to serve each of the other state capitals.

The Directors, acting on the advice of the Queensland Advisory Committee, and after consultation with Icom Australia, announce that the Gold Coast Amateur Radio Society Inc. shall be the D-STAR club to serve the Brisbane area.

The Second Edition "Foundation Licence Manual-Your Entry into Amateur Radio", coming soon

The second edition of the WIA's very successful "Foundation Licence Manual" is currently in the final stages of production and copies from the printer are expected early April.

continued on page 19

Ballot for Two Letter Callsigns

Purpose

This paper:

- sets out a proposed process for the equitable allocation of amateur callsigns with two letter suffixes (two letter callsigns) in accordance with the Principles specified by the Australian Communications and Media Authority (ACMA); and
- invites comment from the amateur community on the proposed process.

This paper will be published in the April issue of the WIA magazine "Amateur Radio" and will be placed on the WIA website <http://www.wia.org.au/> at the beginning of April. It will be further publicised on at least three occasions in April during WIA broadcasts. This paper will also be published on the ACMA website: <http://www.acma.gov.au/>

Subject to the approval of ACMA, following the consultation process the WIA will publish a final document setting out the process for allocating two letter callsigns. It is expected that this will occur in early May 2008. The final document will be published on the WIA website and will also be available on the ACMA website.

Background

In 2003-04, the Australian Communications Authority (ACA) carried out a Review of Amateur Service Regulation (the Review). The ACA conducted extensive consultation with the Amateur community throughout the Review process. The findings of the Review were published in *Outcomes of the Review of Amateur Service Regulation*. A key Outcome of the Review was the decision to consolidate amateur licence options and certificates into three options: foundation, standard and advanced. This outcome was implemented on 20 October 2005.

Prior to these reforms, only holders of amateur unrestricted licences were eligible to hold a two letter callsign. One result of the new arrangements was that Amateurs who previously held amateur limited and amateur intermediate licences became eligible to hold a two letter

callsign under the new arrangements. This resulted in a high level of demand in some states and territories that could not be met by available supply. Accordingly, on 19 October 2005 ACMA suspended the issue of two letter callsigns until an equitable arrangement for their allocation could be put in place.

On 7 February 2008, ACMA introduced several more outcomes of the Review. These reforms included a series of changes to Amateur licence conditions and the introduction of a class licence to authorise amateurs visiting from overseas. In addition, to streamline services for Amateur licensees, ACMA decided to delegate certain statutory functions and administrative services associated with Amateur licensing to the WIA.

As part of these arrangements, ACMA has requested that the WIA manage a fair and transparent ballot process for the allocation of two letter callsigns in all states and territories in Australia (the "Ballot"). Two letter callsigns will be available on an equitable basis to all qualified operators who are eligible to participate in the Ballot.

Principles

The WIA is required by ACMA to give effect to certain broad principles and conditions in regard to how the Ballot should operate. These are:

Eligibility.

This should be limited to holders of amateur (advanced) licences (or a certificate of proficiency that would entitle the holder to an amateur (advanced) licence. Applicants should only be able to apply for a callsign in the state or territory in which they reside.

Equity.

Ballot process to be impartial (with an independent or ACMA representative present). Amateurs should only be eligible to participate in the ballot if they do not already possess a 2 letter callsign. In addition, each applicant should be limited to one 2 letter callsign.

Preference.

The ballot process should enable amateurs to express their preferences for individual callsigns prior to the Ballot. A

list of available 2 letter callsigns should be made available to applicants prior to entry.

Charges.

The WIA may charge an entry cost for the ballot that is reasonably related to the cost of the process.

Outcome.

The WIA is to finalise results of the Ballot and advise ACMA the names of applicants who were successful in the Ballot together with the 2-letter callsign they should be issued with if an application to vary their licence is submitted.

Request for comment

The WIA is seeking comment on the proposed process for the Ballot. Topics for discussion include eligibility requirements, the pre-Ballot review, the Ballot methodology, the application process, the timeframes involved or any other matter relating to how the Ballot process is proposed to operate. Comment is invited as follows:

By mail addressed to:

Two Letter Comment
The Wireless Institute of Australia
PO Box 2175
Caulfield Junction
Victoria 3161

By email addressed to:

2lettercomment@wia.org.au

By facsimile to:

Two Letter Comment
03 9523 8191

All comments must be received by the WIA on or before 4 pm Australian Eastern Standard Time (AEST) **Wednesday 30 April 2008**. Any comment received after that time may not be considered.

Pre-Ballot review

A number of amateurs have "lost" their two letter callsigns since 19 October 2005 as a result of their failure to renew their apparatus licence prior to or during the embargo. Some of these amateurs have sought re-allocation of their previous callsign on the basis that their failure to renew was due to exceptional circumstances.

ACMA has agreed to the WIA's request to consider cases for review

continued on page 14

Fox hunting antennas for 2 metres

Bill Isdale VK4TWI

A popular activity when the Club gets together is 'fox' hunting, often on 2 metres. It raises the competitive spirit as teams form up to find the elusive hidden transmitter. The fox is commonly a low powered FM transmitter operating either continuously or intermittently, depending on the ingenuity of the maker. Hidden somewhere, it will broadcast its signal as the hunters set out, in vehicles or on foot, to find it.

The most useful tool for locating the fox is a directional antenna. It can be connected to something as simple and readily available as a handheld 2 metre rig or as sophisticated as one of the purpose designed and built receivers with variable sensitivity so that, as the target is approached, the sensitivity of the receiver can be progressively reduced to avoid the equipment becoming useless once overloaded by proximity to the transmitter. This is a very valuable feature since at the beginning of a hunt the transmitter may be several kilometres away and a receiver useful at that range will become overloaded well before you get within sight of the quarry. Keep in mind that the fox will often be invisible until you are virtually touching it. If using a 2 m transceiver as your detector, you can attenuate the incoming signal when necessary by simply tuning a little off frequency.

The ideal antenna is one that can be used with a vehicle on the move and also handheld once the area of interest is reduced sufficiently. It may be that more than one antenna is needed but reducing the amount of gear that has to be hauled around will make for a more mobile hunter. My first attempt at a directional antenna was a design that is fast and easy to make at fairly low cost; ideal for an experiment. The requirements are a piece of 2 x 4 cm pine a little over a metre long with brass tube from a hobby shop and some 12 gauge solid copper wire that I had on hand; a few cable ties and some coaxial cable completed the picture.

There is much known about designing Yagi antennas and varying the spacing of the elements so as to achieve a particular result such as maximum forward gain or a high front to back ratio. The individual can choose so I will not try to be prescriptive. My first design incorporates 3 elements, the radiator

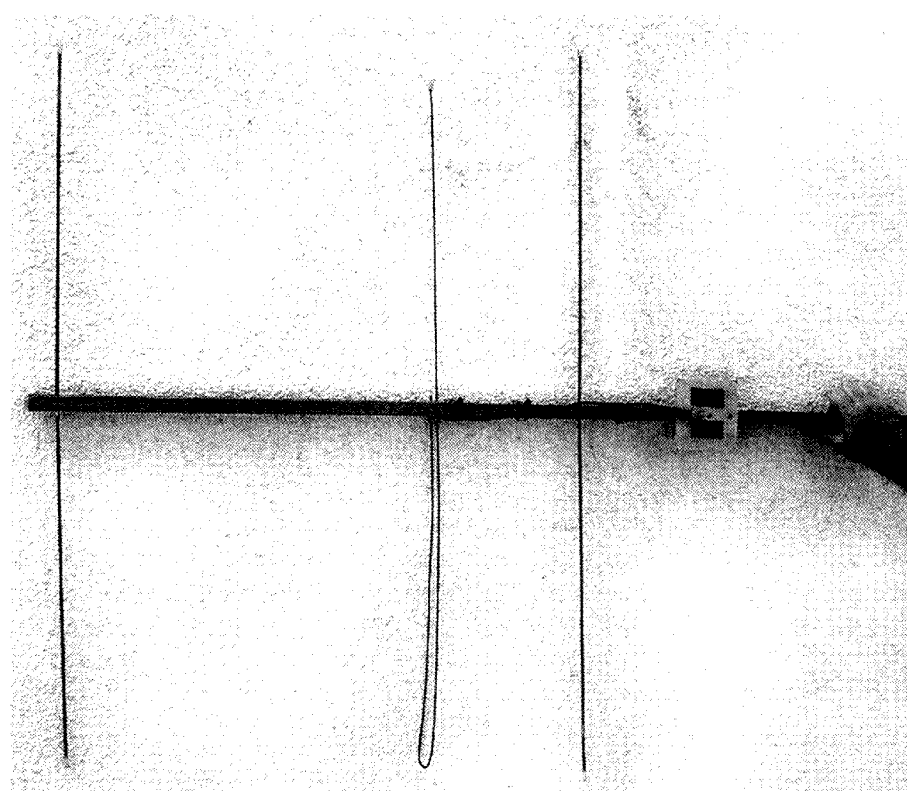


Photo 1: The copper and brass element beam.

with a reflector behind it and a director in front. This provides a simple means of achieving directivity and a good front to back ratio but these features are achieved by sacrificing the compactness that could be realized with only 2 elements, dispensing with the director. The active element could be a half wave dipole; that in theory is the preferred design.

In practice, it is not so easy to anchor the two sides of a dipole to such a slim piece of timber so that it will survive the use to which it will be put. I opted to use a J design made of the solid copper wire. The spine of the antenna is drilled with 2 holes about 2.5 cm apart vertically so that the wire is a snug fit and the overall length of the radiator, in my example, is 94 cm. To achieve this you need a

length of solid wire sufficiently long to be curved back into the J shape and run through the spine of the antenna and then say 8 cm or so out the other side. Leave that length for now as by trimming it later on, once the antenna is built, you will be able to tune it to the desired frequency of operation. Solid copper wire suitable for the task is sold by the vendors of copper and brass in lengths of about 1.5 m, which is ideal. I found that a sample of the wire was helpful to have at the hobby shop when looking for the small diameter brass tube as I was able to find tubing that the wire fitted snugly inside. This is very convenient if it becomes necessary to extend the tubing in order to make an element of the correct length. The brass and copper

solder together easily. If you prefer, it will probably be possible to find some smaller diameter brass tubing to fill the same role. I used a spacing of 20 cm from radiator to reflector and 90 cm from radiator to director. My radiator is 94 cm long when measured as one horizontal element, the reflector is 103 cm and the director 93 cm. I am providing these dimensions only as an account of what I built, as each builder may wish to adapt the design to their own preference of performance.

The coaxial cable that I used, RG 58, is soldered to the radiator close to the spine of the antenna for maximum protection from accidental damage and the cable is secured by cable ties. I have added a plywood platform with Velcro on it to attach a receiver when the antenna is being used handheld. The antenna is best tuned to the correct length to be resonant on the frequency of the fox, by using an antenna analyzer. The protruding stub of the radiator can be trimmed until the antenna is resonant on the chosen frequency. While the antenna analyzer is connected, a pair of wire cutters can be used to snip off a little at a time. If you go too far, some of the copper tube can be soldered on to extend the element and overcome the error. The tubing is easier to clip than the wire and this design allows you to be sure to get the tuning right. A more technically pure method is to make the radiator as if it were a J pole and match it by finding the point of correct impedance, and soldering the connection there.

It needs to be recognized that the actual radiation lobe from the antenna, and therefore the pattern of its sensitivity, will be determined by the size and location of the elements with respect to each other and although this can be modelled, using the antenna in the field will expose it to all manner of reflections from objects and structures so that real world performance may be different from what can be theoretically predicted. Use of this antenna has shown it to be very effective in practice. It is necessary for safety to glue some soft tips to the director and reflector. The design of the radiator makes it unnecessary to do this so that particular source of a detuning influence has been eliminated. An alternative to the brass tubing would be to make the elements all from wire. I chose to use tubing to avoid the bending

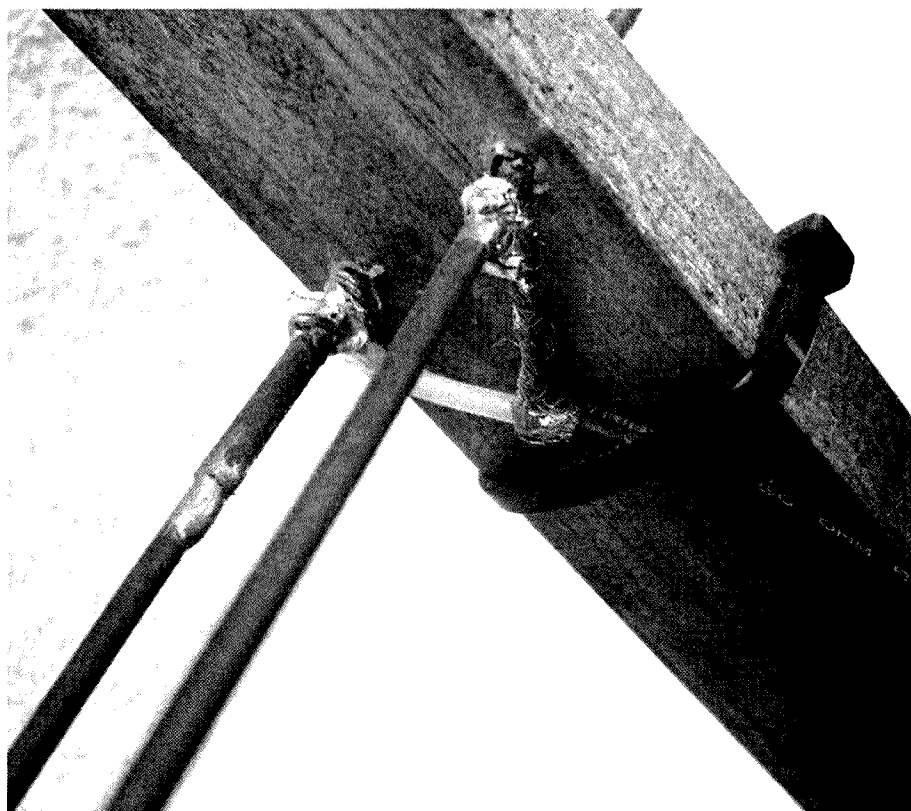


Photo 2: Attaching the coax.

which would have come with using wire. It would sag if used for the reflector and director. The folded design of the radiator stops that from occurring. The disadvantage of tubing is that it costs more than wire and, if bent, is more likely to need replacing.

In the field, this antenna is light enough for use in one hand and has good gain and directivity with a useful front to back ratio. Its disadvantage is its size, making it a little large for use in heavily wooded areas. On a vehicle, a Yagi antenna needs to be 20% of a wavelength from metal (such as a car roof) to avoid it acting as a reflector and distorting the pattern. Placing it inside the car allows it to work reasonably well as the glass is as transparent to radio as it is to visible light and the influence of the metal roof above it is less detrimental than if the metal was below it where it would be reflecting the radiation pattern, and hence the reception lobes, upwards.

Another approach to a fox hunting antenna is to build a simple 2 element design with foldable and extendable elements. To achieve this, a trip to a discount store will yield two sets of rabbit ears type television antennas for just a few dollars each. The two sides of

the collapsible elements will be soldered to some 300 Ohm ribbon cable. Remove that and replace it with some RG-58 coaxial cable. That is the radiator; it can be extended to resonant length for use, marked at that point with a marker pen and collapsed for easy transport and storage. The other set of rabbit ears has the ribbon cable removed and a piece of wire soldered across to bridge the two sides. That is our reflector. At a bit of a loss as to how to fix it to the 90 x 2 x 4 cm piece of pine that cost a whole dollar, I 'temporarily' tied it on with cord. I made the spacing 95 cm and use the element at 101 cm length and the reflector at 107 cm. With this design it is very easy to adjust the element lengths and spacing at any time. The rabbit ears fold up so if mounted facing the correct way, they can be folded back along the wooden spine for easy storage, the antenna taking only a few seconds to be brought into readiness.

This design is especially good for use in brush as the elements are positioned to fold back when bumped. They are quickly put back in place with no damage. As fox hunting may be conducted at night, I have put reflective tape, available at an auto parts shop, at several points. This

lights up brilliantly in car headlights. The wise fox hunter also wears light coloured clothing for safety. This simple antenna has very low cost and is fast and easy to make and to adjust. It is safe and easy to use and tolerant of the environmental obstacles commonly encountered.

A further step in fox hunting antennas is one that can be quickly attached to a car, in my case through a sunroof and easily detached to be used hand held. This antenna emerged from a discussion with Doug Hunter VK4ADC, at OzGear.

While admiring the well built range of Yagis that he has designed and constructed for 6 and 2 metres, as well as 70 cm, I asked what was available for fox hunting, a rather specialized application. I found confirmation that there was nothing available commercially but Doug, a vastly experienced ham, helped me to define my requirements, measured up my car's sunroof and proceeded to custom design and build an antenna with a very high front to back ratio, and

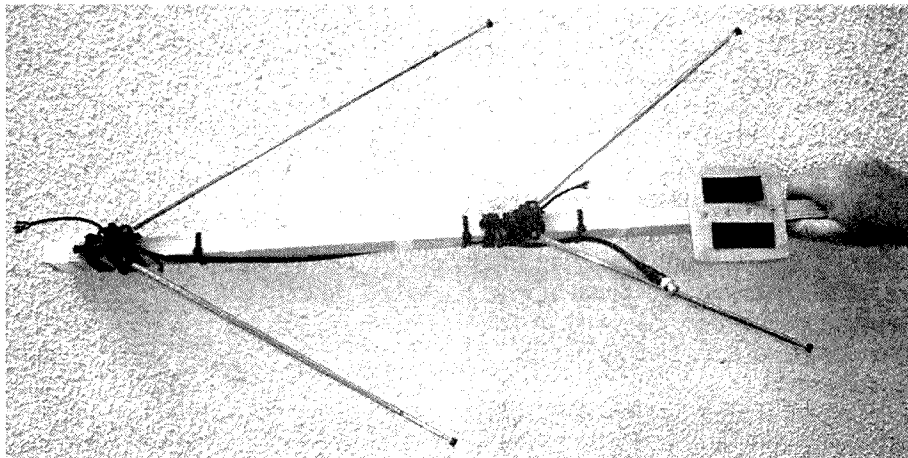


Photo 3: The simple hand held beam.

fittings that allowed it to be mounted through the sunroof without any holes needing to be drilled. It is quickly and easily unclipped to be hand held. When in place on the car, it can be rotated easily by a passenger in the rear seat who has the receiver and provides directions to the driver. This allows for

fast and easy fox finding. The finished article was very economical in view of the development that went into it and it is solidly constructed. I have found that with this on the car the simple hand held beam gets used for zeroing in on the fox when the car can go no further.

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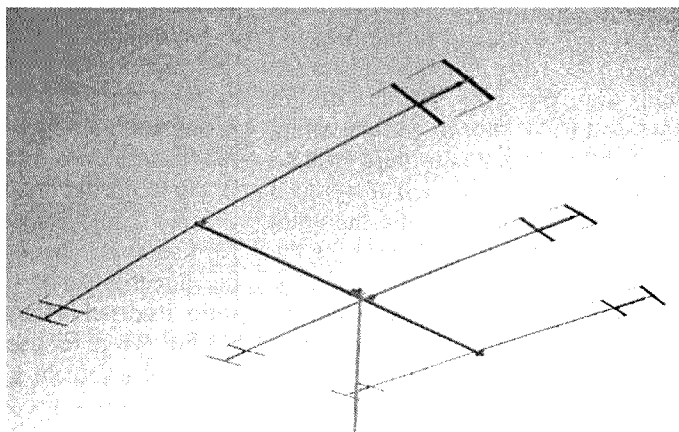
SPECIFICATIONS

FREQUENCY	14, 21, 28 MHz BAND
MAX.ELEMENT LENGTH	5520 mm
BOOM LENGTH	4.0 m
GAIN	6 / 6 / 7 dBi
FRONT TO BACK RATIO	20/ 15/ 14 dB
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A better way to encrypt messages?

Simon Rice VK8ZJZ
vk8zjz@inet.net.au

In "Are you ready for action? (part 2)", published in *Amateur Radio* for December 2005, Bill Isdale VK4TWI demonstrated the need for strong encryption keys and suggested that packet radio could be a good option for sending secure messages in times of emergency. This is certainly a good idea. However, RTTY, PSK31 or some other digital modes could also be used if no BBS were available. Bill also suggests a method of distributing encryption keys in sealed envelopes to be opened in an emergency. In this article I will look at some of the problems with conventional encryption systems, and how these problems can largely be overcome.

Problems with conventional (symmetric) encryption

Key management

How to securely distribute the keys? While distributing keys in sealed envelopes is a good idea, it still has problems. If the keys are distributed in advance how do we guarantee security? If the keys are stored in a central location they need to be distributed when needed which means the time to get up and running is increased. The need to generate and securely distribute a new key if a key is lost or stolen is also a problem. If the keys are in use, then communications must stop until everyone has the new key. Also, if the keys are distributed in advance and someone leaves the organisation, the sealed envelope needs to be recovered, or a new key generated and distributed. As you can see, key management soon becomes a problem.

Data integrity

Data integrity is also a problem with symmetric encryption systems. If the key has been unknowingly compromised there is no way to tell if the message has been altered by a third party in transit. This is known as a 'man in the middle'

Figure 1: An example of commercially available software. This package was purchased a few years ago and is still in use.

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attack. While not a real problem for direct modes like RTTY or PSK31, it is a problem for unattended modes like email or packet where the message could be altered on the server before the intended recipient downloads it.

Nonrepudiation

A definition: *In reference to digital security, nonrepudiation means to ensure that a transferred message has been sent and received by the parties claiming to have sent and received the message. Nonrepudiation is a way to guarantee that the sender of a message cannot later deny having sent the message and that the recipient cannot deny having received the message.*

So, if I have a stolen copy of the key, I could change my call sign to that of an authorised user and send a message. The recipients have no way of knowing that the message was not sent by the person I was impersonating. This could be a real problem if we are sending messages on

behalf of emergency services. All sorts of false information could be sent and acted upon before it was discovered. Who would get the blame? The person whose call sign I had faked and they would have no way of proving otherwise!

There has to be a better way!

Public Key/Private Key encryption (asymmetric encryption) uses two keys; one key to encrypt, the other to decrypt. The key used to encrypt messages is called a public key and the key used to decrypt messages is a private key. Each person has their own unique public/private key pair. As long as the private key is kept secure the public key can be given away to everyone. It is of no consequence if everyone has my public key, as it can only be used to encrypt messages to me but not decrypt them.

Key management and data integrity

Key management becomes easier as we can distribute the public keys via download from a web site or some other communication mode without having to worry about unauthorised users getting them. After all, they are public keys.

Data integrity is also taken care of, as the public keys can only be used to encrypt messages. So, if someone has my public key, and intercepts a message to me, they can't decrypt it anyway. The software available for this type of encryption also includes a key generator. While generating your public/private key pair, it uses your pass phrase and an entropy generator. This helps make the keys stronger, thus harder to break.

Nonrepudiation

A digital signature is created by running message text through a hashing algorithm. This yields a message digest. The message digest is then encrypted, using the private key of the individual who is sending the message, thereby turning it into a digital signature. The digital signature can only be decrypted by the public key of the same individual. The recipient of the message decrypts the digital signature and then recalculates the message digest. The value of this newly calculated message digest is compared to the value of the message digest found from the signature. If the two match, the

message has not been tampered with. Since the public key of the sender was used to verify the signature, the text must have been signed with the private key known only by the sender.

Conclusion

Symmetric encryption has been used successfully for hundreds of years, and is still useful today. The main problem is key management. Asymmetric or public key/private key overcomes this problem. It is also important to remember that no encryption system is unbreakable. In fact, it doesn't need to be. It only needs to be strong enough to protect the information until it has lost its value. For emergency radio traffic this may be from as little as a few hours to a few years.

Software

There are two products available, a commercial product PGP which works with Windows, and GPG which is freeware and compatible with PGP (as long as PGP is not using the idea algorithm). GPG works with both Linux and Windows. Both programs are available for download from the following sites:

GPG: <http://www.gnupg.org/>

PGP: <http://www.pgp.com/> or the older version is downloadable free from <http://www.pgpi.org/>

A Windows shell extension for GPG called GPGeE can be downloaded from <http://gpgee.excelcia.org/> - the shell extension puts GPG encryption and decryption options into Windows Explorer's right mouse menu.

Editor's note:

This article has been awaiting publication for almost two years. This is not the norm. The article has been withheld until the new LCD amendments were released, which clarify the situation regarding the passing of encrypted messages. The context of this article clearly falls inside the approved use of encryption - during the passing of messages under emergency conditions, or when training for such conditions. Readers should note that the circumstances when encryption of messages is allowed are very limited - you should check the new LCD.

ar

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for an application form.

A combined MF-HF SWR meter and RF ammeter

Drew Diamond VK3XU

With the stimulating possibility of gaining a frequency allocation near 500 kHz, thoughts naturally turn to the problem of measuring SWR in antenna work down on 600 m. Ordinary directional-coupler SWR meters, the most common type in amateur and CB work, have an unfortunate characteristic where they become less sensitive as the operating frequency is lowered.

A better pattern is the 'current transformer' method (lucidly outlined in Reference 1). The prototype model is an improved version of that offered in Reference 2. Sensitivity is quite uniform from less than 500 kHz to at least 30 MHz, and requires less than 5 W power flow for full-scale forward indication, yet may be safely used at the full legal limit (400 W PEP). Insertion loss is measured at 0.1 dB. Contrary to the opinion of some observers (who have based their findings on incorrect assumptions), inclusion of the SWR meter in-line causes no measurable harmonic generation. An in-line RF ammeter is useful in estimating

power, so I have incorporated one in this instrument. Being a peak responding meter (but indicating RMS value), quite accurate measurement of CW or PEP power may be obtained under low SWR conditions.

Circuit

The SWR configuration is based upon the instrument outlined in References 1 and 2, but with modifications to make use of locally available parts, and to provide for improved low frequency response and power handling.

See Figure 1 for the schematic. When radio frequency energy is flowing from

the Tx to Ant(enna) connectors, an electromagnetic field is established in the short length of RG-8 line that passes through the opening of toroidal current transformer T2, where the relative strength of the magnetic component produces a proportional voltage in the 13 turn secondary winding. The coax outer conductor is grounded at one end only to provide an electro-static screen between the inner line and the winding of T2. The relative strength of the field's electric component is sampled by the voltage divider comprising a 4.7 kΩ resistor and a 500 Ω trimpot.

When the Ant connector is presented

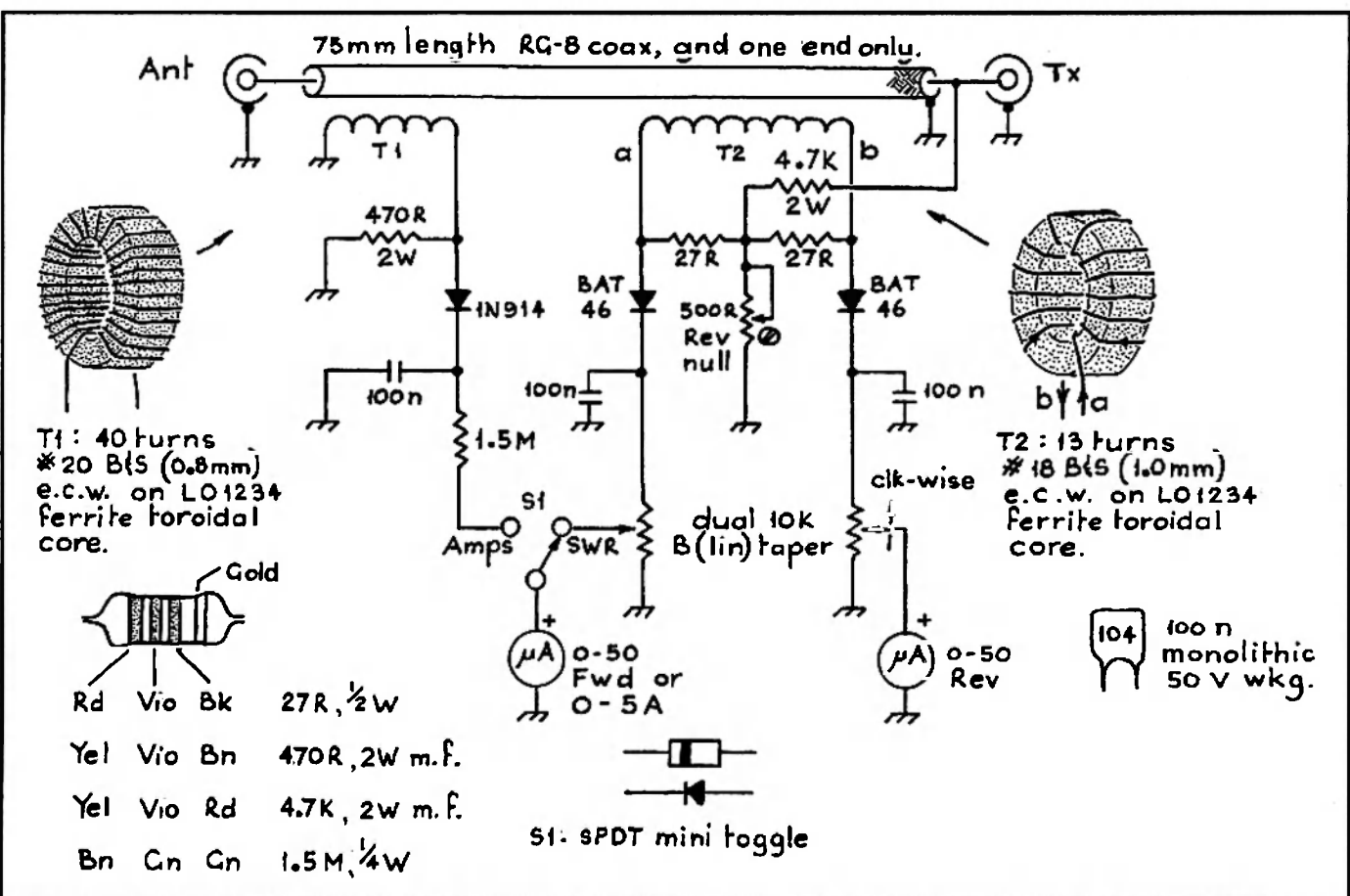


Figure 1: Schematic diagram of the combined MF-HF SWR meter and RF ammeter.

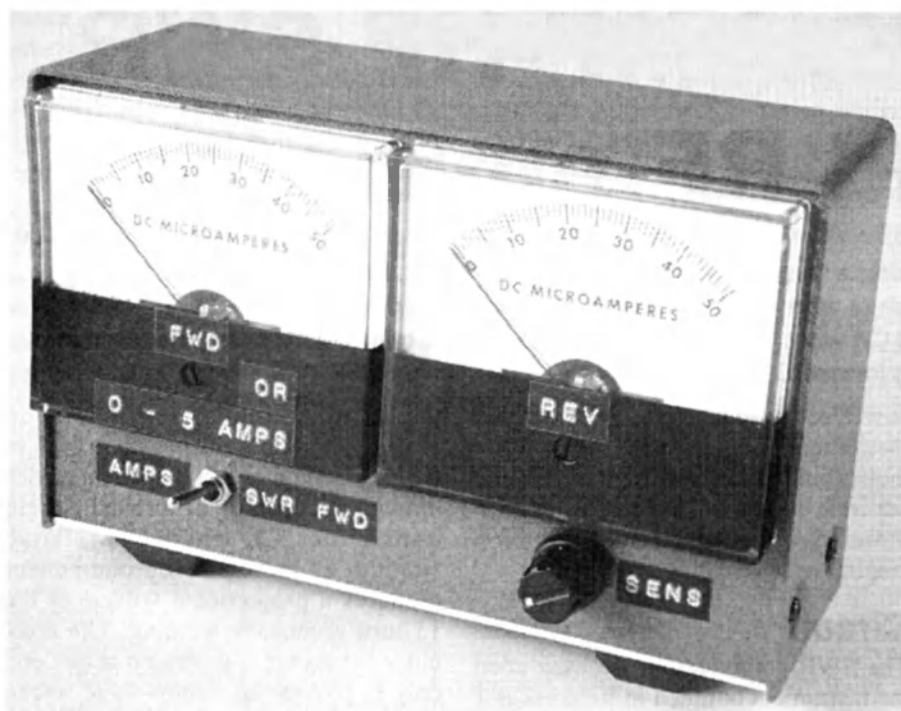


Photo 1: The combined MF-HF SWR meter and RF ammeter.

BAT-46 Schottky diodes provide best sensitivity as detector elements in this instance.

The resulting DC signals are displayed on two 50 μ A meters. One reads relative forward power, settable to FSD (full scale deflection) by use of a dual 10 k Ω pot, and the other reads relative reverse power.

For in-line RF current measurement, the line also passes through the opening of a ferrite toroidal 'current' transformer T1 (References 3 and 4) with a secondary winding of 40 turns. An advantage of the current transformer plan is that the device is thoroughly replicable, and does not need individual calibration. The existing 0 - 5 A scale of the meter registers 0 - 5 A directly (to a continuous maximum of 3 A, which represents a power flow of 450 W).

Let us take an example where a power flow of 50 W into a 50 Ω non-reactive load causes 1 A in the line. The turns ratio is 40:1, so 1/40th of 1 A will flow in the 470 Ω terminating resistor. 1/40 = 0.025 A (25 mA). The voltage established across 470 Ω will be .025 x 470 = 11.75 V RMS. A silicon signal diode will produce a voltage of about

with a non-reactive impedance of 50 Ω , the voltage established at the 'summing point' junction of the two 27 Ω resistors will add with voltage obtained from the secondary of T2 at one end of the

winding and exactly cancel (oppose) at the other. Should the terminating impedance differ from 50 Ω resistive, exact cancellation will not occur, and the degree of mismatch may be detected.

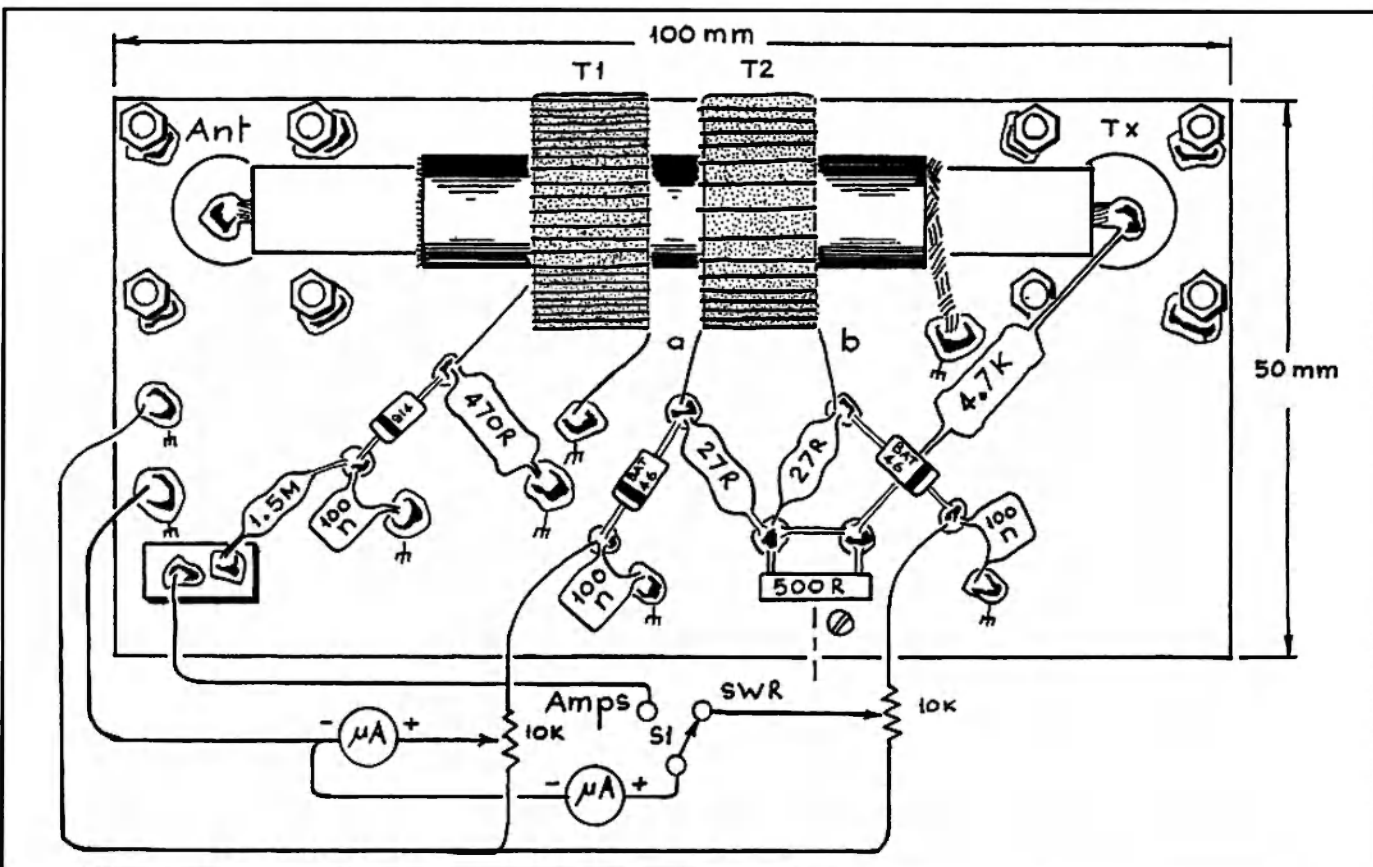


Figure 2: A suggested 'ugly/paddyboard' style layout for the SWR meter and RF ammeter.

1.3 times input RMS across the filter capacitor. $1.3 \times 11.75 = 15.275$ rounded to 15.3 V dc. For the chosen 0 - 50 μ A meter, we therefore require that 10 μ A (indicating 1 A) shall flow through the meter's coil. In practice it is found that a standard 1.5 M Ω 'multiplier' resistor is just right in this instance. If greater ammeter sensitivity is required for QRP work (e.g. 0 - 0.5 A), the multiplier resistor should be 150 k Ω (see Reference 5 for details).

Construction

The prototype model is housed in a home-made aluminium box measuring 100 x 170 x 60 mm HWD. A die-cast or sheet-metal or plastic box of similar dimensions should serve, depending on the size of your meters.

The components of the ammeter and SWR circuit are accommodated upon a rectangle of single-sided circuit board measuring 100 x 50 mm. A suggested 'ugly/paddyboard' style layout (Reference 6) is illustrated in Figure 2 and Photo 2. Component leads which carry RF must be reasonably short. Use coax connectors suited to your set-up - the popular SO-239 is suggested. Note that the RG-8 outer braid is connected to ground foil at one end only. A rectangle of insulation (example plastic from a lemonade bottle - visible in Photo 2) should be inserted under the toroids to prevent their windings from shorting to ground foil. The toroids may be fixed in position with a blob of hot-melt glue. Wiring that carries DC only to the dual 10 k Ω sens(itivity) pot, switch S1 and meters may be done with ordinary hook-up wire of appropriate length.

Operation

Inspect your soldering for quality and accuracy and confirm that the diodes and meters are wired correctly.

To check operation of the ammeter, and for setting the SWR Rev(erse) null trimpot, we require a terminating device, such as a dummy load or power meter that is known to have a very low SWR. Or, consider making a test termination (like that shown in Photo 3) as follows.

Two 100 Ω (2 W) metal film (mf) resistors are fitted into an ordinary PL-259 plug. To reduce stray lead inductance, a section of the connector's wall may be removed (with a hack-saw - the separated portion is shown

in the foreground) to allow the resistor leads to enter the centre pin with short leads. A rectangle of circuit board may be soldered to the remaining part of the connector's wall as shown. Using an appropriate length of 50 Ω coax, connect your transmitter output to the meter's Tx connector, and the 50 Ω termination to the Ant connector.

Set S1 to 'SWR' and the sensitivity pot near zero. The termination can dissipate 10 W for the short time needed to adjust the trimpot, so apply a CW or 'tune' signal at (say) 14 MHz. Adjust the sens pot so that one meter (it should be 'Fwd') reads full-scale, and the other reads some low value. Carefully adjust the trimpot so that the 'Rev' meter nulls to zero.

You can check for SWR 2.0 by connecting two 50 Ω terminations in parallel, whereupon the 'Rev' meter should indicate about 15 μ A.

To measure power flow with S1 in the 'Amps' position (power calculations are accurate only when the SWR is a low value), simply square the reading and multiply that by 50. For example, as a 14 μ A deflection = 1.4 A; from the formula:

$$P = I^2 R$$

$$\text{so } P = 1.4^2 \times 50 \text{ (98W)}$$

In SSB mode, the meter will 'integrate up' on voice peaks to very close to the RMS value of the current, so it will be found in practice that PEP may be estimated by applying the same formula and terminating impedance:

$$P = I^2 \times 50$$

For example, $2.8 \times 2.8 \times 50 = 392 \text{ W}$.

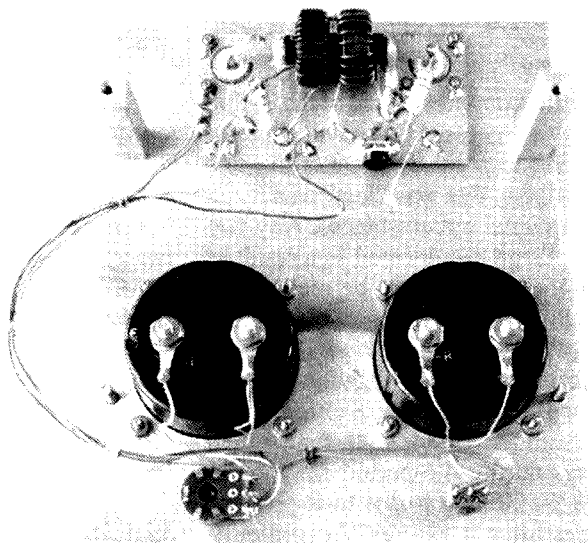


Photo 2: A suggested layout for the SWR meter and RF ammeter.

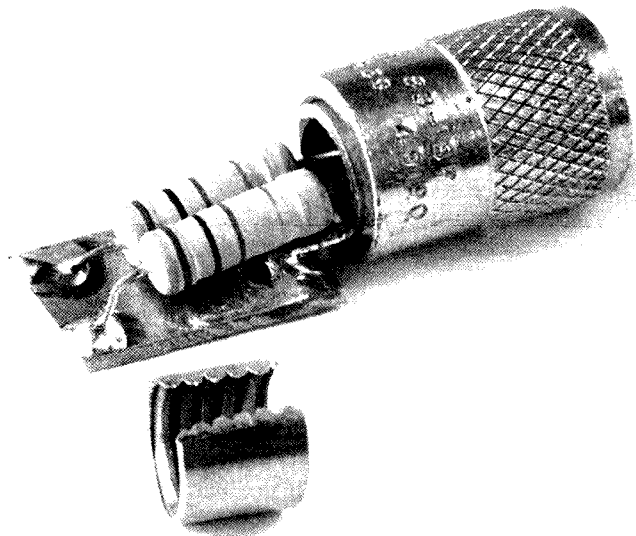


Photo 3: 50 Ω , 4 W termination load.

Parts

The ordinary electronic parts are available from the usual suppliers, including Altronics, DSE, Electronic World, Jaycar, Rockby and Semtronics. Metal-film 2 and/or 3 W resistors may be ordered from Electronic World (also usually available from suppliers to the TV service trade, example Wagner Electronic Services at www.wagner.net.au/).

BAT-46 diodes (P/N ZR-1141) and ferrite cores (LO-1234 - packet of four) are obtainable from Jaycar.

continued next page

Ballot for Two Letter Callsigns

continued from page 5

prior to the commencement of the Ballot. Under this process, ACMA will consider allocating to some applicants the two letter callsign that was "lost" as a result of exceptional circumstances. Any two letter callsign re-allocated as a result of this process will be not be included in the Ballot.

The *Radiocommunications Act 1992* (the Act) imposes the obligation to renew a licence on the licensee. Section 129 of the Act allows licensees to renew their licences during the period six months before the licence is due to expire and 60 days after it expires. Accordingly, ACMA will **only** consider applications for review that demonstrate **exceptional circumstances** as the reason for failure to renew.

For the purposes of the pre-Ballot review, exceptional circumstances are considered to be circumstance(s) that significantly affected the ability of the individual to apply for renewal of their licence. For example, serious illness or bereavement, overseas travel or other significant incidence that occurred at the time the licence was due to be renewed. It is recommended that applications for preliminary review contain documentary evidence of the exceptional circumstances involved, where appropriate. Please note that applicants who apply for preliminary review without demonstrating **exceptional** circumstances will **not** be successful.

Applications for review must be received by ACMA on or before **4 pm AEST Wednesday 30 April 2008**. Applications should be sent to the following address:

Two Letter Review
Australian Communications & Media
Authority
PO Box 13112

Law Courts
Melbourne VIC 8010

Please note that amateurs who have previously applied for "lost" callsigns will need to apply again as part of this process.

ACMA will advise every applicant of the result of their application. This advice will contain a date by which successful applicants must apply to renew or vary their licence. Failure to do so by that date will result in the callsign being included in the Ballot.

Callsigns of deceased amateurs

When ACMA is advised of the death of an amateur, that amateur's callsign is not re-allocated for at least 2 years after the date of death. During this 2 year period ACMA may allocate that callsign to a particular qualified person at the request of the personal representative or the next of kin of the deceased amateur. Unfortunately, it often happens that neither ACMA nor the WIA is advised of the death of an amateur and so the licence is simply allowed to lapse.

Friends, the personal representative or next of kin of any amateur who died on or after 1 March 2006 are urged to ensure that either the WIA or ACMA is aware of the death of that person. This may be done by mail, facsimile, email, or telephone to the WIA office. Appropriate evidence may be requested, such as a copy of a published death notice.

Any two letter callsign belonging to an amateur whose death occurred on or after 1 March 2006, where ACMA or the WIA is aware of the death, will be excluded from the Ballot. Any callsign belonging to an amateur whose death occurred on or after 1 March 2006, where ACMA or the WIA are advised of the death before

4 pm AEST Wednesday 30 April 2008, will also be excluded from the Ballot.

These arrangements will not restrict the right of the personal representative or next of kin of a deceased amateur requesting the allocation of the deceased amateur's callsign to a particular person who is qualified to hold the callsign.

Any two letter callsigns not allocated at the request of the personal representative or next of kin of a deceased amateur will become available in due course for re-allocation outside the Ballot process.

Persons eligible to apply

Any person who:

- 1 holds, or who is qualified to hold, an amateur licence (amateur advanced station); and
- 2 resides permanently in Australia; and
- 3 does not already hold a two letter callsign in any state or territory in Australia; and
- 4 is not a person who is, or in the past two years has been, or is currently elected to be or is appointed to be a director, officer or employee of the WIA or the spouse or partner of any such a person

is eligible to participate in the Ballot for the state or territory in which the person resides.

List of available callsigns

ACMA will provide the WIA with a list of available two letter callsigns by state and territory. At this stage, it is expected that the WIA will publish that list on its website on or after 10 June 2008.

A combined MF-HF SWR meter and RF ammeter

continued from previous page

References and Further Reading

1. *HF Antenna Collection*; E David, G4LQI (ed), RSGB, pp 211 - 213.
2. "A Twin-meter SWR Bridge"; *Amateur Radio*, May 1999.
3. *Electrical Technology*; Edward Hughes, 4th edition pp 419, 420, Published by Longman Group.
4. "Current Transformers and RF Measurement"; Dennis Walker G3OLM, *Rad Com*, Nov 1995, p 70.

5. "RF ammeters for high-frequency measurements"; *Amateur Radio*, Nov 2004.
6. "'Paddyboard' circuit construction - revised"; *Amateur Radio*, May 2005.

Photos: Karlen Dockrey
ar

Ballot invitation

At this stage, it is expected that the WIA will prepare a general notice calling for applications from amateurs wishing to participate in the Ballot in the June 2008 issue of the WIA's magazine *Amateur Radio*. The Notice will invite applications from eligible amateurs wishing to participate in the Ballot in the state or territory of their residence. The notice will also be placed on the WIA website and will also be publicised on at least 3 occasions during WIA broadcasts.

This notice will include an application form. The application form will require the applicant to:

- provide their first and second preference from the list of available callsigns in their state or territory of residence;
- state that no other 2 letter callsign is held; and
- state that the applicant agrees to be bound by the rules of the Ballot.

All applications will require payment of a fee (to be determined). In accordance with the Principles specified by ACMA, this fee will be reasonably related to the cost of holding the Ballot.

Applications for the Ballot

At this stage, the expected closing date for receipt of applications for the Ballot will be **4 pm AEST Monday 30 June 2008**. Applications should be sent to the WIA.

An application for participation in the Ballot delivered by hand to the WIA office must be delivered by no later than 4 pm EST on the closing date. The WIA will treat mail received by postal delivery or by clearance from the Post Office box on the following day as being received in time. The WIA is not obliged to clear the box more than once on that day.

All applications for the Ballot must be accompanied by a cheque or money order for the Fee or a credit card authority in respect of the Fee.

Any application for participation that is not delivered by the time specified or is incomplete or is not accompanied by a cheque or credit card authority for the Fee will be disregarded.

Processing of applications

All complete and eligible applications will be recorded on a secure electronic database after the closing date. A ballot number will be assigned to each application in the order in which they are received on a state or territory-by-state or territory basis. For example, the first application received from New South Wales will be attributed the Ballot number 2001. Similarly, the second application received from Victoria will be attributed the Ballot number 3002.

Under this process, the identity of the applicant will not be known before the Ballot. The Ballot number will be used to link the details recorded on the database for identifying callsign preferences.

Ballot methodology

The Ballot will be conducted on a day and at a place to be announced. At this stage, it is expected that the Ballot will be conducted no later than Friday 11 July 2008.

An application number will be drawn out of a barrel in sequence until all available callsigns have been allocated or no further applications remain. The Ballot for all states and territories involved in the process will be conducted on the same day.

The WIA will ensure the presence of at least two independent witnesses at the Ballot. An ACMA representative may also be present on the day.

As each successful applicant is identified, the eligibility of the applicant will be verified against the ACMA database. If the callsign is available, the first preference of that applicant will be allocated to that applicant. If the first preference of that applicant is not available, the second preference of that applicant will be allocated to that applicant. If the second preference of that applicant is not available, the application will be held until all other applicant preferences have been exhausted, at which point the remaining callsigns, in alphabetical order, will be allocated to the applicants whose preferences could not be met in the order in which they were originally drawn.

ACMA will be provided with a list of all successful applicants and the callsign recommended to be allocated to each applicant.

ACMA licence variation process

The WIA will advise all eligible applicants of the Ballot outcome within three working days after the Ballot day. Applicants will be advised of the Ballot outcome whether or not they are successful.

Successful applicants will be provided with an application for variation of an apparatus licence and will be advised to complete the form and return it to the WIA or ACMA within 14 days, accompanied by a cheque for \$41 made payable to "ACMA" or a credit card authority for \$41 in favour of the WIA or ACMA.

The WIA will forward all applications for variation of an apparatus licence received by the WIA to ACMA.

At this stage, it is expected that the Ballot process will be complete by **Wednesday 20 August 2008**. Any two letter callsigns not the subject of an application for the variation of an apparatus licence received by ACMA by this date will be returned to the list of available callsigns and thereafter will be allocated to applicants for licences or applicants for variations of licences on a basis to be determined, having regard to the number of callsigns involved and the number of people seeking the allocation of such callsigns.

Summary of proposed milestones and timeframes

Step	Date
Comment closes on Ballot process	30 April 2008
Applications close for pre-Ballot review	30 April 2008
Last date for advice of exclusion of callsign due to death	30 April 2008
WIA publish process for allocating callsigns <u>including final dates</u>	early May 2008
ACMA advises applicants result of pre-Ballot review	end May 2008
List of available callsigns released	mid June 2008
Ballot closes	end June 2008
Ballot conducted	mid July 2008
Applicants advised of ballot outcome	mid July 2008
Ballot process completed	end of August 2008

A novel antenna direction indicator

Lou De Stefano VK3AQZ

I recently constructed a home-made antenna rotator using the now commonly available scooter motor. Having completed the mechanical design, I proceeded to plan the usual antenna position electronics. The standard approach is to use a ten-turn pot or similar, driven via a pulley, gear, or belt from the tubular mast, or maybe some convenient gear inside the rotator. Other approaches include optical disks, reed relays and magnets, or good old-fashioned oak switches with the end stops removed.

My first attempt was the most complex method I could devise. My design used several embedded Pentium processors, multi-binary triple-stacked Gray code optical discs, and a small broadband wireless network to send the encoded position data back to the radio shack for display. A GPRS was also incorporated in case I needed to use it from the car. A small diesel generator was added at the base of the tower to power all these electronics.

So there it was – all ready to build. It looked good on paper and was so complex that it could also, if one desired, be used as the guidance system in a nuclear missile, or on the Mars rover. I was describing this marvellous piece of electronics to my son one day, explaining what it was for, and he replied – why not just use a webcam looking along the antenna mast? No – too easy! But, after mulling this idea over for a few days, the whole thing actually looked like it

was worth a closer look. Besides, I had a suitable camera and it did not sound too hard to throw together.

The idea is simple enough. You obtain a low-cost colour or monochrome TV camera and point it at some compass-like scale fixed around the mast tube, or mount it on the end of your beam and use the surrounding landmarks to indicate which way the beam is pointing. There are other possibilities but I chose to mount the camera at the base of the tower looking at a section of mast. In my setup,

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the rotator is installed near the base of a small lattice tower and drives a vertical length of tubing which has the beam mounted at the top. All the mechanics are at ground level and so easy to service. Placing the camera adjacent to the rotator makes it easy to mount, reduces the cable runs, and avoids exposure to high weather conditions.

The camera that I happened to have available can be remotely controlled by either a serial data cable or infra-red controller. It has remote zoom, auto focus, and pan/tilt facilities, and is enclosed in a plastic weatherproof casing. The camera is mounted about level with the rotator, using a suitable bracket attached to the tower frame (see Photo 1). The infra-red remote control is provided using an extender kit. The camera operates from a 12 volt DC supply and is fed by a light-duty figure-8 cable. The compass scale is painted on a small, white, powder-coated pipe clamp, which is attached to the mast tube in front of the camera. The video from the camera is fed back to the shack via a length of 75 ohm coax and is displayed on a colour TV monitor (see Photo 2).

There are a number of alternatives available. You could use a low-cost security camera and monitor. Alternatively, you may have an old camcorder lying around. These tend to have reasonably good lenses with zoom and auto-focus. You do not really need the zoom, auto-focus, or pan/tilt. However you could amuse yourself by panning onto a tower bolt, a piece of grass, or just simply zooming around! Instead of using video cable to send the image back to the shack, an 'A/V sender' could be used. Some models can also send infra red commands back to the camera.

At computer swap meets I have seen small battery-operated wireless cameras which would probably also work. One of these could be powered by a small rechargeable battery which is topped up by a solar panel during daylight. LEDs, or a small lamp, could be used to illuminate the scale at night.

One thing you may need to consider is RF interference into the camera from your transmitters. I do not have any problems with VHF transmissions, but the HF linear does produce some visible bars on the display although the compass points are still legible.



Photo 1: Camera aimed at compass scale on mast.

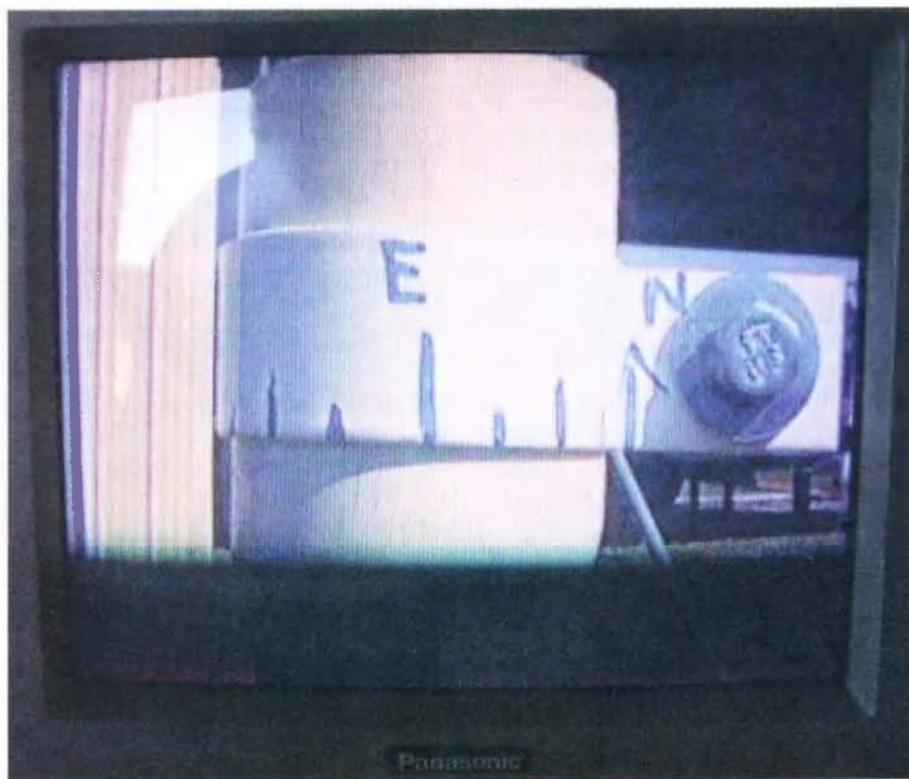


Photo 2: Beam direction display in shack.

Generally however, the antenna is not turning during your own transmissions, so this is not a real problem. Another consideration is condensation on the camera lens. A small fan and heater can be installed in the weatherproof container to prevent this. I use a small PC fan blowing over a 10 watt resistor.

Although I have not tried it, mounting the camera on the boom and looking down its length would give an interesting

view of the surroundings as the beam rotates. You could also get a fair idea of how your beam elements are standing up to the wind – something worth considering!

In conclusion, the idea of using a video camera as a position indicator has turned out to be easy to implement and works very well – thanks to my son Vincent for the suggestion!

ar

Equipment review

The Yaesu VX-3R

Ron Fisher VK3OM

A midget marvel with amazing facilities

The VX-3R follows on from the earlier VX-1 and VX-2. I have had a VX-1 in my collection for some years, so it was interesting to compare the two. I have never used a VX-2 so I cannot comment on the performance of this compared to the other two. I have always considered the VX-1 to be something of a toy with its very low power output. However it is handy to slip into a pocket and use as a receiver and even get into a repeater from a good location when out and about. The VX-3R output, 1.5 watts on two metres and one watt on 70cm, is three times that of the VX-1. This means putting a reasonable signal into a repeater that is just not accessible with the lower power from the old model.

One of the excellent features of both of

these transceivers is the much better than average antenna. Perhaps these short whips all look the same, but in operation there are big differences. I have a couple of Chinese hand-helds where the whip antennas are down at least 10 dB compared to the VX transceivers, even though they are about the same size and even look similar. Audio quality on both transmit and receive is excellent. Reports on transmit indicated the response to be well balanced, with no audible distortion and no background noise. Receive audio, considering the size of the speaker, was also very well balanced and intelligible but audio power output as expected was fairly low with only 50 mW available.

In many ways the VX-3R is similar to the VX-6 reviewed in the December

2006 issue of AR. However the overall size is about 2/3rds of its earlier brother. The overall size is just 47 x 81 x 23 mm and it weighs in at 130 g, barely a hand full. Lets look at the amazing receive facilities of this midget marvel. Starting at the low frequency end, AM broadcast band reception has been 'improved' with the inclusion of a ferrite bar antenna. Unfortunately it does not seem to work very well. Even on the stronger local stations there is quite a bit of background hiss. It is certainly inferior to the old VX-1 and that is not all that good. Going higher, and taking a jump to the FM broadcast band, it is a different story. The sensitivity is good and using a pair of high quality headphones the stereo audio quality is very good and I was able to pick many low power stations with very good, listenable signals.

Short wave coverage is from 1.8 to 30 MHz, and this is for AM reception only. First thing, you will need a longer antenna than the small supplied whip. I tried a quarter wave two metre whip and the difference was quite startling. I was even able to hear a few of the stronger 160 metre AM net stations. Listening around the preset shortwave broadcast frequencies in the early evening, dozens of stations were heard at good listening levels. Of course you might hear much with a longer antenna but there is a trade off with the increased possibility of front end overload.

On the aircraft band, sensitivity with the supplied antenna was about equal to a small air-band scanner that I have; again a longer antenna would be helpful. However I am sure you will be very happy with results if you are not too far from your local airport.

The six metre band is included but again there is only AM or FM available so it might be difficult to check for DX openings on SSB, but I guess better than nothing.

There is full coverage of both the VHF

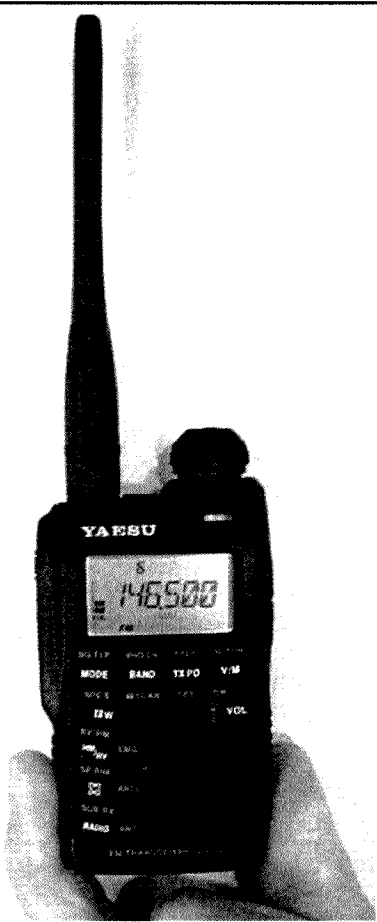
The Yaesu VX-3R

The Yaesu VX-3R is a micro size dual band VHF/UHF transceiver with a wide band receiver which covers from 500 kHz through to 999 MHz.

The transmit side covers both the two metre and seventy centimetre amateur bands with a power output of 1.5 watts on two and one watt on seventy.

Power is supplied from a Lithium-ion battery which is rated at 3.7 volts with a capacity of 1000 mAh.

Transmit is narrow FM (+/- 5 kHz) but receive modes can be selected from AM, narrow FM or wide FM with stereo reception on the FM broadcast band through optional headphones.



Web beats SWL

A quarter of the year has already flown by and conditions do not seem to be improving as quickly as we might have expected.

The propagation experts predict that it will be a long haul before conditions will pick up. However it is apparent that HF is certainly different from 12 months ago. International broadcasters are pruning shortwave from their output and opting to place their offering on the web as either podcasts or streaming audio. Both of these options only permit less than a hundred to simultaneously listen in compared to the tens of thousands who can readily access radio.

In mid February, the BBC World Service decided to bring forward its decision to close all remaining European service shortwave outlets. Naturally BBC external service programming is available either via the web or on AM/FM domestic outlets across Europe. This means that long-established channels such as 9410 and 12095 kHz were cut back. I believe that the latter channel is still employed to target North Africa and the Middle East.

Although BBC programming has

been reduced over shortwave, other broadcasters and program makers have seized the opportunity to utilise the spare capacity of the senders in Britain. Deutsche Welle from Bonn makes extensive use of these senders. This is a reversal of roles from when the BBC broadcast to occupied Europe, gaining an enviable reputation during the Second World War, for the Germans now to broadcast back to Europe from Britain, after ditching their own senders.

Kol Israel also decided to terminate shortwave programming as from April 1st and stream programming on the web. It is unclear at present if this is only confined to external service programming. Hebrew programs from the domestic services have been relayed for some time. As I have previously stated, we have heard these announcements before, only to see them resume at the last minute.

Finland has reappeared on shortwave from the Pori site with relays of the

Overcomer Ministry with Brother Stair. I believe they have been using the very crowded 49 metre band allocation. Incidentally, several European administrations have been moving broadcasting stations from transmitting above 6200 kHz because it is causing severe interference to the maritime allocations. Israel, North Korea, Moldova and so-called hobby pirates are the only remaining senders encroaching into the exclusive marine allocations. If Israel indeed does cease shortwave broadcasting, it means that there will be one less. The North Koreans have been engaged in a cat and mouse game with the South Koreans and have been logged within other exclusive allocations. They may be harder to shift.

Well that is all for this month until next time.

de VK7RH

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The Yaesu VX-3R

continued from previous page

and UHF TV channels. No, you cannot watch the vision on the screen but the sound comes in loud and clear so at least you can keep up with what is happening to your favourite soapy.

Of course you can put all your favourite frequencies into memory, and there are plenty of them. Would 1286 be enough? These come in 24 banks so it's possible to have a bank for every segment of the very wide frequency coverage.

Some of these memories are taken up with pre programmed frequencies for VHF marine and short wave broadcast stations, but I am sure you will find plenty left over. However, the main reason for buying a VX-3R is to use it as a dual band transceiver. Compared with my old VX-1, it is no longer a 'toy,

It has become a very usable piece of equipment.

The VX-3R retails for around \$330. There is a full range of options available, some of which look very interesting. One of these is known as 'WIRES'. This appears to be a system similar to IRLP or EchoLink. I hope to have more information on this for you in the near future.

I would like to thank the gang at Vertex Standard for the loan of the VX-3R. If you are in the market for a miniature dual band hand held, I can recommend the VX-3R. It certainly continues the high reputation that Yaesu has with this type of equipment.

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WIA News

continued from page 4

This second edition has been intentionally delayed, waiting regulatory changes to the Amateur Radio Licence Conditions Determination, (the LCD), so that the regulations and assessment syllabus included in the Manual will be up-to-date.

The Manual also now contains; a description of single sideband by introducing the concepts of time domain and frequency domain; a guide to which frequency bands to use at different times of the day and in different seasons; an explanation of antenna radiation patterns and which type of antenna is best for local or DX contacts; how to wind balun transformers; emergency communications and how to prepare for the unexpected; and several more antennas to build.

The WIA will notify members and trainers as soon as it is available.

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Fuses

or how to get a smaller bang for your buck!

Clive Wallis VK6CSW

A device used to detonate an explosive charge is called a fuse. In our hobby its namesake is a device used to protect electrical circuits. The wrong choice of electrical fuse may lead to the "detonation" of the device it is supposed to protect! Electrical fuse technology is complex; fuse manufacturers' manuals are substantial documents. This article sets out a few thoughts on fuses and why the odd bit of wire will not do.

The electrical fuse is an expendable item that eliminates overload of a circuit. Use one with the wrong characteristics and you could find that the circuit is eliminated to save the fuse! I make no claim to be an authority on the subject but what follows has been gleaned from several reliable sources including the Standard Handbook for Electrical Engineers, 1987.

The role of the fuse is two-fold: it should protect both the device being powered and the source of that power. The major electrical considerations in the choice of a fuse are source voltage and impedance, current required by the load, maximum current to be interrupted, and time needed to interrupt and clear the fault without equipment damage.

Fuses come in many shapes and sizes such as re-wireable, bolt-in, cartridge, glass or ceramic tube, for example.

The re-wireable type is found in older household AC mains fuse-boxes; here the likely option is to replace a blown fuse with the correct wire element, (although you can now obtain a re-settable plug-in circuit breaker).

Bolt-in, large cartridge and tube types are generally confined to industrial applications and may be filled with air, sand, or a special filler such as boric acid or bone-fibre, etc. Such a sealed "company-fuse" (probably rated at 60 to 80 amps on a single phase inlet) can be found lurking near your electricity meter, but you interfere with it at your peril! Here we will concentrate mainly on the small glass or ceramic clip-in types found in amateur and domestic appliances, e.g., the 3AG (6.3 x 32mm), M205 (5 x 20mm), and similar.

What causes a fuse to blow? Over-voltage, over-current, or overheating?

Since the fuse melts, the last choice is clearly the correct one and occurs because the fuse element has a small but finite resistance. When too large a current flows, this resistance multiplied by the square of the current creates sufficient local heat to melt the fuse and interrupt the power. The essential requirement is that the fuse melts before the circuit elements do! The manner in which the melting occurs is important.

Except for re-wireable fuses which use tinned copper wire, fuse elements are generally silver strip or wire shaped to give the desired fusing characteristics.

Use a fuse with the wrong characteristics and you could find that the circuit is eliminated to save the fuse!

As the element melts an electric arc is formed and current continues to flow until this arc is extinguished, hence the "interruption time" is the sum of the melting and arcing times and is inversely proportional to the current.

Where sand or another filler is used its purpose is to absorb the heat of the post-fusing arc thereby speedily extinguishing this arc in a controlled fashion.

A blackened glass fuse cartridge indicates that ionisation of the air within the cartridge has occurred as a result of a prolonged and very hot arc. During the period of arcing and ionisation, current continues to flow and the fuse fails to interrupt the fault current. Such blackening should not occur if the fuse is of the correct type.

Fuses can carry their rated current continuously; fusing or melting starts at around twice the rated current. Current carrying capacity is generally specified at 25 deg C; if the ambient temperature is higher then the fuse should be derated. To prevent nuisance blowing yet still have adequate protection, a fuse rated at 125% of the normal current is often specified.

Fuses are rated by current, voltage, and operating time or "delay". Current ratings range from a few milliamps to many thousands of amps, while voltage ratings go from 32 to 600 for the common 3AG and similar types - and hundreds of thousands for special industrial types.

Voltage classification depends upon the voltage present across the fuse after interruption. Always ensure that a mains fuse is replaced by a correctly rated one, not a 32 volt type. Most high-grade manufacturers stamp the voltage, current, and delay ratings on one metal end-cap though others use a code.

To further confuse the issue there are three main standards used for small cartridge fuses, the American UL (Underwriters' Laboratory) plus the IEC and CEE standards found mainly in Europe and Asia. Because the standards vary, it is wise to always use a fuse identical to the original if at all possible.

Fuses must be able to safely interrupt the highest fault current that could be present at the rated voltage. The impedance of a standard 240 volt AC outlet may be as low as 0.1 ohm, in which case a dead short across it could result in an instantaneous fault current flow of 3400 amps - which can cause a very expensive bang. (Nominal mains voltage is 240 AC, hence peak voltage is $240 \times 1.414 = 340$; 340 V across 0.1 ohm = 3400 amps).

Fuses come in two basic formats, the HRC (high rupture capacity) and LBC (low breaking capacity), and the 3AG type is no exception. Some HRC versions can clear a fault current of up to 10,000 amps whereas the LBC is rated at 10 times the nominal fusing current (exact specifications vary with the manufacturing standard). That is, a 2 amp LBC type will safely interrupt no more than 20 amps. Superficially, the 3AG HRC and LBC fuses look much

the same, but clearly the HRC type MUST be used where mains inputs are concerned.

Fusing speed is important and depends upon the nature of the required protection. Transistors and thyristors (three legged fuses!!) blow very quickly and require that the protective fuse blow even faster. Quick-blow types can act within half a cycle at mains frequency.

On the other hand, motors, transformers, and capacitor input circuits pass heavy initial (inrush) currents and require slow-blow fuse protection. The starting current of an induction motor may be three to eight times the rated running current. Repeated starts should not melt the fuse but the same fuse must give protection against internal shorts or over-current due to seizure or stalling.

Placing a blob of solder in the centre of the silver fuse element increases the thermal capacity of the element sufficiently to withstand brief starting overloads, but a sustained overload melts the solder and dissolves the silver.

One type of quick-blow fuse uses a specially shaped element designed to speed fusing by concentrating the heat in a small area. Some fuse elements have a coil-spring winding around part of the element; these are slow-blow types.

Different applications require different fuse characteristics. A perusal of manufacturers' charts reveals a surprising variety of fuses available, many of which look outwardly similar.

In general terms, the fastest acting fuse is type FF (super quick) suited to thyristor circuits, while the standard quick acting fuse is rated F (normal blow). Type M has a medium fusing time and can handle small current surges, while type T is the standard slow-blow fuse. Type TT is a very slow acting fuse.

Where no letter prefix is shown, such as 2A/250V the fuse may be assumed to be a normal quick-acting type. Where no voltage rating is shown, a fuse purchased locally may be assumed to have a 250V rating. As mentioned above, some fuses without a marked speed rating have a small spring or a solder blob on the wire; these are slow-blow types.

Fuse-holders should also be rated according to their design purpose, and always make sure that the contacts hold the fuse tightly. A little unwanted resistance here plus a high current

flow can lead to high temperatures and ultimate mechanical failure of the clip.

As a fuse has some resistance, a current flow generates heat. The fuse element used in glass fuses usually has a positive temperature coefficient which may make de-rating necessary to allow for the temperature rise. It also means that a fuse can suffer from thermal fatigue and may simply die of old age even though no equipment fault exists.

Similarly, fuses have an "amps-squared-seconds" rating which is a measure of how much energy the fuse can pass and thus how much stress may be placed on the protected circuit before the fuse ruptures.

As well as fuses designed to protect against excessive current, there is also the thermal fuse to protect against excessive heat.

These fuses are found in fan-heaters, hair-dryers, toasters, and so on, and are designed to fail at a pre-set temperature. Replacement must always be by one of identical rating and it must also be positioned correctly to sense the heat. Just like glass fuses, they all look very much alike but have widely different characteristics. An improperly rated thermal fuse may cause a serious fire.

Larger mains transformers often have a thermal fuse incorporated within the primary winding to protect against excessive temperature rise due to prolonged overload. Usually

there is no economic way to replace this fusible link.

Quality fuses manufactured to UL, IEC, or CEE standards are required to show rated voltage, rated current, time delay characteristic, and the manufacturer's name or trade-mark. That being so, one can only wonder at the quality of many fuses sold at local outlets.

As mentioned at the beginning, this article is not intended to be a comprehensive treatise on fuses. If it makes you think twice about what sort of fuse you should use next time the need arises, then it has achieved its aim. Where possible, be guided by the equipment manufacturer's advice - he probably had good reason for choosing a particular type of fuse, and a fracto-buck spent on the right fuse could save mega-bucks on repair bills!

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Didn't make it to Parkes?

Don't miss Broken Hill!

WIA AGM

23 to 25 May 2008

The weekend offers a wide range of family activities for all interests:

Friday 23rd

6:30 pm - Evening meal at the Southern Cross Hotel,
8:00 pm - The History of Broken Hill - A Presentation by Peter Black at the Southern Cross Hotel

Saturday 24th

8:00 am - Informal Breakfast at the Southern Cross Hotel
9:00 - 12:00 School of The Air - A special opening and tour for WIA weekend participants.
9:00 - 12:00 Radio station 2BH - A special presentation for WIA weekend participants.
9:00 - 12:00 Visit the many local art galleries, museums and other tourist attractions.
12:30 pm - BBQ lunch at the Lions Rotary park.
2:00 pm - WIA AGM and Open Forum at the Broken Hill Entertainment Centre.
6:30 pm - WIA Annual Dinner at the Broken Hill Entertainment Centre
8:30 pm - Guest speaker.

Sunday 25th

8:00 am - Informal Breakfast at the Southern Cross Hotel
9:00 - 12:00 Guided technical tours of the RFDS base including a presentation on RFDS radio by Gary Oldman RFDS Telecommunications & IT manager.
9:00 - 12:00 Visit the many local art galleries, museums and other tourist attractions.
12:30 Lunch and weekend wrap up at the RFDS base, Broken Hill Airport.

Broken Hill is...

- a mining town with some of the richest deposits of silver lead and zinc the world has ever seen.
- a working town with mining being its major economic driver in conjunction with agriculture, art and tourism.
- a popular tourist destination and home to many art galleries and famous artists.
- has a history in radio, not only as a major base for the Royal Flying Doctor Service, which initially used Alf Trager's famous pedal powered outback radios.
- home of the School of The Air which also used the network of Trager's radios to provide education to students in remote outback locations.

AGM Registration:

WIA National Office 03 9528 5962

Attractions and accommodation:

www.visitbrokenhill.com.au

Silent key

Ken Matchett, VK3TL (SK): Marathon Man

12 December 1921 - 10 March 2008

Ken was well known in the Amateur Radio community as the Curator of the WIA QSL Card Collection.

The collection under Ken's care has become one of the largest in the world containing hundreds of thousands of cards. International contacts established by Ken enabled duplicate cards in the various overseas collections to be exchanged between Ken and the other curators to enhance each of the individual collections. Ken gave many, many hours of his time in collecting, sorting, cataloguing and filing the WIA QSL card collection of which he was justifiably proud.

During World War II, Ken was in the Signals Corp and this initiated his life long love affair with communications. He was a member of the WIA, the Old Timers Radio Club and the EMDRC, and was a willing guest speaker at many Clubs when asked to give an insight into his beloved QSL collection.

Ken's other main interest in later life was track and field, and in particular, Ultra Marathon Running. The retired school teacher and university lecturer became interested in marathon running at age 57. Subsequently, his achievements are quite daunting and during his career he held many World and Australian Records. He ran in over 112 marathons qualifying as a member of the exclusive 100 Marathons Club, otherwise known as the One in a Million Club as only 24 Australians have run more than 100 marathons. Ken's marathon running took him all over the globe to compete in such diverse localities as London, Vienna, Copenhagen, Antwerp, Rome, New York, Boston, Honolulu, Suva and Tahiti. At one point he held six world records in the 70 -74 age group for distance running.

In April 2007 Ken was still ranked second in the World for M 85-89 10-kilometre run after posting 1:00:52 in Hobart - less than 3 minutes outside the world record.

During the Easter weekend of 2004, 82 year old Ken took part in eight athletic events over four days, including

a 10 kilometre run, an eight kilometre cross-country walk and a two kilometre steeple chase. He also won five gold, two silver and one bronze medals in various distance events at the Australian Masters Athletics Championships, and broke the Victorian record in the 10 kilometre run for his age group. Until ill health intervened, Ken ran into the city almost every day if the weather permitted from Croydon Station to Flinders Street Station where he hopped on the train for the trip back to Croydon. The Australian Ultra Runners Association Log of Australian Records reads in part as follows:

Men's Track - 6th September 2006

12 hours M80 Ken Matchett VIC 76.622 km Coburg VIC 22/04/2006

50 miles M80 Ken Matchett 12:39:05 Coburg VIC 22/04/2006

Men's Track - 17th April 2006

100 miles M80 Ken Matchett VIC 47:26:48 Colac VIC 22/11/2005

48 hours M80 Ken Matchett VIC 165.115 km Colac VIC 22/11/2005

24 hours M80 Ken Matchett VIC 130.517 km Coburg VIC 18/04/2004

100 km M80 Ken Matchett VIC 17:09:07 Coburg VIC 18/04/2004

Age certainly did not weary this Veteran.

Carl Schlink VK3EMF and Peter McDonald VK3DI

The passing of Ken Matchett

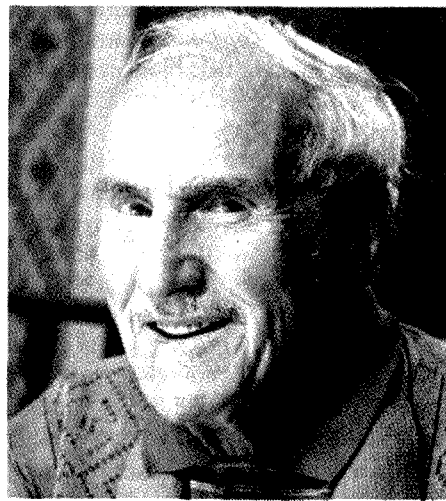
VK3TL on 10 March is a sad loss.

Ken will be equally known for his excellence in preserving radio history through QSL cards and achievements as a track and field athlete.

He was the honorary curator of the now WIA National QSL Card Collection whose dedication over many decades built it up to many hundreds of thousands of cards.

The collection is a repository of much of the history of amateur radio not only in Australia but worldwide and through the internet is increasingly gaining global recognition and appreciation.

A sample of his work can be seen on the internet video facility YouTube



with a four-part series researched by Ken and narrated by his partner Dr Jean Dawson.

Nowhere else will you find such an insight into the pre-WWII history of amateur radio through QSL cards which trace the evolutionary changes in radio technology, callsigns, regulations and the influence of political change.

Over the past 30 years, Ken, a retired education administrator, had run more than 100 marathons including the big races in Boston, New York, Honolulu, London, Rotterdam, Vienna and Rome.

He often trained on the streets of Montrose in Melbourne's Dandenong Ranges. In preparation for the Australian Masters Championships last Easter he ran up to 60 km a week. At the age of 85, he broke seven world records, one Australia record and bagged 10 gold medals.

Then six days later was again breaking records in the Victorian 24 hour championships and then the Canberra Marathon, resulting in one scribe dubbing the octogenarian as unstoppable.

Unsure of exactly why he took up running, it began as a bit of challenge to run regularly with his younger workmates when at Melbourne's LaTrobe University.

In recent months Ken was diagnosed with a brain tumour but remained in relatively high spirits.

His memory will hopefully live on through the legacy of the world's best catalogued QSL card collection.

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BT1500A 1500 Watt Double L Balanced Antenna Tuner

The BT1500A is the only 1500 Watt, Double-L Network antenna tuner on the market today.

- two tandem mounted, precision ceramic roller inductors for a truly balanced tuner.
- dual section capacitor gives correct capacitance for both low band and high band
- relay-switchable between input/output side for maximum range of impedance matching. So why buy a balanced tuner? A September 2004 QST article stated "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." In the QST article Joel Hallas reviewed the Palstar AT1500BAL as a high-power solution. The engineers at Palstar took the AT1500BAL and reengineered the entire tuner inside and out, reintroducing it as the BT1500A.

Having TVI problems? Check us out for Palstar high and low pass filters

ZM30 Antenna Analyzer

An automated micro-controlled SWR antenna analyzer with a 8 bit micro-controller with a precision low power DDS signal generator. Self-calibrating reflectometer, 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.



AT1KP Tuner



Differential capacitor tune, 2 stators, 1 rotor, 2 controls
to precision tune, ceramic body roller inductor and high power balun. Peak and Peak Hold dual cross-needle metering.

- 1200 watts pep
- 160m to 20m(1200+/-j1200), 10m to 15m (1000+/-j1000)
- Output to balanced & unbalanced lines
- 20-1200 ohms impedance match range
- 6 pos. mode switch for multiple antennas
- Meter power range 0-300 W / 0-3000 W
- 270 mm w x 115 mm h x 280 mm deep.

AT-AUTO

1500 Watt Automatic Antenna Tuner

Auto-tuners have been around for years, with clacking relays and matches always just a little bit off. Palstar has reinvented the auto-tuner with continuously variable components for a perfect match, and boosted it with 1500 watts, the highest power-rating about. It interfaces to most recent Icom, Kenwood and Yaesu transceivers and automatically tracks band and frequency changes. Field Updatable Firmware



PM2000A Watt Meter

The PM2000A measures and displays forward power, reflected power, and SWR simultaneously on its dual movement meter system in the frequency range. Accuracy is assured by 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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OMNI-VII is the first truly Net-Ready ham transceiver.

No PC required at the rig to operate remote! Delivers live receive AND transmit operation from anywhere in the world from wideband internet access! A simple GUI written for the OMNI-VII downloadable free or latest GUI source code can be downloaded to DIY. Three built-in filters at 20 kHz, 6 kHz, and 2.5 kHz Optional Collins mechanical filters at 500 Hz and 300 Hz. Filters are auto or manual. 37 built-in DSP filters. Transmit 6 - 160 meters, 100 watts Receive from 500 kHz -30 MHz continuous plus 48 to 54 MHz. SSB, CW, AM, FM, Digital modes. 17 selectable transmit bandwidths. RX EQ and TX EQ in 6 db/octave filters selectable in 1-dB steps. DSP Noise Reduction, auto or manual notch.



The Ten-Tec Orion II

represents an entirely new concept in high-performance HF transceivers. It delivers the finest performance level to date from an amateur transceiver. Its heart is a pair of 32-bit floating-point ADI SHARC DSP processors giving much more processing "horsepower" than a single 32-bit DSP processor can provide. The result? Absolutely unparalleled HF receiver performance, filtering, and flexibility. Full dual receive capability. An amateur-bands-only main receiver, (10 through 160 meters) utilizes both crystal and IF-DSP filtering. The sub receiver is IF-DSP and is general coverage from 500 kHz to 30 MHz. Both receivers can be used simultaneously on any frequency, with no compromise in performance. The two receivers can share a single antenna or each can be fed to a separate antenna.



SGC SG-500 Power Cube HF Amplifier

An HF linear amplifier ideal for high power operation in portable, mobile and base station situations. It can deliver up to 500W CW or PEP with as little as 35W drive. Fully automatic bandswitching and RF detect PTT. It uses one of the most advanced self protection systems on the market to provide maximum stability and reliability FCC Certified.



SG-230 SmartunerTM
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The SG-230 Smartuner was the first product in the HF market to offer fast, flexible tuning without any user interface. The Smartuner senses RF when you transmit from your transceiver and automatically finds the best SWR match to your antenna. This unit works with ANY radio and ANY antenna and requires NO special interface, making it the most versatile tuning product available.



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SMART POWER
Smartuning at 500 Watts. The SG-235 achieves perfect coupling of your 500 Watt HF-SSB and your antenna in mobile, or fixed base applications. It has a durable, waterproof ABS plastic case and a shock mount option. With a sophisticated Pi-L network and over 1/2 million tuning combinations, the SG-235 is the smartest way to tune at 500 Watts.

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Built to last, high density surface mount components on a 4 layer PCB, gives high efficiency, reliability and performance. Its sturdy chassis gives excellent electrical and RF ground system. Waterproof (under 2 ft of water for 24 hours). Base, mobile, portable, marine or aviation. Balanced or unbalanced antenna including whips, backstays, dipoles, loops and longwires, and needs only 28 feet of antenna for full coverage operation.



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A balanced antenna matching unit

Ron Sanders VK2WB

I have always favoured open wire feeders and centre-fed antennas which can be used on all HF bands. This arrangement means that you must have an antenna tuning unit (ATU) to provide a good match on the amateur HF bands. I have used a homebrew Transmatch ATU for many years with this system, but it is much larger than the 100 W transceiver and now looks out of place.

It occurred to me that a simpler system could be used to match the 50 Ω output from my transceiver to the odd impedances presented by my random length doublet with its 450 Ω ladder-line feeder. As I am not a band-hopping operator I reckoned that I could devise a small system, which would only need a simple plug-in module for each band. I started with 7 MHz.

A very useful set of programs written by G4FGQ has one called `t_tuner.exe` (Ref. 1), which produces an LC network for matching an input impedance (Z_{in}) and an output impedance (Z_{out}). The program is essentially for matching an unbalanced input and output, but I thought that by providing a 50 Ω 1:1 balun between the input and the matching network I would have a balanced output to suit my set-up. My matching system is shown in Figure 1.

The T-Matching network (Figure 2) is similar to the circuit of the Transmatch, consisting of two capacitors and one inductor.

I had several multiplate 500 V compression trimmers (Ref. 2) in the junk box, which enabled easy removal of plates (mica dielectric) to allow setting the maximum capacitance. The original trimmers had ten plates, which gave a range of 500-1500 pF. With only two plates the range was 10-60 pF. By

modifying several of these capacitors I was able to cover a range from approx. 10 – 500 pF with three units.

Construction

To enable low loss connections to the plug-in module I got some banana plugs and sockets from the local electronics store and soldered the metal plugs into a piece of printed circuit board measuring 75 x 45 mm. I offset the plugs to prevent inserting the module into the panel the wrong way around. The module is shown in Photos 1 and 2.

The mounting panel has the balun wired at the back and is shown in Photos 3 and 4.

The completed unit is contained in a plastic box measuring 160 x 95 x 50 mm (w,h,d) with an aluminium front panel. There is space available on one side for a future piece of equipment. Photo 5 shows the completed unit with the 7 MHz module mounted.

The balun has 2.5 turns of RG-174 coax through a BN-43-7051 balun core (Ref. 3).

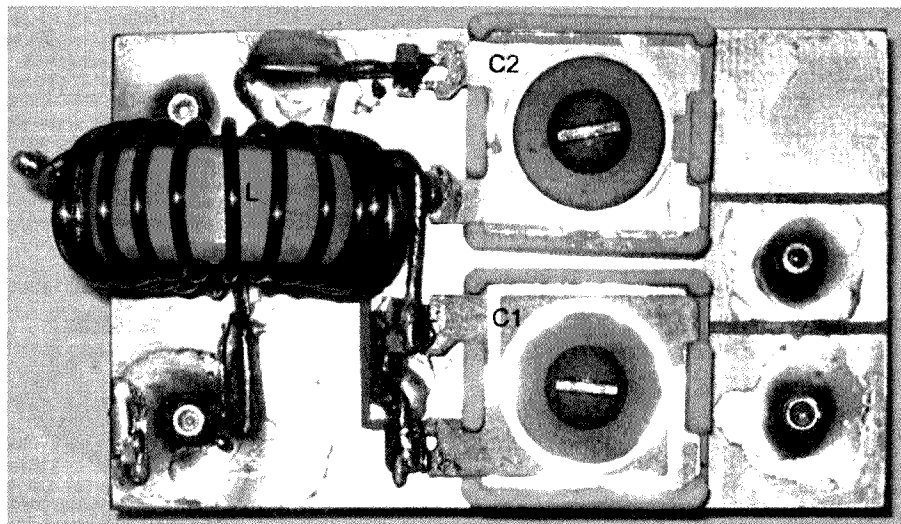
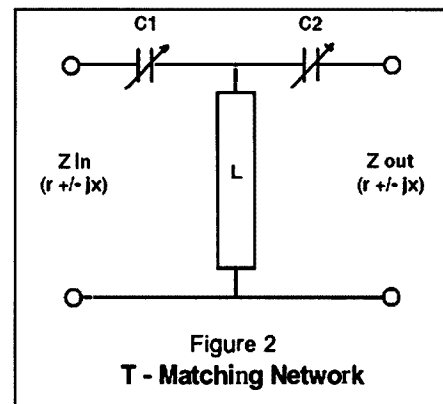
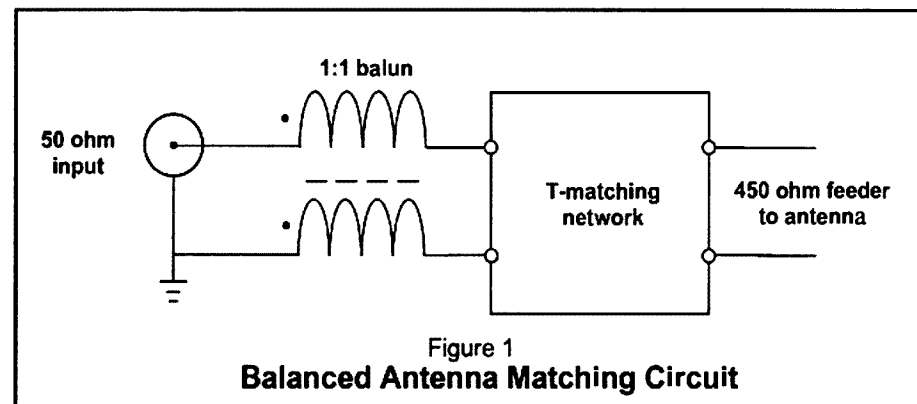


Photo 1



Testing

Every antenna system will have different values of impedance, so the following conclusions are only applicable to my setup.

This has 450 Ω ladder-line feeding a balanced V-shaped antenna with approximately eight metres each side of the feed point.

I had no idea what the values of $(r +/- jx)$ were at the end of the feeder at 7.1 MHz, so I made a calculated guess that r would be somewhere between 500 and 1000 Ω. The value for x was a complete mystery. I assumed that the balun would not cause any problem with the calculations in the program.

The program provides very useful information apart from the values of C1, C2 and L.

I started by entering the load resistance in steps of 100 Ω beginning at 500 and going up to 1000 and load reactances from -200 up to +200. The results showed that the spread of values over this range were as follows.

- C1 80 – 150 pF
- C2 30 – 150 pF
- L 3.5 – 5 μH

I wound toroidal coils with values of 3.5, 4, 4.5 and 5 μH.

My station has an SWR/power indicator on the output from the transceiver followed by a 32 MHz low pass filter and then a Transmatch ATU, which has a balun on the output.

I replaced the Transmatch with my new network and tried many combinations of C1, C2 and L at 7.1 MHz until I achieved the lowest SWR along with maximum power output.

The final values were: C1 = 95 pF, C2 = 40 pF, L = 4.5 μH.

By manipulating output values for $(r +/- jx)$ in the program I was able to find the settings, which produced the same values for C1, C2 and L as I had obtained experimentally.

This showed that the input impedance of my antenna system at 7.1 MHz was $(835 - j216) \Omega$ and the input matching to the network card was $(49.9 - j0.3) \Omega$. These results show that the input match is very close to $(50 + j0)$ and the antenna system has a high impedance as expected.

Any effect due to the balun is included in these results. I guess this back to front method can be called reverse program engineering.

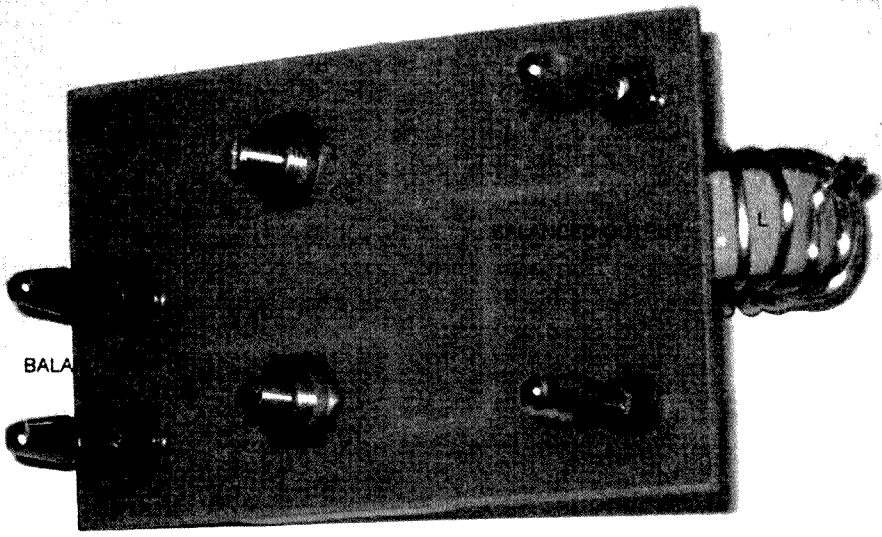


Photo 2

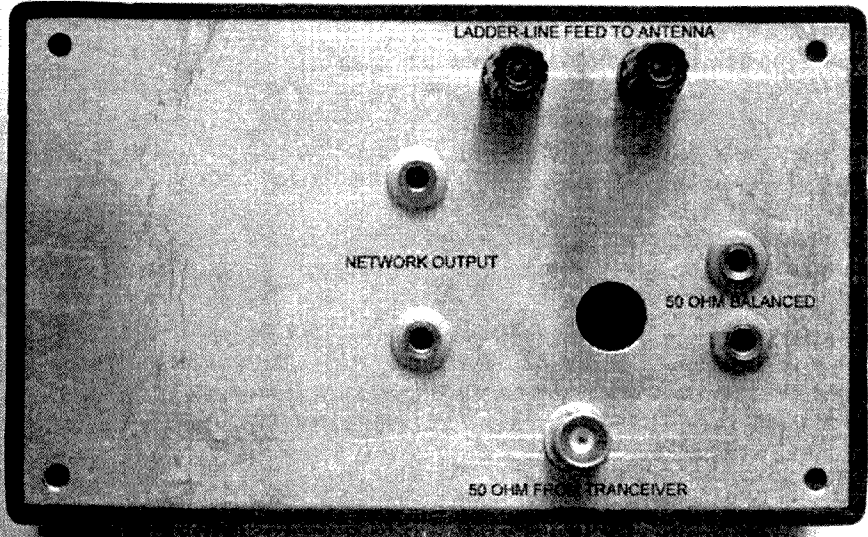


Photo 3

Results

The bandwidth appeared to be adequate as the SWR remained below 1.3:1 from 7.0 up to 7.3 MHz, with a minimum close to 1:1.

The program provides voltages and

currents associated with each component in the network so that you can select components with suitable specifications. To illustrate this I have included a table applicable to my system at 7.1 MHz.

Note the dissipation in L is 5 W and

Measurement	Value	Measurement	Value
Power Efficiency	94.5%	Watts at input	71 V rms
Total Loss	0.24 dB	Current at input	1.42 A rms
Dissipation in C1	0.4 W	Volts across L	325 V rms
Dissipation in C2	0.1 W	Current through L	1.53 A rms
Dissipation in L	5 W	Volts at output	305 V rms
Voltage across C1	449 V pk	Current at output	0.33 A rms

the voltage across the winding is 325 V. I have used a T-106-6 (Ref. 3) because I had one, but it would be better to use a T-106-17 or T-106-0 to restrict the temperature rise. You can select a suitable core by using the program minirk.exe (Ref. 4), which will show the expected temperature rise for specified conditions of operation. Also, note that the capacitor voltage rating should be not less than 500 V.

I initially tried conjugate matching with an L network (Ref. 5), but found the RF power efficiency was noticeably less – probably nearer 60% compared with nearly 95% using this system. This was later backed-up by a reference on the internet (Ref. 6).

Conclusions

The unit described is very simple to construct and hopefully will appeal to some of the new hams who want to put up a simple HF antenna which can fit into available space. Maybe the use of some “free” programs from the internet will encourage others to experiment.

References

- 1 <http://www.smeter.net>
- 2 <http://www.surplussales.com>
- 3 ads in AR for Amidon cores
- 4 <http://www.dl5swb.de>
- 5 <http://www.smeter.net>
- 6 <http://www.analog-rf.com>

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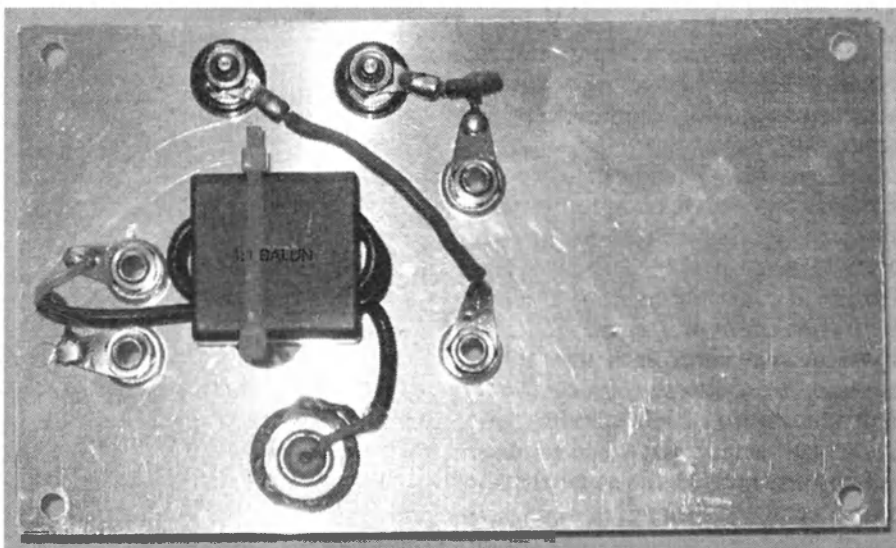


Photo 4

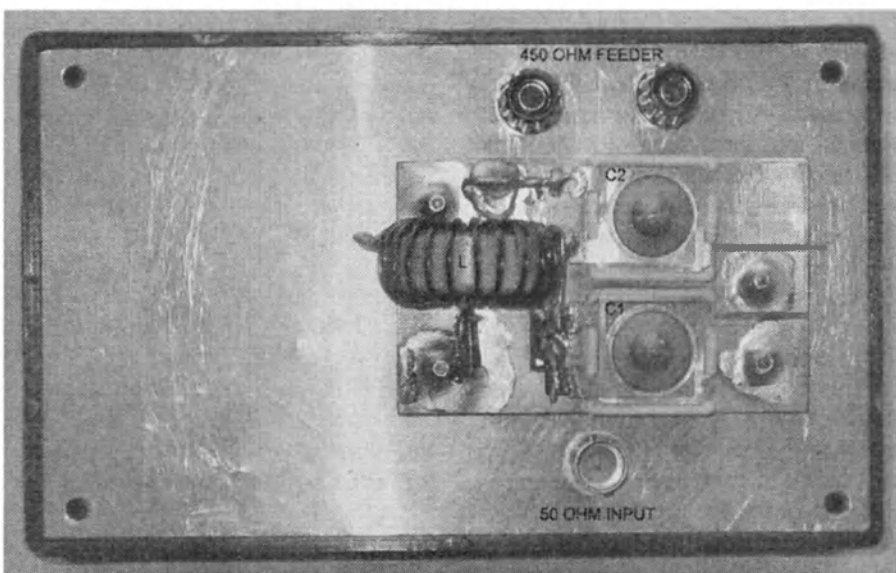


Photo 5

Help wanted

Teleradio Wireless Journal

The WIA has received the following call for assistance:

It will be appreciated if you can ask around if anyone has in their back yard garden shed:

“Teleradio Wireless Journal” dated June 15th 1936

This was a weekly magazine published in Brisbane by Telegraph Press from 1933 until the 1940s or possibly later. The June edition had an article about the wood carvings at the Peel Island leprosarium.

Trying to track down a copy of the June 15th edition has been unsuccessful. The Jan to April 1936. The UQ Fryer Library has 1935 and 1941 editions only. The NLA, Canberra, has the first copy in 1933. None of the other State Libraries has any editions. The Mitchell Library in Sydney is where the Wireless Institute of Australia donated all their material

but alas the journal I am seeking is not there and neither do any of the Australian archive bookshops have a copy.

Thank you very much – Rhonda
Anyone with information can forward it to Rhonda via:
chrisayres@bigpond.com

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SES/QPS/WICEN practise techniques

Gavin Reibelt VK4ZZ

A Joint Exercise to practise for possible summer emergencies was held by the Townsville Thuringowa SES with help from WICEN on the weekend of October 27 and 28, 2007 in parts of the Paluma Range and Crystal Creek Valley. The scenario for the exercise was that six youths had attempted to hike from the Little Crystal Creek Bridge down the valley and were overdue. The group were also carrying EPIRBS.

WICEN operators met at SES HQ Green Street to join the SES Briefing, and then travelled in sections up to Mutarnee State School to help establish an Emergency Base. Helping out at base were Joan VK4FTVL and Colin VK4UCM, utilising the side of their large camper-truck to hoist a VHF co-linear antenna high into the air on the end of a field pole.

Assigned to the search teams that would eventually traverse terrain classed as severe were Nick VK4ZXX, Phil VK4HSV, Steve VK4SJW and Roger VK4CD - utilising radio back packs that mostly had been refined from use in many comms support events such as the Magnetic Island to Townsville Swim. Revving around the mountains in the "Repeater Car" was Lyndall VK4ZM and Gavin VK4ZZ - toting the well secured TARC WICEN VHF repeater in the back of the Troopy searching for the optimum spot to provide good contact between the search parties and Base whilst also performing a radio survey for the SES on UHF frequencies.

During the first day of the exercise ALL communications were routed via the WICEN operators on VHF as the SES UHF frequencies proved to be ineffective in the dense rainforest and severe terrain. Despite aching muscles and fatigue the search team operators were at it again in the same rugged area the next day.

During the second day of the exercise WICEN operators provided backup communications while the SES placed a UHF relay vehicle at some likely spots identified by the radio survey during the previous day and successfully provided primary communications by manual relay most of the time.

The search parties also got to practise RDF techniques in finding the practice EPIRBS, units that had been specially modified to the 121.4MHz practice frequency by Roger VK4CD. All the search party operators commented on the very rugged terrain and the very humid weather conditions which contributed to

some SES search party members suffering heat stress. The roving Repeater Car had an additional welfare benefit being able to deliver much needed water to those search parties that had made it back up to the road but had run out of water. At base Joan and Colin managed to fill over 20 pages of WICEN logs during the exercise whilst providing an efficient conduit between exercise co-ordinators and the teams in the field.

During the Sunday afternoon debriefing SES made it very clear that they want radio amateurs involved closely with exercises and callouts and valued highly the added benefits of having reliable operators and communications to help maintain contact.

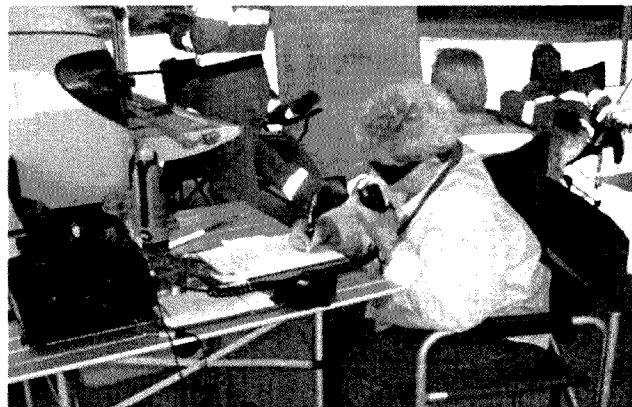
Congratulations to Nick, Phil, Steve and Roger who did it hard in the field and survived!

VK3s move north

Husband and wife team Colin McDonell VK4UCM and Joan McDonell VK4FTVL were active members of WICEN Vic for a few years before moving up north.

Colin was VK3UCM and Joan did most of the operating. Joan did try studying for her licence while a member of Healesville Amateur Radio Club but finally obtained her Foundation licence when they settled in Northern Queensland.

Colin and Joan were for many years part of all WICEN activities in Victoria, such as the Murray Marathon, Ski 80, Sea Lake, Mt Disappointment, Y2K as well as Alexandra with Peter Weeks and Gippsland events with Chris Morley.



Colin's call sign was VK3UCM which he held since 1992 and both originally came from Yarra Glen. They were members of the Healesville Amateur Radio Group as well as Region 4.

They were accredited as a team, Colin as Station Manager and Joan as Message Handler. Joan was sent to Corryong during the 2003 fires.

Colin and Joan are now permanent residents of Townsville, Qld and are members of Townsville Amateur Radio Club as well as WICEN Qld.

They are still doing events. Some are swimming, horse trials and hill climbs and this year were involved with the SES traiaing as well as running the radio for JOTA. Colin is still the technical person whilst Joan mainly works the radio at events.

Colin is now accredited with his CAMS Licence and Joan has completed her training and is just waiting to mail the forms off.

ar

VK2

Tim Mills VK2ZTM
c/- vk2wi@ozemail.com.au

Clubs

The ARNSW Veterans Group skipped their meeting last month due to the Easter period. They meet again this month on the third Thursday (17th) at VK2WI.

The Waverley ARS have renovations being carried out to their club house/meeting location at the Rose Bay Scout Hall. This brought about a special auction last month to dispose of their stock of goodies. This will not detract from their annual auction which is scheduled for Saturday 21st June.

Last month there was a report that the Mid South Coast ARC needed to remove their repeaters from the site they had for some decades. This occurred on the 3rd February after the new owners took over the site, requiring it to be free of RF. Also having to leave were a couple of community radio transmitters, as well as other services at the site. Hopefully all will be able to find sites equal in coverage and elevation to the former Little Forest Ranch site. The 2008 committee of the MSCARC are President John VK2WRT, VP Richard VK2JRB, Secretary Stephen VK2SJA and Treasurer Neil VK2XNF. Stuart VK2LSB and Noel VK2JG are committee members.

The Newcastle Radio Club is able to trace their formation back 80 years. Firstly as the Newcastle radio club, then as the Hunter Branch of the NSW Division and nowadays as the Hunter Radio Group (HRG). They meet on the second Friday evening at the local TV station. They have a news net on Monday at 7.30 pm via HF and area repeaters.

Illawarra ARS celebrate their 60th anniversary this year, having been the Illawarra Branch of the NSW Division before becoming the IARS. They meet on the second Tuesday evening at the Industry World Visitors Centre, Springhill Road, Coniston in Wollongong. They have an extensive network of repeater facilities - to which will now be added one of the two D-STAR systems allocated to VK2. This will provide coverage into the southern side of Sydney. IARS uses much of their network to relay the VK2WI news

sessions. The web site is <http://www.iars.org.au/>

Manly Warringah RS is the other group allocated a D-STAR system. Their club location at Terrey Hills will cover northern Sydney and into the Central Coast. They meet on Wednesday evening at the Warringah Volunteer Services Centre. You can phone on club evenings 02 9450 1746 or check out the web site <http://www.mwrs.org.au/>

The Central Coast ARC welcomed 1600 through the gates to their annual field day at the Wyong Race Course in February. Hopefully all attending enjoyed themselves. There were a few difficulties on the day with no trains running to and from the Central Coast, no inside parking due to the recent heavy rain and a bit of rain during the morning. A field day the size of the Central Coast venture requires a lot of input from their club members. They need to be congratulated for the efforts they provided for the enjoyment of the attendees. Contact with the CCARC <http://www.ccarc.org.au/> or phone 02 4340 2500. Licence instruction information is available from Greg 0418 614 813 or Ray 4325 2182.

The Oxley Region ARC is enjoying their new meeting location at the Port City Bowling Club on the first Saturday afternoon and second and fourth Friday evenings. It is only a couple of months until the annual Queen's Birthday Field Day weekend - 7/8 June.

WICEN NSW renewals fell due at the end of March. It was also the end of the financial year for WICEN and all Groups and Regions should ensure their affairs are in order. The Central Coast Region has their AGM scheduled for Saturday 12th April. A mailing list for those interested in WICEN can be accessed by sending a blank message to 'wicen-net-join@nsw.wicen.org.au'. The web site is <http://www.nsw.wicen.org.au/>

ARNSW

This month - Saturday 12th - will be the ARNSW AGM at the Ryde Eastwood Leagues Club - 10 am. Members should have received their notifications

and other paperwork by either post or e-mail. When nominations closed on the 1st March, the Returning Officer advised that seven nominations had been received for the nine positions on the council. Accordingly, a ballot was not required.

This month - the Harris Park post boxes will not be renewed. The new mail address for ARNSW is P.O. Box 6044, Dural Delivery Centre, NSW 2158. Those members who had their licence address via PO Box 9410 HP and have not been contacted by ARNSW should do so before renewals fall due for details about the future of this service.

VK2WI

Some TLC has restored the 23 cm repeater for the time being. This month we revert back to standard time with the Sunday morning and evening News Sessions - maintaining the same local time - 10 am and 7.30 pm. There is an hour change in UTC. These twice yearly time changes are a good occasion to renew the batteries in all those clocks and smoke detectors.

Besides the direct transmissions from VK2WI which are listed in the Directory page at the back of 'Amateur Radio' there are both automatic and manual relays provided for VK2WI. The automatic relays are provided through repeaters in the western Blue Mountains, south through the Illawarra region and north on the Central Coast, Newcastle and lower north coast. Further out - HF from VK2WI is received and replayed through repeaters in the far north Summerland region (Lismore and Byron Bay), the lower New England (Tamworth) and Central West (Coonabarabran, Dubbo and Tullamore). The VK2WI team greatly appreciates this effort provided by groups and individuals in extending the coverage. There is also some IRLP service provided by others. There are some other retransmissions not known to VK2WI and we would like to hear from those providing these services. Please send an email to arnews@tpg.com.au with the details.

73 - Tim VK2ZTM.

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 tower upon which VK2RSC lives.

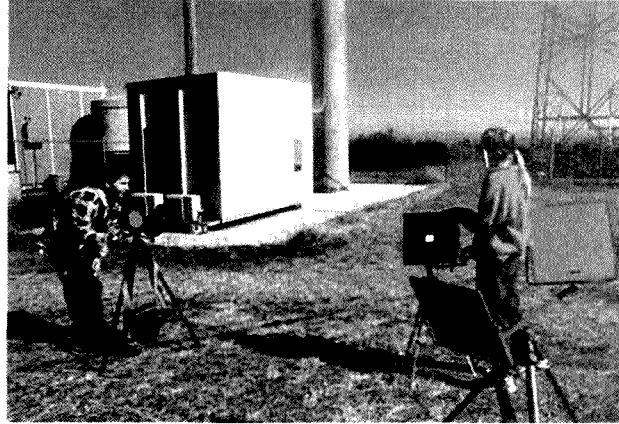
The weather was fine, and it was determined that the day was a great opportunity for some heliograph practicing.

Rob Gallagher VK2KGG, 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



Dave VK2ZDR and Amy VK2FCAT practicing with the heliograph training mirror

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.

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au
Email: arv@amateurradio.com.au
Ross Pittard VK3FCE

Lapsing callsigns

The failure to renew your amateur station licence can result in you losing your callsign forever because it has been re-issued to someone. The ACMA practice is, under most circumstances, to re-issue a vacant callsign.

The exception is when it is notified that a radio amateur has become a silent key and then the callsign is 'reserved' from re-issue for two years after its expiry date.

A number of radio amateurs for whatever reason do not renew their licences. This results in their lapsed callsign being available for re-issue, which is happening.

Importantly it is the licensee's responsibility to ensure their licence is

current. It is not an excuse to claim a renewal notice did not arrive or a cheque in the mail went astray.

So how do you know if your licence is current and check on its expiry date? Visit the ACMA website <http://www.acma.gov.au> and check out the online register of radiocommunications licences.

This database is searchable by a number of categories including callsign, licensee surname and postcode.

This database is regularly used by licence candidates before they sit their assessments and wanting to choose a callsign preference from those which are not on issue.

When renewing your licence remember that you can do so for 12 months as a minimum or up to five years.

Foundation Licence Classes

Enrolments for the next Foundation Licence courses and assessment weekends on 19-20 April close soon. Inquiries to Barry Robinson VK3JBR on phone 0428 516 001 or arv@amateurradio.com.au

F-Troop Net

This weekly Sunday net for Foundation licensees and others is a welcoming, friendly and helpful on air session conducted by knowledgeable class instructors or assessors.

It is often the first time that new Foundation Licensees get to experience a net type operation. F-Troop is held at

News from...

about 11.15 am, straight after the Sunday morning broadcast call-backs, using the wide coverage Mt Macedon 2-metre repeater VK3RMM.

Membership renewals

Members whose two-year membership subscription to Amateur Radio Victoria falls due in either April, May or June will soon receive a renewal notice.

Thank you to those members who have renewed for the January-March membership renewal period.

Membership inquiries are welcome. It is easy and affordable to join and support

Amateur Radio Victoria. Membership for two years is \$30 for Full or Associate Member and \$25 for Concession. Email us for a membership application form or download one from the website, or send us an email and get one in the post.

PRM80 Radios

We still have a limited supply of PRM80 radios which cover the UHF amateur band. These are available from the rooms at \$120.00 each. They are programmed and aligned with the standard repeaters and many simplex channels.

These are an effective way to get on the

70 cm band for those who want a robust rig for the car or as a base station.

Annual General Meeting

Another reminder to members of the AGM to be held at St Michaels Hall, Victory Blvd, Ashburton on Wednesday the 21st of May at 8 pm.

Following the AGM an Open Forum will be conducted. Members can avail themselves of this opportunity to discuss any matter with the Council members.

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

AHARS held their AGM recently at a different venue because of some double booking (thanks to Wally VK5TW for providing the alternative at short notice) at which the following positions were filled:

Club President: John Elliott VK5EMI, Vice President: Leigh Turner VK5KLT, Treasurer: Hans Smit VK5YX, Secretary: David Clegg VK5AMK, Committee: Christine Taylor, Jim Tregellas and Graham Dicker.

The Denis Greig Award for the amateur of the year was presented this year to Christine VK5CTY in recognition of her role in publicising the club in this magazine. (I was considerably surprised but appreciative of the honour).

A presentation was also made to Geoff VK5TAW and his XYL in appreciation of the suppers the club has enjoyed throughout the year.

The club members were reminded that this year is the 25th year of existence for AHARS and to expect some special activities to celebrate the occasion.

Tina VK5TMC spoke of the John Moyle Memorial Field Day Contest soon to be held and invited members to participate from home stations or at the Field Day site.

Paul VK5PH gave an interesting talk about his visit to the Friedrichshafen Hamfest last year. He had a PowerPoint presentation of the various venues within the complex to accompany his talk and then continued with some pictures of the beautiful gardens always mentioned in association with Friedrichshafen, and of the Zeppelin Museum which is also nearby the really marvellous venue used for the Hamfest.

Last month, we mentioned the visit by Mike G3LHZ. Unfortunately, I had the callsign correct but the surname was wrong. Of course, our visitor was Mike Underhill G3LHZ. I offer my apologies to Mike for the error.



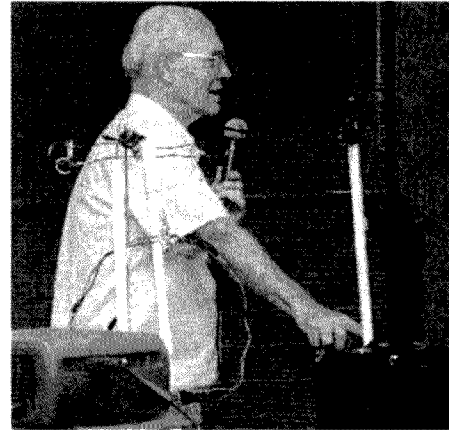
John VK5EMI presenting the Denis Greig Award to Christine VK5CTY



Geoff VK5TAW and his XYL Christine



Mike Underhill G3LHZ discussing his small loop antennas.



South East Radio Group 2008 Convention held each year on Queen's Birthday weekend in June

- Australian Fox Hunting Championship.
- Tea, coffee, hamburgers and soft drinks for sale
- Commercial displays
- Pre-loved radios

For more information, phone Wayne or log onto our web site and follow the links to the convention pages.

<http://serg.mountgambier.org/>

For info or table bookings contact Wayne VK5ZX on
(08) 8725 4335 or 0407 718 908

VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

National ALARA Meet 2008

This national event will be held in Ulverstone on the 13 and 14 September 2008. It will be the 9th ALARA Meet and also will be a celebration of 33 years of ALARA. Susan Brain VK7LUV is the coordinator of the Meet and can be contacted on the email: vk7luv_susan@yahoo.com.au More information can also be found at: http://au.geocities.com/vk7luv_susan/

Athol Johnson Memorial Contest

This VHF and UHF eight hour contest has been successfully revived after a break of 25 years and was run on

February 16. There was a flurry of activity with many mobile stations heading to high ground. Multipliers were available for mobile and Foundation licence holders and mobile operation enables shorter re-contact time. The John Grace Perpetual Trophy has also been introduced this year for the Foundation licensee who accumulates the most points in the contest. Stay tuned for the contest winners in the coming months.

New VK7 BPL Reports

Two new BPL reports dated September and November 2007 are available on the VK7 BPL Watch page at <http://reast.asn.au/bpl/> These include a comprehensive

HF Noise Floor chart prior to installation of BPL in South Hobart and two charts following the activation of BPL. These measurements clearly demonstrate that BPL emissions account for an increase of between 20 to 40 dB in a noise floor – that is between 100 to 10000 times higher than the pre-BPL noise floor level. Thank goodness it has gone!

North West Tasmanian Amateur Radio Interest Group

Jim VK7OW is a member of NWTARIG and holds the honour of being the oldest VK7 amateur as he soon turns 95. Jim is going strong and is an avid DXer. There is a new EchoLink node in the Ulverstone



The Athol Johnson Memorial Contest Trophy

President: Al VK7AN, Vice-President: David VK7YUM, Secretary: Jason VK7ZJA and Treasurer: Ann VK7FYBG. Brian VK7RR gave a presentation on the Stepp-IR antenna system and remote controlling a ham station via the internet. A fascinating talk, thanks Brian. Greg VK7YAD was presented with a lifetime NTARC membership certificate for his efforts with BPL and related matters. Congratulations Greg.

The event runs from April 15 to 20 and there is a large dedicated group assisting with the provision of radio communications this year. It was great to see a feature article on Ron VK7ZRO and XYL Marcia on the Targa Tasmania Website. Ron and Marcia have been involved since the first Targa in 1992.

Radio and Electronics Association of Southern Tasmania

There is a new SSTV Gateway available in the South. Danny VK7HDM joins Tony VK7AX in the North West with an SSTV repeater gateway via SlowScanTV.net, which is a worldwide network of SSTV gateways.

It is available in the South on 145.625 MHz. Wireless networking is now available at the REAST Clubrooms thanks to Ben VK7BEN. Have a chat with him if you would like to use it and he will provide the WPA key.

The ATV Experimenters nights have run throughout the holiday period with many people coming up to the Domain ATV Studio. Some of the special guests have been Mike VK7MJ, John VK7FJGM, Ken VK7KKV, Ray VK3HSR/7 and Wally VK5TW/7. Thanks to many people who have donated equipment; if it was not for them we would not have the great facility we have been able to build.

Our first Foundation Licence course and assessment for 2008 was held on Saturday 23 February and we welcome three new Foundation licensees: Frank McIvor, Tony Lathouras and Sam Lathouras (Sam is Tony's 11 year old son).

Ben VK7BEN gave our March presentation on running a multi-multi contest station on a budget. Murray VK7ZMS, Richard VK7ZBX, Clayton VK7ZCR and Ben VK7BEN went to Penstock Lagoon in the Central Highlands and ran club station VK7OTC for the Remembrance Day Contest last year. This was a very entertaining presentation complete with video of the preparation and actual contest operation. Thanks Ben.

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area with Tony VK7AX establishing VK7AX-L (100478) on 145.350MHz. It is permanently connected as a conference link to VK7HBR-L (311574) in Launceston with a radio frequency of 145.425 MHz.

Regular educational broadcasts are being heard in the Launceston area on 145.425MHz at 7:30pm each night via the EchoLink node (311574) of Rick VK7HBR and John VK7NJD. Call-backs after the programs would be appreciated.

Northern Tasmania Amateur Radio Club

The NTARC AGM on February 13 saw the following election results:

WICEN Tasmania (South)

By the time you read this report, Targa Tasmania 2008 will be almost underway.

BARCFEST 2008

When? Saturday 10th May

at Mt.Gravatt Showground

1600 Logan Road Upper Mt.Gravatt.

27 deg 32 min 40.47 sec South

153 deg 5 min 00.05 sec East

Opening time 1000 hrs EAST.

Club Displays • Commercial Displays • Disposals

Sales • Computer Gear • Canteen

Plenty of off-street parking

Contact Les Parker VK4ZLP on 07 3343 7247

or mobile 0413 377 045

OR

Visit the BARC Website at <http://www.qsl.net/vk4ba> and select Barcfest for full details of venue location as well as an application form for table space and other important information...

Tony Hutchison VK5ZAI receives Johnson Space Centre Group Achievement Award

Robert Broomhead VK3KRB

Australian amateurs can be proud of Tony Hutchison VK5ZAI who has just received the Group Achievement Award from the Johnson Space Centre and signed by JSC Director Michael Coats.

Tony is the Australian coordinator for ARISS or Amateur Radio on the International Space Station. Through ARISS, hundreds of schools around the world have been given the opportunity to speak with the astronauts aboard the International Space Station via amateur radio.

In writing to the WIA, Tony says he enjoys amateur radio and says he particularly likes "giving back a little of what others have given him over the years." Not really expecting the award, he said that "the most rewarding part is to see the excitement on students' faces when they first hear the Crew on the ISS reply to an ARISS call."

The first school Tony assisted was Loxton High in South Australia back in 1992 when he asked Alex Serabrov on Mir if he would speak with the students and answer their questions. The first student to win the Andy Thomas Scholarship was a Loxton High student, who Tony believes may now be studying at the University of Adelaide.

In 1998, Tony handled most of the communications between Andy Thomas and his family during his flight on Mir and in the year 2000 Tony was asked to join the ARISS team as one of the 9 approved telebridge stations around the world. Soon after, Tony was handling most of the private family contacts for the first 3 crews on the ISS along with the scheduled school contacts.

In 2001, Tony and his wife Jill received a personal invitation from NASA to meet the various crews soon to fly on the ISS and space Shuttle. They attended the launch of the second ISS crew on shuttle flight STS-102 at Cape Kennedy with the crews' family, and met the first ISS crew when they returned to Earth on the shuttle 12 days later. Shortly afterwards Tony was asked to become a School Mentor assisting students and teachers prepare for their scheduled ISS contacts.

As a telebridge station, over the years Tony has linked the ISS to schools in most countries around the world. When school linkups became more common he was asked to contribute ideas on linking EchoLink and IRLP to the ARISS student contacts so it could cover a broader spectrum of amateurs throughout the world. The resulting implementation of IRLP and EchoLink for ARISS contacts has become popular and very successful.

In 2006 Tony helped Bill McArthur on board the ISS check out the new Kenwood D-700 and back on the ground assisted with the design and construction of interface units and patches used for ARISS telebridge contacts in Australia and Europe.

During his 16 years associated with manned space flight, Tony has been called up several times by Mission

Control to handle emergency situations that have occurred. Members may also be interested that at present Australia rates third in the world to have had the most scheduled ARISS linkups with the ISS. Tony is very enthusiastic that, through working together and with our schools, we can maintain this position.

Recently Tony has been appointed to the ARISS selection committee. ARISS work as a world wide team of licensed amateurs whose main ambition is introducing Amateur Radio and technology to students around the world by giving them the opportunity of using our hobby to speak with the Astronauts on the ISS as it circles the Earth.

The WIA congratulates Tony Hutchison VK5ZAI on his receipt of this most prestigious award.

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National Aeronautics and Space Administration



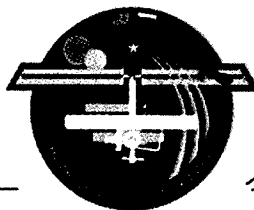
Lyndon B. Johnson Space Center Group Achievement Award

Presented to:

Tony Hutchison

Amateur Radio on International Space Station Team

For providing sustained outstanding engineering support which resulted in a record number of successful ISS amateur radio contacts.



May 25, 2006

Date

Michael Coats
Director

The Award Certificate presented to Tony Hutchison

Christine Taylor VK5CTY

The AGM

Do not forget that our AGM will be held on air on the first Monday night in May. That is Monday the 5th May 2008. We will use 3.580 MHz +/- 5 kHz and start at 1030 Zulu. This is always a well attended meeting; Let us not spoil that record.

Nominations have been obtained for all positions, as you will have seen in the ALARA Newsletter so there is no need to fear being put onto the committee unwillingly. Just join in to add your name to the list and to have a vote.

Two Field Days

On 10th February it was the Kyneton Field Day and one week later on the 17th it was the Wyong Field Day. There were active ALARA tables at both of these events.

Kyneton

Jean VK3FJYL was ably assisted by Margaret VK3FMAB, Michi VK3FMEG, Cristina VK3FCRS, Jane VKFAYL and Michele VK3FEAT, although Michelle also had one eye on the WIA (Vic) table she was also helping to staff.

It was great to see the 'newbies' enjoying being the public face of ALARA. Jean has also been the main organiser behind the morning teas at the coffee shop and the bi-monthly luncheons and she has been nominated to take over from Pat VK3OZ as the VK3 ALARA Representative.

During the day at Kyneton two new members were enrolled and several other application forms were handed out.

Jenny VK5FJAY and myself, Christine VK5CTY, drove over to the Field Day. We were welcomed with open arms. It is lovely to see people you have heard on the air, as we all know.

Wyong

This is the report Dot VK3DB sent me:

The ALARA table was busy all day at the Wyong Field Day. It is better to be busy than have no one visit at all. Two new members joined: Sharni VK2FGKC and Megan VK2FGGL and they took forms to think about ALARA meet Tasmania. Karen VK2AKB came up for a very quick 'hello' as she was working



The VK4 Luncheon: L-R sitting: Daphne VK4IA, Jan VK4FJAN, Kaye VK4VKS and Sheralyn VK2LUV.

Standing: Catherine VK4VCH, Marisa VK4FMAR, Jenny VK4FJEN, Pam VK4PTO (State Rep.), Marliene VK4FMSW, Yvonne VK4FLUV and Marie-Ann VK4DJZ.

downstairs.

Other ALARA ladies visiting the table were Diane VK2FDNE and Lisa VK2FOX, Anne VK4ANN and Agnes VK2GWI. Nancy Karas brought her knitting and sat at the table most of the day except when the prizes were being drawn. For some reason the PA system was not working on the first floor, so we had to go elsewhere to catch the numbers.

Nancy went downstairs to hear the numbers drawn and was lucky she did, as she won a Digital Multimeter and then she won the lucky door prize, or rather the entry gate prize, an ICOM VHF/UHF Digital Transceiver ID-800H. She will really have to try for her Foundation Licence now.

Someone I was delighted to meet was Pierce VK2APQ when he visited the table wearing his Quarter Century Wireless Association badge. (For many years Pierce was the WIA Representative for VK2 and is known by many of the older amateurs. Sorry I was not there to meet you, also - from Christine VK5CTY)

Catherine Freyne from the ABC came to the table to talk to someone about ALARA and Florence McKenzie so I

took some books and history out to show her

Catherine Freyne and the ABC

This lass, mentioned by Dot in her report, contacted ALARA in search of information about Florence McKenzie. We were very happy to supply her with a whole lot of information we have gathered over the years because we are very proud of this lady, the first YL operator in Australia.

Catherine wanted the material for a program on people of historical interest. Unfortunately by the time you read this the program will have been presented (March 16th at 2 pm on Radio National). If you go the ABC site you may be able to download the podcast of the program which I believe will be available for a few weeks after the broadcast.

ALARA will keep a copy of the broadcast in our History collections. It could be that it will be available to be listened to at the ALARAMEET in Ulverstone.

I also hope some of you heard it at the time, of course.

Bookshop news

Chris Flak VK2QV

Get into homebrew

The bookshop has been expanding its range over the last few months. We now have stocks of the latest RSGB Radio Communications Handbook, as well as the ARRL Handbook.

Some of the newer items include "Hands on Radio Experiments" which would ideally suit anyone who wants to learn how radios actually work. The book contains 61 practical experiments and represents good value. So get your soldering iron hot and start experimenting!

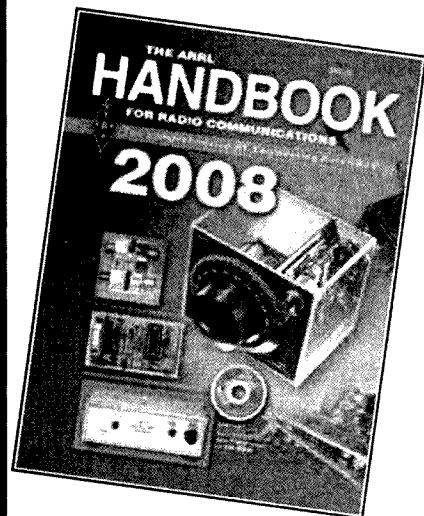
Another new addition is the "VHF Digital Handbook" which covers diverse subjects such as Packet, APRS, D-Star, multimedia and more.

The latest edition of ARRL's QEX magazine is available, now at a reduced price.

We also have in stock a series of Antenna books and CD-ROMS authored by VK4KVK – the G5RV Handbook, Antennas for Restricted Spaces and the Antenna Gain Handbook.

So please visit our website <http://www.wia.org.au/> and look for the bookshop in the member's area. You do not have to be a member to buy books from us! Of course member's prices are lower so if you're not a member of the WIA, why not join up today!

73 Chris VK2QV



Discounts for members

Download our catalogue at

<http://www.wia.org.au>

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PO BOX 3084
EAST BLAXLAND
NSW 2774

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bookshop@wia.org.au

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ALARA continued

A Luncheon in VK4

Pam VK4PTO, the VK4 State Rep, invited ALARA members, YLs and their families to attend the ALARA luncheon on the Gold Coast, recently.

It was a great success with approximately 40 present. A very relaxed and happy day was enjoyed by all.

It was a good opportunity to introduce Marie-Ann VK4DJF from Brisbane to the group.

She joined ALARA last October. Sheralyn VK2LUV from Tweed Heads joined on the day. Both Marie-Ann and Sheralyn have been amateurs for many years.

Some interesting special event stations to listen out for

In May each year the Society for the Preservation of Ancient Buildings have an Open Day at their wind and water mills. This is held on the second weekend in May.

Several years ago amateurs were asked if they could run a station at some of the mills on the day. Jasmine G4KFP

accepted the offer on behalf of her local club (Denby Dale) and has been involved ever since. Last year there were 132 stations operating including one in Holland and another in South Africa.

One year there was a station at a mill that had been involved in the "Titanic" sinking because the resident miller at the time could read Morse and heard the distress call (Unfortunately the authorities did not take his report seriously – after all the boat was unsinkable?).

Radio stations will again be operating from a number of mills this year and QSL cards will be sent out for logs submitted.

Details of where to send for QSL cards etc will be available when you contact the stations

In June, over two weekends, June 14-15th and 21-22nd, there will be a number of stations operating in the UK and possibly elsewhere round the world through Museums of the Air.

This second item was in the RSGB news for the first week in March. More information can be obtained by contacting the RSGB.

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New arrangements for the AMSAT monthly nets

With the aim of improving participation, accessibility and as a service to experienced operators, newcomers and potential participants, a new national net has been organised in which the AMSAT-VK group will be joined by the Ozsat group.

The new net will be known as the Australian National Satellite net. Paul VK2TXT from the Ozsat group has done a lot of work to make this possible and a well-attended full dress rehearsal last month proved it to be feasible. The net has been moved from the second Sunday to the second Tuesday of each month.

The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news.

It is hoped the new format will facilitate other aspects like making 'skeds' and for a general 'off-bird' chat. The week night net will be held at 8.30 pm Eastern time, ie. 09.30 Z or 10.30 Z depending on daylight saving. For the first time, in addition to our EchoLink conference, the net will also be available via RF on the following repeaters and links:

In New South Wales

VK2RMP Maddens Plains repeater on 146.850 MHz

VK2RIS Saddleback repeater on 146.975 MHz

VK2RBT Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3JED Preston, Melbourne on 144.296 MHz SSB simplex

VK3JED Preston, Melbourne on 439.175 MHz FM simplex with a 91.5 Hz CTCSS tone

VK3RTL Laverton, Melbourne, 438.600 MHz FM, -5 MHz offset

In addition to RF, operators may join the net via EchoLink by connecting to either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email at vk2txt@gmail.com

The new week night net commenced on 11th March 2008. Listeners are also reminded of our HF net which is held on the second Sunday of each month. See www.amsat-vk.org or www.ozsatgroup.info for details.

Amateur satellite operations is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give amateurs national communications and handheld access into New Zealand at various times through the day and night.

Finally, the organisers wish to thank the Illawarra Amateur Radio Society for carrying our net on the Coastlink repeater network and Tony VK3JED for the use of his linking system. It is hoped that this move will usher in a means of helping newcomers and experienced satellite operators alike to enjoy the world of amateur radio satellite comms.

New Logging program released

Bert, VE2ZAZ released WorkedGrids, ham log grid square mapping software some weeks ago. It is freeware and it runs under Windows. The program displays a map showing the amateur radio grid squares contacted and logged in using third-party logging programs.

WorkedGrids uses colours to display information on a per-band basis. Up to four bands can be displayed concurrently

on the map. The program reads plain-text (ASCII) log files generated by most logging programs. The software is directed towards the VHF and above operators who collect grid squares for contesting or award purposes. It is designed to supplement a logging program and it replaces the pen and paper technique for marking worked grid squares.

Please visit <http://ve2zaz.net> for more details. Your input is welcome!

AMSAT continues to re-distribute Keplerian elements

Ray Hoad recently announced that AMSAT's 2008-2009 request to re-distribute Keplerian elements from US Air Force Space Command (AFSPC) Space-Track web site has been approved. Our USSTRATCOM Form 1 request to re-distribute the Keps was approved as of February 21, 2008. Ray went on: "This means that AMSAT will continue to distribute the NASA verbose and the two line format Keplerian data for another year. Thanks to AFSPC for their help".

Recent call for European CubeSats on the Vega Maiden Flight

The European Space Agency (ESA) Education Office recently called for CubeSat Proposals to universities in ESA Member and Cooperating States to participate as an educational payload on the Maiden Flight of the Vega Launcher.

The ESA Education Office recognises the growing importance of CubeSat projects as a key tool in providing university students with a valuable hands-on practical education across all space engineering disciplines from end-to-end through the complete space project lifecycle.

The launch opportunity on the Vega Maiden Flight is offered free of charge

AMSAT-UK

AMSAT Groups Support ZEL Funding

Earlier this year the Directors of AMSAT-DL were informed by the University of Marburg in Germany that it had been decided that funding for the ZEL by the University would cease at the end of 2007. The Directors approached AMSAT-NA and AMSAT-UK for financial assistance in keeping the ZEL open for another year. The sum of 25,000 Euros was requested.

At recent meetings of the AMSAT-NA Board and of the AMSAT-UK Committee, it was agreed that both would contribute to the donation. Given the relative sizes of the two donating AMSAT groups it was agreed that AMSAT-NA would donate 75% of the money required, and that AMSAT-UK would donate 25%.

The ZEL (Zentrales Entwicklungslabor für electronic, roughly translated as the Central Development Laboratory for Electronics) has been the facility which, over the last 40 years, has been at the centre of much amateur satellite development activity by members of the University, members of AMSAT-DL, as well as other members of AMSAT from outside Germany. The most famous satellite to be produced there was OSCAR-13 which gave the Amateur Radio Community many years of excellent service.

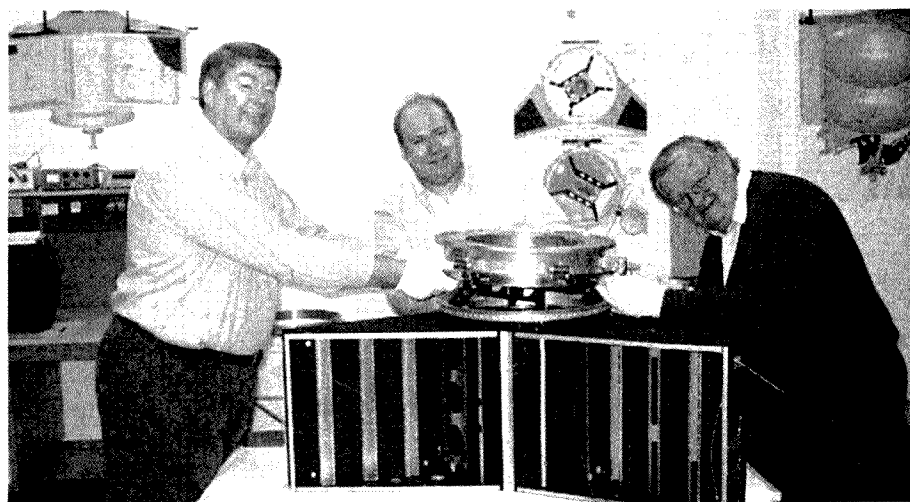


Photo shows representatives of AMSAT-NA, AMSAT-DL and AMSAT-UK at the ZEL with the P3E satellite.

From left to right are: Rick Hambly W2GPS, President AMSAT-NA, Peter Guelzow DB2OS, President AMSAT-DL, and Jim Heck G3WGM Secretary AMSAT-UK

for up to six CubeSats, with an additional two backup CubeSats on stand-by. Proposals are solicited from interested universities with CubeSat projects of sufficient maturity level to be able to meet the Vega Maiden Flight schedule (current target launch date of December 2008).

Proposals will be evaluated by the ESA Selection Board and the selected CubeSats will be announced on the ESA Education web portal by 15 April 2008. Details can be found on-line at:

http://www.esa.int/esaED/SEMSJ8QR4CF_index_0.html

CubeSats offer amateur radio satellite users the opportunity to take part in some exciting science as well as the potential for communications.

OSCAR-11 copied but signal becomes intermittent

Telemetry buffs will be interested to hear that OSCAR-11 was heard from 22 January to 01 February and from 11 February to 15 February.

Signals have been very variable in strength sometimes very strong, sometimes undetectable, even at high elevations. Low signal strength was particularly noticeable at AOS and LOS, and also towards the end of the transmission periods. OSCAR-11 is expected to switch back on under control of its on-board timer around 07 March.

There should be a short period of transmissions before permanent eclipses start in mid March. After March it is unlikely that the satellite will support any sustained period of operation and will only transmit for a short time, possibly less than a single orbit, every 21 days.

Clive G3CWV acknowledges the help of telemetry buffs Peter ZL3TC, Chris M0DQO, Tobias DG3LV, Edward BX1AD, Mark KU7Z, Gene WA4UKX, SWL Mark in CM87, Ron G4PGY, Julian WB9YIG and John KB2HSH for their reports. OSCAR-11 beacon frequency is 145.826 MHz, AFSK FM ASCII Telemetry. See <http://www.users.zetnet.co.uk/clivew/> for additional information.

Currently under construction is Phase 3E, a satellite similar in size and shape to OSCAR-13, but with many advanced features. It will carry a 70 cm to 2 metre band transponder, as well as transponders on other bands. Importantly it will carry its own rocket motor which will boost its orbit into a highly elliptical one, which will give world wide coverage, allowing ordinary radio amateurs great DX possibilities through the transponders. Radio Amateurs have not had such a satellite since the demise of AO-40 in March 2004.

The P3E satellite is still under construction in the ZEL, and its completion is anticipated for sometime in 2008. It is noteworthy that some of the personnel employed by the University to work in the ZEL have undertaken to continue working on P3E as volunteers.

Pictures of the ZEL can be seen at http://www.uk.amsat.org/gallery2/main.php?g2_itemId=32

AMSAT-UK publish a quarterly newsletter full of Amateur Satellite information.

Join now online at <https://secure.amsat.org.uk/subscription/>

For further details contact the secretary Jim Heck G3WGM

Tel: +44 (0)1258 453959

Email: g3wgm@amsat.org

Website: <http://www.uk.amsat.org/>

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The end of an era

Len Ricardo JP VK1ALR

The Canberra Deep Space Communication Complex located at Tidbinbilla have been supporting a spacecraft know as IMP-8 for many years. Unfortunately the spacecraft failed recently and we now have a rather large array detail below which may be available – see details below.

Spacecraft IMP-J

NSSDC ID: 1973-078A

Alternate Names

- IMP 8
- Explorer 50
- 06893

Facts in Brief

Launch Date: 1973-10-26

Launch Vehicle: Delta

Launch Site: Cape Canaveral, United States

Mass: 371.0 kg

Nominal Power: 150 W

Description

IMP 8 (Explorer 50), the last satellite of the IMP series, was a drum-shaped spacecraft, 135.6 cm across and 157.4 cm high, instrumented for interplanetary and magnetotail studies of cosmic rays, energetic solar particles, plasma, and electric and magnetic fields. Its initial orbit was more elliptical than intended, with apogee and perigee distances of about 45 and 25 earth radii. Its eccentricity decreased after launch. Its

orbital inclination varied between 0 deg and about 55 deg with a periodicity of several years. The spacecraft spin axis was normal to the ecliptic plane, and the spin rate was 23 rpm. The data telemetry rate was 1600 bps. The spacecraft was in the solar wind for 7 to 8 days of every 12.5 day orbit. Telemetry coverage was 90% in the early years, but only 60-70% through most of the 1980s and early 1990s. Coverage returned to the 90% range in the mid to late 1990s. The objectives of the extended IMP-8 operations were to provide solar wind parameters as input for magnetospheric studies and as a 1-AU baseline for deep space studies, and to continue solar cycle variation studies with a single set of well-calibrated and understood instruments. In October, 2001, IMP 8 was terminated as an independent mission. Telemetry acquisition resumed after about three months at Canberra only (30-50% coverage), as an adjunct to the Voyager and Ulysses missions. As of August 2005, IMP 8 continued in this mode. In early 2007, the transmitter on the spacecraft suffered a power loss. Efforts to reset or recover the missions were unsuccessful and finally, in October 2007, commands were up-linked to the spacecraft to turn it off.

Funding Agency

NASA - Office of Space Science Applications (United States)

The Antenna

The array that was used at Canberra is being considered for removal. Two options are being considered, first offer it to the amateur community on a tender basis or the second option is to relocate it and continue to use it in a practical space science observations mode.

The antenna consists of an 8 Yagi array of VHF antennas with a nominal centre frequency of 138 MHz.

Gain is approximately 25 dBi.

3 dB beamwidth is approximately 16 degrees.

It was manufactured by M² Antennas.

The array has polarity diversity and is approximately 12 m wide and 4 m high.

It comes complete with tower and is steerable in Azimuth and Elevation.

Readers with a serious interest in acquiring the array can contact the Editor in the first instance.

Len Ricardo JP VK1ALR is Operations Manager and Deputy Site Manager, Canberra Deep Space Communication Complex, Raytheon Australia

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Plan ahead

This month:

Harry Angel Memorial Sprint

Saturday 26th April,
2008

QRP Hours Contest

Saturday, 12th April,
2008



Contest Calendar for April 2008 – June 2008

April	5/6	SP DX Contest	CW/SSB
	5/6	EA WW RTTY Contest	RTTY
	12/13	Japan International DX Contest	CW
	12/13	Yuri Gagarin International Contest	CW
	19	Holy Land DX Contest	CW/SSB
	19	TARA Skirmish Digital Prefix Contest	PSK
	20	YU DX Contest	CW/SSB
	26	Harry Angel Sprint	CW/SSB
	26/27	Helvetia Contest	CW/SSB
	26/27	SP DX RTTY Contest	RTTY
May	10/11	CQ-M International DX Contest	CW/SSB
	10	VK/Trans-Tasman 80 metres Phone Contest	SSB
	24/25	CQ WW WPX Contest	CW
	24	VK/Trans-Tasman 80 m CW Contest	CW
June	7	QRP Sprint	CW
	7/8	IARU Region 1 Field Day	CW
	14/15	ANARTS WW RTTY	Digital
	14	Asia/Pacific Sprint	SSB
	21/22	All Asia DX Contest	CW
	28/29	King of Spain Contest	SSB
	28/29	Marconi Memorial Contest	CW
	28/29	ARRL Field Day	All

Welcome to this month's Contest Column.

Did you support the VK Team in Beru?

As I hammer away at the PC typing this column (and hoping that the PC does not crash again!), Beru is taking place on the HF bands. With my antenna on the floor, I was unable to help them along this year – but next year will be different!

Steve VK6VZ reports that Les VK4BUI had to make a last minute withdrawal from the VK team, owing to high winds in his area which meant he had to take his main antenna down, so Captain Steve played a substitute entry with Karl VK2KM or Rob VK6HG. I am not sure if the adjudicator will allow this, but both Karl and Rob put in big efforts, so hopefully one of their scores will be allowed.

When the high winds died down, Les immediately got the antenna back up and got on the bands. A good display of good Aussie spirit!

The conditions seemed pretty average, but there were a few surprises. Battle stories of QRN from around the country were reported, making 80 m painful and relatively unproductive in certain locations – but at least the Woodpecker stayed in his nest! 40 m proved to be the band of choice, providing good DX for those in the right spots and rewarding stations that had put some additional effort into erecting additional antennae for the contest – mainly directed at the UK and Africa.

The other big surprise was 10 m opening for a couple of hours after 0600 Z – few European and Far Eastern stations ended up in the log, but the opening did not extend into the UK. 20 m seemed to continue its poor showing of recent times with limited DX appearing for prolonged periods.

Phil G4OBK was operating the VK2MB Club station during a holiday visit to VK. Phil got to work many of his UK contest chums, with most of them unaware that it was Phil using the VK2MB callsign.

Phil encountered a few problems during the contest – RFI issues notwithstanding – Phil's biggest problem was locking himself out of the station at 1500 Z local time after a brief session of sleep in his car! When he returned from the break, the lock stuck on the shack door and then whilst trying to free it the key broke off inside the secure lock! Phil's mobile phone was locked inside, but he managed to find two guys outside drinking beer, part of a fire crew, and they helped Phil out of his predicament.

The true contesting spirit is obviously alive and well and VK came to the rescue and made the contest bearable for at least one Pom....

2007 IARU HF World Championship Results

Congratulations to the following VK stations appearing in the results listing for the contest.

VK2GR 36,051
VK3KE 14,801
VK6DU 84,623

VK5MAV 53,354
VK2CCC 37,884
VK4TT 36,162
VK2AEA 242,352

VK6DXI 113,904
VK5MAV 16,422
VK2CCC 13,464
VK4TT 7,980
VK2GR 4,704
VK8AV 3,555

the contesting fraternity.

The website is worth a visit from time to time at www.contestuniversity.com to catch up on what is going on and to get a feel for the contesting related activities and gatherings taking place. I was fortunate to pay the show a visit in 1999 and found it fascinating and somewhat bewildering at times. The flea market is astonishing, covering many acres of land and packed to the gunnels with goodies. They have even provided a shipping service to get that new rig onto your doorstep for when you arrive back in VK. It is a very well organised event but you have got to book accommodation and flights well in advance. Renting a car is good too, as some of the local taxi drivers (and I comment here from experience) tend to be unable to resist the chance to put their kids through college on the proceeds of the elevated takings from the unwary.

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton

2007 CQWW WPX

Results

Congratulations are also due to the following VK stations appearing in the results listing for the contest, but a special mention for VK4BUI showing his true colours when the wind doesn't blow, as continental leader for Oceania on 20 m – well done Les!

VK2AEA 1,539,297
VK4BUI 181,940
VK2GR 88,655
VK4TT 45,270
VK4EJ 37,290
VK8AV 153,102

2007 Islands On The

Air Results

A bumper month for contest results this time, with yet more VKs flying the flag. Raj VK4FRAJ, son of Eddie VK4AN, participated in this one, achieving a very creditable result – nice one Raj!

VK4FRAJ 5,778
VK4BUI 83,214

Contesting – The University Course

Generally not found at your local TAFE, contesting is a hot topic at this year's Dayton Hamvention. For those fortunate enough to have wrangled a business trip to coincide with the show, or if you have sufficient private funds, the Dayton Hamvention in Ohio USA has got to be one of the largest (if not the largest) regular gathering of radio amateurs on the planet. Again this year, the Con Test University (CTU) is being run and promises to have something for everyone to learn – whether seasoned contester or newcomer. Operating from the Crowne Plaza Hotel, the CTU Professors consist of some of the finest operators and station builders to be found. The curriculum consists of subjects ranging from antenna arrangements for DX contesting to RTTY to information for those taking their first tentative steps into

QRP Hours Contest

from Ian Godsil VK3JS
Contest Manager

Saturday, 12th April, 2008

*1000 – 1059 UTC CW/RTTY/
PSK31*

1100 - 1159 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, so as to stress the QRP nature of the event.

Modes: First Hour - CW (including RTTY and PSK31) 2000 hrs Eastern Std. Time

Second Hour - SSB 2100 hrs Eastern Std. Time

Frequencies: CW/PSK31/RTTY
3.500-3.535 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, 121 Railway Parade, Seaford, 3198, or by email to: Ian_G@mail2ian.com

Please consider using email and sending the log immediately after the event. Otherwise, logs should be received by Friday, 18th April, 2008.

Certificates will be awarded to the highest scorers in each Mode in each State.

Note: Email is the preferred method of sending the log, but all entrants must include their postal address (you cannot know if you will be a section winner!).

This is the year
to serve your
community by
joining

WICEN

**Wireless Institute
Central Emergency
Network**

**Local contact
details in your
2008 WIA
Callbook**

Harry Angel Memorial Sprint

from Ian Godsill VK3JS
Contest Manager

1000 Z – 1146 Z Saturday 26th April, 2008

This year marks the 10th Anniversary of an annual Contest to remember VK's oldest licensed operator, Harry Angel. Please note the time length of the Contest - 106 minutes, 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 the 80 m band, using modes CW and SSB.

Categories: Single Operator; Multi-Operator.

Sections: CW, Phone, Mixed and SWL (please choose ONE ONLY).

Frequencies: CW: 3500 - 3535 kHz, Phone: 3550 - 3640 kHz.

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.

Sending Logs: Email is the preferred method to vk3js@inboxnow.com (Please note that even for email logs, the entrant's name, callsign and postal address are required, as per the Summary Sheet.)

Send Written Logs to Harry Angel Sprint, 121 Railway Parade, Seaford 3198, by Friday, 2nd May, 2008.

Send summary sheet showing name

and date of Contest, name, address and callsign of entrant, category entered, points claimed and a declaration that the rules and spirit of the Contest were observed.

Notes:

1. Please submit your logs as soon as possible after the Contest and do not forget to include your postal address (you cannot know if you may be a section winner!!)
2. The VKCL logging program covers this contest. This way everything can be kept electronic.
3. Please make this a special effort to commemorate this 10th Anniversary.

Ross Hull Memorial VHF-UHF Contest 2007 – 2008: RESULTS

John Martin VK3KM
Contest manager

This year I offer congratulations to Andrew Davis VK1DA, who has taken top position in the VHF-UHF section of the contest. Congratulations also to Rex Moncur VK7MO, who again wins the digital modes section. No logs were received this year for the microwave section.

The last summer season has been another very disappointing one for the Ross Hull Contest. For many years – decades in fact – the contest used to generate a high level of activity. But this began to decline in the mid 1990s and the downwards slide has continued since then, in spite of increasing interest in VHF-UHF DX activity.

There seem to be several reasons for the decline. One is possibly the work involved in estimating the distances worked. It is only necessary to make a estimate to the nearest 100 km, but this does complicate the process of log-keeping. It may be better to replace this system with scoring based on grid squares.

Another problem is the duration of the contest. But there is a good reason for it. A longer contest period makes it more likely there will be some good openings during the contest period. And it also allows everyone to fit their contest activity around other summer activities.

It is not necessary to spend the entire contest period in the shack – just work what you can when you can.

A scoring system based on locator squares may also help here. If a locator square is worth say ten times as much as a contact, entrants will be able to concentrate mainly on bagging extra locators, rather than feeling that they have to fill their logs by working anything that moves.

I will publish a draft set of new rules a little later in the year, and in the meantime I would appreciate any comments. The email address for any suggestions is vhf-contests@wia.org.au.

Ross Hull Contest 2007 – 2008

Call	Name	50	144	432	1296	TOTAL
Section A: VHF-UHF (6m - 23cm)						
VK1DA	Andrew Davis	24	1212	475	168	1879
VK7MO	Rex Moncur	-	1356	-	-	1356
VK2TG	Robert Demkiw	31	666	365	-	1062
VK6ADI	Barrle Burns	912	18	-	-	930
VK2AH	Brian Farrar	267	516	70	-	853
VK2ARA	Ted Thrift	389	297	85	-	771
VK3HV	George Francis	4	21	20	-	45

Section B: Microwaves (23cm and above)

No logs received.

Section C: Digital modes, All Bands

VK7MO	Rex Moncur	-	1314	-	12896	14210
VK1WJ	Waldis Jirgens	-	300	-	-	300

Ross Hull Contest – List of Winners 1950 - 2008

1950 - 1951	VK5QR	R. Galle
1951 - 1952	VK5BC	H. Lloyd
1952 - 1953	VK4KK	A. K. Bradford
1953 - 1954	VK6BO	R. J. Everingham
1954 - 1955	VK4NG	R. Greenwood
1955 - 1956	VK3GM	G. McCullough
1956 - 1957	VK3ALZ	I. F. Berwick
1957 - 1958	VK3ALZ	I. F. Berwick
1958 - 1959	VK3ALZ	I. F. Berwick
1959 - 1960	VK4ZAX	D. R. Horgan
1960 - 1961	VK3ARZ	W. Roper

1961 - 1962	VK5ZDR	M. J. McMahon	1985 - 1986	VK3ZBJ	G. L. C. Jenkins
1962 - 1963	VK4ZAX	D. R. Horgan	1986 - 1987	VK3ZBJ	G. L. C. Jenkins
1963 - 1964	VK5ZDR	M. J. McMahon	1987 - 1988	VK5NC	T. D. Niven
1964 - 1965	VK3ZER	R. W. Wilkinson	1988 - 1989	VK5NC	T. D. Niven
1965 - 1966	VK3ZDM	J. R. Beames	1989 - 1990	VK3XRS	R. K. W. Steedman
1966 - 1967	VK5HP	J. H. Lehmann	1990 - 1991	VK3XRS	R. K. W. Steedman
1967 - 1968	VK3ZER	R. W. Wilkinson	1991 - 1992	VK3XRS	R. K. W. Steedman
1968 - 1969	VK5ZKR	C. M. Hutchesson	1992 - 1993	VK3XRS	R. K. W. Steedman
1969 - 1970	VK3ZER	R. W. Wilkinson	1993 - 1994	VK3XRS	R. K. W. Steedman
1970 - 1971	VK4ZFB	E. F. Blanch	1994 - 1995	VK3XRS	R. K. W. Steedman
1971 - 1972	VK5SU	J. W. K. Adams	1995 - 1996	VK2FZ/4	A. Pollock
1972 - 1973	VK5SU	J. W. K. Adams	1996 - 1997	VK2FZ/4	A. Pollock
1973 - 1974	VK5SU	J. W. K. Adams	1997 - 1998	VK2FZ/4	A. Pollock
1974 - 1975	VK5SU	J. W. K. Adams	1998 - 1999	VK3XPD	A. P. Devlin
1975 - 1976	VK5SU	J. W. K. Adams	1999 - 2000	VK3EK	R. G. Ashlin
1976 - 1977	VK4DO	H. L. Hobler	2000 - 2001	VK4TZL	G. R. McNeil
1977 - 1978	VK3OT	S. R. Gregory	2001 - 2002	VK4TZL	G. R. McNeil
1978 - 1979	VK4DO	H. L. Hobler	2002 - 2003	VK3EK	R. G. Ashlin
1979 - 1980	VK3ATN	T. R. Naughton	2003 - 2004	VK3EK	R. G. Ashlin
1980 - 1981	VK6KZ	W. J. Howse	2004 - 2005	VK3UH	L. Mostert
1981 - 1982	VK6KZ	W. J. Howse	2005 - 2006	VK4TZL	G. R. McNeil
1982 - 1983	VK6KZ	W. J. Howse	2006 - 2007	VK3KAI	P. L. Freeman
1983 - 1984	VK6KZ	W. J. Howse	2007 - 2008	VK1DA	A. Davis
1984 - 1985	VK3ZBJ	G. L. C. Jenkins			

Summer VHF-UHF Field Day 2008: RESULTS

John Martin VK3KM
Contest manager

The Summer Field Day went well. Propagation was better than usual, and there was a particularly good sporadic E opening on 6 and 2 metres that gave both portable and home stations large numbers of contacts and a bigger than usual list of grid squares.

The winners of the five sections were: Doug Friend VK4OE, Ralph Edgar

VK3WRE, the Lara group VK3UHF, Alan VK3XPD, and Matt VK2DAG. Congratulations to all.

It was interesting to note that with one exception, the top scorers on each band were not the top scorers overall in their sections. It is good to draw attention to the very high scores that some entrants were able to achieve. These top scorers were: David VK4ZDP on 6 metres,

Andrew VK1DA and the EMDRC VK3ER on 2 metres, Andrew VK1DA again on 70 cm, and the LUMEG group VK3UHF on 1296.

The next VHF-UHF Field Day will be the spring event next November. The dates will be confirmed a little later in the year. Please check the VHF-UHF Field Day page on the WIA web site for further details.

Call	Name	Location	50	144	432	1296	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	24 GHz	TOTAL
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Section A: Single Operator, 24 Hours

VK4OE	Doug Friend	QG63, QG62	75	582	505	640	470	-	-	460	-	2732
VK1DA	Andrew Davis	QF44	79	930	890	552	-	-	-	-	-	2451
VK3BJM	Barry Miller	QF15	156	639	535	272	-	-	-	-	-	1602
VK3BBB	Brian Young	QF31	147	615	435	168	-	-	-	-	-	1365
VK2FRBS	Russell Simon	QF57	-	492	525	-	-	-	-	-	-	1017
VK5XE	Ian Northeast	PF96	140	231	315	-	-	-	-	-	-	686
VK2RS	Don Haberecht	QF33	71	330	120	-	-	-	-	-	-	521
VK5AR	Alan Raftery	PF94	30	195	180	96	-	-	-	-	-	501
VK1AI	Greg Parkhurst	QF44	165	228	-	-	-	-	-	-	-	393
VK5FAAF	Robert Allen	PF96	-	178	212	-	-	-	-	-	-	390
VK2ZSZ	Steve Zoneff	QF44	-	66	-	-	-	-	-	-	-	66

Section B: Single Operator, 8 Hours

VK3WRE	Ralph Edgar	QF31	-	366	450	536	470	340	220	360	-	2742
VK3HY	Gavin Brain	QF32	172	474	455	408	-	-	-	-	-	1509

VK5OQ	Keith Gooley	PF95	65	324	240	168	-	-	-	-	-	797
VK5AR	Alan Raftery	PF94	27	171	150	96	-	-	-	-	-	444
VK3KAN	Rik Head	QF22	23	108	165	-	-	-	-	-	-	296
VK3DCQ	Trevor Haines	QF22	-	153	120	-	-	-	-	-	-	273
VK2YJS	Julian Sortland	QF56	66	132	-	-	-	-	-	-	-	198
VK4EV	Ron Everingham	QG62	30	60	-	-	-	-	-	-	-	90

Section C: Multi Operator, 24 Hours

VK3UHF	LUMEG (1)	QF21	207	666	805	960	960	590	360	840	220	5608
VK3ER	EMDRC (2)	QF22	239	930	865	792	-	-	-	-	-	2826
VK4WAT	TREC (3)	QH22	474	630	420	360	-	-	-	260	-	2144
VK2MA	HADARC (4)	QF46	268	585	605	584	-	-	-	-	-	2060
VK5ARC	SCARC (5)	PF94	223	798	530	168	-	-	-	-	-	1716

Section D: Multi Operator, 8 Hours

VK3XPD	(6)	QF21, 22	-	504	510	600	460	450	-	460	220	3204
VK3FRC	FAMPARC (7)	QF21	161	552	515	304	-	-	-	-	-	1532
VK2MA	HADARC (4)	QF46	170	384	420	464	-	-	-	-	-	1438
VK3BJA	GGREC (8)	QF21	-	325	335	344	-	-	-	-	-	994
VK1WJ	(9)	QF44	120	252	250	-	-	-	-	-	-	622

Section E: Home Station, 24 Hours

VK2DAG	Matt Hetherington	QF56	206	858	640	504	210	-	-	210	-	2628
VK3HZ	David Smith	QF22	-	609	715	720	-	-	-	-	-	2044
VK3BDL	Michael Goode	QF22	177	657	630	528	-	-	-	-	-	1992
VK4BEG	Russell Norton	QH22	477	594	285	216	-	-	-	-	-	1572
VK4DMC	Dale McCarthy	QH22	400	396	240	216	-	-	-	-	-	1252
VK4ZDP	David Purkis	QH32	530	420	255	-	-	-	-	-	-	1205
VK4AR	Gary Ryan	QG62	-	501	160	-	320	-	-	210	-	1191
VK3TPR	Peter Roberts	QF22	91	456	500	-	-	-	-	-	-	1047
VK4ADC	Doug Hunter	QG62	373	564	-	-	-	-	-	-	-	937
VK3YXC	Ken Church	QF22	35	177	320	368	-	-	-	-	-	900
VK2EI	Neil Sandford	QF68	63	396	430	-	-	-	-	-	-	889
VK4AQ	Ross Anderson	QH32	374	252	255	-	-	-	-	-	-	881
VK2TG	Robert Demkiw	QF55	35	345	440	-	-	-	-	-	-	820
VK5MCB	Michael Baldock	PF86	43	492	270	-	-	-	-	-	-	805
VK5FIVE	Rick Cybul	PF94	-	393	270	-	-	-	-	-	-	663
VK3ACA	John Adcock	QF22	-	381	235	-	-	-	-	-	-	616
VK2EAH	Andy Hood	QF56	-	282	330	-	-	-	-	-	-	612
VK3HV	George Francis	QF31	50	159	210	-	-	-	-	-	-	419
VK2ZQX	John Watson	QF58	146	270	-	-	-	-	-	-	-	416
VK4AAT	Terry Stewart	QG62	187	-	-	-	-	-	-	-	-	187
VK3YFL	Bryon Dunkley-Smith			Check log								

- (1) Lara UHF-Microwave Experimenters' Group: Chas Gnaccarini VK3PY, David Learmonth VK3QM, Charlie Kahwagi VK3NX.
- (2) Eastern and Mountain District Radio Club: Steve VK3AMY, Jim VK3AMN, Mike VK3AVV, David VK3DLR, John VK3PZ, Peter VK3QI, Damien VK3SOX, Jonas VK3VF, Max VK3WT, Jack VK3WWW.
- (3) Tablelands Radio & Electronics Club: John Roberts VK4TL, Trevor Gregory VK4ZFC, Dave West VK4ADW.
- (4) Hornsby & District Amateur Radio Club: Mick VK2HMS, Dave VK2FDIW, Rose VK2ANG, Steve VK2BCD, Rod VK2DAY, Compton VK2HRX, Taylor VK2FTEC, Rod VK2FDRW, Josh VK2ZJG, Mal VK2STG, Paul VK2FMAM, Peter VK2TTP, Dave VK2HSS, Pete VK2TPK, Bob VK2BMU.
- (5) South Coast Amateur Radio Club: Barry Bates VK5KBJ, Andrew Willis VK5LA, Stef Daniels VK5HSX, Peter Patterson VK5FPGP.
- (6) Alan Devlin VK3XPD, Michael Coleman VK3AAK.
- (7) Frankston & Mornington Peninsula ARC: Roy VK3GB, Gerard VK3GER, Andrew VK3AEJ, Stjepan VK3TSN.
- (8) Gippsland Gate Radio & Electronics Club: Phil Pavey VK3YB, Kerri-May Pavey VK3FDSD, Bruno Tonizzo VK3BFT, Doug Rowe VK3KMN, Helmut Inhoven VK3DHI, Ivan Blezard VK3ARV, Ian Jackson VK3BUF, Ross Jackson VK3ZAP, Megan Woods.
- (9) VK1YBQ: Hauke Wunderlich, VK1PAR: Al Long, VK1WJ: Waldis Jirgens.

VHF/UHF – an expanding world

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

Despite a number of days where very promising propagation maps were produced by the Hepburn Tropo Ducting Forecast web site, there has not been a great deal of long-distance propagation to report for the month. No VK-ZL contacts have been reported, although the forecast for this weekend for the John Moyle Field Day is looking very promising. In the other direction – across the Bight to VK6 – there have been some reports of the beacons in Esperance and near Albany being heard in Adelaide, but no contacts noted.

There has been more localised enhancement thanks to some slow-moving High-Pressure cells. The pattern, repeated a number of times through the month, starts with enhancement from Adelaide into Mt Gambier and Melbourne. As the High moves east, the Mt Gambier-Melbourne path can become quite intensely enhanced with 23 cm signals over S9. At that point, the keen microwavers at each end normally scurry to the tops of their respective mountains to make contacts on all bands up to 10 GHz, with 24 GHz proving a little more challenging due to water vapour in the air. The High then generally slides to the south between the mainland and Tasmania, producing good conditions between VK3, 5 and 7, before moving out off the east coast lifting the VK7 to coastal VK2 path.

On February 17th, Matt VK2DAG and Rex VK7MO used such conditions to good advantage as Matt reports:

I started to have a JT65 QSO with Rex VK7MO but he was 59+ so we went to SSB instead and were able to work each other on 2 m for an hour with 59+ signals with some rapid deep fades. So we decided to try 23 cm JT65c on 1296.100 and within 10 mins the QSO was in the bag! Rex's best was -14 and I had 100% decodes on him. My VK5EME Transverter seems to have some bad drift on Tx up to 100 Hz but on Rx it only drifted 10 Hz up over Rex's Tx periods. 1120 km on 23 cm – that has easily beaten my best to date of 302 km.

Colin VK5DK has also been having a busy time:

Recently, there has been some very good 144 MHz, 432 MHz and 1296 MHz propagation in the southern parts of VK.

On the evening of Monday March 10th, there were very good conditions between Brian VK5BC/P at Corny Point on the Yorke Peninsula and Mt Gambier – a distance of around 500 km - with 5x9 signals on 2 m and 5x9 + 20 dB on 70 cm. Brian did not take his IC910 with him as the 23 cm antenna was not quite ready for installation at the portable location, but I am sure signals would have been very good on 23 cm as well.

The same evening, conditions were good to the east from Mt Gambier with beacons on 2 m, 70 cm and 23 cm being received at this QTH from Geelong (VK3RGL) on 2 m and 70 cm, Ballarat's new 23 cm (VK3RMB) beacon under test at VK3ADE's QTH, the VK3RGI 2 m, 70 cm and 23 cm beacons from Gippsland & VK7RAE 2 m beacon from NW Tasmania. Stations worked from this QTH were VK3XPD and VK3ZYC in East Gippsland on 2 m, 70 cm and 23 cm.

On the morning of Wednesday March 12th, several stations were worked in the Adelaide and Melbourne directions as well as hearing the VK6REP 2 m beacon at S9 and VK6RST.70 cm beacon at S2, but no VK6 stations heard. Stations worked from this QTH were:

On 2m - VK3ESE, VK3AUU, VK5AKM, VK5BJE, VK5KGP, VK5BC, VK5NY, VK3AXH, VK3TPR and VK3XPD; on 70 cm – VK3ESE, VK5AKM, VK5BC, VK5NY, VK3TPR and VK3XPD; and on 23cm – VK3ESE, VK5NY, VK5AKK and VK3XPD.

At this stage, no 13 cm contacts have been made into the Melbourne area, but I hope that with the increase in equipment building in the Ballarat and Melbourne area, this will happen in the near future.

VK-VHF Reflector

The VK-VHF email reflector has once again found a new home after the

existing host could not continue to provide the service. Hugh VK2YYZ has generously offered the services of his server that is currently hosting a number of similar reflectors. Details of the new reflector may be found at:

<https://ozlabs.org/mailman/listinfo/vk-vhf>

Note the https prefix and that you may get a pop-up window about a security certificate – click OK to proceed.

Thanks to Gordon VK2DJG who has run and hosted the reflector for the past 8 years.

Beacons

Rod VK2SMC/TWR reports that the south-eastern NSW beacons are well on the way to full time operation again:

Starting on the JMFD weekend, the VK2 beacons will be running from this QTH. The frequencies are 144.414 MHz and 432.414 MHz with a tiny bit of drift. You will find them without too much trouble. The beacons are going into a permanent home on Emerald Hill prior to winter at a powered site. It has taken a while getting a tower organised and also underground power etc. We are a tiny group with very tiny amounts of reserves so you will understand why the beacons cannot be just thrown up.

Glen VK2CCW nearby in Cooma also has a temporary beacon in operation. Details are:

Freq: 144.5875 +/- 300 Hz.

Mode: FSK 300Hz –shift.

ID: “VK2CCW QF43NS COOMA SE NSW”

Power: 14 Watts into 6” quarterwave filter, 10 W into antenna.

Antenna: 13 elements HPOLAZ : NNE (Brisbane) from Cooma, negative horizon.

Hours of operation: Continuous, 24 H, battery backed, until at least 30 May.

Location: VK2CCW QTHR Cooma.

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

Digital DX Modes

Rex Moncur VK7MO

Welcome to Ian VK1BG, Rob VK3XQ, and John VK7CEJ, who have all been trying out WSJT. After a number of tries Ian VK1BG was able to complete a JT65A contact with Rex VK7MO over what is an extremely difficult tropo-scatter path from Canberra to Hobart, with high mountains both ends blocking any tropo-ducting. On 17 February there was a good coastal duct from Newcastle down to Hobart and Matt VK2DAG was able to work Rex VK7MO on 23 cm on JT65C with signal levels of -22 and -14 dB.

With the increasing availability of GPS-locked 10 MHz references, some operators have been locking their rigs to GPS to improve frequency stability and accuracy and thus performance using JT65. These devices are called GPSDOs for Global Positioning System Disciplined Oscillators. Very good quality units such as the HP Z3801A and Z3815A, that can hold frequency on 1296 MHz to better than 1 Hz even after losing GPS lock for 24 hours are

becoming surplus with the demise of CDMA telephone systems. Surplus units can be obtained for around 250 dollars. G3RUH, James Miller, has produced a simple low power unit that is more suitable for portable operation. This gives excellent performance while GPS locked but without the complication of a hold-over capability. As Telstra close their CDMA system it is likely that large numbers of high performance GPSDOs will become available.

A number of VK hams have been looking at ways to lock their rigs to these 10 MHz GPSDOs and find they can now report zero DF (Difference Frequency) and no drift on JT65. Peter VK3SO uses an IC-706 which requires a 30 MHz reference oscillator. Peter has found he can lock the 30 MHz oscillator by the simple process of injecting the 10 MHz into a few turns wound over the coil of the existing oscillator. Jim VK3II uses an FT-736 which requires a reference oscillator of 20.480 MHz.

Jim has found that the HP Z3815A has an auxiliary output on 4.096 MHz which can be multiplied by 5 to give 20.480 MHz. Other rigs generally require odd frequencies that require one to use a PLL to lock to the 10 MHz of the GPSDO. David VK3HZ and Rex VK7MO have been designing and testing PLLs to lock the FT-847/817/857/897 which all require a 22.625 MHz reference; the TS-2000 which requires a 15.6 MHz reference; and the IC-910-H which requires a 30.2 MHz reference. At this stage the preferred approach is to use 74AC161 dividers and an XOR gate to produce the control voltage for the oscillator. It has been found that reasonably good phase noise can be produced with a relatively cheap VCXO, although a good quality VCXO can give the last fraction of a dB performance improvement.

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 couple of good openings in early February reported in last month's notes the band quietened down with only a few spasmodic openings which didn't reach any great intensity or longevity.

Interesting day on the 13th February where in VK5 the Band was open for several hours to VK2, 4, 7 and VK6 (Albany area). Conditions were quite intense with strong backscatter signals evident, Garry VK5ZK working Brian VK5BC on backscatter. VK7s also worked into VK4 and Wally VK6WG Albany worked several VK2s as well as VK5.

17th February saw John VK7CEJ in Launceston work Scott VK4CZ Brisbane and Phillip VK2FHN Sydney as well as Norm VK3DUT near Bairnsdale on Tropo with 5/9 signals over the 393 km path. Meanwhile ZL TV was being heard in VK5 but without any ZL contacts reported. Brian VK5BC managed brief

contacts with John VK2BHO and Mike VK2BZE.

On 19th February, short openings when Brian VK5BC worked Henry VK2ZHE in Port Macquarie and Neville VK2YO worked Dale VK4SIX.

20th February saw some openings; in VK5 the VK2RHV beacon was audible for some hours with Brian VK5BC working Peter VK2ZTV. Northern Tasmania opened to northern VK2 and VK4 with John VK7CEJ working Mike VK2OT in Grafton. Ted VK2ARA worked Rod ZL3NW and Doug VK4DUG worked Garry VK2DJ mobile in Wollongong and VK3TPR.

Norm VK3DUT had the VK5RBV beacon at good strength late in the afternoon of 23rd February and worked Jim VK5ZSA near Mannum. Jim also worked Jack VK2XQ in Sydney.

On 27th February the band was open most of the morning in VK5 when

the VK4RGG Gold Coast, VK4ABP Longreach and VK8RAS beacons were audible. Brian VK5BC worked Neville VK2YO and several VK4's from Brisbane to Cairns. Gary VK5DX also worked Wayne VK4WS.

The afternoon of the 29th February, the VK2RHV and VK2RSY beacons were good strength into VK5 with Jack VK2XQ and Kerry VK2BXT working Brian VK5BC. Myles VK6ZRY Perth also reported hearing the Dampier VK6RSX beacon.

Internationally many kept an ear out on 50.105.5 MHz for the VP6DX Ducie Island expedition but unfortunately no contacts eventuated but Dale VK4SIX did hear their beacon on 22nd February.

Please send any 6 m information to Brian VK5BC at bcleland@pickknowl.com.au.

ar

DX – News & Views

John Bazley VK4OQ
PO Box 7665, Toowoomba Mail Centre, QLD 4352.
Email: john.bazley@bigpond.com

Well I guess if you needed Clipperton Island then you will have been successful! I think that at times we sit in our shack and forget all about the planning and the vast amount of effort and expense that has gone into making such a DXpedition possible. Yes I know one can do it on a far more modest budget but the aim of the Clipperton “boys” was to give a new or wanted country, IOTA or mode to as many amateurs as possible in a relatively short time. I have not singled Clipperton out for any particular reason, for there have been plenty of similar recent operations, this one happens to have JUST taken place, so is probably still very fresh in everyone’s mind. Taking just one item – Antennas – the amount of aluminium and wire in the air was impressive!

TX5C Antenna Inventory:

- 1 160 m CW balloon vertical
- 1 160 m CW top loaded vertical
- 1 80 m CW 2 element phased verticals
- 1 75 m SSB 2 element phased verticals
- 1 75 m SSB dipole
- 1 40 m CW 4 Square phased array
- 1 40 m SSB 2 element yagi at 40’ DON’T know about this one. SSB will have either two element vertical or dipole.
- 1 40, 30, 20, 17, 15, 12, 10 & 6 m CW 3 element SteppIR Yagi at 40’
- 1 20, 17, 15, 12, 10 & 6 m SSB 2 element SteppIR Yagi at 40’
- 1 40, 30, 20, 17, 15, 12, 10 & 6 m SSB SteppIR vertical
- 1 40, 30, 20, 17, 15, 12, 10 & 6 m CW SteppIR vertical
- 1 30 m CW 4 element parasitic vertical array
- 1 20 m SSB 2 element SVDA
- 1 20 m CW 2 element SVDA
- 1 17 m SSB 2 element SVDA
- 1 17 m CW 2 element SVDA
- 1 15 m SSB 2 element SVDA
- 1 15 m CW 2 element SVDA

- 1 12 m SSB 2 element SVDA
- 1 12 m CW 2 element SVDA
- 1 10 m SSB 2 element SVDA
- 1 10 m CW 2 element SVDA
- 1 6 m 4 element Yagi
- 2 Beverage antennas for 160 m
- 1 K9AY loop RX antenna
- 1 17-12 A3WS
- 1 10-15-20 A3S
- 1 80-6 Butternut Vertical

The Yasme Excellence Awards

On 18 January 2008 the Yasme Foundation (www.yasme.org) announced the winners of the first Yasme Excellence Awards, given for service and dedication to amateur radio as recognized by the Foundation’s Directors. The prizes are in the form of a plaque and a monetary award.

- Joseph L. Arcure Jr. W3HMK: \$2,000 for his long service to DXers as a QSL manager. Joe’s efforts on behalf of DXers everywhere promote international goodwill by facilitating cultural exchanges between operators who may never meet in person, yet share a common bond of DX operation.
- Sheldon C. Shallon W6EL: \$2,000 for his work with propagation prediction software. By making propagation more accessible, Shel has done much to advance the technical skills of HF operators in understanding the physical environment of radio.
- James Brooks 9V1YC: \$2,000 for DXpedition organization and videography. James’ professional videos make the skills and excitement of DX operating and expeditioning more accessible to hams who have not yet tried DXing and to non-hams alike.
- Jukka Salomaa OH2BUA and Antti Kantola OH5TB: \$2,000 (shared) for conceiving, operating, and maintaining the DX Summit,

the first widely-used Web-based spotting network portal. They created a tool that fundamentally changed the nature of HF operating, a true advancement of the radio art.

They are well deserved, for the recipients have contributed a lot to Amateur Radio over many years.

I wonder how many of the readers can remember Danny Weil VP2VB and the start of YASME?

So what have we got to look forward to in April and May?

GU: The Barry Amateur Radio Society (GW4BRS) will be active as GB0U from Guernsey (EU-114) on 19-25 April. Expect activity on all bands and modes.

P4: Garry Fisher K9WZB and his wife Sharon K7WZB will be active as

P40ZB from Aruba (SA-036) on 16-24 April. They intend to operate CW, SSB and RTTY on 40, 20, 17, 15, 10 and 6 metres. QSL direct to K9WZB.

Peter HA3AUI is going back to Africa. He will be active in his spare time as either 6W2SC (from Senegal) or JSUAP (from Guinea-Bissau) until 15 April. QSL via HA3AUI, direct or via the bureau. Logs will be uploaded to LOTW. Peter plans to operate digital modes with some SSB. Bands in use will be 160-6 m from 6W and 30-10 m from JS. QSL via HA3AUI, direct or bureau.

MJ0MJH will be in Jersey’s EU-013 and maybe EU-099, April 21-25, possibly beyond this time range, all bands and modes. QSL via M0MJH direct or bureau.

JX: Svein LA9JKA (JX9JKA) will be “very active” from Jan Mayen (EU-022) from 27 March through 8 October. He plans to operate SSB and digital modes on 160-6 metres. QSL via home call.

Bob Garrett K3UL is once again heading to Grand Cayman where he will be QRV as ZF2YL on CW and SSB from April 5 through April 12. This will be a vacation and Bob will have daily doses of “radio activity” when not in the sun, sand or with his YL. Look for him on all bands and when possible he’ll be focusing on 80 and 160 metres, during

his evening hours. QSL direct only via K3UL.

F5KEE/p, F5KEE/m, M/F5KEE/p or M/F5KEE/m, one of these will be the callsign from the Scilly Islands, EU-011, for F5OGG, F6HER, F4EVR and F8ATS, May 15-18. On the 15th it will be between 2000-2230 Z and possibly not that entire period of time. They will be on 40 m with 50 watts, battery power, and a mobile vertical. That will be from Penzance and the Lizard lighthouse. May 16 they hope to get on in the evening. They will be on CW and SSB. QSL via the bureau or direct to F8ATS. Be sure to include an SAE and one valid new IRC or one U.S. dollar for Europe or one new IRC or two U.S. dollars for other parts of the world.

DXCC News

ARRL DXCC Manager Bill Moore NC1L reports that the 2007 E4/OM2DX DXpedition to Palestine, VK9WWI -- Willis Island and Y19PT--Iraq have been approved for DXCC.

The following is from the ARRL Web February 2008: Due to several factors, including greater activity from new and reactivated DXCC entities, the ARRL DXCC Desk has been experiencing QSL card processing delays. According to ARRL DXCC Manager Bill Moore NC1L, there are approximately 2300 applications currently on the list of received applications, resulting in a processing backlog of more than 12 weeks. "People usually have to wait 4-6 weeks from the time they send in their application to the time they receive their cards back," Moore said.

Even with the low sunspot numbers of the now defunct Solar Cycle 23, there has been an increase in DXCC activity.

Due to illness, Pete K3PD, QSL manager for 5N0NAS, 5Z4ES, 9Z4DI, BX2/NE3H, C95WH, EL2JH, FM5WE, OX3SA, T32Z, T88RZ, TA3DD, VP2MNI, VP5FEB, W3GOP, W3UU, ZL2MAT, Z21FO, Z21GC, Z21GX, Z22JE, ZS4U, ZS6CCY, & ZS9X, is

retiring from QSL managing. Pete has selected Irv K3IRV to take over his QSL duties. Effective immediately K3IRV, will become the new QSL manager for 5N0NAS, 5Z4ES, 9Z4DI, BX2/NE3H, C95WH, EL2JH, FM5WE, OX3SA, T32Z, T88RZ, TA3DD, VP2MNI, VP5FEB, W3GOP, W3UU, ZL2MAT, Z21FO, Z21GC, Z21GX, Z22JE, ZS4U, ZS6CCY, & ZS9X. K3IRV has been and still is the QSL manager for stations OD5TE, JY4NE, OD5UT, ET3VSC, ZC6A, OD5/JY4NE, E44A, DU1/W3WAZ, DU1MGA, PY5EG, PY2OMS, ZW5B, PS2T, & PP5EG.

Happy DXing.

Special thanks to the authors of *The Daily DX* (W3UR), *425 DX News* (I1JQJ) and *QRZ.DX* for information appearing in this month's *DX News & Views*. Interested readers can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

ar

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And a few words about the Quansheng

This is some of what Jason Reilly VK7ZJA had to say about our radios in AR in November

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- 11) Monitor function (input frequency)
- 12) Low-battery warning
- 13) Frequency Modulation
- 14) Auto power save
- 15) Output power: 4 - 5W
- 16) Large-capacity battery
- 17) Ear/microphone auto-charger connections

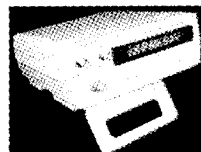
SIMPLEX & DUPLEX



Extra Battery (1100mah)	\$12
Speaker Microphone	\$12
Headset/Microphone	\$8
SMA to BNC Converter	\$5
\$7 shipping charge on Items ordered separately	

Victor Frequency Counter

\$119
Delivered!!



- 8-digit LED display,
- High stability
- Power cord, test leads included

Owner's manual for a ham band

John Kirk VK4TJ

You probably wouldn't take a D9 Caterpillar for a spin without at least a cursory look at the instruction manual, would you? The destructive potential of a D9 dozer and a PTT switch in the wrong hands are roughly equal in my view; but how many of us take the time to familiarise ourselves with the band plans (Reference 1) before making that coveted first contact?

'You exaggerate', you say. Bear with me – the incidents below are actual examples observed on our bands. When we're done, I think you'll agree that a half hour spent with our WIA band plan would be profitable indeed. Let's start out with an open-and-shut one:

As a recent immigrant from the land of the long white cloud, you like to keep in touch with your mates across the Tasman. After your old club's longstanding net on 3725, you stick around to have a natter with a few old friends. What's wrong with this picture? We don't have access to 3725 kHz is what's wrong! Just because it is available to the Kiwis doesn't mean we have it too! Uh-oh – a quick perusal of the ACMA database (Reference 2) reveals that that frequency is assigned to both Telstra and the New South Wales State Emergency Service. Could have really stuck your foot in it had there been an emergency exercise in progress, couldn't you?

Example 2 is a bit more subtle, and involves a modicum of understanding how your rig actually works:

Ubangistan, the last DXCC entity you need for your Worked-All-Asteroids Award, has just been spotted on 80 metre SSB, working split. He announces that he is listening 3775 to 3780, targeting Pacific stations only. You beauty! You load up on 3778 and work him on your first call. What's wrong with this picture? You're on LOWER SIDEBAND, is what! 3778 may be your notional carrier frequency, but your voice products extend at least 3 kHz below you, out of our allocation and into that self-same SES and Telstra band mentioned in example one. Double slap on the wrist if you happen to be a Standard or Foundation licensee, because the 80-metre DX window is for Advanced licences only.

Example 3 is not illegal, merely immoral – guaranteed to make you about

as popular as a proverbial release of intestinal wind in a bathysphere:

You are, very laudably, involved in a public service event involving both QRP and marginal antennas. Due to the distances to be covered and the time of day, 40 metres is about your only option. Weak signals dictate that you find a clear frequency to pass traffic on. Hmm...7040 sounds clear – let's go for it. Congratulations! In one fell swoop, you have:

- Wiped out 30% of the tiny sliver of 40 metres we call the digital sub-band
- Probably curtailed all HF forwarding off this continent we call Australia
- Incurred the wrath of digital operators word-wide, who depend on the store-and-forward capabilities of our BBS's to move their own traffic.

Automated BBS's cannot defend themselves. They cannot move to avoid QRM, because their forwarding partners overseas depend on them being in the same spot – always. They must both put up and shut up, until your encroachment ceases, creating a backlog of traffic that may take days to unsnarl.

'But I never hear anything on frequency X...'

I hope to convince you with the next couple of examples that that is insufficient grounds for 'squatting' on apparently underused spectrum...

Example 4 is more of the same, on a grand scale:

The race for bargains at a hamfest clearly goes to the swift. Knowing this, you and your mates agree to split, scouring the boot sale area with each other's 'most wanted' lists. Liaison will be via hand-held on a quiet two metre simplex frequency. 145.9 MHz sounds clear, and it's only a thumb-click away from the rig's default boot-up frequency.

What's wrong with this picture? Doh! 145.9 is in the satellite sub-band, and is the input of FO-29, a really great bird with intercontinental coverage. Congratulations – with one press of the PTT, you've managed to monopolise almost the entire passband of this SSB/CW-only bird, destroying its usefulness for thousands of users, and probably shortened its battery life at the same time. It's not like it can stop in at the 7-11 next pass for a new set of D-cells!

Is it really sensitive enough to detect the miniscule emanations from my hand-held? In a word, yes. Like all the examples given here, it really happened.

Example 5 is more of a newbie thing, though none of the parties involved were F calls:

The Darling Downs Radio Club operates what could almost be termed a 'super-repeater', with absolute front row seats on the edge of the Great Dividing Range. The repeater's footprint easily extends for 150 km in any given direction. For weeks, the repeater had been plagued with weak signals on its input. Although obviously amateur in origin, the transmissions were in a foreign language, with call signs seldom if ever given. Attempts to direction-find the source of the signals proved fruitless, as few club members had a QTH as good as the repeater! As it turned out, a family of related hams 100 km away had elected to run around their town with handhelds and marginal antennas, due to their close proximity to each other. They selected our input frequency as their family simplex net 'because they never heard anything on it'. Even if they had been listening to our output frequency, it is unlikely they would have heard us, due to their poor antennas, but it does not follow that we could not hear them.

continued next page

Reciprocity is only a valid argument when you choose to use the very best equipment!

Dumb, you say – even a cursory glance at a repeater directory or the WIA Band Plan would reveal that their choice of frequency was a poor one. Perhaps, but this was by no means an isolated incident.

Let's close with one last example, likely to earn you the wrath of a few grumpy old men like myself.

'Yer' mate has uncovered a stash of Codan commercial SSB HF transceivers at a price too good to pass up. Wanting to try your hand at 80 metre HF mobile, you and he program all the "5's and 10's" frequencies into your units. He proposes a test on 'channel 1', which turns out to be 3530 kHz. You're on to me if you've read this far – he's clearly in the 'gentlemen's agreement' CW sub-band. Of the entire available 80 metre spectrum, only 15.6% is allocated to CW operators. One sideband signal effectively wipes out 8.6% of that sliver – in practice, often more, as our band allocations do not mesh well with those overseas, thus often see us sharing our little corner with RTTY, SSB and even broadcasters. Many of those CW operators are operating vintage or homebrew rigs, crystal controlled on the QRP calling frequency of 3528 kHz. They would have no choice but to wait you out. No wonder they get a little testy! Your observance of the CW sub-band limits clearly implies a reciprocal obligation that CW ops stay clear, where possible, of the SSB bands, even though the band plan says we're welcome there. Are you listening, old timers?

In summary, much of what we do as amateurs can be likened to the '12 items or less' line at the supermarket – whilst you are unlikely to be hauled off to jail for transgressing, remember how you felt the last time someone in front of you piled 50 items on the belt? Somebody, somewhere, could be muttering the same imprecations over your very public on-air antics!

Reference 1:

<http://www.wia.org.au/bandplans/>

Reference 2:

http://www.acma.gov.au/webwr/aca_home/legislation/radcomm/acts/consolidations/radam_1of97.pdf

ar

Radios? you mean like CBs or something?

Jayenne Conroy

This is the most common response people give when I tell them about Peter's hobby, I mean passion, I mean obsession. Hell, it was the first thing I thought when he announced he was taking up radios.

I had visions of the bad mullets and hotted cars of my misspent youth; of 'breakers' and 'callsigns', '10-21's' and 'lonely YLs'.

Little did I know! We were (and still are!) renovating our Queenslander style home. Having raised it and built in underneath, I began to notice a collection of boxes with dials and knobs taking place, together with oddly shaped electrical components.

Peter began to disappear down there regularly, participating in 'skeds'. I found out later this stood for 'scheduled transmissions'. Until then, the only 'skeds' I knew were sneakers.

These skeds seemed to be a lot more formal than the CB chats of my youth, lots of letters and numbers, callsigns and no handles like 'Big Daddy' or 'BJ and the Bear'.

Unfortunately, some skeds were early on weekend mornings and, as Peter's radio room is under our bedroom, I would quite often be woken to the sounds of radio discussions! After I went down one Sunday morning and repeated, verbatim, the discussion Peter had just had – Peter bought a set of headphones. Ahh, headphones, the answer to every radio widow's prayers.

The other essential to being a radio widow is the ability to overlook how

much your house begins to resemble a lopsided echidna.

Aerials and antennas begin to sprout from all over the roof. There were even loops of wire all through the trees. Not only was Peter disappearing downstairs but now would often say 'I'm going up onto the roof', leaving me to hear bizarre thumps and bumps overhead.

At one stage, he even co-opted me (an avowed acrophobic) to come up and help him shift an antenna from the side

of the roof. My role was to catch the antenna pole as Peter brought it down across the roof.

Let's just say you can't always pick where an antenna will

essential to being a radio widow is the ability to overlook how much your house begins to resemble a lopsided echidna

fall. The end result was the pole fell away from the roof and fell two metres down across the backyard. We now have a lopsided clothes hoist. Storms have also taken on a new significance, with various parts of antennas winding up in our backyard after them, increasing the lopsidedness of our Hills Hoist!

ar

NOTE: Article submitted by Peter Schrader VK4TGV, partner of the author. Peter reports that Jayenne will by now have attempted the Foundation Licence Assessment. She hopes to gain the callsign VK4FJAY

Silent keys

Archie Bode VK3AIB

It is with regret that I announce the passing of Archie Bode VK3AIB (and originally VK3LAB) on 22 September 2007, aged 83 years.

Archie was a self taught musician, who played piano, bass guitar and drums; he enjoyed playing jazz, and dance and band music.

Archie and his wife, Gwen, were married in 1949, and had three sons.

He had an inventive mind as well as basic engineering skills in welding, things electrical and mechanics. He also held a Private Pilot's licence.

Archie gained his Novice licence VK3LAB at the age of 70, and then went on to gain his full call VK3AIB, where he particularly enjoyed the challenge of operating CW.

He ran a small printing business in Noble Park, and when he retired Gwen and he decided to move to Sea Lake, where he continued his interest in music, outback travel and amateur radio.

He established a modest shack in a caravan, using an FT-7, a home brew power supply and an ATU, along with a G5RV antenna. He enjoyed listening to and using the Travellers' nets, and the Early Birds net, and keeping skeds, over the years.

Dementia related illnesses began to take hold so he decided to close his station down.

Archie is survived by his wife Gwen, and their three sons and their families, all who have many fond and cherished memories of him.

Submitted by **Barrie Astbury VK3NJB**.

Arne Van Der Harst VK5XV

Arne was born in Bandung, Indonesia in 1928.

From 1942 to 1945, as a teenager, he was interned in a Japanese Prisoner of War camp. During his time there, he discovered that the camp had two secret radios – a transmitter and a receiver. They had been built with parts procured from their captors, and were disguised as Japanese military drinking flasks. He

was one of the select few who knew the secret (See AR magazine, September 2006).

After the war, Arne became a watchmaker, and then later on, for quite some years, worked at Flinders Medical Centre on medical technology equipment.

Arne was a very meticulous technician. He loved building things and repairing and refurbishing transceivers and the like, and then selling them to fellow hams. If you bought something from Arne, you knew it was 100%, perhaps better!

Arne was also a very accomplished jazz musician and arranger, specialising on piano. He had a jazz group going from the late 50s and into the 60s.

Arne and Bertie moved to a retirement village over a year ago, where he still kept regular 80 m and 2 m skeds with a few regulars.

He passed away in mid-January.

Submitted by **Hans VK5YX and John VK5EMI**.

Don Benck VK6DB

I regret to inform all that Don Benck VK6DB passed away suddenly on 17 February, 2008.

Don started his career at age 13 in Kalgoorlie working for a radio repair shop working on and repairing early valve radios. He then applied for a position with the ABC and became the CEO of 6WA Wagin for many years. Later on he worked at 6WF, where he often had to climb the 6WF tower and sit on the Top Hat to see if there was any arcing between joints! This was an amazing feat considering Don suffered a disability with his feet and ankles all his life yet never complained.

During his early career he also climbed the 6WA tower many times.

When he lived in Wagin Don was very proud to be honoured by the government and the ambulance association with a special award for duties undertaken while serving as a country ambulance driver.

He later applied for and obtained the position of Channel 2 CEO in Carmel,

and while working there he named the adjoining road 'TV Alley', as it is still known today. Only a few years ago Don, even though retired, and due to his valuable knowledge, was called back to keep the Channel 2 TV station operational for some time until suitable staffing was arranged. He was also called in to help supervise a new cable and antenna installation at the SBS TV tower and on tower extensions at Channel 10.

Don was a very intelligent person and in later life became a full bottle on packet radio; he also attended classes to learn about computers, and had recently built his own.

He was a devoted family man who was always working on various chores for the benefit of the family. Don had only good to say about everyone, and was well liked by all his friends. You had to be careful talking to him as it only took a few words and you would find yourself loaded up with his gear, such was his generosity.

Just recently he had repaired his rotator and antenna and was looking forward to building some new antennas and getting active on the HF bands.

Don was a longstanding member of the WIA, and also the Hills Amateur Radio Group.

Another passing of an early AR gentleman, and a sad loss to our ranks.

Submitted by **Doug Jackson VK6DG** with permission and support from May Benck.

John Knott VK2VM ex VK2AYK

It is with regret that we announce the passing of John in late December 2007.

A keen contester in the 80s and 90s on CW and short wave; an enthusiast since the 1950s. He had been inactive recently due to ill health but was a keen listener to the end.

Deeply missed by all his loved ones.
Vale John.

Submitted by his daughter **Sonya**.

Royal Assent – Official

May I inform readers that a superb compilation of early VK4 history has been archived at the Royal Historical Society of Queensland (RHSQ).

This tome, because that is what it is, weighs over 3 kg, is bigger than A4 size and 5 cm thick. It covers in depth the activities of some of Queensland's most prominent pioneers: much of it in print for the first time. It had been titled "Document collections: Radio and TV Pioneers 1920-1940." The author is Russell Nunn from Brisbane: a radio and TV engineer, journalist, TV manager and an amateur for a very short period many years back.

This tome was put together for archival purposes. It is not for sale commercially. Large and heavy as it is, more researched material is likely to be added during 2008.

Russ and the RHSQ naturally would like to see it read by many amateurs and others. The address is William Street, North Quay, River City, Brisbane.

"Halcyon days" is also archived at RHSQ and the John Oxley Library, South Bank, or can be purchased commercially via the WIA Bookshop.

It speaks well for Queensland that we have been able to retrieve the rare documents and other material we have archived. Go and have a read.

Alan Shawsmith (AI) VK4SS
Retired historian

Dinosaur requests

Perhaps I am a little old, but in all the years of my membership of the RSGB and the WIA I have enjoyed reading the member's letters column almost as much as the featured articles. They were full of interesting ideas, thought provoking views, criticism (usually constructive) and occasional controversy. It saddens me that they are now so few in number; not one in December 07 AR! Why?

From my dinosaur's world of computer illiteracy, I suspect that bane of the numerical healthiness of our hobby, the internet, is to blame.

Perhaps I should adopt the fatalistic attitude expressed so well in that rural Yorkshire of my youth and say to myself: "These things 'appen'?" No! Better to adopt the attitude of the country of my middle and later life and fight it. This letter is a start, and I reckon I am good for a couple that come under the heading of "ideas". Remember! Anything published in "Over to You" is available to all, not just the computer literate; even if they are in the majority (vast majority?).

To hopefully get things moving, I do hereby (dinosaur talk) issue a challenge to anyone who believes "Over to You" should be discontinued: Justify your opinion, via the forum available to all! This may seem counter productive, however I believe there is little to lose and much to gain; but please, be constructive!

David the Dinosaur VK3FGE (David Bell)

Editor's response:

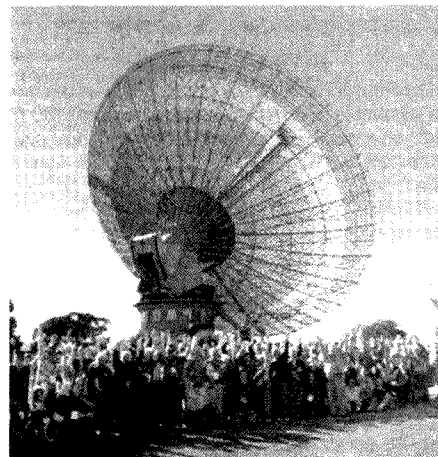
*David and other readers,
I welcome OTY contributions, but do reserve the right to edit and publish, or not publish material.*

In the case of the December 2007 issue of AR, we had a large amount of material to publish and little in the way of OTY items. Despite expanding the magazine to 64 pages, we simply did not have space for all the material we would have liked to publish. The same problem arose with the January/February issue. As some of the Club news items often have a limited "shelflife", we tend to drop the newer SK and OTY items, if any are "in the mix", rather than cutting Club news. This is what occurred in December.

If we have OTY items that are suitable for publication, I will attempt to fit them into the available space as soon as possible. As always, in this modern age, it is easier if the contributions are made electronically. That way, I do not need to type the material or to process a typed letter through a scanner and optical character recognition software.

Regards,

Peter VK3KAI



The crowd at last year's AGM in Parkes.
Photo: Robert Broomhead

Parkes, now Broken Hill!

Although I am unable to attend the Annual General Meeting of the WIA, I want to express my thanks for it once again being held in a regional area.

I am sure that I am not alone in saying "well done" on behalf of those members of the WIA who, like me, do not live in a major city.

Parkes last year, and Broken Hill this year: What a shot in the arm for rural and regional members. Of course, it also provides our city based members with an opportunity to see how the other half lives.

Again, well done, and congratulations to all involved with the decision.

Ray Wells VK2TV

WANTED

Volunteers to assist in the 2009 Callbook preparation

Must have internet access and be able to edit documents using Word or an equivalent word processing package.

We are specifically looking for someone to coordinate preparation of the electronic version of the Callbook.

If you are able and willing, please contact the editor (details on page 1 of Amateur Radio)

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WANTED NSW

• Operators manual or copy for Telecheck and Marker Generator Model 1323A, manufactured by Cossor Instruments, London. Will meet all costs. John Bennett, VK2SIG, RSARS 3292, QTHR, email: macben2@bigpond.com

• Mode Selector switch for a Yaesu Radio FT101ZD, or do you know of anyone who can help me out. Stephen Smith VK2SPS, Ph 02 9456 0130 or 0415 559 784

FOR SALE VIC

• Communication receiver R-390/URR. Collins designed, Motorola built. This well known classic Rx used by USA military has S/N 69 and produced in the 1950s for general surveillance/communication. Fully operational, serviced, aligned with reconditioned panel and hardware. It is not an R-390A/URR. Full technical specifications and photos available via email. Price \$1100. Freight and packing costs extra but negotiable. I can deliver to Melbourne. Frequency Counter Racal-Dana Model 9916 operates to 520 MHz excellent condx. Price \$98. HP 6034L System Power supply 0 - 60 V/10 A (200 W) LED numeric display. Can be controlled manually from panel or with GPIB/HP-1B bus, price \$180. Pete VK3IZ, phone 03 5156 2053, P.O Box 212 Metung 3904

FOR SALE QLD

• 96 element 70 cm beam (no brand – possibly by Hi-Gain), needs some repair. Also a 7 element 2 m beam (no brand - again, possibly Hi-Gain). Both free, just for collection at Brisbane address. VK4LR, Ph 07 3870 7305.

About hamads....

- Submit by email (preferred) or on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully and clearly, use upper AND lower case.
- Separate forms for For Sale and Wanted items. Please include name, address STD telephone number and WIA membership number.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.

• Emtron DX-1D 1 kW HF linear amplifier. 160 to 10 metres. As new. Little used. S/N #10523. \$2600.00. VK4CAG QTHR

• 4-Element Triband HF Yagi antenna, Chirside Yagi Antenna Model CR-34DX, High performance 4 Element Triband Beam, 10 m – 15 m – 20 m amateur bands. Longest element is 9 m long. Comes disassembled with short mast and plenty of cable. Good condition - works great. Sell for \$400. Stored in Morningside, QLD. Jonathan Dimond (ex-VK4DJD) email: jonathan@jonathandimond.com, phone: 03 9016 3506

• Nally heavy duty near new tower, lower 3 section of 150 ft with winch and brake. Lifts Z sections to 23 m with section pull-down hold-up plates. Fitted with Kenpro 450 degree rotator in tower and 6 m 60 mm shock absorbed pipe, SS sleeve bearing and fittings to mount 3 beams Xmas-style, top beam at 25 m steel reinforced double tilt at 2.5 and 4 m with 10, 5, 1 ratio winch to lower tower top to ground level. Buyer to disassemble and remove as VK4UA cannot due to poor health causing close down at Pimpama. New tower is now \$4000 but will consider best offers, or tower \$900 to \$1200, tilt unit \$200 to \$275, rotator with pole \$300 to \$400. Bill VK4UA phone 07 3393 3030 or leave your number on recorder.

FOR SALE SA

• 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

WANTED SA

• Matched pair of 3-500Z tubes; prefer Eimac or Amperex NOS or low hours known good/full output tubes. Would also consider single non-matched tubes. Wanted as spares to keep my old Kenwood TL922 linear amplifier serviceable. Contact Leigh VK5KLT, QTHR, phone: 08 8367 0303 or email: leigh.turner@ieeee.org

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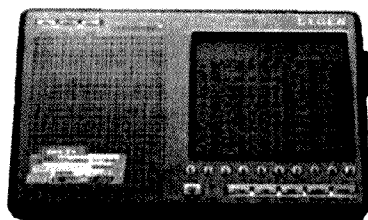
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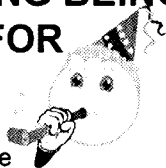
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A new

Amateur Radio Wiki

has been started and can be found at

<http://www.amateur-radio-wiki.net>

We are looking for writers of articles suitable for this website.

The intention is that it will become an online encyclopaedia for hams.

Please log into the site, register and start writing!

Tim Roberts VK4YEH QTHR.

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a radio communications 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 with a personal aim and without any pecuniary interest. 1.56 ITU Radio Regulations.

The Wireless Institute of Australia represents the interests of all amateurs throughout Australia.

The WIA offers one year and five year memberships for Full Member \$75 (\$356), Overseas Member \$85 (\$403) and Concession Member - Pensioner \$70 (\$332), and one year memberships for Concession Member - Student \$70 and Family Member \$30.

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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, 145.6000, 147.000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning.
Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 10:30 am & 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130, 147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
- 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 0900 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. Repeated Sunday, 1900 local, on 1.865, 3.564, 146.700 and 438.525 MHz. Country relays on major repeaters. 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.
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.

WIA AGM

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Volume 76

Number 5

May 2008

Amateur Radio



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Passing on the amateur radio baton

SARC Slim Jim building day



★ *A collett for holding square rod in a 3-jaw
lathe chuck*

★ *John Moyle experiences*

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Our Cover this month

Duncan Raymont VK3DLR showing young Aaron VK2FUNN and Kendall VK2FISH the wonders of amateur radio at Summerland ARC's Slim Jim building day. See story on page 33.

Photo by 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 \$8.00 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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International Amateur Radio Union

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Editorial Comment

Peter Freeman VK3KAI

Club cooperation

It is interesting to observe that some clubs can usefully cooperate. One example of this is the Centre Victoria Radiofest, which has seen Amateur Radio Victoria, Central Goldfields ARC and Midland ARC running a large successful "hamfest" event this year and last. I am sure that there are other examples to be found.

One example that is developing occurs close to home, for me at least. Gippsland is a large area of eastern Victoria, being the area east of metropolitan Melbourne and south of the Australian Alps. To my knowledge, the region is currently serviced by three amateur radio clubs.

In December last, a Foundation training course was conducted by the Eastern Zone ARC (EZARC) in Churchill. Most participants were happy with the outcomes of the assessments held on the Sunday, with most gaining their Foundation licence and one successful completion of the upgrade to Standard. Amateurs from Bairnsdale, Drouin, Longford, and Leongatha, as well as the locals from the Latrobe Valley, assisted over the weekend, including the assessment event.

In the middle of April, the East Gippsland Radio Group held an assessment event at Longford. This time it was the turn of two of the EZARC amateurs, including me, to return the favour. It was a reasonably long day for all.

After an initial briefing, we started with the Regulations paper for all attempting Standard, and the Foundation paper. After marking the papers and giving all feedback on their efforts, the group decided it was time for lunch.

Some of the candidates organised a barbeque, including plenty of food for all, for lunch. A very social break was the result. After lunch, it was down to work again. The Standard candidates tackled the theory paper and our Foundation candidate completed the practical assessment. More paperwork, more feedback and finally congratulations to all involved from both sides of the event. The result, by now, should see one new Foundation callsign, one new Standard licensee and three upgrades to Standard.

Two others were successful with the Regulations paper. One candidate was happy with having gained some more experience in tackling formal written assessment tasks and will be back after he spends some more time with the books and the Radio and Electronics School learning materials.

With a large geographic region, only three clubs and a small number of Assessors and Facilitators, the only way that we can hope to encourage newcomers to the hobby is for the clubs to cooperate. Perhaps groups elsewhere should consider how they can work together for better outcomes for the hobby?

Broken Hill and the AGM

Planning on attending the WIA AGM later this month? I am sure that the team will have an excellent overall program arranged by the time of the event. Plans are moving towards their final shape and registrations are mounting rapidly. Immerse yourself in the history of Broken Hill, the Royal Flying Doctor Service, and the School of the Air. With after dinner speakers available on both Friday and Saturday evenings and organised activities during the day on Saturday morning and afternoon and Sunday morning, there is plenty to do. Even if you are not interested in all of the organised activities, there is plenty to offer in this regional centre. But book soon, as there are a limited number of places available.

I look forward to catching up with those attending. I am planning to attend, driving up on Friday and returning with an overnight stop in Mildura on Sunday, making it a four-day weekend. With a trip like this, perhaps it is time for me to consider mounting a HF antenna on the vehicle and to use the lower bands over the weekend – at present, I rarely venture down to the HF bands. I may even include a Yagi and mast for two metres, and see if I can work some stations via meteor scatter in the mornings, before the organised activities begin. I must remember to not play radio too long on Sunday morning, as I am told that there will also be a guest speaker at Sunday breakfast.

73

Peter VK3KAI

Forty years on

Some weeks ago I was helping look for something among old WIA papers with Robert Broomhead and Geoff Atkinson in the WIA's store room in Williamstown and we came across an old black and gold address book.

The second page was headed "1968 – Inaugural Region III Congress and 1968 Federal Convention" and then "Sydney Easter" and below that "1968".

While it was an address book, it had been used to record the names and signatures of those who participated in both meetings.

The reference to the 1968 Federal Convention was a reference to the fact that in those days the WIA, as a federal organisation, held every Easter its annual general meeting, called the Federal Convention attended by the "members", the WIA's state organisations, the "Divisions" and its so called Federal Executive, the people elected to conduct the business of the organization between the annual meetings.

The signatures show that Max Hull VK3ZS was Federal President, and John Battrick VK3OR was Federal Secretary.

Another signature was Ken Pincott VK3AFJ, Victorian President and Editor of AR.

But much more interesting were the signatures of those involved in the Inaugural Region III Congress that was conducted at the same time as the WIA Federal Convention in a different part of the same building.

There was Harry Burton ZL2APC from Wellington, New Zealand, as well as Tom Clarkson ZL2AZ, also from Wellington, New Zealand. Then, from Newton, Iowa, USA was Bob Denniston W0DX, the President of the ARRL and as such, the President of the International Amateur Radio Union, the IARU, which was the hat he was wearing in Sydney. From Manila, Philippines was Emilio Asisitores DU1EA, and from Tokyo, Japan Kan Mizoguchi JA1BK and Ken-ichi Kajii JA1FG.

So, the societies represented at the Inaugural Congress were JARL, NZART, PARS (PARA) and the WIA and, of course, the IARU.

And, I found my signature there, among the WIA names, as the "Federal Councillor" for Victoria! While I was not then involved with Region III, that did not take long to occur.

John Battrick VK3OR Federal Secretary was the WIA representative at the Inaugural Region III Congress. After that inaugural meeting the WIA provided a secretariat and Peter Williams VK3IZ became the secretary of the fledgling organization, and the three of us, John, Peter and I worked together over the next three years before the 1971 Tokyo Conference to create the draft Constitution that was amended and then adopted in Tokyo, to create the IARU Region 3 Association.

So, after that Region 3 had its own amateur organisation, joining similar organisations in Regions 1 and 2.

Why was it considered necessary to have a regional organization? At that time the IARU was effectively one society, the so called Headquarters Society, the ARRL. The President of the ARRL was ordinarily the President of the IARU, and the whole cost of the IARU was borne by the ARRL.

I think that the Regional organizations had developed in part because some considered the then structure of the IARU was not representative, and that together the societies could do more than what was then the single society that was the IARU.

And a couple of days after I had found this book of signatures, Fred Johnson ZL2AMJ, one of the great contributors to Region 3, pointed out that this year was the 40th birthday of IARU Region 3.

So many things have changed in the 40 years.

The Inaugural Conference was even before the World Administrative Radio Conference for Space

Telecommunications in Geneva, in 1971!

The ITU's World Radiocommunications Conferences (WRC) were then called World Administrative Radio Conferences (WARC) and were held every twenty years or so. Now they happen every three or four years. The Asia Pacific Telecommunity, the APT, did not exist, and the Region 3 organisation was not going to have to worry about any regional preparatory meetings for many years to come.

Today, as one WRC ends, work starts on the next one. The work is done in the ITU's study groups, the preparatory groups established by the regional organizations, in our case by the APT, and the groups established under the leadership of ACMA to develop our national position.

The IARU itself has changed.

Today the Constitution of the IARU recognises the three regional organizations, and creates the Administrative Council, consisting of the President, the Vice President, the Secretary and two representatives from each of the three Regional organizations. Basically, the Administrative Council formulates IARU policy.

And today the role of the Regional organization is much more meaningful. IARU Region 3 appoints two members of the Administrative Council and sends delegates to the APT preparatory meetings, now already preparing for WRC 11.

As we celebrate the 40 years of IARU Region 3 we should salute those who had the wisdom and vision to bring together the people who made the IARU Region 3 organisation come into existence, all those years ago in Sydney, Australia.

And also, let us be proud that the WIA was not only the host, but an important contributor to a development in amateur radio that was probably more important than was realised at the time.

ar

Brett Dawson joins WIA ITU Team

The WIA is very pleased to announce that Brett Dawson VK2CBD has joined the WIA's team involved in the national preparation for the next major ITU Conference, WRC 11.

Brett joins Keith Malcolm, David Wardlaw and Gilbert Hughes.

Brett is known to everyone who attended the WIA's last AGM at Parkes, and visited the Parkes Observatory operated by the Australia Telescope National Facility of CSIRO.

Brett is also active in his local club, the Orana Region Amateur Radio Club at Dubbo

ACMA releases papers

ACMA has recently issued a number of papers concerning the Principles of Spectrum Management in Australia and a discussion paper in respect of various proposals to re-plan spectrum in the region of 420 to 512 MHz, with proposals affecting the 70 cm amateur band.

ACMA has also published details of their 5-year work plan that includes references to the 6 metre and 70 cm amateur bands. These papers can all be found on the ACMA website.

These papers have been published in time for the ACMA's radio-communications conference, RadComms08, which will be held from 30 April to 2 May 2008.

WIA Director Peter Young VK3MV will be attending Radcomms 2008 on behalf of the WIA representing the amateur services.

The WIA will be making submissions on any proposals that affect the amateur services and will continue to actively follow these developments

Good things come to those who Wait

The WIA's much anticipated second edition Foundation Licence Manual "Your Entry Into Amateur Radio" is now at the printer.

"After months of preparation this is good news indeed", says WIA Director

and Manual Editor Phil Wait VK2DKN. "We were expecting the second edition manual to be ready in early April but it has dropped back a couple of weeks, mainly due to the fact that we wanted everyone involved to be absolutely happy with it."

"We think readers will be happy with it too, and it incorporates many of the comments and suggestions we received to the first edition, as well as extra pages containing information on antennas, propagation and single sideband."

Manuals will be available from the WIA office before the end of April.

The second edition will cost WIA Members \$19.50, \$25.50 posted. Copies can be ordered from the Bookshop part of the WIA website.

Clubs that have not already placed orders are encouraged to do so now.

New reference material on WIA Website

The WIA website has been enhanced by the addition of much additional regulatory material.

The Legislation section, which is under the Reference Information in the Members Area of the WIA Website, now contains all the important pieces of

legislation that govern the operation of amateur stations in Australia.

The site also contains the legislation that controls LIPDs, the EMR standard and Class Licences for Visiting Amateurs and the CBRS service.

Further work is being undertaken to link all the ACMA's information papers that relate to the amateur service.

ACMA now issuing HAREC endorsed Advanced Certificates of Proficiency

The WIA has been advised that ACMA has commenced the issue of a new Amateur Operator's Certificate of Proficiency (Advanced) [AOCP(A)]. The certificate incorporates statements to the effect the certificate's examination corresponds to the examination described in the CEPT recommendation T/R 61-02 (HAREC).

Amateurs who have obtained an AOCP(A) without HAREC recognition during the period while we were seeking HAREC compliance may obtain a new duplicate instrument at a cost of \$45.10.

ar

WANTED

Volunteers to assist in the 2009 Callbook preparation

Must have internet access and be able to edit documents using Word or an equivalent word processing package.

Are you into IT?

We are specifically looking for someone to coordinate preparation of the electronic version of the Callbook.

If you are able and willing, please contact the editor (details on page 1 of *Amateur Radio*)

A collett for holding square rod in a 3-jaw lathe chuck

Drew Diamond VK3XU

The accepted method of machining four-sided material (such as square rod) is to hold the material in a 4-jaw chuck, whose jaws are independently adjustable. That is the way we were all taught at trades' school, and remains the strictly correct method.

But for a person (like me, and probably many others) who only uses his lathe occasionally, the job of setting up (say) six rods for machining and axial drilling, involves 12 insertions of the rods, each time requiring a careful re-adjustment of two or three jaws. Time consuming.

If the worker is able to accept a less than perfect, yet sufficiently accurate method, the collett idea is offered as a practical solution. For a worker who only owns a (common) 3-jaw, then its attraction is even greater (because it is impossible to hold square rod axially in a 3-jaw).

So the collett is a reasonable and cheap alternative to the standard 4-jaw method, and a fellow with only a 3-jaw in his kit can easily machine up a collett for use with some standard size (like 12 mm) square rod.

Pictured in Photo 1 is a handy dedicated collett for holding square rod. It is made from a 20 mm length of ordinary 25 mm diameter free-cutting bright mild steel.

With a vernier caliper, measure the exact diagonal distance of your rod. Nominal 12 mm square rod does indeed vary in size from time to time and from maker to maker, but generally (in the samples I have had) it is very close to 16 mm, which is fortunate, because it allows us to bore the axial hole to that standard drill diameter.

The annulus must have a single cut, applied with a hack-saw, along the entire length of one side. The rod should be chucked such that the slit will be compressed upon tensioning the 3-jaw, as illustrated in Photo 2, which shows the slit positioned about half-way between the jaws. Note that only a small part of the work should project from the

collet during end drilling and/or turning operations.

Interested in learning more about lathe work? The following texts are highly recommended:

Further Reading

1. Model Engineering - A Foundation Course; P Wright. Nexus Books (an excellent book, with much else of relevance to radio/electronics metal-work practice).
2. The Amateur's Lathe; Laurence H Sparey, Argus Books (UK) (still in print by popular demand).
3. The Amateur's Workshop; Ian Bradley, Argus Books (UK) (also still in print).
4. How to Run a Lathe; South Bend

Lathe Works (USA) - an oldie but a goodie, now available as a reprint from Lindsay Publications.

Photos: Karlen Dockrey.

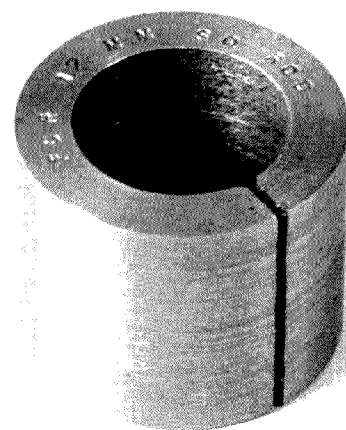


Photo 1 – A close-up of the collett showing the detail.

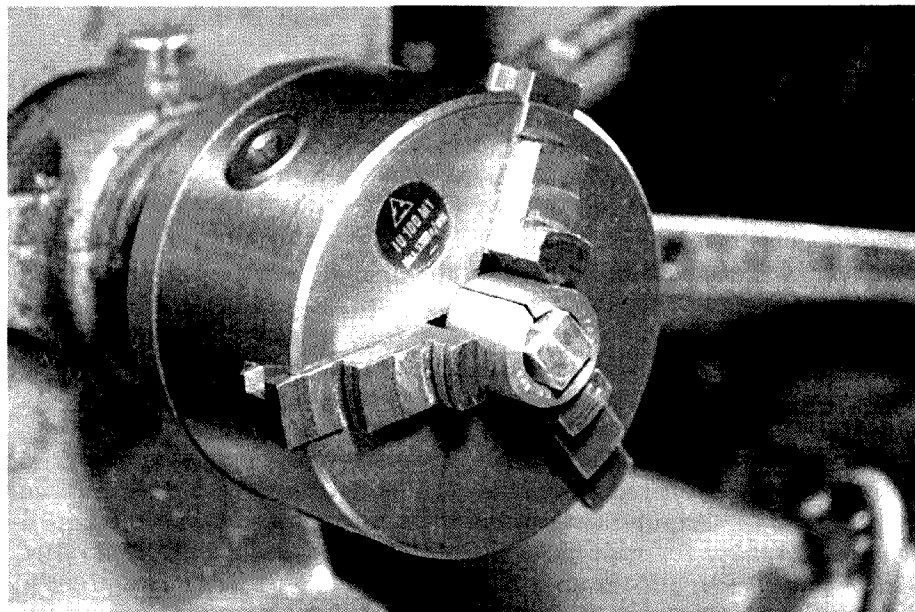


Photo 2 – A collett in a 3-jaw lathe chuck holding a length of 12 mm rod.

The 'RF mate'

Dale Hughes VK1DSH

The ability to measure various parameters of circuits, transmission lines and antennas is fundamental to radio frequency development work. RFmate is a device that can measure many parameters of interest; it consists of two modules (see Figure 2 for details):

The main module contains the microcontroller and associated circuitry, liquid crystal display, an AD8307¹ logarithmic amplifier and a frequency counter. This unit can measure frequencies up to 1300 MHz with a resolution of 1 kHz, and can measure power over a dynamic range of approximately 90 dB (from approximately -68 dBm to +22 dBm). Accurate relative and absolute power measurements can be made up to 500 MHz, with less accuracy up to 900 MHz. Amplitude resolution is 0.1 dB.

A second unit (Module 2) contains an AD8302² 'RF/IF Gain and Phase Detector' which allows for measurement of gain/loss over a +/- 30 dB range and phase angles over the range of 0 to 180 degrees. This device works up to 2.7 GHz. Amplitude resolution is 0.2 dB and angle resolution is 0.5 degrees.

The RFmate is reasonably simple to construct and offers considerable flexibility in use.

Signals from the various inputs can be simultaneously connected and measurements switched between them.

A minimum of external controls has been used, and as is common with modern instrumentation, 'soft keys' are used to select the various functions of the instrument. Multi-level menus allow the user to configure the device into the wanted mode and rapid switching between useful measurements is possible, avoiding the need to always switch back to the main menu. Selected measurements can be sent to a host computer using an RS-232 port for storage and later processing if desired.

Circuit Description

The main unit contains two circuit boards and the schematic diagram is shown in Figure 8. One circuit board holds the microcontroller and associated circuitry and another, upon which the log amplifier and prescaler are mounted. The microcontroller (U5) is an Atmel ATmega8535 device and it accepts analog and digital signals from the various input devices that are attached

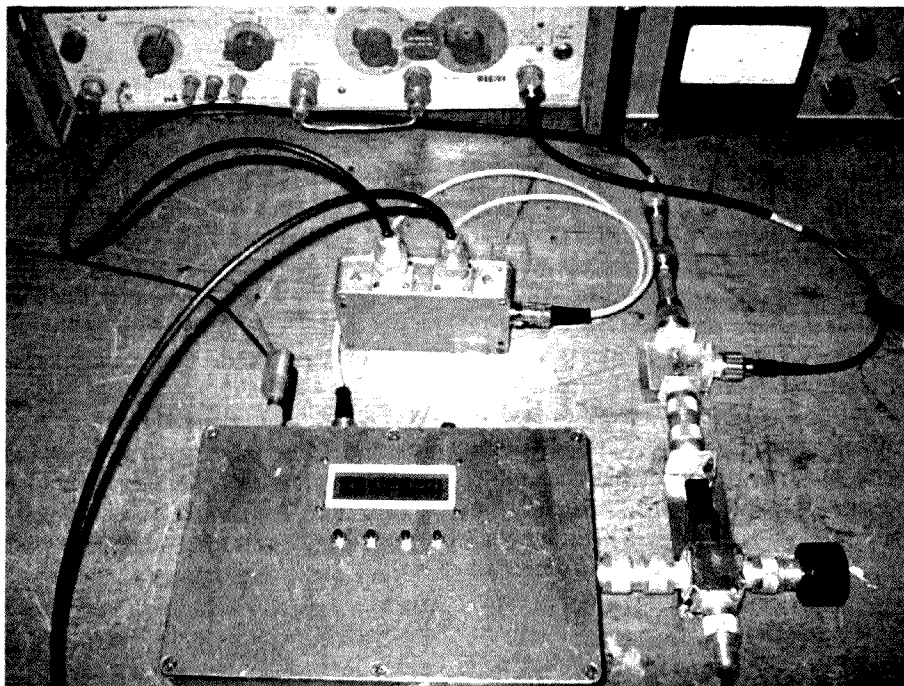


Figure 1: RFmate, AD8302 module, return loss bridge and 6 dB splitter in use measuring the input match of the RFmate. The second line of the display shows the 'soft key' functions.

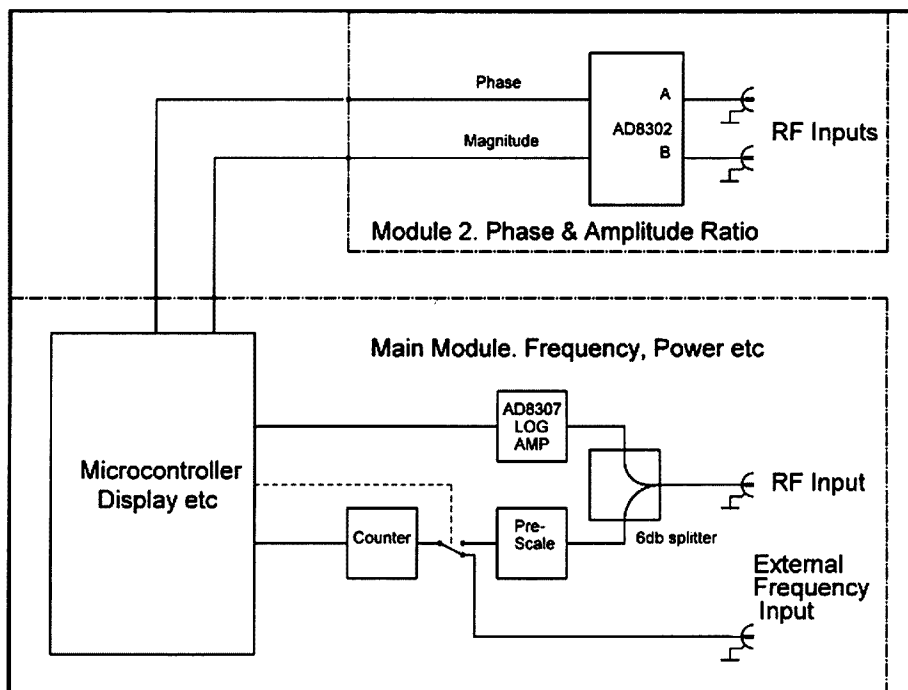


Figure 2: Block diagram of the RFmate. The switch that connects the prescaler to the counter input is a relay controlled by the microcontroller.

to it. An on-board 10-bit analog to digital converter converts the voltages to binary values which can be processed and displayed. So that accurate analog measurements can be made, a stable 5.120 V reference is provided by a REF02 device (U8). The reference voltage can be trimmed to exactly 5.120 V using potentiometer R8. Resolution of the ADC is 5 mV.

Frequency measurements are made using an internal microcontroller 16 bit counter which is coupled to an external 4 bit counter (U2B) to make a 20 bit frequency counter; the 4 bits from U2B are read into the microcontroller through four input lines on Port B. The external counter is reset by control line PB2, and the internal and external counters are reset every 4 milliseconds by means of an interrupt. The counter time-base is derived from the 4.096 MHz crystal via internal and external dividers, and this results in the input signal being gated to the counter for 2 ms every 4 ms. Transistor Q1 and gate U1d process the input signal and convert it to logic levels. This counter operates up to approximately 30 MHz with a 1 kHz resolution. Measurements up to approximately 1300 MHz with 1 kHz resolution are made using a divide by 64 prescaler (U10), the microcontroller software multiplies the measured frequency by 64 and switches the signal using relay RL1 when operating in the prescale mode. Maintenance of the 1 kHz resolution is achieved by effectively lengthening the sample period by 64 times. An external prescaler can also be selected so that frequency measurements can be made using other prescaler hardware; however the present software only supports a division ratio of 64. The signal source relay, RL1, is operated through a Darlington transistor output in U7 under software control.

Four push buttons and Schmidt triggers are used to control the device functions and the LCD shows the device settings and measured values. The LCD is configured in the four bit mode so that fewer control lines are required.

Signal level measurements are

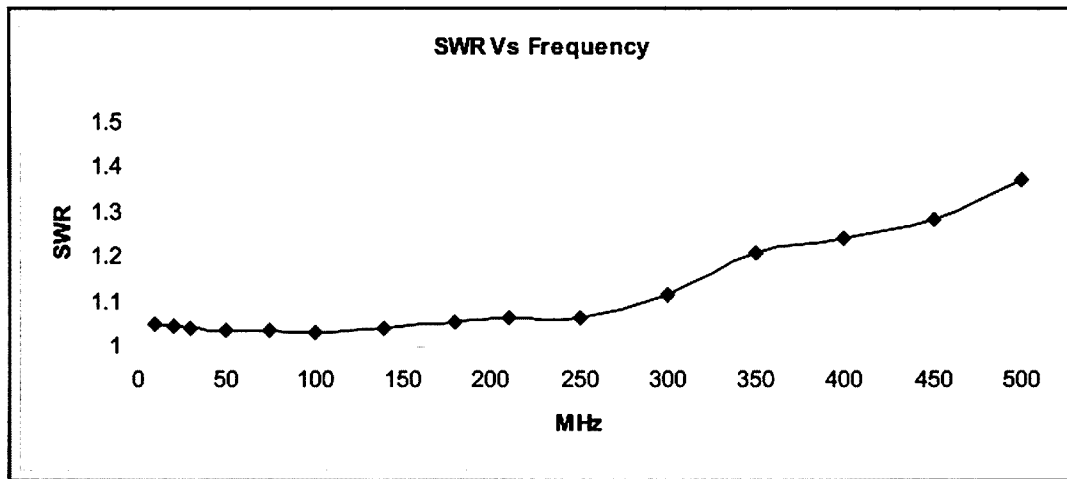


Figure 3: Input match of the main module vs. frequency. (This was measured by the RFmate using the external AD8302 module as shown in Figure 1) The input match is quite adequate for most measurement applications.

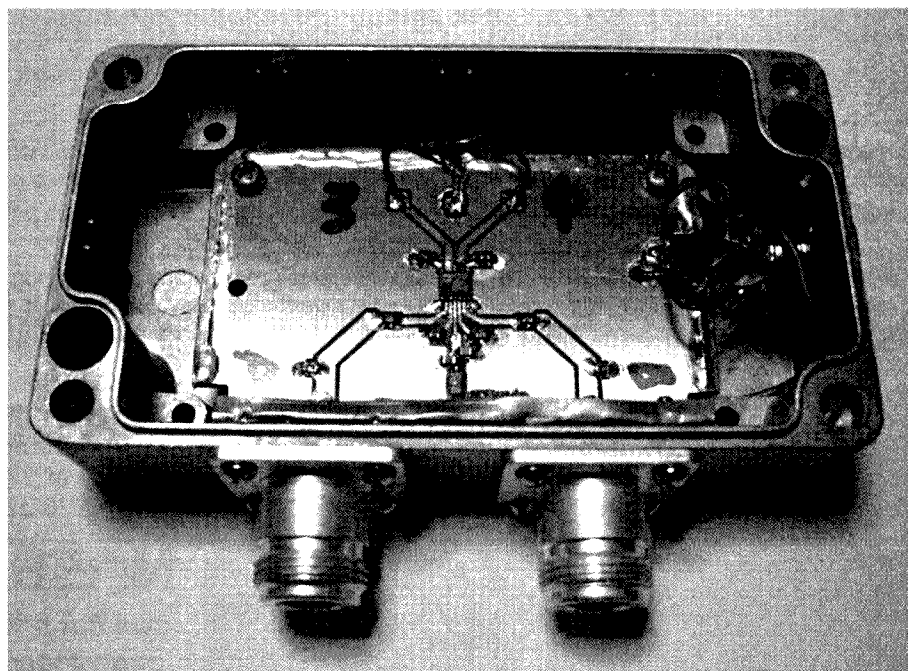


Figure 4: The AD8302 module. The Analog Devices data sheet should be consulted when using the AD8302 as circuit board layout is important for best performance of the device. Double sided circuit board was used, and small 0805 and 0603 surface mount components were used.

made using the AD8307 logarithmic amplifier (U9); its output is specified at 25 mV/decibel with a dynamic range approaching 90 dB. This input can be used to measure relative or absolute power; and by using a return loss bridge accurate return loss and SWR measurements can be made from low frequencies up to approximately 500 MHz (and lesser accuracy to 900 MHz). When operating in the power and return loss modes, a reference level can be set so that all measurements are relative to the reference point. If the input power

at the reference setting is accurately known, accurate power measurements from microwatts up to tens of milliwatts can be made. RF power is split between the prescaler and log amplifier by means of a 6 dB resistive splitter and the input is a good match to 50 ohms over a wide range of frequencies. An RS-232 interface is provided using the ubiquitous MAX232 (U6). A menu option selects its operation and information such as frequency, phase angle and magnitude information from the AD8302 can be transmitted to a host computer.

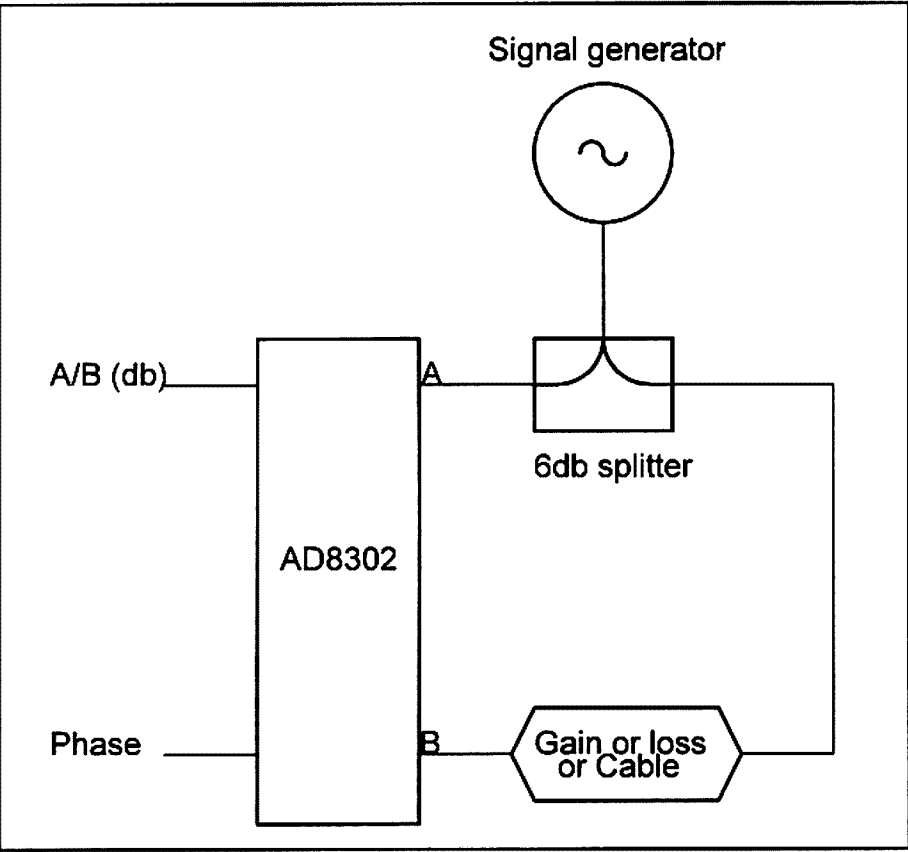


Figure 5: Setup for measuring circuit gain/loss, phase angle etc. Note that measuring phase angle requires some care, and difference measurements are more accurate than absolute measurements. Attenuators may also be needed on ports A and/or B to keep signals within the dynamic range of the AD8302.

The second module uses an Analog Devices AD8302 chip (Figure 9), which is a most interesting component: the device has two inputs and measurements of phase angle and amplitude ratio (in dB) between the two inputs can be made to a maximum frequency of 2.7 GHz. The dynamic range is +/- 30 dB

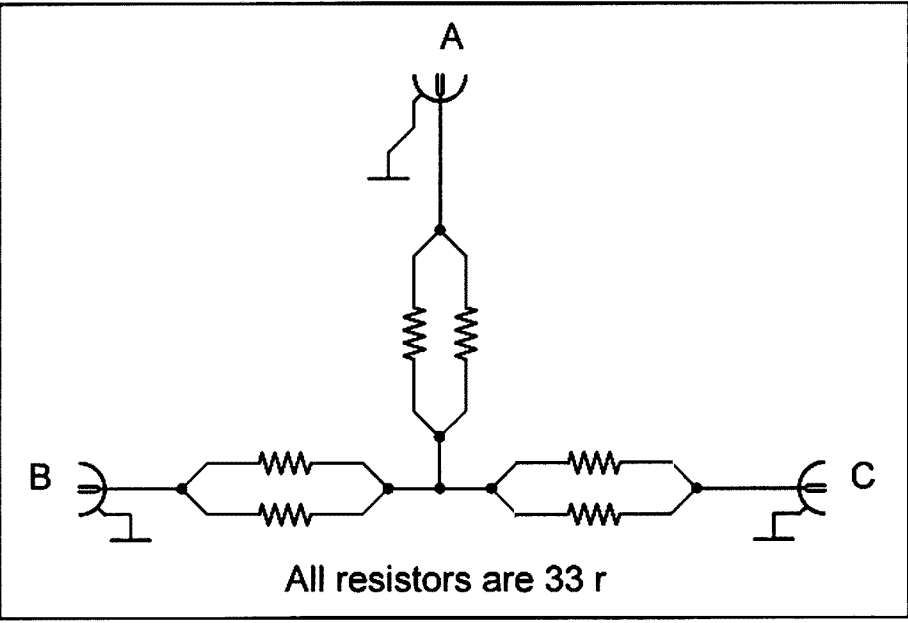


Figure 6: 6 dB resistive splitter. Power applied at port A is split equally between ports B and C. The splitter maintains a 50 ohm impedance for all ports when correctly terminated.

centred on - 30 dBm, so some care is needed when using the device, otherwise its dynamic range can be exceeded with adverse effects on measurement accuracy. The range of phase angle is +/- 180 degrees; however there is no easy way of determining which input leads or lags the other which means some care is required in interpreting the measurements. Also phase differences at angles less than 15 degrees or greater than 165 degrees have higher uncertainty. Despite these limitations, the AD8302 is an exceptional device and opens up exciting possibilities for test equipment. The possibilities include amplifier gain, attenuator loss, (electrical) cable length, return loss and SWR measurements. Even conversion gain or loss in mixers can be measured as the two inputs do not have to be the same frequency.

Construction

All of the modules should be easy to construct, however the AD8302 is a small surface mount device and the external components are also surface mount.

Applications

Measurement of frequency is straight forward; the only thing to consider is whether or not a prescaler is used and make the appropriate selection from the menu. Measurement of power or relative signal levels are also straight forward, readings in dB can be read directly from the display and, if required, a suitable reference level can be set e.g. 0 dBm, so that power measurements are then absolute. Reference levels can be saved to either EEPROM or SRAM. Reference levels saved to EEPROM are not lost when the power is switched off. Reference levels stored in SRAM are lost when the power is switched off and are most useful as temporary reference points when making gain or loss measurements.

One of the most useful applications of the unit is the measurement of return loss or standing wave ratios. There is a direct relationship between return loss and SWR, and the user can switch between the two scales. A lookup table in the system software is used to convert return loss in dB to SWR. When making measurements of this sort, a return loss bridge or directional coupler is used. A very good design for a RLB was

described in *Amateur Radio* magazine by Paul McMahon(3), a version of the design was constructed and its performance was found to be very good, allowing accurate measurement of return loss and SWR from 3.5 MHz to nearly 1 GHz. The unit that was constructed differed from the published design in that an open construction format was adopted and semi-rigid coaxial cable was used instead of the miniature Teflon cable that was specified. The simplest approach for using the RLB is to use the AD8307 log amp as detector for the bridge, although with care, the AD8302 can be used. If the reference level is set with the unknown port connected to high quality 50 ohm termination, the return loss of the unknown impedance can be directly displayed in dB. The user can switch to SWR and the software converts the return loss to voltage standing wave ratio.

Circuit gain or loss, cable loss and electrical length can be easily measured using the AD8302 module and Figure 5 shows how. Note that the frequencies of

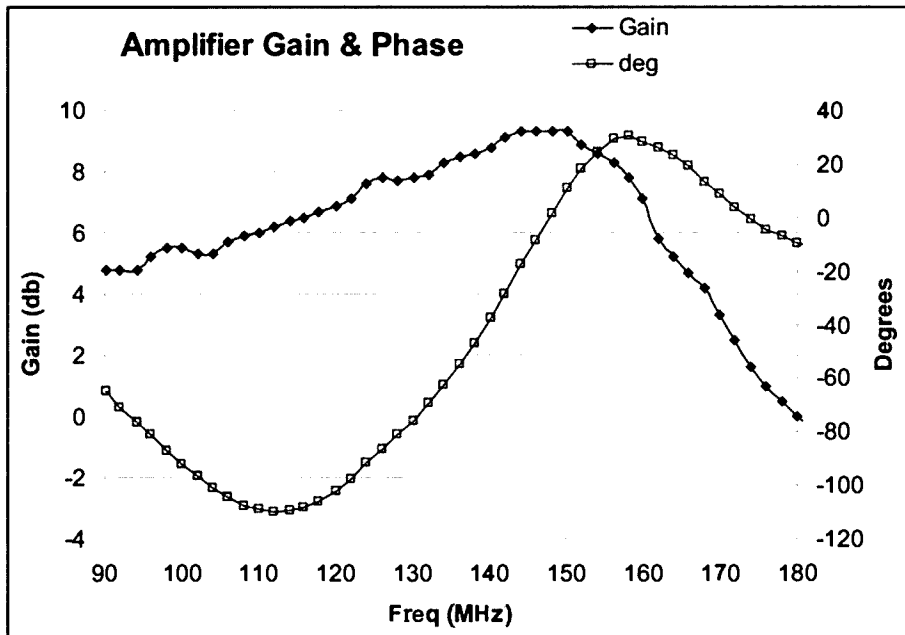


Figure 7: Measurement of gain and relative phase characteristics of a basic amplifier used on the 2 m band.

the signals on input A and B do not need to be the same, so it is possible to measure the conversion gain or loss of mixers as

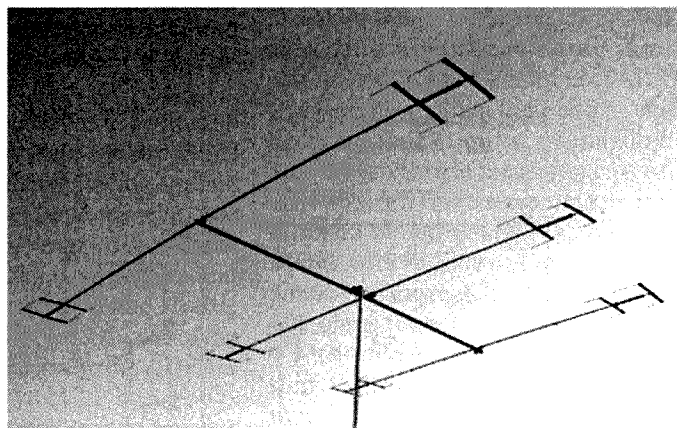
long as the +/- 30 dB dynamic range is not exceeded. Optimum operation of the AD8302 requires that the power inputs

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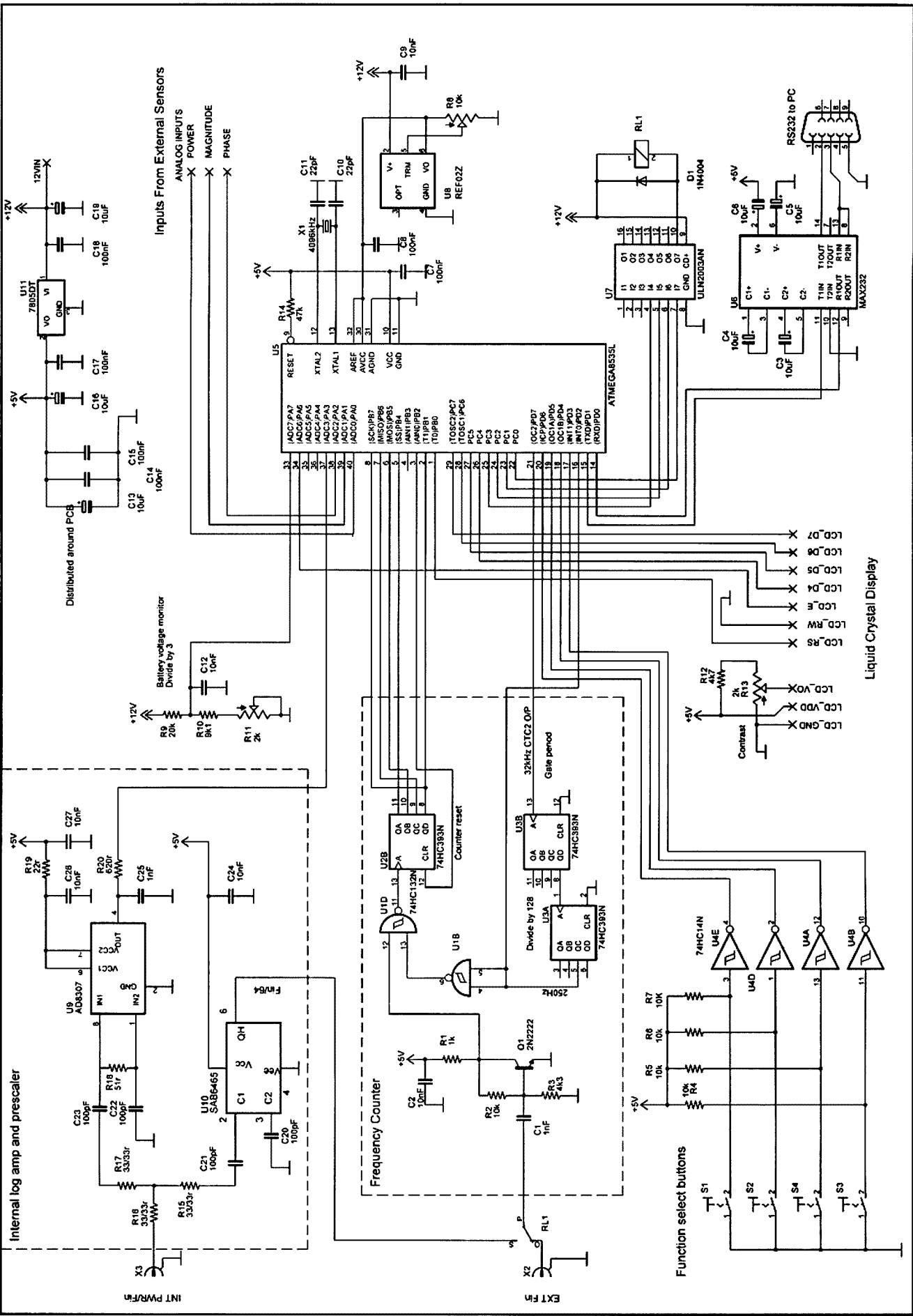


Figure 8: Schematic diagram of the main unit.

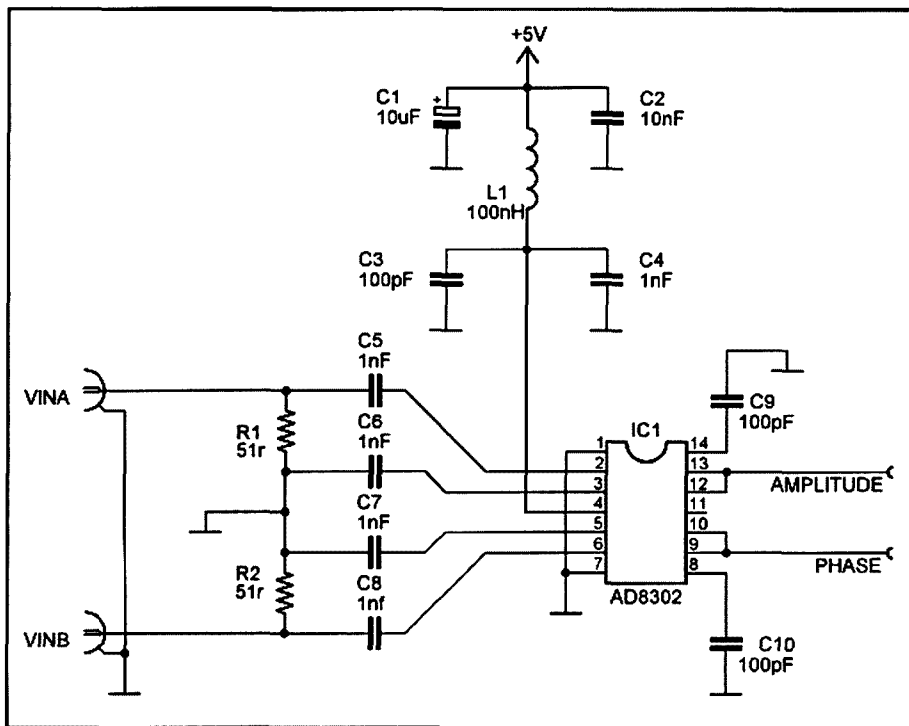


Figure 9: Schematic diagram of module 2, which measures gain/loss and phase angle using an AD8302.

can be made very quickly and the effects of any changes on the circuit performance rapidly checked.

An attempt to 'calibrate' the measurement was made by doing two sweeps: with and without the amplifier in place, then subtracting the 'without amplifier' from the 'with amplifier' measurements. This process should eliminate (or at least greatly reduce) the effect of connectors and cables. As the sweep was manually performed, the frequencies for the two sweeps did not exactly line up, so this is the cause of some of the 'bumps' in the chart. The whole process took only a few minutes. The data was then plotted using a spreadsheet; more sophisticated processing could be done using a Smith Chart if desired.

If a signal generator is not available, a suitably attenuated signal from a transmitter could be used, especially for making return loss or VSWR measurements.

Calibration

Calibration of the RFmate attenuation measurements is straight forward and is easily achieved using a number of attenuators with accurately known attenuation. Tests of a number of AD8307 devices showed that their output was an accurate indication of attenuation, as was the amplitude measurements of the AD8302. VSWR measurements can be checked by terminating the return loss bridge with resistors of known value to simulate a mismatch, for example 25 or 100 ohms for a 2:1 SWR.

Measurement of phase angle showed that the un-calibrated phase angle transfer function had a slight slope and intercept error, and that for accurate measurements some calibration was required (see Figure 5 for the setup). To calibrate the phase angle it is necessary to use a cable with a well known electrical length. In my case I used a good quality section of RG58 cut to be 2.475 metres long – assuming the velocity factor of the cable is 0.66. This length corresponds to an electrical length of 45 degrees at 10 MHz, 90 degrees at 20 MHz and 135 degrees at 30 MHz. The RFmate calibrate function is entered and the slope is adjusted until the measured phase difference between 10 MHz and 30 MHz is 90 degrees, the intercept is then adjusted so that the phase difference

being measured are centred on -30 dBm, so a selection of attenuators is useful for keeping the input levels around the optimum values (this requirement is covered in the data sheet). If the dynamic range is exceeded, the amplitude ratio measurements can be very confusing; however phase angle measurements appear not to be so affected.

The main issue with phase angle measurements, especially when measuring cable lengths, is in knowing what impact connectors have on the measurements. In effect, knowing exactly where a cable begins and ends (RF wise). Measurement accuracy is significantly reduced when making measurements within approximately 15 degrees of zero or 180 degrees. If an application requires measurement at these angles, it is better to insert a cable to add a fixed phase angle and then subtract the fixed phase angle from the measured results. Accuracies of 1 to 2 degrees should be achievable with care.

Another factor to consider when using the AD8302 is its high sensitivity; signal leakage from cables, signal generators and other sources can easily contaminate measurements. For example, if using the AD8302 and a return loss bridge to measure the SWR of an antenna, the measurements are easily corrupted by strong external RF sources. However

using the AD8307 a much greater signal power, say 10 milliwatts (+10 dBm) instead of 1 microwatt (-30 dBm) can be used to excite the return loss bridge and stray RF is not nearly as likely to corrupt the measured SWR.

A very useful device for use with the AD8302 is a 6 dB resistive splitter, which is a simple device that splits the applied RF power equally between the two ports. It can be made using any available resistors, however using surface mount parts will help to extend the usable frequency range. The performance of the device can be checked with the AD8302 very easily!

Measurement of amplifier performance is easily achieved and Figure 7 shows such a test. In this case a simple, single stage amplifier (BFR91A transistor) with a single tuned circuit on the input was connected to the AD8302 module; a 10 dB attenuator was fitted between the amplifier output and port B of the AD8302. The signal generator frequency was manually swept using (approximately) 2 MHz frequency increments and the output from the RFmate was logged on a PC connected to the RS-232 port of the RFmate. The logging function transmits frequency, amplitude ratio and phase angle information to the host PC every time the 'send' button is pressed. Measurements

is exactly 90 degrees at 20 MHz. The new calibration coefficients can then be saved to EEPROM for non-volatile storage. Using a low frequency for calibration lessens the problems of length uncertainty due to cutting accuracy and connector effects. Note: it is essential to use a quality coaxial cable with an accurately known velocity factor!

Software, PCB artwork and construction

The software consists of about 2800 lines of assembler code. Commented source code can be supplied to those who would like to construct a similar unit. A copy of AVRstudio4 will be required to assemble the code and some form of programmer will be required to program the microcontroller chip. AVRstudio4 can be downloaded from the Atmel website free of charge. Circuit board artwork in EAGLE format can also be supplied to interested readers.

Construction, in general, requires no special precautions or techniques. The only exception is that traces connecting the A and B inputs on the AD8302 should be symmetrical and the same length, this will ensure the most accurate performance.

Component availability

The Analog Devices parts (AD8307 and AD8302) were purchased directly from Analog Devices through their on-line purchasing facility. It is a convenient (although relatively expensive) method of obtaining parts that are otherwise difficult to purchase. The AD8307 can also be purchased through other local suppliers such as Mini-kits and Futurlec. The SAB6456 prescaler might be more difficult to obtain. It used to be commonly available through Dick Smith outlets, but it is no longer in their catalogue. However there are probably many devices lurking in

people's component stores waiting for a suitable application, so ask around. The ATmega8535 is readily available through Futurlec. None of the other components should be difficult to obtain.

References and suppliers:

Datasheet: AD8307 DC-500 MHz, 92 dB Logarithmic Amplifier. Analog Devices Inc 2003.

Datasheet: AD8302 LF-2.7 GHz RF/IF Gain and Phase Detector. Analog Devices Inc 2002.

McMahon, Paul. VK3DIP. 'A simple wideband return loss bridge revisited'. Amateur Radio, Volume 75, Number 6. June 2007

Atmel website: www.atmel.com

Analog Device website: www.analog.com

Mini-kits website: www.minikits.com.au

Futurlec website: www.futurlec.com

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Amateur television – SA style

Barry Cleworth VK5BQ

This article describes an example of a relatively complex amateur television full duplex hook-up, allowing the eight operators involved to enjoy a round table discussion with video.

On 6 August the conditions prevailing on most of the UHF and microwave bands were exceptional and allowed a fairly rare type of ATV contact to take place.

From the accompanying diagram (Figure 1) it will be seen that there were four stations plus one digital ATV repeater in continual transmit mode, and four additional stations in receive mode.

Some interesting aspects of this contact included the fact that there were no less than five microwave bands in use, namely, 1250 MHz, 2.4 GHz, 3.4 GHz, 5.76 GHz and 10 GHz. Then, taking into account the distances involved, which varied from 60 km to 87 km, and that the location of several domestic stations was not very suitable for microwave transmissions, the success of this contact was quite gratifying.

Audio liaison and intercommunication frequencies involved the 2 metre and 70 cm bands.

From the diagram it will be seen that the ATV signals emanating from VK5BQ are capable of being received by all the other stations simultaneously. The picture and sound signals may be sourced from cameras at VK5BQ, or more often via a relay from one of the other three stations in the lower line on the diagram, that is, VK5ZTS, VK5AO, or VK5RD.

The relay facilities at VK5AO and VK5BQ are quite comprehensive. Routing changes are conveniently accomplished by the touch of a single button. An example from the diagram shows that a signal originating at Tom VK5ZTS on 3.4 GHz, is received by and converted to digital format by the digital repeater VK5RWH. The 1283 MHz digital signal is received directly by several stations, including Maitland VK5AO, who then relays it to VK5BQ on 5.76 GHz. VK5BQ then distributes the signals to the other members of the hook-up via 1250 MHz and 2.4 GHz.

Of course in any large roundtable like this, audio feedback may occur. In order to mitigate this problem, audio received from relayed stations is fed into separate inputs of an audio mixer with individual audio level controls and facilities for quality correction before input to the 1250 MHz transmitter at VK5BQ.

The 10 GHz relay received from Ben VK5RD is over a path length of about 68 km. It is no-where near a line of sight path, with the VK5BQ elevation



Photo 1: Graham VK5JD in his ATV shack.



Photo 2: ATV signals being received by Barry VK5BQ – Top L to R, Maitland VK5AO on 2.4 GHz, 86 km; broadcast.TV; Ben VK5RD on 10.35 GHz, 68 km; Bottom L to R, Graham VK5JD on 1250 MHz, 82 km and Maitland VK5AO on 5.76 GHz.

being barely 100 feet (30 m), and Ben's elevation being considerably less. The use of parabolic dishes at both ends helps to produce P5 pictures about 80 per cent of the time, and this continues to surprise us.

Most of our transmitters are built up from kits sourced from

continued on page 15

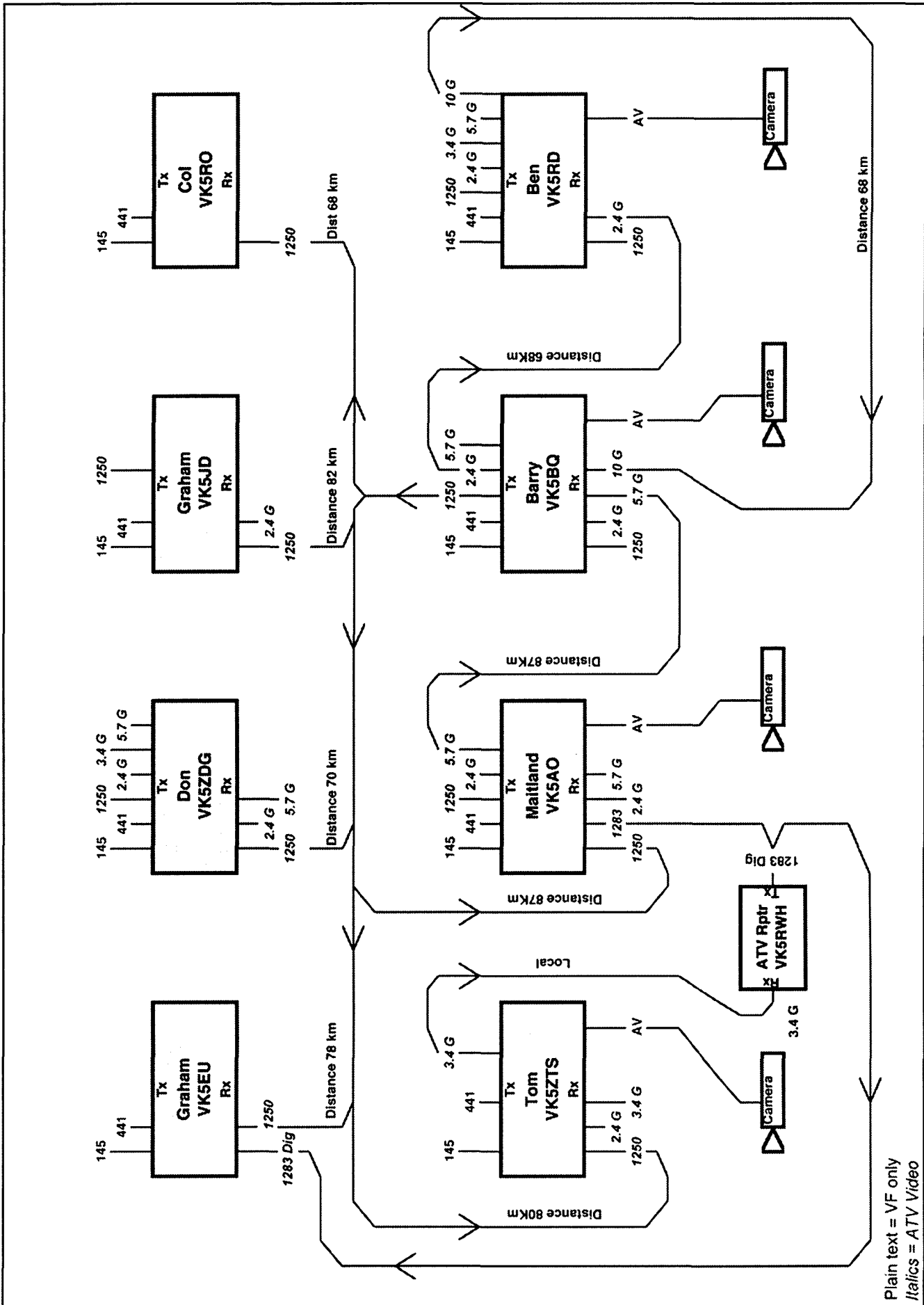


Figure 1: Showing the complex hook-up of the eight operators involved.

A WIA grant at work in East Gippsland

Bob Neal VK3ZAN
Secretary, EGARC.

The East Gippsland Amateur Radio Club Inc. was one of the few clubs to be successful in obtaining a grant from the first round made available from the then recently reorganized WIA.

We are one of the smaller clubs in the state with less than twenty members, and have established, and are maintaining, a total of four voice repeaters in the area. Three VHF repeaters serve some three hundred kilometres along the Princes Highway between Sale and the New South Wales border in the far east of the State, and the other repeater is a UHF system near Bairnsdale, which is configured to link into the VHF network, but is usually operated independently for local use.

Mt Cann was chosen because of the good VHF coverage along the highway and as a mid-point for the UHF links, but had the disadvantage that solar power was the only option. The system had been operating satisfactorily for a number of years until we had the misfortune of several solar panels being stolen during 2005.

Although we received the grant at the end of 2006 and the extra panel was purchased almost immediately, the site installation was not completed until May 2007. Some effort was made to improve the security of the panel before being taken to the site but serious bush fires in the area early in 2007 caused logging truck roads in the area to be closed for several weeks.

The three VHF repeaters along the Princes Highway are permanently linked through this mid-point repeater at Mt Cann, some fourteen kilometres south of the highway, and only accessible along rough logging truck roads that are unusable in wet weather.

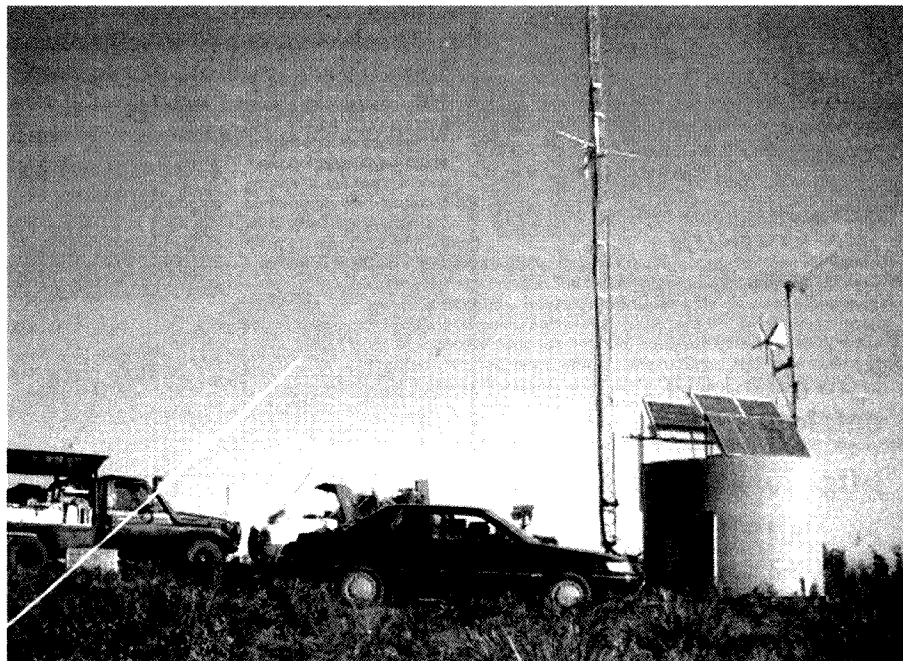
Permanent linking was chosen because of the very few licensed amateurs east of Lakes Entrance and the repeater at the Mallacoota end is mainly used by travellers or holidaymakers in the area.

The system is configured to automatically relay the WIA broadcasts from the Mt. Baw Baw repeater to the far east of the state, with the exception that the Mt Cann repeater does not transmit the broadcast but acts only as a relay point to Mallacoota. This has been done to conserve energy at this solar powered site.

Our club meets monthly, and because of the large area from which the club draws its membership, our meetings are held alternatively at Maffra and Bairnsdale, some sixty kilometres apart. The club also has a WIA Assessor and Learning Facilitators who undertake assessments for all classes of licence in the eastern end of the state.

We appreciate the WIA support for this project as our small club would have had difficulty in restoring this power system without outside help.

ar



The Mt Cann site where a team of five EGARC members installed the new solar panel during May 2007. The small wind driven generator also supplements power at this site.

Amateur television – SA style *continued*

Mark VK5EME at Minikits Australia. Receivers can vary quite a bit but include home brew converters and/or preamplifiers fed into a variety of commercial satellite receivers, usually analogue FM or digital, whichever is required. These Satellite receivers have become easy and cheap to acquire in the past, and still are from time to time.

Subjects for discussion on these nets vary widely, probably resulting from the use of ATV where it is possible to

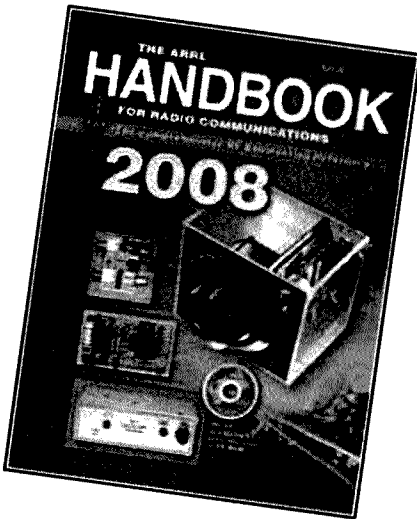
put the cameras on new projects under construction, including antennas outside. These scenes are viewed and discussed by all involved within the group. Local scenery through the shack window can be interesting where a coastal or other aesthetically pleasing view is involved and this makes the contact more interesting to family members or visitors to participant's shacks. Some of our members have video clips of their

recent amateur activities and holidays, and these are readily playable through a VCR. Even computers with suitable video cards and frame rate can be connected to our transmitters.

So for those who have not experienced the mode of ATV, I can thoroughly recommend its advantages. In closing, I would like to thank Graham VK5EU for his contribution to the article, and in particular the block diagram.

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A screw-plate

Drew Diamond VK3XU

In radio/electronics work, it is often the case that an exact length screw is not available for a job, and so a longer screw must be cut to length. The hack-saw inevitably leaves a ragged end on the screw, which must then be dressed with a file in order that the nut may be fitted. But then it is often found that the nut will not start because some damage has been done to the thread, or a small unseen burr of metal remains.

Consider fabricating a 'screw-plate' for these jobs. The plate provides an effective method of holding the screw whilst the hack-saw is applied. After cutting, a hand file may then be applied to give the screw's end a nicely rounded, burr free finish.

Now, as the screw is withdrawn from the plate, any little pips or burrs will be cleanly removed from the thread.

The plate shown in Photo 1 is a 25 mm wide, 100 mm length of 3 mm mild-steel bar. Threaded holes spaced at 20 mm are provided for popular 3, 4, 5 and 6 mm screws.

See Reference 1 and/or 2 for information about tapping internal threads.

Further Reading

1. Drills, Taps and Dies; Tubal Cain. #12 in the Nexus Workshop Practice Series.
2. Model Engineering - A Foundation Course; P Wright. Nexus Books (an excellent book, with much of relevance to radio/electronics metal-work practice).

Photo: Karlen Dockrey.

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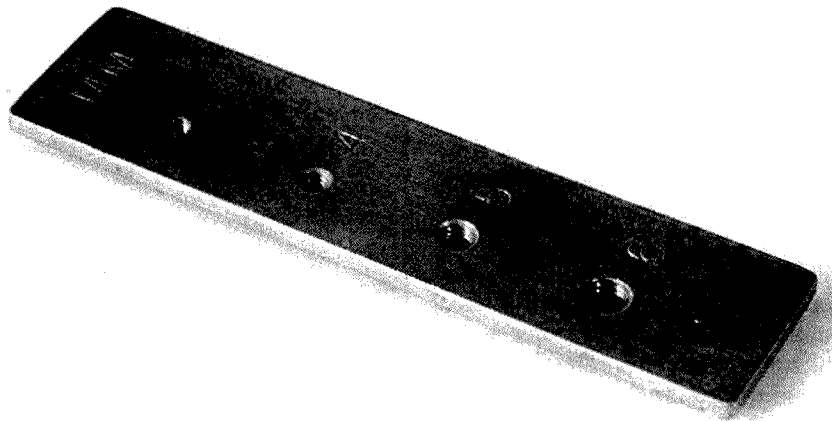


Photo 1 – A screw-plate for 3, 4, 5 and 6 mm screws.

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Palstar TTS is the local home of Palstar Superbly engineered and robustly built in the USA
NEW RE-DESIGNED FEATURES are WINNERS in the AT2K Antenna Tuner



New smaller roller inductor allows 6 metre tune; a relay-switched toroid adds extra inductance for 160 metre coverage. New capacitors give improved high band performance; maximum capacitance is upped to 400 pF for better low band performance. The AT2K borrows the Peak/Peak Hold metering from the PM2000. The AT2K 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. It has a bypass for quick straight-through antenna connections with SWR/POWER monitoring, and a 6 position ceramic wafer antenna selector switch. Two range forward power metering: 300 and 3000 watt. A Peak/Peak Hold metering function is also provided. Standing Wave Ratios display on an illuminated cross-needle meter. SWR is read directly from the meter face at needle intersect. The AT2K has Palstar's classic Vernier dial plates for accuracy. The front panel and top cover have powder-coat paint.



ZM30 Antenna Analyzer

An automated micro-controlled SWR antenna analyzer with a 8 bit micro-controller with a precision low power DDS signal generator. Self-calibrating reflectometer, 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.



AT1KP Tuner



Differential capacitor tune, 2 stators, 1 rotor. 2 controls to precision tune, ceramic body roller inductor and high power balun. Peak and Peak Hold dual cross-needle metering.

- 1200 watt pep
- 160 m to 20 m (1200+/- j1200), 10 m to 15 m (1000+/- j1000)
- Output to balanced & unbalanced lines
- 20-1200 ohm Impedance match range
- 6 pos. mode switch for multiple antennas
- Meter power range 0-300 W / 0-3000 W
- 270 mm w x 115 mm h x 280 mm deep.

AT-AUTO

1500 watt Automatic Antenna Tuner

Until now Auto-tuners have had clacking relays and matches just a bit off. Palstar's reinvented auto-tuner has continuously variable components for a perfect match



and a massive 1500 watts, the highest power-rating about. It interfaces to most recent Icom, Kenwood and Yaesu transceivers and automatically tracks band and frequency changes. Field Updatable Firmware

PM2000A Watt Meter

The PM2000A measures and displays forward power, reflected power, and SWR simultaneously on its dual movement meter system in the frequency range.



Accuracy assured by a true shielded directional coupler. The backlit meter displays either peak or average power readings, with 300 and 3000 watt range settings. QST found that this 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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OMNI-VII is the first truly Net-Ready ham transceiver

No PC required at the rig to operate remote! • Delivers live receive AND transmit operation from anywhere in the world from wideband Internet access! • A simple GUI written for the OMNI-VII downloadable free or latest QST source code can be downloaded to DIY • Three built-in filters at 20 kHz, 6 kHz, and 2.5 kHz Optional Collins mechanical filters at 500 Hz and 300 Hz. • Filters are auto or manual. • 37 built-in DSP filters. • Transmit 6 - 160 metre, 100 watt receive from 500 kHz -30 MHz continuous plus 48 to 54 MHz. • SSB, CW, AM, FM, Digital modes. • 17 selectable transmit bandwidths. • RX EQ and TX EQ in 6 dB/octave filters selectable in 1-dB steps. • DSP Noise Reduction, auto or manual notch.



The Ten-Tec Orion II

represents an entirely new concept in high-performance HF transceivers. It delivers the finest performance level to date from an amateur transceiver. Its heart is a pair of 32-bit floating-point ADI SHARC DSP processors giving much more processing "horsepower" than a single 32-bit DSP processor can provide. The result? Absolutely unparalleled HF receiver performance, filtering, and flexibility. Full dual receive capability. An amateur-bands-only main receiver, (10 through 160 metre) utilizes both crystal and IF-DSP filtering. The sub receiver is IF-DSP and is general coverage from 500 kHz to 30 MHz. Both receivers can be used simultaneously on any frequency, with no compromise in performance. The two receivers can share a single antenna or each can be fed to a separate antenna.



SGC SG-500 Power Cube HF Amplifier

An HF linear amplifier ideal for high power operation in portable, mobile and base station situations. It can deliver up to 500 W CW or PEP with as little as 35 W drive. Fully automatic bandswitching and RF detect PTT. It uses one of the most advanced self protection systems on the market to provide maximum stability and reliability FCC Certified.



SG-230 SmartunerTM

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 The SG-230 Smartuner was the first product in the HF market to offer fast, flexible tuning without any user interface. The Smartuner senses RF when you transmit from your transceiver and automatically finds the best SWR match to your antenna. This unit works with ANY radio and ANY antenna and requires NO special interface, making it the most versatile tuning product available



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SG-235 SmartunerTM SMART POWER

Smartuning at 500 watt. The SG-235 achieves perfect coupling of your 500 Watt HF-SSB and your antenna in mobile, or fixed base applications. It has a durable, waterproof ABS plastic case and a shock mount option. With a sophisticated Pi-L network and over 1/2 million tuning combinations, the SG-235 is the smartest way to tune at 500 watt.

SG-237 SmartunerTM

Built to last, high density surface mount components on a 4 layer PCB, gives high efficiency, reliability and performance. Its sturdy chassis gives excellent electrical and RF ground system. Waterproof (under 2 ft of water for 24 hours). Base, mobile, portable, marine or aviation. Balanced or unbalanced antenna including whips, backstays, dipoles, loops and longwires, and needs only 28 feet of antenna for full coverage operation.



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WIA awards seventh G A Taylor Medal in 20 years

Special recognition for Al Shawsmith

At their face to face meeting in early March the WIA Directors considered the WIA merit awards to be announced and presented at the Annual General Meeting, to be held this year on Saturday 24 May 2008 at Broken Hill.

For only the second time in 4 years, the Directors decided to award a GA Taylor Medal, this year to Al Shawsmith, known to all as VK4SS (even though he has passed that callsign on to his son).

However, recognising that Al, now aged over 90, would not be able to be in Broken Hill, the Directors decided to announce their decision and present the award early.

So on Saturday 29 March 2008 WIA President Michael Owen VK3KI, WIA Vice President Ewan McLeod VK4ERM and National Broadcast Coordinator Graham Kemp VK4BB went to Al Shawsmith's home in Whynot Street, West End, in Brisbane to make the presentation to Al in the presence of his family and friends.

In presenting the award, Michael said:

The WIA is an organization approaching its centenary and so it should be very conscious of its history, which is really the story of the people who have made it what it is.

It is also very important that we, the WIA, honour those people.

The Board of Directors met recently and considered who we should honour



Part of the gathering at the presentation of the GA Taylor Medal. Left to Right: Ewan McLeod VK4ERM, Al Shawsmith, Michael Owen VK3KI, Michael Charteris VK4QS, Graham Kemp VK4BB (seated in front)

at the next Annual General Meeting which will be held in Broken Hill at the end of May.

We wanted to honour someone who for so many years has been associated with the WIA and amateur radio, VK4SS, Al Shawsmith.

But we believed that Al would be unlikely to join us in Broken Hill, so we have come to Al's home in Whynot Street, in Brisbane, so we can today be with Al and his family.

Al, we wish to present you with the GA Taylor Medal.

This award was first considered over 25 years ago, and finally coming into existence 20 years ago, in 1988, as a silver medal of some intrinsic value. Its creation owes much to its primary proponent, the former VK6 Division of the federal WIA. It is named after George Augustus Taylor, the founding chairman

continued next page

Smithy says thanks

May I say thank you to the WIA President Michael Owen VK3KI and the Awards Committee for conferring on me Australia's ultimate award – the G.A. Taylor Medal – akin to the Roll of Honour.

To say thanks for this high honour seems utterly inadequate but let me assure all that this beautiful trophy has already assumed pride of place in my collection. Coming from my peers, it is the highest accolade.

I must say thank you to the WIA stalwarts who were present and I suspect were involved in this surprise presentation. They were: the President Michael Owen VK3KI (naturally),

VK4 Board member Ewan McLeod VK4ERM, newsman Graham Kemp VK4BB, President of the Ipswich Club Mike Charteris VK4QS, and some of the Shawsmith family. Last but far from least: TV station manager, executive, sound engineer, etc. Russell Nunn whose years of research into early wireless pioneers produced a tome so in depth and accurate that it was given Royal Assent and can now be read at the Royal Historical Society of Queensland. To Russ, all VK4s owe an unrepayable debt.

My present membership with the WIA stands at 73 continuous years. This is one man's whole lifetime. Yet for me this

journey seems all too short.

Currently I am culling my written material, printed locally and overseas. It may be a slow job but without assistance of many, many friends and helpers, little may have been heard or known of VK4SS. This is my debt to the fraternity in AR. One that I have tried to pay, in part.

So it is thanks once again to one and all. I will say my au revoir, not goodbye, because who knows, there is hopefully a place I wrote of in my last poem in Halcyon Days.

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Alan Shawsmith VK4SS
WIAQ Historian 27 years

The axe at the base of the tree

I am surprised that a third of the year has already passed. Here we are in May and winter is here. We had temperatures in the high thirties as late as mid-March and within 24 hours, the thermometer plummeted to below 10 degrees. I had to put the heater on because it became so cold. Later on there were gale force winds, some even registered as hurricane force. Fortunately I do not have any outside antennas, so was spared any damage.

The BBC World Service made further unannounced cuts to the shortwave schedule to tie in with the A-08 broadcasting period. They axed the service to the Caribbean, saying there were sufficient partner broadcasters already providing relays via AM or FM and shortwave relays were no longer needed. As well, the remaining transmissions to Central and South America were also discontinued. The services to Asia were also reduced and the BBC Singapore relay station would not operate from 0100 to 0900 UTC. Services to Africa are unaffected mainly because the Internet is extremely scarce. Although the BBC is relayed in some countries via domestic partners, some

nations are extremely hostile to the BBC and the use of shortwave will be required there for many decades.

On 31st March, Kol Israel in Jerusalem closed down the shortwave service. We have often heard that this was going to happen and usually at the last minute, money was found to continue the shortwave relays. However, the administrators did pull the plug and Kol Israel is now confined to either streaming on the Net or via podcasting. You can find it at www.intkolisrael.com. When they decided to close down the ageing HF senders, it was realised that broadcasts in Farsi or Persian would not get through the Internet gatekeepers in Teheran and thus programming via HF would have to continue. The Israel Defence Forces Radio, Galeel Zahal, continues on shortwave in Hebrew and is heard here on 6973 USB.

You also may have heard the American religious broadcaster, KTBN on 7505 kHz. This station started off originally with a pop music format but was not commercially successful and was eventually sold to the Trinity Broadcasting Network. The sender was

located near Salt Lake City, Utah. KTBN did not have any original programming and was basically an audio feed on the TBN television network. Gradually the modulation dropped off and it became difficult to hear it and it was no surprise that it was finally switched off on 31st March.

Also I notice that Radio Netherlands Worldwide has stopped relaying broadcasts to Asia and the Pacific via the CIS and started from senders in Tinian and Saipan. This also will mean VOA programs will be heard via Bonaire in the Netherlands Antilles.

Turkey is another broadcaster which has commenced relaying from a North American site, namely Sackville in Canada. I believe that this has made it easier for Turkey to be heard in North America. Greece used to also broadcast from the VOA sites but this concluded when the VOA closed down their Greek sites a few years ago.

Well that is all for this month. Do not forget you can email any news to me at vk7rh@wia.org.au.

73 de VK7RH

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Special recognition for Al Shawsmith continued

of the Wireless Institute of New South Wales, out of which grew today's WIA.

So the Medal came into existence just one year after your book, Halcyon Days was published.

Your contribution to amateur radio and the WIA, particularly the Queensland Division of the WIA is well known.

Also well known was the Al Shawsmith Journalistic Award, an award to recognize and encourage the quality of writing in the WIA magazine, Amateur Radio. That award lapsed but now as the award for the best non-technical article has, thanks to your generosity, been revitalized and will again be presented this year in Broken Hill, as the Al Shawsmith Award, but now the award itself is so structured that it will be an award in perpetuity.

And, yes, we ignored your wish that your name be not associated with the award. That it comes from you is too important to ignore.

Perhaps your most important gift to the WIA was only made several years ago, when you donated a sum of money to the WIA for educational purposes. That enabled us, last year, to train and qualify a number of WIA Assessors from remote areas. Our successful case to become the ACMA preferred examination system manager relied on a coverage of qualified Assessors across our country.

So, in the past, as WIA historian, and as a prolific writer on amateur matters, and more recently you have provided a special service for the WIA. And it is

for a special service that the GA Taylor Medal is given

And the GA Taylor Medal is not lightly given.

It is a very special recognition.

Indeed, since its inception 20 years ago, there have been 6 awards of this Medal, so this becomes the seventh awarded, and only the second since the WIA became a national body in 2004.

So, Al, please accept this award, the GA Taylor Medal, presented by the WIA to one of its members, an Honorary Life member, to honour what you have done for the WIA and amateur radio.

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see also inside back cover

The John Moyle Field Day Reports

EMDRC VK3ER Report

Jack Bramham VK3WWW

On Friday 14th March, four vehicles containing six members of the EMDRC radio club headed off to Mount Cowley in the Otway Ranges near the coastal town of Lorne. All four vehicles left Melbourne at different times and met up at Benwerrin on the Deans Marsh to Lorne Road. When the fourth vehicle arrived, the convoy took the dusty Mt Sabine road for the 30 minute trip to the telecommunications tower located on the summit of Mount Cowley.

Friday was a very hot day at around 40 deg C. During the week leading up to our departure, the weather had been very dry and hot. Friday was declared a Total Fire Ban for the whole State and this meant we would not be able to cook using an open flame. There would be an issue running the generators however we later found out that generators can be used during total fire bans but the strict regulations make it difficult to operate them safely. Not knowing if a fire ban would be declared for Saturday and Sunday we carried a DC power source, totalling around 800 AH, so we would be able to operate for some time before our supply ran out.

Our station setup is very settled now and setting up 6, 2, 70 and 23 has become very routine. We commenced the assembly about 08:00 and by 11:15

were ready for the 12:00 noon start to the contest. Craig VK3FCLS visited us while we were setting up the site. HF operations from VK3ER/P have not occurred for some time, but with two keen additional operators, a station was set up that included a Yaesu FT-100D transceiver, Metron MA1000B Solid State amplifier and MFJ-986 roller inductor tuner feeding a droopy dipole at about 12 m. This is the same setup that has netted over 12,000 QSOs from four IOTA expeditions in which some members of the group have previously been involved.

With no Total Fire Ban declared for either day we were able to operate the petrol generators. Two Honda EU20i and two EU10i generators enabled us to operate full power on all bands for the duration of the contest. In fact, whilst most of the State had hot and humid conditions, we enjoyed ideal temperatures on the mountain top with even the wind dropping to just a gentle breeze for most of the time.

Our operating positions for the weekend were mainly 6 m Mike VK3AVV, 2 m Jack VK3WWW, 70 cm Max VK3WT, 23 cm Peter VK3QI and HF Dave VK3DLR and Jim VK3AMN.

Activity was good and we managed quite a few QSOs on all bands. On 23 cm it was interesting to get 59+ reports from VK5SR/P located at Mount Gambier

with enhanced band conditions. Working a 23 cm station at this distance was a great result.

Early on Sunday morning we were joined by Jonas VK3VF, David VK3RU, John VK3PZ and Damien VK3SOX who assisted in the final few hours of operating and packing up. At 12:00 local time VK3ER/P finished the contest and in just over two hours we had the contest site packed up and were ready for the three hour journey back to Melbourne.

Our final score was: 80 m = 312 points, 40 m = 352 points, 20 m = 16 points, 6 m = 2220 points, 2 m = 4360 points, 70 cm 2870 points, 23 cm = 1280 points: Total Score = 837 contacts for 11,410 points.

This is our highest score for some time and it reflects the work that has gone into the station over the past 2 years, work that has long been planned but never accomplished. Thanks to all those who came up and gave out numbers to stations in the contest and I must also thank those who took the time to come away for the weekend and operate VK3ER/P

I should have a short video of the weekend by the time this is published. The video should be on my Youtube site at:

<http://www.youtube.com/profile?user=vermontcreekbed>

Cheers, VK3WWW Jack for the VK3ER/P team.

John Moyle 2008 Field Day Expedition Report – VK3XPD/VK3AAK

Alan Devlin VK3XPD

Following on from our recent success in the 8-Hour section of the 2008 VHF-UHF Summer Field Day Contest, Michael Coleman VK3AAK and I decided to tackle the 2008 John Moyle Field Day Contest (JMFD). As usual, the first decision was the choice of a Portable Operating location. We eventually settled on Mt Leura, a 310 metre high landmark that overlooks the rural city of Camperdown, about 185 kilometres west of Melbourne.

As the JMFD weekend of March 15/16 drew near, the weather forecast for VK3 and VK5 was expected to be very hot with high 30s predicted with the likelihood of Regional Fire Bans. I travelled to Port Fairy on the Friday afternoon where our host Russell Lemke VK3ZQB attended to our every need/demand. We also tested most of the Microwave gear in Russell's front yard.

Michael VK3AAK had family

commitments so he decided to drive down on the Saturday morning and we would meet on the Mount. This delayed start also gave Michael the opportunity to knock up a simple Moxon antenna for six metres... a very worthwhile decision for which we would later derive a huge benefit in Contest Points.

Saturday morning to noon in Port Fairy was a very pleasant 24 C. Mt Leura was only an hour away but as I travelled east to Warrnambool and then onto the

Cobden Road towards Camperdown, I could feel the ambient temperature rising as I went further inland. On my arrival at Mt Leura at 1500 hours, there was no shade and the heat was quite oppressive. It was obvious the temperature was in the mid 30s. Michael had arrived a few minutes earlier and was already surveying the area.

After working out our bearings, we parked both cars North/South, rear to rear on the summit to create an ideal East/West Operating area midway between the cars. Our six hour Contest started at around 0515 UTC, (1615 hours EDST) giving us the benefit of making repeat contacts over two of the 3-hour boundaries. Our first points came from a QSO on six metres. More six metre contacts followed quickly and it became evident that Michael's decision to include "something" simple for six metres was of great benefit to our overall Contest Score.

The microwave bands took a little longer to get going and contribute to our points tally. During the set-up, an unexpected north-easterly breeze sprung up and caused a bit of havoc. The 1200 mm dish mounted on its tripod was blown over and the feed support structure was badly bent. Then the six metre antenna went down...and then a little later so did the two metre Yagi.... fortunately with no real damage. These were just teething issues that we all have to expect and endure if we participate in any contest from a portable location.

Finally the dish repairs were completed and several of the microwave transverters were powered up: I was ready but what was the propagation likely to be? Michael in the meantime had been flat out managing 6 m, 2 m, 70 cm and 23 cm bands.

The Mt Gambier team of VK5SR was not able to go to their usual preferred site due to fire ban restrictions, which prevented access to their favoured mountain. Consequently, Colin VK5DK and his team initiated a reduced Contest effort later in the day closer to sunset from Mt Gambier in the township. As usual, the VK3UHF team from Geelong was very active and racking up the points on their many bands. Russell VK3ZQB had decided that he would not go out portable so he operated at home from an east facing balcony with a rather degraded/obstructed outlook.

Ralph VK3WRE from Mt Tassie was

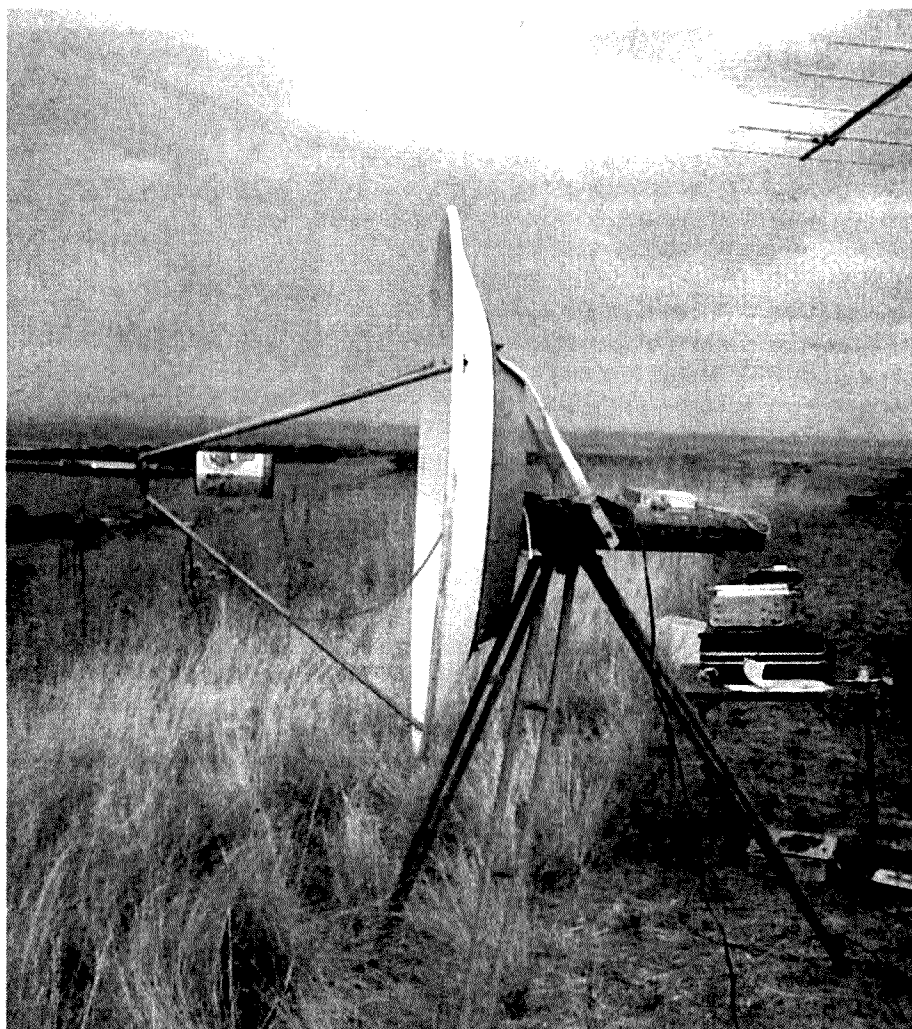


Photo 1: The antenna for 5.7 GHz.

a bit of a late starter or should I say he was for us. The Ballarat group of VK3BML was operating from Flagstaff Hill to the north of us and the VK3ER group was on Mt Cowley. These were the only significant teams with microwave possibilities for us to score contest points.

Over the next six hectic hours, Michael and I repeatedly searched for stations, rotated antennas, swapped transverters and dish feeds and recorded those all-important QSOs in our log sheets. We found the microwave bands were indeed wide open with huge signal reports of 5 + TOO, TOO loud... being common.

Finally at 1220 hours UTC (2320 EDST) we had all our gear packed. We were both well satisfied with our evening and our achievements. Then we headed home with Michael driving back to Melbourne three hours away (now there is dedication to the hobby) and I returned to Port Fairy.

There are obvious improvements that

can be made to our portable station. These relate mainly to our operating techniques and better time management. Our biggest hurdle was actually finding the stations that we could work or rework. This led to a lot of time being wasted searching, not making QSOs and therefore not adding to our contest points score. This was especially the case for the microwave bands where each QSO or series of QSOs over multiple bands to/from one operator usually takes a longer time to complete.

One observation I will add is the apparent lack of growth of microwave stations. Sure there are a couple more new microwave operators appearing but we do not seem to have the same amount of vigorous microwave activity that there was a few years back.

Let us hope we can change this for the future!

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Alan VK3XPD
Michael VK3AAK



Photo 2: Michael VK3AAK working "on phone".



Photo 3: Part of the antenna farm. Michael VK3AAK has built an interesting mounting frame.

The Peel Amateur Radio Group

Gavin Bazukiewicz VK6VKS

The Peel Amateur Radio Group participated in its first John Moyle Memorial Field Day contest on 15-16 March. The station was located on the Pinjarra scarp, some 86 km south of Perth, with an elevation of approximately 250 metres. A special thanks to Alcoa for permission to operate in that area.

Saturday morning was a flurry of activity, with setting up the hired 3.5 kVA generator, and the numerous antenna supports. The antennas for HF were a TET rotatable dipole, and a Werner Wulf vertical. Two metres was covered by a 12 element vertically polarized beam and 70 cm also utilised a vertically polarized beam.

Thanks go to Paul VK6DAT for supplying the gazebo which housed the 2 m/70 cm station, and part of the HF operations, both of which became quite competitive at times.

The callsign for the exercise was VK6ARG. A total of 227 contacts was made: 1 contact on 15 metres, 86 contacts on 20 metres, 28 contacts on 40 metres, 8 contacts on 80 metres, 67 contacts on 2 metres and 37 contacts on 70 cm.

Equipment used was a FT-847, 50 W, for 2 metres, an Alinco DR-435 at 70 W for 70 cm, and for HF a Kenwood TS-570SG, at 100 W. Thanks to all who loaned their equipment.



Photo 1: The Peel Amateur Radio Group
Back L-R: Marty VK6FDX, Rex VK6SN, Maureen, Paul VK6PAG, Milan VK6KTV.
Front L-R: Dot, Michelle VK6FMOZ, Warren VK6MOD, Gavin VK6VKS, John VK6ZN.

Paul VK6DAT, John VK6ZN and myself Gavin VK6VKS remained onsite throughout the night. Rain interrupted proceedings around midnight, but this really had the effect of shutting the station down, and allowing for some well earned rest. Operations recommenced

first thing in the morning to round off the weekend.

Thanks to all who participated in the event and were involved in the set up. A thoroughly enjoyable field day had by all.

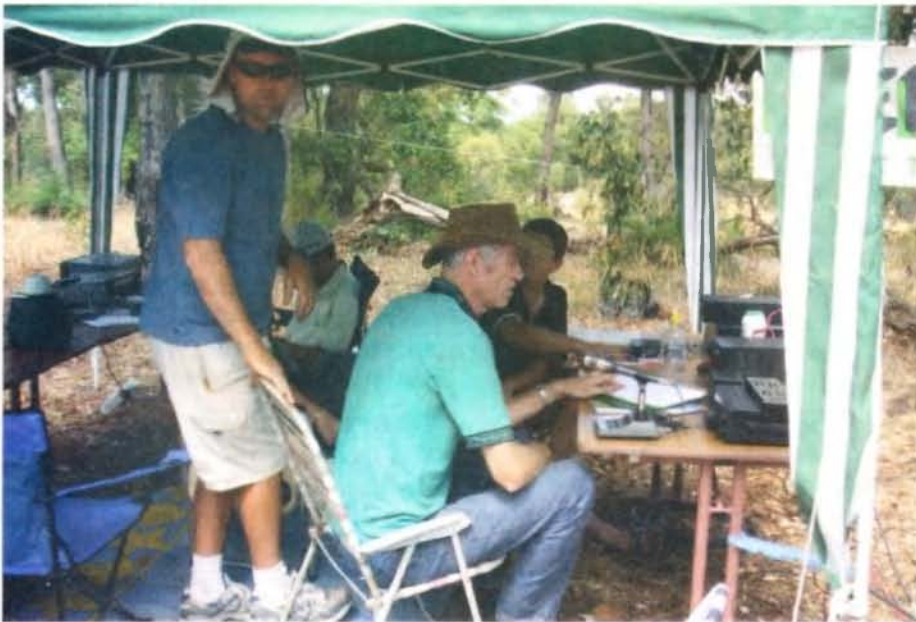


Photo 2: Paul VK6PAG, Milan VK6KTV, Warren VK6MOD, and Marty VK6FDX operating the PARG JMMFD station.



Photo 3: One of the PARG antenna support anchors – a little unusual, but effective.

My John Moyle Memorial Field Day 2008 experience

James Fleming VK4TJF

Field day for me is a once a year event where I can use antennas that cannot fit into my yard and use power levels that would normally have the neighbours come knocking at my door.

I belong to the Redcliffe and Districts Radio Club where around 40-50 people attended the 2008 John Moyle Memorial Field Day (JMMFD). We book the field day at Murrenbong Scout Camp near Petrie, Queensland.

This year John VK4YJV brought his work truck, which was equipped with an 18 metre crane, to the site. John fabricated a rotator using two worm drive gear boxes. One had a 10:1 reduction and the other had a 40:1 reduction resulting in an overall 400:1 reduction. A 24 volt DC motor ran on three volts. Andy VK4KY used the EZNEC computer program to design a four element beam on 10 and 15 metres, and a three element beam on 20 metres, all matched with a 1/12 wave transformer. Andy and John then fabricated them for field day. The ten metre beam was put on a German made winch up tower that stood around 10 metres.

We started setting up on the Friday and by night time more than one beverage was consumed as well as erected! I managed to make a rare contact to

Wake Island using my own call sign. Headphones, foot switches and home made voice callers were provided by Andy.

Saturday night was the famous camp roast put on by Peter VK4TGV with roast lamb and vegetables on the menu. The lamb and vegetables were left under red hot coals all day till the meat was

falling off the bones. In the end, a few were gnawing on the bones just like a Neanderthal.

This was my one time of the year (except JOTA) to lie under the stars, feel the warmth and glow of the electron tubes in the amps, make many contacts, and have a belly full of beer and roast lamb.

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Photo 1: The Redcliffe and Districts Radio Club JMMFD 2008 campsite.

The CEPT licence

Bob Whelan G3PJT

Chair, Radio Regulations Working Group, IARU Region

Going on a trip this year? Want to take and use your radio? If you are going to a CEPT country, read this first!

Planning on doing some travelling and want to take your radio? Then a new agreement between ACMA and CEPT will help you do just that – and with minimal paperwork and bureaucratic hassle! And best of all no licence fee!

What is CEPT?

CEPT stands for European Conference of Postal and Telecommunications Administrations.

CEPT has harmonised telecommunications legislation between its member countries and thus made it easy for radio amateurs to get operating permission during visits. The administration of CEPT takes place at the European Radiocommunications Office (ERO) in Denmark.

What's new?

The ACMA and CEPT have come to an agreement which will allow Australian radio amateurs to operate their radios during short visits to over 30 countries.

The CEPT recommendation T/R 61-01 permits the holder of an Advanced class Australian radio amateur licence to operate in over 30 countries without having to obtain a licence from the countries you plan to visit.

This very convenient arrangement is intended for short visits, typically one to three months. And many of us use it all the time on holidays, DXpeditions and business trips. This arrangement covers both CEPT countries and even non-CEPT countries like W, ZL, ZS, VE etc. and now VK.

I have an Advanced licence and I want to take advantage of this, what do I need to do?

In practice you have to:

- Check that your Australian licence shows that it qualifies as a CEPT licence. Licences renewed after Australia has reached agreement with CEPT will show this. You will also be able to obtain a substitute licence from ACMA which will have the CEPT endorsement, though you will have to pay a fee for this.

- Check what national licence class in the country you want to visit is equivalent to your licence.
- Check what are the operating privileges and regulations covering the use of that national licence class in the country to be visited.
- Use the appropriate prefix which has to be appended to your own personal Australian callsign.

The key point is that the operating privileges for the visitor operating under the CEPT Licences are defined by the **COUNTRY BEING VISITED, NOT YOUR OPERATING PRIVILEGES IN AUSTRALIA.**

- Go operate!

So much for the information but how does this work in practice?

Have a look at the tables in either of the CEPT documents (URLs below) and you can see that the equivalent local licence class is listed for each of the countries which have adopted the CEPT licences.

So as an example, having found out that your Australian licence is included in the table in T/R 61-01, Appendix IV and you want to travel to Germany, you turn to the table in Appendix II and look up the entry for Germany which says that German licences 1, 2, and A apply.

Then you go to the DARC website

and look up the operating privileges which apply. Likewise if you plan on coming to the UK then the licence class which applies is the UK Full licence and operating details are available from RSGB and Ofcom websites.

What callsign should I use?

You should use the national prefix and any secondary locator if any, then a forward slash, '/', followed by your home VK callsign. Yes, this is the reverse of what Australia requires under its Class Licence for Overseas Amateurs visiting Australia, but that does not matter.

Appendix II of T/R 61-01 tells you the prefix which you should append to your personal Australian call (VK'x'aaa') when you are in Germany, so your callsign becomes DL/VK'x'aaa' or in the UK M/VK'x'aaa'. Note that special Australian calls or club calls are not valid under CEPT and should not be used.

You can also use the radio of a local amateur under these arrangements.

What documents should I carry with me?

When travelling you need to carry your VK licence with you showing that it is recognised by CEPT and it is a good idea to carry a copy of the local licence too.

Some form of explanation is useful if you have to show your licence etc. to local officials who might not be familiar with these arrangements.

The CEPT Licence

The WIA is very hopeful that the CEPT will finalise the arrangements between it and Australia to allow Australian Advanced licensees to operate in the CEPT countries during visits sometime this May.

Accordingly we have asked Bob Whelan G3PJT to tell us how operating under the CEPT arrangements work.

As this issue goes to the printers, the arrangements to allow VK amateurs to operate in the CEPT countries have not been finalised, but immediately we hear that it is clear to operate we will let you know through the WIA website and the WIA broadcasts.

Australian Advanced licensees should not attempt to operate in the CEPT countries under their Australian licence until the agreement with CEPT has been finalised.

When that happens, this will be the implementation of another of the outcomes of the ACMA inquiry into amateur regulations and a major benefit for Australian amateurs.

Some fine print.

So far so good, but these arrangements are always being updated as new countries join the arrangements. So it is important to always get the up to date information from the ERO website.

And of course there is the fine print.

Not all of the countries who implemented the previous versions of T/R 61-01 have implemented the revised and current version. In such cases it is reasonable to assume that the requirement for Morse code for operation below 30 MHz and any other restrictions still stand. ERO have tried to clarify any such restrictions in footnotes to the tables.

Some of the 48 members of CEPT have NOT implemented the CEPT licences. Just because the country is listed as a CEPT country does not mean it has adopted the CEPT licences.

And any country can add extra conditions to the CEPT licences. These conditions will be shown as footnotes to the equivalence table e.g. in T/R 61-01 Appendix II. For example, Estonia requires that a visitor use a local regional prefix.

Special conditions often apply to overseas territories such as those of France. Local permission will often be required in such locations.

And finally CEPT T/R 61-01 bears no relation to the import and export of amateur radio equipment, which is subject only to relevant customs regulations.

But I am going to stay longer

For longer stays, more than 1 to 3 months or more than 90 days, you will need in most cases to advise the Administration in the country where you are staying. You might have to obtain a local licence. In such cases there is another CEPT agreement T/R 61-02 which may be relevant and help you avoid having to take any local examinations if you hold the Advanced qualification and the AOCIP or AOLCP qualifications. While you should certainly take your certificate with you if you intend to stay more than a short visit, it is probably a good idea to have at least a certified copy with you however long you intend to stay.

Certainly, you should look at the ERO website.

ACMA is already issuing Advanced Amateur Operator's Certificate of Proficiency that include a declaration in three languages that the holder of the certificate has successfully passed an amateur radio examination that corresponds to the CEPT recommendation.

URLs of documents

The main ERO page is www.ero.dk

The main access to T/R 61-01 CEPT Radio Amateur Licence is via the document database at:

<http://www.ero.docdb.dk/doks/doccategoryECC.aspx?doccatid=2>

Scroll down the page to the relevant documents or quicker just use your browser to 'search in the page' for '61-01'.

You can then download the text of these agreements or just look on line.

If you click on the 'Implementation' button a new page opens which shows which countries have adopted the agreements and any special conditions if any.

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News from...

VK3

EMDRC visits

FAMPARC.....again!

The second "D-STAR" highly successful and fun morning was held at FAMPARC on Saturday 19 April 2008. In fact, it would be hard to plan and achieve a better morning and it was good to see that there were 22 people attending either with D-STAR equipment or with a keen interest. Even Bill the club president was happy to give his input (hi hi).

Starting things off, the weather was just plain perfect, the coffee was hot and the donuts were fresh and in good supply. The best thing however was the spirit of the meeting and the outcomes with people swapping ideas and getting to know their equipment better. Jeff VK3EUL kindly distributed the latest IC-91 and 92 (and other) ICF "memory" files and also gave a great introduction and demonstration of programming software.

When you see just how much can be

done with these powerful radios you realize that the programming software and cables are a highly recommended addition.

Being new to D-STAR myself, I was surprised to see that he had programmed in repeaters from all around the world and for a few seconds until I realized and remembered the power of the D-STAR system I forgot that you can just select and make a contact to anywhere with a repeater. This is how easy Jeff and others such as VK3UR (sorry to everyone else I have missed out) have made making international contacts. It also demonstrates the close co-operation and the best of the amateur radio spirit in action.

Peter "TQ" a.k.a. Captain D-STAR dropped in on the way past and gave an impromptu talk about the upcoming changes happening with the G2 upgrade (happening on 28th April). Also discussed were some interesting aspects of D-STAR.

Richard VK3TXD

Eastern and Mountain District Radio Club goes Digital

On Valentine's Day, Thursday 14th February 2008, love was not the only thing that was in the air. It was Melbourne's ever active Eastern and Mountain District Radio Club that went on air with the first Australian D-STAR net at 8.00 pm that day with VK3DLR transmitting from a portable location. After putting out a call for stations to check in, a few nervous moments of silence followed. Then the first station to check in VK3UR was heard and the rest, as they say, is history. A total of 12 stations checked in on that day, including Peter VK3TQ from Icom and Richard VK3JFK, the resident D-STAR expert. There was great discussion on the settings required to get the D-STAR capable radios to work the repeater. This discussion resulted in the number of stations that checked in. The

News from...

first D-STAR net kept the net controller busy for the next one and a half hours and even after the net was closed, the repeater was active for quite some time. The D-STAR bug has definitely caught on! In recognition of this event and to commemorate this occasion, the EMDRC have presented a certificate to the stations that joined this inaugural net, possibly the first in the World.

As a sign of things to come, since the inaugural net there have been an average of 13 callers each week making it a very successful net indeed. To top this, on Thursday 6th March 2008, DL4FDL from Germany and IR3UQ from Italy joined the ever increasing group. To join in to the net, tune to VK3RWN on 146.9125 every Thursday at 8 pm.

Joe VK3FJBC

EMDRC WES 2008

One of the great things about amateur radio is that it involves people in many different activities. There are field days and the lighthouse weekend and then there are project days and fox-hunting. The list just goes on and on. But once a year, amateurs from far and wide can be seen line up in front of an ATM at a certain suburban shopping centre. In case you are wondering what connection this has to amateur radio, think again. This very important and essential field activity involves the withdrawal of large sums of money for the purpose



There is always someone in the crowd who seeks attention! A view of part of the busy hall.

of purchasing goodies at the annual Eastern and Mountain District Radio Club White Elephant Sale 2008. And this year's WES was strategically slotted in for Sunday 9th March (the Labour Day long weekend). This had the advantage of allowing people to have the next day off to recover from the effects of the WES (and to unpack and assemble their new gear).

In the weeks preceding the event, the Committee had been busy putting together the list of things to do and arranging volunteers. On the day of the event, it all came together like a well oiled machine. The smell of coffee greeted people as they arrived at the venue a couple of hours before the official start time.

Carl VK3EMF and the very efficient ladies could be seen already hard at work in the kitchen. Jack VK3WWW was spotted doing a (tyre kicking) final inspection of the barbeque and had it going for the morning bacon and egg run at the right time. The traders were busy bringing in their goodies and Antony VK3TAG was kept busy at the registrations desk

for a while. As is always the case in such high profile events, security was tight and the flow of people was closely monitored by the "stronger" and "slightly robust" members of the volunteer group. As the start time drew close, the crowds outside were growing and Jack's bacon and eggs were disappearing fast. The endless cups of free coffee were being gulped down quickly. After all, nobody wanted to be caught with a cup in hand when the doors opened. You have to hand it to these amateurs. They never go radio shopping on an empty stomach!

Ten o'clock struck and with it came the mad rush of people as the doors opened. Before long bargains were snapped up and haggling was the flavour of the day. Yet in the middle of all this, there were some who were just content to sit outside with a coffee and a cigarette and talk about their favourite topic. An exciting moment in the proceedings was the draw of the door prize. An Icom IC-91AD digital handheld was given away to one lucky winner while the rest of the people drooled, gulped and looked rather green with envy. Finally after a lot of cash and gear changed hands, the afternoon eventually ended (as all good things must) and the doors closed to another highly successful WES. A well deserved round of applause to the volunteers and members, traders and participants who made this event a huge success.

Joe VK3FJBC



Jack VK3WWW hard at work at the barbeque, trying to keep up with demand.

EMDRC antenna build day

David Ryan VK3LOZ.

The antenna build day held at the EMDRC East Burwood clubrooms on Saturday 28 July was an outstanding success.

Three club members built their own antennas and a fourth brought his along to be checked. The three who built their own antenna also built their own balun.

Including those who built antennas, there were 26 club members present to observe the proceedings. It was pleasing to see two new members join the club on the day; both learnt of the club activity on their 2 metre radios. One new member heard the activity announced on the Sunday Net and the other from listening to a simplex conversation.

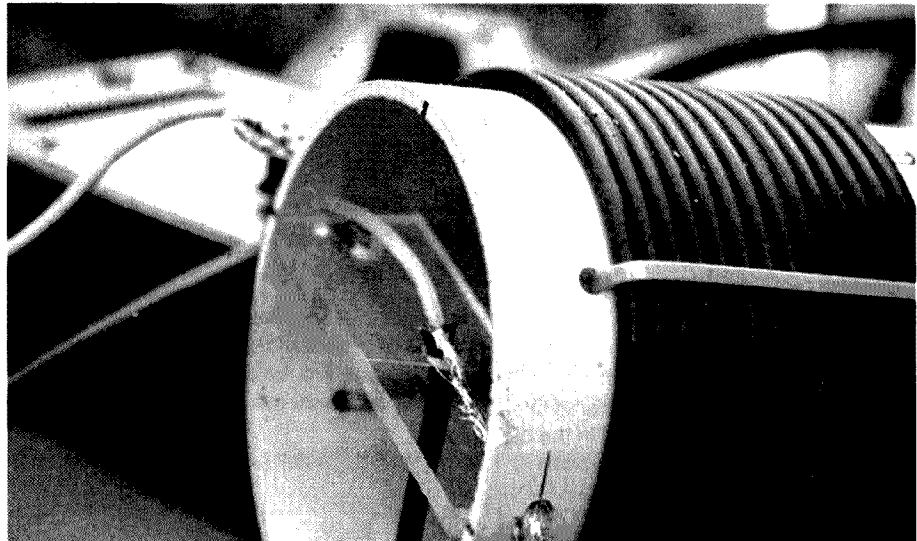
Without doubt the presentation of a technical nature sparked interest in the membership. It was standing room only when the GDO and the antenna tuner came out.

Watch out for the continuation to the antenna builds, when we will include a 40-metre trap into the 80-metre dipole.

Also discussed was the proposal to hold an information day on IRLP, to be held in conjunction with the Saturday BBQ. David VK3DRB has indicated he is willing to instruct on the Day.

The EMDRC extends a warm welcome to all club members and visitors for both days.

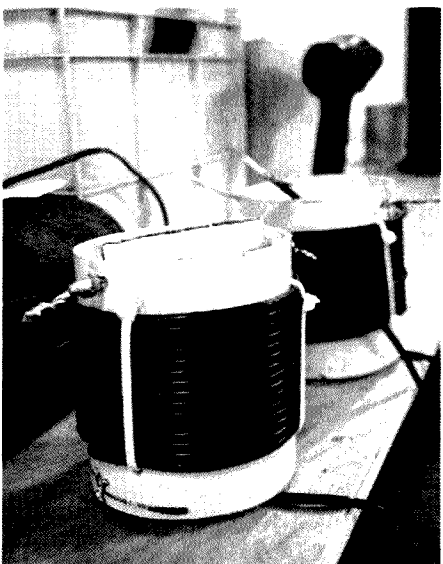
Remember: **TALK** about the activity **ON AIR**.



Balun construction



Many hands tuning the antenna rig



Finished baluns



The antenna is up (in front of the amateur at left) but the discussion continues

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

Happenings on VHF and UHF

The 2 m and 70 cm bands are certainly popular, the latter probably more so in the Melbourne area than in many other parts of our big country.

Whenever something unusual happens there is no shortage of radio amateurs to pick it up and discuss it on air.

Recently there were a number of stations on the VK3RMM 70 cm repeater identifying with geographic or location names. Instantly there was concern about these transmissions. Who were they and what was their purpose?

The simple answer is that they were WICEN (Vic) stations providing logistic and support communications for an event as part of a communications training exercise.

A relaxation of the station identification requirements for emergency communications can be found in the revised Radiocommunications Licence Conditions (Amateur Licence) Determination released in February.

The general requirement is for amateur stations to identify at the beginning, end, and at least once every 10 minutes during transmissions. However a network of amateur stations taking part in emergency services operations or related training exercises need be identified at least once every 30 minutes.

Under the new LCD, this identification must be given by one station in such a network. The reason for this is to enable a smooth running of an emergency services operation or training exercise without the need to stop every 10 minutes for a roll call.

WICEN (Vic) has long used abbreviated station call signs that also aids in the running of an emergency network. A little time listening to the traffic of these efficiently run networks should leave no doubts about their legitimacy.

Such was not the case on the 70 cm band recently when obviously non-

amateur transmissions appeared with traffic related to security or crowd control matters.

It turned out that staff at a security company in central Melbourne were equipped with imported Chinese made hand-helds tuned to the amateur 70 cm band. Soon after there was other traffic heard on the band that appeared to be parking attendants at an entertainment centre.

The ACMA acted quickly to take appropriate action and ensure compliance with the Radiocommunications Act.

It was tempting for radio amateurs to engage in on air discussion with these intruders. In doing so they may be in breach of the amateur licence conditions. But importantly it can also frustrate ACMA investigations if the offender does QSY.

In these circumstances restraint is required, listen, observe and report the matter to authorities. An incident last year saw a radio amateur challenging on air what he thought was an intruder or a hoaxer pretending to be an emergency services dispatcher.

However it turned out that someone unknown had maliciously cross-repeated an emergency service channel with a 2-metre band simplex frequency.

Annual General Meeting

Another reminder to members of the AGM to be held at St Michaels Hall Victory Blvd Ashburton on Wednesday 21 May at 8 pm.

Following the AGM an Open Forum will be conducted. Members can avail themselves of this opportunity to discuss any matter with the Council Members.

The annual reports for 2007 were made available to members last month as a download from the Members Only section of the website. Hard copies were posted to those financial members who have not registered their email address,

or request such a copy.

Some highlights include:

The year 2007 had been a busy one for the statewide organisation that faced some challenges but, with a strong active council, is able to make steady progress on most of them.

The Centre Victoria RadioFest at Kyneton had firmly established itself as a 'must see' event for the discerning radio amateur.

JOTA and ILLW are now permanent activities for the organisation.

Our Education Team led by Barry Robinson VK3JBR is playing an important role in helping those entering amateur radio or wishing to upgrade.

The Internet Project Development Officer, Gary Furr VK3KKJ continues an excellent job that plays a major role in membership recruitment and retention.

A great deal of work has been done in restoring a number of repeater sites, resulting in an extraordinarily large amount being spent in 2007.

The new D-STAR repeater, kindly donated by Icom (Australia), will necessitate a very large capital expenditure by Amateur Radio Victoria before it becomes fully operational on Mt Macedon.

We have gratefully received some donations of money and material for this project but we have a long way to go. Thanks and acknowledgement is now given to two donors, Roger de Valle VK3ADE and David Tilson VK3UR. Further donations are welcome and should be addressed to the Secretary, Amateur Radio Victoria, Ross Pittard VK3FCE.

Foundation class

The next weekend training and assessment session for the Foundation Licence will be 17-18 of May. Enrolments close soon. For inquiries or to enrol contact Barry Robinson VK3JBR 0419 808 323 or arv@amateurradio.com.au

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

Formal meetings for 2008 commenced in late January, and since then our club meetings have been well attended. We were fortunate to have Peter Willmott VK3TQ, who is sales manager for Icom, as a guest speaker. Peter gave a PowerPoint presentation on the new digital mode of communication "D-STAR". Following the presentation, Peter answered questions from the floor and also gave a practical demonstration. Peter's talk was well received and gave us all an insight as to what we can expect in the future. Of particular significance is the fact that this mode of communication lends itself to experimentation, which means that we as amateurs still have the opportunity to make a contribution to the development of either the hardware or the software.

Pip VK3YME gave us instruction in the use of the CAD program "Eagle", which is a software package that allows the user to draw a circuit diagram and then produce a printed circuit board

to suit. This program is quite powerful and as such it took two evenings for Pip to explain the basic operation of the program. The second evening was a hands on approach with members making use of our computer laboratory to gain practical experience using the software.

In February we had our annual visit with the Ballarat Amateur Radio Group (BARG). This time it was our turn to go to Ballarat and it is a visit that our members look forward to. As usual we were well looked after by our hosts. We were given an outline of their latest club project that will allow their members to access the club station from a remote location via the internet. This is a most ambitious project and the BARG are to be commended in their ability to bring a project of this complexity to completion. The operating console housing the equipment was of particular interest to Arno VK3YAP, who is in the process of designing and building a new operating

console for our club rooms.

We have two construction projects we hope to build within the next three months. The first is a PIC based tone board to allow access to CTCSS controlled repeaters. This will be particularly useful to members who own older FM transceivers that do not have this facility built in. The second is a small portable Yagi antenna for 70 cm, and is a follow up project to the 2 m Yagi that we constructed last year. Both of these projects are in the final stages of the design and we should start on them later in the year.

Visitors to Geelong are invited to attend our meetings which are held every Thursday evening at 8 pm local time. Or you may wish to call in on a Wednesday morning between 9.30 am and lunch time for a cup of coffee with the Wednesday group. Our rooms are located at 237A High St. Belmont.

VK2

Tim Mills VK2ZTM

cl- vk2wl@ozemail.com.au

Clubs

The Mid South Coast ARC, which meets quarterly, now has a new venue and a change of date. The May meeting will be held on the second Saturday at the Country Women's Association (CWA) Hall located at 55 Wason St. Milton. <http://www.msarc.org>

The Oxley Region ARC wish to remind amateurs from throughout VK2 and beyond that it is only a month until the annual Queen's Birthday weekend Field Day. It will be held over Saturday the 7th and Sunday the 8th of June at the usual venue, the Sea Scout Hall in Buller St. Port Macquarie. The Oxley Club members have settled in well to their new meeting venue at the Port City Bowling Club, Owen St. Port Macquarie where they hold the monthly meeting at 2 pm on the first Saturday of the month. There are informal meetings on the second and fourth Friday evenings.

The Urunga Convention just celebrated its 60th Birthday gathering over Easter in the village of Urunga (mid north coast) in the same community hall as the first get together in 1948. Over 70 signed in during the two days for a round of fox hunts, again hotly contested by the VK3 team. Planning is already under way for the 60th anniversary event next Easter, with, it is understood, a new management committee.

Waverley ARS has its annual auction next month on Saturday morning the 21st June. The club rooms are part of the Scout hall in Vickery Ave Rose Bay which is behind the RSL Club on New South Head Rd. Rose Bay, in the eastern suburbs of Sydney.

Taree and District ARC held their AGM in early March. The committee positions determined were President Ross Barlin VK2DVZ, VP John Farley VK2KHZ, Treasurer John Van Denderen VK2SWR, Secretary Mark Swannack

VK2AMS, Public Officer Arthur Archer VK2PE, Net Controller Ken Varley VK2KYO, Publicity Officer Terry Davies VK2KDK and Webmaster Glen Steep VK2YOJ. The repeater committee is VK2s DVZ, AMS, KHZ and YOJ. The Club committee is VK2s DVZ, AMS, PE, KHZ, KYO and MSX. They meet at Taree TAFE on the first Tuesday evening of the month.

There is a net on Monday at 7.30 pm on the two metre area repeaters.

Blue Mountains ARC will be conducting their annual field day towards the end of winter – date yet to be advised. They meet monthly on the first Friday evening in the scout hall at Reading St. Glenbrook, and this is also the location for the field day.

Illawarra ARS is also in the celebrations with its 60th anniversary in June. They have a special event call sign V12AMW60 for use during June. To celebrate the formation date, a dinner is being held

News from...

on 10th June which was more than 80% booked by the end of March. The club is currently conducting workshops building a direction finding antenna, a radio direction finding unit, a CTCSS encoder/decoder, with many more projects being considered. They wish to remind users that a 123 Hz CTCSS sub tone is required to access VK2RMP 438.725 MHz. The Illawarra ARS has a weekly news bulletin on Tuesday evening, other than the meeting night, at 7.30 pm on their Coast Link system.

Liverpool and District ARC and Fishers Ghost ARC recently joined forces to conduct exams. They cover the south west of Sydney. vk2tsr@bigpond.com or vk2zww@wia.org.au

St. George ARS meet on the first Wednesday evening at the 1st Kyle Bay scout hall, Donnelly Park, Kyle Parade, Connells Point. Club meetings are provided for the southern part of Sydney. The society also sponsors several repeaters including the western Blue Mountains Mt. Bindo VK2RDX 6650. It has recently had an antenna and feedline overhaul, as well as work on the repeater. This system provides a link over the sandstone wall between the coast and the Central West. It is also a relay point for VK2WI news.

I am looking for VK2 news to the west of the sandstone wall. Some news

from Orange recently was all that has been heard for a while. Would club committees, publicity officers and individual amateurs care to drop a note to the VK2WI news bulletins via the email address arnews@tpg.com.au The VK2WI bulletins require new and varied items. I use a lot of the news items to VK2WI as the source for these notes.

The printed word in publications such as this magazine is the only way that a lot of the happenings and history are ever recorded. Just looking back in the older publications refreshes the memories and often shows it has all been done before. Thanks in advance.

ARNSW

Details next month about the AGM and new committee for ARNSW. The AGM occurred a couple of days after this month's deadline.

The last Sunday of this month (25th) is the next Trash and Treasure at the VK2WI Dural property. This will be in the morning, and the Home Brew and Experimenters Group in the afternoon. This is also the weekend of the WIA AGM in Broken Hill.

A reminder that the only postal address for ARNSW is now P.O. Box 6044, Dural Delivery centre, NSW, 2158. Telephone contact is 02 9651 1490 into a message bank.

VK2WI

40 metres in the evening is back to sharing with Radio New Zealand on a near-by channel. The schedule shows they have an AM transmission there until September. 80 metres on 3595 kHz continues to be the main wide area coverage for the evening transmission.

One of the broadcast team, Jeff VK2BYY, is still finding time to write books. His latest will be out this month with the title *The Mind of the Dolphins*. The other books written by Jeff were *Barefoot Times* in 2004 and *Call of the Delphinidac* in 2006.

In the VK2WI upgrade it is planned to restore the beacons on 2 metres and 70 cm. At the moment, some 2 metre band indications are provided by the 5A TV from Newcastle but this will go in due course. What has been noted by the technical team is that there is no direct feedback from those who use the services of beacons. If there is an interest in having these services restored to the Sydney region how about a note or email to show there is interest. Send it to arnews@tpg.com.au attention Technical Committee or write to P.O. Box 6044 Dural Delivery Centre NSW 2158.

73 - Tim VK2ZTM.

Twin Cities Radio And Electronics Club Inc.

The Riverina Field Day

Sunday 31st August 2008

Held at Murray High School in the Assembly Hall

Corner of Kaitlers Road and Kemp Street Lavington

Opening 10 am - Shutdown 2 pm

Food will be supplied by caterers on site at reasonable prices

Tea and coffee will be free to everyone

There are a number of reasonable motels located nearby and in Albury/Wodonga

On Saturday evening some club members will be having an informal evening meal at the Commercial Club Bistro, come along and enjoy a relaxed evening.

Contacts:

Tony VK2ADQ 02 6040 0114 brabazon@aapt.net.au

Peter VK2CIM 02 6040 3210 vk2cim@wia.org.au

Stafford VK2AST 02 6040 6987 staffordsimpson@westnet.com.au

Waverley Amateur Radio Society

Annual Club Auction

The club will be holding its 2008 auction on Saturday, June 21st, at the clubhouse in Vickery Avenue, Rose Bay, Sydney.

Gates open 8:30 and the sale starts at 10:30.

Goods consist of useful ham radio, computer and electronic gear and it is open to all wishing to buy or sell.

No catalogue is produced, but details of some of the items to be sold will be posted on the web site before the sale.

Full details are available on the club's web site at www.vk2bv.org or by phone from Simon VK2UA on 02 9328 7141.

Summerland Amateur Radio Club Slim Jim building day

29 March 2008

SARC thought that a simple 2 m antenna would make it easier for new amateurs to get on air cheaply.

It was decided to hold an antenna day and Duncan Raymont VK2DLR volunteered to host it. Duncan had experimented with variations in our usual ubiquitous Slim Jim design. His version is easier to make and to adjust, and works just as well.

Nine people enjoyed the antenna construction day.

Many aerials of Duncan's design were built and tested.

Contrary to theory it was found the solid ribbon worked better than the slotted type. Good 300 ohm TV ribbon is now very difficult to obtain: it is all too light and cheap.

A good and practical learning and building day was enjoyed. Particularly pleasing was the success of the antennas made by our two youngest members, Aaron Smith VK2FUNN and Kendall Smith VK2FISH.

Construction and soldering techniques were learned by the younger members.

Thanks Duncan for your effort and

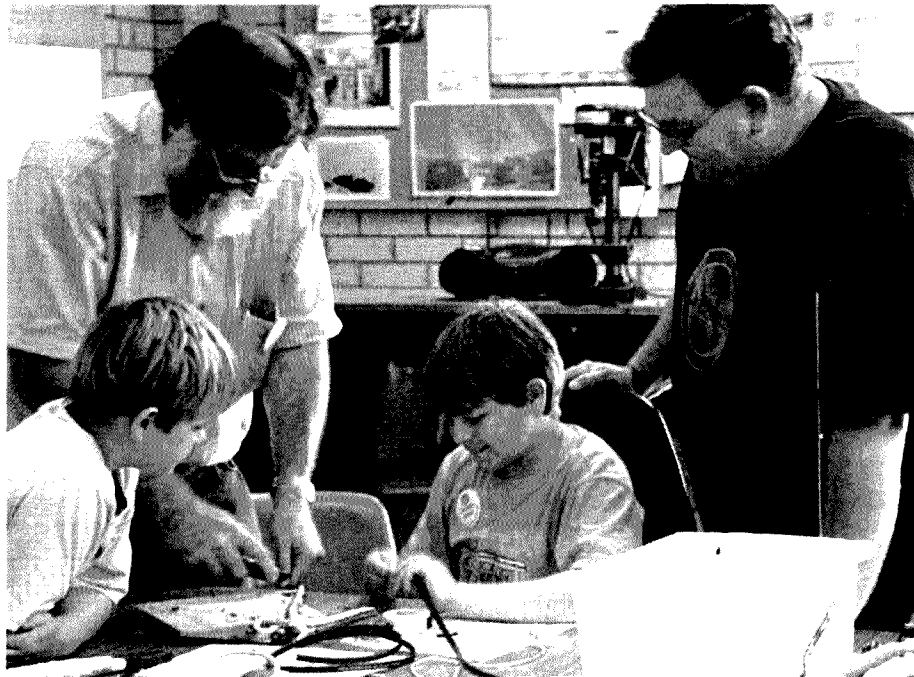
instruction. Duncan's design for the antenna is included on page 34.

WIA Director, Robert Broomhead, VK3KRB, visited us. Thanks Rob for

calling and sharing your info with us. All enjoyed a BBQ lunch as part of the day.

It is planned to hold a HF Antenna day on July 27 at the clubrooms.

John Alcorn VK2JWA



Duncan VK3DLR showing young Aaron VK2FUNN and Kendall VK2FISH how to attach a tuning stub with dad Bruce VK2KAP watching on.



Duncan VK3DLR passes on useful advice to a Summerland member

Oxley Region Amateur Radio Club

33rd Field Day

7th and 8th June, 2008

Hall open Saturday from 8.00 am for set-up

Sunday, 8.00 am until 4.00 pm

- *Trader tables* • *Fox hunts*
- *Trash & Treasure*
- *General interest displays*

Entry \$8 per person

Coffee, tea and biscuits supplied

Steak and sausage sandwiches available

Sea Scout Hall, Buller St., Port Macquarie

**Inquiries: Jim Neil, Field Day Coordinator
(02) 6581 2481 - jim.neil@gmail.com**

A pocket sized 2 m Slim Jim antenna – VK2DLR style

Duncan Raymont VK2DLR

Ever been somewhere with your 2 m hand held and wished that you could pull a better antenna out of your pocket? Nothing flash, just something that had more gain than the rubber ducky antenna?

Ground plane independent? Includes a short length of coax so that the antenna is where the signal is best and the hand held where it's easy to operate? Works on 70 cm also? You need a Slim Jim!

This version is designed for the long end of the 2 m band and can be tuned by trimming.

You will need about 1.5 m of 300 ohm solid TV ribbon (The slotted type has a different velocity factor and will not work with these dimensions) and a length of RG58 coax terminated with

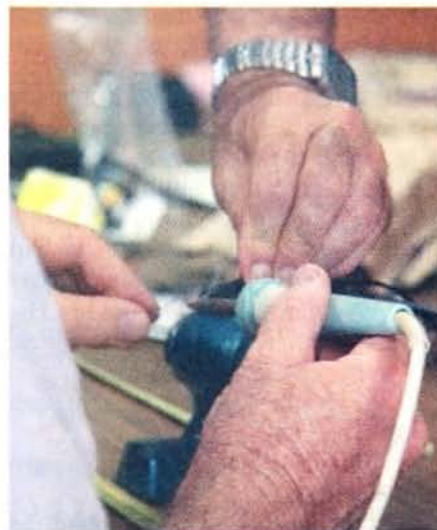
a connector to suit your transceiver. I recommend 1.5 m of coax for indoor use and up to 5 m of outdoor use.

Solder, insulation tape, and about 250 mm of fishing line to make a hanging loop finish things off.

Make up the lengths of twin lead as shown below. The 30 mm and 390 mm dimensions are critical as is connecting the coax outer to the notched side of the long length. The top of the 1390 mm section is left open for trimming and the 30 mm stub is taped against the coax contrary to theory.

Step 1: Cut twin lead to the lengths shown. Slotted twin lead does not work with these dimensions.

Step 2: Strip insulation back 10 mm



Soldering the stub to the half wave radiator

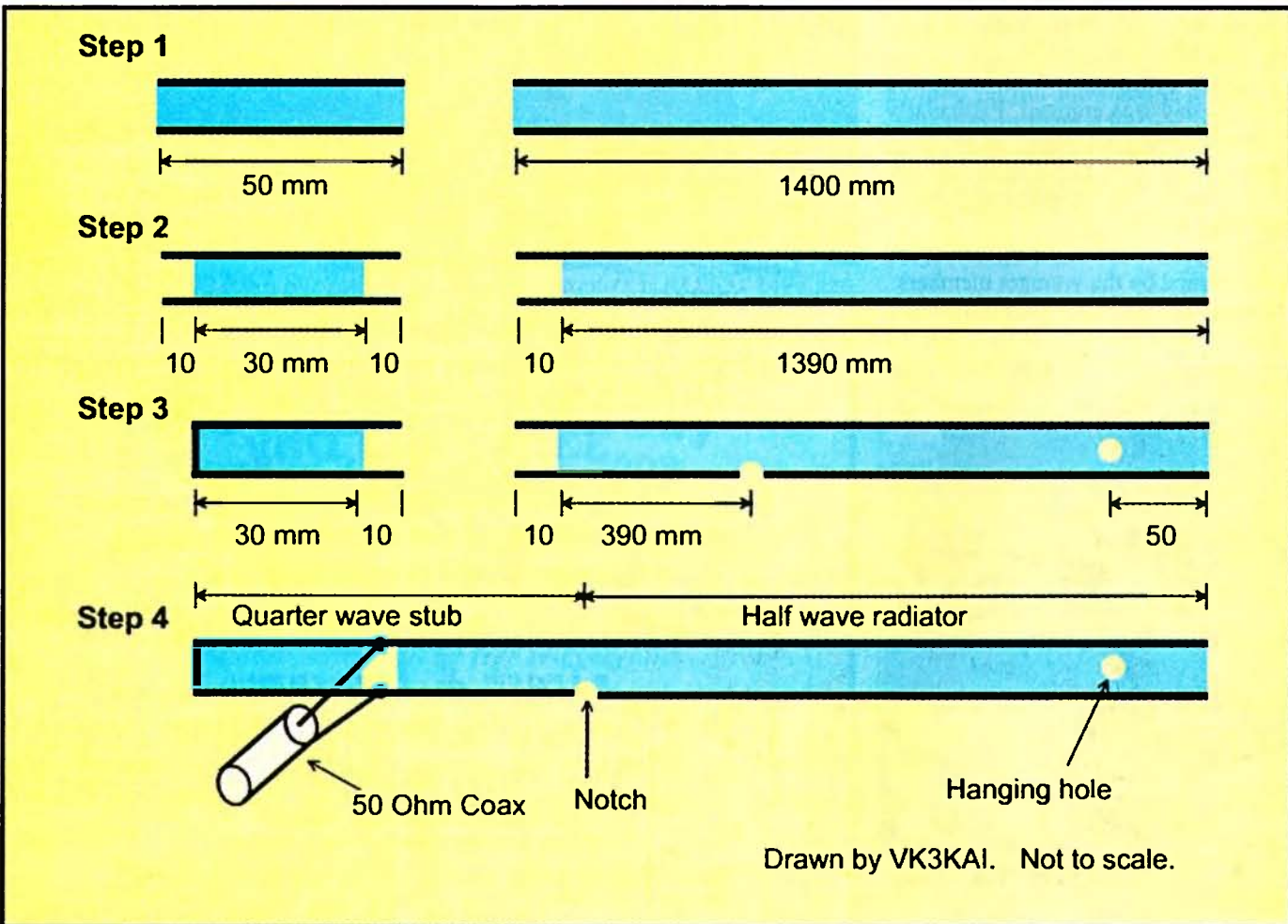


Figure 1: Construction steps for the Slim Jim. See text for details

News from...

as shown. The 30 mm length is critical.

Step 3: Twist and solder the conductors at one end of the short length to form a short. Cut a notch 390 mm from the exposed conductors on one side of the long length. The 390 mm length to the bottom of the notch is critical. Do not short the top of the 1390 mm length.

Step 4: Twist and solder the 30 mm, 1390 mm lengths and the coax together as shown. Note that connecting the outer to the notched side of the 1390 mm length is critical.

Step 5: Tape the joint securely with the 30 mm length against the coax (contrary to theory). Add the fishing line hanging loop. Test and trim the top (a couple of mm at a time) to move the resonant frequency if necessary and the bottom of the

notch (very carefully - one mm at a time) to change the impedance match. The antenna should also work reasonably well on the third harmonic in the 70 cm band.

Leave it as is for portable use or slip it inside a length of plastic conduit with a cap on the end for a self supporting permanent installation.



Duncan VK3DLR showing how to terminate the feedline



The Summerland Radio Clubrooms (exterior building shot)



The Summerland Radio Club Shack

Australian made ANTENNAS

Setting a new standard

COM-AN-TENA

(formerly a j and j coman)

115 John Street
GLENROY 3046

NEW 10-15-20 vertical antenna	\$225
2 ele delta loop 10/11 metre	\$275
40-80 metre vertical NEW	\$330
10/11 beams comp opt 5 ele	\$399
10/11 5/8 vert 4 rad 1/4 wave	\$224
Tri band HB 35 C 10/15/20 m	\$844
NEW 3ele 20 m Confined space Antenna Max. Width 7 m wt 11 kg gain 7dBd	\$425
log periodic 9 ele 13 30 8.4 m boom	\$1152
NEW 160 m Vertical SUBURBAN	\$355
M B Vert auto switch 10/80 m	\$345
NEW 2 ele 40 m wth 13.4 gain 5.2 dBd wt 27 kg boom 6.1 mtrs	\$574
6 m 5 ele compr opt beam	\$309
Top loaded 160 m vert	\$474
10 ele high gain 2 m 3.9 m boom	\$180
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NEW 80 m lin loaded height 15 metres Drives as 1/4 wave antenna	\$246

Guyed Masts

21 metres **13 metres**
Winch-up & tilt-over. Aluminium and stainless steel
three-sided construction. Auto-brake winches.

Free Standing Masts

9.5 metres

New Baluns

1-1 to 16-1 to 3 kW



Our Masts meet Australian Standards. We supply all the computations and data you will need for a permit.

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VK5

Adelaide Hills Amateur Radio Society

Twenty-Five Years Celebrations

This year marks 25 years since the first meeting of AHARS. The very first meeting was in February 1983. The occasion was to be celebrated on the third Thursday of April 2008 with a presentation of photos and minutes

of the early meetings and some stories from some of those early members, and a general coverage of the following 25 years.

Plans include a talk about some of the circuits in use 25 years ago and a display of representative equipment. The event was advertised on the local VK5 broadcast, so there should have

Christine Taylor VK5CTY
been a good gathering of members and visitors. I plan to report later on details of what should have been a very interesting meeting.

The last meeting was a member's Buy and Sell at which one person's junk became someone else's treasure. With the wide range of interests of our members, there is always a good selection available on these regular members' only nights.

Unfortunately, because of the extreme temperatures experienced in Adelaide for the fortnight surrounding the John Moyle Memorial Field Day, the club's participation in this event was cancelled.

It was not reasonable to subject operators to temperatures of 40+ when it was an activity in which we choose to participate. If you missed hearing VK5BAR this year, this is why.

Instead, a number of the people who would have been at Swan Reach for the weekend operated as home stations. Special mention should be made of John VK5EMI, who operated for the whole 24 hours, as he would have done in the field.

South East Radio Group

2008 Convention

Queen's Birthday weekend in June (7 & 8)

- Homebrew contest, with great prizes
- Commercial displays
- Pre-loved radios and parts
- Australian Fox Hunting Championship
- Sunday night after Convention BBQ

What a great weekend to come to Mount Gambier.

See you at the Margaret Street Scout Hall (behind the Police Station).

For more information log onto our web site <http://serg.mountgambier.org/> and follow the links to the convention pages.

If you do not have internet or you wish to book a table contact Wayne VK5ZX on (08) 8725 4335 or 0407 718 908

VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

"Meet The Voice" BBQ at Ross

On April 6, the weather was fine and sunny and with the historic Ross Bridge in the background the "Meet the Voice" BBQ was a wonderful success thanks to the Sewing Circle Net. The estimate was about 100 people attending, including family members and many K9s!

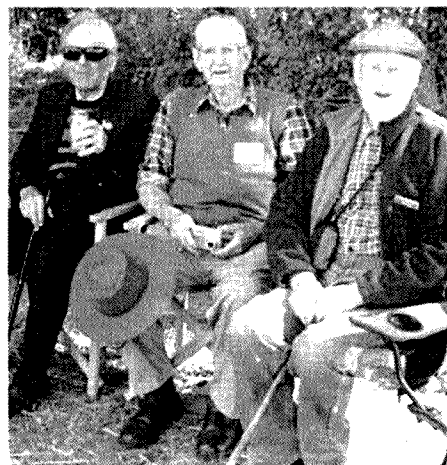
The group heard from Steve VK3JY about how the island of Simbo was using the funds that the Sewing Circle donated to the tsunami ravaged island. Then a panel discussion got underway on the "future of amateur radio". It was a thought provoking discussion.

Thanks to TTS Systems for the

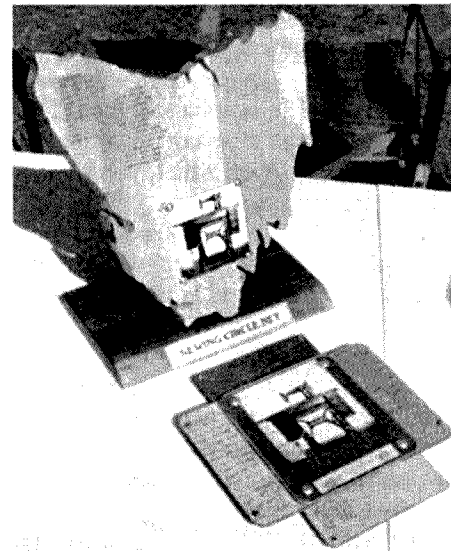
donation of the raffle prize which was won by Dick VK7DIK from Rosebery. It was great to see David VK3JKY and Claireen VK3KMB from TTS Systems make their way down to Ross for the weekend. The new and very impressive Sewing Circle award was presented to its current holder Jerry VK7EE. It will all be happening again next year, so stay tuned for details.

Northern Tasmania Amateur Radio Club

March 12 was the BBQ meeting at Lilydale Falls and by all accounts it was a great night with everyone enjoying themselves and Jason VK7ZJA



249 years of amateur radio experience at the BBQ! L to R: John VK7JK, Baden VK7BRY and Frank VK7CK



The "Sewing Machine" Award (New and Old) presented to the most loquacious members of the VK7 Sewing Circle Net each year.

the storm. There are some pictures on the REAST website. Ironically the illustrated presentation we had earlier in the night was from Mal Riley from the Bureau of Meteorology about the technology behind forecasting and its history. This was a great talk, thanks Mai. The presentation was recorded for a future ATV night.

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sneaking some incriminating pictures! Bill VK7MX was looking for a pre-scaler chip and placed a wanted notice on the VK7 Regional News broadcast and some weeks later was contacted from the United Kingdom by another amateur who had a substantial quantity of just the ICs Bill needed. Some emails and money transfer via son who was studying in the UK and Bill had secured a quantity of the required IC. The power of the Regional Broadcast is remarkable sometimes! IRLP Node 6700 is back online on repeater VK7RAA. Thanks to all involved.

WICEN Tasmania (South)

March 29 saw safety checkpoints manned for the Southern Tasmanian Endurance Riders around the Huon Valley. It started and finished in Woodstock and looped around Kaoota then down to Cygnet across Silver Hill and back to Woodstock. This posed some interesting radio coverage issues.

Congratulation to Andrew VK7HAW who was on the University of Tasmania Dean's Roll of Excellence for Bachelor of Science and Bachelor of Engineering, Andrew is a harmonic of Brian VK7BW.

The International Lighthouse/Lightship Weekend on the 16-17 August 2008 will see WICEN running VK7WCN from the Cape Bruny lighthouse.

Radio and Electronics Association of Southern Tasmania

REAST's new committee member is Thomas VK7NML who replaces John VK7HJS who retired due to ill health. The transmitter on repeater VK7RAD on 146.700 MHz has had a complete overhaul along with the addition of a 141.3 Hz tone on the six metre receiver. Congratulations to our new Foundation Licensees who now have their callsigns: Anthony VK7FTCL, Sam VK7FSTL and Frank VK7FINF. We look forward to hearing you on air. On Wednesday night April 2, Southern and Northern Tasmania experienced hurricane force winds up to 176 km/h. The VK7RAD mast bent after two guys broke and the six and two metre antennas on the main tower were ripped off. Thanks to Dave VK7DM, Barry VK7TBM and Steve VK7XOR who did the repair work. A number of other amateurs also had their antennas forcibly modified during



The group photo of most of the attendees at the VK7 "Meet the Voice" BBQ at Ross – 6 April 2008.

John Alan Moss VK7FAAE

John passed away on Sunday 6th April. John was father to Danny VK7HDM, father-in-law to Denise VK7FDKM and grandfather to Sam VK7FSAM. John came from Parattah where he played trains all his life with Tasrail. Upon retiring from Tasrail, he became caretaker at the Orford Caravan Park until that was closed down. John then moved to Bridgewater to be close to his

family. John was married for 50 years and had seven sons and one daughter – I guess we can see who got spoilt just a little bit. There was mention at the funeral about his having helped Danny with Communications for the Subaru Safari and his help with the communications during the fires for Tasmania Fire Service as part of the WICEN team.

There was also a tribute from Danny and Denise about obtaining his amateur licence which he thought was a waste of time as he would not pass it.

The boot was on the other foot when he did the exam and got his "F" call. There were about 80 people at the service which was quite moving.

submitted by Gavin VK7HGO

ALARA

Christine Taylor VK5CTY

Annual General Meeting

Please be on-air on the first Monday in May, the 5th. Make our AGM as busy as it usually is. The agenda and the list of nominees for the different positions are all in the Newsletter, which you should have by now.

We will hope conditions will be as good as they have been sometimes recently, but not as bad as they have also been. It is amazing how everything can change from week to week.

Certainly the bad atmospherics one evening brought the welcome rain to some of the southern states – some rain but not much. Hopefully this too will improve soon.

The weather is still the first topic for discussion each Monday, and will no doubt get a mention on the AGM night.

Did you participate in any of the recent YL contests?

If so, have you submitted your logs? We are so far away from Canada and the US that if we make any contacts in any of their contests they are extremely pleased to hear about it. Recently there have been several contests, a YLRL one, the CLARA one on a Wednesday and a Saturday, and several Special Event stations in the UK, such as the one mentioned in last month's ALARA column.

Then, over the first full weekend in April we had the Thelma Souper Memorial Contest, on 80 metres over two evenings. This is a little easier for us to participate in because of the closeness

of New Zealand to us, so maybe this was the one that gave you a log.

There was a little confusion about the time of this Contest because it became involved in the changing time from Daylight Saving to Standard time. It was a bit of a shame but contacts were made by those that were around within the two hours each night.

Please put your logs in ASAP. It really is important.

An extra reminder for the CLARA Challenge

This event was extended so more contacts could be made, so you may have forgotten it. This list also must be submitted for you to get the special certificate. After this month it will be too late.

The VK3 girls have to be very strong minded

In March the VK3 girls had two gatherings. The first was a two-part day. They enjoyed a barbecue at the QTH of Pam VK3NK followed by a film show at the QTH of Jenny VK5ANW/3.

It was rather cold, as their clothes show but lots of fun, nevertheless. After the long run of extremely hot weather, it was a pleasure to feel chilly. The fire in the newly refurbished fire-pit at Pam's QTH was doubly welcome, you can be sure.

A little later in March the VK3 girls went to a "Death by Chocolate" restaurant. From the picture we can see what they had to resist (as best they could!).

Recently VK3 has been very busy with luncheons, morning teas and participation in Hamfests.

It is great to see so much enthusiasm.

Plans for Tasmania

A number of people, some with caravans, are travelling to Ulverstone on Wednesday night 10th September. Unfortunately as most of the travellers are non-full fare paying, we have not been able to obtain a special discount, however it could be an early start to the ALARAMEET for us.

If you are hoping to come to Ulverstone but have not yet let Susan VK7LUV know, please do not delay any longer. She does need to know so she can make firm bookings for all the activities.

The application forms have been in the Newsletter and on the website for some time, so please make sure Susan knows of your plans.

So far there are approximately 80 attendees, so it sounds as if it will be most exciting. 80 is a good number and one that can be managed.

There is no question that an ALARAMEET is a special occasion. It gives us an opportunity to put faces to names and to store up memories for the future.

Quite a number of people going to Ulverstone intend to stay on to see something of Tasmania while they are there, so we will probably meet up again at various places afterwards, as we have done several times before after ALARAMEETS. More memories are created this way.

Hope to see you there.

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The gathering at the VK3 March luncheon. Standing left to right: Marg Loft (new member), Michele VK3FEAT, with VK3 MILLY THE DOG, Pam VK3NK, Elain VK3EQY, Jean VK3FJYL. Sitting left to right: Micheline VK3FMGE, Margaret VK3FMAB, Jenny VK5ANW, Susan VK3FXXX. Photo by Jean Fisher VK3FJYL.



Death by Chocolate. Left to Right: Jean VK3FJYL, Pat VK3OZ, Naree (Alara member), Micheline VK3FMGE, Margaret VK3FMAB, Barbara VK3AGU, Jo (not yet a ham). Photo by Jean Fisher VK3FJYL.

Gridsquare standings at 28 March 2008

144 MHz Terrestrial

VK2FLR	Mike	113
VK3NX	Charlie	106
VK2KU	Guy	102
VK3KAI	Peter	85
VK3HZ	David	80
VK2ZAB	Gordon	78 SSB
VK2DVZ	Ross	72 SSB
VK3PY	Chas	71 SSB
VK2KU	Guy	69 SSB
VK3CY	Des	68
VK2TK	John	62
VK3EK	Rob	62 SSB
VK7MO	Rex	62
VK3QM	David	61 SSB
VK2EI	Neil	59
VK3BJM	Barry	57 SSB
VK5AKK	Phil	56
VK3BDL	Mike	54 SSB
VK3KAI	Peter	51 SSB
VK3ZLS	Les	51 SSB
VK3WRE	Ralph	50 SSB
VK2ZT	Steve	48 SSB
VK2KU	Guy	47 Digi
VK3CAT	Tony	46
VK3VG	Trevor	46 SSB
VK5BC	Brian	46 SSB
VK4TZL	Glenn	45
VK7MO	Rex	45 SSB
VK4CDI	Phil	44
VK7MO	Rex	42 Digi
VK4CDI	Phil	41 SSB
VK5BC/p	Brian	41 SSB
VK3II	Jim	39
VK3II	Jim	38 SSB
VK3KAI	Peter	36 Digi
VK2TK	John	35 SSB
VK4KZR	Rod	35
VK2KOL	Colin	34 SSB
VK3ZUX	Denis	33 SSB
VK6HK	Don	33
VK2AMS	Mark	32 SSB
VK3DMW	Ken	32
VK3ZYC	Jim	31
VK2TG	Bob	30 SSB
VK3VHF	Rhett	29 SSB
VK4TJ	John	29 SSB
VK2KRR	Leigh	28 FM
VK3CJK	Chris	28 SSB
VK2EAH	Andy	27
VK2TK	John	27 Digi
VK1WJ	Waldis	26
VK3ACC	Gordon	26 SSB
VK5ACY	Bill	26 SSB
VK3BBB	Brian	25
ZL3TY	Bob	24
VK3TLW	Mark	23 SSB
VK3YB	Phil	23
VK4EME	Allan	23
VK1WJ	Waldis	22 Digi
VK3BG	Ed	22 SSB
VK3HV	George	21 SSB
VK3II	Jim	21 Digi
VK6KZ	Wally	20
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK4CDI	Phil	18 Digi
VK3UDX	Geoff	17 SSB
VK2EAH	Andy	17 SSB
VK3ECH	Rob	16 SSB
VK6KZ/p	Wally	16
VK3ZYC	Jim	14 SSB
VK3VHF	Rhett	12 Digi
VK4EME	Allan	12 Digi
VK2EAH	Andy	11 Digi

VK2EI	Neil	11 Digi
VK2KOL	Colin	9 Digi
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 SSB
VK1WJ	Waldis	5 CW
VK4AIG	Denis	5 SSB
VK2ZT	Steve	4 Digi
VK4JAZ	Grant	3 FM
VK3QM	David	1 Digi

144 MHz EME

VK2KU	Guy	275
ZL3TY	Bob	264
VK2KU	Guy	263 Digi
VK3AXH	Ian	185 Digi
VK7MO	Rex	154 Digi
VK4CDI	Phil	136 Digi
VK2FLR	Mike	120
VK3CY	Des	70 CW
VK2AWD	Dave	52 Digi
VK2KU	Guy	39 CW
VK2KRR	Leigh	30
VK2ZT	Steve	26
VK3VHF	Rhett	20 Digi
VK3HZ	David	19
VK3II	Jim	10 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
VK3NX	Charlie	50
VK3PY	Chas	50 SSB
VK3QM	David	48 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3HZ	David	37
VK2KU	Guy	34 SSB
VK3BJM	Barry	34 SSB
VK3EK	Rob	34 SSB
VK2DVZ	Ross	32 SSB
VK3CY	Des	32
VK3BDL	Mike	30 SSB
VK3KAI	Peter	30
VK3KAI	Peter	29 SSB
VK3WRE	Ralph	28 SSB
VK5BC	Brian	21 SSB
VK3VG	Trevor	20 SSB
VK7MO	Rex	20
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2TK	John	17 SSB
VK2ZT	Steve	17 SSB
VK3CAT	Tony	16
VK3BG	Ed	15 SSB
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK5BC/p	Brian	15 SSB
VK4KZR	Rod	14
VK4CDI	Phil	13
VK4CDI	Phil	13 SSB
VK4TZL	Glenn	13
VK6KZ	Wally	13
VK2KOL	Colin	12 SSB
VK2KRR	Leigh	11 FM
VK2EI	Neil	10 SSB
VK2TG	Bob	10 SSB
VK3AL	Alan	10 SSB
VK3YB	Phil	10
VK2AMS	Mark	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
VK3ECH	Rob	6 SSB
VK4EME	Allan	6 SSB
VK6DXI	Mirek	6
VK2KU	Guy	5 Digi
VK3HV	George	5 SSB
VK1WJ	Waldis	4 SSB
VK3DMW	Ken	4
VK3KAI	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK3ZYC	Jim	4 SSB
VK4CDI	Phil	4 Digi
VK3VHF	Rhett	3 Digi
VK4AIG	Denis	3 SSB
VK4JAZ	Grant	3 FM
VK2EAH	Andy	1 SSB
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz EME

VK4KAZ	Allan	14 CW
VK4CDI	Phil	10 Digi
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK2SN	Sean	6 Digi
VK3NX	Charlie	5
VK3HZ	David	4
VK2KRR	Leigh	1
VK2ZT	Steve	1
VK3AXH	Ian	1 Digi
VK3VHF	Rhett	1 Digi
VK5BC	Brian	1

1296 MHz

Terrestrial

VK3PY	Chas	39 SSB
VK3QM	David	39 SSB
VK3NX	Charlie	37
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2KU	Guy	25
VK2KU	Guy	22 SSB
VK3EK	Rob	20 SSB
VK3KAI	Peter	20
VK2DVZ	Ross	19 SSB
VK3KAI	Peter	19 SSB
VK3KWA	John	19
VK3BDL	Mike	17 SSB
VK3WRE	Ralph	17 SSB
VK3BJM	Barry	16 SSB
VK3HZ	David	16
VK3VG	Trevor	12 SSB
VK3BG	Ed	11 SSB
VK7MO	Rex	11 SSB
VK2TK	John	10 SSB
VK3UDX	Geoff	10 SSB
VK4KZR	Rod	10
VK2ZT	Steve	8 SSB
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK4TZL	Glenn	6
VK3ECH	Rob	5 SSB
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
VK3BBB	Brian	3
VK4CDI	Phil	3 SSB
VK4EME	Allan	3 SSB
VK5BC	Brian	3 SSB
VK6DXI	Mirek	3
VK7MO	Rex	3 Digi
VK2FLR	Mike	2
VK3CJK	Chris	2 SSB
VK3CY	Des	2
VK3DMW	Ken	2
VK3KAI	Peter	2 Digi
VK3QM	David	2 Digi
VK4AIG	Denis	2 SSB
VK2AMS	Mark	1 SSB
VK3ZYC	Jim	1 Digi
VK4CDI	Phil	1 Digi
VK5BC/p	Brian	1 SSB

1296 MHz EME

VK7MO	Rex	27
VK7MO	Rex	24 Digi

2.4 GHz

Terrestrial

VK3PY	Chas	15 SSB
VK3QM	David	15 SSB
VK3NX	Charlie	14
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

VK3NX	Charlie	17
VK7MO	Rex	9
VK7MO	Rex	7 Digi

3.4 GHz

Terrestrial

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

3.4 GHz EME

VK3NX	Charlie	5
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5.7 GHz

Terrestrial

VK3NX	Charlie	12
VK3WRE	Ralph	9 SSB
VK3QM	David	8 SSB
VK3KAI	Peter	7 SSB
VK6KZ	Wally	4
VK3BJM	Bany	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	11
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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	11
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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
VK7MO	Rex	2 Digi
VK7TW	Justin	2
VK7HAH	Ben	1 Digi
VK7TW	Justin	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU.

The guidelines (and the latest League Table) are also available on the VK VHF DX Site at www.vhfdx.radiocorner.net - click on Gridsquares.

Next update of this table will close on or about 13 June 2008.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

Scanning *Amateur Radio*

Will McGhie VK6UU
National WIA Historian
will2@iinet.net.au

Over two years ago a project to scan *Amateur Radio* magazine began, beginning with the first edition printed in October 1933. There had been other magazines but this was the first attempt at a National publication, which has lasted to this day.

The first difficulty was to source the magazines. Copies are held at some libraries but they are difficult to find and sometimes the copies are on microfiche and not suitable to scan. Eventually an almost complete collection, from October 1933 to December 1939, except for July

1938, was found. The National WIA had the collection along with the World War 2 years and beyond. The missing July 1938 was eventually sourced from Amateur Radio Victoria. There are however still several missing from 1940. If you have any *Amateur Radio* magazines from the

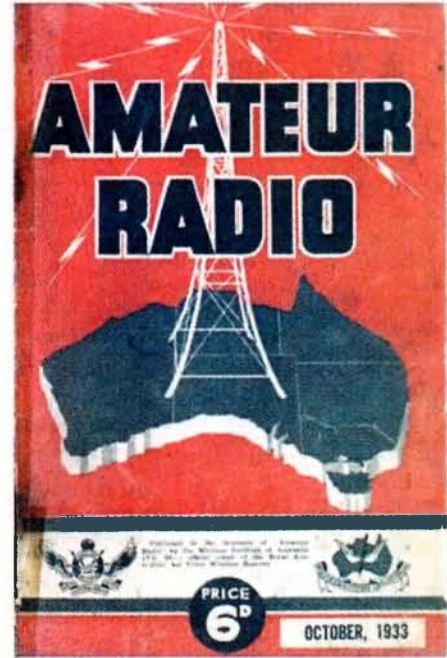


Photo 1: The front cover of the October 1933 *Amateur Radio*.

1940s please let me know, as this would almost complete the collection.

Amateur Radio was half the physical size of today's publication and averaged over 30 pages, with a single colour front cover. Scanning is a labour intensive repetitive process. Scanning 1933 to 1939 is doing the same process 2,400 times! Computer enhancement does produce a near perfect result, but this also is very time consuming, but worth the effort. Most of the 1933 to 1939 magazines have been computer enhanced.

The magazine was forced to change to a much cheaper and poorer quality offering from 1941 to 1945. Advertisers had withdrawn support, believing as most amateurs were serving in the forces, they would not be able to receive their magazine. During this time the magazine increased in physical size to today's size.

It is intended to release the 1933 to 1939 series soon on CD as a trial to see if there is a market. This series has not all been computer enhanced but updates will be available in the future.

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AMATEUR RADIO

Published by the Wireless Institute of Aust., Victorian Division.

Vol. 6 No. 6

1st JUNE, 1938.

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Photo 2:(above) The index page from the June 1938 *Amateur Radio* magazine, in its original state today.

Photo 3:(below) The same page after computer enhancement.

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Contest Calendar for May 2008 – July 2008

May	10/11	CQ-M International DX Contest	CW/SSB
	10	VK/Trans-Tasman 80 metres Phone Contest	SSB
	24/25	CQ WW WPX Contest	CW
	24	VK/Trans-Tasman 80 m CW Contest	CW
June	7	QRP Sprint	CW
	7/8	IARU Region 1 Field Day	CW
	14/15	ANARTS WW RTTY	Digital
	14	Asia/Pacific Sprint	SSB
	21/22	All Asia DX	CW
	28/29	King of Spain Contest	SSB
	28/29	Marconi Memorial Contest	CW
28/29	ARRL Field Day	All	
July	1	Canada Day Contest	CW/SSB
	6	VK/Trans-Tasman 160 metres Phone Contest	SSB
	12/13	IARU HF Championship	CW
	14	Jack Files Memorial Contest	CW/SSB
	16	Moon Contest	CW/SSB/Digital
	19/20	CQWW VHF Contest	All modes
	20	VK/Trans-Tasman 160 metres CW Contest	CW
	26/27	RSGB IOTA Contest	CW/SSB
	27	Waitakere (NZART) Sprint	SSB

Welcome to this month's Contest Column

I sit here in the shack, having just participated in the John Moyle Memorial Field Day. All radio gear is now back in its 'usual' position – but connecting it all together can wait until tomorrow!

An interesting contest, as it was the first JMMFD in which I have participated. The VKCL software worked nicely with only a handful of hiccups, allowing logging and repeat QSOs to be a doddle. The team managed 647 QSOs for a claimed score of 1290. Not bad for a first effort, but probably not a winning one, I suspect, as we worked some stations with some very nice numbers!

I also had a single operator entry into the CQ WPX SSB contest in late March, entering a single band section on 40 m. The band seemed to be quite lively with many stations from the USA and Japan. Murphy struck with me yet again, with my ATU flashing over and my amplifier

cooling fan calling it a day during the first QSO. I had to resort to the low power section as QRO was not possible. I had originally thought that the QRP section was the one for me – but I should have read the rules as this section limits output to 5 watts and not the 10 watts that I used. A lesson learnt!

I really wanted to participate for the full period of 36 hours for a single operator entry, but home circumstances truncated matters somewhat to limit my operating time to only a few hours over the weekend. I got 260 QSOs into the log and a score of a little over 205,000. I hope you had some fun and enter a log – the more the merrier! There were plenty of VKs heard on the bands, so hopefully a good number of stations will submit a log.

ANARTS RTTY

Time to brush-off that old Creed 7B oil guzzler and have a go in the ANARTS RTTY contest. Alternatively, just use a PC with a bit of interfacing hardware and see how you go. The normal practice of CR/LF during rag chewing tends to be altered somewhat. Putting excessive CR/LF before CQs and responding to callers can cause problems with modern software, as it is difficult to click a mouse on the callsign of a station within a software window, when the callsign is hurtling up the screen due to multiple CR/LFs being sent!

For a newcomer, and I include myself in that category, it is useful to spend some time getting used to tuning RTTY signals prior to the contest. Filter selection is usually 250 Hz or 500 Hz to enable a single signal to be plucked out of the ether and decoded accurately. It would also help to have a few QSOs to make sure that your gear is working OK. Just because you see RF being transmitted does not mean that the signal is not

inverted for some reason. This will result in long CQs going unanswered – until someone is kind enough to tell you your error. There are bonus points available to overseas stations for working VKs during the contest, so you might be in demand!

RTTY Frequencies

To find RTTY signals, have a listen around these frequencies:

80 metres: 3570 to 3615 kHz (JA 3520 to 3525 kHz)

40 metres: 7030 to 7100 kHz

20 metres: 14070 to 14120 kHz

15 metres: 21070 to 21120 kHz

10 metres: 28075 to 28120 kHz

Note, that there is no 160 metre and WARC Band RTTY Contesting.

Ten RTTY Pointers

Message buffers should have a carriage return (ENTER) at the beginning and only a space at the end. Following this practice really helps pick out sent information such as a call sign or the contest exchange.

Consider starting your CQ with the contest name and end it with CQ e.g.: BARTG DE VK9XYZ VK9XYZ CQ.

Poor Audio

It is a shame to find that operators will spend quite an amount of money on radio equipment and then not spend sufficient time to make sure that the quality of their transmitted signal is as good as they can achieve. Some simple adjustments to the radio itself are often all that is required. Most transceivers these days can be adjusted to sound okay with a reasonable microphone. It may be the case that much of the poor audio problems could be attributable to RF getting back into the audio systems where we have audio going in and out of PC sound cards, DVKs, SO2R radio switches etc. Perhaps some investment in 600 ohm/600 ohm transformers is required to get rid of earth loops.

Listening around during the recent WPX SSB contest, a few stations were heard with distorted audio – usually due to processors turned-up way beyond their needs. The resultant audio is distorted and can often cause requests for repeated information during contest exchanges.

This way, a station tuning in midway of your CQ will know you are not calling another station, but CQing.

Use spaces to separate your numbers, e.g.: 599 001 001. There is no real advantage to using hyphens. It is preferable to send the full 3 digits, it is easier to click on 001 than 1. In normal conditions the exchange is sent twice but the RST only once. In poor conditions exchange may be sent 3 times, ex: 599 001 001 001.

Do not use 5NN, use numbers, e.g. 599. RST 5NN requires data to be sent to the receiving station that you are about to transmit letters, then numbers, then letters again, so it is shorter to send RST 599 as they are all numbers after the RST part. The RST part is still required as the receiving station might think that 599 is your serial number to them. RST is sent only once and not repeated if the exchange is sent again. Read the rules, if the RST is not required, don't bother to send it.

Keep the transmission short and limited to just the essential information needed for the contest exchange.

It is important to have macros to ask for (or repeat) specific information

instead of asking for an entire repeat or sending an entire repeat of an exchange. Repeating the entire exchange when only one piece of information is needed is a waste of time. Additionally, have macros ready for special situation, ex: SRI QRG QRL, SRI YOU ARE OFF FREQ, SRI NO QSY, SRI NO COPY CUL, etc.

If you are in RUN mode (CQing), reply with (TheirCall) the exchange (TheirCall). If there are many callers or QRM, it is important to confirm to whom you have sent the exchange.

If you are in the S&P (Search and Pounce) mode, never send your exchange to the CQing station until he has acknowledged your call and sent his exchange first! Do not send TheirCall but only YourCall, ex: DE VK9XYZ VK9XYZ, then reply with only your exchange, e.g.: TU 599 002 002. (TU says it all: QSL, TU, 73) The DE can be omitted.

Do not use (NAME) while in S&P mode. In RUN MODE, it is your choice to use it or not. It is a nice touch but not absolutely necessary – see item 5.

Put the word RTTY in the comment field of DX spots if you are spotting stations.

Have a go and have some fun!

Unfortunately, a few of the stations heard were VKs and yes, I did make comment during the QSO if I had trouble getting the details from the station. We all make mistakes and the wrong control can be tweaked in the heat of contesting battle, but if nobody tells them then the error perpetuates if they are not monitoring themselves....

Assistance

What is it? Does someone making you a cup of tea place your single operator entry into the “assisted” category? A general definition of “assistance” is any person or “system” which helps identify and “capture” specific stations and place them in the log. That may be considered to include spotting networks, packet, “skimmer”, and other similar “things”.

There are various viewpoints on this aspect but I suppose it boils down to: As long as a single human operator hunts down and identifies target stations for

his/her log, then personally copies the exchange without outside “hints”, he/she is operating as Single Operator Unassisted. There have been reports of operators entering the unassisted category whilst actually being logged-in to the packet network for multiplier spotting. This is against the rules of the vast majority of contests – but not all. Some contest organisers actively encourage the use of facilities such as packet and do not penalise entries using it. There are statistical methods that are used in picking up packet cheaters, by analysing a station's behaviour relative to the posting of packet spots. A careful cheater could probably cheat with packet just enough to win, but not enough to attract attention. For example, with logging programs placing spots on a band map, what is to prevent anyone who wants to cheat from simulating the behaviour of a proficient SO2R operator and working spotted stations in a steady progression up or down a band? How

do you distinguish between a very good SO2R operator and someone who is unfairly using either packet or CW Skimmer “just enough to win”?

Assistance traditionally is basically using a packet system for the additional “monitoring” of the bands to flag stations of interest to the operator. However, there are other ways to get this information perceived as beneficial and an unfair advantage to a single operator. Remote operation of a station can aid matters as this approach gives an unfair advantage by having the ability to build antennas that would not be available in normal residential areas, or the ability to operate from geographically advantaged locations (e.g. rare zone, country, section) without being a resident or travel, or even the ability (although not legally) to use multiple receive locations. If these approaches are taken then whilst being perceived as a possible unfair advantage, they are not outside the Unassisted/Assisted categories as there is only a single operator at the controls. The latency, or lag, effect from the use of the internet or other controlling medium can cause significant delay and that delay can cause numerous problems in a contest.

But is equipment without an operator really a “station”? An operator without equipment is not a “station” so possibly not. Some contest organisers have included a set of “address” rules to limit the extent of the station to be within a given distance – usually around a 500 m radius. The “address” bit of the rules was included after a particular group of hams in Europe tried to argue that because a communist state (in which they lived) owns everything in the country, the property boundaries of any station in their country extended all the way to the country’s borders. They tried to exploit that argument to allow multi-multi stations operating as one station, spread across their country. I understand that the contest entry was disallowed.

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 vk4baa@wia.org.au.

See you on the bands.

73 de VK4BAA Phil Smeaton
ar

Beware of dog trackers

This may be of interest as an example of what can happen when technology and the unsuspecting public come together via an apparently less than scrupulous supplier.

I was approached by a work colleague, who knew of my interest in radio, for assistance with programming a receiver he had purchased. In due course the radio and instruction sheet arrived on my desk, with the information that it had been purchased for the purpose of tracking dogs. In this system, a small transmitter is attached to the dog’s collar, operating near 215 MHz. This is then tracked by the receiver – quite useful for people like deer hunters who may otherwise lose their dog in the bush. My colleague had been unable to program the radio from the instructions supplied, and also wished to be able to scan across a number of frequencies, to track several dogs.

The receiver turned out to be a small scanner, with an unknown model number in the instructions and on the ‘splash’ screen when turned on. However it was in a Yaesu soft case (the first clue) and the identification sticker under the belt clip, while partly blacked out and almost totally obscured, confirmed that it was made by Vertex Standard. So far, so good. However a Google search on the model number turned up absolutely nothing. After some more searching, it became apparent that what we had was none other than a standard VR-500 – but with some differences.

First, the serial number sticker had been blacked out to remove model information. On close inspection, the model number and manufacturer, which are usually located above and below the display, had also been blacked out under the transparent faceplate – but not so carefully, as the faceplate had been chipped at one side, apparently while being removed and replaced. The standard Yaesu antenna (which has the brand imprinted into it) had been replaced with a generic scanner ‘ducky’. The turn-on ‘splash’ screen had been reprogrammed to the supply company’s brand and model. And none

of the original instructions had been supplied – just a number of photocopied A4 sheets with rather garbled and almost incomprehensible programming information, and no information on how to scan multiple frequencies. And finally..... the price for this receiver? Well over \$300 above the listed price for a VR-500, which in Australia is around the \$450 mark at the moment.

My colleague was very pleased that we had managed to track down some better instructions for his radio (easily downloaded once we knew what it was), and departed muttering about what he was going to say to the company who supplied the dog tracking system!

John Morrissey VK3ZR

**“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.

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or call Derek VK3XY on 03 9563 6909
or Bill VK3BR on 03 9584 9512,
or email to raotc@raotc.org.au
for an application form.

DX – News & Views

John Bazley VK4OQ

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Email – john.bazley@bigpond.com

Last month I referred to the recent Clipperton DXpedition and how at times we do not appreciate the effort made for us to have a QSO. Little did I realise when I wrote that what problems they would have. Having landed on Clipperton on March 6th they issued the following Bulletins on March 9th – 12th and 15th:

MARCH 9th, 1900z: Just as we were about to begin operating yesterday at noon Clipperton Time, the sky opened up and for the next two and a half hours both the CW and SSB tent operators had their hands full plugging leaks in the tents, protecting the station equipment, rescuing antennas that had been toppled by the nearly 50 mph gusts that accompanied the rains and hoping that the lightning would not hit our verticals. After three gruelling days, we were set back yet again by Mother Nature. But the good news is that we're operating and filling our logbooks with QSOs. We are planning on beginning uploading the logs very shortly. As soon as we do, we will make the announcement on this page.

MARCH 12th: QSOs now total 41,564. Yesterday we had three major thunderstorms that tore up the camp. Generators in both the SSB and CW camps went down and took repairs to get back up and running. Winds toppled antennas which had to be repaired. We lost our 15 metre SVDA in the SSB camp which was destroyed by the winds. We will attempt to straighten or replace the broken aluminium today. Two of our CW keyers went down and we cannot repair them. So our operators are sending CW the good old fashioned way but it is reducing our QSO rate. Morale is high and despite the weather we are all working as hard as we can. The thunderstorms are also causing our noise levels in the night to be extremely high. These thunderstorms have been increasing in size and frequency for the past several days. Although they blow through in about 15 minutes, they dump on average about an inch of rain or more and are accompanied by very strong

gusting winds.

TX5C went QRT 1400Z March 15th 2008, two days earlier than originally planned, due to both weather and sea conditions. The Captain of the Shogun insisted that an earlier departure was required to ensure the safety of his crew and our team. We began moving equipment offshore two days prior in challenging conditions. By the time the last team members were extracted from the atoll late in the day, all but one of the Zodiac spare propellers had been broken on the reef. The Shogun pulled anchor at 0130Z March 16th and as the sun set, the team watched Clipperton Atoll slowly fade from view.

TX5C made 71,794 QSOs in 156 hours (6.5 days) of operating.

After many years permission has been granted for a DXpedition to Glorioso Island (FR/G). The Glorioso Islands (Iles Glorieuses) are a sand and coral archipelago that stretches in length to almost 16 kilometres and are located approximately 220 kilometres northwest of Madagascar (5R). The archipelago is made up of Grande Glorieuse (roughly 3 kilometres in diameter) and Petite Glorieuse (600 metres in diameter), which are 10 kilometres from the main island. The archipelago also includes Verte Rocks, Wreck Rock and South Rock. The main island is located at 11 33' South 47 17' East. The highest point on the main island is a sand dune about 10 to 12 meters high. Glorioso is ranked at number 4 in The DX Magazine's 2008 Most Wanted List and has not been active since May 2000. The DXpedition to Glorioso is expected to start in early May. Probably between May 5th and the 9th for some weeks reports F6AJA, Jean-Michel, editor of Les Nouvelles DX. At present the operators scheduled to operate from there are Pascal F5PTM, Freddy F5IRO, Stephane F6KIN, David F8CRS, Yves-Michel F5PRU, and possibly three others. They will try to have three or four stations active. The team is looking for sponsors, who can contact Didier F5OGL, who will also be the QSL manager.

For those interested in QSL cards, Jean-Michele F6AJA has a very interesting QSL collection (28 different QSLs) from Glorioso. You can see the collection at <http://tinyurl.com/yrrx8o> He is still in need of QSLs (JPGs) for FR5ES/G, FR5HG/G and FR5KH/G.

FH: Georg DK7LX will be active holiday style as FH/DK7LX from Mayotte (AF-027) on 11-23 June. He will operate CW on all bands, with an emphasis on 30, 40 and 80 metres, using vertical arrays as well as dipoles. QSL via home call, direct or bureau. Further information will be available at <http://www.dk7lx.mayotte.2008.ms/>

V7: Randy V73RY has been regularly active from Kwajalein (OC-028), Marshall Islands since May 2005 and will be returning to the US in May 2008. SSB is his preferred mode, but he also operates a little PSK31, CW and other digital modes. See QRZ.com for information on his operating habits. QSL via N7RO. Logs are uploaded to LoTW.

A5: Torben OZ1TL will be active as A52TL from Bhutan on 2-23 May. He plans to operate 99% CW on all bands. QSL via OZ1TL. Logs will be uploaded to LoTW.

Start looking for *Svein LA9JKA* to be "very active" as JX9JKA from Jan Mayen starting this month through early October 2008. He plans to be QRV on 6 through 160 metres on SSB and the digital modes. QSL via Svein Rabbvag LA9JKA, Brendlia 12, N-6013 Alesund, NORWAY with at least one IRC or two green stamps.

VK4FRAJ and VK4AN are planning an operation from the Mamanuca Group (OC-121) from 17~30 May 2008. It is Raj's first DXpedition, and the 40th anniversary of Ed's first DXpedition (as VR3DY-KP6AP in 1968). Keep an ear open for the father-son team of Ed 3D2A and Raj 3D2B. During the CQ WPX CW contest they will use 3D2A in the multi-op single-tx LP category, other times using 3D2B. There is a possibility of one or two other ops joining them for the contest. QSLs to VK4AN.

Digital voice should be for FLs too

I would like to put forward the opposite position to Brian Kendall's assertion that use of digital voice is a privilege rightly withheld from Foundation Licence holders (VK3WL letter in AR March 2008). Brian's argument is that Foundation Licence holders already have access to enough, so they should gain higher qualifications to access more. This attitude suggests a desire to hold people back rather than support them advance.

In most walks of life, licences are issued to people who are sufficiently competent. They are not products or services where it is usual to give more for greater benefits. The Standard Licence syllabus does not contain digital voice and therefore I do not understand why obliging people to clear this hurdle before using the mode makes sense. Digital voice is a modulation method that can be used within bands that Foundation Licence holders are permitted to access, provided they do so using commercially available equipment, limited power levels, etc, etc. My own experience of the D-STAR digital voice mode is that the additional skills required are more akin to configuring computer software or a mobile phone than radio related. As such

I believe that the ACMA has missed the point by forbidding Foundation Licence holders access.

As only a minority of WIA members are Foundation Licence holders, it might be that this issue is of limited interest to the WIA. I recognise that the ACMA decision was against the WIA's position but I encourage the WIA to keep pushing. In the commercial arena, voice communications has been mostly digital for over a decade now - witness the 20 million digital voice mobile phone customers in Australia alone. Restricting access to this mode within the amateur community puts us well behind the radio development curve, and is not going to accelerate broader community interest in studying for their Foundation Licence. Innovation and investment usually flourishes where regulation is absent. If we want a small amateur community locked in the past then we should support the ACMA position. Personally, I dream of a vibrant, forward looking, expanding amateur community keen on innovation and pushing the envelope. That requires a supportive regulatory framework, and not regressive rulings like this ACMA decision on digital voice.

Ben Ramsden VK2FLIV

Silent key

QSL V51AS: Frank Steinhauser V51AS has a new mail address: Am Rosenkothén 17, 40880 Ratingen, Germany.

Stig LA7JO, currently home in Norway, says he will be on from the Maldives with his 8Q7JO callsign March 13-24, but his activity will be limited. He plans to be back in Nepal using 9N7JO, on and off from March 26 to June 30. He will leave Nepal at the end of June. Since January 2005 he has made 77,000 QSOs as 9N7JO, on SSB, CW, PSK31 and RTTY, from 160-6 m.

Piel Island: A group of nine operators from the north west of England is going to be operating from a small island off the north west coast on the 24th and 25th of May 2008. The name of the island is Piel and a short video clip to promote the trip can be found at:

http://www.youtube.com/watch?v=DeCP1iGI_Ww

Hopefully, with the advantage of salt water we hope to work stations worldwide.

Sean 2E0BAX

Happy DXing.

Special thanks to the authors of *The Daily DX* (W3UR), 425 *DX News* (I1JQJ) and *QRZ.DX* for information appearing in this month's *DX News & Views*. Interested readers can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

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Walter Stanley Cuffley (Stan) West VK4WY

Stan was born in Brisbane on the 20/10/1922 and died of a heart and kidney failure in a nursing home in Laidley at 0930 on Monday 4th February 2008 aged 86 Years. He became ill in June 2007. This stopped him playing his much loved game of tennis and his car driving, but it did not stop his amateur radio activity. Despite his illness, he was heard every morning as regular as clockwork on the Coral Coast Net until he was admitted to the Greenslopes Hospital on Christmas Day 2007.

Stan lived the first ten years of his life in Oxley, Brisbane, with his parents

on their poultry farm, (they were well known for their prize winning cocks), and he first went to school at Oxley. When in 1932 his mother died, they sold their farm, moved to Milton and lived with his grandmother.

Having ended his school years in Milton, he became employed in various jobs until he joined the Air Force in 1940. Stan served in New Guinea, Townsville, Amberley and Archerfield. During that time he married his wife Rose. After the war, he became interested in amateur radio. He completed a radio course with "The Australian Radio College",

obtained his A.O.C.P. on the 13th of June 1963 and built his own radio station. He worked the world on both CW and phone and taught his daughter, Pam, Morse Code. He undertook and completed a cabinet maker's course and became employed as a cabinet maker in Woolloongabba and Balmoral.

Stan and Rose were divorced in 1967. He is survived by his five children, two sons and three daughters. Stan lived on his own in Murarrie. A true friend and gentleman, he will sadly be missed by all who knew him, especially participants of the "Coral Coast Net".

Submitted by Peter Oliveri VK4PO.

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

March 18th was a day of good conditions for both the VK2 to ZL path and the VK3, VK5 and VK6 areas.

The Channel 5A transmitter at Newcastle was being heard in northern NZ. At 0420 Z, Ross VK2DVZ at Taree made contact with Nick ZL1IU on 2 m with a 5x4 report. Ross subsequently worked ZL2TAL (5x1) and ZL1AVZ (5x1). He tried 70 cm with ZL2TAL, but nothing heard. Steve VK2ZT also worked ZL1IU (5x4), ZL2TAL (5x1) and ZL1BT (5x2). ZL1IU also worked Col VK2KOL in Sydney (5x8) and Karl VK2GKA in Mittagong (5x2). The last VK/ZL contact was at 0905 Z.

Meanwhile, things were building up over the southern part of the country. At 0800 Z, the Esperance 2 m beacon was reported in Adelaide. By 1030 Z, it was audible in Ballarat and Melbourne. The Albany 70 cm beacon was by then audible in Adelaide. Unfortunately, no contacts were made.

However, conditions between Melbourne and Adelaide were picking up. The 70 cm Geelong beacon was being heard in Adelaide, and, at 0920 Z, on 70 cm, Brian VK5BC worked Mike VK3AAK (5x1) and Mike VK3BDL (4x1). At 0950 Z, Peter VK5ZLX reported hearing the VK3RXX and VK3RLP 23 cm beacons in the Melbourne area. On 23 cm, he worked Mike VK3AAK (5x3) and Chas VK3PY (5x1). Mike VK3BDL worked Phil VK5AKK (5x1) on 23 cm.

The following morning (19/3), conditions were still good. Alan VK3XPD worked Phil VK5AKK on 23 cm (5x2). In Adelaide, the 2 m Esperance beacon and 70 cm Albany beacon were both good strength – peaking to S7. At 0330 Z, Wally VK6WG worked Roger VK5NY (5x2) and Brian VK5BC (5x1), both on 2 m. The beacons were audible throughout the day, and at 1220, Brian again worked Wally on 2 m at 5x9. They also worked on 70 cm (5x3). Meanwhile, Rob VK6JRC was making some hasty repairs to his temporary station. At 1250

Z, he finally worked VK5NY (4x1) and VK5BC (5x1).

At 1200 Z on the 14th of April, Phil VK5AKK worked Wally VK6WG on 2 m (5x3) and 70 cm (5x1). Bill VK5ACY, recently having moved from Kangaroo Island to Adelaide, reported hearing Wally on his temporary 14-el Yagi at 14 ft (4 m).

EME

Doug VK3UM has been busy with the DUBUS European EME Contest (70 cm) held over the weekend of 15th and 16th March. Doug reports:

At moonrise, Faraday was aligned with slow QSB but at ~10° elevation polarity changed to ~45° and stayed that way until ~1220 Z when significant libration, deep fading, and widely swinging polarity made conditions quite challenging. While northern hemisphere stations were battling with snow, wind and gale force winds, I had temperatures of +41° C on both days (if only we could share!).

The 45° Faraday offset reduced signal levels of course, but it probably helped those with fixed polarisation. Patience was required to combat the fading but I managed to work single and 2 Yagi stations without query (YYY). As an aside (a tip for new stations), increasing CW speed is far better than slowing it down. Trying to duplicate the other station's speed is always good practice. I battled with a couple of guys during periods of Libration where that would have been an advantage from my view point. Thanks for their persistence.

Activity level was very good. I was very pleased with the North American turn out (compared with previous months) and, although the number of stations has diminished significantly over recent years, there was plenty of activity to keep all quite busy. The operating technique and manners were exemplary from what I heard in keeping with 70 cm tradition. It was a 'pleasant' change to have to work for your QSOs given the Libration,

QSB, swinging polarity. Everybody was spread out and mutual QRM seemed at a minimum. I think I worked all available, with the exception of WW2R (not a trace) and 9H1TX whom I realised after my Moon set. It was a thoroughly enjoyable weekend, most fitting to the dedicated memory of our highly respected and sadly missed friend, Jose EA3DXU SK.

A total of 42 random QSOs (4200) and 39 Multipliers gave a Claimed Total Score of 163800.

Charlie VK3NX was also participating in the DUBUS EME Contest, although on the 5.7 GHz and 10 GHz bands. He reports:

Participants seemed lower than last year, unfortunately. It was disappointing not to work any stations to my east (NA).

On the 15th for my first moon pass on 5.7 GHz, conditions were difficult at my QTH due to very enhanced local tropospheric conditions on the microwave bands. This produced scattering of signals and created a very spread received signal for all stations. Luckily on the 16th, when I operated on 10 GHz, the local conditions subsided and the signals were exceptional.

On the 15th on 5.7 GHz, worked OK1CA (new #), OK1KIR, ES5PC and JA6CZD.

On the 16th on 10 GHz, worked OK1KIR, ES5PC (new #), OK1CA and F5JWF (new #). Did not complete with HB9SV due to moonset, but very loud signals. I was astonished to hear ES5PC with his 6.5 W on 10 GHz.

I am sure more stations were active, especially on 10 GHz on the 15th, but due to my shorter windows because of declination, I chose to stay on one band for the entire pass. It would take approximately 1 hour to do a complete band change - feed, amplifiers etc - and this is "valuable time" during a contest.

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

Digital DX Modes

Rex Moncur – VK7MO

Congratulations to Joe VK7JG on working OY3, Faroe Islands on 6 metres EME using JT65a, and to Leigh VK2KRR who made his first 23 cm EME contact with G4CCH.

Jim VK3II has been using his GPS-locked rig to explore tropospheric

scatter Doppler shift with Rex VK7MO. Doppler shifts on 2 m were recorded of up to 75 mHz on a 500 km path to Hobart and this reduced to around 6 mHz when the path was reduced to around 80 km.

David VK3HZ and Rex VK7MO have been testing GPS locking of their 10

GHz systems and were pleased to see the Frequency Difference on JT65 is consistently zero Hz and that there is no difficulty in running JT65a.

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

The Magic Band – 6 m DX

Brian Cleland – VK5BC

March was a very quiet month on 6 m with no “E” openings and only a smattering of openings to JA from far north Queensland late in March and early April.

John VK4TL from the Cairns area reports working 9M6XRO CW 539 on the 4th March and then on the 11th March 3 x JAs, 27th March 16 x JAs, 29th March 15 x JAs, 2nd April 3 x JAs. Late on the 3rd April John heard the VR2 beacon and worked a further 5 x JAs. John also reports that Ian VK4AFC who also worked 9M6XRO is back on 6 m after an absence of about 20 years. Russell VK4BEG from the same area also reports the following:

27/03/08 J1, J2, J5 & J6 call area 10 contacts (Band open 0650-0715)

29/03/08 J1, J2 & J3 call area 24 contacts (Band open 0550-0715)

02/04/08 J1, J2, J3, J5 & J6 call area 12 contacts (Band open 0500-0600)

04/04/08 J6 & J1 call areas 2 contacts (Band open a couple of minutes only)

A little to the south, John VK4FNQ at Charters Towers reports good openings to Japan on 27th, 29th and 31st March, the 29th being the best opening when John worked 22 JAs. John also reports hearing the V73SIX beacon on 30th March.

Not to be left out of the action, the Mackay boys Andrew VK4KAY and Kevin VK4BKP have also had some openings to the north. Kevin reports hearing the following beacons;

09-03-08 0404Z AH2G/B Beacon 50.0045 5X6,

11-03-08 0441Z JE7YNQ Beacon 50.027 519,

26-03-08 JA2IGY Beacon 50.010 519

27-03-08 0712Z JE7YNQ Beacon 50.027 519

27-03-08 0713Z JA2IGY Beacon 50.010 519

27-03-08 0731Z JA6YBR Beacon 50.017 519

29-03-08 0500Z V73SIX Beacon 50.013 519

On 27th March, Kevin completed contacts with VK5DX 5/7, JI1DMA 5/7, JA1RJU 5/5 and heard JR6EXN 4/1.

Then on the 3rd April worked JA3EGE 5/8, JM1WBB 5/7 and JHOHZO 5/7.

Andrew also reports hearing many of the northern indicators and beacons but only managed one contact in between work commitments on the 2nd April with JR6EXN 5/1 whilst mobile in the Ute.

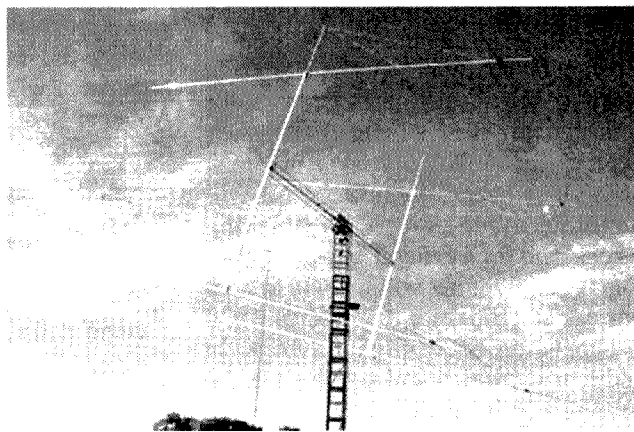
The northern activity has not extended much further south this year but Ray VK4BLK in Yeppoon has had a couple of JA openings and on occasions 49.750 carriers have been heard in the southern states with Brian VK5BC reporting them up to S9 early evening on the 8th April with the JA2IGY beacon audible for 20 minutes. There has also been the odd report of the VK6RSX beacon being heard in Japan and on the 2nd April JR6EXN reported the Perth VK6RPH beacon 529.

On 10th March, the 1st “E” opening of any substance since February occurred. VK4s were worked from VK3, VK5 and VK7. Kevin VK4BKP in Mackay worked Norm VK3DUT, Trevor VK3VG, Rob VK3XQ and Joe VK7JG. Russell VK4BEG near Cairns heard the VK5RBV beacon but unfortunately no VK5s were heard. A little later Brian VK5BC worked Doug VK4ADC, Col VK4CSC, Col’s 1st DX contact on 6 m, Daryl VK4ADM and Wayne VK4WES mobile all from the Brisbane area. Doug VK4ADC also worked Colin VK5RO.

Another “E” opening on the 11th April from VK5 to VK2 with Brian VK5BC working VK2s FA, BZE, JDS and ZT.

Gary VK4ABW in Townsville is well on the way to getting a massive new

6 m array consisting of 4 x 13 element Yagis on 17.5 m booms completed. Gary reports the Yagis are constructed and all tested OK and is presently in the process of mounting them on the “H” frame. Will certainly be interesting to see how they perform. Hope the cyclones are kind to you Gary.



The VK4ABW Monster 6 m Array

Received a note from Eddie VK4AN who advises he and his son Raj VK4FRAJ are going on a DX expedition from 17th to 31st May 2008 operating from Malolo lailai Island, Mamanuca Group, Fiji with the callsign 3D2A. The rig will be a FT-100 running 50 W with external beacon keyer and vertical coaxial antenna (bazooka). Both Eddie VK4AN [66 yo] and Raj VK4FRAJ [13 yo] will be the operators and they will be running a beacon on 50.105 MHz CW. If the beacon is heard, call them when it is not transmitting on either CW or SSB on the beacon frequency. They will not have ‘live’ internet access, but will check email once a day at the resort kiosk. QSL to VK4AN.

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

AMSAT

Bill Magnussen VK3JT

New arrangements for the AMSAT monthly nets

With the aim of improving participation, accessibility and as a service to experienced operators, newcomers and potential participants, a new national Net has been organised in which the AMSAT-VK group will be joined by the Ozsat group. The new net will be known as the Australian National Satellite Net. Paul VK2TXT from the Ozsat group has done a lot of work to make this possible. The net has been moved from the 2nd Sunday to the 2nd Tuesday of each month. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. It is hoped the new format will facilitate other aspects like making 'skeds' and for a general 'off-bird' chat. The week night net will be held at 8.30 pm eastern time, i.e. 0930 Z or 1030 Z depending on daylight savings. In addition to our Echolink conference, the net will also be available via RF on the following repeaters and link:

In New South Wales

- VK2RMP Maddens Plains repeater on 146.850 MHz
- VK2RIS Saddleback repeater on 146.975 MHz
- VK2RBT Mt Boyne Repeater on 146.675 MHz

In Victoria

- VK3JED Preston, Melbourne on 144.296 MHz SSB simplex
- VK3JED Preston, Melbourne on 439.175 MHz FM simplex with a 91.5 Hz CTCSS tone.
- VK3RTL Laverton, Melbourne, 438.600 MHz FM, -5 MHz offset

In addition to RF, operators may join the net via EchoLink by connecting to either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you

are interested in carrying our net on your system, please contact Paul via email at vk2txt@gmail.com The new week night net commenced on the 11th of March 2008. Listeners are also reminded of our HF net which is held on the 2nd Sunday of each month. See www.amsat-vk.org or www.ozsatgroup.info for details. Amateur satellite operations is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Finally, the organisers wish to thank the Illawarra Amateur Radio Society for carrying our net on the Coastlink repeater network and Tony VK3JED for the use of his linking system. It is hoped by all that this move will usher in a means of helping newcomers and experienced satellite operators alike to enjoy the world of amateur radio satellite comms.

All communication regarding AMSAT-Australia matters can be addressed to AMSAT-VK – see the title box for details.

New format

In a month or two, when the new arrangements for the Nationwide Satellite Net has shaken down into shape, I will re-arrange the header box of this column to reflect any permanent changes. The net held on Wednesday 11 March was successful and the arrangements will remain the same for the immediate future with members and potential satellite users welcome to take part. The actual format of each session is still under discussion so if you have anything to contribute please get in touch with Graham via his e-mail address above.

Passing of Arthur C Clarke

Arthur was not a radio ham but most satellite users will have heard of him. The Washington Post noted his passing thus:

Arthur C. Clarke, 90, the world-famous science-fiction writer, futurist and unofficial poet laureate of the space age, died of a respiratory ailment March 18 at his home in Colombo, Sri Lanka.

He is probably best known for his novel *2001 – a Space Odyssey*, so brilliantly turned into an epic film by Stanley Kubrick. Arthur was an AMSAT Life Member. His member number, quite fittingly, was LM-2001. In the 1970s and 80s, Arthur was a frequent visitor to NASA. He was listed in the Goddard phone directory as a consultant in the LANDSAT group, and he also served as a consultant at NASA HQ. In 1945 he worked out that a satellite in a circular orbit with radius of about 42,242 km would have an angular velocity that matched the Earth's which would keep such a satellite in a fixed position relative to the ground. He had predicted geo-stationary orbits. Although the idea was originally scoffed at, the launch of "Early Bird" a generation later proved his prediction true. He also proposed that 3 such satellites spaced 120 degrees apart could cover the entire Earth apart from small areas around the poles. All this is now old-hat but in recognition of his far-sightedness, this piece of prime space real estate is now named the "Clarke Orbit" by the International Astronomical Union. The above is from various sources: AMSAT-BB, "Satellite Comms", Pratt and Bostian 1986 and some research of my own.

NASA Award for Tony Hutchison VK5ZAI

Tony has been the Australian coordinator of the "Amateur Radio on the International Space Station" (ARISS) project for over 15 years. He was recently recipient of a Group Achievement Award from NASA's Lyndon B. Johnson Space Centre in Houston Texas. This award was made *For providing sustained outstanding engineering support which has resulted in a record number of successful ISS amateur radio contacts.* Ten years ago Tony handled most of the communications between Australian-bom Astronaut Andy Thomas VK5MIR and his family during his flight on MIR. During his time as coordinator, Tony

has been involved in the development of IRLP and Echolink for ARISS contacts and the design of interface units used for ARISS telebridge contacts in Australia and Europe. A well deserved award; congratulations Tony.

Terrestrial tests for KiwiSAT

Things are moving right along on the New Zealand KiwiSAT project. It is worth a look from time to time at their web site. The linear flight transponder was, at the time of writing, transmitting from the Whangaparaoa area with beam antennas pointing South. Now it is extremely unlikely that the signal will be heard in VK so here are some details.

The transponder is a "passband-inverting" type to partially compensate for Doppler shift when in orbit. This is standard procedure for transponders using frequencies above the HF range.

- Transmit Power is 2 Watts PEP.
- Beacon frequency is 145.885 MHz
- Uplink is from 435.265 to 435.235 MHz
- Downlink is from 145.850 to 145.880 MHz

A test transmission on 435.2544 LSB came out at 145.860 USB. In the early LEO days we used figures like this to calculate a "conversion factor" which could be used to work out expected downlink frequencies. Slide rule devices were common to make this calculation easier. Today's users will nearly all have easy access to automatic Doppler tracking software and computer controllable transceivers to make that particular chore a piece of cake. The linear transponder is 30 kHz wide and while any mode can be used, FM is strongly discouraged. Being a 100% duty cycle mode, FM could tax the available power budget. An additional telemetry beacon has been added to the design. Congratulations to all concerned with the KiwiSAT project on these recent developments.

OSCAR-11 still working 24 years on

Clive G3CWV has reminded us all that OSCAR-11 celebrated its 24th birthday on 01 March 2008. It was designed, built and launched rather hurriedly, within a time scale of six months, using commercially available

components, hardly any of which had been rigorously tested in the manner of today's requirements for orbital material. Congratulations to Professor Sir Martin Sweeting G3YJO, his team at the University of Surrey and associated groups of radio amateurs, for their magnificent achievement. OSCAR-11 is a satellite for telemetry buffs. Now that is not everyone's cup of tea, but I for one became fascinated by telemetry on first hearing AO-11's rhythmic brrrup-brrrup-brrrup signal and building a decoder. I can still recall the feeling when the ASCII data began streaming down the screen of my BBC Acorn computer. It was the thing that prompted me to build an AZ/EL computer controlled antenna system. It is hard to believe that was over 20 years ago and the familiar old brrrup-brrrups are still to be heard on 145.825 MHz as AO-11 passes over. Amazing!

Anniversary of amateur radio SSTV from space

While we are on the subject of significant anniversaries, it is now 10 years since Slow Scan TV was first transmitted from the MIR Space Station. Miles WF1F reminded us of this fact recently. The first pictures were transmitted on 12 December 1998 and over the next couple of years over 20000 images were transmitted back to Earth. Miles also reminds us that in 1998 the resources just were not available to publicise all of these pictures. He will be upgrading the MAREX web site to include many of the pictures which have not been seen before. Thanks Miles. I have several on file which I was fortunate enough to download directly from MIR during that period. It will be good to see some others and reflect on the whole MIR experience.

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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. 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

Didn't make it to Parkes?

Don't miss Broken Hill!

WIA AGM 23 to 25 May 2008

The weekend offers a wide range of family activities for all interests:

Friday 23rd

6:30 pm - Evening meal at the Southern Cross Hotel,
8:00 pm - The History of Broken Hill - A Presentation by Peter Black at the Southern Cross Hotel

Saturday 24th

6:00 am - Informal Breakfast at the Southern Cross Hotel
9:00 - 12:00 School of The Air - A special opening and tour for WIA weekend participants.
9:00 - 12:00 Radio station 2BH - A special presentation for WIA weekend participants.
9:00 - 12:00 Visit the many local art galleries, museums and other tourist attractions.
12:30 pm - BBQ lunch at the Lions Rotary park.
2:00 pm - WIA AGM and Open Forum at the Broken Hill Entertainment Centre.
6:30 pm - WIA Annual Dinner at the Broken Hill Entertainment Centre
8:30 pm - Guest speaker.

Sunday 25th

8:00 am - Informal Breakfast at the Southern Cross Hotel
9:00 - 12:00 Guided technical tours of the RFDS base including a presentation on RFDS radio by Gary Oldman RFDS Telecommunications & IT manager.
9:00 - 12:00 Visit the many local art galleries, museums and other tourist attractions.
12:30 Lunch and weekend wrap up at the RFDS base, Broken Hill Airport.

Broken Hill is...

- a mining town with some of the richest deposits of silver lead and zinc the world has ever seen.
- a working town with mining being its major economic driver in conjunction with agriculture, art and tourism.
- a popular tourist destination and home to many art galleries and famous artists.
- has a history in radio, not only as a major base for the Royal Flying Doctor Service, which initially used Alf Trager's famous pedal powered outback radios.
- home of the School of The Air which also used the network of Trager's radios to provide education to students in remote outback locations.

AGM Registration:

WIA National Office 03 9528 5962

Attractions and accommodation:

www.visitbrokenhill.com.au

SOTA Australia asks: Are you up to the peak challenge?

Paul Stampton VK3IH

Summits on the Air (SOTA) is a new activity set to increase the activity of operators keen on field day operations and those who like to work them! Are you up to the challenge?

- Are you interested in portable operation but can only find a reason to get out on the odd occasion?
- Are you an armchair traveller who likes using your home station to talk to operators in remote and interesting locations?
- Do you enjoy the great outdoors – 4WDing, cycling, hiking, walking?
- Have you wondered if there are more ways to get younger hams interested in actually operating?
- Ever wanted to mount a DXpedition and attract worldwide attention but do not want to sail to an Antarctic isle?
- Do you have a Yaesu FT-817, Icom IC-703 or TenTec Argonaut that could do with a lot more work?
- Like to visit places with spectacular views?
- Would you like to be part of a

new amateur activity that is now operational in 16 countries?

Well..... the answer you have been looking for is being launched in Australia and you can be part of it!

Summits on the Air (SOTA) began in the UK several years ago and is now being formally organised for Australia by Paul Stampton VK3IH (The SOTA Association Manager) and Peter Watkins VK3TKK (the Victorian SOTA Regional Manager). The programme is similar in some ways to the Islands on the Air (IOTA) programme run by the RSGB in the UK but is based on the 'activation' by amateur operators of significant mountains, hills and peaks (Summits). Each Summit in Australia will have an individual alphanumeric label and the degree of difficulty in activation is reflected by a sliding scale of points.

You can be part of the programme by activating one of the listed Summits,

activating a new, approved Summit, conducting a QSO with a Summit operator, or if you are a Short Wave Listener, hearing a QSO between a Summit station and another operator.

Just to add to the fun you can only gain final access to the Summits on foot or bicycle and must operate from power derived from batteries, solar cells or the like. You must have the land owner's permission to be on the Summit.

You may make contact on any allowed amateur band, so all you need to get started is a hand held on a popular band like 2 m; even Foundation Licensees can be king of a pile up! VHF and UHF equipment is small and lightweight and significant distances can be covered with portable set ups and simple antennas from your prominent Summit location (see Peter VK3YE's Versatenna AR February 2003 and VK3IH's IH-Vertenna AR June 2007). Of course HF operation with whips, random wires, and even kite antennas can provide worldwide contacts with international SOTA chasers! (see Ron VK3VH's Shack in a Briefcase AR July 2002).

Certificates are available for various scores, leading to the prestigious 'Mountain Goat' and 'Shack Sloth' trophies. An Honour Roll for Activators and Chasers is maintained at the SOTA online database. Who will be the first VK ham to qualify?



Photo 1: Paul Stampton VK3IH SOTA Association Manager and Sean Stampton VK3FMS with some portable SOTA equipment including a 4-element 'fold-up' beam for 2 m SSB, a random wire and tuner for 40 m, and a 2 m FM handheld and beam.





Photo 2: Peter Watkins Victorian SOTA Regional Manager with his favourite antenna for SOTA operation.

IOTA - Islands On The 'Air

Aubrey Bannah VK4AI

IOTA is a world wide program that introduces a new and exciting dimension to DXing on the HF amateur radio bands from 160-10 metres.

IOTA activities centre around a broad range of activities designed to stimulate two way radio contact with island stations worldwide. For many amateurs working IOTA, and chasing island contacts, has become an enjoyable and highly regarded on-air activity. An estimated 20,000 amateurs world-wide enjoy IOTA, or island chasing, on a regular basis.

IOTA administration

The starting point and only authoritative place for official IOTA information is the RSGB (Radio Society of Great Britain) website <http://www.rsgb.org.uk/>. For IOTA information scroll down to the search box, type in IOTA and click. The direct URL to go to IOTA is <http://www.rsgbiota.org/>

Since 1985, the RSGB IOTA Committee has been responsible for the worldwide administration and management of the IOTA program and attends, and presents IOTA information, at many major amateur radio conventions.

The IOTA program is managed by volunteers on a non-profit making basis. The IOTA Committee has appointed a large number of amateurs worldwide as 'checkpoints', and advisers who assist it to administer the IOTA program in accordance with its rules, to foster DXpeditions and provide general IOTA information.

IOTA has been responsible for increased amateur radio activity on all HF bands, in so doing extensively promoting amateur radio. Many rare IOTA islands are also rare DXCC entities, so IOTA and DXCC activity complement each other.

The IOTA Directory

The RSGB IOTA Directory is the cornerstone of the IOTA program.

It is available from the RSGB. It lists about 99.9% of the oceans islands. The Directory costs about \$31.50 (UK£13) airmailed to Australia. The Directory

is essential reading for all IOTA island hunters and activators. It lists groups of islands that qualify for IOTA listing, by continent, region, and country, similar to the DXCC list. I recommend you purchase a copy of this directory.

IOTA islands by region

The IOTA Directory is divided into seven regions, covering:

EUROPE	EU
AFRICA	AF
ANTARTICA	AN
ASIA	AS
NORTHAMERICA	NA
OCEANIA	OC
SOUTHAMERICA	SA

The Directory lists the IOTA islands/groups by country, generally in accordance with the DXCC list.

Which islands qualify for IOTA?

As a general rule an island, atoll or cay will qualify for IOTA listing if it meets two basic rules relating to size and location:

Rule 1:

The island must be shown on a map with a scale 1:1,000,000 (10 km to 1 cm). An island may be assumed to meet this rule if it consists of a single unbroken piece of land in excess of 1 km in length measured by straight line at low tide.

Rule 2:

The island must, if it lies within 1 km of the mainland, be separated from it at all points by a minimum of 200 metres of sea at low tide.

Islands that DO NOT qualify for IOTA include those located in lakes, inland seas, rivers, or surrounded by a permanent ice shelf, or totally submerged by water for part of the day, or those that fail to meet the above criteria.

IOTA island groups

As a general rule, the IOTA Directory lists eligible islands (lying along the

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coastlines of the worlds continents) in groups.

Grouping has been necessary to limit the size of the directory and to prevent IOTA island numbers becoming an unmanageable figure.

For example, the east coast of Queensland and the Gulf of Carpentaria contain 1372 islands, not including shoals, reefs and inland waterway islands. Over 1000 of these islands are listed in the Queensland Place Names Act of 1994. Many of these islands do not qualify for IOTA.

For the purpose of IOTA listing, islands along the Queensland coastline are listed in nine groups, from Torres Strait to Moreton Bay. Each group has an IOTA reference number. Grouping of the islands into these nine areas makes the IOTA program simple and easy to manage, and use.

Another good example of IOTA island grouping is the Philippines. The Philippines consists of 1707 islands. The IOTA directory manages this large area by listing eligible islands in 20 island groups, each with an IOTA Reference Number.

Worldwide, 1200 IOTA groups of islands have been listed, and well over 1100 have been activated, at least once.

Island reference numbers

Each qualifying IOTA island group activated and validated with the RSGB since 1945 has been given an individual IOTA reference number.

For example, the Queensland islands in Moreton Bay (the Queensland South Coast Group) include Moreton, North Stradbroke, Lamb, Russel, St Helena, Peel, Karragarra, Green, Mud, Garden, and Coochiemudlo. This group is given the IOTA reference OC-137. Such IOTA numbers are often quoted on air, and now are printed on QSL cards.

The objective for the amateur 'Island Chaser' is to make two-way radio contact with at least one island with an IOTA reference number, in as many IOTA groups as possible, situated in the seven regions of the world.

IOTA awards and certificates

The IOTA awards program is sponsored by the RSGB. Eighteen separate awards are available, each of which is issued on presentation of satisfactory evidence of two-way contact with amateur stations operating from islands listed in the IOTA

Directory. Check the RSGB website for details. The IOTA 100 Islands is the basic award and the place to start. Examine your DXCC QSL Collection, as many of your contacts will be IOTA stations. To begin with, search for QSLs with printed IOTA reference numbers. Older QSLs without the IOTA number printed on them are also acceptable. Details are on the website.

IOTA computerized software program for award applications

The awards application process is available 'online' at <http://www.rsgbiota.org.uk/>. For more information check the RSGB website.

IOTA contact frequencies

The main SSB frequency is 14.260 MHz. Others on SSB are 28.460, 28.560, 24.950, 21.260, 18.128, 7.055, 3.755 and 3.765 MHz.

The CW frequencies are 14.040, 10.114, 3.530, 28.460, 28.040, 24.920, 21.040, 18.098 and 7.030 MHz.

These frequencies are not used exclusively for IOTA but are shared with others on a normal non-interference basis.

IOTA news and information websites

Perhaps the most useful source of DX and IOTA news for amateur radio operators can be found at the Daily DX: <http://www.dailydx.com/>

A number of IOTA operators and

groups maintain home pages with IOTA information. Check out www.usats.com/de-dx.html, www.islandchaser.com, www.425.dxn.org, www.dsepub.com/dx_news.html and www.wqde.com, as well as www.rsgbiota.org/

IOTA DXpeditions most needed DX entities

Part of the fun of IOTA DXing is chasing new rare islands and making contact with most wanted DXCC entities.

Activations in the first half of 2007 provided amateurs worldwide with an opportunity to contact two of the most wanted DXCC and IOTA entities in the world, BS7H Scarborough Reef AS-116 and N8S Swains Island OC-200.

Over 117,000 QSOs were made with Swains, and the DXpedition is reported to have cost in excess of US\$155,000.

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Editor's note

Swains Island lies some 1200 km south of the equator, 185 km south of Fakaofu (now Fakaofa), 314 km north and a little east of Apia, Samoa, 370 km north and a little west of Pago Pago, and 574 km west of Pukapuka (Danger Islands). It is now part of American Samoa after a chequered history of 'ownership'.

Scarborough Reef is in the South China Sea about 250 km west of Luzon in the Philippines. It is a much disputed territory due to the rich fishing grounds surrounding the reef.

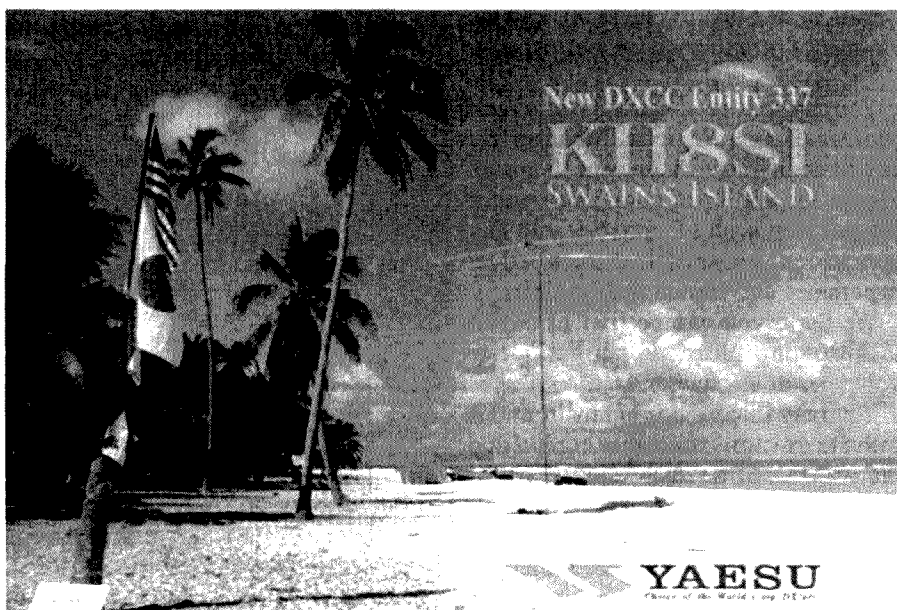


Photo 1: The QSL card from KH8SI, IOTA OC-200, the first Swains Island DXpedition, in July/August, 2006.

FLM Mk II now available!

After months of preparation, the WIA's much anticipated second edition Foundation Licence Manual (FLM) "Your Entry Into Amateur Radio" is now off the press.

"This is good news" said Phil Wait VK2DKN, WIA Director and Foundation Manual Editor. "We were expecting the second edition manual to be ready in early April but it had dropped back a couple of weeks, mainly due to the fact that we wanted everyone involved to be absolutely happy with it."

"We think readers will be happy with it too, as it incorporates many of the comments and suggestions we received to the first edition, as well as extra pages containing information on antennas, propagation and single sideband."

The WIA member and club price for the manual is \$19.50. The recommended retail price is \$24.50

You can order the manual, with delivery to your door through the WIA Online Bookshop, found under the Members area of the WIA website. Or you order from the WIA office. Packing and postage for a single copy is \$6.00, cheaper for multiple copies if combined with other books from the bookshop. For affiliated clubs, the WIA has a special offer of no packing or delivery charges for five or more manuals ordered. For all club orders, please contact the WIA office.

The following abridged prefaces to the second edition give an idea of what it is all about.

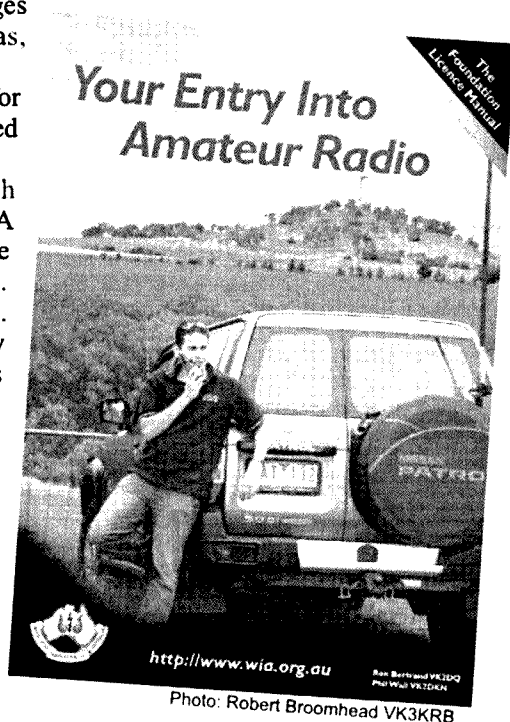
Preface to the second edition Michael Owen VK3KI

The Australian Foundation licence came into existence on 19 October 2005. Shortly after that, the First Edition of this Manual was published. In the preface to that edition I described the Foundation licence as an entry-level licence with restricted but attractive privileges, saying that it was "hopefully providing a new entry to this exciting hobby that will attract many new radio amateurs." It is clear that this hope has been realised.

The Wireless Institute of Australia is the body responsible for the management of the Australian amateur examination system and is the publisher of this Manual. In a little over two years, the WIA has qualified more than 2,000 Foundation licencees. The number and

spread of age and gender shows that the entry level licence is achieving exactly what it was hoped that it would achieve. Recently, the steady increase in the number of Foundation licencees seeking to upgrade to a higher amateur qualification shows the worth of this entry-level licence.

This book has been used by virtually anyone even considering becoming a radio amateur. It contains all the



information necessary to obtain the Foundation qualification and more and is attractively presented. When first published, WIA knew ACMA intended to further amend the regulation of the amateur service. We thought that we would need to publish a second edition to incorporate the amendments necessary to reflect the further regulatory changes. Those changes have now been made, and the Foundation Licence relevant information included in this edition. As well, some clarifications have been made and useful information added.

The WIA owes much to the joint authors, Ron Bertrand and Phil Wait, to Robert Broomhead for the photography and production co-ordination, to designer Ivan Smith for making it such an

attractive publication, to Roger Harrison for contributing A Guide to Propagation on the Various Amateur Bands, to Alan and Mavis Ford for proof-reading, to the many people who offered suggestions for the improvement of this edition of the Foundation Licence Manual.

Introduction Phil Wait VK2DKN

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Since first published a couple of years ago this manual has assisted over 2000 people to achieve a Foundation Amateur Radio Licence with just a few hours study, and so join the ranks of about three million radio amateurs worldwide.

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I sincerely hope that this manual will not only help you obtain a Foundation Amateur Radio Licence, but also spark an interest in technology and spur you onto bigger and greater things.

Thanks to the many people who suggested changes for this edition. The most contentious issue appeared to be the direction of electric current flow in a wire, and we received as many letters saying we got it right as we did saying we got it wrong. Current flow has been contentious for many years and, in the end, we left it as it was (negative to positive) and commented on the issue in the chapter on electricity.

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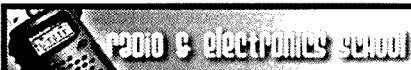
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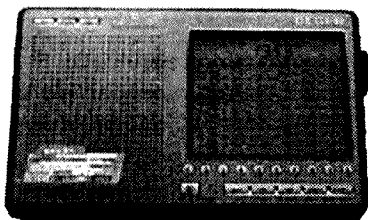
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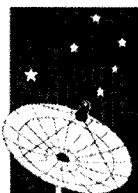
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Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
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- VK4 VK1WIA:** Sunday 0900 local via HF and major VHF/UHF repeaters.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. 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.

Note that many clubs broadcast the WIA News via local VHF and UHF repeaters. Check the News section of the WIA website.

Special recognition for Al Shawsmith



At their face to face meeting in early March the WIA Directors considered the WIA merit awards to be announced and presented at the Annual General Meeting, to be held this year on Saturday 24 May 2008 at Broken Hill.

For only the second time in 4 years, the Directors decided to award a GA Taylor Medal, this year to Al Shawsmith, known to all as VK4SS (even though he has passed that callsign on to his son).

However, recognising that Al, now aged over 90, would not be able to be in Broken Hill, the Directors

decided to announce their decision and present the award early.

So on Saturday 29 March 2008 WIA President Michael Owen VK3KI, WIA Vice President Ewan McLeod VK4ERM and National Broadcast Coordinator Graham Kemp VK4BB went to Al Shawsmith's home in Whynot Street, West End, in Brisbane to make the presentation to Al in the presence of his family and friends.

Michael's speech when presenting the award, and Al's response, can be found elsewhere in this issue of *Amateur Radio*.

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Our Cover this month

Ron Fisher VK3OM, Bill Roper VK3BR and Eric Buggee VK3AX review
the Yaesu FT-950 HF and 6 m transceiver. See story on page 24.
Background scene photo by John Gardner VK7ZZ. See VK7 notes on
page 36

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Editorial Comment

Peter Freeman VK3KAI

Imperfect proofing

Yes, we are all human and subject to making errors. One such error last month resulted in the same typographical error occurring four times! I missed the error when the photo captions were sent to me, and the proofing team members also missed it – four times! So, rather than just apologising to the person that was misidentified (incorrect numeral in his callsign), I have decided to share here with you most of my exchange with Duncan VK2DLR, as Duncan's response has some points worth sharing. Yes, I could have done this as an *Over to You* item, but hopefully it may have more impact here. Also note the correction regarding the diagram of the Slim Jim antenna dimension. I will post the corrected diagram to the AR archive on the WIA website.

Hello Duncan,

Please accept my apologies on having missed the error in your callsign in three places with the photos, and in the caption to the cover photo! I can only blame it on myself, not having closely checked the captions sent in to me, and then missing the errors again at proofing.

On the other hand, I hope that I did a reasonable job of recreating your diagrams into a form that was usable for publication.

I will place a correction note in the next issue.

Regards,

Peter VK3KAI

Duncan replied:

Thanks Peter,

It is amazing how strong habits become. I have the same problem when I record VK4 callsigns from just over the border. The diagrams look pretty good to me. The only minor technicality I can see is in step 3 the 390 mm dimension is to the bottom of the notch rather than the centre as the drawing suggests. The text elaborates this point.

Thank you for all your work and to Robert Broomhead VK3KRB for the visit and photography. When we stand back and think about it I am the dead lucky one who ends up with his photo on the cover as the result of a lot of work from others. It was the WIA executive and others that did the work to create

Foundation licences and the Assessor system that let Aaron and Kendall earn their licences. Their enthusiasm and attendance created the photo opportunity that would have passed unnoticed if Robert had not visited. My contribution was simply to share my experience of building antennas designed by others.

Some people would call it teamwork. Others would call it individuals working independently for the common good. Call it what you like - it works.

Thanks again for your work and the correction note.

Regards,

Duncan VK2DLR

WIA and AR magazine Awards

At the AGM in Broken Hill, several awards will be announced. Some are decided by the WIA Board. Three awards are recommended to the Board by the Publications Committee, based largely on the material published in AR in the previous year – the *Higginbotham Award*, the *Al Shawsmith Award* and the *Amateur Radio Technical Award*. The President outlines the awards and identifies the recipients in this month's Comment column. Congratulations to all recipients.

Call for help

Over the past couple of issues, we have called for volunteers to assist with the preparation of the next Callbook. I thank all who indicated their willingness to assist. By now, I shall have been in contact with all of them. They may still be able to assist in some way – we shall keep them all informed.

I welcome to the Publications Committee Greg Williams VK3VT, who not only offered to assist this year, but is willing to take on the role of Callbook Editor after this year, with Brenda VK3KT having announced earlier this year that the next Callbook would be her last! So, a big thank you to Greg – I trust that we shall all be able to make his job not too difficult.

We still need some help with the Callbook and for AR – we need your high quality photographs for consideration for use on the cover of either publication!

73

Peter VK3KAI

Why do we present Awards?

Last month *Amateur Radio* carried pictures and a story about the presentation of a *GA Taylor Medal* to Al Shawsmith. It started me thinking about awards generally, and more particularly, the other awards that will be presented by the WIA this year and asking myself what end is served by the WIA Awards.

In most cases they honour the person whose name they bear.

So, in the case of the presentation to Al Shawsmith, we not only honour a man who has given much to amateur radio, but we are reminded of George Taylor, the founding chairman of the WIA.

Some awards are made on the basis of the recommendation of the Publications Committee.

The *Higginbotham Award* is one of those awards. Ron Higginbotham served on the Publications Committee from 1947 until 1964. He worked at the *Richmond Chronicle* and was responsible for the typesetting and production of this magazine from 1949 until 1973. The award named after him is to recognise general services to amateur radio, not necessarily the magazine. In fact, and perhaps hardly surprisingly, it has often been awarded to people whose contribution has been associated with the magazine. This year it is awarded to **Robin Harwood VK7RH** for the long standing SWL column he contributes to *AR*.

It is our way of remembering a man who gave so much to amateur radio and the WIA in the past, and also a way of saying thank you to someone who is giving much today.

But some awards do not merely say thank you. Their purpose is to encourage excellence. **Al Shawsmith** is known for his writing, and firmly believes that good writing is to be encouraged, particularly if it is associated with amateur radio, and so he has given the WIA a sum of money to be used for an award for the best non-technical article in *AR*.

That will be awarded this year on the recommendation of the Publications Committee to **Graham Scott VK2KE** for his article "Teaching amateur radio classes" published in the July 2007 *AR*.

The *Chris Jones Award* was only created last year. It honours a man who gave amateur radio so much. The inscription on the award says it all:

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.

To many of us this is a very important award, simply because so many of us knew Chris Jones so well and his passing is so recent.

This year, only the second year of the award, the Board has decided to award it to **Ken Fuller VK4KF**.

On the sudden death of Chris we faced a time of great need, and Ken stepped in and agreed to act as WIA Secretary on a "temporary" basis. The administration of the WIA turns very much on the Secretary, and it is not a bad idea to file all the things that the Corporations Act tells you to file. But Ken brought much more, dealing with the structure (or restructure) of a number of our groups.

The real problem was that he did such a good job that his idea and my idea of the meaning of "temporary" greatly diverged.

In awarding it this year, we are saying a very real and personal thank you to Ken who came to our aid in our time of most need, and the *Chris Jones Award* is just such an appropriate way of doing so.

Another award given by the Board is the *Ron Wilkinson Achievement Award*.

Ron Wilkinson VK3AKC gained a high level of skill and knowledge of VHF and UHF radio, encouraging others to follow him with their own investigations.

His widow Mary, who has now also passed away, gave \$1,100 to the WIA to create an award to honour Ron. Last year, I was very happy that I was able to advise Ron and Mary's children that we

still honour Ron, the money is still there, invested and still supporting an award.

While that award has often been presented to recognise a technical achievement, that is not always so, and this year is the way we can say thank you to someone who has given amateur radio much, but in a non-technical area.

We are awarding it to **Brenda Edmonds VK3KT**. In the past, her passion was education. But today it is other things for which we wish to say thank you.

She, along with Ted Thrift, co-edits the *Callbook*. She has for many years given us a day a week helping in the office. And during a period when we were in real trouble due to sickness of our employee, she gave us much more than a day a week.

So, to Brenda, we say thank you and honour her contribution, at the same time preserving the memory of an enthusiastic amateur.

In Broken Hill we will give two other awards, neither reminding us of someone special from the past, but both honouring and encouraging excellence and contribution.

One is the *President's Commendation* given, as is said in the old minutes, as a means of recognising an act or activity particularly supporting the Wireless Institute of Australia.

We give that to **Michael Wright VK5ARD**, for his encouragement of amateur radio in Roxby Downs, in particular by introducing amateur radio to young people, establishing training sessions and then arranging assessments.

Finally, we award the *Amateur Radio Technical Award* for the best technical article to **Drew Diamond VK3XU** for his article "Class-E AM/CW transmitter for 1.8 MHz" published in the June 2007 issue of *Amateur Radio*.

So, to answer my own question, the WIA awards may honour and remind us of people from the past and may be given to encourage and honour contribution and may be a special way of saying thank you.

2-letter call issue clarified

One matter that has concerned a number of people about the proposed 2-letter callsign ballot process that the WIA and ACMA have jointly published was cleared by a statement published by the WIA in April.

The published paper setting out the proposed process, under "persons eligible to apply" states, in effect and leaving out a number of words, that a person who is a director, officer or employee of the WIA will not be eligible to participate in the ballot.

The term "officer" was to be used in the Corporations Act 2001 sense, where by section 9 "officer of a corporation" is defined to include a person "who makes, or participates in making, decisions that affect the whole, or a substantial part, of the business of the corporation; or who has the capacity to affect significantly the corporation's financial standing", though this was not made clear.

It was intended to exclude people who are, or could be perceived to be, in a position to influence the outcome by reason of their particular position in the WIA. It was intended to exclude, as well as the directors and employees, persons holding positions such as secretary, and who, if they successfully participated, could be suspected by some of improper influence.

It was not intended to exclude the many other volunteers who undertake tasks for the WIA, whether as coordinators, assessors or members of committees.

28 July is last date for Club Grant applications

On 18 March 2008 the WIA published a release highlighting the changes to the WIA Club Grant Scheme, and in particular that in 2008 there will be two categories of projects supported.

One category will be for useful but not innovative projects or activities, including projects involving repeaters or associated links. The WIA will support up to three projects in this category, with grants up to a total of \$3,000.

It will be up to the Grant Committee to decide how much of the money available will be recommended for each project recommended in this category.

The other category will be for projects or activities that are innovative. The WIA

will support up to three such projects, with grants up to a total of \$3,000.

Again, it will be up to the Grant Committee to decide how much of the money available will be recommended for each project supported in this category.

The Club Grant Scheme Rules have been amended to allow the Board to make these changes to the scheme. The amended Rules can be found on the WIA website, as can a useful template setting out the suggested application headings for an executive summary identifying how the club seeks to meet the objectives of the scheme in the category it has selected. Clubs are urged to carefully read both documents.

The WIA Board has now decided that the closing date for applications for grants this year will be Monday 28 July 2008.

ACMA spectrum review

As previously reported, ACMA has published a number of papers concerning the principles of spectrum management in Australia and a discussion paper in respect of various proposals to re-plan spectrum in the region of 420 to 512 MHz, with proposals affecting the 70 cm amateur band.

From 30 April 2008 to 2 May 2008 ACMA conducted its major radiocommunications conference, RadComms08, where these papers were presented.

WIA Director Peter Young VK3MV represented the WIA at the conference and has reported in detail to the Board.

The WIA will be lodging submissions setting out the position of the amateur service to the matters that are put in issue in these papers.

2008 BERU Contest

This year, the BERU contest not only had teams from Australia, Canada, Great Britain, New Zealand, and a team called "The Rest-of-the-World", but were joined by Team Africa.

Team Australia, who was last year's runner-up, amassed a marvellous score of 61,500 to take the title, just ahead of the Rest of the World on 59,700.

Team Australia was captained by Stephen Ireland VK6VZ; and included VK2NU, VK4EMM, VK6BN, VK2BJ,

VK6HD, VK6LW, VK4XY, VK2MB (G4OBK) and VK4BUI.

In the Headquarters section, VK4WIA made a welcome re-appearance in the hands of Keith VK4TT.

Band plans documents updated

The WIA band plan document has been updated.

The most recent versions of files for download are on the WIA web site.

John Martin VK3KM, Chairman of the National Technical Advisory Committee, advises that the changes to the 70 cm band plans include the addition of alternative 70 cm frequencies for D-STAR repeaters in areas where beacons and repeaters are co-located.

Changes to Australian Radiofrequency Spectrum Plan

The ACMA has advised the process leading to amendments of the Australian Radiofrequency Spectrum Plan, the ARSP, that may lead to the creation of a secondary amateur service allocation on 137 kHz.

Once the final WRC-07 documents have been received from the ITU, ACMA will commence drafting amendments to the ARSP with the view to a public consultation period later this year. After consideration of comments received, the ACMA is hopeful of publishing the new plan and accompanying changes in subordinate legislation by early 2009.

ARISS on television show

Tony Hutchison VK5ZAI, WIA National ARISS Coordinator, appeared on the Channel 7 Today Tonight show on April 11th. The show provided some great insights as to how Tony and others over the years have provided support to NASA and how amateur radio helps to promote public awareness of the NASA space program through school contacts with the astronauts aboard the ISS.

The WIA has put this segment on the WIA website in Windows wmv format and should launch correctly in Windows Media Player when using Microsoft Internet Explorer Web Browser.

You will find it under the "Discover Amateur Radio Menu"; select "Amateur Radio Videos".

The market umbrella portable antenna mast

Richard Cortis VK2XRC

Some time ago, the local coffee shop threw out some market umbrellas. Being a little more fanatical than your average dumpster diver, I picked one up and brought it home because it had some good timber which may have been useful for something one day. The sun had done its job on the umbrella canopy but the timber structure was in good order. Recently, I had a rush of blood to the head and decided to re-configure the geometry of the umbrella to turn it into a portable amateur radio mast.

The market umbrella was a typical four sided timber framed market umbrella with a fixed hub at the top and a sliding hub to support the braces. There was a brass pin to hold the sliding hub in position when the umbrella was erected.

The first thing I did was to remove the canopy and throw it away because it was just too rotten even for a painting drip sheet. I then removed the arms from the fixed hub at the top of the pole, and then removed the braces from the sliding hub. This was fairly simple and required only a pair of pliers to untwist the wire fixing the arms and the braces to the hubs. I then took two wire coat hangers and reversed the arms and the braces so that the braces were attached to the fixed hub on the end of the pole and the arms were fixed to the sliding hub on the pole.

Fixing the arms and the braces back onto the hubs was a little bit of a hassle, mostly because my grandchildren were trying to help. In the normal course of events, it is a fairly simple activity where the coat hanger wire is formed roughly into the circular shape of the hub and then threaded through the holes in the arms. The arms are then set into the recesses in the hub and the pliers are used to twist the wire and tighten it. I did the same thing to reinstall the braces on the fixed hub.

I then set the modified device on the ground and attempted to erect it. I found that the original hinge position needed to be changed, for two reasons. Firstly, the distance from the fixed hub to the hinge point on the arm was about the same as the length of the strut so that, when the sliding hub was moved as far as it could, the braces ended up almost parallel to the arms and the arms lay flat on the ground, leaving the device somewhat unstable.

The second reason was to make the

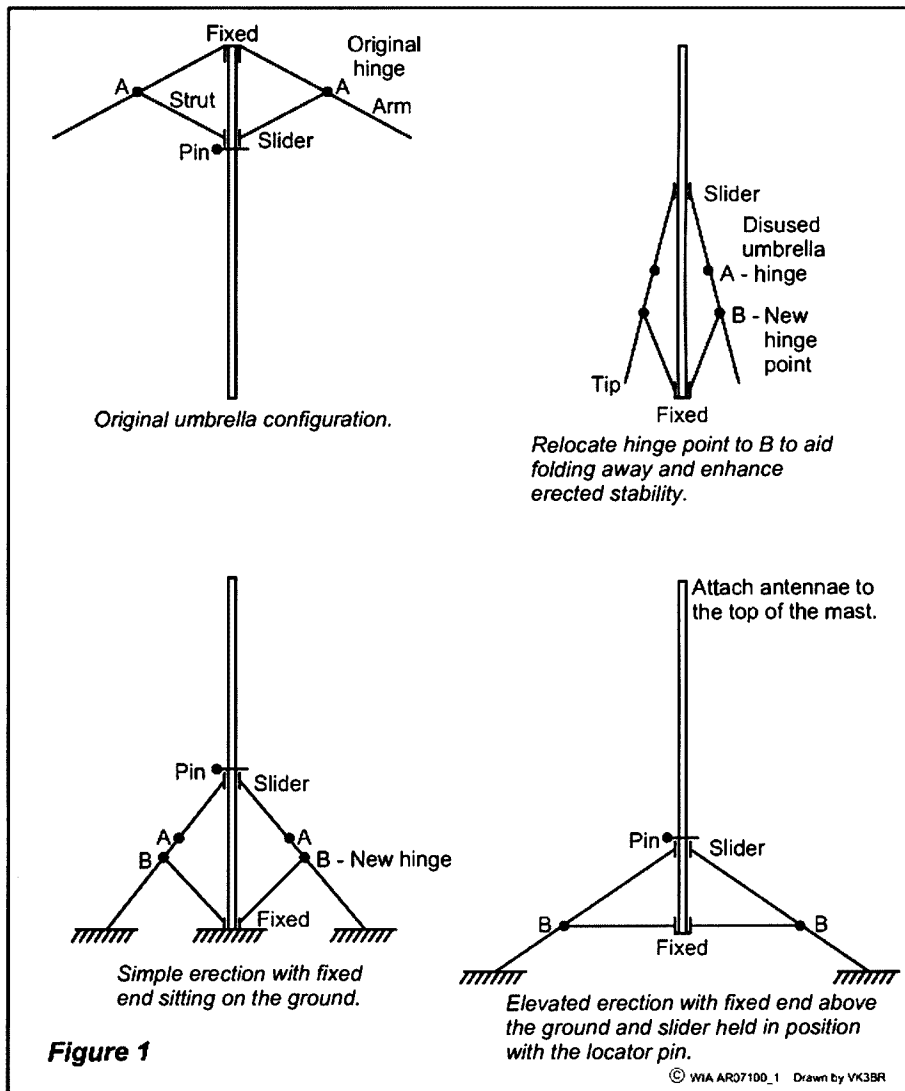


Figure 1 The author's modification plans for the umbrella mast.

device fold more compactly than the umbrella. I moved the hinge point (the point where the brace attaches to the arm) about 200 millimetres towards the tip so that, when folded, the arms sit neatly against the pole, beneath the fixed hub. This also has the effect of stabilizing the geometry so that the sliding hub can be moved towards the fixed hub without

the device becoming unstable.

The only carpentry work was to drill the four holes in the arms. The only tools I used were the pliers, drill and 5 millimetre bit, screw driver and a hammer to peen over the ends of the threads on the new hinge pin bolts.

continued on page 9

A low-noise amplifier for 70 cm

Filip Zallo VK3FLP
vk3flp@optusnet.com.au

I needed a good low noise amplifier for some weak signal experimentation. After having a look around in the various places that sell them, I concluded that it is worth trying to design and build my own version of it. If nothing else, it would be an excellent learning opportunity, as I had never designed a high performance low noise amplifier before this exercise.

Luckily, the main component – the low noise High Electron Mobility Transistor (HEMT) – is being sold in small quantities by Mini-Kits [1]. The transistor, the ATF-54143 is made by Avago [2] (formerly Agilent) and has exceptional parameters on the 70 cm band.

The noise figure of this device is less than 0.2dB, which allows us to build an EME-class low noise amplifier, as long as the input matching circuit is done correctly. The HEMT is also very linear having a 3rd order intercept of +30 dBm, so it can cope well with out of band interference. The transistor is an enhancement mode HEMT, so it does not require negative gate bias supply. One other advantage of this transistor is that the optimum input impedance for minimum noise figure is close to 50 ohm, at our frequency of interest. Thus the input matching circuit can be simpler and less lossy, further improving the noise figure.

A disadvantage of the ATF-54143 HEMT is that the amplifier could be unstable in the GHz region, unless the output match circuit is designed carefully.

The ATF-54143 HEMT has been used by other builders of 70 cm preamplifiers. One good and stable design is by YU1AW [3]. I do recommend this design, if you have access to high quality trimmer capacitors and do not mind building the input resonator from a copper strip. Since I did not have the high quality trimmers and also having decided that I could live without the input selectivity, I simplified the YU1AW design and changed the input circuit. I also tweaked the output circuit a little to improve the matching. The result is a preamp on a single small printed circuit board, with no unusual or hard-to-get components, while the noise figure is still very good.

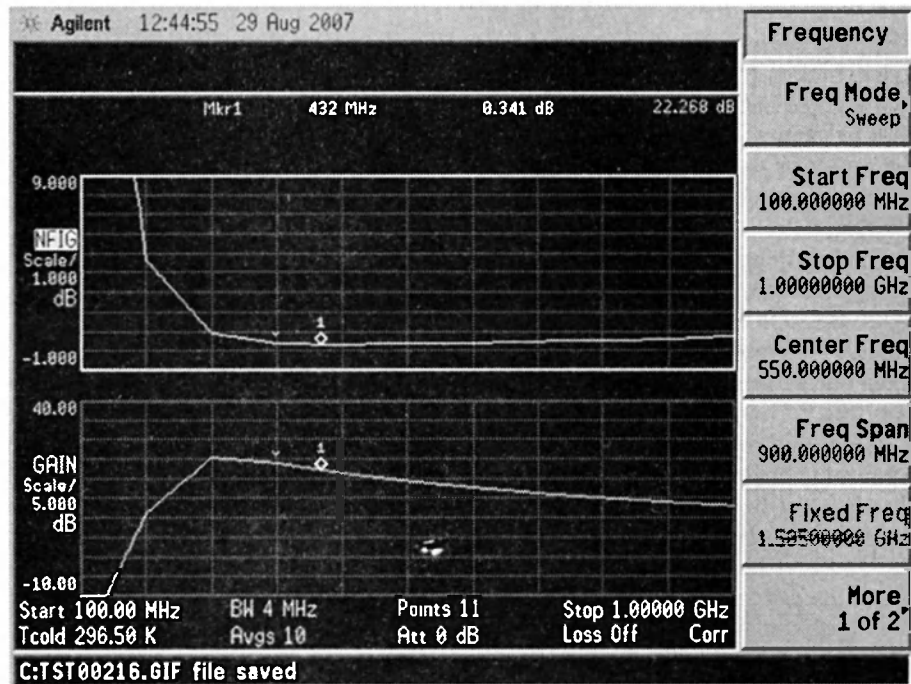


Photo 1: Measurement results showing gain and noise figure at 432 MHz.

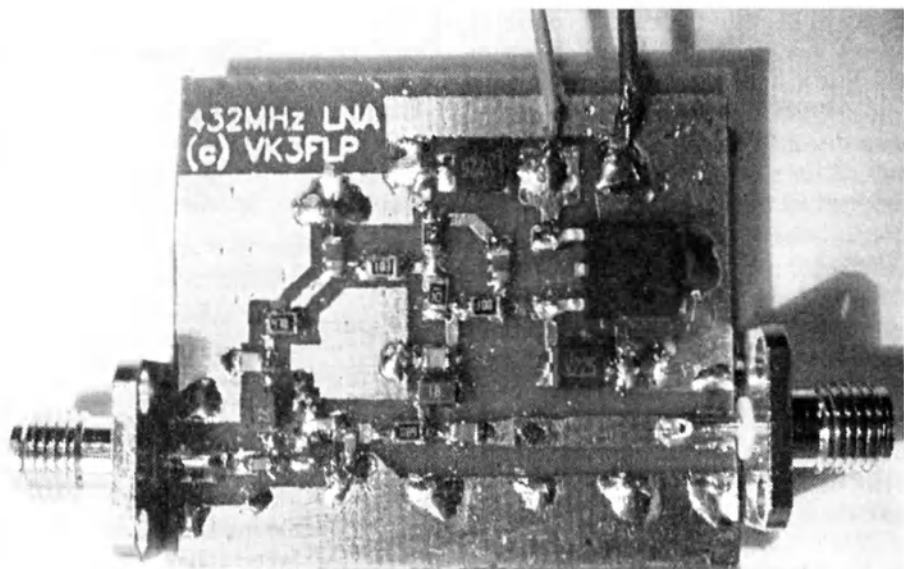


Photo 2: The completed unit.

My LNA design does not include any form of transmit-receive switching or protection, as this would depend very much on the individual application. A T/R switch design should take into account the fact that the transistor can tolerate up to about 50 mW input power according to [2], and I recommend a further 10 dB headroom.

Circuit description

Referring to the schematic diagram (Figure 3), L1 and C1 form the input matching circuit. These two components transform the input impedance of 50 ohm close to 70+j40 ohm, which is required to achieve the optimum noise figure.

Something to note is the influence of the Q factor of L1 on the total noise figure. The parasitic resistance of this inductor affects the noise figure noticeably. In this case, I have chosen an ordinary moulded SMD inductor, with a quite low Q of about 40, resulting in a measured total amplifier noise figure of 0.34 dB. Based on some quick simulation I have done, it should be possible to reduce the noise figure close to 0.2 dB, if one used a better inductor with a Q in the still achievable range of 70-100. Perhaps someone might try a hand-wound inductor, using a silver-plated wire...

The capacitor C2 provides RF ground connection for the input matching inductor and decouples the bias circuit. The bias circuit includes resistors R1, R2, R3, R4, R6 and capacitors C3 and C6. The gate bias is a positive voltage, adjusted with R3 so that the current through the HEMT is about 40 mA, and the drain voltage is about 3.3 V.

The output circuit, consisting of C4, C5, R5, L2 and C7 serves two

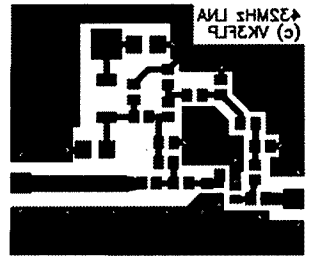


Figure 1: Image of pcb artwork.

purposes. Firstly, it ensures stability of the amplifier across the full frequency range, especially above 1 GHz. Secondly, it provides a good impedance match to a 50 ohm output at 432 MHz.

IC1 is a standard 5 V. regulator. The printed circuit board has a separate connection pad for the positive power supply, but if desired, the power supply could be provided from the output coax connection. In such case, an RF choke could be soldered from the RF output line to the power input pad.

All the components are surface mount. Most of the passive components are the 0805 SMD footprint, which is still large enough to solder easily by hand (with tweezers) but small enough that the circuit performance on 432 MHz is not affected too much by the parasitic parameters. It is also possible to use 0603 size components with no adverse effect.

Assembling the amplifier

I have manufactured the printed circuit board at home using a laser printer and the iron-on transfers, sold by Jaycar. If you use a laser printer, you will need an exact 1:1 mirrored image of the board pattern, to print onto the transfer sheet.

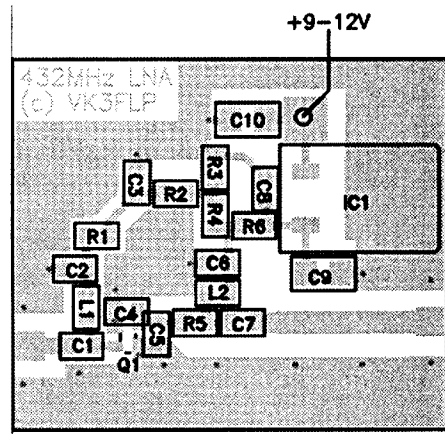


Figure 2: Parts placement diagram. Note that the grey dots represent through board vias connected to the ground plane side of the pcb (see text).

I can provide a PDF file by email. The circuit board design has been optimised for 1.2 mm double sided FR4 laminate. The bottom side of the PCB is not etched and serves as the ground plane. The top side is shown on Figure 1 and component placement is on Figure 2. The printed circuit board measures 1.46 x 1.24 inches (37.08 x 31.5 mm).

There is a number of 'via' holes which connect some pads to the ground plane. These are drilled with a 0.8 mm drill and a wire pushed through and soldered on both sides.

After preparing the PCB, all components except R3 can be soldered in. In my experience, the surface mount components can be easier to work with than through-hole and the whole preamplifier could be put together in an hour. One just needs a steady hand and good eyesight, or a magnifying glass. The Q1 is sensitive to static electricity, so I recommend the usual 'ESD' precautions.

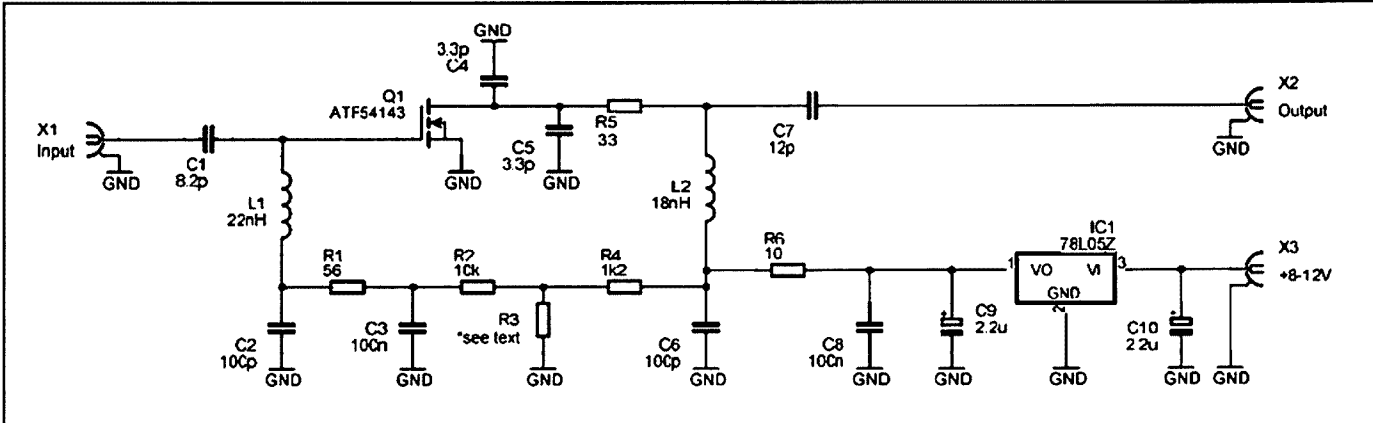


Figure 3: Schematic diagram of the LNA.

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After thoroughly checking the board, the next step is to solder a 2 k trim pot in place of R3, and turning it to the position of minimum resistance (short). Next, the power supply can be connected and turned on. The output of IC1 should be checked, and the voltage should be 5 V. Next the voltage on the drain of Q1 should be measured. It should be 5 V at this stage, as no current flows through Q1. Next, the 2 k trim pot should be carefully turned, to increase the resistance, until the Q1 drain voltage drops to 3.3 V. Turn off the power supply, unsolder the trim pot, being careful not to move it. Then measure the resistance. Select a SMD 0805 resistor (or parallel combination of resistors) with the same resistance, and solder them in place of R3. In my case, it was 200 ohm, so I chose 220 ohm in parallel with 2.2 kohm. I decided to use a fixed R3 resistor in this way, rather than a permanently soldered trimmer to ensure mechanical stability and reliability.

Results

Luckily, I have an occasional access to an Agilent N8973A noise figure analyser, so that I had a chance to check how the real circuit performs. The prototype LNA measured on this instrument showed 0.34 dB noise figure and 22 dB gain on 432 MHz. The noise figure measurement at such low values has some uncertainty, and more on this can be read on the N8973A web page [4]. The measured noise figure and gain over the frequency range 100 MHz – 1 GHz can be seen on Photo 1.

Naturally, the preamplifier should be mounted as close to the antenna as possible, to take advantage of its performance, but that would be a subject for another article. If anyone decides to build this preamplifier, I would be very much interested in the results achieved.

Component List

- Q1 ATF-54143 pHEMT, Avago, available in Australia from Mini-Kits
- IC1 SMD Voltage Regulator MC78M05 +5 V, Jaycar No. ZV1544
- CI 8.2 pF, 0805 or 0603 SMD capacitor
- C2, C6 100 pF, 0805 or 0603 SMD capacitor
- C3, C8 100 nF, 0805 or 0603 SMD capacitor
- C4, C5 3.3 pF, 0805 or 0603 SMD capacitor
- C7 12 pF, 0805 or 0603 SMD capacitor
- C9, C10 2.2 uF, tantalum capacitor, 3216 surface mount, Jaycar No RZ6544
- LI 22 nH, 0805 SMD inductor
- L2 18 nH, 0805 SMD inductor
- R1 56 ohm, 0805 SMD resistor
- R2 10 kohm, 0805 SMD resistor
- R3 see text
- R4 1.2 kohm, 0805 SMD resistor
- R5 33 ohm, 0805 SMD resistor
- R6 10 ohm, 0805 SMD resistor
- X1, X2 SMA female connectors, or solder coaxial cable directly

References

- [1] Mini-Kits web site <http://www.minikits.com.au>
- [2] ATF-54143 datasheet, <http://www.avagotech.com/products/product-detail.jsp?navId=H0,C1,C5230,C5088,P94057>
- [3] <http://www.qsl.net/yulaw/atf54143eng.htm>
- [4] <http://www.home.agilent.com/agilent/product.jsp?cc=US&lc=eng&nid=-536902736.536880065&pageMode+OV>

Plan ahead

16 & 17 August

Remembrance Day Contest

30 & 31 August

ALARA Contest

The market umbrella portable antenna mast

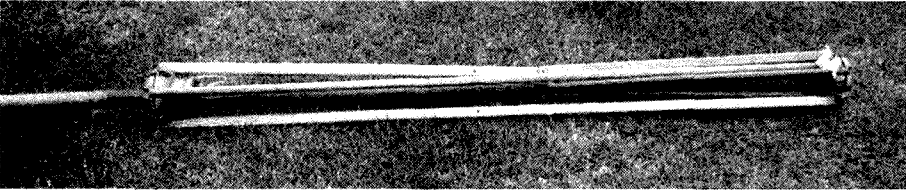


Photo 1: The umbrella mast in its fold-up state..

continued from page 5

Market umbrellas with eight arms can be treated similarly but you may consider only reinstalling four of the arms to save weight and complexity. I do not recall having seen a six-sided market umbrella.

So what did all of this cost? Well, the coat hangers cost nothing and the four machine screws, four nuts and eight washers came out of stock.

And how long did it take me? Even with the grandchildren helping, it took a bit over half an hour.

The finished product is a bit like a large version of a camera tripod but a lot larger and a lot more stable. It will support VHF and UHF beam antennas and verticals

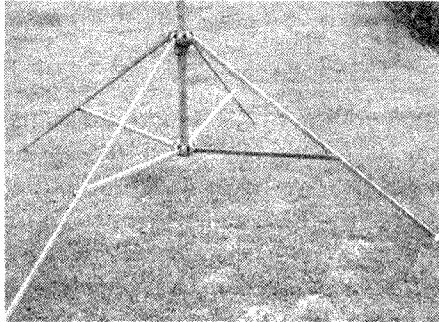


Photo 2: A close up view of the umbrella mast after the modifications and will even support one end of a long wire or the centre of a dipole. There are many options.

I thought it was worth the effort and one of the members of the Waverley

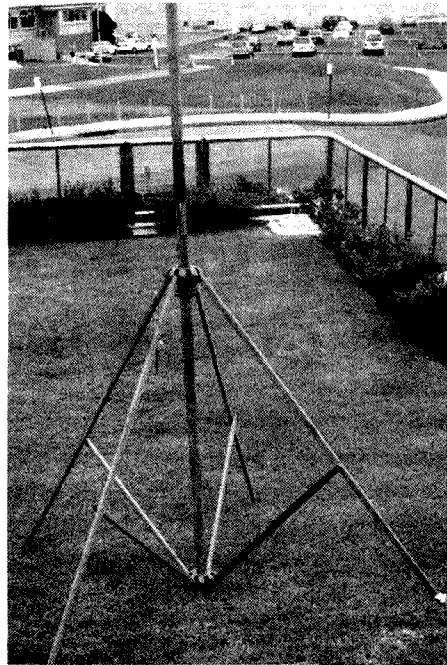


Photo 3 The umbrella mast ready for action.

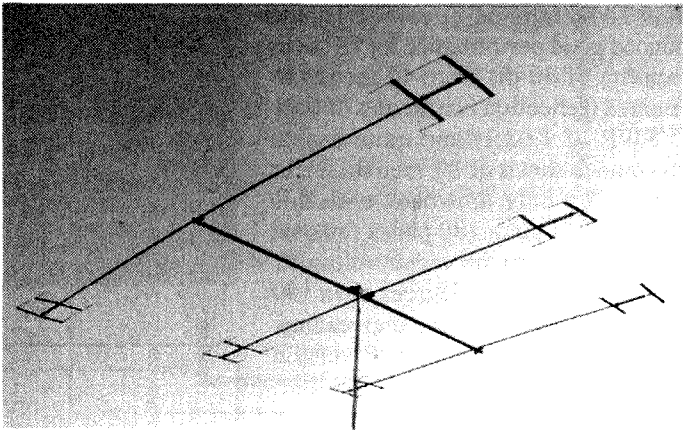
Radio Club liked it so much that I decided to give it to him as he has possibly more use for it than I do.

ar

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Measuring complex impedances

using the HP8405A vector voltmeter and a return loss bridge

Gary Gibson VK8BN.

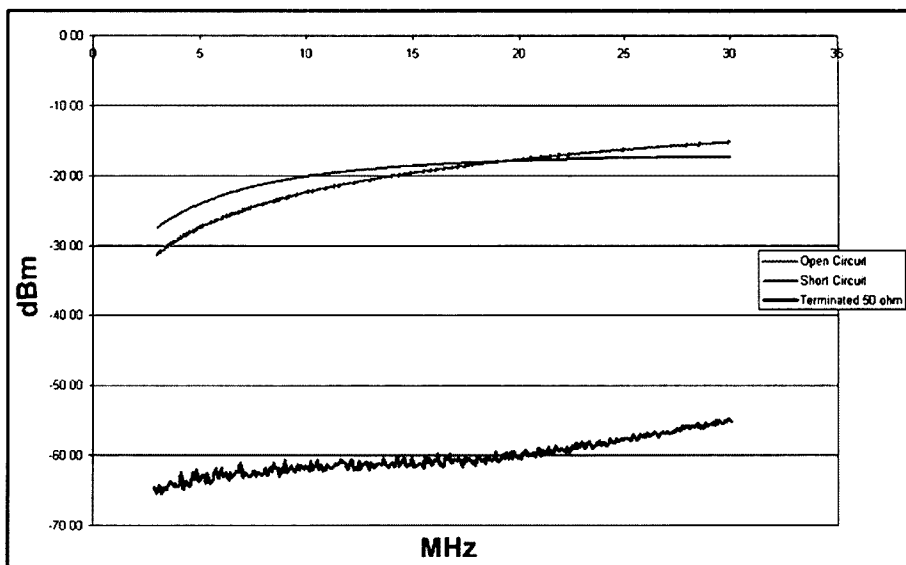
Richard Sawday VK5ZLR in the June 2005 edition of AR described some basic uses for the HP8405A vector voltmeter. In a more recent edition, June 2007, Paul McMahon VK3DIP described a simple wideband return loss bridge. Here I describe how I have put the two items together to measure complex impedances. I do not intend to describe again the construction of the RLB as this has been covered previously. Using the return loss bridge to simply measure return loss or VSWR is great; however by adding the vector voltmeter we have the tool to effectively calculate matching solutions. Using a return loss bridge along with a vector voltmeter the amplitude and phase reading of the vector voltmeter represent the magnitude and phase of the reflection coefficient; if we plot this on a Smith chart we can directly read the complex impedance.

My first experiments were conducted with a RLB as described by Jack Priedigkeit W6ZGN in the October 1981 edition of QST. This bridge was built using 51 ohm chip resistors and a simple balun constructed with 30 bifilar turns of #30 enamelled wire on a stack of four T44-1 toroidal cores. This bridge produced good performance for HF with directivity of 40 dB from 40 metres to 10 metres (reflection coefficient of 0.01 or VSWR of 1.02:1) and quite usable performance down at 80 metres. Refer Trace 1. The only drawback with this bridge is that I get a 180 phase reversal due to the balun so the vector voltmeter must be zeroed at 180 degrees, then 180 degrees subtracted from the final reading. I then tried a slightly modified version of the bridge described by Paul VK3DIP. In my unit I used nine binocular cores and mounted the completed bridge in a box manufactured by soldering pieces of PCB together. I used N connectors instead of BNCs and used single 51 ohm chip resistors instead of two parallel 100 ohm chip resistors. This bridge produced a much greater usable frequency range with, however, slightly less overall directivity performance, 35 dB at 6 metres and 30 dB at 2 metres; still a very good result as 30 dB is only a return loss coefficient of 0.032 or a VSWR of 1.06:1. Refer Trace 2.

The reason for the diverging open and short circuit results obtained with the second bridge is possibly due to the poor quality of my short circuit constructed



Photo 1: The HP 8405A vector voltmeter.



Trace 1

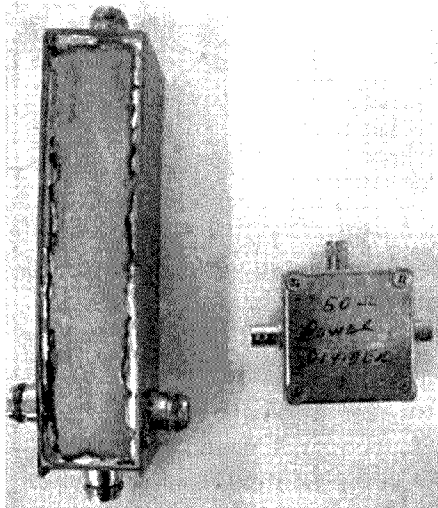


Photo 2: The completed return loss bridge.

with a bit of wire soldered to short out a BNC connector. The traces were done using 50 ohm SMA microwave terminations with a rated VSWR of 1.15:1 at 14 GHz and plotted with an Agilent E4408B spectrum analyser and tracking generator; input to the bridge was 0 dBm. Due to the type of balun, the second RLB did not give the 180 degree phase shift of the first bridge. The results I obtained were not as good as quoted by VK3DIP; however, for real world matching solutions from 80 metres to 2 metres, I am very happy with my results. The other change to Paul's design was my use of semi rigid or hardline coax for the manufacture of the balun.

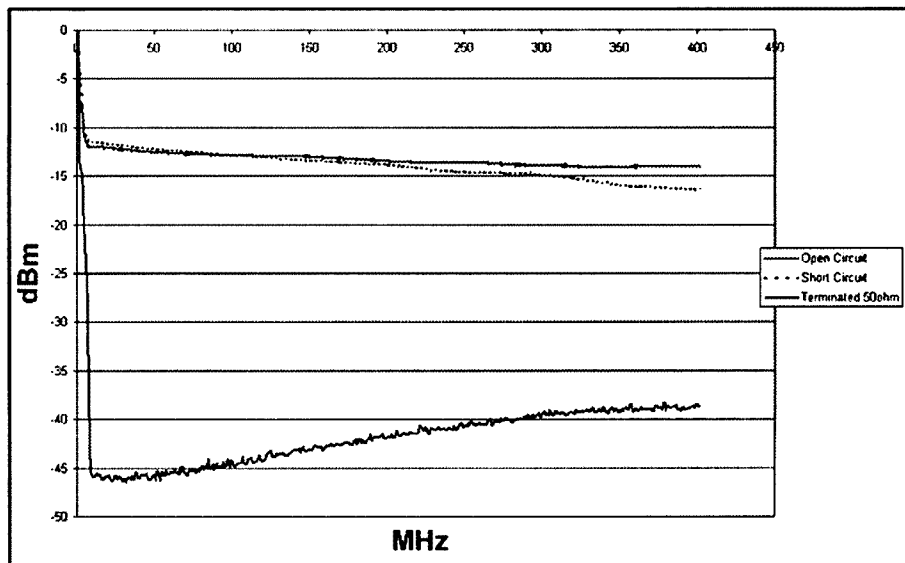
The Setup

Refer Figure 1

The output of a signal generator is fed through a 50 ohm power divider via an adjustable attenuator to the reference A channel of the vector voltmeter. The second output of the power divider is fed via a 10 dB pad to the input of the RLB. The output of the bridge is fed via a terminated tee connector to the B channel of the vector voltmeter.

The 50 ohm power divider is made of a resistive Y network mounted in a diecast box. Each arm of the Y is made from two parallel 33 ohm chip resistors. Each arm of the Y should actually be 16.66 ohm however 16.5 ohm seems to give good enough results.

The 10 dB pad is used to limit the effect of varying impedances on the test output of the bridge.



Trace 2

The Method

Apply a signal from the generator. With the bridge Z_x output unterminated adjust the variable attenuator to match the A channel level to the same reading as that of the B channel (in my set-up this was about 18 dB at 14 MHz) - this will vary with frequency. I also used the 10 mV range on the voltmeter scale to simplify the return loss coefficient readings. Adjust the phase control to zero the phase reading of the vector voltmeter. Now connect the unknown and plot the results directly on a Smith chart using the reflection coefficient scale at the side of the chart and the degree scale around the circumference of the chart. Smith charts can be obtained on line at www.printfreegraphpaper.com

The plot obtained on the Smith chart is normalised, so for instance if we plotted an impedance of $1.2 - j0.6$ the actual impedance for a 50 ohm system would be $60 - j30$ ohm. To check that I was getting valid plots, I terminated the bridge with a short circuit and got a purely resistive result of about 1 ohm; I then terminated the bridge with a 75 ohm

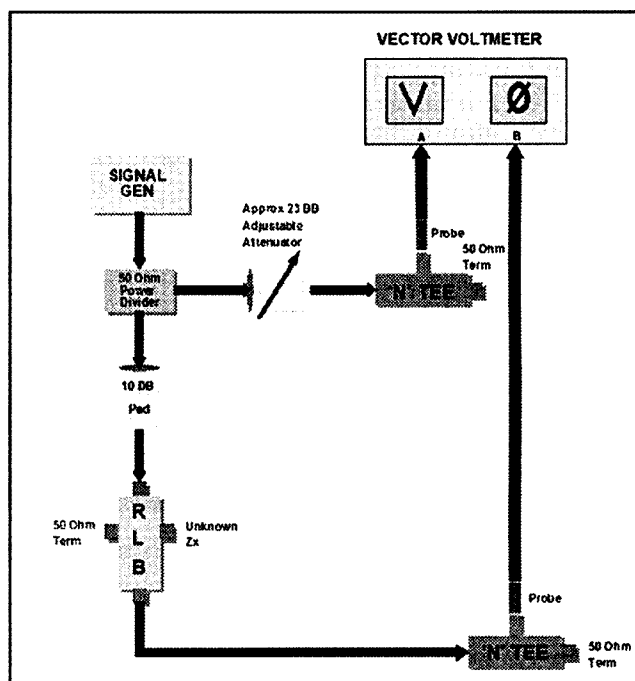


Figure 1: The set up of the return loss bridge to the HP 8405A.

chip resistor and sure enough it plotted right on the money. I then used 100 ohm and again bingo, it plotted just where it should. To check the phase readings, I cut a piece of coax calculated to be 0.125 wavelengths, remembering to take the velocity factor into account. This I measured open and short circuit and sure enough I obtained my 90 degrees both positive and negative. This satisfied me that the readings I was obtaining were actually valid.

continued next page

A better ground plane for mobile antennas

Rodney Champness VK3UG.

Most mobile antennas have less than perfect ground planes. A VHF/UHF antenna mounted in the centre of the roof of a vehicle can be considered to have a good ground plane. For a variety of reasons, mobile antennas are commonly not mounted in the centre of the metal roof of the carrying vehicle. For VHF/UHF antennas, the most likely locations to mount the antenna are on the gutter grip (on older cars), the mudguards at the front of the vehicle or on the boot lid at the rear.

However, it is possible to improve the effectiveness of mudguard and boot mounted antennas by a simple addition to the earthing. It would be nice if the bonnet of the vehicle could act efficiently as part of the ground plane. Normally the bonnet and the mudguard are not earthed directly across to each other where the mudguard mounted antenna base is located – but this can be done.

Looking at the two photographs it can be seen that 'finger stock' as used to RF proof sealed boxes is placed onto the side of the GME antenna base adaptor. It is placed so that the bonnet rubs on the finger stock as the bonnet is closed. It is necessary to remove paint at this particular point and to put a little anti-corrosive paste there to stop any rusting (if the bonnet is metal). By doing this simple modification, a cheap and more efficient ground plane is achieved. I have had my finger stock for several years and I think I got mine from Vorlac (now closed), a subsidiary of Rockby Electronics in Melbourne.



Photo 1: Showing the finger stock attached.

ar

Measuring complex impedances

continued from previous page

The Matching solution

Having measured the complex impedance we are now in a position to be able to calculate a matching solution. I do not plan to go into this process here however the hard work of plotting the complex impedance is done and there are numerous tools available, including those on line to help calculate your matching solution. One great place to look is www.amanogawa.com

I have to thank my XYL, VK8YL, for being astute enough to purchase the HP 8405A at an auction along with an Adret 740A signal generator.

References

“A reflection-coefficient Bridge-Impedance Matching Measurements the easy Way”. Jack Priedigkeit W6ZGN *QST* October 1981.

“Using the HP 8405A Vector Voltmeter”. Richard Sawday VK5ZLR *Amateur Radio* June 2005.

“A simple wideband return-loss bridge revisited”. Paul McMahon VK3DIP *Amateur Radio*, June 2007

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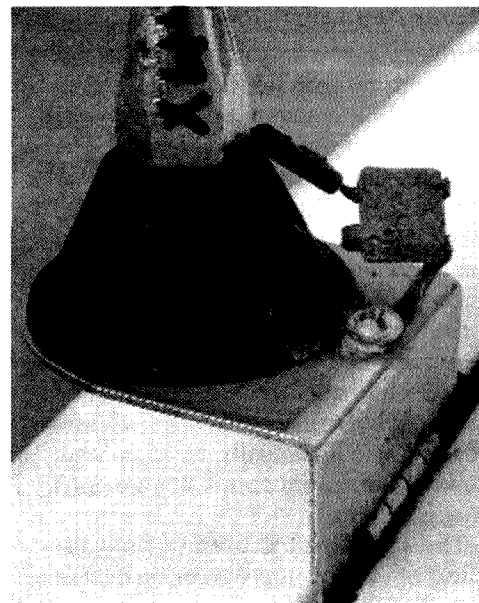
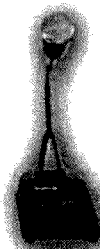


Photo 2: Showing the finger stock with bonnet closed.



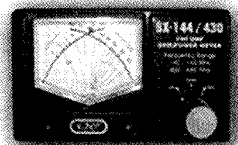
Base (power) mike with channels up/down \$145.-



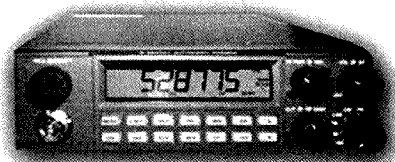
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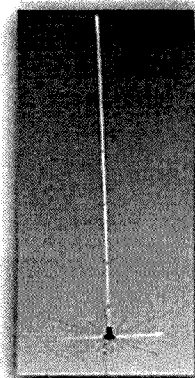


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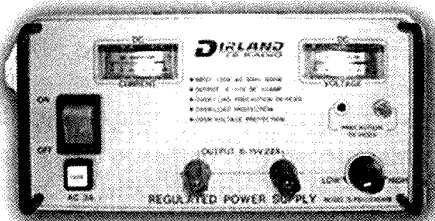


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China is news. China's influence is felt everyday around the world, in trade, international relations and security. No more so than in Australia, where China has now become our most important trading partner, with the total volume of trade in 2007 reaching a staggering A\$52.7 billion. With Australian exports fuelling and building China's soaring economy, this relationship will only increase in size and importance, with a projected \$A25 billion growth to the Australian economy over a 10 year period.

What does this mean for us radio amateurs? It means that there are tremendous opportunities for Australians to travel to China. In 2006 alone, some 538,000 Australians travelled to China for work, study, family and holidays. At the same time, China's amateur radio scene is growing from strength to strength, with an overwhelmingly young and increasingly English speaking amateur population.

This article will give an overview of my amateur radio experience while visiting Guangdong (Canton) province, as well as the general situation of amateur radio in China.

Amateur radio in China

The general situation of amateur radio in China has mirrored the country's development over the last 30 years. In 1980 with new national policies of openness, economic development and social liberalisation, the national amateur radio body, the Chinese Radio Sports Association (CRSA) began establishing club stations with the goal of developing amateur radio as a recreational and educational activity, (rather than the paramilitary 'radio sports' of the past). In 1993, again reflecting further development of the economy and society, private home stations were permitted for the first time since 1949. By 2000, there were close to 900 licensed Chinese amateurs. From 2001 to the present, through the efforts of the CRSA's public awareness and education programmes, the Chinese amateur radio population has grown exponentially from just over 1000 in 2002 to some 32,000 in 2007.

According to CRSA figures, the vast majority of Chinese amateurs range from 18 to 40 years of age. Additionally, some 50% of Chinese amateurs have completed a level of technical or university education. These trends suggest that the amateur population in China is not only young, vibrant and dynamic, but increasingly, English speaking (English education begins in primary school). The staggering growth of China's electronics industry has seen



Photo 1: Exchanging greetings between the ZRSA and the WIA. L to R: He Rongjie BG7IEU, Edwin Lowe VK2VEL, Winnie Gao (ZRSA admin), Fang Yulong BG7IEU (ZRSA Secretary)

a flood of affordable, domestically made amateur radio gear onto the Chinese market (with which VKs are now very familiar), well within the price range of the average amateur. Additionally, imported amateur gear is also well within the range of affordability of the young and prosperous amateur population. The availability of affordable equipment has helped to fuel the growth of the amateur population.

Correspondingly, there has been a proliferation of independent radio clubs,

affiliated to the CRSA, which have taken on the task of public awareness, education, and amateur activities. Again, reflecting the phenomenal growth of the internet in China, there has been a proliferation of dozens of websites, discussion boards and mailing lists dedicated to amateur radio. So much so that an estimated 50% of new licensees enter the hobby through an internet based awareness.

Licensing

The Chinese licensing system is structured into four classes of operator's certificate, and progression involves developing a knowledge base that includes the ability to operate in the English language.

Class 4 is the entry level with the BG prefix call signs. Class 4 operators must demonstrate an understanding of regulations, Q codes, the International Phonetic Alphabet and numbers and the ability to operate in the Chinese language by telephony. Class 4 licensees are permitted access to 10 m, 6 m, 2 m and 70 cm, with 15 W on HF and 30 W above 10 m. About 82% of Chinese amateurs are Class 4 operators.

Upgrading to Class 3 (BG and BH prefix) may follow one of three paths of the applicant's choice.

- 1) A class 4 operator may upgrade though a Morse test of copying 25 words at 5 wpm; or
- 2) by copying five call signs per minute spoken in international phonetic alphabet in a two minute period; or
- 3) by demonstrating operating proficiency by presenting 10 domestic or foreign QSL cards.

Class 3 has HF access to portions of 80 m to 10 m bands (less WARC bands), with 25 W and full access to all bands from 6 m to 248 GHz with 30 W. Class 3 operators make up about 12% of the amateur ranks.

Upgrading to Class 2 (BD prefix) requires a significantly higher level of knowledge and ability. Operators must furnish 10 domestic and 10 DX QSLs; demonstrate an ability to answer and reply to calls in English; demonstrate a Morse ability of copying 25 words at five wpm; copy ten call signs spoken in international phonetics in two minutes; demonstrate knowledge of basic radio and electronics theory. Class 2 is permitted full access to all bands, with 100 W on HF and 50 W above HF.

Class 1 (BA prefix) operators must furnish ten domestic and ten DX QSLs; demonstrate an advanced level of theory knowledge; demonstrate a conversational ability in the English language and send and receive Morse at 5 wpm. One kilowatt is permitted on the HF bands.



Photo 2: Edwin with some members of the Zhongshan Radio Sports Association. L to R: Fang Guocheng BG7Nzc, Emma XYL, Xu Mingsheng BG7PPK, Li Zebin BG7PHQ, Ms Winnie Gao (callsign pending), Zhang Xiaobo BD7IDF, Fang Yulong BG7IEU, "Sausage" (i.e. not yet a ham), Fang Zechuan BG7NZB

Operating in China

Unfortunately at this time, China has not signed any reciprocal arrangements and so does not permit the issue of "station licences" to foreigners to operate their own station. However, visitors for a period of up to 12 months may apply for an "Amateur Radio Operator's Certificate for Visitors", which will permit operation of either an individual or club station as 'your call/host call', for example VK2VEL/BG7IEU. Foreigners intending on residing in China for more than 12 months must contact the CRSA on the matter as different regulations apply.

Applying for a visitor's certificate is a very simple process (allow a minimum of two months for this process before your trip) which involves sending an application to the CRSA, including the following;

An application cover sheet stating name, gender, date of birth, nationality, passport number, class of home license, home call sign;

A photocopy of the document page of your passport;

A photocopy of your AOC and Apparatus Licence;

A passport photo;
\$US5.

The next step is to make contact with potential hosts! The easiest way is to ask the CRSA for a list of clubs and their

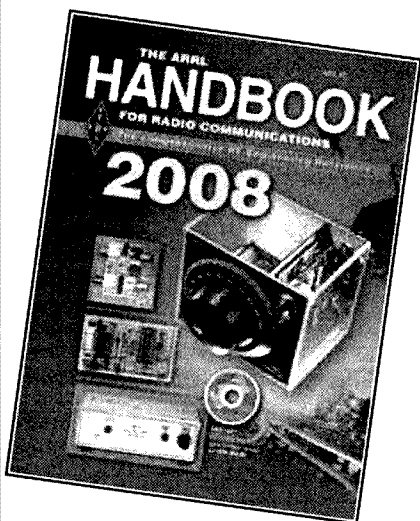
contact details in the places that you intend to visit when you are applying for your visitor's certificate. You might even contact Chinese amateurs or clubs directly. If you are planning your trip to China via your work or through a travel agency, especially those specialising in China, or perhaps you know someone who can communicate in Chinese, you could seek their help in working through the literally dozens of Chinese amateur radio websites. You are certain to find that there will be Chinese amateurs who will be able to communicate with you in English and be willing to host your amateur radio experience.

Amateurs travelling to China via Hong Kong can apply on-line for a reciprocal Hong Kong licence (VK Advanced calls only) through the Office of the Telecommunications Authority.

Zhongshan, China – the Australian Connection

A random QSO on 20 m with He Rongjie BG7IEU at the beginning of 2007 turned into a friendship in amateur radio, after Rongjie stated his QTH as Zhongshan in Guangdong province. Zhongshan in the far south of China, 40 km from Macau, is a regional city on the Pearl River Delta and the cradle of China's revolutionary history. Zhongshan has had a long association with the nations of

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the Pacific Rim. In Australia particularly, Zhongshan people formed the nucleus of early Chinese communities in Sydney, the New England region of NSW and far north Queensland, establishing small businesses, market gardens, produce markets and the banana and sugar industries. In turn China was itself greatly influenced by the Zhongshan people who imported Western technologies, ideas and practises back to China.

Zhongshan's most famous son, Dr Sun Yat-sen led the revolutionary republican movement which overthrew the Imperial dynasty and the 11 year old 'Last Emperor' in 1911, using networks of support and finance in Chinese communities across the Pacific, including Australia. Zhongshan was in fact named after Sun Yat-sen (who is known in China as Sun Zhongshan). Like the name 'Victoria' in the Commonwealth nations, there is a 'Zhongshan' road, park or square in seemingly every city of China and Taiwan (where it is known as 'Chung Shan'), in honour of the 'Father of the Chinese Republic'.

The Australian connection was to change China's shopping habits, when in the first decades of the 20th Century, Sydney based Zhongshan businessmen imported the concept of the Australian department store into China and Hong Kong. The buildings of the 'Big Four' great department stores of Shanghai, staffed largely by Zhongshan people from NSW, still stand along the famous 'Bund' today. These buildings were modelled architecturally and their companies modelled in business organisation and in stock, on the great Australian stores such as Anthony Hordern's, David Jones and Mark Foys. These great Australian entrepreneurs, largely forgotten in Australia today, are celebrated on an entire floor of the four floor 'Zhongshan Commercial Culture Museum'.

Further evidence of the Australian connection in Zhongshan today can still be seen in the colonial style buildings in the pedestrian mall street of Sun Wen Xi Road, and in the smaller businesses of the commercial side streets, all giving the familiar feeling of being in Haymarket, Sydney! Further out in the outer suburbs, once the rural villages, stand literally dozens of enormous walled houses, complete with watchtowers for security, built with money made in Australia, Canada and Hawaii and speaking of the

prosperity in the 19th and 20th centuries. The banana and sugar cane fields in the surrounding countryside (not to mention the climate!) reminded me of northern NSW and Queensland. 'Chinese' people speaking English with suspiciously familiar accents can be randomly heard. An Australian would not feel completely out of place here.

Zhongshan lies in the heart of the Pearl River Delta, one of the booming light industry centres of the modern Chinese economy. The Pearl River Delta accounts for a staggering one third of China's trade value, largely in manufactured exports. The prosperity of 21st century Zhongshan is seen in the modern city, with comfortable broad open spaces, built around the heritage of the old town centre and the outer urban areas. Shopping malls abound, Westerners in education and business are a common sight and the usual familiar fast food outlets are everywhere.

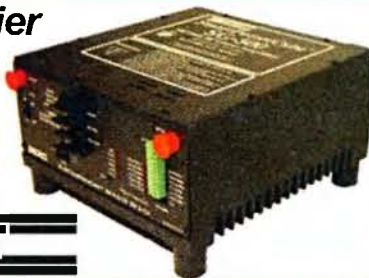
An evening with the Zhongshan Radio Sports Association

In October 2007, I was off to Zhongshan, armed with my CRSA issued visitor's certificate, my AOC (Standard) certified as Chinese Class 2. Prior to the visit, I had contacted my friend He Rongjie and the Zhongshan Radio Sports Association to let them know that I was coming. I was invited to a specially arranged meeting of club members for an evening of amateur radio. I was warmly received by the ZRSA members at the Zero Outdoors Activities Equipment shop, owned by Li Zebin BG7PHQ. The Chinese amateur population is generally young in age and many members of the ZRSA who greeted me are also outdoor adventure enthusiasts and this is one of their meeting places. Although I was familiar with the statistics about the average age of Chinese amateurs, I was still pleasantly surprised to find that I was in the same age group of '30-somethings' as the amateurs who greeted me. It was a pleasant change from the general situation in Australia!

Outside the shop, there was a portable HF station of a Yaesu FT-900 and Diamond multiband dipole and I was invited to the dials. I managed to tune around 40 m and 20 m and called CQ as VK2VEL/BG7IUH/p, although there

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**AMATEUR RADIO OPERATOR'S
CERTIFICATE FOR VISITORS** No T729

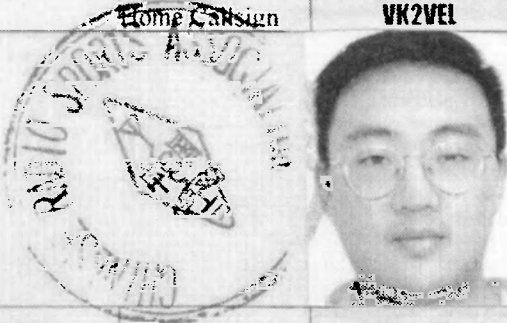
Name	Edwin Hulme		
Nationality	Australia	Passport No	
Date of Birth		Sex	Male
Home License		Home Callsign	VK2VEI
Official Remarks			
Issued Date	12 Oct 2007	Valid Until	11 Oct 2009

Photo 3: CRSA Amateur Radio Operator's Certificate for Visitors

the dials and less time socialising! My new friends also promised that my visit would include a visit to the "Ham Club", a bar restaurant in Zhongshan owned by another local amateur, and another meeting place for the club! So much for more radio time.....

Travelling in Guangdong

Travelling to any of the major cities of the Pearl River Delta in Guangdong province has never been easier. Several airlines offer flights to the region via the capital Guangzhou, Hong Kong or Macau. A return flight to Macau with new budget carrier Viva Macau cost me all of \$A650 return, after tax. Entry visas are required for China (single entry and multi entry are available), although visas are not required for entry to Macau or Hong Kong for Australian passport holders. Connecting flights to other cities of China can also be made from these airports.

Visitors are well catered for in the major cities of Guangdong, where street signs are in dual Chinese and English. In the cosmopolitan, historic capital of Guangzhou, the excellent underground metro voice announcements are also made in English. The metro lines take you directly to the main tourist sites. The major tourist centres of the region are Guangzhou, Shenzhen, Hong Kong, Zhuhai and Macau. The sky is the limit with shopping and visitors can choose anywhere to shop from department stores, malls to street markets. The opportunities for consumer electronics shopping are especially good, and in particular, the excellent Chinese made amateur radio gear can easily be found in Shenzhen.

Contacts

Chinese Radio Sports Association,
P.O.Box 6106, Beijing 100061,
P.R. China.

<http://www.crsa.org.cn/>
Phone +86-10-67050878
Fax +86-10-67050899

Email (none listed but try) crsa@hellocq.net

Office of the Telecommunications
Authority (OFTA) Hong Kong
<http://www.ofta.gov.hk/>

was little time for operating, as the social side of things were getting into full swing.

I presented a certificate of greetings from the WIA to the ZRSA to the club secretary, Fang Yulong BG7IUH. In return, I received a photo of the members of the ZRSA and a car sticker used by the local amateurs bearing the frequency of the 70 cm repeater and the title of CRSA Zhongshan. To prove just how small the world of amateur radio really is, we discovered that the administration

assistant, Ms Winnie Gao is the daughter of my mother's school friends, when she was a school girl in Zhongshan in about 1960. A few moments later, old school friends were reunited on the phone!

An outdoor feast was being prepared while the formalities were underway, and now completed, the festivities began. Following the wonderful and happy meal the evening drew to a close and my new friends invited me to return soon for the next visit. I replied that next time, we would spend more time at



Photo 4: Colonial style buildings on Zhongshan's Sunwen Xi Road pedestrian mall

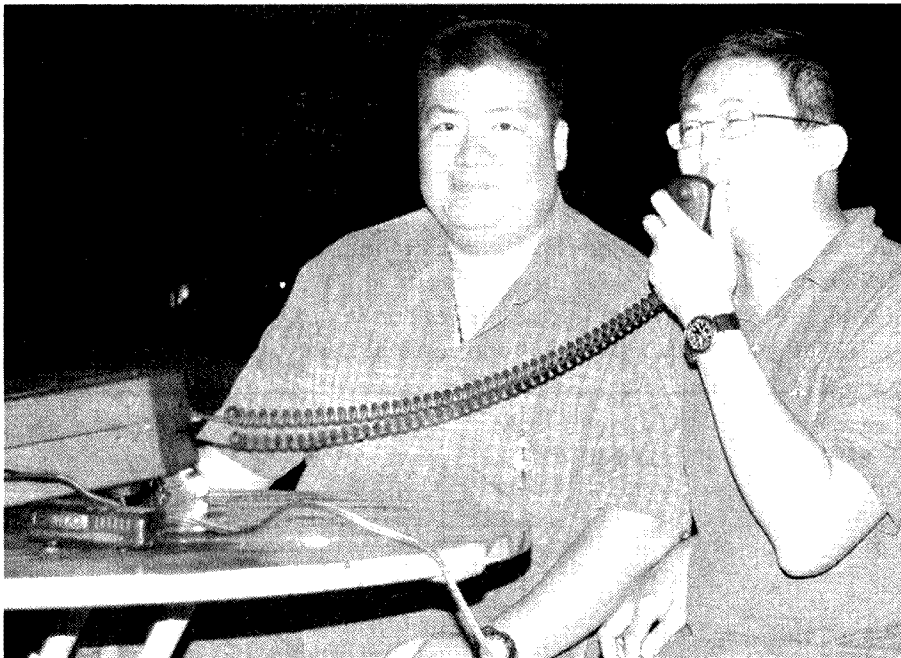


Photo 5: VK2VEL/BG7IUH calling CQ on 20 m

Big White Lie: Chinese Australians in White Australia. John Fitzgerald, UNSW Press, 2007.

The Guo Brothers and the Yong An Company (Cantonese: The Kwok Family and the Wing On Company). John Fitzgerald, La Trobe University.

http://131.172.16.7/stories/guo_bros.htm

Department of Foreign Affairs and Trade (Country and Travel Information)

<http://www.dfat.gov.au/geo/china/index.html>

Author

Edwin Lowe VK2VEL is a Lecturer in Chinese Studies at the Department of Asian Studies, Macquarie University. Edwin teaches Chinese history and contemporary China studies. Special thanks to Michael VK3KI, Robert VK3KRB and Margaret at the WIA for the certificate of greeting to the ZRSA.

ar

Further Reading

The Current Status of Amateur Radio in the Mainland of China. CRSA, 12th IARU Region 3 Conference 2004
<http://www.jarl.or.jp/iaru-r3/12r3c/docs/057.doc>

Status Report of Amateur Radio in the Mainland of China. CRSA 13th IRU Region 3 Conference 2006.
<http://www.jarl.or.jp/iaru-r3/13r3c/docs/021.doc>

Silent keys

Les Gaborit VK2LW

It is with regret that I advise the passing of Les Gaborit VK2LW. He was aged 84. Les was killed in a motor vehicle accident on Wednesday 2 April 2008, when his car ran off the road near Ballina in northern NSW.

He was an active and popular member of the Summerland Amateur Radio Club and a Life Member of the Blue

Mountains Amateur Radio Club. He was also a member of the Alstonville Probus Association and had held the positions of President and Treasurer.

Les served in the RAAF during World War II. In the early 1990s, Les took on the role of net control on a daily (17:00 local time) 80 metre net, after the founder, Col Patterson VK2BCP,

suffered a stroke. Les was also a regular on the Blue Mountains ARC Tuesday night 80 metre net. We extend our condolences and thoughts to his family and friends.

Vale Les Gaborit VK2LW,

John Watt VK2QN,

Publicity Officer, Blue Mountains Amateur Radio Club.

Bruce Cameron VK7GC

Bruce Cameron VK7GC became silent key in the early hours of Thursday the first of May 2008 at the Georgetown Hospital following a short illness with cancer.

Bruce was a well respected member of the Mole Creek community until recent years, when he and wife Betty moved to Georgetown where he soon became

involved with community affairs, in particular Probus.

Bruce joined amateur radio in about 1986 and was a regular member for many years at Northern Club meetings and other state functions when able. Bruce was a foundation member of our 8.30 am 80 metre net and we shall miss his cheerful voice and words of wisdom.

In 2007 Bruce, who was crippled in a logging truck accident in his early life, produced a book from his life's diaries which makes very interesting reading, and demonstrates the determination and character of a man who spent the last 50 plus years in a wheel chair.

Farewell dear friend

from Don VK7AY.

A swept-frequency generator

Paul Anderson VK2GPT

This article describes an instrument which when used in conjunction with a cathode ray oscilloscope (CRO), displays the amplitude/frequency characteristics of linear filters, tuned circuits and the 'Q' of inductors. A total of forty one markers is displayed simultaneously with the frequency response curve. This unit is useful as a teaching adjunct or as a servicing aid in aligning filters used in communication equipment.

A voltage controlled oscillator (VCO), IC3, generates a signal in the range 37 kHz to 800 kHz, the operating frequency being determined by the combined settings of a coarse control VR4 and a fine control VC1. The optional addition of a 390 pF capacitor across VC1 extends the low frequency limit to 18 kHz. Output is available at high (1 MOhm) and low (600 Ohm) output impedances. When filters of specific low input impedances are investigated, they should be connected to the low Z terminals through an appropriate resistive matching pad external to this unit. All outputs, counter and CRO measurements are taken with reference to a common terminal.

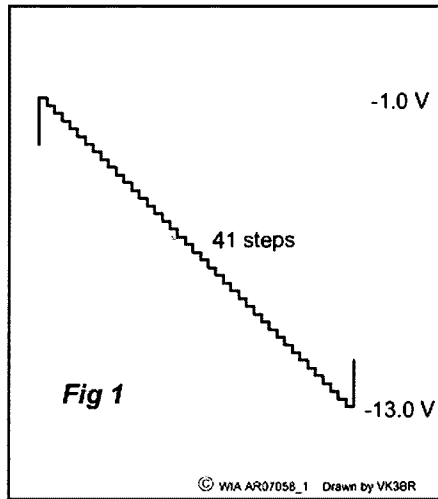


Figure 1: Sweep voltage at output of IC2

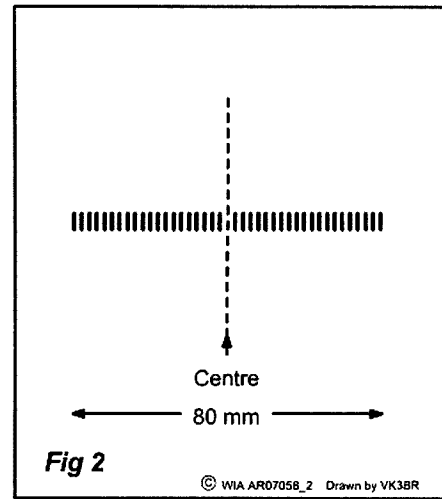


Figure 2: Typical sweep signal on Display

Circuit description

Frequency modulation of the VCO is achieved by applying a varying potential to pin 5 of IC3, such variations being obtained from the output of a staircase generator IC2. The staircase consists of forty one steps which together constitute one sweep. Each consecutive step causes the VCO to change frequency by a small increment. IC2 is an integrator used to linearise the output of a diode pump (C3, D1, D2) fed from a square wave generator IC1. Q1 resets the output of IC2 to start the next sweep. A total of forty one markers per 80 mm of sweep is available for frequency identification. These 'markers' are not actual markers but an artefact that is generated because the oscillator steps between a number of discrete frequencies instead of sweeping continuously.

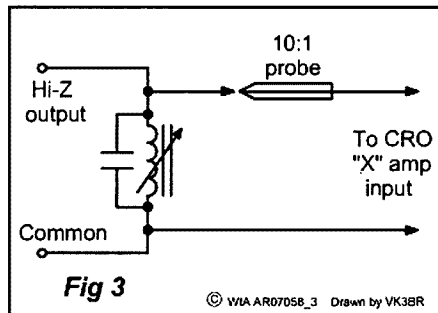


Figure 3: Test circuit to measure resonance curve

Connect the CRO probe to pin 10 of IC1 and adjust VR1 to obtain a square wave of one ms duration. Connect the probe to the unit's terminal marked CRO 'X'. Set VR2 to obtain a descending staircase extending from minus one volt at the top of the screen to about minus thirteen volts at the bottom. Reset VR2 if necessary to avoid the appearance of a straight horizontal line at the bottom. Final setting consists of suppressing the last one or two bottom steps. Figure 1 shows the waveform thus obtained.

Usage

Example: To display the resonance curve of a typical 455 kHz IF inductor.

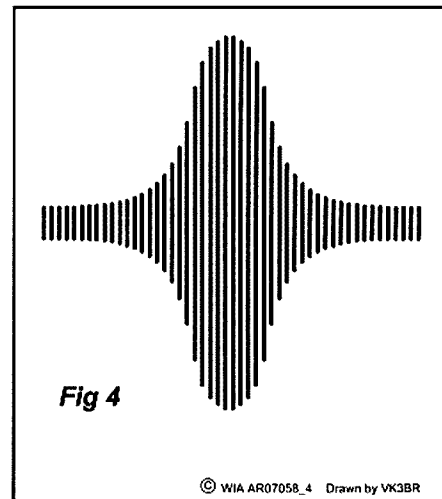


Figure 4: Typical single tuned circuit resonance curve

Note: Most CROs are equipped with a switch to disable the internal sweep and use an external sweep signal to drive the horizontal deflection via the 'X' channel amplifier.

Close switch S1. Connect the unit's 'X' terminals to the CRO's 'X' amplifier input by setting a relevant switch located on the CRO and specifically provided for that function. Centralise the horizontal sweep as shown in Figure 2

Setting up procedure

All CRO measurements are taken with a DC coupling and a passive 10:1 probe. Apply power and allow a warm-up period of at least ten minutes. Set all potentiometers and VC1 to mid position. Set switch S1 to open, that is, no FM.

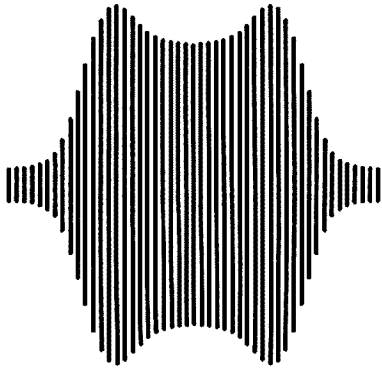


Fig 5

© WIA AR07058_5 Drawn by VK3BR

Figure 5: Typical response of over-coupled pair

(this is shown with the 'High Z' terminal grounded). Connect the inductor under investigation and a 10:1 probe as shown in Figure 3. Rotate VR3 slowly to display a resonance curve. Refer Figure 4. Always search for the largest deflection which is indicative of operation on the fundamental and not on harmonics. The bottom half of the display being a mirror image should be disregarded. Connect a frequency counter to the unit and adjust CV1 to read 455 kHz on the counter. Adjust the slug of the inductor to centralise the pattern on the screen.

Adjust VC1 to place the peak of the response at the start of the scan and take a frequency reading (say, 432 kHz). Do

All resistors 0.5 W, 1% metal.

Parts List				
R1	5K6	VR1	100K	lin pre-set
R2	8K2	VR2	2K	lin pre-set
R3	1K	VR3	100K	lin
R4	1K	VR4	20K	lin
R5	1K5			
R6	22K	C1	2n7, 100V polyester	
R7	10K	C2)		
R8	2K	C5)		
R9	1M	C6)		
IC1	CD 4047	C9)	220n, 50 V, monolithic	
IC2	TL 071	C3	4n7, 100 V, polyester	
IC3	LM 566	C4	220n, 100V, polyester	
		C8	1n, 100 V, polyester	
		C10	100p, 5%, ceramic	
		C11	220n, 50 V, monolithic	
		C12	100p, 5%, ceramic	
Q1	2N 6027			
	Optional – 390p,			
	ceramic			
D1	1N 914			
D2	1N 914			
VC1	Mini tuning capacitor,			
	60-160 pf,			
	two sections in parallel,			
	Jaycar RV 5728			

the same at the other end of the scan and note again the frequency (say, 480 kHz). The difference between the two is the total shift (480-432 = 48 kHz). Therefore two consecutive markers are separated by $48/40 = 1.2$ kHz.

A typical response for an over-coupled pair is shown in Figure 5. The design can accommodate variations in parameters

such as sweep speed and number of markers in which case C3/C4 may have to be altered in value.

The regulated power supply is conventional and shown in Figure 6 together with the circuit of the frequency-swept generator.

ar

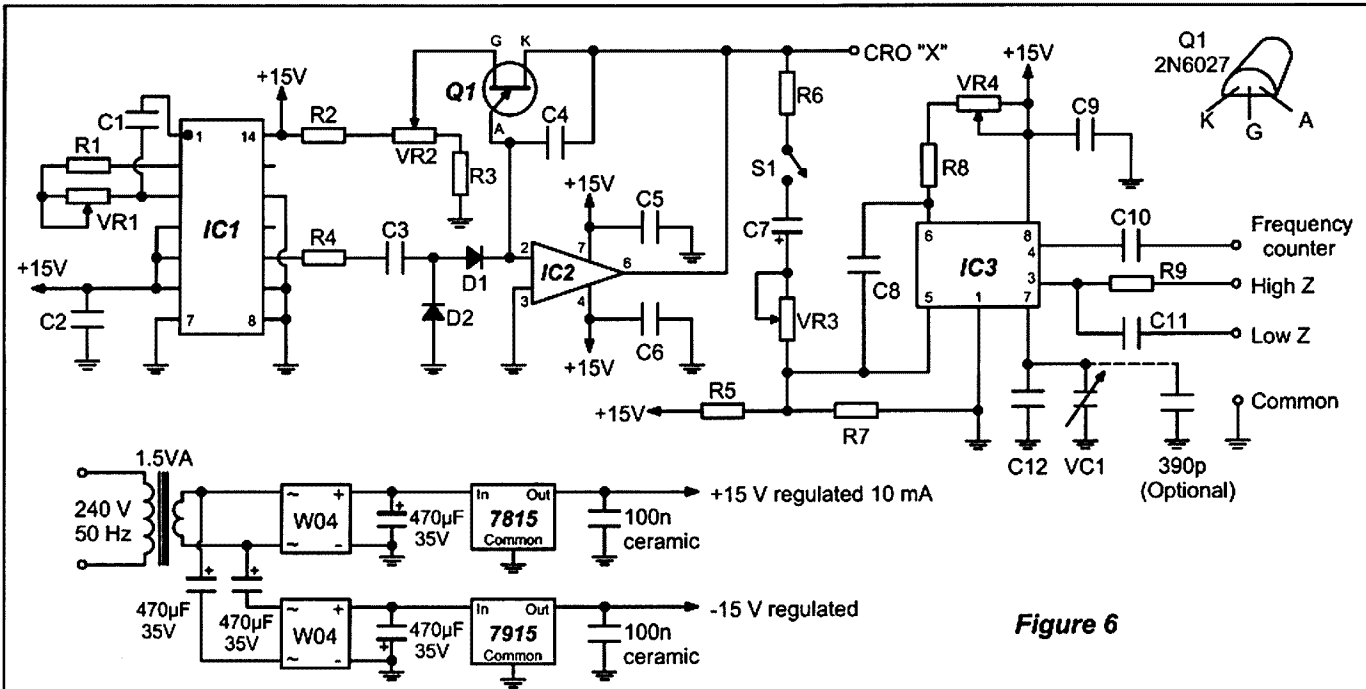


Figure 6

© WIA AR07058_6 Drawn by VK3BR

Figure 6: Circuit of sweep generator

The John Moyle from New Zealand

John Hammond VK4TJH

Some bad planning with timing a trip to New Zealand meant that we were going to be away for the John Moyle weekend. What to do? Obvious – take a radio and aerials with us. My XYL, Catherine VK4VCH, is the competitor in the family and after discussing the holiday limitations, we realised that we would not be in a position to compete for the full 24 hours and it was decided that Catherine would just work the first six hours of the contest, being the Saturday afternoon.

We have a FT-900 that we use portable, and after finding a suitable bag (a microscope case) this was carried as hand luggage. Packed in our bags was a 20 m length of good quality RG58, a quick change balun, wire for a 20 m and 40 m dipole, cord and an extended power cable. We did plan the South Island part of our holiday so that Saturday 15 March would find us at Westport, on the west coast. A couple of chairs were borrowed from the park where we were staying but finding an available table became impossible and we were forced into buying a plastic one (that later was given to friends).

After finding a suitable spot, just above the beach with appropriately spaced trees, a weighted bag soon had the cord over trees and we set up the 20 m dipole. Power came from the hire car battery. Apart from a constant wind, it was a lovely sunny, nearly warm afternoon. Catherine worked 20 m through to about 0600 Z, when she changed to 40 m for the last hour. Around 80 contacts were made into VK, with one JA. Interestingly not one ZL contact was made; this we do not understand.

The end of the six hours was just before local dusk, and by then the temperature had dropped noticeably, and after a quick pack up it was time to find some hot food.

Even with the extra hassle of taking the radio and all the gear, and the explanations when going through customs, it was certainly a worthwhile experience, and even though we were travelling lightly equipped, it just demonstrates how easy it is to be able to operate portable (and if need be in an emergency environment) and to have some extra radio fun, even on holidays.



Catherine VK4VCH operating the John Moyle portable from New Zealand, under her pink umbrella “shack”. Note the power source. The seaside view certainly is very pleasant, and surely assisted with propagation.



ar Catherine VK4VCH hard at work during the John Moyle, from a portable seaside location in New Zealand. Note the microscope case used to transport the FT-900.

Relocation of the Riverland repeater VK5RLD

Doug Tamblyn VK5GA

The Riverland repeater VK5RLD, at Berri in South Australia, is to be relocated to Kingston-on-Murray, some 22 km from its present site.

The present site at Werner's Linen Service in Berri is required for expansion to the premises.

The new site will give better access to the Barossa Valley repeater VK5RBV at Mt Kitchener, and the south east repeaters at Willalooka near Bordertown and Mt Benson near Kingston.

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Photo 2: Standing next to the lowered tower are:
Back, from left: Grant VK5FGME, Ian VK5NIW, Mai VK5MJ and Robert VK5TRM. Front: Doug VK5GA.



Photo 1: Ian Campbell VK5NIW attaching the crane cable to the tower for lowering.



Photo 3: The tower loaded for transport to the new site.

Newcastle celebrates Scouting's centennial

Gianni Mazzantini VK2FGCV.

More than 2500 Scout youth members converged on the Newcastle foreshore on the weekend of the 22nd and 23rd September, to celebrate 100 years of Scouting.

Eighty five scout groups from the Hunter and Central Coast regions of NSW were represented over the two day event that included activities such as abseiling, amateur radio, canoeing, bungee jumping and camping.

A band of enthusiastic Foundation licensees guided by Hunter Radio Group members, set up and manned a portable field station that was tried, tested and proved itself worthy in operations and

resistance to Saturday's gale force winds and threatening rain!

The station used the VK2SOA callsign, which itself attracted a 'Special Event Station' status (and two points for contacts to other scout operators) with regards to 'The Centenary of Scouting 100 Award'. Details are available at www.scouting100award.org/

The station's operators, Paul VK2FPAC, Karen VK2FKRN and

Gianni VK2FGCV (who is also a Cub Scout leader) showed prospective amateurs the ropes and introduced them to basic radio communications, as well as the Echolink system.

The weekend was a steep learning curve for the first timers, but a great rehearsal for the upcoming worldwide event which is JOTA.

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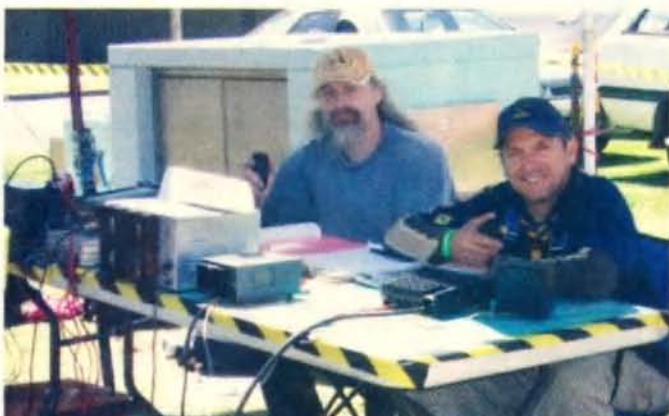


Photo 1: Paul VK2FPAC (left) and Gianni VK2FGCV at the operating position.



Photo 2: Paul VK2FPAC shows a young 'might be' ham how to operate the scout station VK2SOA.

Equipment review

Exploring the complexities of the Yaesu FT-950 HF and 6 m transceiver

Ron Fisher VK3OM, Bill Roper VK3BR
and Eric Buggee VK3AX

The Yaesu FT-950 HF and 6 m transceiver is a 13.8 V operated transceiver designed to be used with an external power supply. It has similarities with both the FT-2000 and the FT-450; however, compared with the FT-2000, it has a single receiver only, 100 watt output, and no inbuilt power supply.

The price range puts it in between these other two transceivers and gives Yaesu the widest range of HF transceivers on the market. The FT-950 measures 365 mm wide by 115 mm high by 315 mm deep and weighs only 10 kg, mainly because of no built-in AC power supply.

The transmitter is set up to cover only the standard HF and 6 m amateur bands but the receiver is full general coverage from 30 kHz to 56 MHz. The transceiver covers all modes, SSB, CW, AM, FM, RTTY and packet.

Worthy of mention at this point in the review, before we get into the 'nitty gritty', is that the FT-950 is a very sophisticated and complex piece of equipment. No doubt many will simply take it out of the box, connect it up to power and an antenna, and operate it quite happily. In fact, the reviewers did just this initially and experienced good results.

However, if you want to get the maximum capability from the FT-950, you will need to spend a considerable amount of time having fun exploring the many menu and other settings.

Similarly, if we were to do a complete review of this transceiver, and explain all of its facilities, we would more than fill an issue or two of *Amateur Radio*. Therefore, this review covers only what we see as the more important features that a prospective purchaser would be interested in. If you want a full set of specifications, then we suggest you look on the internet, or contact a Yaesu dealer to obtain a copy of the comprehensive FT-950 brochure.



Photo 1: The FT-950 HF to 6 m transceiver.

What is the FT-950

The transceiver adopts a triple conversion design with a first IF at 69.450 MHz, a second IF at 450 kHz and a third IF of 30 kHz where the digital signal processing occurs. Three roofing filters with bandwidths of 3, 6, and 15 kHz operate at the first IF frequency immediately after the first mixer. A comprehensive menu system provides access to 118 different sets of adjustments.

Display presentation is very good with S meter, PWR out, SWR, ALC and also input voltage metering, presented in a bright, easy to read linear vacuum fluorescent display format.

Immediately to the right of the metering section of the display panel there are four rows for the various receiver signal enhancement functions. The top row is the 'Contour' function display, the second row is the 'Notch' function, the third row displays the 'Width' function, and the bottom row

is the 'Shift' function. In combination, these control graphics indicate the actuality of the various settings for the individual, key selectable control knobs below the display panel.

Above the aforementioned four rows are displayed the settings for the receiver front end and AGC, which include from left to right, antenna selection, attenuator selection, filter selection (with the optional RF μ Tuning units connected – these were not supplied with the transceiver on test), IPO (pre-amp) selection, roofing filter selection, and AGC decay time constant selection.

Frequency, mode selection, VFO, and Rx and Tx clarifier, are all displayed to the right above the main tuning knob, with its surround of attendant selection buttons for VFO/memory menu and various memory/band stacking control buttons.

To the right of the frequency display are the Band Selection keys in four rows

of three keys, with the mode selection keys to the extreme right.

Below this grouping are the attenuator, IPO, roofing filters and noise blanker keys, with larger than normal concentric control knobs for receiver audio and RF gain. Further to the right are the logically grouped Rx and Tx clarifier keys with the clear key to the extreme right. Below these are the clarifier frequency offset control with its attendant grouping of Rx and Tx indicator/switch LEDs.

At the very bottom of the panel are the MHz and memory channel keys. When the MHz key is pushed it enables the CLAR/VFO-B control to tune the receiver up or down in menu selected steps.

The main display is reminiscent of the FT-2000 and is a very bright fluorescent unit, well sorted out and easy to read. Most people will have the display set on full intensity, which is set through the extensive menu system.

Some of the features of this transceiver include a high speed antenna tuner with 100 memories, a parametric microphone equaliser similar to the FT-2000, a reasonably effective speech processor, and a transmit monitor facility. One of the more useful features is the triple band stacking register, which effectively gives you three memories on each band at the push of the band button.

The CW enthusiast has not been forgotten with features such as the CW

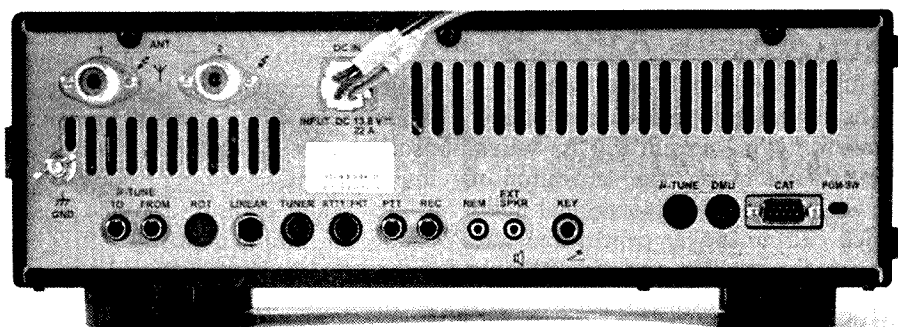


Photo 2: Rear panel of the FT-950 transceiver with the DC input cable plugged in.

zero-in facility, the CW spot switch, key jacks available on both the front and the rear panel, a built-in electronic keyer with 4 to 60 wpm capability, full CW break-in, and five message memories holding 50 characters each.

A very desirable facility is the TCXO (temperature compensated crystal oscillator) which provides 0.5 ppm stability at normal room temperature, ideal for modes such as PSK31 and the like.

The rear panel (see photo) provides comprehensive interfacing with external equipment such as a linear amplifier, a computer, and packet peripherals, plus two antenna inputs which are selectable from the front panel. Unlike some other transceivers, there is no input available for a separate receive antenna, and no low level RF output for VHF/UHF transverters.

The 10 pin mini-DIN socket is used for control of an external linear amplifier; however, the 10 pin plug is very difficult to obtain!

The transceiver is supplied with an MH-31 hand microphone which has up/down frequency buttons on the front and a fast tuning button. On the rear of the microphone is a two position 'tone' switch which, in one position, gives some bass cut in the frequency response.

On the air

As mentioned earlier, the FT-950 requires an external 13.8 V power supply with a peak current rating of at least 22 amps. However, the reviewers found that an earlier Yaesu power supply, an FP-707 rated at 20 amps, was more than adequate to do the job. The power cord supplied with the FT-950 is nearly three metres long with the fuses on both leads

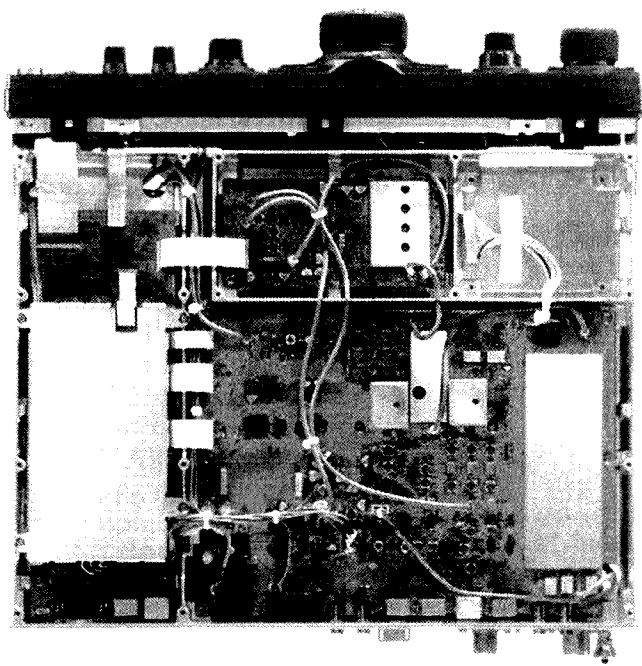


Photo 3: An underneath view of the FT-950 with the case removed.

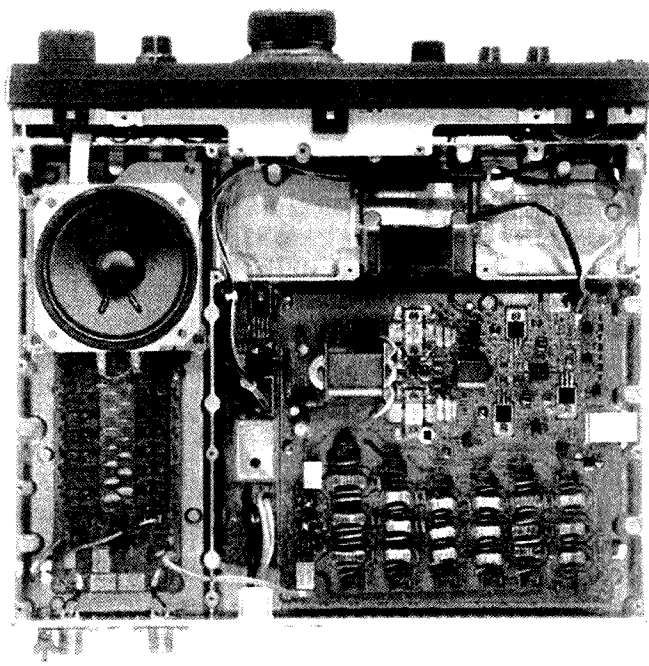


Photo 4: A top view of the FT-950 with the case removed.

within 20 cm of the power supply end. If you want to shorten this lead, replacing the fuse holders would be difficult.

The power lead consists of two entirely separate heavy current (20 A) wires, one red, one black. The separation of the wires decouples their mutual fields which can no longer cancel and will increase the likelihood of stray RF field pickup. In most installations this may not be a problem, but in some situations it certainly will not be helpful. The connection to the transceiver is via the new style "standard" four pin power plug.

On initial setup, the bright display was very much appreciated. However, the labelling for all of the knobs and switches on the front panel is in grey which, in dim light, made control identification somewhat difficult. White would be preferred! Incidentally, one great improvement over the FT-450 is the adjustable height feet under the front of the cabinet.

The receiver

The main tuning control, which is a weighted knob 50 mm in diameter, has a very smooth flywheel effect with the tension being adjustable. Tuning steps are menu adjustable for 1, 5, and 10 Hz on SSB and CW. The 5 Hz step was preferred by the reviewers. AM and FM steps are 100 Hz, and the 'Fast' button increases all the steps by a factor of 10. Frequency readout on the dial is to 10 Hz on SSB and CW.

The second VFO tuning knob, for VFO B for split frequency operation, is 35 mm in diameter. The buttons to select either VFO are brightly illuminated when pressed and make it very easy to understand which VFO is in operation. This control is also used for RIT and XIT operation and for fast tuning in 100 kHz to 1 MHz steps (menu selectable).

The DDS/PLL frequency synthesiser utilises high frequency clocking from a 0.5 PPM TCXO with a divide by four function to minimise close-in phase noise, which confers a cleaner signal on both transmit and receive. In addition, there are four VCOs to cover the frequency range of the FT-950.

99 memories are provided which store all transceiver settings, including frequency.

On initial switch-on, it was found that the receiver audio was somewhat lacking

in high frequency response. Adjustment of the 'Width', 'Shift' and 'Contour' controls overcame this to some extent, while menu adjustment of the carrier oscillator made another worthwhile improvement.

The 'Width' control varies the receive bandwidth from a narrow 1.8 kHz to a wider 3.0 kHz. The 'Shift' control moves the band-pass within the confines of the filter. The 'Contour' control enables you to shape the receiver band-pass by rolling off the high or low frequency components in the received signal. Adjustment and experimentation with these three controls will enable the user to adjust the frequency response of the received signal to suit themselves.

The menu system on the FT-950 is similar to that of the FT-2000 and the FT-450. It contains 118 selectable items, many of which would not be used unless the optional accessories, such as an external automatic ATU, the optional RF μ Tuning kits, or the DMU (Digital Management Unit) were connected.

Any menu item can be consigned to the 'CS' button which is immediately above the 'Menu' button. However, there are a number of often used menu items, such as the DNR (Digital Noise Reduction), the DNF (Digital Notch Filter) and the transmit power output which are a little clumsy to use in a hurry from the menu system. What a pity that Yaesu did not include a stacking register on the 'CS' button to enable quick selection of, say, five or six menu items!

The DNR provides 15 different noise analysis parameters for digital noise reduction. No doubt it is very effective under some circumstances, but the reviewers were not overly impressed with its performance.

The manual notch filter 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 other signals in the passband.

A feature of the FT-2000, FT-450 and this FT-950 transceiver is the inclusion of roofing filters. The FT-950 has three roofing filters at 3, 6, and 15 kHz bandwidth which can be automatically selected by mode. No doubt these make a worthwhile difference under busy band conditions, but the reviewers had difficulty, when tuning around the bands,

in noticing any worthwhile improvement in reception.

Eric VK3AX put the FT-950 through its paces on his comprehensive test bench and found that the claimed performance figures are met and/or exceeded in all major areas.

Eric did not tabulate the measured figures, but commented in one area, that the MDS (minimum detectable signal) performance was exemplary. The MDS for SSB on 14.180 MHz was -135 dBm (0.05 μ V). This figure was typical for all bands from 160 through to 6 metres and was within 0.1 dB band to band. This is most impressive! To explain MDS for those not familiar with the term, MDS is where the minimum detected signal causes a 3 dB increase in the audio output above the internally generated noise of the circuitry of the radio.

The transmitter

On the transmit side, one of the first things to note is the built-in automatic ATU (antenna tuning unit) which operates only on transmit over the amateur bands from 1.8 to 50 MHz, and will provide matching to an antenna feeder with up to 3:1 VSWR. With 100 memories to store various ATU settings, rapid and accurate reselection is obtained.

A speech processor, VOX and a transmission monitor are provided for voice modes. Initial on-air reports of transmit audio quality on SSB again reflected a severe lack of high frequency response. Much menu adjustment and experimentation with the parametric microphone equaliser, and the transmit bandwidth selection (2.2 to 2.9 kHz), finally resulted in a pleasant sounding quality, particularly when using a good desk microphone, such as the MD-1, in lieu of the supplied hand microphone.

With the transmit bandwidth set to 300 to 2,700 Hz we did a frequency response test feeding a calibrated audio oscillator into the microphone input and measuring the transmitter power output. The results were as follows: with 1 kHz set at 0 dB as the reference,

250 Hz was -20 dB;
300 Hz was -12 dB;
400 Hz was -1.0 dB;
500 Hz was -1.0 dB;
1.5 kHz was -1 dB;
2.0 kHz was 0 dB;
2.5 kHz was -2.0 dB;
and 2.7 kHz was -17 dB,

there was no reading at 3.0 kHz input.

This compared favourably with the response of my tried and trusty FT-1000. The response of the FT-1000 was slightly better at 2.7 kHz which was 10 dB down at this point. The bandwidths mentioned in the manual give no indication of the responses in that bandwidth.

When the speech processor was switched into circuit, reports of distortion, without much added 'kick' in the signal, were received. No doubt, after judicious adjustment of the parametric microphone equaliser settings for the speech processor, better results could be obtained.

The transmitter power output is very close to the specified 100 W for each band, plus or minus a very few watts.

The 128 page FT-950 Operating Manual is well illustrated and does a good job of explaining the radio's features and operation. It is well worthwhile spending some time going through the manual and trying all of the features and settings. Yaesu offers a PDF version of the manual on the Web.

Conclusions

Perhaps there are some areas that could be better (such as the menu selection facility), but the FT-950 is a good looking radio with many very nice features and an excellent overall performance.

The Vertex Australia Pty Ltd list price for the FT-950 is \$2,800, but it may be available from Yaesu dealers at a discounted price. Whatever the price, the FT-950 is good value for money.

Thank you to Yoshi and the gang at Vertex Standard Australia Pty Ltd (particularly Peter and Mark) for making the review transceiver available to us.

ar

Comment from Vertex Standard (Australia)

With reference to the difficulty in obtaining the 10 pin mini DIN plug for the external linear control, this plug (Part number T9207451), complete with 2 m of cable with bare ends, is a standard stock item in our warehouse. Contact any of our authorized dealers if you require one.

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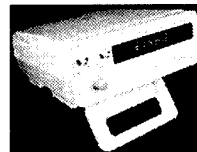
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VK2

Tim Mills VK2ZTM
c/- arnews@tpg.com.au

Earlier this year Jo Harris VK2KAA was honoured by being named Ku-ring-gai Citizen of the Year for her voluntary service to many community groups, including the Ku-ring-gai Historical Society.

Also noted in the award was her involvement in WICEN – in particular the area's storm of 1991 and bushfires of 1994. On the Amateur Radio side was involvement as Mission Control for the Dick Smith VK2DIK Balloon flight and the Wairoonga Historical Amateur Association with the annual special event stations VK2IMD and VK2WAH. For some decades Jo also provided extensive record keeping of VK2 callsigns, and their respective holders and history down the ages.

Oxley Region annual field day is on the Queen's Birthday weekend 7th and 8th, in the Sea Scout Hall in Buller Street, Port Macquarie.

Waverley ARS has notified a change of date for its annual auction from the 21st June to the 12th July. Both these events have the details shown on pages 32 and 33 of May AR.

Riverina Field Day. Also there is the longer notification of this event at the end of August.

Illawarra ARS hold its 60th birthday dinner on the 10th June, and for this month, the special call VI2AMW60.

WICEN has the annual Nav. Shield exercise to the south of Sydney on July 5th and 6th.

Summerland gives advance notice of SARFEST to be held at Richmond Hill on August 10th.

40 years ago...

It was mid year 1968 when the word came through that the Department had approved the operation of 'repeaters' for the two metre band. There were a few unauthorized 'tests' going on, notably 'Fred' at Orange. In the mid 1960's there had been a major revamp of the commercial world when channel spacing halved from 60 to 30 kHz. (It had started at 240 kHz spacing). This placed a lot of surplus equipment on the 'market'. Prior to this time, most amateur operation had

The Lighthouse/Lightship weekend shares the date with the RD Contest, 16th and 17th August.

The Veterans Group which transferred its meetings to VK2WI has found the numbers attending were reducing. It was decided to stop the gatherings during winter and review the position in the spring.

Illawarra ARS put its D-STAR system on air from the Maddens Plains site on the first weekend of May. On 2 metres it is VK2RDS C on 146.7625 with - 600 kHz offset. On 70 cm, VK2RDS B on 439.750 - 5 MHz offset and on 23 cm, VK2RDS A on 1273.900 + 20 MHz offset. 23 cm data was still awaiting a frequency.

The existing services provided by IARS from the Maddens Plains installation remain operational. Further details on the web sites iars.org.au or dstar.org.au

ARNSW (which is the trading arm of the company WIA NSW Division) held its AGM in April with an attendance of 31. The business was dealt with quickly – the attendees appeared interested in the light lunch provided. There were two motions presented. The first was to introduce membership periods of either 2 or 5 years and the second was that, as the WIA commenced in VK2 in 1910, celebrations should be observed locally as well as nationally. The minutes of the meeting have been prepared and are ready for distribution to the ARNSW membership.

This year there were only seven

been with crystal locked transmitters and tuneable receivers, usually in the AM mode. Everyone had 'their' frequency and new arrivals were discouraged from squatting on someone's 'spot'.

The majority of the surplus equipment was in the FM mode, although there were a few AM sets like the Pye Reporter, which could be converted from low band to 6 metres. Most FM equipment headed for 2 metres by either of two methods: Obtaining low band (70 – 85 MHz) and

converting up to two metres, often by physically moving components around, with quite a lot of work involved; or the major method was to bring high band (170 MHz) down to two metres. With no band plans in place FM migrated to the empty space above the AM operation which was in the first megahertz of the band. They settled on the centre of the band, 146 MHz. Soon some wanted more channels and the 'slide rules' must have slipped as channels 146 kHz, above and

nominations received for the nine committee positions. Those standing from last year's committee are Michael Corbin VK2YC, Brian Keegan VK2TOX, Brian Kelly VK2WBK, Beth Langley VK2AO, Norm Partridge VK2TOP and Terry Ryeland VK2UX. Joining this year is Mathew Magee VK2YAP. Not standing from the old committee were Erik Houseman VK2MAN, Noel May VK2YXM and Barry White VK2AAB. These notes were compiled before the first full committee meeting and a caretaker role was being provided by Norm VK2TOP as President and Brian VK2WBK on Secretary/Treasurer matters. The first committee meeting was scheduled for late May.

John Veters VK2JJV has taken on the role of VK2WI news co-ordinator from Erik VK2MAN. Ideally, all news should come in via email – arnews@tpg.com.au – and be lodged by Friday afternoon.

There is a slow turn round on the snail mail - so only use this for notification well in advance. Limited urgent matters may be faxed 02 9651 1661 or the station telephone 02 9651 1489 after 9.30 am Sunday.

Submissions should be less than a page in Arial size 14 or just plain text, written in the third person. The office telephone 02 9651 1490 goes to a message bank. The ARNSW mail address is P. O. Box 6044, Dural Delivery Centre, NSW 2158. If news items come by mail - indicate on the envelope that it is a 'news item'. It helps with the sorting and distribution.

73 – Tim VK2ZTM.

below 146 MHz were established. These were simplex and became known as A, B and C.

A = 145.854; B = 146.000 and C = 146.146 MHz. Some operators in Sydney tried to find the channels and created 146.100 MHz which they found very lonely as they thought it was 146.000.

Very quickly there were plans to develop a national channel plan for the country. This fell on the skills of Chris VK2ZDD who had a meeting arranged at Wodonga, Victoria, in September 1968. All States were represented by attendance or proxy.

The equipment of the day, almost exclusively ex commercial, could only move a short distance in frequency before performance dropped off. Since operation was already taking place round 146, this was taken as the reference. It was found that if one stagger tuned the user equipment so that the receiver covered 145.600 to 146.146 MHz and the transmitter from 145.854 to 146.400 MHz, one achieved simplex and repeater operation. The repeater offset would be 500 kHz.

Many available units were single channel, a few three channel and the rare one, six channels. The meeting adopted the existing three simplex channels and introduced four repeater channels, thought to be enough for everyone. A compromise was reached to introduce a simplex (B) and only two repeater channels, 1 and 4, to limit the cost of crystals and channel capacity in equipment.

Channel 1 was 146.100 in and 145.600 out; 4 was 146.400 in and 145.900 MHz out. The outcome of the meeting became national policy, adopted by the WIA.

All attendees returned to their home

states and filed repeater applications, a slow process of months or even years. As systems developed, it was found that site separation was insufficient; commercial users operated within their service confines with little effect on a reused channel elsewhere, but the Amateur was a DXer and wanted to work the world. System clashes were frequent and pressure mounted to expand channel availability. Another meeting of the Waverley Amateur Radio Society occurred in July 1972 in Albury. That story another time.

To be continued.
Tim VK2ZTM.

Waverley Amateur Radio Society Auction

POSTPONEMENT

The club's 2008 auction has been postponed until Saturday July 12th, due to unforeseen circumstances. All other details remain unaltered.

The venue is the clubhouse in Vickery Avenue, Rose Bay, Sydney. Gates open 8:30 and the sale starts at 10:30. Goods consist of useful ham radio, computer

and electronic gear and it is open to all wishing to buy or sell. No catalogue is produced, but details of some of the items to be sold will be posted on the web site before the sale. Full details are available on the club's web site at www.vk2bv.org or by phone from Simon VK2UA on 02 9328 7141.

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Jim Linton VK3PC

ATV returns

After ten years absence and with assistance from Amateur Radio Victoria, the Amateur TV repeater VK3RBO is back on air and attracting very good reception reports.

It has an input frequency of 1250 MHz FM and an output of 2415 MHz AM. The arrival of the repeater has resulted in old Austar MDS pay TV service antennas being used.

One local radio amateur literally picked up a couple of these discards that had been abandoned after the withdrawal of the microwave delivered subscription television service.

Located at Specimen Hill, the VK3RBO transmissions are delivering

good signal strength over a wide area and definitely stimulated interest in this mode of operation.

Foundation class

The next weekend training and assessment sessions for the Foundation Licence will be 19/20 July and 23/24 August. Enrolments close soon. For inquiries or to enrol contact Barry Robinson VK3JBR 0419 808 323 or arv@amateurradio.com.au

Mentor Hall of Fame

An important aspect of amateur radio is the role that experienced and knowledgeable individuals can play in encouraging new licensees or less

experienced radio amateurs.

What we are talking about is the Mentor (or Elmer) who has exemplified that tradition in our hobby, and from time to time we give recognition to worthy individuals.

They are individuals who have done much more than just teach amateur radio licence classes, although that activity is very honourable.

The latest inductee into the Mentor Hall of Fame is Ash Clark VK3SSB. Observed at the VI3JAM station and associated activities at the Australian Jamboree in January 2007, he made a positive impression in relation to his contributions at the event.

Displaying a maturity beyond his years

News from...

he was looked up to by those only a few years his junior.

Ash VK3SSB is regularly involved in scouting and JOTA taking every opportunity to promote amateur radio within the scouting movement. He also enjoys contests, field days, space communications, SSTV and building his own antennas.

After considering a detailed nomination from four radio amateurs in Western

Victoria plus other supporting evidence, there was no hesitation in announcing at the Annual General Meeting, that Ash Clark VK3SSB is the latest inductee into the Mentor Hall of Fame.

Hamfest stand

It was great to meet with members and others at the Moorabbin District Radio Club Hamfest, one of the major events held in Melbourne.

Our Secretary, Ross Pittard VK3FCE, has created a portable display showing some of the activities of Amateur Radio Victoria in the form of photographs. This has been effectively used at other events and went on display at our Annual General Meeting on 21 May.

In order to meet this month's deadline, a report on the AGM will appear in this column in July.

EMDRC member spotted in suit while storm destroys shack ... and other EMDRC news

Joe VK3FJBC

While most amateurs like to read technical articles in AR, it is best left to those technically qualified to do so.

Instead here is a peek at the "behind the scenes" yarns at the Eastern & Mountain Districts Radio Club which deserves a mention. *Jim VK3AMN is seen here wearing a suit.*

The reason why this is worth printing is because this is a bit like Hayley's Comet. We may never see this happen again. It might be worth saying at this stage that the headline is not entirely true – the suit was not actually being worn when the storm destroyed the shack but both these events are significant enough to make a juicy headline! Thankfully the radio gear was spared and at the time of going to press, Jim advises that the insurance assessor had been out to visit and that all would be well.

In other new items from the EMDRC, club members are busying themselves with many projects to keep warm during the winter months. Notable among these are two types of portable telescopic masts which are to be constructed and sold to members and non-members, a diplexer project proposed by Ray VK3RD, a beginners soldering night being organized and supervised by solder-maestro Andrew VK3BFA, a "return" visit by the members of FAMPARC (Frankston & Mornington Peninsula Amateur Radio Club) and finally, a CW training Course by Jack VK3WWW. Details of all of these are on the club website. Also coming up on EMDRC's social calendar is the (rumoured) attendance of several OMs



Jim VK3AMN attempting a quick getaway



Jim's shack receiving VK3BIGTREE loud and clear

at the ALARA luncheon to be held on 31 May at the Royal Victorian Aero Club at Melbourne's Moorabbin Airport.

By the time this is published, it will be time for the EMDRC AGM on 6 June, with all office bearer positions up for grabs and many items of discussion, this promises to be a busy and eventful night for the club's member base.

And then there is the other upcoming event which promises to be a really big one: the upcoming talk on the Australian

Synchrotron at the July 4 club meeting. Michael Roberts, Senior Education Officer at Monash University Science Centre, promises to reveal more about this device. If things go as planned, it promises to be a "standing room only" event.

The Synchrotron which is about the size of a football field produces high intensity light beams across multiple wavelengths. Synchrotron light has unique features that make experimental

results far superior in accuracy and clarity to comparable conventional lab equipment. For example, synchrotron x-rays are millions of times brighter (more intense) than the x-rays obtained from conventional x-ray machines found in labs and hospitals. More information on this fascinating device can be found at its official website www.synchrotron.vic.gov.au Hope to see you at the July Coffee shop meeting.

Gippsland Gate Radio & Electronics Club

The Gippsland Gate Radio & Electronics Club members would like to announce that on **July 19th**, they will be conducting their **Hamfest Sale** at the **Cranbourne Community Hall** on the corner of Clarendon and High Streets, Cranbourne. High Street is part of the South Gippsland Highway. Melway 133 K4.

Forty tables of goods will be presented at this large venue, but stall holders

should book early as demand is always high. Reservations for stall holders may be made by contacting **Dianne Jackson VK3JDI** on **(03) 5625 2545** or hamfest@ggrec.org.au.

Tables will be available for \$20 each. Doors open at 8:30 am for stall holders and at 10:00 am for buyers. Your admittance fee of \$6 as a buyer will go towards the continuing upgrading of

facilities at our Club Shack and meeting room in Cranbourne. Take away food, plus free tea and coffee will be available. The entry fee includes a ticket in the Door Prize which will be drawn around 1:00 pm for all who register upon entry. Great prizes to be won as usual. Additional tickets can be purchased on the day.

Eastern Zone Amateur Radio Club

GippsTech2008 Update

Chris VK3CJK
Secretary EZARC

The organising team at the Eastern Zone Amateur Radio Club (Inc) is gearing up for GippsTech2008.

This year the event will be held on Saturday July 5 and Sunday July 6. 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 from 2007 will be available for sale during this year's event. Previous years' Proceedings are also available – see the web site for details.

Program

A number of prominent amateurs have already committed themselves to speak. Topics confirmed to date include:

- DSP with the Atmel AVR processors
- Cavity backed dish feeds for 23, 13 & 9 cm

- A versatile PLL Oscillator for microwave applications
- Locking our rigs to GPS references
- Crystal IF filters and the practical issues involved with their use
- A high performance 2 m downconverter
- Minimising EMI from a portable refrigerator
- Non-line-of-Sight Optical Propagation
- Sun Noise and Measurements

Any other amateur (& others with material to contribute) are invited to submit titles and outlines for topics to be presented at GippsTech2008 as soon as possible. Presentation slots can be brief (5-10 minutes) through to one hour. We use a lecture theatre for the formal (& semi-formal) presentations. Potential presenters are welcome to contact the Chair of the Organising Committee

direct (vk3kai@wia.org.au) for further information or to suggest a topic.

Many amateurs bring equipment to display to others, particularly home-brewed projects. A limited number of individuals usually also have items of interest for sale, particularly Alan VK3XPD and Mark VK5AVQ, well known for the goodies that they bring. No, this event is NOT another hamfest, but some trading does occur. Displays and the trading area are open during coffee/tea breaks and in the later portion of the lunch break.

Further information

The conference is held in Churchill about 170 km east of Melbourne, just south of Morwell.

Further details, including registration information, can be found at the Eastern Zone Amateur Radio Club web site at: <http://www.vk3bez.org/>

News from...

The Geelong Amateur Radio Club – The GARC

Tony VK3JGC

The AGM

The 59th AGM was held on April 4 at the club house in Storrer Road, Geelong.

The committee members as elected for 2008 were:

Ian VK3VIN was elected as President for his second year

Peter VK3APJ was elected as Secretary replacing Dallas VK3DJ

Kevin VK3FKEV retained his role as Treasurer

Tony VK3JGC, Dallas VK3DJ and David VK3VLH were also elected to the 2008 committee.

The club president's statement for 2008 was "for many years, the GARC has held its place as a club that aims to achieve and be recognised for its high level of technical expertise and that it will continue to maintain technical standards as its primary goal. During the year several members will be assisted to upgrade their licences to Standard and Advanced levels.

However, in order to promote the great hobby of Amateur Radio to a broader cross section of the community, the club will continue to work with the Geelong Council and affiliated bodies with presentations and demonstrations. Projects already identified are:

- Participation in the Museums On Air on the weekend of the 14th of June with a station set up at the Geelong Regional Museum.
- An open day at the clubhouse during Seniors Festival week in October.
- Some planned interaction with schools in the Geelong and Bellarine Peninsula.
- Continuance of presentations of Amateur Radio to the PROBUS groups in Ocean Grove and surrounding areas."

VK3ATL

Listen for activities from our VK3ATL club station and its companion web site for a planned program of events throughout the year.

Repeaters and Beacons maintained by the GARC

A program of further improvements to our VHF and UHF VK3RGL repeaters is planned along with the re-activation of VK3RGC on the Bellarine Peninsula

The 60th Anniversary of the foundation of the GARC

Planning for this event is being undertaken by Lee VK3PK, who has selected the venue for the celebration

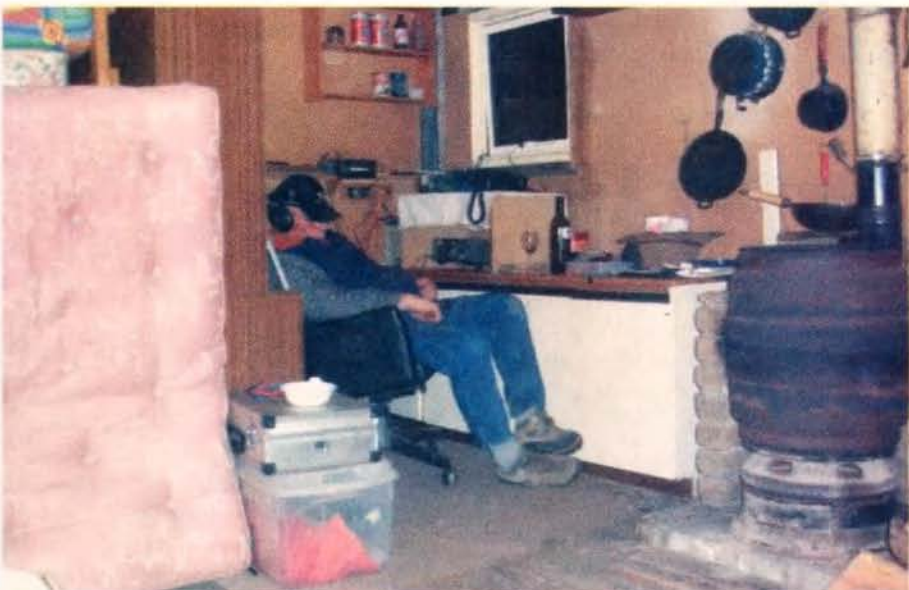
dinner for members and their partners, and a guest speaker for the occasion. Progress and arrangements can be found on the VK3ATL web site.

Construction weekend at Dereel

On a lighter note: over the long weekend of the 25th to 27th of April, some 13 members of the GARC were on site at the Dereel shack of VK3DJ to start work on long planned extensions to the existing building.



Dereel construction. Phase 1 of the alfresco area in progress



Ken VK3NW taking a break at Dereel from drilling the hard surrounds in preparation for the Nally tower, or is he in QSO with Z3ZZZ

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

Our 25th birthday

The May meeting was a special one when AHARS celebrated 25 years of existence. The club had its first meeting in May 1983 when Marshall Emm VK5FN, now N1FN, was elected President. Marshall now lives in the US but sent a long message of greetings and congratulations to the club.

The main topic for the evening was an illustrated talk by Graham VK5ZFZ about early circuits which brought back many memories to the 'oldies' and astonished the 'newbies'. There were two working radios of the 1980s, one an amateur band unit and the other a broadcast receiver brought back from the US in 1985 by the father of Jim VK5JST.



A broadcast receiver from the US.

Copies of AR from that time were on display, along with an essential piece of equipment for every amateur in those days: a Bendix Frequency Meter. John VK5EMI

The birthday cake.

The birthday cake.



Some of the youngsters at the Foundation training event.

gave a PowerPoint demonstration of the history of AHARS, from the material gathered by Lloyd VK5BR, as Historian. Then a cake was cut by a group of early members.

A very satisfactory and enjoyable evening

On the weekend after the birthday celebration, AHARS held an examination at the Aviation Museum. Twelve attendees achieved eight Foundation Licence passes and one Standard Licence pass. Thanks to Sasi VK5SN and all his helpers.

Preparations for the next Buy and Sell are under way. This year we will be at a different location, it will be held on a Sunday, and in a much larger hall in Rosa Street, Goodwood. The whole event is planned to be bigger and better than before. Keep the date Sunday 9th November in your diary.



Cutting the cake are: (l to r) Hans VK5YX, Brian VK5NOS, Ron VK5RV, Meg VK5YG, David VK5OV, and Gordon VK5KGS



An aircraft receiver, used as a communications receiver.

VK7

Justin Giles-Clark VK7TW

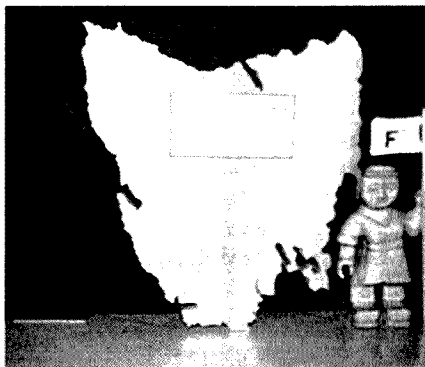
Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

Athol Johnson Memorial Contest Results

Ben VK7BEN, contest manager, is pleased to announce the winners of the Athol Johnson Memorial Contest, and the John Grace Perpetual Trophy.

Overall winner of the Contest was Steve VK7XOR with 641 points, and the winner of the inaugural John Grace Perpetual Trophy was Tony VK7FACC. Congratulations Guys.

John Grace was one of the pioneer builders and operators of VHF and UHF equipment in Tasmania during the late 50's and his trophy is awarded to the Foundation licensee who gains the most points in the Athol Johnson contest.



John Grace Perpetual Trophy with an intrepid F-Call flying the flag!

Northern Tasmania Amateur Radio Club

On April 9 Ken Gourlay, around the world solo yachtsman, was guest speaker at the NTARC dinner meeting. The group heard of Ken's inspirational tales of resourcefulness, persistence, courage and determination. Thanks to Peter VK7KPB for his generous donation for assisting with the upkeep of the VK7RAA repeater.

We welcome our newest Learning Facilitator Idris VK7ZIR, who recently qualified, congratulations Idris. We also congratulate and welcome Don Prewer who is now VK7FAAM.

N. W. Tasmanian Amateur Radio Interest Group

On 12 April at a general meeting, NWTARIG discussed the on-going maintenance issues at the Mount Duncan repeater site. Wayne VK7FWAY and Eric VK7FEJE have already over-flown Mt. Duncan and taken photos to assist the planning to get a maintenance crew flown in to replace faulty batteries. Thanks to all who have offered assistance.

Using the 2 m repeater VK7RMD for Slow Scan and sharing with voice traffic was voted for overwhelmingly. The SlowScanTV net gateway of VK7AX is now the Mountain Duncan Repeater and great SSTV pictures were exchanged.

Nightly broadcasts can be heard on the 2 m repeater VK7RMD from 7:30 pm Monday to Friday and also in the Launceston area via EchoLink through VK7HBR on 145.425 MHz and also on 145.350 MHz. in Ulverstone on the Central Coast. For broadcast details see <http://203.24.120.3/spectrum/>

Radio and Electronics Association of Southern Tasmania

Congratulations to Andrew Welch who passed his Advanced assessment and is now VK7WWW and according to OM Brian VK7BW, is hereafter known as "Triple Scotch"!

REAST is trialling an alternative method of training for the Foundation amateur radio licence and is part of the Saturday afternoon "Winter Project" sessions. A checklist has been developed that follows the syllabus that a prospective F-Call can complete prior to assessment, with information sessions provided by knowledgeable REAST members on a wide range of AR topics. The prospective F-Call must still become familiar with the FL Manual. However, if the checklist is completed then both the practical and theory assessment should be a breeze.

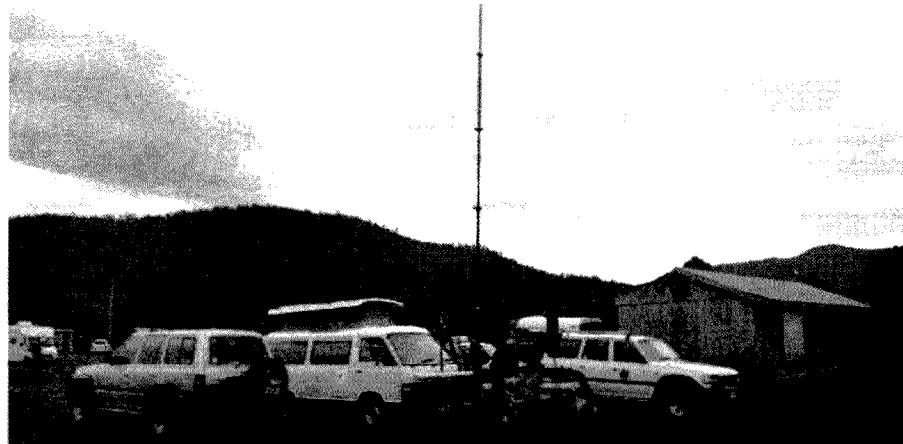
Remember, Foundation Licence Manuals and CDs are available for purchase at McCann's Model World in Elizabeth St. Hobart at \$20.

The ATV group, including our most recent F-Calls: Tony VK7FTCL, Frank VK7FINF and Sam VK7FSTL have put together some very professional promotional AR introductions and "See the Voice" interviews that really promote the hobby through ATV.

These presentations are on YouTube : <http://reast.asn.au/events.php#ATVnights>

A year after the BS7H Scarborough Reef DXpedition, REAST screened the professional video produced by DXpeditioner James Brooks 9V1YC. This was a fascinating insight into this rare and controversial DXpedition.

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The REAST making ready at dawn

The Annual General Meeting

The AGM was held on air on May 5th. There were 22 call-ins. This year conditions were good for most stations: Marilyn VK3DMS, as President, could hear everyone, which has not always been the case. There are a few changes to the committee this year but there has been no problem getting people eager to participate. ALARA is alive and well!

ALARA Office Bearers for 2008/09

President: Marilyn Syme VK3DMS

Senior Vice President:

Tina Clogg VK5TMC

Junior Vice President:

Shirley Tregellas VK5JSH

Treasurer:

Margaret Schwerin VK4AOE

Souvenir Custodian:

Margaret Schwerin VK4AOE

Secretary: Susan Brain VK7LUV

Editor: Dot Bishop VK2DB

Librarian/Historian:

Sue Southcott VK5AYL

Minute Secretary:

Jenny Wardrop VK5ANW

Contest Manager:

Marilyn Syme VK3DMS

Publicity Officer:

Christine Taylor VK5CTY

Public Officer:

Robyn Gladwin VK3WX

Sponsorship Secretary:

Maria McLeod VK5BMT

Awards Manager:

Kathy Gluyas VK3XBA

State Representatives

VK1/2: Dot Bishop VK2DB

VK3: Jean Fisher VK3FJYL

VK4: Pamela Benner VK4PTO

VK5/8: Jean Kopp VK5TSX

VK6: Bev Hebiton VK6DE

VK7: Rosanne Webb VK7NAW

Marilyn thanked the committee for their help in making the organisation run so smoothly. She wished well those leaving and the new-comers.

After the formal meeting was closed there was time for the usual exchange of news.

The forthcoming ALARAMEET in Tasmania

Plans are progressing well for September, at the time we expect about 80 people which is a manageable number. Venues for excursions and meals have been booked and the caravan parks and motels are asking for deposits.

A number of caravans and car loads will be crossing Bass Strait on the night of 10th September but others will make their way to Ulverstone separately.

If you are hoping to go to the MEET but have not yet informed Susan VK7LUV, PLEASE do so ASAP. Otherwise you will be making it very difficult to make arrangements.

Hope to see you there.

The International YL Meet In South Africa

This meet starts in Johannesburg on October 3rd and runs till October 18th. If you have not yet decided to go there is not much time left.

The organisers are Janet ZS5JAN and Vee ZS6ZEN.

If you do not know how to contact these YLs go to Yahoo Groups and then to YL Meets and leave a message.

There are a number of tour options, such as the Apartheid Museum, a visit to Soweto or to the Cullinan Diamond Mine from Johannesburg. There is a visit to the Pilanesburg Game Reserve with both balloon flights and drives through the reserve, from Lesedi Cultural Village where you would be overnighing.

From Durban, you can watch the sunset before your evening meal and next day visit a Marine Theme Park. Another tour will take you to a Zulu Homestead where traditional crafts and dancing will be on show.

Once in Capetown, you could go to the top of Table Mountain or see it from a helicopter or just tour the city and 'shop till you drop'.

With several dinners, and opportunity to meet local amateurs as you travel through the fascinating country, you finish up with a flight back to Johannesburg where it is time to say farewell to everyone and time to enjoy

all the photographs and memories you have gathered in a packed fourteen days.

International YL MEETS are special.

A special event for some children recently

Calling Phoenix

Last Friday, the students in 4Q were treated to a demonstration of a great way to communicate with people around the World. Alicia Simpson's parents bought in two special portable radio transmitters to establish an Internet link with people in Phoenix Arizona USA. The Amateur Radio Group the children talked to in Phoenix included Jane (90), Ken (70+), Carl (70+), Walt (85) and Joe (70). When we spoke to them in the classroom it was 9 am Friday our time and 3 pm Thursday their time.

It was interesting to listen to the very special call signs and procedures that need to be followed to complete the links. Alicia, one of the youngest radio operators in NSW, used her call sign VK2FALI to begin the call. Some other students were able to speak with members of the Phoenix group. They shared information about similarities and differences between the two locations. Alicia studied for her Foundation Amateur Radio Licence in Baulkham Hills during a full weekend course, with instructors from the Hornsby and District Amateur Radio club (HADARC: <http://hadarc.org.au/>)

We thank HADARC for their donation to the school's library of a book titled "Your Entry into Amateur Radio". This is an excellent resource for anybody thinking about getting their Foundation Amateur Radio Licence.

We will chat again in the near future. The students in 4Q will undertake some further research about Phoenix and surrounding districts, and some additional information will be given to our Phoenix friends about our environment.

Item sent by Dot VK2DB member of ALARA and of HADARC.

The AMSAT group in Australia

There have been some important changes in the structure of the group over the past couple of months.

Following the resignation of Graham Ratcliff from his long-held position of co-ordinator, we have a new executive in the persons of Paul Paradigm VK2TXT and Judy Williams VK2TJU.

Paul and Judy will fill the positions of National Co-ordinator and Secretary. There will be a complete merging of the Ozsat group and AMSAT-Australia into the new group to be known as AMSAT-Australia. Details of these events and a "vision for the future" of AMSAT-Australia will be found on the group web site at www.amsat-vk.org.

If you visit the site you will find details of how to join the new group if you wish to do so and details of how to get on the new mailing list for information. It is requested that all further email communications with AMSAT-Australia be forwarded to the following email address secretary@amsat-vk.org or if you need to email Paul directly, please send your emails to coordinator@amsat-vk.org.

While we are on the subject of changes, I had already discussed with Graham that after 20 years of writing the AMSAT column and other items for AR magazine, I had no desire to continue beyond the end of this current year. I am very pleased to say that Paul has agreed to take on that role too.

I think there are many benefits in having the co-ordinator also do the AR column and we are fortunate in that Paul's writing, editing and publishing experience will fit him perfectly for the task. I have agreed to carry on for the next couple of months until he feels comfortable with his new duties, at which time he will take over.

To Graham:

What can I say? Twenty five years of dedicated service to any organisation is remarkable. Graham has been a stalwart of not just the Australian but the world-wide AMSAT communities

since their formation. It has been my privilege to work with him over much of this period. Graham's stewardship of the AMSAT-Australia co-ordinator's role officially began in 1983 but he was involved at various levels well before then. He compiled, produced and distributed the AMSAT-VK Newsletters which ran monthly for 180 issues and played a vital role in the pre-internet, pre-web, pre-packet, even pre-PC days. Communication with and among the VK group amounted to the posted-out newsletters and the weekly AMSAT HF nets which Graham and others hosted with a broadcast and round-robin callback. He organised the purchase and distribution of the wonderful little Sharp Pocket Computers to members after Dr Karl Meinzer DJ4ZC had written a modified tracking algorithm which could be compressed into this little marvel's six kilobytes of memory! To myself and many others, these very basic devices were our first introduction to the mysteries of computing. In the heady days of AOs-10/13/40, Graham was a principal southern hemisphere control station for these birds. A mere 'thank-you' seems so inadequate but thank you Graham for your immense contribution. Like many others, I wish you a happy retirement and it will be great to know that you will at last have enough time to operate on the satellites. I look forward very much to working you on P3E.

On-going arrangements for the nets

The EchoLink net on the AMSAT Conference Server has been moved from the afternoon of the 2nd Sunday to the 2nd Tuesday of each month and to an evening time slot. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. It is hoped the new format will facilitate other aspects like making 'skeds' and for a general 'off-bird' chat. The 2nd Tuesday night net will be held

at 8.30 pm eastern time, i.e. 0930 Z or 1030 Z depending on daylight savings. Please refer to last month's column for details of repeater links and watch the new AMSAT-VK web site for any new developments

A Last Goodbye to UO-11?

Clive G3CWV has been supplying the amateur radio satellite community with regular, and eagerly awaited by telemetry buffs, OSCAR-11 reports for 12 years. I have quoted from them in this column many times in the past. In April, Clive produced his last OSCAR-11 report. This is a significant event, so I will include some of it here. I have edited it a little for the sake of brevity.

Final monthly OSCAR-11 report - April 2008

Clive G3CWV

In the years ahead, it is possible that you may hear OSCAR-11, by accident, when tuning round the frequency. If you are able to record the satellite on audio tape or as a WAV file (not MP3), please do so, as it is unlikely that it will be heard on the next pass! If you need to hear what the satellite sounds like, please visit my website <http://www.users.zetnet.co.uk/clivew/> The satellite transmits on 145.826 MHz. Set your receiver to NBFM. This is the 144th monthly report for OSCAR-11. Unless there is an unexpected change of status (such as occurred with OSCAR-7), I am expecting this to be my last report. Transmissions were expected to resume on 24 March, after the beacon switched-off on 14 March. However, permanent eclipses started a few days beforehand, which probably caused the transmission period to be terminated prematurely. It is now unlikely that the satellite will support any sustained period of operation, and will only transmit for a short time, possibly less than a single orbit, every 21 days.

I am indebted to all those who sent reception reports during the last 12 years. Initially there was much interest in hearing the mode-S beacon, which was very weak. Recently, interest has changed to hearing when the two metre

beacon switched on/off. Special thanks must go to Jeff KB2M who recorded telemetry during my holidays, and Peter ZL3TC, who has monitored the beacon daily, during recent months. The satellite is now subject to eclipses during every orbit. Long term predictions indicate that eclipses will occur until 2019, when there will be some eclipse free periods until 2023. However these very long term predictions should be regarded with caution, as large tracking errors can accumulate over long periods of time.

When telemetry was last received, it showed that one of the solar arrays had failed, and there was a large unexplained current drain on the main 14 volt bus. After 24 years in orbit the battery has undergone over 100,000 partial charge/discharge cycles, and observations suggest that it cannot power the satellite during eclipses lasting more than about ten minutes, or sometimes even during periods of poor solar attitude. The current status of the satellite is that all the analogue telemetry channels, 0 to 59 are zero, i.e. they have failed. The status channels 60 to 67 are still working. The real time clock is showing a large accumulated error, although over short periods timekeeping is accurate to a few seconds per month. When last heard the clock was 83.0958 days slow.

OSCAR-11 was the second satellite from the University of Surrey. It was designed, built and launched, within a time scale of six months, by a team headed by Martin Sweeting G3YJO. Amateur radio groups working at

various locations in the world also contributed to the project. It used commercially available 'off the shelf' components. Following the success of these satellites, in 1985 Surrey Satellite Technology Ltd. was formed, as a commercial venture. This grew into a major company which has produced over 27 small satellite projects for a global market. The University of Surrey has recently agreed to sell its major shareholding to EADS-Astrium. This agreement is now awaiting regulatory approval. The joint company will have the experience of manufacturing large and small satellites, for geo-synchronous and low earth orbits.

In recognition of his work, Martin G3YJO was appointed Professor at the University of Surrey. He received an OBE in the 1995 Queen's Birthday honours list, and in 2002 a knighthood in the New Year's honours list.

Listeners to OSCAR-11 may be interested in visiting my website, which is being updated to reflect the current status of the satellite. If you need to know what OSCAR-11 should sound like, there is a short audio clip for you to hear. The last telemetry received from the satellite is available for download. The website contains an archive of news & telemetry data which has now been updated. It also contains details about using a soundcard or hardware demodulators for data capture. There is software for capturing data, and decoding ASCII telemetry. The URL is www.users.zetnet.co.uk/clivew/

The full text of this, Clive's final

OSCAR-11 report can be viewed at this site. As an old telemetry buff from way back, I want to thank Clive for his dedication to this effort over so many years. Thanks Clive.

Flurry of activity follows the launch of Delphi et al.

As this column was being prepared, Wouter Jan Ubbels PE4WJ of the Delfi-C3 Team announced that the PSLV-C9 launch from India carrying the CUTE-1.7, SEEDS, DELFI-C3, COMPASS-1, AAUSAT-II, and CANX-2 Cubesats into orbit has been successful.

The payload is still to be separated and individually identified as is the case in multiple launches. In a few weeks after shakedown we will know which object aligns with which set of Keplerian elements. I will include a list of frequencies and operating modes in next month's satellite column.

The Delfi-C3 team has released RASCAL, the telemetry decoding software for their satellite mission and it has met with the approval of those telemetry buffs who have tried it. The Delphi website has download details. By next month's copy deadline a lot more should be known about this latest batch of satellites and how we as radio amateurs can help the design teams. In so doing, we will be helping ourselves, and having a lot of fun along the way.

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Over to you

Compatibility caution

I have just taken delivery of some adaptors advertised for sale through Ebay from a Hong Kong supplier.

They were advertised as being PL259/SO239 ground plane adaptors.

Problem is that the threads are not the standard UNEF 5/8" x 24 threads per inch, they are 16 x 1mm.

They are not compatible with our connectors.

I feel a warning should be placed in the next issue of AR advising any members of the WIA that there is an issue with compatibility of threads, even though they are advertised as being the "real McCoy".

John McLean VK2KCE

2009 Callbook preparation

**WANTED
GOOD
PHOTO FOR
CALLBOOK
COVER**

Email to
callbook@wia.org.au
Or mail to WIA
PO Box 2175
Caulfield Junction
VIC 3161

CLUBS

Make sure that
the WA National
Office has your
correct details.
The Callbook
will publish this
information.
Do it by 1/7/08
please, or earlier

**Check
your ACMA
listing
detail**

The Callbook
prints what
comes from
ACMA. Contact
ACMA with your
changes

Spotlight on SWLing

Robin Harwood VK7RH

Winter is very much here and there seems to be plenty of time to listen around, particularly in daylight hours. One thing I have noticed is the major broadcasting allocations seem less congested compared to previous winters.

More broadcasters are rapidly dumping shortwave as a platform, particularly in the west. Contrast this with the decision of the Chinese to dramatically escalate the use of shortwave for relays of both their domestic and external service programming. They also have been jamming many foreign external service programming broadcasting in Chinese and other languages spoken within the PRC. Ten years ago I did not hear any Chinese-based broadcasters in daylight hours but today they can be easily heard 24/7. They have also constructed major relay sites in far western China at Kashi, at Cernik in Albania as well as entering into agreements with other broadcasters to use their sites in Canada, Cuba and Brazil.

I am expecting that broadcasting from Beijing will peak during the Olympics. They want to maximise opportunities that will arise from the Beijing Games. However things did not get off with a good start even before they have commenced with violent

protests throughout the World over the situation with Tibet. Jamming certainly escalated especially against both western and clandestine stations in Tibetan and Mandarin.

I have also noted that there was a dramatic increase in shortwave broadcasts to the African nation of Zimbabwe, following the hotly contested election. There is a well-known clandestine station operating out of London, utilising senders in Africa and Europe. Ever since they commenced, they have been heavily jammed from within Zimbabwe and some media outlets say that the Chinese have assisted in this jamming. Another program emanating from Washington DC from the VOA has also targeted Zimbabwe and has been using senders in nearby Botswana as well as Sao Tome off the West African coast. This also is a jamming target.

With the expansion of shortwave transmissions from China, it is very much a surprise to learn that the VOA will cease Cantonese broadcasts from the end of the current broadcasting period. Cantonese is a widely spoken Chinese dialect throughout SE Asia. I believe that there are further reductions in other VOA sections in favour of an internet-based delivery system.

I also have seen reports that Radio Taiwan International, in Taipei, will cease relays via Family Radio in Okeechobee Florida at the end of this month. Taiwan is regarded as a "renegade" province of China, ever since the Chiang-Kai-Shek Nationalist Government in Nanking fled to the island from the Chinese Communists in 1949. I do not know why this agreement has ended and it seems that Family Radio are the ones who have made this decision. The Oakland California religious broadcaster has been using Florida for their senders. Radio Taiwan International was formerly known as the Voice of Free China and made use of the Florida senders to reach both North America and Europe. In return, Family Radio made use of Taiwanese senders to reach mainland China. Lately Family Radio has commenced utilising senders in Europe and the CIS which are providing better signals than from Taiwan. RTI recently has been trying to determine if there is a sufficient audience base, by asking North American listeners to write in.

Well that is all for June. You can email me at vk7rh@wia.org.au.

73 de VK7RH

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The Gippsland Gate Radio & Electronics Club

Hamfest Sale

July 19th

Cranbourne Community Hall

Cnr of Clarendon and High Streets, Cranbourne.

High Street is part of the

South Gippsland Highway. Melway. 133 K4.

Dianne Jackson VK3JDI on (03) 5625 2545 or
hamfest@ggrec.org.au.

GippsTech2008

Saturday July 5 and Sunday July 6

GippsTech is the premier 2 day conference organised & run by the Eastern Zone Amateur Radio Club Inc for VHF, UHF & SHF enthusiasts in Australia.

including a

Partners' Tour

Any other amateur (& others with material to contribute) are invited to submit titles and outlines for topics to be presented at GippsTech2008 as soon as possible.

The conference is held in Churchill about 170 km east of Melbourne, just south of Morwell.

Further details, including registration information, can be found at the Eastern Zone Amateur Radio Club web site at:

<http://www.vk3bez.org/>

Contest Calendar for June 2008 – August 2008

June	7	QRP Sprint	CW
	7/8	IARU Region 1 Field Day	CW
	14/15	ANARTS WW RTTY	Digital
	14	Asia / Pacific Sprint	SSB
	21/22	All Asia DX	CW
	28/29	King of Spain Contest	SSB
	28/29	Marconi Memorial Contest	CW
	28/29	ARRL Field Day	All
July	1	Canada Day Contest	CW/SSB
	6	VK/trans-Tasman 160 metres Phone Contest	SSB
	12/13	IARU HF Championship	CW
	14	Jack Files Memorial Contest	CW/SSB
	19/20	CQWW VHF Contest	All modes
	20	VK/trans-Tasman 160 metres CW Contest	CW
	26	Waitakere (NZART) Sprint	SSB
	26/27	RSGB IOTA Contest	CW/SSB
August	2	TARA Grid Dip	PSK/RTTY
	2	Waitakere (NZART) Sprint	CW
	2/3	10-10 Intl QSO Party	SSB
	9/10	Worked All Europe	CW
	16/17	Remembrance Day Contest	CW/SSB/FM
	16/17	Keymen's Club of Japan Contest	CW
	30/31	ALARA Contest	CW/SSB

Welcome to this month's Contest Column.

Beru Commonwealth Team Contest - Results

This year, teams from Australia, Canada, Great Britain, New Zealand and the Rest-of-the-World were joined by Team Africa. They made a very creditable start with a little help from an Indian team member (all above board!) but were unable to muster a full team.

Last year's winners New Zealand were hampered by the non-availability of the Quartz Hill super station and a failure of 10 m to deliver conditions enjoyed by other southern areas.

However, these factors do not detract from a superb performance by Team Australia, last year's runners-up, who amassed a marvellous adjusted score of 61,528 to take the title, just ahead of the Rest of the World on 59,791. In third place is Team Great Britain, with

51,830 points. The others are fairly evenly-balanced – Africa on 37,909, New Zealand on 35,023 and Canada on 34,270. It remains to be seen what happens in 2009, when the newly-calculated multiplier suggests another closely-fought competition.

The VK Team members were:

Team Australia: VK6VZ; VK2NU; VK4EMM; VK6BN; VK2BJ; VK6HD; VK6LW; VK4XY; VK2MB (G4OBK); VK4BUI.

Claimed Scores for CQ WPX SSB 2008

VK representation in world-wide contesting is going from strength to strength it seems. The following stations submitted a log for the contest, which is a healthy increase over the previous year's entries. The claimed scores do not seem to have suffered too much from the sun spot cycle however, as they seem similar to the last year or so. More traffic

on the lower bands is evident however, with 10 m being often overlooked as the multipliers are not band specific in this contest. Ten metres can often open to unexpected parts of the globe at various times of the day however, so it is prudent to now visit the band every now and then as DX is sometimes lurking in the ether for a few minutes prior to disappearing beneath the white noise. Whilst not so much of an issue for CQ WPX, for CQWW it is advisable to have 10 m capabilities for those elusive openings if entering an 'all band' section.

The Northern Corridor Radio Group made a special trip to Faure Island for the contest and evidently had a great time on the bands, causing a pile-up or two. Many months of planning went into the trip but unfortunately, Neil Penfold VK6NE had a spot of bother with his health and could not make the trip with the rest of the team. Get well soon Neil!

Callsign	Operator	Claimed Score	Transmitter	Band	Power	Assisted	Overlay
VK6FAU	MULTI-OP	810378	ONE	ALL	HIGH	ASSISTED	TB-WIRES
VK4WIL	MULTI-OP	716616	TWO	ALL	HIGH	ASSISTED	DX
VK4VSP	MULTI-OP	15249	ONE	ALL	HIGH	ASSISTED	DX
VK4HAM	SINGLE-OP	359632	ONE	20M	LOW	NON-ASSISTED	ROOKIE
VK2CCC	SINGLE-OP	4	ONE	20M	QRP	NON-ASSISTED	DX
VK4BAA	SINGLE-OP	205428	ONE	40M	LOW	NON-ASSISTED	DX
VK2APG	SINGLE-OP	2810960	ONE	ALL	HIGH	NON-ASSISTED	TB-WIRES
VK7GN	SINGLE-OP	1271634	ONE	ALL	HIGH	NON-ASSISTED	DX
VK7WPX	SINGLE-OP	213634	ONE	ALL	HIGH	NON-ASSISTED	DX
VK4FRAJ	SINGLE-OP	145179	ONE	ALL	LOW	NON-ASSISTED	ROOKIE
VK3FM	SINGLE-OP	110554	ONE	ALL	HIGH	NON-ASSISTED	DX
VK4FJ	SINGLE-OP	82810	ONE	ALL	LOW	NON-ASSISTED	DX
VK2FHN	SINGLE-OP	54802	ONE	ALL	HIGH	NON-ASSISTED	DX
VK4AMC	SINGLE-OP	52056	ONE	ALL	LOW	NON-ASSISTED	TB-WIRES
VK2KDP	SINGLE-OP	42400	ONE	ALL	LOW	ASSISTED	DX
VK4ATH	SINGLE-OP	32239	ONE	ALL	QRP	NON-ASSISTED	DX
VK1MJ	SINGLE-OP	23871	ONE	ALL	HIGH	NON-ASSISTED	DX
VK3YXC	SINGLE-OP	21204	ONE	ALL	HIGH	NON-ASSISTED	DX
VK4VDX	SINGLE-OP	12672	ONE	ALL	LOW	NON-ASSISTED	DX
VK3TDX	SINGLE-OP	6435	ONE	ALL	LOW	NON-ASSISTED	DX
VK2GR	SINGLE-OP	2820	ONE	ALL	HIGH	NON-ASSISTED	TB-WIRES
VK4XES	SINGLE-OP	1960	ONE	ALL	LOW	NON-ASSISTED	TB-WIRES

Cut Numbers

So, what are 'cut numbers' and what use are they?

You have no doubt heard reports given on CW as 599 or even 5NN. The latter, uses cut numbers for each number 9, represented as an 'N'. Serial numbers also often become 'slimmer', with a 'T' in place of a zero, so 001 becomes TT1 for example, making the new representation have seven characters to send instead of the original fifteen.

'Cut numbers' use a reduced set of dots and dashes to represent the numbers from zero to nine, inclusive. The thinking behind this approach is that a reduced set of characters representing the numbers will lead to less time taken to work a station and therefore allow more stations to be worked during the contest time period. The sending of 'T' and 'N' as replacements for '0' and '9' are fairly commonplace, but things have now moved on a little to include other alternative replacements.

But the cut number approach (unfortunately there appears to be more than a single method used!) can also add to confusion for some unwary recipients, as 005 might become TTE. The two zeroes are swapped-out for two Ts and the five is exchanged for an E, so fifteen characters now become three.

But, could sending exchanges in this

way affect your ability to attract new stations? It is important to recognise that even when you are just coming back to a call – or finishing the QSO, you are making transmissions that might be heard by someone tuning the band. As the person tunes in, they need to listen to what is going on – with the intention of determining if they should try to work you. The ability to lure stations in is a function of how potent your presence is on the band. This potency is essentially the product of how strong you are and how much transmitting you do. In saying "how strong", I am talking about the energy your transmitter is producing - which essentially is measured by looking at a wattmeter with a slow enough time constant to show average power while sending CW.

It is true to say that sending 'dahs' does take some extra time, but it also increases the amount of energy you are putting into the band over time (because the duty cycle of 'dahs' is higher than 'dits'). This higher duty cycle might help make your signal harder to miss when someone is tuning by. It is also important to recognise that there are some number of guys who really do not like hearing a report that is hard to understand and might "vote with their feet" not to bother calling you. Not everyone you work in the contest is in the contest looking to have the best score. A large percentage

of contest QSOs are guys who are "just handing out some QSOs" and they really do not care that much if they work you or not.

Cut numbers should theoretically enable quicker QSOs and therefore more time available for QSOs. Unless the cut number system is universally utilised in the same manner however, it might become counter-productive and cause a number of stations to ignore you and tune away, or ask for repeats for information as the cut number sent is not received as a recognisable exchange.

With my home antenna system, I am unlikely to be in the position of having a huge pile-up to be worried about 'wasted' time due to taking cut numbers to their limits! I'll stick with just T and N for now.

Contest Result Search Engine

If you have been in the position of having submitted a number of logs for various contests and then forgotten about them, have a look at <http://www.qrz.ru/contest/search.phtml>? This nifty facility reminded me of a few contests where I had completely forgotten about submitting a log – not that I would have won or even got highly placed in the listings – but it was good to see that the log had been received!

Many congratulations to the following stations for a superb effort in the contests and for flying the flag for VK:

JIDX 2007 Phone Results

Call	Score
VK6DXI	47,847
VK4BUI	3,901
VK3AVV	2,204
VK4NEF	26,680
VK4ATH	12,240
VK7BEN	6
VK4FJ	1,265
VK6NU	504
VK1KLW	108

CQWW RTTY DX 2007 Results

Call	Score
VK4AN	907,204
VK7GN	113,760
VK2NU	96,159
VK3KE	15,106
VK3TDX	20,790
VK7CAV	5,198
VK4EJ	40,590
VK6DU	31114
VK7AAP/3	864

CW Speed & Contesting

I remember when I first became interested in CW contesting. I was overwhelmed by it. I stood in awe as I listened to the contesting gods in action. It was magic. It was indecipherable. I did not know the code, so I would have to learn it.

Once I became licensed I engaged in contesting immediately under the wing of an Elmer, Dave Lawley G4BUO. Most stations were sending at 25-30 wpm, which was a whole lot faster than I could reliably read. I made a complete mess of the first few QSOs/contests. However, after a while, things did improve.

I had to adopt a different strategy to those already experienced. Running was not a good way to go, for two reasons: my signals were weak as my station was in its infancy (much the same as today actually!) so I could not hold a frequency but more importantly I did not have the skill to run a pile-up because I could not read the code reliably enough at speed.

The answer was to search and pounce

(S&P) instead. This gave me the advantage that I had time to work out who a station was before I tried to give them a call. I could also work out what the exchange he would send would be - even if it included a serial number.

Using S&P only and without the ability to read the code reliably, I was never going to win a contest. I certainly aspired to winning but I realised I had a whole lot to learn before that would become a possibility.

The key to motivation is the setting of realistic objectives. Realising my limitations and understanding that winning was not an option forced me to focus on defining different objectives. When it is a struggle to read the code, a 24 hour contest is close to impossible as it is just too fatiguing. Instead, I would divide the contest up into 1 hour segments or, in the early days, even half hour. I would commit myself for a segment and go for it, aiming to work as many stations as I could. At the end of the segment I would retire away from the rig for a while. Later, I would return for another session. Who was I competing against? Myself!

In each subsequent session I would focus on improving my S&P rate. I did not just try to work stations that sent slowly and I would set out to work stations sending at all speeds. In the case of the faster ones, I would have to listen to three or four of their QSOs before I figured out their call and what my exchange was going to be.

Adopting the above technique ensured I always pushed myself. As a consequence, I found my CW receiving speed rapidly increased. So did my sending speed.

One of the great things about amateur radio contesting is that you can participate regardless of your level of expertise. However, if you decide to participate and expect to win whilst having limited expertise, you may be in for a shock! Use contests for your own purposes and be realistic about what you're trying to achieve. Your most important competitor is yourself. Aim to improve on what you did last time.

Contestants want to work you. They need contacts for points. Some will slow down for you and some won't. A good competitor will always try to make a valid contact and will QRS. Not all contestants are good operators! Do not

let that put you off. Enter contests with a view to learning from them and raising your game.

Using readily available software such as MorseRunner can go at least some way towards getting some practice, but what no software can teach of course, is operating tactics - when to run, when to S&P - or indeed how to S&P, as its simulation is restricted to running - and when to change bands.

Have a go. You have nothing to lose. Contesting is great fun and your fun will increase with increasing skill. One final thought: Callers (regardless of experience) would be best placed not to call a station at a speed faster than they can copy.

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton.

"Hey, Old Timer..."



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John Moyle Memorial National Field Day 2008 Results

Denis Johnstone VK4AIG/VK3ZUX

24 Hour Portable Operation – Multiple Operator

Call Sign	Oper-ators	Mode	Band	Contacts	Score	Place / Award
VK3ER	Multi	Phone	All	837	11410	1*
VK2SRC	Multi	Phone	All	482	7944	2*
VK2MA	Multi	Phone	All	319	7520	3*
VK2HZ	Multi	Phone	All	409	3740	4*
VK4WIS	Multi	Phone	All	331	2388	5
VK2WG	Multi	Phone	All	441	2076	6
VK3BML	Multi	Phone	All	212	1820	7
VK3AWS	Multi	Phone	All	240	1804	8
VK2AOA	Multi	Phone	All	161	1206	9
VK6ARG	Multi	Phone	All	231	1074	10
VK4WSS	Multi	Phone	All	95	712	11
VK4JWH	Multi	Phone	All	236	696	12
VK2BTW	Multi	Phone	All	56	344	13
VK8DA	Multi	Phone	All	81	162	14

VK3FRC	Multi	Phone	VHF	319	7520	1*
VK3UHF	Multi	Phone	VHF	217	4310	2*
VK2EH	Multi	Phone	VHF	135	3910	3*
VK4WIE	Multi	Phone	VHF	177	3316	4*
VK5SR	Multi	Phone	VHF	105	2878	5
VK3JTM	Multi	Phone	VHF	68	1482	6
VK2BV	Multi	All	All	368	2000	1*
VK2ATZ	Multi	All	HF	1311	2618	1*
VK4IZ	Multi	All	HF	1114	2220	2*
VK2AWX	Multi	Phone	HF	937	1834	1*
VK4BAA	Multi	Phone	HF	647	1290	2*
VK5BP	Multi	Phone	HF	369	738	3*
VK2AOJ	Multi	Phone	HF	239	478	4
VK4CHB	Multi	Phone	HF	296	592	5
VK6SH	Multi	Phone	HF	134	268	6
VK4WIT	Multi	Phone	HF	117	234	7
VK2LE	Multi	Phone	HF	104	208	8
VK7WCN	Multi	Phone	HF	120	60	9

Six Hour Portable Operation – Multiple Operator

Call Sign	Oper-ators	Mode	Band	Contacts	Score	Award
VK3XPD	Multi	Phone	All	131	2590	1*
VK3SAA	Multi	Phone	All	143	2104	2*
VK4WIM	Multi	Phone	HF	9	16	1*

24 Hour Portable Operation – Single Operator

Call Sign	Oper-ators	Mode	Band	Contacts	Score	Award
VK4OE	Single	Phone	All	114	2442	1*
VK4TRX	Single	Phone	All	181	828	2*
VK5KBJ	Single	Phone	All	307	798	3*
VK2YJS	Single	Phone	All	33	302	4
VK2FREK	Single	Phone	All	47	130	5#
VK3ECH	Single	Phone	VHF	77	1214	1*
VK3YLV	Single	Phone	VHF	42	754	2*
VK5MFW	Single	Phone	HF	341	682	1*
VK4ART	Single	Phone	HF	275	548	2*
VK5UKK	Single	Phone	HF	173	346	3*
VK4JM	Single	Phone	HF	139	278	4
VK5FAJP	Single	Phone	HF	120	240	5#
VK4EV	Single	Phone	HF	90	180	5
VK3MV	Single	CW	HF	22	44	1**

Six Hour Portable Operation – Single Operator

Call Sign	Oper-ators	Mode	Band	Contacts	Score	Award
VK3DCQ	Single	Phone	VHF	95	1442	1*
VK1XYZ	Single	Phone	VHF	8	190	2*
VK5AGZ	Single	Phone	All	58	236	1*
VK4FHYH	Single	Phone	All	46	176	2.*
VK1AI	Single	All	HF	51	102	1*
VK1WJ	Single	All	HF	41	82	2*
VK3ZPF	Single	Phone	HF	82	164	1*
VK4VCH	Single	Phone	HF	82	162	2*
VK2FGAZ	Single	Phone	HF	69	138	3*
VK2FDMB	Single	Phone	HF	65	130	4#
VK4TGL	Single	Phone	HF	4	8	5

Home Station – 6 Hour

Call Sign	Oper-ators	Mode	Band	Contacts	Score	Award
VK2ZEN	Home	All	All	122	178	1*
VK2KDP	Home	All	All	110	169	2*
VK7HAY	Home	All	All	95	136	3*
VK3KFE	Home	All	All	46	82	4
VK2DAG	Home	All	All	22	71	5
VK4DGU	Home	All	All	12	24	6
VK2FY	Home	All	All	15	24	7
VK2ZTM	Home	All	All	11	19	8
VK8AV	Home	All	All	9	18	9
VK3HV	Home	All	All	9	15	10
VK4FNQA	Home	All	All	4	7	11#

Home Station – 24 Hour

Call Sign	Oper-ators	Mode	Band	Contacts	Score	Award
VK4VDX	Home	0	0	299	443	1*
VK2LCD	Home	0	0	238	353	2*
VK2AFY	Home	0	0	247	343	3*
VK4FABC	Home	0	0	166	263	4#
VK3BBB	Home	0	0	111	200	5
VK3YXC	Home	0	0	122	188	6
VK2ENG	Home	0	0	106	185	7
VK4KEL	Home	0	0	104	181	8
VK3FSTU	Home	0	0	113	180	9#
VK2HBG	Home	0	0	105	161	10
VK3FABV	Home	0	0	101	158	11#
VK3CNE	Home	0	0	101	157	12
VK2BOR	Home	0	0	85	104	13
VK2ASU	Home	0	0	82	138	14
VK2EAH	Home	0	0	73	130	15
VK4BBX	Home	0	0	64	110	16
VK5EMI	Home	0	0	61	101	17
VK2ZTY	Home	0	0	49	94	18
VK4HDX	Home	0	0	47	84	19
VK4AR	Home	0	0	41	82	20
VK4DMC	Home	0	0	46	80	21
VK3IO	Home	0	0	42	77	22
VK2UVP	Home	0	0	42	74	23
VK4ZW	Home	0	0	45	74	24
VK2FMEL	Home	0	0	38	65	25#
VK4ION	Home	0	0	32	57	26
VK3KTM	Home	0	0	28	47	27
VK5HLS	Home	0	0	19	38	28
VK6ZMS	Home	0	0	19	34	29
VK6VVV	Home	0	0	16	29	30
VK2BJT	Home	0	0	11	20	31
VK2JNA	Home	0	0	10	15	32
VK2ZZ	Home	0	0	8	14	33

Short Wave Listener – 24 Hour

Call Sign	Oper-ators	Mode	Band	Contacts	Score	Award
Craig Edwards	Portable	0	0	45	90	1*

- * Certificate Awarded
- # Participation Certificate
- ** President's Cup

Comments on John Moyle Memorial National Field Day 2008

This year's entries came from every Australian mainland call area and Tasmania. However this year there were no entries from across the Tasman from ZL. An effort will again be made in 2009 to suggest to the NZART to inspire some more active interest among ZL amateurs. Especially since VK4VCH, who was in New Zealand as a tourist, operated portable in ZL3. All of her contacts were from other than ZL stations. A few did take part and gave out contacts to other stations, but not that many and no logs were submitted.

I have included all of the results that I received in the totals

and if any are missing, they are completely lost. I can only offer my apologies to anyone so affected. I am sorry if your log is missing, but it did not get to me despite my most careful procedures and cross checking.

Based upon submitted logs, there were some 17,258 contacts, amounting to some 99,248 points claimed. This was pretty heavy contesting, but unfortunately it resulted in only 104 logs being submitted. This is, however, considerably higher than in previous years.

Unfortunately, the numbers of stations who went to the considerable trouble of going out and setting up as a portable station and then not bothering to submit a log as an entry, is still a disappointment. Some multiple operator stations got very big scores this year; perhaps this simply reflects the great and varied planning and implementation efforts required to assemble and operate a multi operator station without operation on one band wiping out the efforts on another band?

Band	S/UHF		VHF		HF	
	Contacts	Points	Contacts	Points	Contacts	Points
24 GHz	3 (0)	30 (0)				
10 GHz	22 (1)	670 (30)				
5.7 GHz	12 (1)	372 (30)				
3.4 GHz	21 (0)	650 (0)				
2.4 GHz	30 (4)	660 (120)				
23cm	224 (94)	4576 (1670)				
70 cm	1116 (777)	17801 (12375)				
2m			2222 (1545)	38718 (24410)		
6m			648 (436)	11051 (6813)		
10m					62(25)	122(49)
15m					372(125)	742(248)
20m					2206 (1646)	4291 (3276)
40m					5790 (6041)	10867 (11402)
80m					4358 (1831)	8360 (3596)
160m					172 (9)	340 (18)
Total	1428 (877)	24759 (14225)	2870 (1981)	49767 (31223)	12960 (9677)	24722 (18580)

Table should be read – 2008 results in bold, and 2007 results in brackets.

This year we had some stations operating on the higher microwave bands up to and including 24 GHz, and there were many more contacts on the other microwave bands than in previous years. This is a good outcome and hopefully an indicator for the future.

The other major change noticed this year was the slight increase in Portable Station operation but a very significantly increased number of Home Stations. This is not in line with the spirit of the contest, which is to foster portable station operation. Clearly there were many more portable station operators who did not submit a log. They are strongly encouraged to do so next year.

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 considerably more activity than last year, but mainly in the southern states. Maybe it follows a weather cycle, rather than the solar cycle.

There were very high temperatures in VK3 and VK5 which probably limited the number of operators because of the possible Total Fire Ban. VHF and UHF activity increased considerably as well, with the higher scoring reflecting the increased numbers of contacts as well as the longer distance of many contacts.

The participation across the various call areas was patchy. The greatest changes were in the great increase in the number of Home Station logs submitted.

Call Area	Portable		Home		Total	
	2008	2007	2008	2007	2008	2007
VK1	3	2	0	0	3	2
VK2	16	17	18	7	34	24
VK3	13	11	9	4	22	15
VK4	17	16	11	4	28	20
VK5	7	7	2	1	9	8
VK6	2	3	2	0	4	3
VK7	1	1	1	0	2	1
VK8	1	1	1	0	2	1
ZL	0	0	0	2	0	2
P2	0	0	0	0	0	0
	60	58	44	18	104	76
	2008	2007	2008	2007	2008	2007

The scoring on VHF may need further revision as the scores produced on VHF are higher than the scores on HF, where the effort required to get a high score out weighs the comparative effort on VHF. However this is not the nature of contesting whereas HF takes time and effort to work the number of stations required, while VHF and UHF require the vagaries of weak signals to achieve a contact?

Maybe next year we can get a few more portable stations out in the field in VK3? Last year the weather was cold and wet which discouraged portable operation and this year the weather over the contest weekend was very hot and for several days before there was the chance of a Total Fire Ban. This would be a sure way to discourage portable operation from any remote location. Perhaps the weather may be kinder next time.

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? In line with last year the Foundation Licence logs were awarded a participation certificate for encouragement.

Only ten Foundation Licensed operators bothered to submit a log. (Four were from VK2, two from VK3, three from VK4 and one from VK5.) There were many more than this logged during the contest. Perhaps they can be better advised next year? All logs submitted by Foundation operators were awarded a certificate.

For the first time in a number of years a shortwave listener – from the Top End – made the effort of setting up a portable station and managed to log some 45 contacts. Well Done!

Perhaps we will receive a Foundation Log from him next year?

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 any paper log completed by hand.

This year there were still a few individuals or clubs who submitted their log only handwritten on paper; while these can be integrated into the scoring they cannot be easily manipulated electronically and are much harder to use. All logs submitted in an electronic form this year were fully readable.

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. (Contact me at vk4aig@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 VKCL (VK Contest Log). Paper logs and scanned files of handwritten logs can also be used, but require considerable manual work on my part to input the data and are not encouraged.

There were a few who complained about the scoring process again this year. These complaints and comments fell into several main categories.

The comparative difference in score and scoring between HF and VHF/UHF contacts.

In fact within the John Moyle Contest, the rules allow for some 27 possible alternative categories as shown below. 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.

Table of alternative categories

Operators	Time	Modes			Bands		
		Phone	CW	All	HF	VHF	All
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						

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.

The second most contentious area is the ‘Non Phone’ modes.

In this contest CW was the only ‘non-phone’ mode allowed for within the rules. All other forms such as RTTY, PSK31, JT65 etc were previously 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.

What assurance can be given that the contacts were in fact using a human operator and not simply a fully automatic station?

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.

Would a further 'Digital Mode' be required in the rules to cope with the range of options?

What distinct modes among the many available options are acceptable?

What log output format would be needed to present the contact exchange information in an acceptable form?

Would a separate 'Digital Only Contest' be the better solution by creating a more even playing field?

There were no comments raised last year when the results were published and so a trial was included in the rules this year for these modes, but no logs were submitted so the matter remains a moot point. I intend to leave them in the rules for 2009.

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.

As only one log was submitted in the CW only category it is clear that a change will be required in the rules to promote a little more interest in the mode. 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. This will be introduced in the 2009 contest.

The number of people who submitted logs claiming 'All Modes' and only logged contacts using SSB or 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.

Only five logs were submitted with all mode and one with CW only.

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.

(Editor's Comment: Denis, if they cannot read the Rules for a particular contest and work out the scoring system, they should not bother! The rules of the other main VK VHF/UHF Contests and the JMMNFD are different, but they are NOT hard to work out!)

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?

Perhaps it is time to reconsider the scoring principles involved and the method of calculating scores? I again look forward to and welcome any feedback on this topic.

Finally there was discussion about the massive scores accumulated by multi-operator club stations: being so much higher than 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.

There is the very low number of CW only logs and the award of the President's Cup.

As there was only one entrant who submitted a CW Only log they automatically collect the President's Cup. Not in any way to discourage CW operation, it is considered that this award may have reached the end of its useful life.

Perhaps, as suggested by this year's winner, there is a good argument that the President's Cup should be awarded to the club Station with the highest overall score, or the highest individual score? I welcome any submissions on this topic and we can put a case to the President for a change of rules in this matter.

Now it is over to you.

If you have a contribution to make on any of these topics, please feel free to contact me. My contact details are already on the WIA web site, as are the rules for this contest – <http://www.wia.org.au> If sufficient interest is raised they can be assembled into an article for subsequent publication in AR.

Well done to all of those stations 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 so please give Peter Freeman editor-armag@wia.org.au anything else you have for later use for the magazine.

Denis Johnstone (VK4AIG/VK3ZUX)
Contest Manager

Breakdown of Contacts by Call Area and Band

SHF/UHF/VHF BANDS

	24 G	24 G	10 G	10 G	5.7 G	5.7 G	3.4 G	3.4 G	2.4 G	2.4 G	1.2 G	1.2 G	70 cm	70 cm	2 m	2 m	6 m	6 m
	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C
VK1	0	0	0	0	0	0	0	0	0	0	0	0	30	21	160	6	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	1168	44	2048	66	154	9
VK2	0	0	0	0	0	0	0	0	0	0	554	42	6081	332	15057	767	2894	156
	0	0	30	1	30	1	0	0	0	0	230	15	3071	161	7941	373	1952	94
VK3	30	3	440	16	192	8	340	14	430	25	3202	161	8345	471	15725	878	7136	368
			0	0	0	0	0	0	90	30	1432	75	6091	371	9726	618	4077	249
VK4	0	0	0	0	0	0	0	0	0	0	300	9	2175	192	6340	404	827	102
	0	0	0	0	0	0	0	0	0	0	520	58	1189	108	2653	317	422	61
VK5	0	0	230	6	180	4	310	7	230	5	520	12	826	73	904	81	192	22
	0	0	0	0	0	0	0	0	0	0	0	0	856	93	2490	170	208	23
VK6	0	0	0	0	0	0	0	0	0	0	0	0	344	46	530	85	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VK7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VK8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
ZL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	30	3	670	22	372	12	650	21	660	30	4576	224	17801	1116	38718	2222	11049	648
2007	0	0	30	1	30	1	0	0	120	4	1670	94	12375	777	24410	1545	6813	436

HF BANDS

	10 m	10 m	15 m	15 m	20 m	20 m	40 m	40 m	80 m	80 m	160 m	160 m
	P	C	P	C	P	C	P	C	P	C	P	C
VK1	0	0	0	0	28	14	134	67	22	11	0	0
	2	1	0	0	24	12	486	243	76	38	0	0
VK2	12	7	73	37	1332	693	5059	2709	4097	2141	208	106
	3	2	40	20	726	365	4231	2333	1277	600	0	0
VK3	2	1	0	0	185	96	1194	664	829	443	20	10
	0	0	4	2	167	85	644	346	317	163	6	3
VK4	68	34	595	298	1923	983	3027	1600	2190	1143	94	47
	40	20	192	97	1658	837	3959	2076	1278	644	12	6
VK5	40	20	66	33	412	211	1173	590	956	480	18	9
	2	1	10	5	366	184	1663	833	474	237	0	0
VK6	0	0	4	2	287	147	92	46	148	74	0	0
	0	0	0	0	126	63	298	149	94	47	0	0
VK7	0	0	0	0	22	11	134	87	100	57	0	0
	0	0	0	0	108	54	96	48	64	32	0	0
VK8	0	0	4	2	102	51	54	27	18	9	0	0
	2	1	2	1	50	25	4	2	0	0	0	0
ZL	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	42	21	21	11	16	10	0	0
2008	122	62	742	372	4291	2206	10867	5790	8360	4358	340	172
2007	49	25	248	125	3267	1646	11402	6041	3596	1831	18	9

Numbers in Bold are for 2008 and other details are from 2007

Inaugural Winter VHF-UHF Field Day 2008

John Martin VK3KM, contest manager

The first VHF-UHF Field Day was run as a trial in January 1989. The response was good, so the Field Day became a permanent event. Then in 1998 Rod VK2TWR suggested that it would be a good idea to have a Spring Field Day as well. This also went well, and activity has continued to increase since then, especially over the last few years.

Now Michael VK3AAK has suggested the idea of a Winter Field Day. This is certainly worth a try, and if it goes well it could become another regular feature of the contest calendar.

This Field Day is being arranged at short notice, so please spread the word. Polling has indicated majority support for a date in early winter, and the date has also been chosen to avoid clashes with major events such as GippsTech.

The rules are quite straightforward. The wording of the details relating to the contest sections has been rearranged for the sake of clarity, but the rules themselves are the same as for previous events. A sample scoring sheet is included with the rules on the WIA web site.

I hope you will be able to participate in the Field Day, and I look forward to receiving plenty of logs.

Dates

Saturday and Sunday June 21 and 22, 2008.

Duration in all call areas other than VK6: 0200 UTC Saturday to 0200 UTC Sunday.

Duration in VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Please note these times carefully, because this is the first VHF-UHF Field Day to be run at a time of the year when daylight saving time does not apply.

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.

Entrants may enter more than one section.

Single operator stations: 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.

Two operators: 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 call signs, or Section C or D under a single call sign. If they enter Section A or B, they may not claim contacts with each other.

Multi-operator stations: Stations with more than two operators must enter Section C or D. If the winners of Section C have also entered Section D, their log will be excluded from Section D. Operators of stations in Section C or D may not make contest exchanges using call signs other than the club or group call sign.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours – please include details in your cover sheet of which 8 hour period should be used for scoring purposes.

General Rules

One call sign per 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. 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. You may work stations within your own locator square. Repeater, satellite and cross band contacts are not permitted.

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 to make the contest exchange.

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.

Band	Locators + Activated	Locators + Worked	QSOs	x	Multiplier	=	Band Total
	(10 points each)	(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
etc.							
Overall Total					=		680

Table 1

continued on page 51

DX: news & views

John Bazley VK4OQ

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

Email:john.bazley@bigpond.com

Most DXers reading this are aware of Bill NG3K's Web page, with information of announced DXpeditions, but just in case you are not, here are the details:

Bill NG3K (bill@ng3k.com) recently made a functional improvement to his ADXO (Announced DX Operations) listing (<http://www.ng3k.com/Misc/adxo.html>). Active DX operations now include a link to the DX Watch spot database. The link is located beneath the call sign in the Call field for most active DX operations listed in ADXO. A user clicking on [spots] will view a real-time list of recent DX Cluster spots for the call in question. DX Watch (www.dxwatch.com) is an innovative second generation DX spotting application that integrates data from packet cluster, qrz.com, and 425 DX News.

The five-man UK YK9G DXpedition team ran two stations around the clock for one week making around 29,500 QSOs. The YK9G Website is at <http://www.yk9g.com/>, including a log search and photos. QSL via G3TXF. Lots of activity from YK recently and the occasional trips there continue by YK1BA.

Island hopping

Dennis Motschenbacher K7BV has announced his plans for a June/July 2008 6-metre DXpedition to two islands in the Caribbean.

He may also be QRV on HF when the "Magic Band" is not open. His first stop will be back to Belize (V3), where he will be QRV from Caye Caulker Island (NA-073) from June 20th to 26th. This is grid EK57xr.

Next stop: even better! Plans are to be on San Andres Island (NA-033) from June 28th to July 6th. This is from grid EK92dm. Dennis says "The budget for this two-island trip is a bit staggering and beyond my pocket book, but I am going to "go for it", believing sufficient financial support will come." Mick McManus W1JJ will be the "DXpedition Treasurer" and QSL manager. Complete details can be found on Dennis' web site at www.qth.com/k7bv/caribe2008

PMM3M will be on the Isle of Arran, EU-123, July 24-28. Ops signed up for this trip are G3VCQ, G3PHO, M0GAV,

2E0TJX, M3VCQ, M1ERS, M0TWS and 2E0JTL. They will be in the IOTA contest and also plan to go to the Isle of Pladda, July 25-26. QSL via G3VCQ direct or bureau.

FP/KV1J and FP/W1MAT will be active from St. Pierre and Miquelon July 9-14. Eric and Matthew, father and son, will be on 80-6 m SSB, CW and RTTY with 100 watts to verticals and a TW2010. They will be on for the IARU contest. QSL to their home calls.

With immediate effect, Tim Beaumont M3SDE is the new QSL manager for the following stations/operations, previously managed by the late Graham Ridgeway (M5AAV): 9M4SEB (OC-295), 9M6XRO, HS0ZHX, 9M6/G3OOK, 9M6XRO/P (OC-133), V8FEO, 9M6DXX, 9M8Z, XU7DXX, 9M6DXX/P (OC-133), A25OOK, XU7XRO. QSL to Tim Beaumont, P.O. Box 17, Kenilworth, Warwickshire, CV8 1SF, England. (It will take some time before the blank cards can be forwarded on to M3SDE, please be patient).

Six operators will activate OJ0, Market Reef, for the IARU HF World Championship July 12-13 with three stations, 160-6 m. The operators will be SM0CKV, OH1VR, OH3RM, W6RGG, AE9YL and K9LA. They will sign OJ0/home call before and after the IARU event, except for OH1VR who has his own OJ0 callsign, OJ0VR. Send for the OJ0/ cards to the individual ops' home calls and OJ0VR via OH1VR. The special call for the contest is not yet known. We will let you know. This operation will be July 11-14 and be multi-single.

A group of serious yachtsmen and rock climbers plan an expedition to Rockall Island, EU-189, a desolate place approximately 490 km off the Scottish Coast. They have room on board for up to eight hams. You can express your interest in going by contacting Andy Strangeway, www.island-man.co.uk, by e-mail at info@island-man.co.uk For more info on this interesting opportunity, check out <http://hamspirit.wordpress.com/>

ZD9: Tom KC0W (ZD7X) now says he will depart St. Helena in late June.

His next DX location will be Tristan da Cunha (AF-029), he plans to be very active as ZD9X for 4-6 months, or more.

KH9: WAKE ISLAND, OC-053 Colin WA2YUN/KH9, will have a three element tribander in a few weeks time. About two months later he will get a power amplifier as well. Colin will stay on Wake Island (OC-053) until the end of 2009. His QSL manager is K2PF.

QSL via G3SWH

Phil G3SWH is the QSL manager of the following stations:

3C5XA, C6AWF, M5BXB, 4S7WHG/p, D68C, MW1BCG/p, 5B4AIZ, EA8/G3XAQ, OH6/G4VXE, 5H1/G3SWH, F/G3RTE/p, OK8XB, 5H3/G3SWH, F/G3SWH/p, PJ2Y, 5R8FL, FO/G35WH, SV8/G3SWH, 5R8FT, FO/G35WH/p, SV9/G4VXE, 5R8FV, G3SWH/mm, UA9CDC, 5R8GO, G3XAQ/6Y5, UI1A, 5R8GZ, G4VXE, UI8A/G3SWH, 5R8HA, G4VXE/C6A, UI8AA, 5R8HA/p, G4VXE/TF, UI8B, 5R8O, G4VXE/VE3, UI9AWD, 5T0CW, G4WFO/6W, UI9BWR, 5Z4LI, G4WFO/HI9, UK8AA, 5Z4WI, G6YB, UK8AWD, 8P9XA, G6YB/p, UK8BWR, 8Q7WH, GD6YB/p, UK8R, 8Q7ZZ, GJ3RTE/p, UU8AA, 8R1PW, GJ3SWH/p, V8JIM, 9G5XA, GJ4VXE/p, VK9NJ, 9I40CA, GJ6YB, VP2V/G6AY, 9J2CA, GQ6YB, VP2MTE, 9M0C, GT6YB, XU7ABC, 9M6LSC, GU4VXE/p, XU7ACT, 9M6PWT, GU6YB/p, XU7ACU, BX3AC, GW4VXE/p, ZF1VX, BY1QH/G3SWH, GW6YB/p, ZF2NT, C4Z, GX6YB, ZS1/G3SWH, C56C, J6/G3XAQ, ZS1RBN, C56VZ, L4D

Phil sends his QSL cards via bureau, direct or after requested online at his website: <http://www.g3swh.org.uk>

DXCC Credits

The ARRL DXCC Desk has approved the following operations for DXCC credit:

9UXEV: Burundi: 2008 Operation

5X1NH: Uganda: 2007 Operation

YK9G: Syria: 2008 Operation

S05A: Western Sahara: 2007 Operation

HZ1PS: Saudi Arabia (note: no dates)

were given – probably any and all)

Christmas Island Press Release #1. It is a great pleasure to officially announce the VK9X Christmas Island 2008 amateur radio DXpedition.

Dates: From July 8th until July 20th
The Crew: Marq VK9XWW (CT1BWW), John VK9XHZ (EA3GHZ), Henry VK9XOR (EA5EOR), Dina VK9XME (EC5BME)

Stations: 3 stations (1 high-power, 2 barefoot)

Bands and Modes: 160 to 6 metres

CW, SSB, RTTY, PSK31 and SSTV
Pilot Stations: Africa: ZS1AU, Asia: JA8BMK, Europe: EA4TD, Oceania: ZL2AL and VK2CZ and North America: K4SV.

QSL Card: via EA4URE direct or by Bureau.

The official Web site is: <http://www.dxciting.com/vk9x/>

An email from Tomi HA7RY, who activated Willis Island last year, says that he is up-to-date with all direct requests. If you have not received yours, then you can email him for confirmation that your

request was received by him. Some of the mail has not arrived (mine included!). The email address is available on qrz.com

Happy DXing.

Special thanks to the authors of *The Daily DX* (W3UR), *425 DX News* (I1JQJ) 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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Inaugural Winter VHF-UHF Field Day 2008

continued from page 49

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 call signs 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 in Table 1 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 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, July 14, 2008. Early logs would be appreciated.

Contest rules and sample cover sheets are available on the WIA website.

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Denise Robertson VK5YL

At the end of January this year Denise became a SK.

She had been in a nursing home for the last couple of years but till then she had been able to stay at home. As long as Denise was at home she always enjoyed her dogs and their activities.

Denise received her amateur licence while she was living in Canberra in the early 50s and became VK1YL. After two stints in America, Denise and David came home to Adelaide when David's mother died and left the family home to them. When she applied for a VK5 licence she was given VK5YL.

submitted by Meg Box VK5YG

William Malcolm (Chum) Ferris VK2CWF 1914 – 2007

It is with sadness we announce the passing of Chum Ferris on 3rd December 2007 at age 93. Chum was the founder and chairman of Ferris Car Radio. He was exposed to the radio "Bug" in his early teens at Noyes Bros, Philips and AWA with an urge to establish a radio business of his own. Aged all of 18 years with a boy assistant and a bank balance of five pounds, Ferris opened in October 1932, in a small shop in Military Rd Mosman,

In 1935, Chum's brother, Mr G I (George) Ferris, joined the firm. In 1936 with a staff of five, the company started manufacturing car radios, making and selling one set to buy parts for the next one. Radio development was stalled by WWII and Ferris diversified, developing gas producer systems for cars, electrical service department, manufacture of toy trains and a stud piggery at Blacktown, to supply pork to the troops.

Chum played a large role in the design and engineering of all the numerous products manufactured entirely in-house. Ferris had strategic coverage nation wide (including three factories at Brookvale) with an all-up staff around 700.

I always found Chum to be a fair businessman and always a gentleman. As a manufacturer of HF marine transceivers, Chum had an interest in radio communications acquiring his first amateur radio licence VK2XWF in 1983, then upgrades to VK2KWF and VK2CWF.

He made many contacts and friends both from home and maritime locations. Being a member of the WIA and Westlakes ARC, he enjoyed his radios right up to six weeks before his passing.

A sector of Australian radio history has now passed on, but Chum will never be forgotten because there will always be a product somewhere with the name "Ferris" on it.

Chum is survived by his wife of 68 years, Joan and two sons John and Bill, grandchildren and great grandchildren.

References:

1. Electronic Australia "When I think back" AUG/SEP 1996
2. Historical Radio Society of Australia, April 2000, no 72

Submitted by: John Emanuel VK2EJP
HRSA member 1183

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

About the only enhanced conditions reported during the month occurred in early May.

On the afternoon of the 9th, the VK6REP 2 m beacon at Esperance was heard in Adelaide. No contacts were reported. On the morning of the 10th, a high-pressure cell had drifted across the south bringing with it some reasonable conditions. Many 2 m contacts were reported between VK3, VK5 (Adelaide) and northern VK7 stations. On the morning of the 11th, Phil VK5AKK in Adelaide worked Karl VK7HDX in Launceston on 70 cm, but conditions were not good enough for 23 cm.

Mid-Winter VHF/UHF Field Day

As has been advertised elsewhere in this issue, due to popular demand, a third VHF/UHF Field Day has been created to fill in the lull between the JMFD and the Spring event.

To align with a minor peak in Es propagation that normally occurs in late June, the Field Day will be held on the weekend of 21-22 June. This date may also be early enough to beat the coldest part of winter.

A number of stations have indicated their intention to be out on a hilltop somewhere, although winter track closures and the presence of snow may hamper some efforts and many may only be out for an 8-hour stint. If you are not intending to be out in the field, please provide as much support as you can from the comfort of your shack by providing contacts and contest points to those who have braved the conditions.

70 cm Band Under Threat

It is sad to see that, once again, one of

our bands is under threat. As reported last month in the WIA notes, the ACMA has commenced a review of operations within the 403 – 520 MHz band seeking input on future options. The discussion paper to be found on the ACMA site states that the frequency range of 430 – 440 MHz is out of scope for the discussion. However, it specifically states that the use of the section of our band from 440 – 450 MHz is up for review. In many of the populated areas, we recently lost large slabs of the 420 – 430 MHz allocation. Now it looks as though 440 – 450 MHz is up for similar treatment. I would urge all of you to contact the WIA to insist that we voice our objection to this to the ACMA in the strongest possible terms.

GippsTech 2008

GippsTech - the premier conference in Australia for VHF/UHF and Microwave enthusiasts - is on again over the weekend of 5-6 July.

Not only will you hear presentations from other fellow amateurs on subjects of interest, but you also get to meet the voices behind the microphones. This is one event that should not be missed if you are interested in the VHF and upwards bands. Try to come for the informal Friday evening meal as it provides a good opportunity for some informal discussions.

EME

Trevor VK4AFL has been a keen EME enthusiast for many years. Early operations were on 70 cm where he developed a large array that was rotatable about its axis to cope with changes in

signal polarisation. Then he erected a satellite TV dish and commenced operations on 23 cm.

Now, with a change in feed, he has the dish operational on 13 cm and is finding it the best of the bands he has used so far. He participated in the recent DUBUS EME contest and reports:

I found 13 cm to be definitely a good band and certainly suits a smaller dish such as my 3.7 m dish. It was helped a lot by WD5AGO's excellent preamp. With about 90 W, CW echoes are quite loud and SSB returns Q5.

Earlier in the year I had a handful of contacts limited to 2301 and 2304 receive, but I purchased a 2320 receive converter from Kuhne Electronic, which I switch in and out as required.

A few days prior to the contest I had a check contact with G3LTF to confirm that 2320 was working. In the contest I worked W5LUA, WA6PY, WW2R, VE6TA, VK3NX, ES5PC, OKICA, G3LTF, DL4MEA, F2TU, SD3F and OZ4MM. For the next contest I expect to have 2424 receive going for the JAs. Carl, SD3F was my EME contact number 1000.

One problem is the continual tuning required to cover the various European frequencies within the 13 cm band, which I found very inefficient and frustrating. I am thinking that a better system might be to announce prior that I will listen 2304 only for a certain time frame and then listen only 2320 for another I still have the 13 cm setup in place and will change to the 23 cm feed just prior to the 1296 contest in May.

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

Digital DX Modes

Rex Moncur – VK7MO

During April, David VK3HZ and Rex VK7MO set a new Digital Record for 10 GHz of 224.7 km using JT65 between Mt Cowley near Lorne, Victoria and Mt Baw Baw in Gippsland, Victoria (see Photos).

David was running 0.8 watts to a 43 cm dish and Rex 10 watts to a 65 cm

dish. Both stations were GPS locked to meet the stability requirements of JT65. The path is line of sight except for heavy tree cover at the Mt Cowley end. Signals were very strong at up to S8 on SSB, so the weak signal capabilities of JT65 were not really tested.

In order to explore the application of

JT65 at 10 GHz tests were conducted over a number of paths from David's QTH in Melbourne to Strathmore (17 km), the Pentland Hills (69 km), Mt Buninyong (104 km), Mt Alexander (115 km) and to the QTH of Des VK3CY (202 km). From Strathmore it was necessary for Rex to beam through two

large trees just a few metres away, such that signals were scattered and weak and the antenna could be beamed in any direction with little change in signal strength. While at Mt Buninyong there appeared to be a clear path through the trees about 10 metres away, signals were again scattered widely and signals were available from many directions.

At Mt Cowley, the trees were around 100 metres away and while they fully blocked the path the longer distance to the trees limited scattering at wide angles and it was possible to discern a reasonably sharp pattern of the antenna. While experienced 10 GHz operators will be well aware of the problems of scattering from trees, this was all a new experience and something to be aware of in planning 10 GHz operations.

Despite the problems of scattering, JT65 performed extremely well and with GPS locking, WSJT always reported a DF of zero Hz indicating that both stations were within one 2.9 Hz bin.

The 202 km tropo-scatter path to the QTH of Des VK3CY proved much more demanding and on the first attempt with JT65C, no decodes were achieved and there was only slight evidence of signals at David's end where he could make use of the higher power being transmitted.

Following a visit to Alan VK3XPB, Rex was able to replace his feedline with hardline and improve transmit performance by 1 dB. In addition, with stability sufficient to allow the use of JT65a, it was decided to move to this

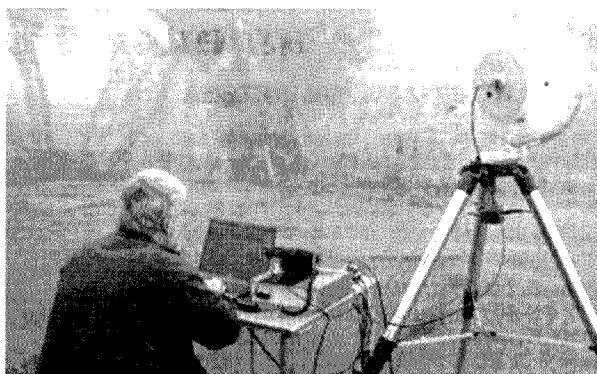
mode to gain another 2.2 dB.

With this 3 dB improvement, a second attempt was made and this time David was able to decode signals. With the presence of signals it was possible to carefully optimise beam headings until David was receiving consistent signals of around -22 dB from Rex's 10 watts.

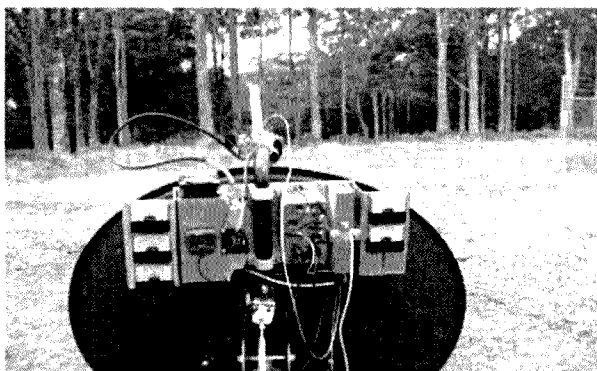
At this time Rex started to see traces of David's 0.8 watts and, after an hour and a half, a QSO was completed with Rex obtaining only four very weak decodes that peaked at -29 dB. It was found that it was in fact easier to get the RRR message through in conjunction with call signs rather than to use the shorthand message approach.

A lesson from our experience is that on very weak troposcatter paths at 10 GHz with antenna beamwidths of a few degrees, it is necessary to have a means of very accurately pointing the antenna so that when the troposcatter signals rise out of the noise you are in the right direction – it is just too difficult to peak the antenna on a fading signal you cannot hear.

While it was pleasing to complete



Fogged in at Mt Baw Baw



All Clear at Mt Cowley

a tropo-scatter contact, signal levels were 8 dB below that calculated for troposcatter and 20 dB below that calculated with the Radio Mobile computer program. Further tests are planned on paths from VK3 to VK7 to explore these anomalies.

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 few "E" and JA openings in early April as reported last month the band went to 'sleep' mode with little to report in the rest of April and early May.

On 11th April Brian VK5BC reports working VK2s FA, BZE, JDS & ZT.

Best openings were on 13th April with many reported contacts. Kerry ZL2TPY worked John VK4FNQ, David VK4ZDP and Russel VK4BEG. Brian VK5BC had good conditions to Northern Queensland, contacting VK4s ZDP, ABW, FNQ, BEG, RF and APE.

David VK5AYD at Coober Pedy also worked John VK4FNQ, Andrew VK4KAY and Wayne VK2XN. Andrew VK4KAY completed a good contact with Wally VK6WG at Albany. Andrew also worked VK2XN. John VK4FNQ

at Charters Towers worked many VK2s and VK5s and John VK4TL in the Atherton Tablelands worked John VK2FAD. The Alice Springs beacon was heard by both Kevin VK4BKP in Mackay and Jeff VK5GF (ex 8GF) at Victor Harbor and Phil VK2FHN reported the FK8SIX beacon.

Some brief openings on the 21st April with Joe VK7JG working Frank VK4FLR and Brian VK5BC working Neville VK2YO and Alan VK4SN. Then on 25th April Jeff VK5GF worked John VK4FNQ. Meantime Joe VK7JG has been continuing to have success with EME contacts and reports:

Conditions this month were good for 6 m EME on the days that I operated. Though rather early on a couple of

mornings – 0230 one day then 0330 the next – it was well worth it. On May 1st, I completed contacts with Mick W1JJ and Lance W7GJ with the moon between 2 and 5 deg. Next morning I had a sked with Gary VK4ABW, his new array makes it easy. Lance called just to have another contact for the day. May 3rd I had a sked with GD0TEP and we completed with a very high moon at 16 deg. Not having elevation control limits my operating time with his best signal being -21. Then I worked Matteo IW5DHN.

Hopefully June brings some good winter "E" openings.

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

Hamads classifieds **FREE**

FOR SALE NSW

• I have an HP 141T spectrum analyser for sale. It comes with an 8555A module which goes to 18 GHz. All reasonable offers considered. I am in Sydney on the North Shore at Cremome. Phone 02 9904 9845. Mornings and evenings is the best time to reach me.

• **Shack Clearout:** Kenwood TS-120S, VFO-120, PS-30, AT-120, \$500. Kenwood TS-700 \$120. Kenwood TR-2400 H/H with chargers, Base etc., \$100. Philips PRM8030s, 1 each of VHF & UHF, \$100 ea. MFJ 1278B Multimode TNC, \$100. ICOM IC-R100 Scanner, \$500. 2 x MDS Downconverters, \$40 ea. N & SO239 switches, Filters, SWR bridges, Mag. bases and mobile whips. Contact: Roger VK2DNX, vk2dnx@hotmail.com, 02 9547 2546.

• Yaesu FT-230R with YM-47 scanning mic., instruction manual, circuit diagram. S/N.2DO30860. \$160. Maurie, email: mauriehay@bigpond.com. or VK2OW. QTHR

WANTED NSW

• Rascal HF receiver model RA1217 or RA1218, prefer working condition. Contact Jack VK2AAS QTHR, phone 02 4454 1037 Mollymook

MISCELLANEOUS NSW

• See you at the Port Macquarie Field day June 7th & 8th. The Ozi-Pole portable dipole and other projects will be on display from the Mid North Coast Amateur Radio Group Inc. Visit <http://www.mncarg.org/> for further information, or email mncarg@yahoo.com.au

FOR SALE VIC

• Yaesu FT-7 txcvr. Genuine 20 W output, 80/40/20/15/10 m. Excellent condition, any trial \$200. Philips PRM-80 VHF FM txcvr. All repeater channels plus simplex, total 61 ch. \$50. Solid state Sig. Gen. B+K Precision model E2000, range 10 kHz – 200 MHz. \$50. John VK3BAF, phone 03 8502 8627 or email vk3baf@optusnet.com.au

• Codan Model 8525 100 watt Mobile Radio. Serial NoA4494 Good condition.. Five VKS737 frequencies, 80, 40 30 and 20 metre frequencies, power lead, Outbacker antenna with VKS and Flying Doctor frequencies with base and spring. \$420 plus postage from Wonthaggi Vic. Lindsay Allen VK3IQ QTHR, Phone 03 5672 2563

About hamads....

- Submit by email (preferred) or on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully and clearly, use upper AND lower case.
- Separate forms for For Sale and Wanted items. Please include name, address STD telephone number and WIA membership number.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.

• Werner Wulf 3el 20mtr Beam good condn dismantled \$150, also W/W 10/15mtr 5el Beam one element broken dismantled \$100, Kenpro Rotator Model KR600RC and controlbox \$150, Geoff VK3ED 03 9746 1438

WANTED VIC

• Ant rotator. Must be GWO, mast clamp top and bottom for 50 m pipe. David VK3ADL 03 5952 5940 QTHR

• Wanted for a project, a Codan 6801 Mark 2 and 7113 power supply, both in top condition, complete and fully working. Damien VK3RX phone 03 5427 3121 or email vk3rx@wia.org.au

• I am looking for a General Radio GR 1931A Modulation Monitor. John Eggington, VK3EGG. mob 0409 234 672, email vk3egg@optusnet.com.au

MISCELLANEOUS VIC

• Free magazines. Amateur Radio: 1946 to 1979 (incl), QST: 1960 to 1978 (incl), Amateur Radio Action: 1980 to 1989 (incl). Magazines are at Bacchus Marsh, but I could bring them to Footscray (or even Baimsdale). Don Watson VK3DPI, 03 9689 3995.

FOR SALE QLD

• Yaesu HF transceiver MARK-V FT-1000MP 200 W version, external PS s/n AG620042 plus Yaesu FL-1000 linear amp ext PS s/n 4H64005, also two filters for transceiver, lot incl. Yaesu desk and h/held mike, Morse key. VK4YV QTHR 07 5472 3097 \$5000. Details: email vk4yv@yahoo.com

• 4-element Triband HF Yagi antenna. Chimside Yagi antenna model CR-34DX high performance 4 element Triband beam 10 m – 15 m – 20 m amateur bands. Longest element is 9 m. Comes disassembled with short mast and plenty of cable. Good condition - works great. Sell for \$400. Stored in Morningside, QLD. Jonathan Dimond (ex-VK4DJD), email: jonathan@jonathandimond.com, phone: 03 9016 3506

WANTED QLD

• Tower for all-band antenna. Need to be close to Rockhampton and easily re/assembled. Contact vk4yoh@wia.org.au

FOR SALE SA

• Yes, the very popular VK5JST Antenna Analyser kits are still available (see AR article May 2006). For more details see www.scarc.org.au; or contact SCARC PO Box 333 Morphett Vale SA 5162, email kits@scarc.org.au

• **HMV Kimberley 4 band Transistor Portable radio** Multi Band Multi Band 82541196 Mobile 0430 270 466 Brenton

WANTED SA

• S/H with damaged final RF/OP transistors Yaesu FT-817 transceiver-transmitter, must work on all bands up to finals. Receiver must work on all bands. Have another use for radio. Steve VK5AIM QTHR. Phone 08 8255 7397

MISCELLANEOUS SA

• Help wanted in the Adelaide Metro area from an experienced operator to erect a full size G5RV antenna. It is necessary to be able to mix cement to make a base for one of the masts. I have most of what is required but I would be extremely grateful if an operator would phone me on any evening after 2000 hours and arrange to come and inspect the situation in order that I can show what is needed and explain details. Phone 08 8294 6906 VK5ZLC QTHR

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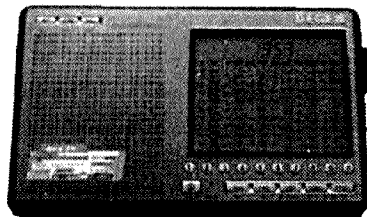
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A new
Amateur Radio Wiki
has been started and can be found at

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We are looking for writers of articles suitable for this website.

The intention is that it will become an online encyclopaedia for hams.

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Tim Roberts VK4YEH QTHR.

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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, 145.6000, 147.000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning..
Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130, 147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. 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.
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.

More John Moyle experiences



The view to the east from VK3JTM – green energy on the horizon

Photos from the John Moyle Memorial National Field Day 2008

Photos by Tim Morgan VK3JTM, Peter Young VK3MV and Doug Friend VK4OE



The view inside the back of the Peter Young VK3MV 4WD



The caravan and antennas used by Tim Morgan VK3JTM



A close up of part of the VK3MV portable shack.



The Doug Friend VK4OE portable shack, with its impressive array of antennas

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Our Cover this month

ALARA was well represented at the WIA AGM in Broken Hill. The backdrop to the group, photographed at the AGM Dinner, is a sculpture that recognises the sacrifice of those from Broken Hill and district in war, located in the foyer of the Broken Hill Entertainment Centre. L-R Lesley VK5HLS, Dot VK3DB, Jeanne VK5JQ, Susie VK5FSUE, Lia VK3LPH, Marilyn VK3DMS, Kathi VK6KTS, Jenny VK5FJAY, Meg VK5YG, and Christine VK5CTY. The inset shows Brenda Edmonds VK3KT with her certificate for the Ron Wilkinson Achievement Award. Photos by Peter Freeman VK3KAI.

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 \$8.00 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).

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Editorial Comment

Peter Freeman VK3KAI

Here we are in July already – half the year has already passed. For me, there will be an all too brief small reduction in pressure at work before the start of the second half of the year.

WIA AGM

It was good to see so many people in Broken Hill for the WIA AGM in late May. It was a very long drive from Churchill, which was fortunately broken up in both directions by overnight stays with other amateurs.

On the trip to the AGM, Barry VK3BJM had offered a bed. It was great to catch up, even if only for a couple of hours on the Thursday evening before adopting horizontal polarisation. A brief chat over coffee in the morning allowed a quick look over the shack before hitting the road again.

In Broken Hill, there were lots of people to meet and many others with whom to renew contact. I even managed a little time to play some VHF radio – see the VHF/UHF column for an outline.

The return trip involved a “short” three-hour drive to Mildura, arriving early enough to drop into one winery to sample some of the produce. Then it was to the home of Geoff VK3ACZ and Marilyn VK3DMS for dinner and more discussion, enlivened by the presence of Christine VK5CTY, who was to spend a few days in Mildura. The next morning saw us back on the road for the trip home – fortunately an easy trip with few traffic hold ups resulted in only 8.5 hours travel time.

The atmosphere was excellent at all the WIA organised events. We have a photo essay in the centre pages showing some of the visual highlights.

Drawings in AR

Some time ago, I made a call for assistance in the production of drawings for production in AR. Indications are that we have a volunteer to assist Bill VK3BR in the production of circuit diagrams, using one of the standard electronic design packages.

However, many of the drawings required do not work well unless prepared using a true CAD drafting package, for example TurboCAD, AutoCAD or

similar packages. Most of the non-circuit diagrams are prepared using such a package. Are you a reader with skills in the use of such a package, who can prepare a drawing in your spare time on the odd occasion? If so, let me know and Bill will send you a sample task. Like so many of the jobs undertaken for the WIA, this too will be a volunteer task – giving you a chance to give a little back to our hobby.

Callbook and AR cover photos

Thanks to those that have sent photos for consideration for the 2009 Callbook cover and/or for AR. We do need a greater selection of photos to be available, so that we can prepare covers of sufficient quality. Digital images are best; at as high a resolution as you can produce. Feel free to send the images at lower size and resolution, but remember to let us know the file size of the original to assist us in assessing whether the image/s will be usable for the required task.

AR articles

Articles for consideration for publication in AR have been coming in slowly over the past couple of months – so much so that the technical editors have reduced the list for review to almost empty. Our thanks go to all who have contributed to date. We will soon be in need of new material – so please put fingers to keyboard and tell us all about the latest project in the shack, or even about the last club event. Remember that there are hints available on the WIA website – look under Members, AR magazine, Contributing material.

Did you venture out for the inaugural Winter VHF/UHF Field Day? If so, let us all know how it went for you and do not forget the photos.

By the time this magazine arrives in your mail box, it will be time for GippsTech2008. Once again, I look forward to catching up with so many amateur friends at the event. Of course, I will be on the look out to find someone to prepare a report for the August issue!

Cheers,

Peter VK3KAI

A simple question?

If you go to the WIA website and click on the button "About the WIA" you will find a button "Contact the WIA" and then you can select to whom you send your message – including the President.

Recently I received a question from an amateur through the WIA website as follows:

Just a quick query on why Australian amateurs have restrictions on bandwidth in the 160 and 80 metres sections. Looking at band plans for IARU region 3 shows 160 metres as 1800 kHz up to 2000 kHz and 80 metres as 3500 kHz up to 3900 kHz. Is this restriction placed on us by the ACMA and why?

I am afraid that it is one of those deceptively simple questions. I could just say "Yes" and "Because it is how a sharing problem was solved" but that would be neither very helpful nor very meaningful.

So I have decided to answer part of it rather fully here, as the answer may be of general interest. I am going to answer it in terms of the 3500 kHz to 3900 kHz band only, as the principles are the same for both bands.

It all starts with the International Telecommunications Union, the ITU. Australia is a signatory to the ITU Constitution and Convention, and so is bound by the Radio Regulations, revised at World Radiocommunication Conferences every four years or so.

Article 5 of the ITU Radio Regulations lists the frequency bands allocated to the various services according to three geographic regions.

Article 5 shows that in Region 3, the Asia Pacific region, the band 3500 to 3900 kHz is allocated to 3 co-primary services, Amateur, Fixed and Mobile.

So there is the answer to your first question, the IARU Region 3 band plan covers the whole of the band available for an administration to allocate to the amateur service.

But it is important to recall that the ITU table does not actually allocate the bands in a country. The administration

of a country does that. The term "administration" is an ITU term, and means the governmental department or service in a country "responsible for meeting the country's obligations under the ITU Constitution".

The sharing on a primary basis between Amateur, Fixed and Mobile in the band 3500 kHz to 3900 kHz in the ITU international table has been unchanged since 1959.

But how does Australia implement its allocation of frequency bands to services?

Since the Radiocommunications Act has been the primary Australian legislation, the responsible agency, now ACMA, must prepare and publish the Australian Radiofrequency Spectrum Plan (ARSP) which sets out in broad terms the services to which frequency bands are allocated in Australia. A copy of the ARSP can be found on the WIA website under Members Services\ Legislation.

In the words of the ARSP, the Australian allocations are "broadly aligned with the ITU requirements". That is because the Radio Regulations themselves allow variations from the international table if stations transmitting outside the table do not cause harmful interference to stations in another country operating in accordance with the international table.

Going back to 1959, Australia decided to solve the sharing problem by separating amateur and fixed and mobile, with the latter services using bands on a shared basis.

The WIA, after 1959, was concerned that the Australian band upper limit was below the US phone band and so sought an allocation above the US lower phone band limit of 3700 kHz. Initially, in 1984, a 6 kHz slot at 3794 kHz was given to amateurs on a non-interference basis, but in 2004 amateurs were given the primary allocation in the band from 3776 kHz to 3800 kHz.

Today the Australian Radiofrequency Plan's Table of Frequency Allocations

shows the band 3500 kHz to 3700 kHz is allocated to Amateur, with no sharing with any other service, 3700 kHz to 3776 kHz allocated to Fixed and Mobile as co-primary, and the band 3776 kHz to 3800 kHz allocated to Amateur without any sharing, and the band 3800 kHz to 3900 kHz allocated to Fixed and Mobile, again as co-primary services.

But that is still not the end of the matter. The Plan is only a broad allocation of spectrum. The amateur must finally look at the Radiocommunications Licence Conditions (Amateur Licence) Determination No. 1 of 1997, generally referred to as the Amateur LCD and which is the formal title of the compilation of the Determination incorporating all the changes made to it since it was created in 1997.

That shows that the permitted frequencies and emission modes for an amateur Advanced station include the frequency bands 3.500 MHz to 3.700 MHz and 3.776 MHz to 3.800 MHz. An amateur Standard station and an amateur Foundation station can use the band 3.500 MHz to 3.700 MHz (but not the band 3.776 MHz to 3.800 MHz), with the Foundation station subject to the power, equipment and emission modes set out in the LCD.

So, while the international table has not changed since 1959, the Australian administration has solved the sharing problem by allocating separating bands to the Amateur service, with shared bands to the Fixed and Mobile services but also, in 2004, recognised and met a need for a higher segment.

So, it all goes back a very long way, and to find the precise allocations you must finally look in the Amateur LCD.

And that all shows, too, why the WIA is so anxious to ensure that we participate in the preparation for each ITU World Radiocommunication Conference and to have an amateur as a member of the Australian delegation to each WRC.

That is where it all starts.

Two letter call ballot

In April the WIA published a paper setting out the process that was proposed for it to conduct a ballot on behalf of the ACMA to provide a means for the equitable allocation of available amateur callsigns with two letter suffixes (two letter callsigns).

The paper sought comments and proposed a time table for the future conduct of the ballot.

As a part of the process, ACMA agreed to the WIA's request to review the cases of amateurs who had "lost" their two letter callsigns since 19 October 2005 as a result of their failure to renew their apparatus licence on time and who could show that their failure to renew was due to exceptional circumstances.

All amateurs who applied for a review were able to show exceptional circumstances, and so were successful and their callsigns have been returned to them.

However, a number of contractual, taxation and other issues have emerged in the discussions between the ACMA and the WIA in respect of the conduct of the ballot, and these complex issues have made the adherence to the original timetable impossible.

It now appears that the timetable originally proposed will slip by at least two months.

The WIA will advise all amateurs of the steps to be taken by those wishing to participate in the ballot, and the timing, just as soon as it has resolved the currently outstanding issues.

AGM resolves to change WIA Constitution

The Annual General Meeting conducted at the Broken Hill Entertainment Centre at Broken Hill on 24 May 2008 had to consider two special resolutions proposed by the Board, one to correct a drafting error, the other more significant, to remove the requirement for a proposer and seconder for a person wishing to join the WIA.

The need for a proposer and seconder followed the previous Divisional constitutions and was now considered by the Board to be inappropriate for a national organisation and a barrier to

entry, particularly for people in remote areas.

The special resolution also removed the requirement for a signature from a person wanting to become a member, a requirement that had prevented the WIA from having a true on-line method of becoming a member.

It was proposed that the Constitution say that the Board can prescribe the application for membership form, or accept a different form.

The special resolutions were convincingly passed, both on the vote of those present who were unanimously in favour and those voting by proxy, with only one proxy vote against the changes.

New members can now join the WIA using the new application form to be found on the WIA website, currently with a phone call to the office but shortly with a secure on line payment facility.

VK2DQ new WIA Director

The Annual General Meeting conducted at the Broken Hill Entertainment Centre at Broken Hill on 24 May 2008 was the last official meeting for Trevor Quick VK5ATQ, who retired after being a director of the WIA since its restructure in May 2004.

The meeting thanked Trevor for his contribution to the WIA.

The meeting welcomed Ron Bertrand VK2DQ, who took office as a new director of the WIA at the conclusion of the AGM.

The Vice President of NZART Stuart Watchman ZL2TW and NZART Councillor Vaughan Henderson ZL1TCG represented NZART at the AGM and over the weekend.

WIA makes news headlines in Broken Hill

The WIA AGM and weekend of activities made front page headlines in The Barrier Miner, a local Broken Hill newspaper.

The feature article which appeared on the front page of the newspaper talks of how amateur radio "has come a long way since the early days when Alf Traeger revolutionised communications in the outback with his pedal radio" and goes on to talk about the various activities our

members will be participating in over the weekend. The article also acknowledged that through the changes to regulations for amateur licensing and with the introduction of the Foundation licence that "this has encouraged many more people to take up the hobby and numbers have grown significantly".

WIA director, Robert Broomhead appeared on "Outback Outlook", the ABC Radio 2NB Broken Hill morning show.

China Earthquake

Fan Bin BA1RB, on behalf of CRSA, reported via IARU R3 Disaster Communications Committee Chairman Jim Linton VK3PC that as the disaster recovery efforts continue following China's most powerful earthquake, the Information Office of the State Council reported (on 26 May) that the death toll had reached 65,080.

Government officials and news media have recognised that when communications failed after the Sichuan earthquake on 12 May, it was amateur radio operators who stepped in to provide vital links.

In the past two weeks there has been more than five million people made homeless. The most in-demand materials and supplies for the disaster area are tents and medicines. Disease prevention is also at a very critical stage.

China Central Television (CCTV) reported on 26 May, "When all other communication means failed, amateur radio operators came out!" An amateur radio emergency communication network was setup and one of the commanders, Liu Hu called for amateur radio operators on air to provide services for disaster relief.

Thankfully, one main repeater survived during the earthquake. This repeater provided 100 km coverage to Mianyang. Amateur radio operators from Chengdu, Shenzhen, He'nan went to the centre of the disaster area, set up repeaters in Beichuan County, and provided various valuable first hand information from the centre.

The IARU radio society, CRSA say that it hoped to report later more detailed information on the role of amateur radio emergency communications in the earthquake.

Triangle of six metre dipoles

Neville Chivers VK2YO

One morning last October, I came outside and looked up at my antennas, to see the reflector of my six metre beam at an angle of 45 degrees to the driven element and swinging in the wind. When lowered to the ground, the aluminium of both the boom and the elements showed severe corrosion from the salt-laden sea breeze.

I consulted the local TV antenna installer, who said I was lucky to get twelve years' service from the beam, as five to eight years was about normal around Kingscliff, and he noted that he only installs anodised aluminium antennas as a defence against the salt.

With the six metre season already late opening at this QTH, what to do, I asked myself? By the time I sourced the anodised material and built the beam it would be Christmas, and the season would be half over!

So I put up a six metre dipole running east/west, which gave broadside coverage north/south up and down the coast, with good contacts into VK3, VK4, VK5 and VK7. But I received weak reports from VK6, ZL and the Pacific islands, when other stations just to the north of me, in south east VK4, were getting and giving much better signal reports.

So, after scrounging some material to make another mast, a dipole running north/south took care of the signals from east and west. Then a third dipole, forming the hypotenuse of the triangle, takes care of signals from VK8 (if any), ZL and JA.

The only real problem was the time it took to change the coax connection at the back of the transceiver from one dipole to another, and in my experience the use of a coax switch at 50 MHz is not to be recommended. So I made use of a large electrical junction box on hand from a previous work life.

I mounted a coax socket on one end of the box, as the input from the transceiver, and three coax sockets on one side for the dipoles to connect to. Three banana plug sockets on the other end were individually wired to the centre pins of the dipole sockets. Then a banana plug on a wander lead from the centre pin of the input coax socket completes the circuit, for a quick change between dipoles – only on receive of course, unless you happen to like RF burns!

My box was metal, so an insulating grommet was used in the wall where the wander lead passed through. If a plastic box is used, no grommet would be required but a bonding strap connecting the bodies of all four coax sockets certainly would be.

Figure 1 shows the antenna layout. The only question that may be of concern if you want to build this antenna configuration is what to tie the dipoles to? Well, anything that is convenient is the answer. For instance, one corner of the triangle could attach to the barge board or chimney (if you actually have one) of your house, and the other masts could be something as simple as six metre lengths of water pipe, set one metre into the ground.

The purists will note that the dipoles are fed with 50 ohm coax when, in theory, their input impedances are approximate 72 ohms in free space; not easily achieved at five metres above ground – mine measured 63 ohms at the

feed point. So, the VSWR is less than 1.5 at resonance. Anything less than this is acceptable with modern solid-state transceivers because their protection circuits activate above this level to automatically decrease output from the final amplifier transistors.

The purists will also tell you that the coax should have a balun between the balanced dipole and the unbalanced coax, or the radiation may be skewed. Quite right, too! But the extra weight makes the dipole sag, which again may skew the radiation pattern, and unless the balun provides the correct ratio between the feedline and the dipole impedance then a mismatch will occur, with a higher resultant VSWR.

The trick when connecting coax directly to a dipole is to shorten, by 5%, that side of the dipole which is connected to the braid.

I am a believer in applying the law of diminishing returns when necessary.

ar

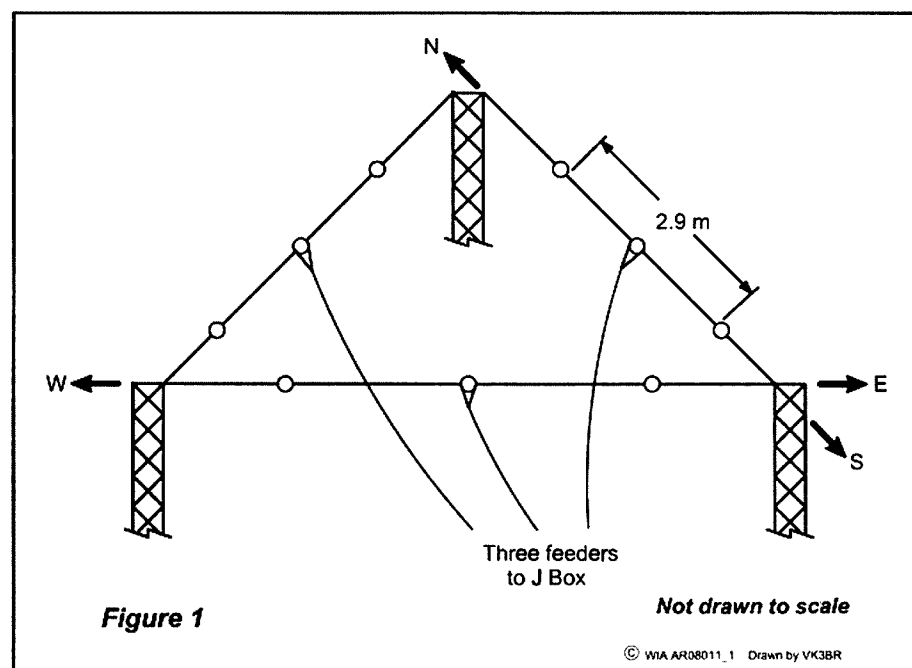


Figure 1. Triangular arrangement of six metre dipoles

Now for something completely different

Part 1

A high power class-E amplifier for 40 metres

Phil Wait VK2DKN

The June 2007 edition of AR featured a 160 metre, 35 watt, Class-E, AM/CW transmitter by Drew Diamond VK3XU, comprising a buffered crystal oscillator driving a single amplitude modulated MOSFET. Drew's circuit is an ideal project for those wanting to get into home brew AM.

My first transmitter, almost 40 years ago, was a two valve home-brew 40 metre AM rig using whatever parts I could scrounge, extort or borrow at the time. All these years later, the allure of home-brew AM has never really left, so in an attempt to exorcise it I thought I would have a go at building a 40 metre rig again, but something up with the times, and something, well.... dramatic.

The theory of class-E operation is very well covered in various websites including Steve Cloutier's (WA1QIX) site at www.class-e.com, and an article by Nathan O. Sokal WA1HQC in the Jan/Feb 2001 edition of QEX.

This amplifier circuit, developed by Floyd Koontz WA2WVL, uses MOSFETs connected in a balanced push-pull arrangement and fed by a current mode input circuit. Floyd has successfully built several amplifiers using up to 10 MOSFETs producing 1500 watts power output. I chose to use six MOSFETs capable of 750 watts, or more: at the Australian legal limit of 120 watts average or 400 watts peak power on AM it is loafing along.

The amplifier is suitable for RTTY, CW, DRM, high level modulated AM, or any other analogue or digital mode where the drive signal is not amplitude modulated. The amplifier is not suitable for SSB, DSB, or low level (exciter) generated AM.

The greatest advantage of Class-E is its efficiency. This amplifier runs above 80% efficient - far superior to any class A/AB/B or C amplifier, and at Australian power levels does not require any heat sinking other than the aluminium base plate and chassis. If driven to higher



Photo 1: The AM station at VK2DKN. The Class-E transmitter, Class-D modulator and power supply are on the left. The small box to the far left is the Behringer MIC100 valve microphone pre-amplifier/limiter.

power levels for extended periods, a heatsink, or at least a fan, may be necessary.

The complete amplifier circuit is shown in Figure 1.

The MOSFETs used are International Rectifier IRFP22N50A HEXFETS designed primarily for switch mode power supply/high speed switching applications. These MOSFETs have the following characteristics: drain-source voltage 500 V; maximum drain current 22 A; drain-source on-resistance 0.23 ohms; and total gate charge 120 nano-coulombs. Other similar or better MOSFETs will probably work.

Each set of three MOSFETs is driven

in anti-phase to each other by reversing the primary windings between each set of three input baluns. The drain outputs are combined in a large home made ferrite balun transformer. This balanced arrangement produces less second harmonic distortion than a single ended design, and the output filtering requirements are therefore less onerous. In order to reduce drive requirements the gates are biased at about +3 V by a diode string.

The amplifier can be driven from any source delivering at least 20 watts average/RMS power; however it seems quite insensitive to higher drive levels. I was a little worried about connecting

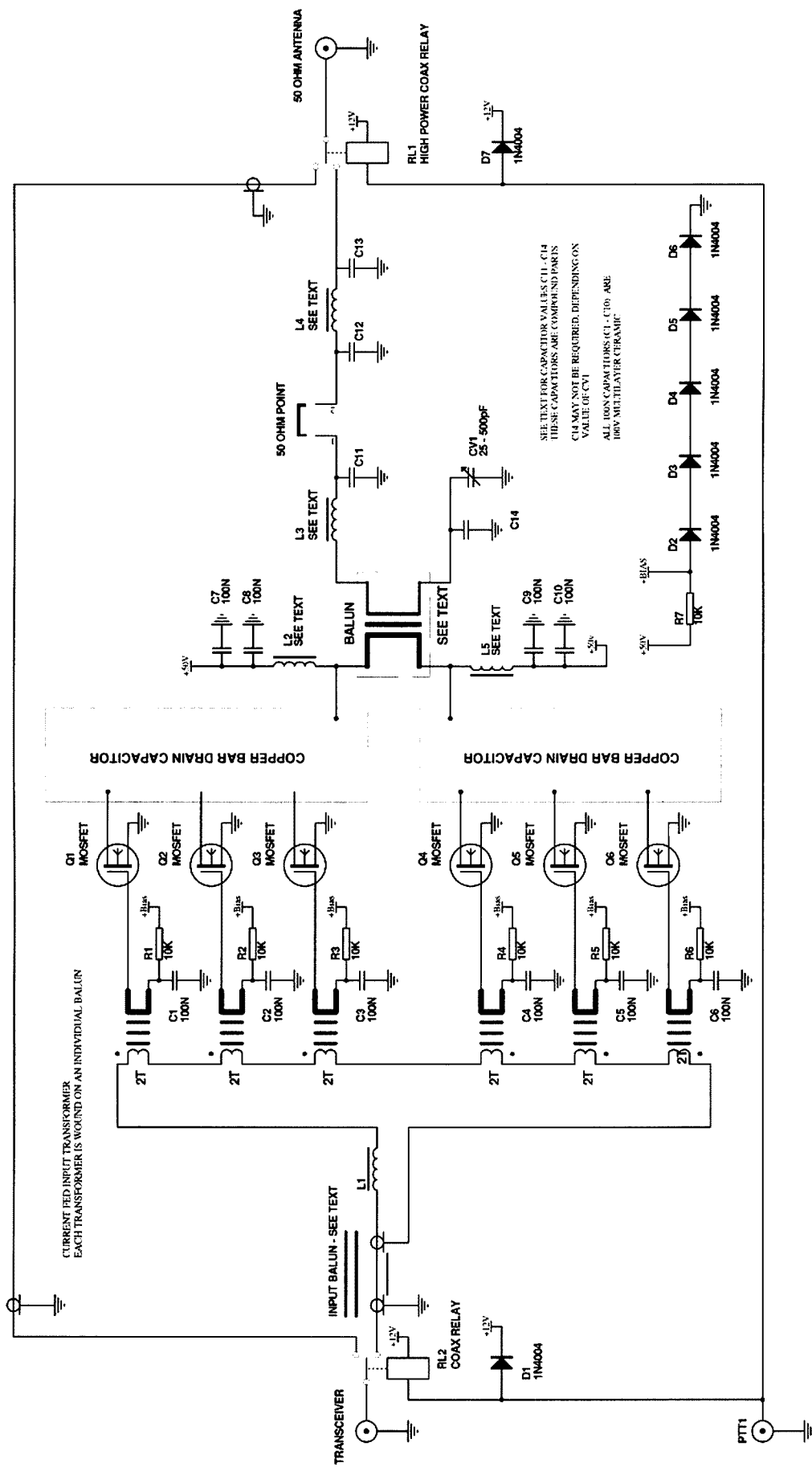


Figure 1: The complete amplifier circuit

my solid state rig to such a monster, so I used my old Collins S-line valve transmitter which, when set to the "key lock" position, produces carrier power that can be adjusted by the microphone gain control. A solid state 100 watt SSB transceiver switched to AM, but with its microphone audio input shorted, will probably deliver 20 - 40 watts average/ RMS carrier power.

At first several characteristics of Class-E seem quite strange. Firstly, output power cannot be adjusted by varying the drive level; rather output power is adjusted by varying the power supply voltage, usually using a variac on the mains input to the power supply or a variable power supply.

Secondly, the amplifier tank circuit is not tuned for maximum power output, but rather for maximum efficiency which will occur slightly off the point of maximum power (and if a Class-D switch mode pulse width modulator is used, for the desired load impedance presented to the modulator's output low pass filter - more on that later).

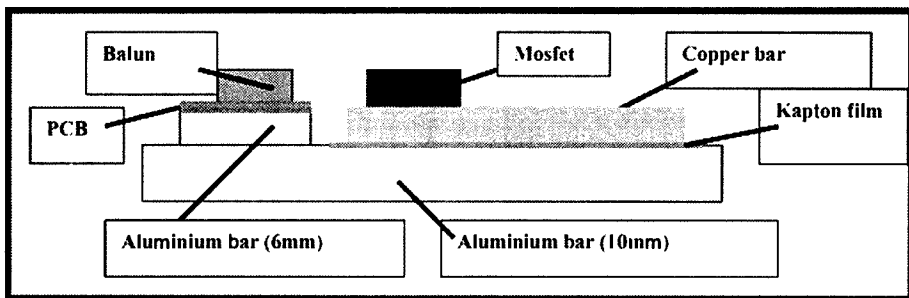


Figure 2. Cross section of input balun and MOSFET sub-assembly

Still feeling brave? Let us look at the amplifiers design and construction in detail, but first some words of caution. This amplifier contains very high RF voltages and RF currents, and this article is really only intended for general interest. If you attempt to build this amplifier you must take care to avoid injury from RF burns, exploding components and/or exposure to dangerous levels of electromagnetic radiation. Do not substitute cheaper or more commonly available components as they will quickly fail, possibly explode, and certainly adversely affect performance.

In short, this amplifier is not for the faint-hearted, financially challenged, or the novice constructor.

The input matching and balun network, together with the MOSFETS and their drain capacitors, are constructed as sub-assembly on a 280 mm x 100 mm x 10 mm flat aluminium bar. This ensures a perfectly flat surface (for the drain capacitors) and also allows assembly of the most difficult components on the bench, separate from the chassis. I would strongly recommend this method of construction. See Figure 2 and Photo 2.

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This is some of what Jason Reilly VK7ZJA had to say Quansheng in AR in November "... solid and rugged ...comfortable to hold...the audio qualities are superb! This is one of the nicest sounding handheld radios ...

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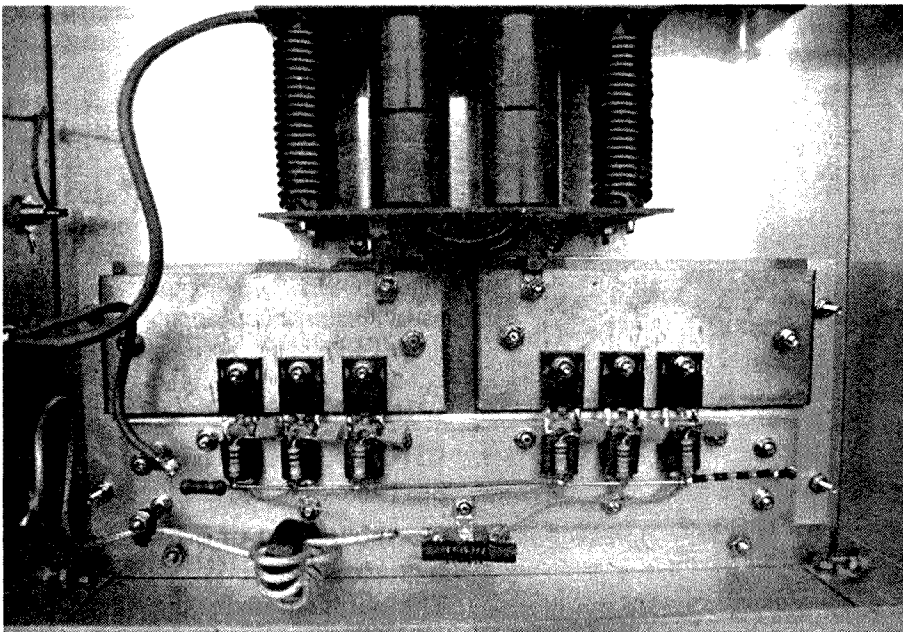


Photo 2. The input balun assembly (lower), MOSFETs mounted on home made drain capacitors (middle), and the output balun (top). The brown material is DuPont Kapton film forming the insulator and dielectric in the capacitors formed between the copper plates and the 10 mm aluminium bar. The coax input balun and input inductor (L1) are lower centre.

50 ohm input matching network

The input matching network consists of a toroidal current balun and a series inductor, L1. The balun is made by winding 8-10 turns of RG316 coax around a 25 mm diameter core (ferrite type 43 or F14 or L15).

The series inductor L1 consists of seven turns of 22 gauge wire wound on a short length of approximately 6.5 mm F25 ferrite rod. The number of turns and turn spacing on L1 can be adjusted for lowest input SWR, (even with the power turned off). I used an MFJ-269 analyzer for this task during construction.

Current fed input transformer network

The series connected balun transformers, which connect to the gates of the MOSFETs, form a current driven input network capable of driving the very high MOSFET gate capacitances, (typically 3450 pF for each MOSFET!). The transformers do not have a common magnetic core, consisting of six individual two-hole balun cores with their primary windings in series and phase reversed between each block of three MOSFETs. Photo 3 shows a close-

up of one set of three MOSFETs and their input circuit.

The secondary windings (connected to each MOSFET) consist of short lengths of 3.5 mm diameter brass tube inserted into each balun hole and connected together with wire at one end to form one complete turn. Wind the secondary first, being careful not to let solder run inside the brass tubes.

The primary windings are then wound from a continuous length of 22 g Teflon insulated wire, with two turns passing through the inside of each brass tube. Photo 3 shows how to wind the primaries for the correct phasing. Only use Teflon insulated wire as other insulating materials will melt during soldering at a later stage.

The baluns are mounted on a 240 mm x 40 mm length of copper-side-up fibreglass PC board (you could also use copper sheet) which in turn is mounted on a length of 240 mm x 40 mm x 6 mm aluminium bar, which in turn is mounted on the 10 mm thick base bar. (The intention is to raise the mounting position of the earth plane and of the baluns to match the source and gate leads of the MOSFETs). Use evenly spaced nuts and bolts to hold the assembly together and ensure a low impedance ground connection.

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film is inserted between the copper and aluminium and acts as insulating dielectric and heat transfer material. DuPont Kapton film has excellent electrical and thermal properties and should not be substituted.

The value of the drain capacitors formed is not critical, but ideally should be approximately equal to the total MOSFET drain capacitance. The capacitors measured about 700 pF using the MFJ-269 analyzer.

Output balun and choke assembly

See Photos 4 and 5, and Figure 3

Construction of 3-turn output transformer

The output transformer and choke assembly uses large ferrite tube cores mounted over brass tubes with the whole assembly held between fibreglass PCB end plates. Ferrite cores are mounted two-in-line beside two-in-line.

On 40 metres the ferrite material chosen for the balun transformer (inner four cores) is Fair-Rite type 61 or equivalent, the primary and secondary windings are three turns each with the brass tubes forming the centre turn on the primary. Only use silicon or Teflon insulated wire to prevent insulation breakdown, (such as heavy gauge silicon insulated multimeter test lead wire).

The power feed chokes are wound on slightly thinner diameter ferrite tube

Photo 3. Connecting the input balun transformers to the MOSFETs

The MOSFET source leads are soldered onto the grounded pc board and the gates are soldered onto the corresponding brass tube secondary windings. Bypass capacitors C1 – C6 are connected from the cold end of the secondary winding to the grounded source lead, and bias resistors R1-R6 are positioned over the top of the baluns.

All connections must be as short as possible (only a few mm) as the series inductance of any lead length will be significant compared to the MOSFET's input impedance, and will severely affect performance.

MOSFET assembly

Refer to Photos 2 and 3. The MOSFET assembly has three purposes; to mount the MOSFETs; to provide good thermal transfer; and to form a high current RF capacitor between the MOSFET drains and ground.

The six MOSFETs are mounted on two 125 mm x 50 mm x 6.5 mm copper plates cut from a length of electrical bussbar obtained from a local scrappy. File all facing surfaces so they are absolutely flat. The MOSFETs are fastened onto the top surface of each copper plate using M3/20 mm bolts and nuts, with the bolt head deeply countersunk into the underside of the copper.

The MOSFETs must make good electrical connection from their body

drain connections to the copper plates – DO NOT use insulating washers or thermal grease under the MOSFETs. Individual MOSFETs can be easily replaced, without disassembly of the entire module, by simply undoing the upper M3 nut.

The copper plate assemblies, with their three MOSFETs in position, are clamped onto the 100 mm aluminium base bar using insulated nuts and bolts. A layer of 0.005" (0.127 mm) DuPont Kapton

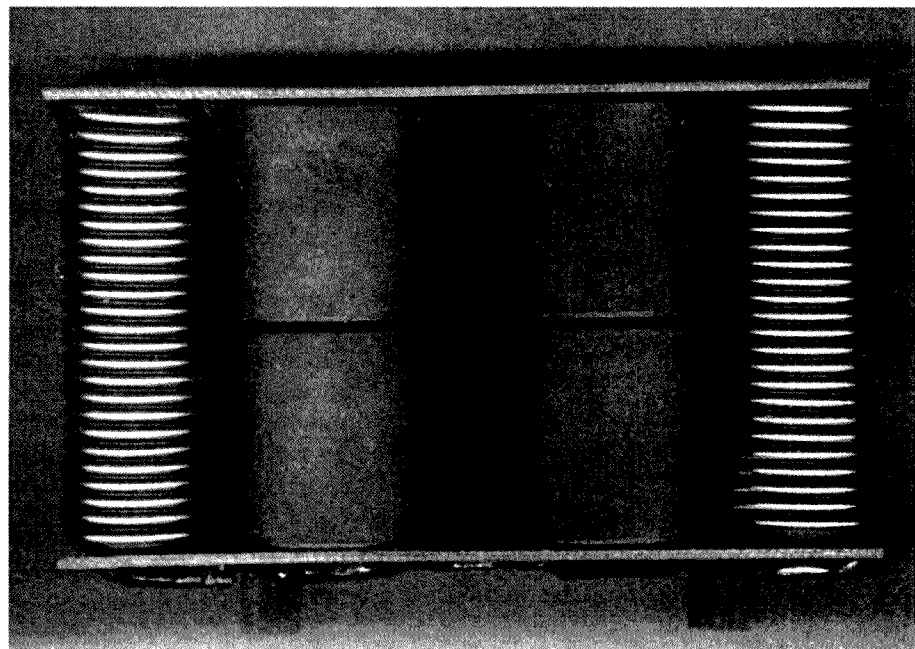


Photo 4. Top view of the output balun assembly prior to adding the windings

cores, two ferrite tubes for each choke, which are also mounted on brass tubes held between the PCB endplates. Wind #12 enamelled wire over a slightly thinner mandrel and then slip over the ferrites during assembly. Tricky, but effective.

The 100 nF bypass capacitors C7 – C10 are mounted on the PC board endplate. These capacitors must be high current, low impedance types and must also have very short leads. The whole assembly is mounted in position on the chassis with 12 mm aluminium angle. The mounting assembly also provides the earth connection for the bypass capacitors.

Output tuning and filter inductors

See Photo 6

Refer to photo 6. L3 (the lower inductor) resonates with C11 and CV1/C14. Due to the high RF voltage, CV1 must be a wide spaced transmitting type variable capacitor rated to at least 2 kV. The padder capacitor C14 may not be required depending on the value of CV1. L4, together with C17 and C18 form a Chebycheff (0.2 dB ripple) low pass filter at $F_o = 8$ MHz.

The inductors can either be wound as shown in the table, or could be heavy duty commercial coil stock. If possible confirm their actual value using an inductance bridge operating at 7 MHz.

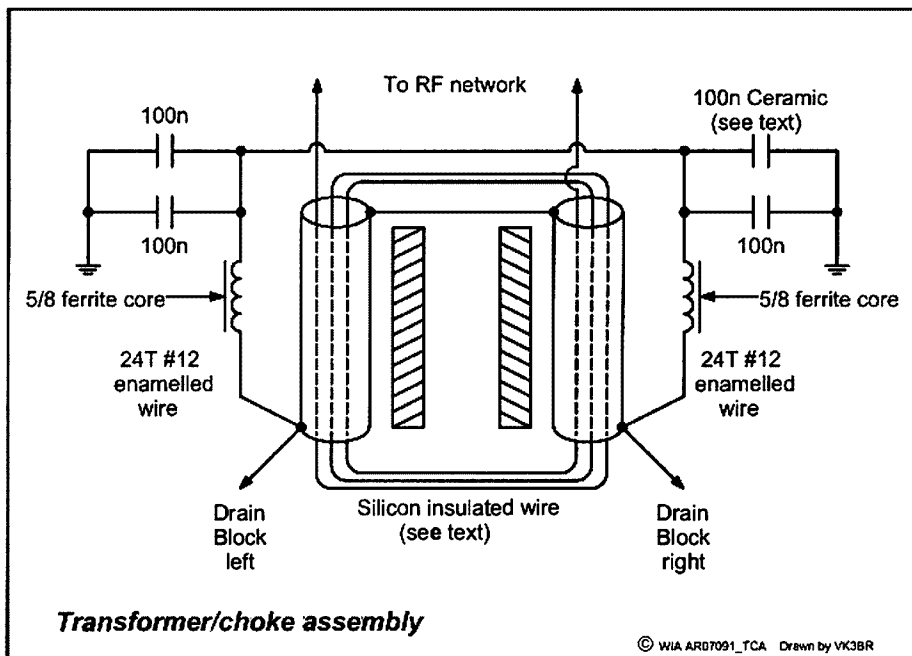


Figure 3

Inductor	Core Material	Diameter	Turns/ Inductance	Wire Size/length
L3	Air wound	40 mm	1.3 uH	#12, 6.5 turns 50 mm long
L4	Air wound	30 mm	1.1 uH	#14, 6.0 turns 35 mm long

Capacitor selection

Correct capacitor selection is extremely important when dealing with high RF currents or voltages. Common high voltage ceramic capacitors are not suitable for use in this circuit and may explode very spectacularly. High voltage “doorknob” capacitors have significant

loss and should also be avoided. (The author has experienced exploding capacitors, as well as fires inside the balun transformer from insulation breakdown when using PVC insulated wire – but the MOSFETs survived!)

Vitramon VY81, VY82, VY83, VY84 series capacitors (2000 V) or ATC 100 E Series Porcelain High RF Power Multilayer Capacitors (7200 V), available from sources such as Surplus Sales of Nebraska, USA, appear to work well. Smaller value capacitors in parallel are used to share the total RF current. If you intend running very high power you should probably use more capacitors in parallel to share the current load.

PART	VALUE	TOTAL C
C11	3 x 470 pF 2 x 200 pF	1810 pF
C16	Padder	(as required to tune CV1)
C17	1 x 470 pF	470 pF
C18	1 x 470 pF	470 pF

Bypass capacitors must efficiently bypass very high RF currents. All 100 nF bypass capacitors must be AVX-CK06BX104K multilayer ceramic or equivalent type and must be soldered with very short leads. Do not use

Output balun transformer details

Only use silicon or Teflon insulated wire to prevent insulation breakdown. Use type 61 ferrite material for 40 metres.

Design	Core Type	Core Size	Winding
4 cores mounted between pcb endplates 2 in-line beside other two.	4 off Fair-Rite Products 2661 102002 or 4 off Neosid 28-112-28	Each core 25.9 x 28.6 with 12.8 mm hole	Primary: 3 turns total comprising 1 turn made from 12mm (1/2") brass tube between G10 PCB end plates plus 2 turns of thick silicon insulated wire. Secondary: 3 turns of thick silicon insulated wire.

Power Feed Choke Details

Use type 43 ferrite material for all frequencies.

Design	Core Type	Core Size	Winding
L2 & L5 Mounted on drain transformer assembly. See drawing	4 off Surplus Sales 28B0625-100 or 4 off Fair-Rite 264362 5102 or 4 off Neosid 28-074-38	Each core 16.2 x 28.6 long with 7.9 mm hole	24 turns #12 enamelled wire

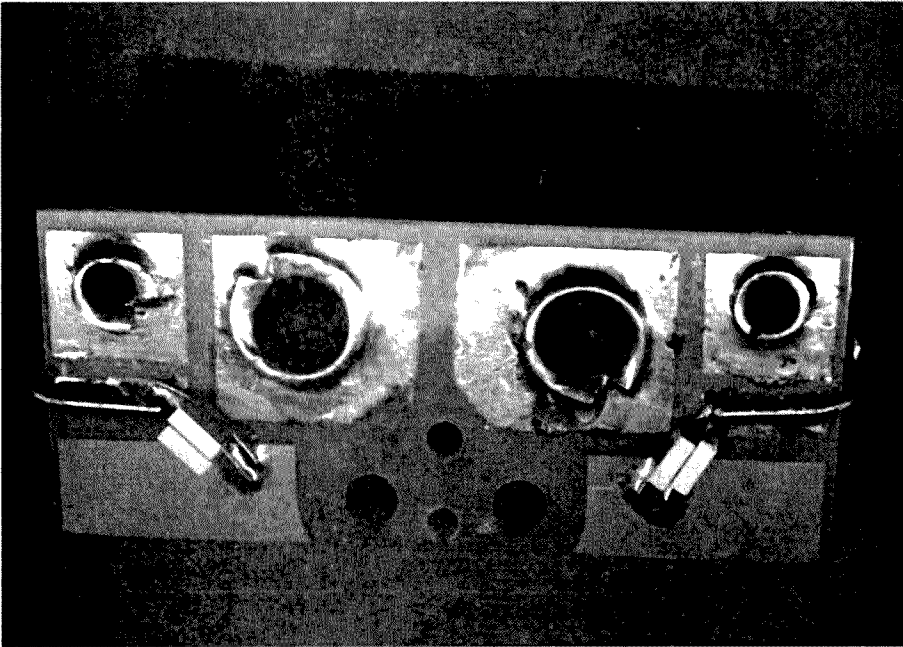


Photo 5. End view of the output balun assembly prior to adding the windings

common disc ceramic, mono ceramic, nor foil capacitors.

Power Supply

The power supply will depend on your power requirements. The more powerful the power supply the more power output you will achieve. The maximum voltage is probably around 80 volts, but is untested. As my transmitter was intended for amplitude modulation at 400 watts peak power, and using a series modulator which sets the quiescent supply voltage

at 40% of peak modulation voltage, I used a 50 volt power supply.

If you intend running AM or a pulse type modulation, you should use large filter capacitors (say 10,000 uF) designed for high current applications to ensure adequate peak current capacity.

Naturally, any high current power supply should be protected against current overload and excessive output voltage at small loads. Additionally it must be designed to limit surge currents

at switch-on through the rectifier into the discharged storage capacitors.

RX/TX Switching

The circuit shown uses two antenna changeover relays to allow a transceiver to be used as the exciter. If a separate receiver and exciter are used, only one antenna changeover relay will be required.

When switching from transmit to receive, driving power must be removed before releasing the amplifier's power and antenna changeover relays. Otherwise your expensive relay contacts will quickly disappear. The Collins S-Line conveniently has an "antenna relay output" which can be used to control the PTT line in the amplifier. Using this control output, the exciter's power will always be off before the amplifier switches to standby.

When switching from receive to transmit, the exciter power should be applied only after the relays in the amplifier have had time to operate.

Stand Back and Turn On

For initial tests connect a Variac to the 240 V. mains input. Set the DC supply voltage to about 10-15 volts and connect a power meter and a large 50 ohm dummy load.

Set the output tuning capacitor to fully meshed (maximum capacitance). Apply drive and slowly un-mesh the output capacitor noting the power output and the DC current. You should notice that the current rises quickly near resonance to a point where, although current continues to increase, power output does not rise in proportion. Back off the tuning capacitor to a point which appears to give best efficiency (or trade-off between DC current and power output).

Try this a few times to get a feel for what is going on, and when happy all is OK increase the Variac output slowly. You should see the power output increase. When you have achieved your desired power output, and nothing has blown up, retune the output for best efficiency (you may need a calculator for this), and again adjust the Variac.

For each power output level you will find a "sweet point" (between supply voltage and current) which provides highest efficiency. If you detune the tank circuit too far you may cause excessive heating in the output transformer core.

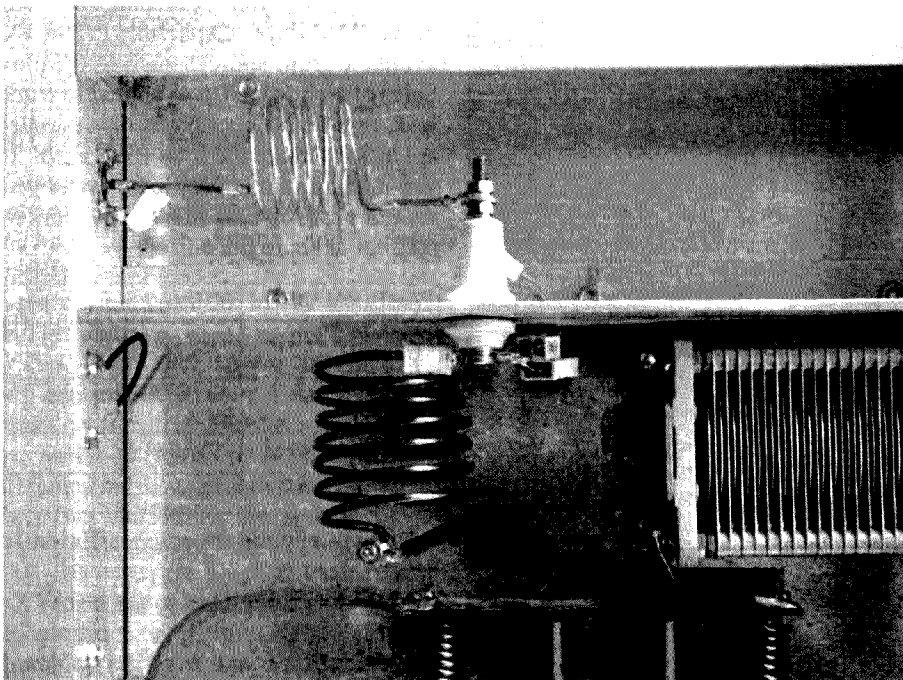


Photo 6: Output tuning and filter inductors

In all cases it is best to adjust the supply voltage and go for maximum efficiency for each carrier power output level.

Other Bands

With suitable changes to the output tuned circuit and low pass filter values, this circuit will operate on 160 and 80 metres. To reduce loss in the output transformer type 61 ferrite material was used on 40 metres, with three turns for the primary and secondary windings. On lower bands use type 43 ferrite material with single turn primary and secondary windings, (the single turn primary is simply the brass tubes connected at one end).

The table gives suggested starting-point values for operation on 160 and 80 metres, based on a 10 ohm to 50 ohm impedance transformation. Naturally, the output filter will also need to be changed.

Band	CV1 // C14	L3	C11
160	2100 pF	5.6 uH	3500 pF
80	980 pF	2.7 uH	1700 pF

Due to the high voltages and high currents, multiband switching is not really practical.

The Chassis

The chassis is made from standard aluminium extrusion and cut sheet. Use 100 mm U-Channel for the sides and back panel, with short lengths of 12 mm angle fixing the inside corners. The returns of the side U-Channels face inside, and the rear U-channel returns face outside. The front panel is made from a 390 mm length of 4 mm x 100 mm extruded bar. The bottom panel is 3 mm aluminium sheet sitting on, and fixed to, the lower U-Channel returns. The top cover is 1.5 mm aluminium sheet. Overall dimension is 380 mm wide by 300 deep with a 5 mm overhang on the ends of the front panel (could be made longer if rack mounting is required).

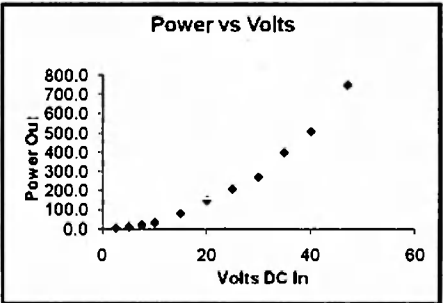


Figure 4: Output power in relation to supply voltage

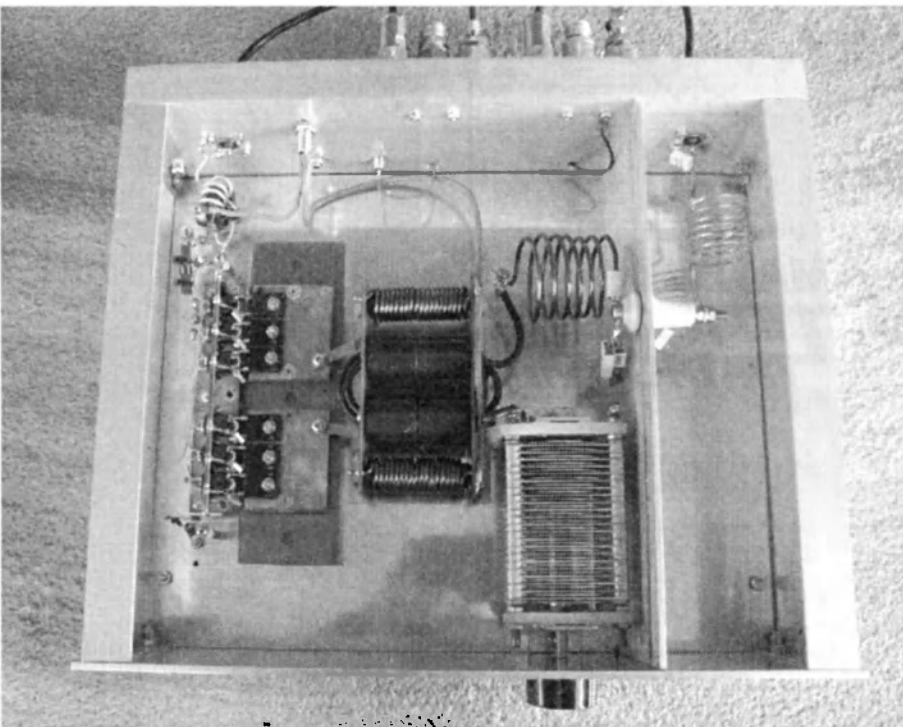


Photo 7. Internal view of the amplifier. The coax switching relays are mounted externally on the rear panel. An aluminium divider forms a compartment for the output filter (right).

Performance

Power output into a 50 ohm load versus supply voltage is shown in the graph. The amplifier tuning was not changed

during the test. The efficiency achieved at 200 watts output is in the order of 80-85%. Expect higher efficiencies on lower bands.

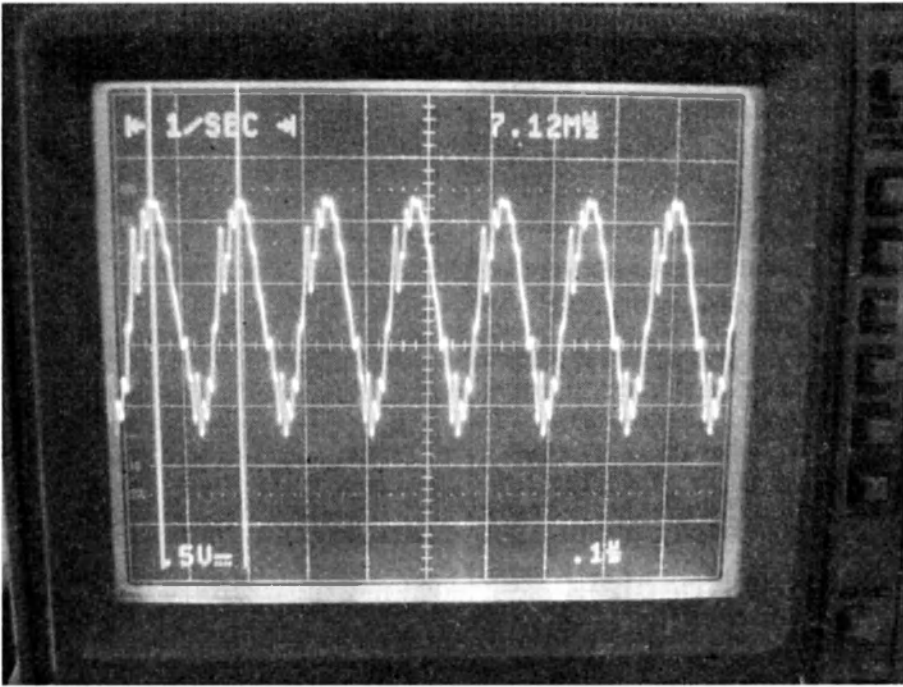


Photo 8. HP8591E spectrum analyser sweep from 2 MHz to 50 MHz. The second harmonic is 60 dB below the fundamental, and the 3rd harmonic 70 dB below. An MFJ high power dummy load was modified to provide a sample output for this test, (L-network off input connector consisting of 4k7 non-inductive resistor and 50 ohm resistor to ground).

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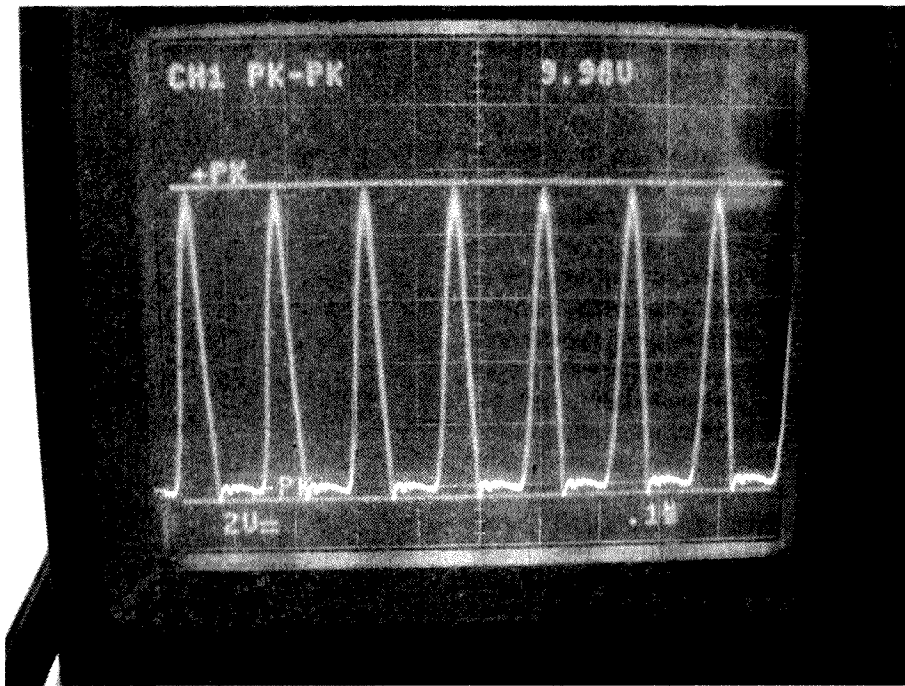


Photo 9. Gate voltage waveform (using x10 probe) at 30 watts driving power. Peak gate voltage is around 20 V p-p. The positive swing is about 12 volts zero - peak.

The drain capacitor value is correct if the peak RF voltage across the MOSFETs during the "off" cycle is around 3.5 times the DC voltage applied to the stage. Increasing the drain capacitors decreases the voltage excursion, and vice versa.

In a subsequent article, I will describe

a highly efficient "broadcast quality" Class-D (variable pulse width) AM modulator which will push this amplifier to its full output, and give you the best sounding signal on air.

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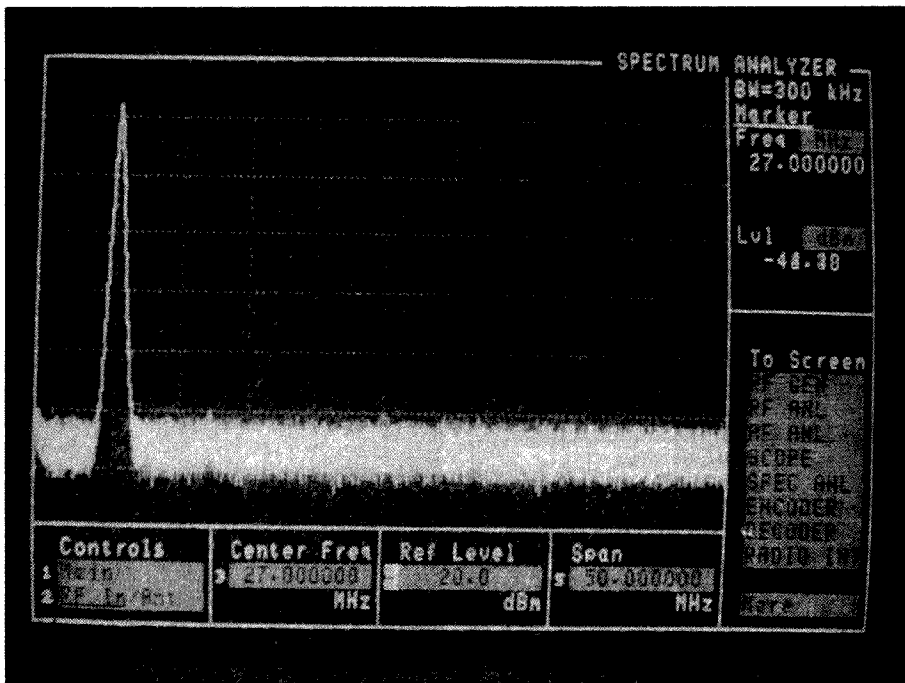


Photo 10. Drain voltage is around 100 volts p-p using a 27 V DC supply (using x10 probe). Top and lower limit lines are internally generated by the oscilloscope.

Repairing an Icom PS-30 power supply

Warren Stirling VK3XSW

I recently saw an advertisement on VKham for an Icom PS-30 switchmode power supply. After some searching the internet with Google to find out more about the PS-30 and to check for known problems and any reviews of the same (from the Eham site), I bought it.

Reading the manual and sorting the specs

The PS-30 power supply is circa 1980 and was intended to be used as the main power supply for an amateur radio station. It is rated at 13.8 V dc, 25 amps, and 10 minutes on/10 minutes off, 50% duty cycle. The dc output voltage tolerance is 10%, which may seem a bit high (I have a commercial 13.8 V dc supply that only drops 500 mV when 22 A is drawn from it), but is in keeping with the age of the design (I have checked the specifications for the dc input tolerance of some of the HF rigs from that era and they show a 15% tolerance of 13.8 V dc).

To this end the PS-30 has three two pin connectors across the back panel (each rated at 6 A) and the usual single 6 pin dc power connector common to HF radios of the era, fitted at the end of a short lead. Removal of the Icom nameplate on the rear panel will uncover two holes where banana sockets can be fitted if required.

The front panel has a power switch, power on indicator LED and an illuminated analogue meter, which indicates either the dc output voltage or the dc output current, this being selected by a rotary switch, also on the front panel. In the example I purchased, initial testing showed that the power on LED, the meter scale lamp and the current indication function of the front panel meter were not working. Otherwise the power supply worked.

In the course of surfing the 'net for information on the PS-30 I had downloaded the user manual and schematic, together with adjustment information for the power supply and regulator boards (authored by Adam Farson VA7OJ/AB4OJ). I also found an article on the repair of the power supply (authored by Ernesto Lastra Bohme DF1ELB) and downloaded it as well. I made sure that I was familiar with this

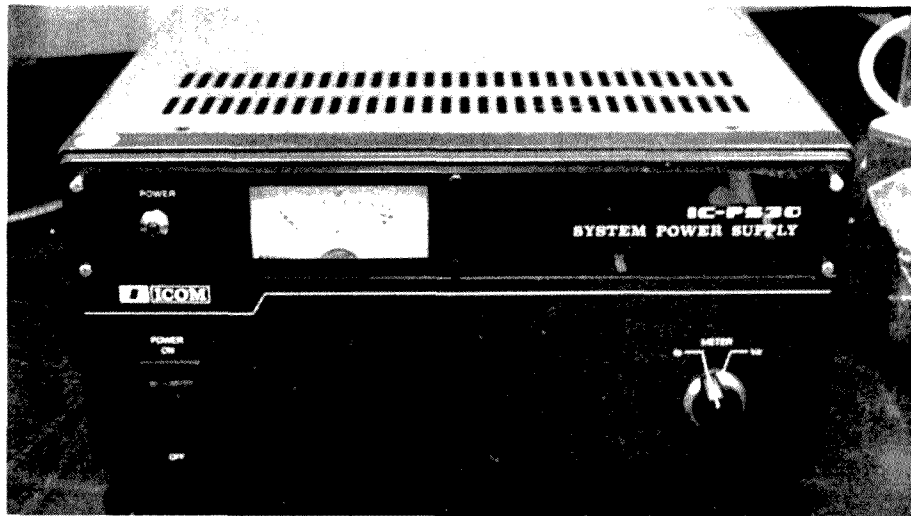


Photo 1: The front panel of the Icom PS-30 power supply.

information before I tackled the power supply faults.

Screwdriver time

Removing the six screws that held the power supply top cover revealed uninsulated mains wiring, which was common practice when the power supply was made (I have seen both Icom and Kenwood equipment wired this way), a cooling fan driven by an induction motor and a circuit board, mounted on standoffs to a black diecast box which was in turn attached to the bottom of the case.

This board is the supply board which has several functions: it converts the incoming ac mains to high voltage dc for the switchmode regulator, contains the circuitry that drives the current function of the front panel meter and also a small linear supply used for both the current indicator circuitry and as a bootstrap power supply to start the main switchmode regulator.

Visual inspection of the supply board showed that the magic smoke had definitely escaped from resistor R12. Consulting the schematic, I found that

this resistor together with zener diode D6 and capacitor C17 form a shunt regulator, powered from the 13.8 V dc output, which feeds the power on LED and the meter scale illumination lamp. Further testing showed that the power on LED was OK but that the meter scale illumination lamp was open circuit.

The schematic of the power supply does not indicate the clamp voltage of zener diode D6. While I could get a replacement diode from Icom I felt that I could sort it out myself. After isolating the power supply from the mains and allowing the main filter capacitor bank to discharge, I removed the six screws holding the supply board to the black diecast box and removed the zener diode, which was shorted, and the remains of resistor R12.

Repair, replace, refurbish

I replaced the meter lamp with a 5 mm green LED, as I had some to hand and I have found that LEDs do very well as replacements for the meter lamps used in amateur equipment, and fitted

it into the existing lamp grommet. After experimenting with powering the LED from a variable voltage test supply to find the voltage for best meter scale visibility in low light, I temporarily paralalled the power on LED with the new meter scale LED and found its brightness acceptable, so the green LED was connected via the original lamp wiring in parallel with the power on LED wiring,

The connection was made at the rear of the Vo/Io meter function switch which includes a 1k ohm ¼ W resistor, mounted on the rear of the meter switch and wired in series with R12 on the supply board, which was replaced with a 22 ohm ¼ W resistor.

Zener diode D6 on the supply board was not replaced as I think the shunt regulator was there mainly for the dial lamp and is now not needed as the new meter scale lamp is a LED (and also because I did not know what zener voltage to use when replacing it).

I did note that the coil of relay RL1 on the supply board, which is powered from the 13.8 V dc output (and functions as a soft start circuit for the power supply)

does not have a diode across it to clamp any spikes the relay coil will generate when the power supply is turned off. I soldered a 1N4007 diode directly across the relay coil, on the underside of the board, to fix this as the spike generated by the coils magnetic field collapsing would appear on the 13.8 V dc output. While I had access to the solder side of the supply board I resoldered all the joints as some of them looked decidedly unreliable.

With the meter scale illumination and power on indicator working, it was time to sort out the current indicator. The current sensor is on the regulator board and to access this board requires removing the diecast box (in which the regulator board is mounted) from the power supply bottom cover. Note that the screws securing the diecast box to the bottom cover are insulated from the power supply metalwork, as is the diecast box.

At this point in the proceedings I reinstalled the supply board on its standoffs and, to make working on the regulator board that much easier, decided

to replace the power supply top cover which would hold the front and rear panels in the correct alignment as the power supply would have to be operated while it was upside down in order to test and adjust the regulator board.

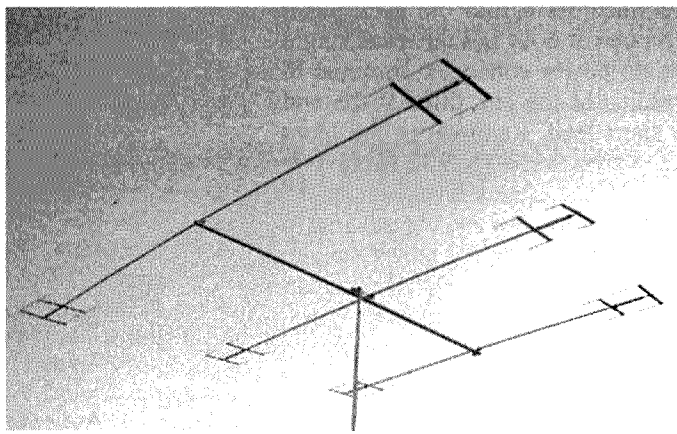
After removing the six insulated screws holding the diecast box to the bottom cover, I removed the power supply bottom cover, which involves removing eight screws with lockwashers and the two screws that hold the dc output terminal strip to the bottom cover. I did not remove the mains terminal strip, which is also screwed to the bottom cover, as I found that with the power supply turned upside down the mains wiring has enough slack to allow the bottom cover to be 'hinged' out of the way and not have any of the mains wiring touch the metalwork. It did, however, present a possible shock hazard, so I was careful to exercise due caution.

Now that I had sorted out the basic access to the diecast box, I had a look at it and found that the bottom of the diecast box could be removed by unscrewing

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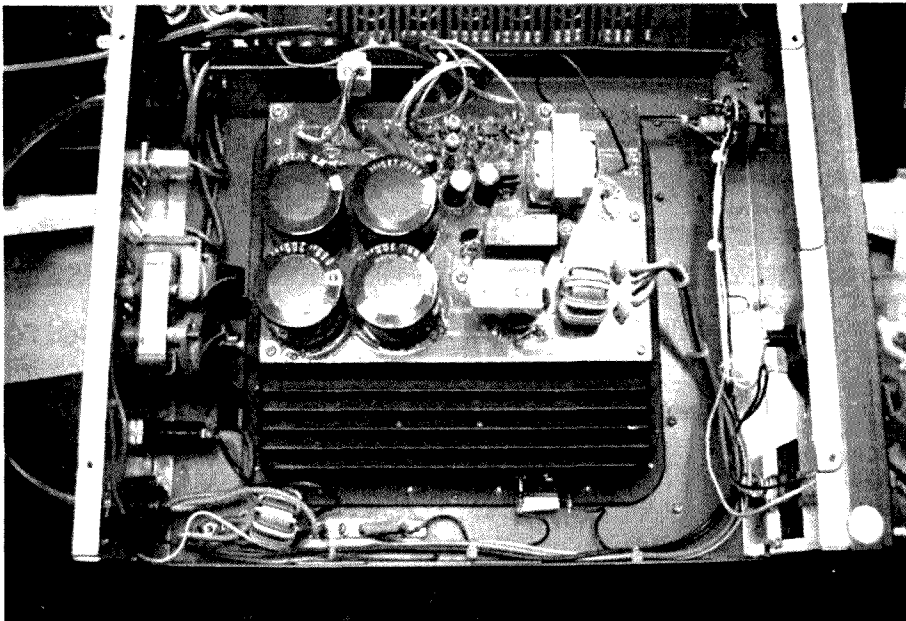


Photo 2: An overhead shot of the internals of the PS-30 power supply.

the power supply on. It all worked as expected so I connected a current sink set for 4 A (which I had lying around, as you do).

Success! The current indicator function of the meter was now working, although it was off calibration.

Checking voltages around the regulator board with no dc load current and then again with approximately 22 A load current (doesn't everybody have eight paralleled 5 ohm 95 W ceramic resistors to hand?) I noted that the dc voltage across each of the two 33 uF capacitors (C4 and C5) dropped by about 10V at approximately 22 A load current with reference to the no dc load current state. These two capacitors are specifically mentioned in the article by DF1ELB as requiring replacement.

More replacement

This same internet article also mentioned replacing C18 to C21 (470 uF 16 V) and C22 (4700 uF 16 V) on the regulator board, together with C14 and C16 (470 uF 16 V) on the supply board, with 35 V rated equivalents.

I checked these capacitors and found they all had a temperature rating of 85 degrees centigrade which, for the regulator board capacitors, I felt was a bit low as the diecast box in which the regulator board is mounted has no internal air cooling (or indeed air flow at all, which is one of the characteristics of the space inside closed boxes), so I sourced replacements with a temperature rating of 105 degrees centigrade (except for C22, the 4700 uF 16 V dc output filter capacitor as I could not find a 35 V dc rated replacement that would physically fit).

After all the replacement capacitors were sourced, I removed the regulator board (again!) and replaced the capacitors one at a time to make it harder for me to put the right capacitor in the wrong place. Following the removal of each capacitor, the brown 'glue' on the board around where each capacitor had been was carefully removed with a sharp knife. Once all the capacitors were replaced they were glued down with Dow Corning 738 electrical sealant, which I had on hand.

The other important property this has, apart from being non-conductive is that it is NEUTRAL CURE. This means that as it cures it does not produce any acidic

series across the high voltage dc fed from the supply board. There are another two resistors of the same value (68 kohm, ½ W, 5%) on the supply board, wired across the main capacitor bank. For the sake of easy confusion, both sets of resistors are designated in the schematic as R1 and R2.

Calculations with a plastic brain (calculator) showed that these resistors would dissipate around 400 mW which I felt was a bit close to their 500mW limit; and as two of them were faulty anyway, all four were replaced with 1 W metal film resistors of the same ohmic value. While I had the soldering iron to hand, I resoldered all the joints on the regulator board as some of them looked decidedly unreliable.

I then replaced the regulator board, checked I had properly reconnected everything I should and made sure that the cooling fan could spin without fouling anything. The dc output terminal block was insulated so that it could not touch the potential short circuit represented by the side of the case. I found that the assembly of the supply board and regulator board (in its diecast box) would rest easily on the four large capacitors on the supply board which would also keep the whole assembly isolated from the case metalwork.

The acid test— switch on (but stand well back)

With some trepidation and making sure I was well outside the blast radius, I turned

a mere eighteen self tapping screws. These are under a clear plastic cover that ensures the diecast box metalwork can not touch the power supply bottom cover. This plastic cover is glued to the bottom of the diecast box but it can be flexed enough to easily access the screws that hold the lid on.

All is revealed

With the lid unscrewed, I had a look at the regulator board.

To remove it involves unsoldering three high current connections to a smaller board mounted in one corner of the diecast box, removing four plastic screws holding down the four transistors soldered to the regulator board and unscrewing the seven screws that hold down the regulator board itself. The regulator board can then be carefully 'hinged' away from the diecast box as there is just enough play in the wiring that exits via each of two grommets in the side of the box to allow this.

Referencing DF1ELB's internet article that mentioned a specific fault, I checked the area of the regulator board mentioned in the article and found two resistors, virtually covered with a brown 'glue' used to hold down the capacitors on the regulator board. Multimeter testing (with the power supply unplugged from the mains) showed that one resistor read low and the other was open circuit.

These two resistors are wired across the two 33 uF capacitors that are wired in

or acetic compounds. This is important, given that the (mildly) corrosive properties of the previous brown 'glue' caused some of the problems I had fixed.

With the regulator board reinstalled in the diecast box the power supply was tested after the sealant had cured and on checking the voltage drop across each of the two 33 uF capacitors on the regulator board I found the voltage drop was now 5 V with 22 A load current drawn, with reference to the no dc load current state, where it had been a 10 V drop with the original 33 uF capacitors.

The power supply was then set at 13.8 V dc no load with preset pot R5 and then the 22 A load was again applied. Previous testing showed an approximate 1 V drop from 13.8 V when a 22 A load was applied which is well within the 10% tolerance specified. The current limit was then set, with preset pot R10, in the following manner: with the 22 A load connected preset pot R10 is adjusted so that the output voltage starts to drop with a 22 A load applied and then is readjusted slowly until the output voltage just stops rising (if the output voltage continues to fall as you adjust the current limit preset then turn the preset the other way). With the 22 A load removed the dc output voltage should again be 13.8 V dc. In the instance of the PS-30 I was working on, at 22 A load the dc output was approximately 12.8 V. Both of the presets are on the regulator board.

DF1ELB's article also recommended changing C4 and C5 on the regulator board from 33 uF to 47 uF, the intent being to improve the regulation of the dc output. I have tried this, with very little improvement. Ernestos' article does not, however, make mention of the mains supply voltage he was using when he wrote the article, which would make a difference as the high voltage dc circuit on the supply board works as a voltage doubler when the mains input is set for 110 V ac and as a rectifier when the mains input is set for 230 V ac.

Power off —recalibrate — covers on

I then turned the power supply off and replaced the insulated lid on the diecast box and replaced the eighteen screws that hold the lid on and reinstalled the diecast box on the bottom cover of the power supply with the six insulated

screws. Just for fun I checked that the diecast box was indeed open circuit to the power supply chassis, as it should be, before doing anything else.

Since I had the power supply top cover off anyway when reinstalling the diecast box, I recalibrated the meter dc output current scale. This is done by switching the meter switch to I_o (output current) and then adjusting the current meter scale to zero with preset R15 while there is no dc current drawn from the power supply. A 10 A load is then connected, so that the meter needle will be approximately mid scale when correctly calibrated, mid scale being the most accurate part of the scale for a moving coil meter, and then preset R14 is used to adjust the current meter calibration with the 10 A load connected. Both R14 and R15 are on the supply board.

Voltmeter

The voltmeter is calibrated by switching the meter switch to V_o (output voltage) and then adjusting preset R4, which is on the back of the meter switch, to show the correct output voltage while there is no dc load connected.

One of the interesting things I found while testing the power supply was the presence of a 390 V, approximately, peak sawtooth waveform superimposed on both the high voltage dc supply and the 13.8 V dc output. The fun part is that this waveform disappears if the negative side of the 13.8 V dc output is grounded, that is, tied to mains ground. I only found this as I was checking for switching noise on the 13.8 V dc output with the power

supply under load; in one of the tests I was using an oscilloscope with the probe floating and in the next test I connected the oscilloscope's probe ground to the 13.8 V dc negative line (and as the probe's ground is tied to mains ground this tied the power supply dc negative to mains ground).

As an aside, trying to use the junction of the 33 uF capacitors on the regulator board as a ground reference for the oscilloscope while looking at switching waveforms on the high voltage dc supply does not work, as this point in the circuit is sitting at approximately 160 V dc and the workbench RCD (which we all have wired in, don't we!) will trip out as it detects you trying to do something stupid like trying to raise the mains ground by 160 V dc. This also results in a smack across the back of the head, courtesy of a person who will remain nameless, from the office next door to the workbench, who has also noticed that the RCD has tripped.

Back to the manual and a ground-making thought

With all this in mind I had a closer look at the schematic for the PS-30 and found an anomaly, the symbol used to represent the mains earth to the chassis connection and the symbol used for the power supply dc negative are the same (that is, power supply negative is tied to mains ground), yet a resistance check with a multimeter shows that this is not the case. Measuring ac volts between the

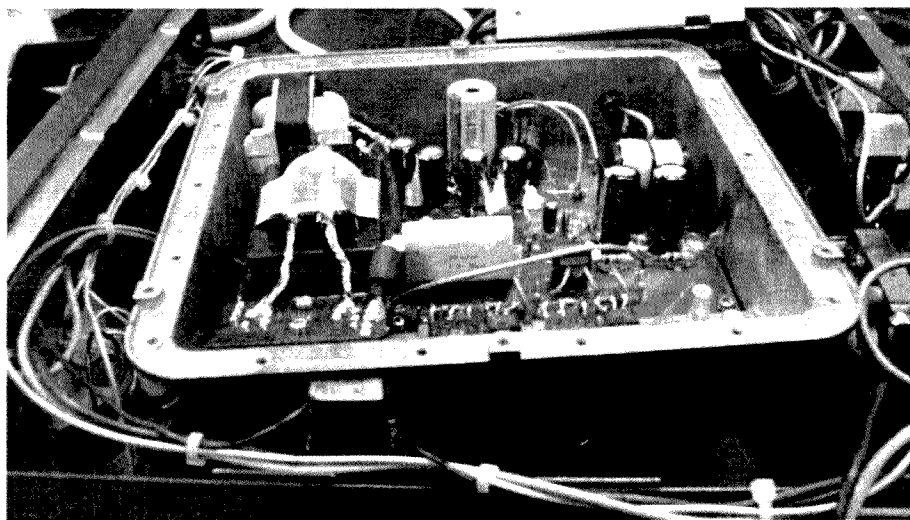


Photo 3: The regulator board of the PS-30 power supply.

power supply dc negative and the PS-30 chassis shows a substantial voltage is present, yet trying to measure the ac amperage and then the ac milli-amperage between the power supply chassis and the dc negative showed zero current flow in both cases.

After some further thought I have come up with a theory, based on how the PS-30 was intended to be used, namely to run an IC-271/471/720/730/740/745/751 transceiver (these models are specifically mentioned in the PS-30 user manual) together with a smaller vhf/uhf transceiver or transceivers.

This theory is based on the following observations: All of the transceivers mentioned and all the other 100 W rated HF transceivers I have seen have a large threaded stud with a wing-nut mounted solidly to the transceiver chassis. This is also tied to the transceiver dc supply negative. This point is intended to tie the transceiver (and yes I know the IC-271 and IC-471 are not HF transceivers) to a common ground point in the shack.

The PS-30 also has one of these threaded studs with a wing nut, located on the rear panel. It is meant to be grounded as well via this stud but since the stud is mounted on the PS-30 metal chassis it is also tied to mains ground. Both the threaded stud on the transceiver of choice and the threaded stud on the PS-30 would be tied together as both would be going to a ground point in the shack, nominally the RF ground. Tying all of our RF generation equipment to the same single ground point is something we all do, don't we?

When the transceiver of choice is plugged into the PS-30, the PS-30 dc negative would be tied to mains ground via the path: transceiver dc negative connection to transceiver chassis – transceiver chassis to ground point via its threaded stud – ground point to mains ground via the threaded stud on the PS-30.

With all this in mind and allowing for some paranoia on my part I tied the PS-30 13.8 V dc negative to mains ground (PS-30 chassis) via a one ohm $\frac{1}{4}$ W metal film resistor. The intention being that, if there is a large current flow from the power supply dc negative to mains ground, (which there should not be because previously I could not measure any current flow between these

points), the resistor will get hot and go open circuit, the smoke and the smell from doing this being an indication of a fault condition.

Power up — again

Switching the power supply on, again making sure I was outside the blast radius, had no effect on the resistor.

There was no dc or ac voltage measurable across it. Checking the dc output with a floating oscilloscope probe showed no ac at all on either the high voltage dc or the 13.8 V dc output, which is what I wanted. Further testing showed the PS-30 working as expected.

Where did this ac waveform come from? Well each of the diodes in the bridge rectifier on the supply board has a 2.2 nF capacitor across it (C3 to C6) to keep rf out of the diodes. This is very nice but if you draw this circuit out you find that from each side of the ac mains there is a capacitive path to the dc output.

I hear you say, the ac voltage would not get that high because of the forward voltage drop of the diodes in the bridge rectifier! True enough, but only for the two conducting diodes of the four diodes in the bridge rectifier and only for one half cycle. You see, in a four diode bridge rectifier, as used in the PS-30 and numerous other power supplies, only two of the four diodes conduct at one time, leaving a nice high ac voltage across the two non-conducting diodes.

Grounding and dc negative

So how does grounding the supply dc negative get rid of the superimposed ac?

On the rectifier board each side of the floating high voltage dc has a capacitor directly connecting it to the dc output negative (C2 and C3) and on the regulator board the high voltage dc is indirectly connected to the dc output negative (via C4 and C5 through C6).

So if I tie the dc supply negative to mains ground, or in my case to mains ground via a 1 ohm resistor because I am paranoid, any RF that might appear on the dc side of the supply is provided with a low impedance path to ground, instead of a path to dc negative and possibly ground if both the power supply

chassis and the chassis of the transceiver connected to the power supply have been tied to the same ground point.

This leads me to another point, the encapsulated bridge rectifier used (a GBPC 806) has a peak inverse voltage rating of 600 V (that is, the maximum voltage that can appear across a non-conducting diode in the bridge is 600 V) and for a nominal 240 V ac mains input.

I feel this is a bit low given the high voltage dc is a nominal 320 V and any mains borne spikes could easily reach 600 V for long enough to damage the bridge rectifier (yes I know there are some capacitor/inductor filters between the mains input and the bridge but they may not stop a fast, narrow spike that could damage the bridge rectifier) so I replaced the bridge with one from the same series, in this case a GBPC 810 which conveniently is the same mechanically, but with a PIV rating of 1000 V, (incidentally the 1000 PIV bridge is roughly 30% cheaper than the 600 PIV bridge, and no, I do not know why either!).

After some repair work and a steep learning curve, I can now retire the old shack power supply and replace it with one not that much larger but of at least twice the capacity.

If I total what it cost me in terms of the hip pocket, I would have to agree with some of my usual brians trust members who have told me that there are cheaper alternatives, but at least this way I have learned something!

Acknowledgements:

A lot of the approaches I have taken while testing and repairing the PS-30 were prompted by discussions with some of my usual suspects from the drive time net on the Melbourne 438.075 MHz repeater and their suggestions are gratefully acknowledged.

The internet articles by Adam Farson VA7OJ/AB4OJ, on adjusting the PS-30, and Ernesto Lastra Bohme DF1ELB, on fixing a problem he had found with his PS-30 are also gratefully acknowledged.

I would also like to acknowledge the suggestions of my boss, Ralph. The coffee has also helped!

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A simple two element 'Strip' Yagi for fox hunting or other applications

Felix Scarri VK4FUQ

I recently had the opportunity to go 'fox hunting' (hidden transmitter locating), and I was quite keen to attend, however there was one small problem. Although I had a suitable 2 m hand held, I had no suitable directional antenna!

Then a flash of inspiration! Some time ago I had 'partially' built a two-element 2 m Yagi for test purposes which was never properly finished. Thus inspired, I spent a few hours finishing this little antenna and I got it ready for fox hunting duty. Its design borrowed directly from my earlier three and five-element 'strip' Yagi designs, which performed exceptionally well.

This little two-element Yagi is perhaps the 'absolute minimalist' version of my strip Yagi series, simply consisting of a driven element and a reflector placed at a distance 0.2 of a wavelength away (see Photo 1); theoretical forward gain is around 4.5 to 5 dBd. Using a gamma match, I matched the antenna to a short length of RG58 coax at 146.3 MHz and it was ready to go fox hunting!

I had never really participated in any radio 'fox hunt' before, so it was going to be interesting! The day of the fox hunt arrived and I was pleasantly surprised at how well things turned out. The little two element beam had quite a clean directional pattern in practice, with especially deep nulls off the back and sides. It was actually quite easy to rotate the beam through 360 degrees (at different polarisations), then look for the deepest null off the back of the beam and simply note the reverse direction by 180 degrees for the true direction of the 'fox'. In the end, although I was not the first to find the 'fox', it was much easier to find than I had expected! Overall, I was quite happy with this little two element 'strip' Yagi.

Although this antenna was built expressly for 'fun' fox hunting activities, it has since occurred to me that it could have value in extending the range for portable and/or base applications. Whilst a larger Yagi with more (and carefully tuned) directors will obviously have greater gain, this very compact and

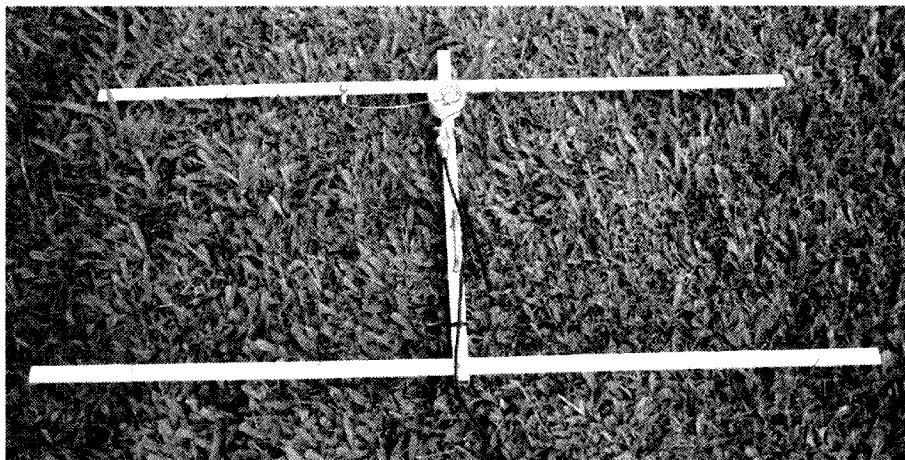


Photo 1: Two-element strip Yagi antenna

diminutive two element version provides around 5 dBd of forward gain. This is equivalent to doubling, and a little bit more, on both transmit and receive, which is very worthwhile given its small size! Indeed, when fully assembled, it

easily fits into the boot of my Mazda 3 sedan, while the larger three-element version will not, unless completely disassembled!

So its value is not limited to purely fox hunting applications!

The VK4FUQ two element 'strip' Yagi construction data

Boom material:	19 mm aluminium box tubing
Element material:	20 x 1.6 mm aluminium strip
Driven element length:	980 mm (38.5 inches), for the 146 MHz range
Reflector element length:	1020 mm (40.25 inches)
Spacing:	410 mm (16.125 inches), measured 'centre to centre' from one element to the next
Matching System:	Gamma Match. Tapping point 140 mm (5.5 inches) from centre, capacitor approximately 27 pF.

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CORRECTION

In the article "A swept-frequency generator" by Paul Anderson VK2GPT published in the June 2008 issue of Amateur Radio, both the parts list and the circuit diagram on page 21 omitted the value of C7.

Please note:

C7 4.7 uF Tantalum 35 V

A state gathering of radio amateurs in the Czech Republic

Vlad Sezemsky VK2EKO and Margaret Sezemsky VK2PSM

A state gathering of radio amateurs was held at Holice, in the Czech Republic, on 24th/25th August 2007. This gathering not only included many Czech amateurs but also several from various European countries, from Canada and, for the first time, Australia.

Holice is a town of about 6000 located in Eastern Bohemia near Paradubice, and has for some years been the centre for this gathering of amateurs. The Paradubice region is an area of natural beauty, an undulating landscape that is an attractive tourist destination as well as an historical centre. Holice surprised us with its African Museum, a memorial to Dr. Emil Holub, a 19th century explorer from Holice who travelled extensively in Africa, gathering a large collection of ethnography and natural science.

We were overwhelmed by the joyful reception extended to us, and it was a challenging exercise matching faces with voices that we had heard over the years; in the case of Jaroslav OK1NH, for 21 years. We were not very successful until they had something to say.

Accommodation had been arranged for out-of-town travellers in a recreation centre where we all had a chance to relax and socialise after the formal meetings had finished.

The chief formality was a sit-down meal with the Mayor of Holice, for about twenty amateurs plus the committee responsible for the organisation of the gathering. It was an occasion for speeches and an exchange of gifts. Our speaker Vlad VK2EKO thanked the Mayor for his welcome, commented on the historic nature of the town, which was established in 1340, and remarked that while Paradubice is an important and larger town, especially known to horse racing enthusiasts, Holice is more significant for us because it is the venue for the gathering of radio amateurs, several of whom we had been in contact with for twenty years. A 'coffee-table' book of Australia was presented to the Mayor as a memento of this visit; best wishes were extended to him for his good health and successful tenure of office. In return he presented us with souvenirs of Holice.

The next day was an occasion for informal meetings scheduled in smaller

meeting rooms, and on a roster basis. Australia was first on the roster, and this provided an opportunity for us to pass on greetings from Emil VK2FHC, Vojta VK4AXM, Standa VK3PSR and Karel VK4CWS, and to discuss equipment and the hobby in general, and to exchange souvenirs.

Among those present was Jaroslav OK1NH, who was a radio officer on the ship 'Vltava' when first contact was made with him on 21 June 1986. Others we met were Vladimir OK1ATQ, Pavel OK1KZ, Jaroslav OK1TC, Ondra OK1TKO, Libor OK1WS, Josef OK1AB and his wife Jana OK1UB and Ivan OK1MOW, who was involved in organising the gathering.

Altogether it was an exciting and rewarding visit. Thanks go to the organising committee, and especially the amateurs who welcomed us and took care that we met as many people as possible, and experienced the spirit of the occasion as well. The only regret is that Holice is so far away, and is unlikely to be on our itinerary again any time soon.

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Photo 1: Vlad VK2EKO meets Jaroslav OK1NH, after 21 years of on-air friendship. Margaret VK2PSM looks on.



Photo 2: Meeting members of the welcoming committee – Ondra OK1TKO, Josef OK1AB, Vladimir OK1ATQ, Vlad VK2EKO, Jana OK1UB and Margaret VK2PSM.



Photo 3: Vlad VK2EKO visits one of the stalls at the gathering.

International Lighthouse/Lightship Weekend

It all started on a wet wintry evening...

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 GM4OOU and the late Mike GM4SUC, were talking after a club meeting 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. It was at this time that John, GM4OOU, due to pressure of work, had to cease his connections with the event.

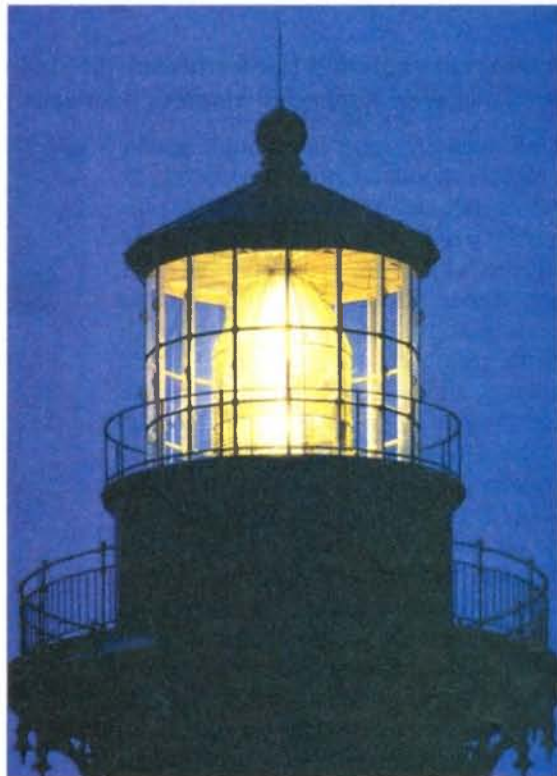
The weekend became an annual event taking place over the third full

weekend in August and has slowly grown in popularity. In 1999 there were 204 lighthouse/lightship stations in 36 countries and by 2007 380 stations in 43 countries took part. Full statistics and guidelines for participation can be found on the ILLW web site at <http://illw.net>

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.

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 visit 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 of the countries involved in the event.

This year's event takes place on 16-17 August 2008, so if you have not 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 do not intend operating from within the lighthouse itself or one of its



cottages, you really do not need to get any approval. Most first time entrants are so enthused with the event that they return year after year. A report from the Burlington ARC, Canada, summed up 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 Amateur Radio Group and one of their members has taken on Mike's role as the PR man and main co-ordinator. The event is now dedicated to Mike's memory, as is the official web site <http://illw.net>, where you will find the event guidelines, an on line entry form and lists of participating lighthouses since 1999.

An LF receiving converter with loop-stick antenna

Drew Diamond VK3XU

Interest in exploring low frequency (LF) techniques has been re-kindled in this country by the likely approval for Australian Advanced amateur licensees to use 135.7 to 137.8 kHz (2,200 metres) for narrow-band modes.

Unfortunately, most households and/or neighbourhoods are now enveloped in an 'electronic smog' of spurious noise plus a galaxy of harmonics from a multitude of switch-mode power supplies and other appliances. Rather than use the main transmitting antenna for receiving, much better results should be obtained where a loop, either 'frame' style, or ferrite rod (loop-stick) is used. Such antennas possess a deep null in their response that usually permits the worst of these noise sources to be placed 'in the null', and so obtain a substantial improvement in signal to noise.

A significant reduction in noise may be had by making the converter self-contained and battery operated, with no electrical connection whatsoever with the AC mains (which conducts, and re-radiates noise into the shack environment). For a loop-stick antenna, a further decrease in mains-born noise pick-up is obtained where the antenna is located more than a one metre or so from mains operated devices.

Offered here is a simple, sensitive receiving converter that allows an ordinary HF receiver - one that tunes the 3 or 4 MHz bands - to be used as a 'tunable IF'. Hence, where a signal on, for example, 137 kHz is tuned in, it will be 'up-converted' and appear on 3,137 (or 4,137) kHz.

Circuit

See Figure 1. The loop-stick's self-inductance, about 2.4 mH, is resonated with a variable peaking capacitor adjustable from (about) 20 to 800 pF. This gives a tuning range of around 110 to 290 kHz, thus also providing access to some of the navigation beacon signals above 200 kHz - a handy feature for appraising the converter's capabilities.

The amount of signal energy available from a loop-stick is much less (about 20 dB) than obtained from a long wire antenna (References 1 - 6). Amplification of the loop's voltage is therefore required,

partially provided in this instance by a 2N5484 FET common source amplifier. Thus, very little loading of the antenna circuit occurs, so the natural 'Q' - and hence selectivity - of the antenna is maintained. This feature greatly attenuates any (possible) intermodulation-causing signals that lie either side of the resonant frequency (a characteristic that is absent from a 'general-coverage-receiver-and-long-wire' set-up, for example). The 100 pF ceramic capacitor between gate and source discourages any strong local TV or FM signals from entering the amplifier.

A popular NE/SA602 mixer chip and on-board crystal-controlled oscillator heterodynes the LF signal up into the 3 (or 4) MHz band. The '602 also provides about 15 dB of conversion gain. A conventional broadband transformer couples the 1.5 kilohm balanced output of the '602 into 50 ohm coax cable, thence to the input of an appropriate receiver.

The crystal frequency is accurately adjusted to 3.000 (or 4.000) MHz so that exact knowledge of the input frequency is assured.

Construction

The prototype model, pictured in Photo 1, is housed in a plastic 'jiffy' box measuring 130 x 67 x 40 mm. The variable capacitor, amplifier and mixer chip are accommodated upon a 'paddyboard' circuit board (Reference 7) measuring 100 x 50 mm, although any preferred construction style, even 'ugly', should serve, provided that component leads are reasonably short, and the general layout shown in Figure 2 and Photo 2 is followed.

The SA/NE602 may be fitted into an 8-pin DIL socket that is, in turn, soldered upon a 'substrate' pad of circuit board, segmented as shown. The angled cuts are at 65 degrees to the centre line of the chip. The substrate and pads may be fixed, copper side up upon the circuit

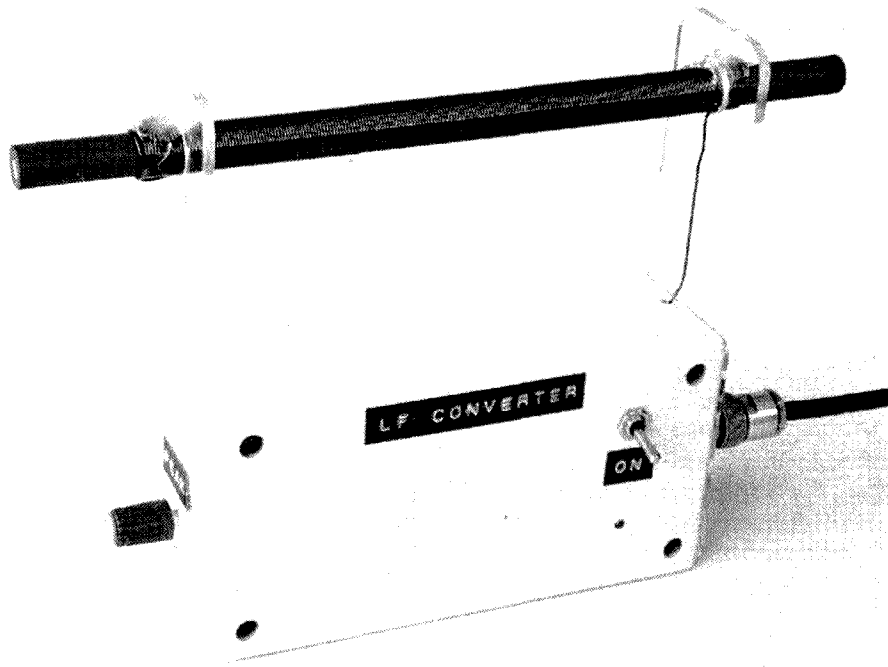


Photo 1: The LF receiving converter with loop stick antenna.

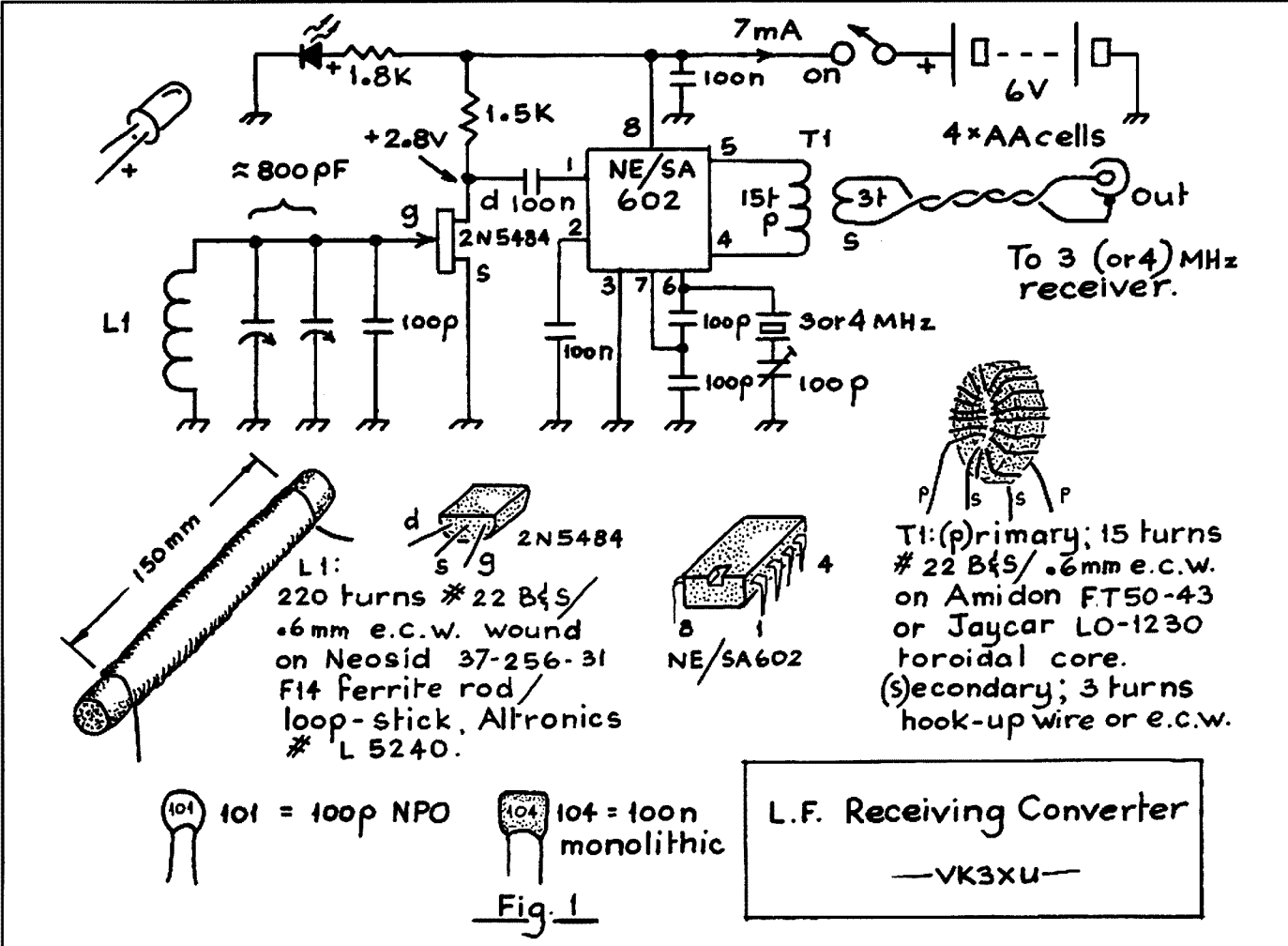


Figure 1: Schematic of the LF receiving converter.

board, with just a dab of super glue.

Or consider using hot-melt glue. In this case apply a sliver of solid glue upon the underside (fibre) of the pad, then apply your soldering iron tip to the glue and melt it evenly. Quickly place the pad on to the board in the exact spot required. A 'handle', such as a 3 A diode, may first be temporarily soldered to the pad as an aid to this procedure.

To achieve best 'Q', the loop-stick should be distanced from metal objects by more than about 50 mm. 3 mm Perspex or acrylic sheet is an ideal material for mounting the rod above the box, as illustrated in Photo 1.

For the antenna coil, close-wind 220 turns of #22 B&S/0.6 mm enamel coated wire (ecw), with a winding length about 150 mm, upon a Neosid 37-256-31 F14 ferrite rod. The coil ends may be temporarily anchored with a small piece of sticking tape. Upon final assembly, the rod is passed through a slightly over-size hole in each of the Perspex sheets. A

dollop of hot-melt or epoxy glue should be applied to the interface between the coil and the Perspex. Later, with care, the tape may be removed and replaced with a small blob of glue to secure each end of the coil.

The four AA cells for the 6 V battery supply may be accommodated in a 4-cell holder (eg Jaycar P/N PH 9204), attached with hot-melt glue to the lower rear of the jiffy box.

Operation

Carefully inspect your soldering for quality and accuracy. Confirm that the FET, NE/SA602 and the 4 x AA cells are correctly installed.

Connect the converter's output to the receiver input using a suitable length of 50 ohm coax cable. Switch on, and tune your receiver to about 230 kHz (3.230 [or 4.230] MHz on the receiver's dial). Adjust the loop variable capacitor for a pronounced peak in noise, then find a navigation beacon signal, re-

peaking the capacitor as you go. The set-up should sound lively (or 'gainy'), indicating that the converter is probably working correctly. You should be able to substantially reduce the (man-made) noise level by rotating the converter for lowest noise/best signal.

Now tune down to 'zero frequency' - 3 (or 4) MHz. Provided that the receiver's dial/readout is accurate, adjust the 100 pF trimmer so that the crystal oscillates on exactly 3.000 (or 4.000) MHz at 'zero beat'.

When the band is allocated to us in due course, amateur signals should be audible near 137 kHz.

Parts

All of the ordinary electronic components are available from our usual electronics component suppliers, including Altronics, Electronic World, Jaycar, Rocky and Semtronics.

The preferred Neosid ferrite rod is available from Altronics, P/N L 5240. A

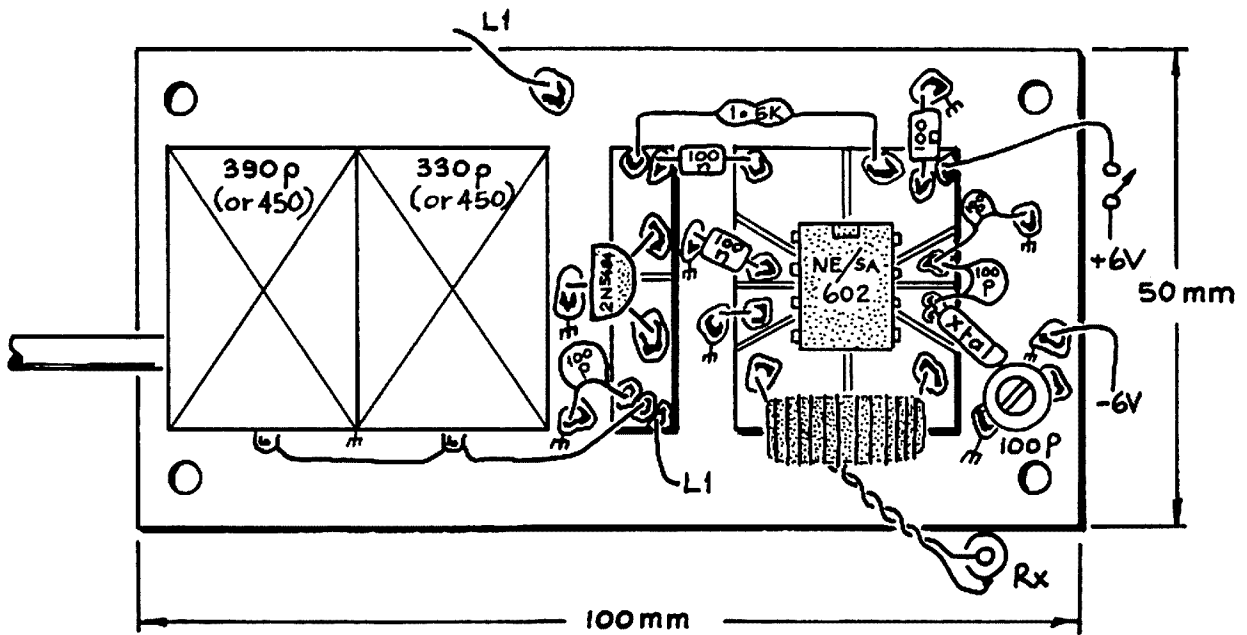


Fig. 2

Figure 2: The general layout of the components in the plastic 'jiffy' box.

3.000 MHz crystal, P/N 13662, may be ordered from Rockby Electronics (www.rockby.com.au).

Unfortunately, SA/NE602s are not (normally) stocked by the usual suppliers (although Electronic World (03 9723 3860) have them in an SOIC [surface mount] package). Andrew Blight VK3BFA at Starlight Electronics (ph 03 9802 3421) can supply single '602s to amateurs at reasonable cost.

My plastic 'jiffy' box is a Jaycar HB 6023 (take care that your chosen variable capacitor will fit, together with the other circuitry).

The variable capacitor may be any miniature two (or three) gang broadcast type with a total capacity of 700 or 800 pF. The capacitor for the prototype (visible in Photo 2) is a beautifully made 330 + 390 pF 'Kopf' part, complete with anti-back-lash reduction drive, obtained at a local ham swap-meet at next to no cost. The fellow selling these was practically giving them away, so it is possible that you, or one of your radio mates, have one. It may be fixed upon the circuit board with four 2.5 mm (preferably brass) screws inserted into existing pre-tapped holes, where the screw heads provide four solderable anchors.

If you enjoy the same good luck as

this writer, a bundle of 3 mm Perspex (acrylic) sheets may be obtainable from the off-cuts/scrap-bin at your local plastic sign makers, free for the asking.

Should you have genuine difficulty in locating an item or two, do please write (or 'phone on 039722 1620). I am not in the parts business, but I usually have spares on-hand, or can suggest a source.

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5. 'LF and VLF Converter'; R Haigh, *Everyday Practical Electronics*, July 2005.
6. *Radio Communication Handbook*; RSGB, LF chapter (10) in recent editions.
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Photos: Karlen Dockrey
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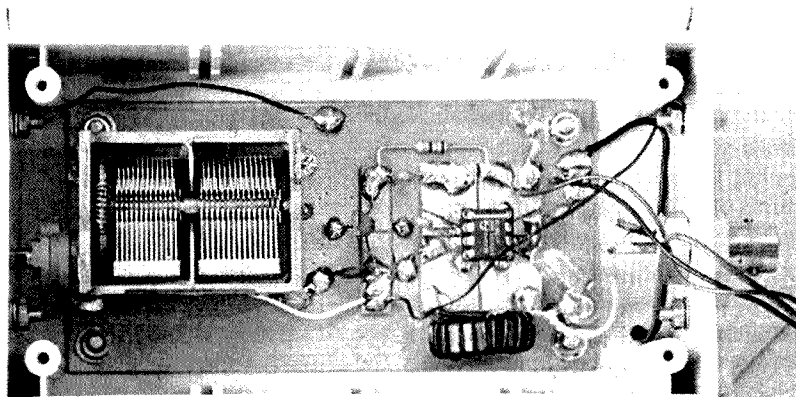


Photo 2: View inside the 'jiffy' box with the lid removed.

When one can't see the forest for the trees

Felix Scerri VK4FUQ

Yes, there is an aspect of 'humble pie' to this story but I have decided to tell it anyway, a simple story of not being able to 'see the forest for the trees', or an inability to realise a very basic long-term error.

For some years I have had weekly skeds with an amateur friend of mine in VK3 on 20 m. Over the years we have had many excellent skeds with good signals in both directions, despite both of us using basic single-element antennas. However in recent times this 'path' had become poor and many of our weekly contacts had been essentially non-existent.

As a consequence, I had been giving much thought to improving my 20 m antenna set-up. One recent Saturday after lunch, whilst having a doze and staring at the Amateur Radio Map of the World, it occurred to me that perhaps my inverted V dipole was not really 'looking' at the VK3 region at all, as I had previously thought that it was. Well, it was not! It was firing essentially to the SE and NW from this location in Northern VK4 and was skirting the edge of the VK3 region, a long way from the intended target, which was confirmed by a couple of basic compass bearing checks. I quickly ventured down to the backyard and reorientated the inverted V to 'look' due south and due north. Before I did so, I noted as a reference the signal strength of Radio Australia on 15.240 MHz from the Shepparton transmitter, with the 20 dB attenuator in circuit. It was 5 dB over S9. After re-positioning my inverted V, the Radio Australia signal was now at 15 dB over S9, a definite improvement!

I sat there for a few minutes as the significance of this sank in. In a flash of inspiration I decided to re-install my wire 20 m Quad loop, as the inverted V in its 'new' position was no longer an obstruction. The Quad loop was hauled up the mast in a few minutes ('Murphy' was obviously away for the day), and then I did more receive tests. Radio Australia was still at around 15 dB over S9 on the Quad loop. I made a quick phone call to my friend in VK3 and arranged a contact on 20 m.

The result: despite poor and disturbed propagation (a 'K' index of 5), a good solid contact at a 100 watt SSB power level with no problems, and with the S meter indication at both ends 'well up' throughout the lengthy contact. I was quite happy, as one might expect.

The whole incident has been a real eye-opener as I had not properly appreciated the importance of correct aiming, even of a basic single-element antenna. One does not ordinarily think of a single-element antenna as a 'directive array'. An 'array', perhaps not, but 'directive', yes! I had always assumed that a single-element antenna's radiation pattern was broad enough to be relatively non-critical. Well, yes it is; but there are limits! The Quad loop actually does have a slightly sharper pattern, with deeper nulls 'off the ends' than a dipole, making optimised positioning even more important.

Since that fateful day I have rethought many aspects of this general situation and why I had not properly appreciated it before. My other antennas for HF are separate inverted V dipoles for 40 m and 80 m. Because they are physically quite long, at this QTH they fit in the backyard pretty much as dictated by the available space. For this reason they run essentially in the N to NE, and S to SW directions, firing broadside to the wires, yet they give excellent coverage to the desired VK target area as evidenced by my weekly 40 m Sunday morning WIA news broadcasts. This, despite them being poorly positioned and firing mostly east (out to sea) and west; in theory anyway. Why? Well, it is worth remembering that inverted V antennas tend to have a somewhat more omnidirectional pattern than true horizontal dipoles, and that when such dipoles are

on low HF frequencies and close to real 'Earth', this tendency is exacerbated. A big blob of radio frequency energy going just about everywhere, and up, is the main result. Twenty metres is a band where perhaps these omni-directional effects are substantially reduced, making more precise positioning more important and practically mandatory. Well, it certainly works out that way in practice at this QTH!

Well, my 20 m Quad loop is still up and whilst I am still not totally convinced that it is noticeably better than my half-wave inverted V, for various reasons such as 'effective height' considerations, it is working very well in practice. I have to concede that it does have some

unique virtues such as excellent noise cancellation, not only on 20 m but also when used as a general coverage 'receive' antenna which, as a keen SWL, I find a most desirable quality. Especially on the lower short-wave frequencies and the AM medium-wave broadcast band, this noise cancellation and the resultant improvement in 'listening' S/N ratio has to be heard to be believed. For this reason as well as its good performance on 20 m, I think I might leave it up. I admit to having a considerable aversion to noise of all kinds!

Although in some ways I am a little annoyed at how silly this error was, thankfully the antenna is still worked quite well despite its non-optimum positioning for the VK3 region. Sometimes I think that it might be preferable if things simply did not work at all when they are not right, rather than 'sort of working, after a fashion'. But perhaps I should not be too annoyed, as this sort of thing happens in life all the time, or so I am told. Hi.

VK4FUQ learns to appreciate the importance of correct aiming

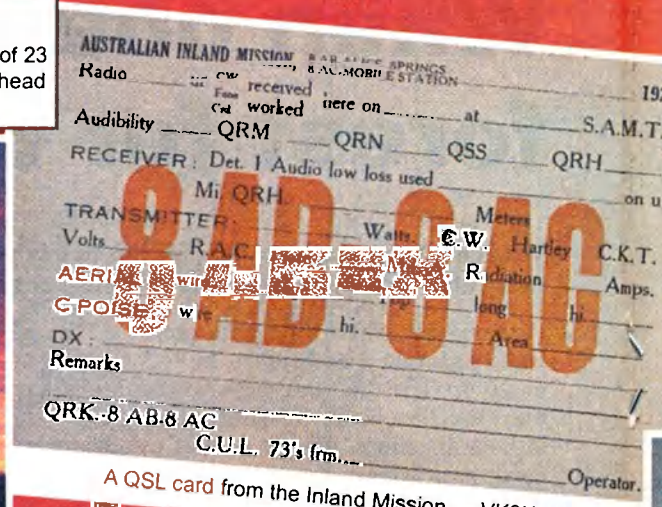
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Views from Broken Hill

Photographs from the WIA AGM activities in Broken Hill on the weekend of 23 to 25 May 2008. Photographs by Peter Freeman VK3KAI, Robert Broomhead VK3KRB, Ewan McLeod VK4ERM and Christine Taylor VK5CTY.



Playing 144 MHz SSB at dawn, just south of Broken Hill — VK3KAI



A QSL card from the Inland Mission — VK3KRB



Traeger's radio display at the School of the Air — VK3KRB



Michael Wright VK5ARD receiving his President's Commendation certificate from Michael Owen VK3KI — VK4ERM



Traeger radios advance to SSB — VK3KRB



Michael Owen VK3KI conducting proceedings at the AGM. Peter Freeman VK3KAI, Phil Wait VK2DKN and Trevor Quick VK5ATQ prepare for the next items on the agenda — VK4ERM

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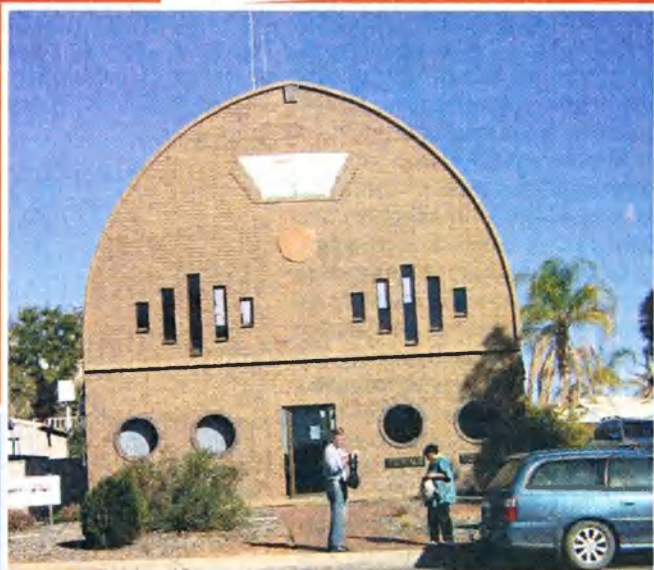
Some of the crowd at the lunch at Lions/Rotary Park on Saturday — VK4ERM



NZART visitor Stuart Watchman ZL2TW presents a book to Robert VK3KRB, for his efforts in planning the AGM activities in Broken Hill — K4ERM



Well known Broken Hill artist and outback traveller Jack Absolom emphasizes a point during his after dinner oration — VK4ERM



The building housing Radio 2BH, styled after a classic broadcast receiver — VK5CTY



Some of the ALARA YLs gathered at the Lions/Rotary Park, near the relocated Kintore headframe of the Centrai mine — VK5CTY



Part of the collection of historical radio receivers at Radio 2BH — VK4ERM

The Central Coast ARC adopted a new constitution and standing orders at a special meeting on the 18th April. Their 2009 Wyong Field Day is on Sunday 22nd February, subject to confirmation. Their AGM was last month.

The Mid North Coast ARC recently commissioned a 70 cm repeater at Dorrigo. Callsign is VK2RMG. Frequency is 438.125 MHz with a 123 Hz CTCSS tone. The next project is a 2 metre service linked to 70 cm, followed by a 6 metre system. Planning is well under way for the Radio Expo on Sunday the 18th January 2009. The MNC group produces a range of kits, the sale of which helps fund the repeater development. Check their web site www.mncarg.org

The Illawarra ARS celebrated their 60th anniversary last month – including the special callsign VI2AMW60. They currently provide technical workshops with a range of projects, including kits of parts. Check it out at www.iars.org.au They have a news session on Tuesday evenings – other than meeting nights – on the Coast linked repeater network. The anniversary dinner is moved to the 28th June from the earlier announced date.

The Oxley Region ARC conducted their annual field day over the June long weekend. They are now back in the routine of the monthly meeting on the first Saturday afternoon with the informal second and fourth Friday evenings at the Port City Bowling Club, Owen Street, Port Macquarie. They can provide Foundation and Standard classes and exams in the Port Macquarie and Wauchope regions. Inquire to P.O. Box 712 Port Macquarie NSW 2444, or check out their website www.orarc.org

Waverley ARS had to shift their annual auction to the 12th July as notified in AR last month as the Scout hall has other users other than during school holidays.

The Hunter Radio Group, formerly Hunter Branch of the NSW Division, meet on the second Friday evening at the local NBN TV studios. There is a news net Monday evening at 7.30 pm, 80 metres – 3593 – and local VHF and UHF repeaters.

Next month – 10th August – will be the SARCFEST of the Summerland ARS at Richmond Hill. They are seeking two more area amateurs to become assessors. Contact Ian VK2IGS or Duncan VK2DLR for details.

ARNSW

The office bearers for the ARNSW 2008/09 year were recently decided. Norm Partridge VK2TOP is the President and will also look after Membership and Affiliated clubs. Senior Vice President is Beth Langley VK2AO, with duties at the Dural property. Junior Vice President is Terry Ryeland VK2UX who also has education. Secretary is Michael Corbin VK2YC, also the role of Public Officer, Deceased Estates and will oversee building development. Brian Kelly VK2WBK is the Treasurer. Mathew Magee VK2YAP is looking after broadcasts and Dural engineering. Brian Keegan VK2TOX is Web Master.

The last Sunday this month – 27th – is the next Trash and Treasure and Home Brew gathering at the Dural property.

Beth VK2AO, on behalf of ARNSW announced a DXpedition as part of the celebrations leading up to the 100 year celebration of WIA NSW. To quote from the news release on VK2WI news on the 8th June:

For the information of those interested in DX expeditions and who are current members of ARNS, we are looking at staging a number of DX trips across Australia over the next 18 months with the intention of setting up HF radio sites over long weekends and a long trip with a four week travelling expedition to a number of destinations as part of the 100 year celebration of WIA NSW.

If you want to be part of an expedition or a support site or can assist in some other way please get in touch. These trips will need a team of dedicated people if they are to be successful. If you are an F call, a Full call or somewhere in between then this is the chance of a lifetime.

We cannot do it without help so we would be interested to hear from anyone who would like to participate. If you would like to be part of fun then call Beth VK2AO on 0413 155 531.

Advised by Beth Langley VK2AO
Vice President ARNSW.

A major posting of ARNSW renewals went out last month. There is a problem with any renewal being FAXed back to 02 9651 1661. The machine does not like the dark paper of the form. If you wish to FAX – down load a form from the ARNSW web site onto a light coloured paper. Membership of ARNSW is now available for either 2 or 5 years.

73 – Tim VK2ZTM

40 years ago ... continued.

You may have noticed the Editorial Comment last month about the gremlins in some text. Well, something also happened to the last part of the article last month. A line about the Waverley ARS found its way into what should have just said .. Another meeting occurred in July 1972 in Albany. ...

Well, that meeting took place with a good attendance. The agenda was to introduce more channels on 2 metre for the many systems then on line or waiting. There was also a proposal to shift the frequencies from being centred across 146 MHz to all above 146. A reason offered was that the international Amateur Satellite Service was assigned the couple of hundred kilohertz from 146 down.

This was a VK3 proposal and VK2 did not like the idea. The meeting did agree to expand the channels to be available by bringing in the previously withheld Ch 2 and 3 and adding three more on the 50 kHz spots between the existing four. These were to be known as Ch 5, 6 and

PLAN AHEAD

MID NORTH COAST AMATEUR
RADIO GROUP

RADIO EXPO

COFFS HARBOUR NSW

SUNDAY 18TH JANUARY 2009

20 EXHIBITORS PLUS

ENTRY ONLY \$5.00

7. The new plan would be between 146 and 147 MHz with a - 600 kHz offset – a plan by then operating in the USA. Our plan made use of the inputs already in operation. To protect the satellite service, simplex operation was to move from 146 to the [present] 146.500 region.

Back in VK2 feelings ran high, the locals disagreed with the outcome of the meeting and they were not moving, said a vote of 216 to 10 at a Sydney meeting – on the 1st April 1973. While the rest of Australia embraced the new allocations, VK2 spent the next 18 months sitting tight, becoming isolated and lonely. A further meeting in November 1974 reversed the opposition to the new plan by a margin similar to the earlier rejection. It was then full steam ahead to untangle the local channel congestion.

After that, it was not long before more channels were needed, so there was movement to above 147 and then the 25 and 75 points in between. Now, in many major population centres and some country regions there is not a spare channel. The introduction of D-STAR has required some systems to be allocated 12.5 splits.

While the Australian system was based on 25 kHz channel spacing, the Americans were at 30 kHz. In their plan 147.000 is a top megahertz allocation with + 600 offset, where as we treat it as a - 600 offset, which confuses some radios.

The next band to become available for repeater operation was 70 cm. Planning was somewhat determined by existing use. It had to be within 430 to 440. It had to avoid the 435 to 438 MHz Amateur Satellite Service and not intrude into the narrow mode segment at 432 MHz.

Some Europeans had chosen a 1.6 MHz offset in the 433 to 435 MHz portion. Others used a 7.6 MHz offset. Region 1 was at the disadvantage of having to fit all its operations, including ATV in the 10 MHz allowed between 430 and 440 MHz. We chose a 5 MHz offset to be either side of the satellite portion. The Americans chose above 440 at 5 MHz offset with various regions opting for high or low input, at times causing some interesting repeater lockups. For a short while there was local interest in adopting

VK5

Adelaide Hills Amateur Radio Society

At our regular meeting in May we had a very interesting talk given by Arthur VK5AZY about EMR associated with large installations (North West Bend in VK6 was one of them). He had some of the specialised devices used to make measurements of radiation strengths, everything from a small hand-held meter to a large recording instrument and some interesting tales to tell.

The talk was illustrated by marvellous photographs of outback Australia.

Sometimes you feel very small and insignificant!

Within AHARS excitement is growing as we plan for the bigger and better Buy and Sell in November. Remember to put it on your calendar.

If you are in VK5 be sure to listen in to the regular Sunday morning broadcast, immediately after the National session. AHARS and most of the other clubs have a news item about their future activities.

the European 1.6 MHz offset. Due to problems posed by LIPD and other 'low power' devices and systems in our input region 433 – 435 MHz, some repeaters at the low end of the segment can have a 5.4 MHz offset which puts the input below the portion of interference. Many others are having to fit CTCSS encoders.

The early repeaters had either a 25 or 75 channel. In the planning stages – when the first 7 channels in two metres had been introduced - some pointed out that the third harmonic from a two metre radio transmitting in the 146 MHz portion to access a two metre repeater would fall on either a 00 or 50 channel on 438 MHz and up on 70 cm. Some wanted the planning to avoid a possible feed back loop by not allocating channels ending in 00 or 05.

The future of 70 cm could be difficult with the ACMA interest in all of this UHF spectrum. The loss to ATV and some linking in spectrum below 432 MHz has impacted on some activities.

After these (more) primary bands – 2 and 70 – others were more routine. At 23 cm, the first plan was based on a 12 MHz offset to be clear of the airport radars that were centred on 1275 MHz. When they went, the offset became 20 MHz in the 1270 to 1290 region. On this band the 1260 portion is Amateur Satellite Service and like on other bands - terrestrial based

activities have to avoid these segments.

Six metres is a 1 MHz offset system of 16 channels. This band, with its ability to open into other regions, has to be planned on a national basis to select channel reuse on the least likely skip distances. This plan made one channel available – almost exclusively – to a call area and the balance [8] on a reuse anywhere.

Ten metres is a problem as it is world wide with only (nominally) four channels and a 100 kHz offset. It is a matter of reuse to the best advantage. It is almost impossible to operate the repeater's receiver and transmitter at the same site.

The planning of all the spectrum for repeater and other mode operation over the years has seen heavy involvement by members of the Amateur Radio Service. What we have is what the users generally want. In any future planning of any aspect of the hobby, be involved; offer your opinion and suggestions. Do it at local, club or national level. It is always evolving as new modes and methods put a demand on our spectrum space, just like the commercial world.

40 years down the track and much has changed. Some consider that the heyday of the repeater is over, others might say it is just beginning with new features like IRLP and D STAR.

Let us review it – 40 years down the track in 2048.

Amateur Radio Victoria News

AGM

The AGM on Wednesday 21 May was well attended by members including those who had travelled some distance from country areas.

The annual reports issued, and available on the website, detailed the operations and activities of the state-wide organisation for the 12 months to December 2007.

As Chairman, I was pleased to announce that John Brown VK3JJB, who had served six years as Secretary and was also the office administrator, had been found most worthy of recognition. John had retired as Secretary and office manager in 2005 in order to travel, but has continued part-time voluntarily.

The council relied heavily on his knowledge to get a number of things done. His suggestions toward improving the computer systems in the office made the upgrading work that much easier.

John did not always agree at the time with all of the decisions taken by his fellow councillors, it was noted, however that was not a bad thing and made everyone re-assess their views.

The council does not believe that someone should merely be awarded recognition because they have served for a substantial period of time. Each individual is different. Other attributes considered include the contributions made to the well-being of the organisation and the legacy of their volunteer work.

John has worked consistently with the interests of the organisation and its members in mind. A humble John Brown VK3JJB, in accepting his Life Membership Certificate, said he was not expecting such an honour. The occasion obviously caught him by surprise.

The Scout Radio and Electronics Service Unit received the SW Gadsden Trophy in recognition of the enormously successful VI3JAM amateur radio activity at the 21st Australian Jamboree, Elmore, 2 to 12 January, 2007.

Our Event Coordinator, Terry Murphy VK3UP was also acknowledged for the contributions he had made since joining council. As a symbol of working towards the success of the now discontinued Welcome Aussie Foundation Licensees (Waffle) Award, Terry was presented with his personal award certificate.

On air standards

The AGM saw operating standards and anti-social behaviour on the amateur bands discussed. This matter is being talked about elsewhere and on air.

A couple of radio amateurs who had returned to the hobby after an absence of many years claim that operating standards such as proper callsign use has slipped and the attitudes of some operators are less than friendly.

In 2006 some thought was given as to how best to encourage and recognise reasonable behaviour and that maybe a set of radio amateur guidelines or a code of practice would be useful.

The draft code contains the following:

- Recognise that the amateur radio community is made up of a diverse range of people with various backgrounds, abilities and other personal attributes.
- Support continued harmony within the amateur radio community, putting aside personal feelings and emotions.
- Encourage newcomers and the less experienced in a way that makes them feel welcome and supported to personally grow in the hobby.
- Do not knowingly cause interference or engage in any other activity that lessens the enjoyment of amateur radio for others. Not use amateur radio to offend other radio amateurs or listeners.
- Appreciate the history of amateur radio, from its beginnings when wireless was a scientific oddity through to its existence today in the information technology age.
- Recognise the traditions, operating practice, band plans and other self-regulated measures that achieve orderly participation on the amateur bands.
- And finally, to personally acknowledge that amateur radio is a privilege and not a right.

It remains as a suggested starting point to address those practices in modern day amateur radio that are unacceptable to the majority, or have not kept up with other positive changes in our society including tolerance, harmony and equity of access.

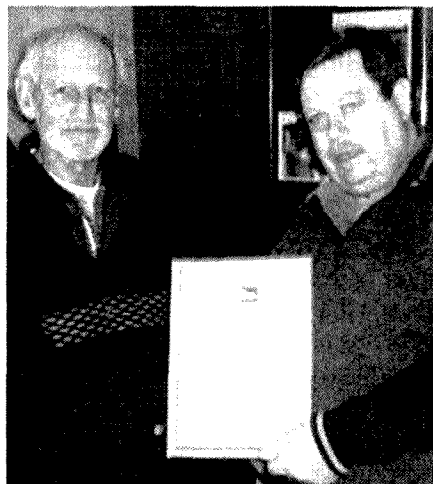
Foundation class

The next weekend training and assessment sessions for the Foundation Licence will be 19/20 July and 23/24 August. Enrolments close soon. For inquiries or to enrol contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Looking ahead

All is set for Amateur Radio Victoria to again activate the Williamstown Lighthouse and Timeball Tower during the International Lighthouse and Lightship Weekend of 16 & 17 August.

Work has also begun on reviving the Keith Roget Memorial National Parks Award in time for the arrival of spring this year. That initiative follows inquiries from several members including one who has offered to be the award manager.



John Brown VK3JJB receiving his Life Membership certificate from President Jim Linton VK3PC.

Tony Collis VK3JGC

Geelong Amateur Radio Club – The GARC

Recent Club Activities

The Design of Antennas by Computer Modelling

Gerhardt VK3HQ gave a presentation on the theoretical design of antennas, from the derivation of formulae through to the use of MMANA_GAL, the free computer-based antenna design system designed by JE3HHT, DL1PBD and DL2KQ. This was particularly revealing in respect of the compromises necessary to produce a multi-band antenna with low angle radiation and matching it to a 50 ohm feed point. The program allows the user to try different feed points showing the resistive and reactive parts of the input impedance as well as the manner in which the radiation pattern changes with height above ground.

A number of these scenarios are shown on the VK3ATL web site at www.vk3atl.org and the tabled information can be directly plumbed into the MMANA-GAL program.

relying on a pressure contact rather than being soldered.

Another issue highlighted was waterproofing the connector to stop the ingress of rain water into the coax, by using shrink wrap tubing. Water vapour can significantly increase the attenuation or losses within the cable by oxidation of the braid or they may be incurred due to water absorbed into the dielectric, heating up when power is passed through the cable.

At the conclusion of the presentation there was a practical session where a number of these antennas were built by the members.



Peter VK3ZAV

The Geelong Museum Association

A talk was given to the GARC by Beck Gurrie, Director of the Geelong Museum Association about her motivational plans to inspire members of the museum and interested organisations, to provide facilities in the museum to educate and promote awareness of the Geelong Regional Heritage. Beck explained that the museum only had about 10% of its exhibits on show at any one time but had a rotation programme to give them all an airing. Not all the exhibits are owned by the museum – a number are on loan from people in the Geelong area.

Amongst the events currently being sponsored by the museum are:

- Whisky Tasting
- A Radio Club Open Day – which the GARC will provide
- A 150th year anniversary dinner related to Osborne House

- A Seniors week in October
- A Heritage Festival in November

All the above and more can be gleaned via www.geelongmuseum.com or contacting Beck directly at geelongago@yahoo.com.au



Beck Gurrie

The 60th Anniversary of the formation of the GARC

The club 60th anniversary plans are now well established, with the venue at the Geelong RSL. Amongst the guests invited is the President of the WIA Michael Owen VK3KI and Councillor Barbara Abley AM DSJ who represents Geelong's Brownbill Ward.

The guest speaker is David Tilson VK3UR. A few of David's activities have included:

- designing and managing the first Australian 10 m FM repeater,
- constructing and managing the Victorian end of the Aussat Satellite/amateur radio links for Jamboree Of The Air across Australia and New Zealand, which linked into various 2 m repeaters across Victoria,
- hosting Cosmonaut Musa Manarov U2MIR during his visit to Australia in 1992,
- Coordination of WICEN Victoria's response to major flooding in North Eastern Victoria in 1993.

David has managed the design and implementation of various satellite and microwave communication networks for the Department of Defence, setup and managed the information technology network for the Victoria State Emergency Service and recently was the Information Technology Manager and Infrastructure Manager for Rural Ambulance Victoria.



Gerhardt VK3HQ

The Design of Simple Antennas

To compliment the presentation by VK3HQ, Peter VK3ZAV gave a presentation on building 'simple' antennas focussing on 2 m and 70 cm. These included stub matched verticals and the well known 300 ohm ribbon J-pole. In regard to coupling the transmitter to the antenna, Peter was at pains to point out that whilst the PL259 is a commonly used connector, unlike the BNC or N type connector, it has the potential of poor contact with the coax braiding as it is screwed into the socket

VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

May 18 saw the last VK7 Regional News broadcast that John Roger VK7JK read after 28 years of involvement. John has decided to give it a well earned rest and focus on other amateur radio pursuits. There was a tribute to John's involvement including a great history lesson of the VK7 Broadcast from the 1950s. Best wishes and thanks John for your years of dedication to this great hobby.



John VK7JK reading his last VK7 Broadcast

Congratulations to Robin Harwood VK7RH who was awarded the "Higginbotham Award" at the WIA AGM for his many years of dedication to contributing the Short Wave Listening column in this magazine. Congratulations to Steve VK7XOR, who was presented the Athol Johnson Trophy, and Tony VK7FACC who was presented with the John Grace Trophy by Rick Grace, the son of John Grace. Thanks also to Max VK7KY who crafted the John Grace trophy.

Please note there are linking changes to the Table Cape Repeater - VK7RAC. For more information take a look at: <http://reast.asn.au/repeaters.php>

The VK7 callbacks for the WIA National News year contributed 6160 check-ins to the VK total of nearly 98,000. The repeaters around VK7 accounted for a majority and 80, 20 m and UHF CB topping the rest of the list.



Steve VK7XOR and Tony VK7FACC both first time contesters!

Northern Tasmania Amateur Radio Club

NTARC's May meeting was presented by Greg VK7YAD with a talk on ATV and proving that you can get into ATV cheaply using vestigial side band AM TV on 70 cm. The higher bands are also available cheaply by using old analogue satellite TV receivers or old Austar microwave "MDS" pay TV downconverting antennae. Thanks Greg.

Congratulations to Bryn VK7FBAW who was awarded George Town's 'Volunteer of the Year' award, in recognition of his work with the Tamar Sea Rescue Association.

WICEN Tasmania (South)

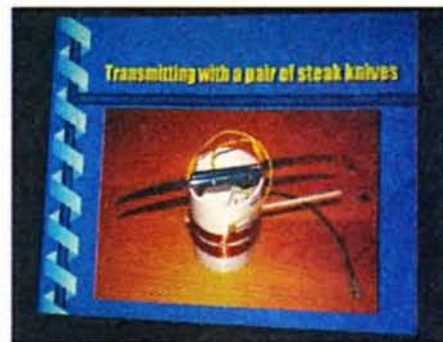
The weekend of June 15/16 saw WICEN South at The Lea scout camp for a field weekend of activities including - connector and cables, HF dipole building, NVIS trials using the WICEN 5MHz Frequencies, APRS and much more.

Radio and Electronics Association of Southern Tasmania

REAST's June meeting was a professional presentation by our resident Physicist Mike Groth VK7MJ on all things antennae. Mike covered the basics, the designs and the theory in layman's

language. Mike then summarised the presentation with some words of wisdom that I think all of us can relate to - "There Is No Magic Aerial!" Mike finished with transmitting a signal using a pair of free steak knives... HIHI. Pictures and a downloadable copy of the presentation are available on the REAST website.

ar



Silent key

Lloyd Cherry VK7BF

It is with sadness we hear of the passing of Lloyd Cherry VK7BF.

Lloyd worked for and left Telstra at the same time as Mike VK7FB. Since then he was involved in the Security Industry, both as a guard and installing and maintaining alarms, etc.

He lived on the side of the Huon Highway at Lesley Vale (some of you may have seen the tower and antennas) but has not been a very active amateur for some time.

He was also very involved in breeding and showing cats, among other interests.

Mike comments that "We called each other "book end mates" - BF/FB"

Vale Lloyd.

Mike VK7FB and Bill VK7WR

VK6

Keith Bainbridge VK6XH
vk6xh@wia.org.au

Who am I

First of all let me introduce myself. My name is Keith Bainbridge, and I am VK6XH. I have been licensed since April 1982, first of all in the UK as G6HHV and later as G0HEL. I emigrated to Western Australia in September 1987 where I received the call VK6BRK. It changed a couple of years later to VK6XH.

I was a member, first of all of the Hills Amateur Radio Group, and now of the Northern Corridor Radio Group, the latter for over 20 years. I served a three plus year spell on the old WIA VK6 Divisional Council and now serve as Chairman of the VK6 Advisory Committee.

All about the West

Formalities out of the way and down to business.

The lack of VK6 Notes in AR magazine has often been commented by many people here in the West but there has been a distinct lack of hands raised for the job. I am not a scholar or a prolific writer but I have decided to give it a go and see if I can produce an offering every month.

It will all depend on input from the various Clubs and Groups in WA so please send all your news and proposed activities to me at vk6xh@wia.org.au and we will try and get this ball rolling. I will be honest though, if no feedback is received, I am not willing to flog a dead horse!

NCRG Hamfest

I will start off with a plug for the NCRG Annual Hamfest.

This year it will be held on Sunday 3 August at the usual venue, the Cyril Jackson Recreation centre in Fisher St., Ashfield. Doors will open for traders at 7:30 am and to the public at 9:00 am.

There is no charge for tables for any trader or group; however, everyone must pay the \$5 admission fee, even NCRG members. If you require tables or further information please visit the NCRG website at www.ncrg.org.au and fill out the form in the Hamfest section.

This year the featured attraction is the Gravity Centre from Gingin with an interesting display of all things astronomical and a couple of the traders will also have telescopes on view.

The attendance is normally in the 300-450 persons range so it will be a worthwhile visit if you are selling or buying. Doors close at 1:30 pm and raffle prizes will be drawn around 1 pm.

HARG

I am also pleased to announce the re-birth, so to speak, of the Hills Amateur Radio Group (HARG).

Due mainly to the ageing amateur population in the Hills area, the membership and activities had dwindled to the point where consideration was given to winding it up. Then along came new blood and it is now thriving again. The efforts of Richard VK6BMW, Mick VK6YXL, John VK6NOW and many others have seen a hive of activity at the Saturday afternoon meetings. New radio and antenna projects are underway and hopefully the club will attract many new members (in excess of 30 at present I believe).

I have received a potted history of the first ten years of the group, and forwarded to the Editor of AR for consideration to publish as an article of interest, in a future edition. Stay tuned!

I wish them the best of luck for the future, and keep it informal folks, have some fun!

NCRG Activities

The Northern Corridor Radio Group meeting in April saw the members receive an excellent presentation by John Warburton G4IRN, a member of the 3X5A contest winning Voodoo Contest group.

John gave a slide presentation of the logistics involved in annually taking part in the CQ World Wide CW contest from locations in West Africa, no mean feat! He also left a DVD of their exploits for members to enjoy and had a play in the club shack, thanks John.

Sunday 27 April was the annual VHF Group Contest and also the Wireless

Hill BBQ, so here is a report from Terry VK6ZLT on the activities:

Every year in April the West Australian VHF Group holds its annual field day. This year was decision making time for me with respect to the actual site I was going to use. Like a lot of good field day sites positioned out on bush promontories, in time they become "tree'd out" thus making them unsuitable as point generating sites for radio field days.

Having made some preliminary excursions in the weeks prior to the day I reluctantly decided on a beach site about 100 km south of Perth. Then, the weather decided to take a hand, with the forecast for 'rain and probable thunderstorms' predicted. It was with some trepidation that one thought of setting up in an exposed beach and having all that lovely antenna array hoisted in the air just waiting for the next lightning strike. But rescue was at hand - Phil VK6ZKO, a regular field day participant, had to cancel his field day trip at the last moment, so he offered his site to me.

The site (Mount Dale) is a real ripper, situated behind the Darling Escarpment south-east of Perth. On the day when I arrived at this site it was bucketing down, but it eventually eased to allow me to assemble my beam antennas (12 element 70 cm, 6 element 2 m, 3 element 6 m) on a 5 m steel tubing mast which I attached to a guard rail of the lookout. Fortunately I had a sufficient amount (just) of cable to run back to the car to my IC-706; with an antenna switch for the 70 cm/2 m beams. (I never did get that diplexor up and running in time).

Just a note; I had constructed a new 6 m folding antenna of the 3 element asymmetrical design, which worked superbly. Try one, you will be surprised.

With over 40 contacts to show for the day's effort the outcome was very satisfying.

Graeme VK6BSL made a display of amateur radio related topics that spent quite some time going around the

News from

libraries of the state and is hoping, after some refurbishment, to send it on its travels again. He is looking for assistance from amateurs in country regions and even interstate to move it from place to place. Please contact me if you can assist and I will pass your details on to Graeme.

The Worked All WA Shires award is ticking over nicely on the low bands and Alek VK6APK is hoping to get some activity moving on 80 m during the winter months, so if you like chasing awards, be on the lookout for the coming activity. More info on the WA Shires award can be found on the NCRG website previously mentioned.

From Nigel VK6KHD came the following report:

Wally VK6YS and I have an ongoing ambition to work all the IOTAs in VK6. We have set up a website to record the efforts but it is very much a 'work in progress'. See www.westozdx.net. Activity ebbs and flows with available time; we both work in the oil and gas industry and do a lot of travel which often restricts home time let alone

expeditions to far flung islands.

We activated Cheyne Island last year – see <http://www.westozdx.net/IOTAS/OC193/OC193.html> and Rottnest – see <http://www.westozdx.net/IOTAS/OC164/OC164.html> – with Bruce KD6WW making the trip from the US to be part of the exercise. We have also activated Breaksea Island off Albany and Dirk Hartog off Denham, in the past. These are recorded on the website. Still to be added to the website are some interesting tales about activations of islands off the Kimberly coast involving shipwrecks and rescues by the RAN.

We also activated the twin lighthouses of Cape Leeuwin and Cape Naturaliste last year during the lighthouse weekend and plan to do the same again in August this year. Lack of propagation has curtailed activities in the last few years but hopefully as the sunspots increase DX will improve. Then again probably no amount of sunspots will improve the eastern states ability to listen and actually work VK6. It is a sad fact that during events such as the RD contest and Lighthouse Weekend we often hear the eastern states 5x9 working someone over

the fence in the next state completely ignoring the chance of a trans Australia contact; if only they would listen a bit more.....

Feel free to use any of the material from the website (with an acknowledgement).

I would appreciate those of you around the state who have news you wish to see in AR contacting me, either individuals or clubs, particularly in the Geraldton, Albany, Bunbury areas, and the north west, as there are many travellers on our roads during the winter months who would appreciate the chance to drop in on a club meeting and say hello.

The local D-STAR project is well on the way toward becoming operational with the location at Wollaston proving a more than satisfactory site to cover the metropolitan area. I have been promised a report from Will VK6UU so more information soon.

Well that's it for this time. Hopefully the information will keep coming in and I can produce this somewhat informal update monthly.

ar

2008 WIA Grants scheme launched

Geoff Atkinson VK3AFA
Secretary, WIA

Monday 28th July is the closing date for applications for the WIA Club Grants Scheme for 2008.

Full details and rules are on the WIA website, with a template suggesting application headings for the executive summary, guides to identifying how the club seeks to meet the scheme's objectives and guidance on supporting documentation.

WIA President Michael Owen said that the Board was pleased with the results of the 2007 scheme and believed that there was overall support from members for a continuation of the grant scheme. In 2007, some nine project proposals were received and six received financial support. The Board has changed the rules from those that applied last year, with half of the allocated funds for "useful" and half for "innovative projects."

There is \$6,000 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 at least 50% WIA members qualify to participate, though the Board has discretion to allow a lesser percentage in special circumstances.

The 2008 Grant Committee will recommend to the Board the projects that should be supported and the amount to be allocated to each supported project. Michael said; *I urge affiliated clubs to participate in this opportunity. However, it is most important that clubs read the rules very carefully*".

ar

2008 Club Grant Scheme
Innovative ideas sought

Applications close

28 July 2008

The rules and application form can be downloaded from

<http://www.wia.org.au/members/affiliation/about/>

(Editor's Note: Our regular columnist John Bazley VK4OQ was on 'leave' for the July column. He did leave notes for our guest columnist, and these form part of this month's DX news).

Although we are, arguably, almost half a year into Cycle 24, the numbers remain terrible, and very near those of the (presumed) trough of Cycle 23, thus regular DX is difficult to find, particularly from down-under. However, it is there, particularly when DXpeditions make their presence known, or one of the more major contests is in swing, so a keen ear, lots of patience, and a bit of luck are all required to keep the log moving.

Among DX news of the moment is the following:

VP9: Ralph K9ZO says to 'look for K9ZO/VP9 during the IARU contest in July'. He will be vacationing with his XYL, but plans to keep an ear on 6, 12, 17 and 30 metres, and to operate in the IARU contest.

FK: Look for Jean-Louis F5NHJ to be operating as FK/F5NHJ from Grande Terre, IOTA OC032 from August 12 to 29. Activity will be mostly CW and the digital modes, on 30 metres. Logs will be uploaded to LOTW, and a log search will be available on <http://www.f5nhj.fr/logsearch>

TF: Emil W3EP plans to operate from nine of Iceland's 23 grids between July 26 and August 6. Signing TF/W3EP, he will have 50 watts and a dipole, operating as time and circumstances permit.

7O: Chris Lorek G4HCL operated for a few days from Yemen as 7O/G4HCL in August 2007. Bill Moore NC1L, ARRL DXCC Manager reports 'This is not good for DXCC'.

TM: TM5F is the special call for Radio Club EME Phocéen F5KDK, August 15 to 18, as they operate from EU095, Frioul Archipelago. They will be on the HF bands operating SSB, CW, PSK and RTTY. Operators mentioned are F1IKA, F5IVP, F5ODA, F5SDD and F6DHI. The web page is <http://tm5f.free.fr/>

JA: Japan's Ministry of Internal Affairs and Communications (MIC) recently announced the expansion of the Japanese band plan of 75/80 metres, effective April 28, 2008. JA can now operate on the following frequencies:

3500 – 3520 CW only
3520 – 3525 CW and Digital
3525 – 3575 CW and Phone
3599 – 3612 CW and Phone (New)
3680 – 3687 CW and Phone (New)
3702 – 3716 CW and Phone (New)
3745 – 3770 CW and Phone (3745 – 3747, 3754 – 3770 New)
3791 – 3805 CW and Phone

The latest Japanese band plan is available at http://www.jarl.or.jp/English/6_Band_Plan/JAbandplan.pdf

ZS8: Petrus ZS6GCM is planning to be QRV as ZS8T from Marion Island as soon as work commitments allow. He has been on the island for some months now, and it was thought he may be operating from early May. However, as the senior officer on the island he has been busy ensuring that his period on duty is settled in, and well organised for the future, before devoting time to amateur radio.

Marion Island is currently one of the 'most wanted' DX entities, thus Petrus can expect to be inundated with calls when he does eventually appear. Go to <http://zs8t.net/> for the latest information, and stay tuned!

VK9X: Marq CT1BWW (VK9XWW), John EA3GHZ (VK9XHZ), Henry EA5EOR (VK9XOR) and Dina EC5BME (VK9XME) will be active from Christmas Island OC-002 on 8 through 20 July. They plan to operate on 160-6 metres CW, SSB, RTTY, PSK31 and SSTV with three stations. QSL via EA4URE, direct or buro.

KL: A keenly anticipated one for IOTA chasers will be the Dxpediton to Chuginadak Island, NA234, a new activation, from 21 through 27 July and including a presence in the IOTA contest. They will operate as KL7DX. Operators are Yuri N3QQ, John KE7V and Yuri UA9OBA. QSL via AC7DX. Further information is at <http://www.NA-234.com/>

BY: Five Beijing Olympic Games special event stations appeared on air

around mid May and will be active until 17 September. The five special call signs each represent a colour of the Olympic flag: BTIOB (for Beibei, blue), BTIOJ (for Jingjing, black), BTIOH (for Huanhuan, red), BTIOY (for Yingying, yellow) and BTION (for Nini, green). The QSL manager is BA4EG, direct or bureau.

DX pile-up operational and behavioural expectations.

One of the enduring topics discussed among DXers is the behaviour exhibited by those calling the DX in the inevitable pile-up.

- Do you acknowledge the DX when he calls for 'only 3s', by not calling unless you have a three in your prefix?
- Do you acknowledge the DX when he calls directionally, that is, for 'NA', or 'EU', or whatever, if you don't reside in the continent being called?
- Do you call even when you know the DX is transmitting?
- Do you call, and call, and call, even though you can barely hear the DX?
- Do you call on the DX frequency, through ignorance or even when you know he is working split?
- Are you one of the ubiquitous 'policemen' always found in pile-ups?
- Do you continue calling, even when the DX is listening to the lucky recipient of the pile-up as he tries to make a good QSO?

Well, all of these things happen, and rather more regularly than one would like to admit, and more so when the DX is 'rare' DX, like Ducie Island, Clipperton, Rwanda and Mauritania were only recently.

I have to admit that I transgress on one of those 'DX commandments' – I will call the DX even when he is calling directionally, provided only that I can

hear him well enough that I truly believe a QSO can be made.

Why would I do this?

Well, firstly let me say that I could wait a very long time, in most pile-ups, for 'OC' to be called. And, if it were, and I blinked, I would quite possibly miss the directional call to 'OC' because, almost certainly, given two minutes, it would be over, and the DX would have moved on to another, more 'active' continent.

It is also my experience that most good DX operators now realise that calling SA, AF, AN and OC is, essentially, only a means of slowing down QSO rates, as the numbers of DXers from these continents is so small as to be inefficient if directional calls were made as regularly, or even regularly, as to other areas.

Again, it is my experience that most good operators will respond to a call from a VK/ZL station, even if calling directionally somewhere else, because it is the most efficient way of handling the traffic from that area – and provides very little disruption to the orderly management of the pile-up. Certainly, in two of the biggest and most looked-for DXpeditions of recent times, Ducie and Clipperton, operators readily responded to VK/ZL calls, got them 'out of the way' then moved on. In addition, I believe that this policy was followed by the KH8SI Swains Island DXpedition, itself one of the largest and most successful DXpeditions of all time.

As an aside, there are probably no more than 200-300 intrepid DX souls in VK/ZL combined, and our contribution to the QSO totals of the four afore-mentioned DXpeditions was approximately 1.0%.

That is why I call whenever I think I have a chance – no operator is going to spend a lot of time on 1.0% of his potential customer base – he is going to work (call) where the numbers are – in all cases NA, then EU then JA. Those three generally account for 90%+ of all QSOs made by a DXpedition.

So, there you go, that is my reason – I do admit following this policy does require a deal of common sense, and caution, but thus far I have escaped admonition from the DXpeditions themselves. I wonder what your view may be on this very lively subject!

ar

ALARA

Christine Taylor VK5CTY

Keeping a log for the contests

We are fast approaching the busiest Contest season of our year. In the middle of next month, August, it will be the Remembrance Day (RD) Contest, on the 15th and 16th. At the end of the month we have the ALARA Contest over the weekend of 30th and 31st August.

It is important, if you participate in a Contest, to send in your log. But what do we mean by this log we need to keep and send in?

Until about 15 or 20 years ago every amateur kept a list of all his contacts in a book on the desk at home (he kept a log of contacts).

Then we started talking to people as we moved around, from our cars or just walking along, so it was harder to write down every contact. So now it is rare to keep a record of the people you talk to on the radio - except in a Contest!

During a Contest you write down the callsign of the station you are in contact with, the signal report he gives you (remember learning about signal report 5 and 9 for a very good strong signal, or 1 and 2 or 3 for a signal you can hardly hear or understand?). You also exchange numbers with the station, to tell him and anyone listening, how many contacts you have each made since the beginning of the contest.

It is usual to combine the signal report and the number, eg. 59001 for the first contact or 54010 for the 10th one in which you could hear every word but the signal was not very strong.

Most radio clubs have log books or pads of log sheets for sale, or they can be bought from the WIA bookshop (which is now on line!).

You can draw up a set of columns to make your own log sheet:

date/time/band/other callsign/your sig & number/other sig number/name of the operator

A typical entry in my log for the ALARA Contest could be:

30Aug/1000/3600MHz/
VK3DMS/59001/54010/Marilyn

In the ALARA Contest it is a good idea to mark beside the name to remind you who is an ALARA member because you get more points for them.

After the Contest finishes, before you forget to do it, I recommend you make a copy of the entries in your log ready to send in to the Contest Manager. Keep the original log for future reference. (Often the original is a bit messy with stations you heard but did not connect to before they disappeared, but that is also a record of the event).

Look in *Amateur Radio* for the address you must send your log to, and the final date (you do not want to miss this or your log will not be counted).

The RD and the ALARA Contest

The RD Contest, or Remembrance Day Contest is always held on the Saturday and Sunday of the weekend closest to the end of WW2 (August 15th 1945), so this year it will be run from 0900 UTC on Saturday 15 August to 0859 UTC on Sunday 16 August.

In this Contest you may only make a legal contact with each station once on each band, so it is a good idea to set up a method of checking a callsign when you hear it, to make sure you have not talked to them on this band before. If you operate for 24 hours (and lots do) you will hear "Cannot talk to you OM, we had a contact at" quite often.

Participation in this Contest is for the glory of your own State (though there is always a list of scores, so you can see how well you did compared to your friends), so be sure to send your logs in to boost the number of participants from your state and the total number of contacts. Both of these figures are taken into consideration when the winning state is being calculated. Even a small score of ten or twelve can count in the final result.

Within ALARA we also use the RD Contest to check that our equipment is running well and is ready for our own ALARA Contest.

The ALARA Contest runs for 36 hours with two evening sessions so that we have two chances to use the 80 metre band.

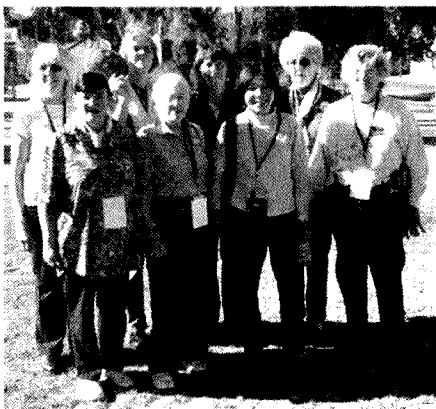
80 metres is the band we use on Monday Nets and was chosen as the band of choice in the days of the Novice licence when Novices were not allowed

to use all bands and all frequencies and we have continued to emphasise this band.

We start the Contest at 0600 UTC on Saturday but continue till 1159 UTC on Sunday. In the ALARA Contest, because there are not many ALARA members we are allowed to have repeat contacts with each other and with other stations an hour apart. We watch the log we are keeping for the correct minute to roll over before we make another contact. You will hear "No we cannot make a contact yet, my log says we have another two minutes".

ALARA's representation in Broken Hill

ALARA was very well represented at the WIA AGM: our President Marilyn VK3DMS and nine other YLs from all round Australia. We had Dot VK2DB representing New South Wales, Marilyn and Lia VK3LPH from Victoria, six from South Australia Meg VK5YG, Jenny VK5FJAY, Lesley VK5HLS, Jeanne VK5JQ, Susie VK5FSUE and Christine VK5CTY, and after arriving with just ten minutes to spare because the train was held up, Kathi VK6KTS



The ALARA group at the Saturday lunch in Broken Hill

to represent Western Australia. It was a very satisfactory number. We did not plan to all be there, it just happened.

The report of the whole weekend will have been covered elsewhere in this magazine but one of the highlights for me was the visit to the School of the Air where we came to understand just how important this service is to the children. The motto of this school says it all: "Parted but United".

Another talk I enjoyed very much was given by the current pastor of the Inland Mission founded by John Flynn. He spoke at breakfast on the Sunday.

As this talk was followed by a visit to the Royal Flying Doctor Base where we saw the planes that carry the doctors and the pastors all over the area covered by the "umbrella of safety" Rev. John Flynn envisioned. We really gained an insight into this important world.

Luncheons

The monthly luncheons in several states continue. In VK5 we meet on the second Friday of the month. In VK6 they meet on the third Thursday of the month, and in VK3 they meet on the second Saturday.

The recent VK3 luncheon was held at the Moorabbin Airport and included a tour of the airfield. For this occasion a number of OMs joined the ladies, which in VK5 only happens for the Birthday Lunch.

In July we have special Birthday Lunches as close as possible to the end of July, when ALARA was formed 33 years ago. We also try to go on air on the Saturday evening of that weekend to wish each other "Happy Birthday". Same time and frequency as the Monday nets. Let us hope we have a good number of us this year. It is fun to remember the beginning of ALARA.

ar



The "Red Baron" - a bright red biplane admired at Moorabbin Airport



The VK3 luncheon group at Moorabbin Airport

Information sought

I am currently researching my family tree and was wondering if you would put this little letter in the next Amateur Radio magazine?

I have discovered that my mother Gloria Ling went to radio school in Melbourne. This would of been in the 1940s. I was reading about the Marconi School of Wireless reunion back in the 90s and wondered if there was anyway I can get a certificate for my mother.

She called it a Radio Operators Licence and when she finished the course was the first woman in Victoria and second in Australia to do so. She then went on to work for the ABC in Melbourne for 3 and a half years, Radio Australia for one year and then 2UW in Sydney for 4 years as a control operator.

She then moved to Tasmania to 7QT and 7LA announcing and copywriting. I know this is a long shot but would love to hear from anyone who may be able to help me locate that little certificate.

I can be contacted by e-mail or mobile phone:

Isabelle Answerth

ianswerth@hotmail.com

0450 046 592

Contests

Phil Smeaton VK4BAA

Welcome to this month's Contest Column.

After last month's news that Team VK had given the rest of the world a resounding thrashing by winning the Commonwealth Contest, comes a bevy of contest results featuring VK stations at the top of the results table:

All-Asia SSB Contest 2007 Results

Callsign	Band	Score	Op. Name
VK4HAM	All	23,920	Andy
VK4FRAJ	All	600	Raj
VK3ZGP	All	49	Len
VK1ANU	20	30	Masanori

Congratulations to all participants listed, but especially Andy VK4HAM and Raj VK4FRAJ for a sterling effort. Masanori VK1ANU was in Canberra until the end of May this year and his home call of JO2SLZ (his language skills, that is) no doubt helped him land a few that others might not have logged.

This contest runs at the same time as the Region 1 Phone contest and can, at times, clash a little bit from the Eu perspective. There tends to be plenty of multipliers around the bands for the European stations to try and get into the log, often to be rebuffed by All-Asia competitors as they gain no points by working non-Asian stations. Europeans have a different scoring system and tend to concentrate on working /P (portable) stations to gain maximum points per QSO. The exchange differs as well, with serial numbers being replaced by the age of the operator for All-Asia participants – except for female operators who are permitted to send “00” if they do not want their age to be known.

LZ DX Contest 2007 Results

Callsign	Score	Op. Name
VK4TT	5740	Keith
VK8AV	816	Alan
VK7GN	300	Martin



Photo 1: 10 m beam used at VK8AA. Photo: David Burger VK2CZ.

This multimode (CW & SSB) contest is organised by Bulgarian Federation of Radio Amateurs and takes place on the weekend before the last full weekend of November. The scoring system consists of 10 points for each QSO with an LZ station, 3 points for each QSO with another continent and 1 point for each QSO with the same continent. The multiplier is then the sum of ITU zones and LZ districts (there are 28 of them) on each band regardless of the mode. Hence, in order to maximise the multiplier count, Bulgaria needs to be heavily targeted to log those 28 LZ districts. This is no mean feat when you consider they are all on the other side of the planet and the sunspots are thin on the ground.

2007 10 m ARRL Contest

Tables list callsign (VKs only), score, class (A = Mixed Mode, B = Phone only, C = CW only, D = Multi-Op), and power (A = QRP, B = Low Power, C = High Power).

Callsign	Class	Score	Op. Name
VK4FRAJ	AA	9,576	Raj
VK5MAV	AA	944	Andy
VK2GWK	AC	4,676	Henk
VK7GN	AC	2,376	Martin
VK4ATH	BA	312	Tom
VK7WPX	BB	152	N/A
VK8AA (Op: VK2CZ)	BC	13,770	David
VK4ZD	BC	2,808	Bill
VK3AVV	BC	256	Mike
VK4TT	CB	2,800	Keith
VK2AYD	CC	3,696	David
VK2NU	CC	624	David

David Burger VK2CZ participated in the contest as VK8AA. David evidently spent quite some time planning the event – see photo 1.

The monster nine (9) element Yagi antenna was 23.5 m (77') long and boom size is 80 mm in the middle and 60 mm at the ends. It weighed in at around 115 kg and obviously required a bit of assistance to get it into the air. With a gain of 14.1 dBi, David could generally be heard wherever he pointed the beam – if propagation permitted! The whole lot was supported about

Contest Calendar for July 2008 – August 2008

July	1	Canada Day Contest	CW/SSB
	6	VK/trans-Tasman 160 metres Phone Contest	SSB
	12/13	IARU HF Championship	CW
	14	Jack Files Memorial Contest	CW/SSB
	19/20	CQWW VHF Contest	All modes
	20	VK/trans-Tasman 160 metres CW Contest	CW
	26	Waitakere (NZART) Sprint	SSB
	26/27	RSGB IOTA Contest	CW/SSB
August	2	TARA Grid Dip	PSK/RTTY
	2	Waitakere (NZART) Sprint	CW
	2/3	10-10 International QSO Party	SSB
	9/10	Worked All Europe	CW
	16/17	Remembrance Day Contest	CW/SSB/FM
	16/17	Keymen's Club of Japan Contest	CW
	30/31	ALARA Contest	CW/SSB
September	6	ARDF Championship (80 m)	CW
	6/7	All Asia Contest	SSB
	6/7	RSGB SSB Field Day	SSB
	6/7	Region 1 Field Day	SSB
	13/14	Worked All Europe	SSB
	20/21	SRT (Italian) HF Contest	SSB
	27/28	CQWW RTTY DX Contest	RTTY

20 m in the air by a 14 tonne crane at the Darwin East Arm Port Facility. At this stage of the sun spot cycle, this is a very tough contest to engage. David managed to grab 259 QSOs for the log, but "could not operate after dark due to site safety, lack of lighting and blood sucking bugs the size of a shoe". David is rightfully pleased with managing number 1 Phone in Oceania for the 5th consecutive year (probably a record in itself?), placed number 8 in the world for Phone and number 5 in the world in the BC Category. I cannot help but wonder how David is going to approach the 2008 contest....

CQWW WPX CW 2008

Claimed Scores

At the time of writing, the following stations had submitted a score for the contest:

Call sign	Operator	Claimed Score	Transmitter	Band	Power	Assisted
VK3FM	Single		One	All	High	Assisted
VK3KE	Single	36708	One	All	Low	Assisted
VK3TDX	Single	19630	One	All	Low	Non-Assisted
VK4BAA	Single	232	One	80 m	Low	Non-Assisted
VK4BUI	Single	254474	One	20 m	Low	Non-Assisted
VK4TT	Single	129132	One	All	Low	Non-Assisted
VK5SW	Single		One	All	Low	Non-Assisted
VK6DXI	Single	1679900	One	All	High	Non-Assisted
VK8AV	Single	44144	One	40 m	Low	Non-Assisted

I managed to have a brief stint on 80 m during the contest to try-out a new 80 m antenna. I used the same antenna during the recent John Moyle Memorial Field Day Contest and it seemed to work reasonably well, so I was interested to see how it performed as regards DX. I need not have bothered. It was not very impressive as I struggled to make myself heard. I could hear NA stations during the early grey line period and commenced calling them – but to no avail. Over the next 30 minutes or so, their signals got stronger and stronger, until many were a genuine 599 report – but they still could not hear me. I even had a short burst at the VL/ZL Trans-Tasman contest but my PC decided to call it a day and proceeded to shutdown or lock-up at erratic intervals. I took the hint and gave up after trying to work

stations on the straight key. The PC was still connected to the rig and keyed the rig into transmit but refused to de-key. That was the time that I decided to switch off the station and have a visit by Mr. Boag.

Conditions did not seem to be particularly impressive in VK4 – 80 m in particular! Multipliers count for all bands and are not band specific, so 80m was always going to be a hard slog, but I needed to trial the antenna so that was my band of choice on this occasion. There is no incentive to search the bands looking for multipliers as such, so the higher bands took most of the traffic during the contest. 40 m particularly seemed lively in comparison. The lower bands give a double amount of QSO points though, when compared to 20-10 m, so 40 m is an obvious choice in VK to hunt for points and multipliers for WPX. As usual, the EU noise is difficult to penetrate, but participation seemed to me to be low this year and CQ calls often went unanswered. There have been reports of 15 m opening into JA but with few takers at the other end.

OCDX Contest Results 2007

Brian Miller ZL1AZE on behalf of the OCDX Contest Committee has notified the Lockyer Valley Radio and Electronics Club that VK4WIL achieved the highest score from OC for the M/M Phone category in the 2007 Oceania DX Contest. The station consisted of the following operators: Laurie VK4VCC, Trent VK4TI, Dave VK4NDX, Phil VK4BAA, Di VK4KYL, Bill VK4ZD and Alan VK4SN. Additional help was received from VK4HAM during station set-up. This is an excellent achievement and is a credit to Bill and Di for kindly making their new (and at the time, incomplete) premises available to the team for the contest. The team were generally unknown to each other and the equipment had not been gathered together before either, but the team quickly set about gelling together to fill the log as fast and as accurately as possible. Some antenna hardware was already on site, but the vast majority was erected (or even constructed) specifically for the contest. Alan VK4SN spent a not inconsiderable amount of time climbing trees and strapping lengths of rope up in the air to lodge wires for the various bands of interest. Alan had also just completed the electrical wiring and data communication set-up for the shack only a day or so prior to the contest – nice going Alan!

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton.

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Plan ahead

30 & 31 August

**ALARA
Contest**

Spotlight on SWLing

Robin L Harwood VK7RH

A pleasant surprise and other chaotic events

I was amazed to discover that I had won the Higginbotham Award when I was reviewing the WIA News on a cold Sunday afternoon. It certainly is an honour to win this prestigious award and I wish to publicly thank the Publications Committee for nominating me.

When I started out compiling this column in 1980, there was so much activity and there was not a spare piece of spectrum space. Every Hertz was occupied and there was always something to be heard. Almost three decades on and today's activity on HF has reduced. International broadcasters are departing shortwave in droves, preferring to either stream audio on the Internet or abandon broadcasting entirely. The latest to do so is Radio Singapore International. I believe that they will be turning off the Kranji senders at the end of this month and you just have a few days to hear them before their signals fade away in the ether. They are on 6080 in English from 1100 to 1400 and on a few other 49 metre channels in either Malay, Chinese or Hindi. The reason cited for this cessation was that there was a big drop in audience numbers, so the decision was made to concentrate on streaming Radio Singapore domestic networks and wind up the International Service. The Kranji senders were originally installed for the BBC World Service and it is unclear if the Singapore decision will effect any alterations to their schedule. They have already reduced their output in the local daylight hours.

VT Thomson manages a variety of senders worldwide and some were former BBC external service bases. They have quite a number of clients utilising their facilities, including Kranji. Broadcasters such as Radio Japan, Deutsche Welle, Radio Australia, FEBA as well as the BBC World Service have all been known to use Kranji in recent years.

In early May, two natural disasters hit Asia and there was a huge loss of life from both calamities. Myanmar, or

Burma as it is more commonly called, was hit by a cyclone. The response was very poor and uncoordinated. This cyclone was mostly ignored by the local radio and again shortwave radio filled in the intentional void left by the Burmese junta. Millions of people are still without help or aid as the junta has refused all offers of assistance. The world community understandably was shocked at this callous behaviour.

A few days later, a massive earthquake hit the Szechuan Province of China and again there were thousands of people killed, many of them children. The response was swift and immediate. Unlike the Burmese, the Chinese were openly candid and the networks covered the news extensively. As the magnitude clearly became apparent, the major network began to relay the Szechuan Provincial Station and a common program was aired during the three days of Official Mourning. Elsewhere you may read of the amateur radio response to aid the rescue effort. Even the jammers were silent or ended up relaying the common program.

Next month sees the Olympic Games commence in Beijing and we expect this to be extensively covered by the proliferation of Chinese shortwave senders. Yet the streaming of audio of Olympic events via the Net will again not happen as the IOC jealously guards their exclusive rights and very few if any broadcasters will bother to stream sport in case they breach this IOC copyright.

Well that is all for now, if you have any news or comments please send them to vk7rh@wia.org.au or to 20/177 Penquite Road, Norwood Tas 7250

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Six-monthly review of Ups and Downs

As in previous instances, this review will deal only with amateur radio satellites that are currently fully or mostly operational in our part of the world – and then with some caveats. There will be times when a particular satellite may not appear due to some usually short term problem. For more up to date information refer to the appropriate internet website. It is quite impossible to keep a list like this absolutely accurate, even at the time of publication.

The Cube-Sats and/or educational satellite packages are listed but their status can change with no notice at all. Some could have re-entered by the time you read this column. The Cube-Sats, tiny 10 cm cube packages are mostly designed and built by University or College students. Their missions focus on data collection in some specific area of science. They are generally short-lived and the presence of their telemetry beacons in the amateur bands is in the hope that the world-wide amateur radio satellite community will provide feedback to the students in the form of telemetry collection or advice

in setting up radio ground control links. In turn they provide the amateur community with practice in tracking and telemetry gathering techniques that will be valuable, particularly to newcomers who may wish to broaden their horizons and to those wishing to evaluate their ground station performance. As well there is the very great possibility that those College or Uni students exposed to amateur radio perhaps for the first time by their involvement may be imbued with the esprit de corps and become radio amateurs.

In many cases the controllers communicate regularly with AMSAT via the bulletin board and as a consequence they get regular feedback from the amateur radio satellite community around the globe. To save space only those satellites that are listed by reliable sources as operational in the southern hemisphere will be included in the list. The current situation is best followed on the AMSAT-NA bulletin board but neither it nor the AMSAT-NA web site can hope to remain totally abreast of day to day happenings. You will notice that a number of the Cubesats have their status listed as 'in-orbit'. Presumably that means the control stations have

confirmed they are operational and transmitting telemetry on demand. No individual web sites are listed here for these satellites but the AMSAT web-site may have more information. The list is in order of Oscar number where possible.

AO-7 AMSAT OSCAR 7

Launch Date: November 15, 1974. This is not a typo, say again, 1974. That is 34 years and still counting!

Status: Operational depending on the 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 (1W PEP)

145.975 to 145.925 MHz CW/USB Mode B (8W PEP)

145.975 to 145.925 MHz CW/USB Mode C (2W PEP)

Beacon: 29.502 MHz CW

http://www.amsat.org/amsat-new/satellites/sat_summary/ao7.php

The AMSAT group in Australia.

National Co-ordinator: Paul Paradigm
VK2TXT

Secretary: Judy Williams VK2TJU

Website: www.amsat-vk.org

E-mail for National Coordinator:

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The AMSAT monthly nets

Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, i.e. 9.30 Z or 10.30 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater on

146.850 MHz

VK2RIS Saddleback repeater on 146.975

MHz

VK2RBT Mt Boyne Repeater on 146.675

MHz

In Victoria

VK3JED Preston, Melbourne on

144.296 MHz SSB simplex

VK3JED Preston, Melbourne on

439.175 MHz FM simplex with a 91.5 Hz

CTCSS tone

VK3RTL Laverton, Melbourne,

438.600 MHz FM, -5 MHz offset

Operators may join the net via the above

repeaters or by connecting to EchoLink

and either the AMSAT-NA or VK3JED

conferences. The net is also available

via IRLP reflector number 9509. We are

keen to have the net carried by other

EchoLink or IRLP enabled repeaters and

links in order to improve coverage. If you

are interested in carrying our net on your

system, please contact Paul via email.

AMSAT-Australia HF net.

Members and interested parties are also reminded of our HF net which is held on the 2nd Sunday of each month. See www.amsat-vk.org or www.ozsatgroup.info for details. Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. The organisers wish to thank the Illawarra Amateur Radio Society for carrying our net on the Coastlink repeater network and Tony VK3JED for the use of his linking system. Should you wish to join AMSAT-Australia, details are available on the web site. You will be made very welcome.

AO-16 PACSAT

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>

GO-32 Gurwin TechSat-1B

Status: Operational but difficulties are reported occasionally.

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

Status: Operational only in full sunlight

Current Mode: V

General Usage Uplink/Downlink: 145.827 MHz 1200 Baud

Special Usage Downlink: 144.390 MHz 1200 Baud

<http://pcsat.aprs.org>

SO-50 SAUDISAT-1C

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. Users have reported difficulties recently.

AO-51 ECHO

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 - 67Hz 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/>

VO-52 HAMSAT

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>

CUBESATS

Like the mail, the Cubesat projects just keep coming. They come and go so fast that you need to be in constant touch with a reliable internet source to keep up. They are usually launched in batches of a half-dozen or so from a single launch. Because of this it is always a few weeks before they separate sufficiently and accurate tracking data is available. The monitoring of the telemetry from the Cubesats is becoming a specialised operation requiring close attention to the most reliable and immediate sources. The following information has been gleaned from the AMSAT-NA bulletin board and various other AMSAT sources. Check the very latest information regarding the Cubesats before planning your monitoring sessions.

CO-57 CubeSat

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/>

CO-58 CubeSat

Status: Operational - CW Beacon only
437.4250 MHz AFSK 1200 bps

Callsign: JQ1YGW

<http://www.space.t.u-tokyo.ac.jp/cubesat/mission/V/>

DO-64, Delfi-C3

classified as a nano-satellite

Status: Semi-Operational

TLM beacon 145.870 MHz

Transponder 435.53 – 435.57 MHz up.
145.88 – 145.93 MHz down.

The transponder is not active but the telemetry has been heard in VK.

CUTE1.7+APDII

CubeSat

Status: IN ORBIT

Downlink: 437.475 MHz 9k6 Packet

Telemetry heard in VK

COMPASS-1 CubeSat

Status: IN ORBIT

Downlink: 437.275 MHz CW 437.405 MHz Packet

Telemetry heard in VK

SEEDS CubeSat

Status: IN ORBIT

Downlink: 437.485 MHz

Telemetry has been heard in VK

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
KD5PLB

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/>

Recently

As this column goes to print a new Russian satellite is being tracked by the AMSAT community. Dubbed YUBILIENY, it is transmitting on 435.315 MHz +/- Doppler. The transmission seems reminiscent of the old Russian WEFAX format used by their weather satellites of a few years ago. Occasionally it transmits CW and steady carrier. So far no-one has reported decoding any pictures. By the time you read this, reliable Keplerian elements should be available. Moves are being made to contact members of AMSAT-R to see if they have any further information regarding the possibility of a transponder being on board.

Future goodies.

Phase 5a - Marburg University's Mars Mission

This is not an amateur radio satellite in the same sense as any so far. First mooted in 1996, it will be the culmination of over a decade of activity at Marburg University. With the close involvement of AMSAT-DL, it will probably contain an amateur radio beacon designed to test the resolve of even the most advanced amateur station operators. A precedent was set in early December 1996 when a 70 cm beacon on board the Mars Global Surveyor was detected by amateurs when the spacecraft was three weeks into its trip to Mars and five million kilometres from Earth. Technology used by radio amateurs has improved since then but P5a will still be a mighty test for any amateur station.

Proposed Launch Date: 2009 or 2011 depending on systems testing and favourable Mars aspect.

Status: Design Phase

<http://ticket-to-mars.org>

PHASE 3e - advanced High Orbiter

Proposed Launch Date: Was originally listed as late 2007, which is obviously a bit ambitious. This project will go ahead, if a little late, as it is in a way a test platform for some systems to be flown on P5a. A 2009 launch date for P3e could be announced soon which would probably push the P5a launch out to the 2011 opportunity.

Status: Under Construction

<http://www.amsat-dl.org/p3e/>

AMSAT-Eagle - advanced High orbiter

Proposed Launch Date: Early/Mid 2009, which is probably rather optimistic.

Status: Although the proposed launch date is listed as 2009, Eagle is still very much in the design stage. No launch has been negotiated at present. Funding is also behind schedule.

<http://www.amsat.org>

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or Bill VK3BR on 03 9584 9512.

More details of the Club and membership application forms are available from our web site:

<http://www.raotc.org.au>

VHF/UHF – an expanding world

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

I have received a number of interesting submissions from people detailing their activities. So, this month the majority of the column will be turned over to them.

Barry VK3BJM near Kyneton in central Victoria reports on some enhancement to the west on Saturday 10th May:

On firing up the station at 2200 Z on Saturday morning, I noted the Adelaide 2 m beacon at 419 and reasonably steady. I spent the next hour working the usual suspects to the NE, then at the top of the hour I heard Phil VK5AKK on 144.200 MHz through the back of the array. I redirected myself to the Adelaide direction and worked Phil at 55. We QSYed down to 144.160 MHz, and were followed by Geoff VK5GF I worked Geoff, who was a smackingly comfortable 58. 70 cm was not playing ball though, and no contacts were completed there. Phil and I both tried 23 cm as well, but again were unsuccessful. The VK5VF 2 m beacon was about 53 at the time.

I continued to call to the west, and at 2313 worked Gary VK5ZK, who was 55 on 144.100 MHz. At 2332 Z, Terry VK3ATS, in Mildura, was worked on 144.150 MHz at 58.

Interestingly, stations just north of Adelaide (and slightly over the Mt Lafty Ranges) were not accessing the path - after much effort Brian VK5BC and I completed on 144.100 MHz, with reports of 31 both ways, at 0007 Z. At the time VK5AKK was still hovering at a level of 57-58 or thereabouts.

I left the receiver listening to the VK5VF 2 m beacon for the remainder of the day, and it was audible well into the afternoon. Sunday morning there was no evidence of similar favourable conditions.

Broken Hill and the WIA AGM

Peter VK3KAI sent in this report of his trip to the WIA AGM:

Having had my arm twisted firmly to

attend the WIA AGM in Broken Hill, some very loose plans were formulated. I would have some company for the trip, so care was needed in not planning to spend too much time playing RF!

The car was fitted with a HF mount and 2 whips were available - a 40 m single band unit and an Outbacker multiband unit. The IC-7000 was fitted to the car in a temporary fashion - enough for reception on HF, but I had insufficient time to do things (such as grounding) properly. I also threw the homebrew 144 MHz Squalo and a short mast and 5-element Yagi into the car.

The trip started at 1730 local from Churchill, with a drive to and through Melbourne to Kyneton - fortunately the planned departure time meant that we missed the evening peak hour. A little 2 m and 70 cm FM operation occurred along the way (the Squalo was not "up"). I caught up with Barry VK3BJM via the phone and then the Mount Macedon repeater. As planned, we stopped in to enjoy dinner, a bottle of red, and a long chat before heading to bed.

In the morning, a short chat was had with Barry over coffee whilst having a quick look over the radio shack. Discussion included sites for potential activity near Broken Hill. Barry had the Friday off, so was relaxed, but with several tasks on the "to do" list. We departed from Kyneton at around 0830, again without any antennas fitted other than the FM vertical - Kyneton was very cold first thing after a clear, cloudless night!

We had a pleasant drive up the Calder Highway to Charlton, where we stopped for breakfast at 1005 - but convinced the coffee shop owner to make breakfast (kitchen was supposed to shut at 1000). Near the end of breakfast, I received a text message from Barry indicating that the Mildura beacon was audible. Following a brief chat, I fitted the 40 m whip and the 2 m Squalo to the car. Once everything was installed, we resumed the long drive. Just after we restarted, Barry called on 144.1 MHz. A very good 57/59

signal was received. We chatted briefly as I drove through the second half of town and onto the open highway. The next contact with Barry occurred briefly about 30 km short of Ouyen - a good haul for mobile! Signals were 52 to start with and fluctuated with the local terrain - local cuttings made Barry drop into the noise. From then on, it was just listening to the FM repeaters or occasionally to the activity on 40 m. The drive on to Mildura and then to Broken Hill was somewhat monotonous, with occasional FM contacts.

Once in Broken Hill, we settled into the motel room and then joined the crowd for a very pleasant meal at the Southern Cross Hotel. We were at a small table and were joined by an amateur and some friends from Bendigo. Much of the evening was spent discussing things VHF, UHF and above, as the Bendigo group were also interested in astronomy.

Despite the long drive on Friday and the long dinner, I was given a leave pass to play radio on Saturday morning. I headed off on the Menindee road, following Barry's description of a favourable location (QF07sx). I found the spot easily and was set up just before 2130 Z. I alerted Barry via SMS and then a quick call on the mobile. At 2131, contact was made via an aircraft travelling Adelaide to Sydney. The contact was short, but complete. Barry posted a message on the VK Logger as I started to get the laptop PC and interface together, just in case there was a chance of some MS contacts. I received a 'phone call from Steve VK2ZT and pointed the 5-element beam in the appropriate direction, but heard nothing. A little after 2200 (time not recorded), I received a 'phone call from Rex VK7MO. We talked about what was happening - I was having some issues with the laptop and the interface, as it had been a few years since I had tried to operate the system from the car and had not used it with the IC-7000 (yes - poor planning).

I finally got the system working and started trying on FSK441 with Rex at 2235. I had a complete contact in the log by 2242 - only seven minutes! I was amazed that it took so little time - I guess a quiet location helps! At some stage, Phil VK5AKK had called, but I did not receive notification of the voice message until late that afternoon: Sorry Phil.

I also ventured out again on Sunday to a nearby location, with the goal of working my home square via MS. Ralph VK3WRE was willing to try. I was set up and transmitting by 2135 and received several pings over the next hour or so from Ralph. Unfortunately, Ralph heard nothing from me and we gave up at 2250 after telephone contact.

So, two stations were happy that I had taken some limited gear with me - Barry had actually worked a new square (previously in the log via a reciprocal contact) and Rex had a new square. Unfortunately, no new square for me to add to my tally. Given the uncertainties of the trip, I did not wish to raise expectations of others, so made no prior announcement of any possible activity. Perhaps I can arrange another trip in the future....

The return trip was uneventful, with some more 2 m FM contacts. We stayed overnight on Sunday in Mildura - thanks to Geoff and Marilyn Syme. Christine VK5CTY was also staying at the Syme residence, so some lively discussion occurred. I had work commitments on Tuesday, so could not stay for the local Mildura activities on Monday evening. A long but un-eventual drive on Monday saw us safely home in the Latrobe Valley late in the afternoon.

Aircraft Enhancement

Here is another report from Barry VK3BJM. Interestingly, Barry is now using an ADS-B receiver to receive real-time position reports from aircraft in view of his antenna.

As background, the ADS-B system is a distant descendant of the Interrogate Friend or Foe radar system (IFF) where a ground-based radar sent a signal to interrogate a transponder on a military aircraft, which then replied with the appropriate code. The system has been extended over the years for both military and civilian use so that the radar can ask for different information. Thanks to onboard GPS systems, the aircraft now

know their position accurately. ADS-B eliminates the need for the ground-based radar by having the aircraft periodically transmit a message that includes an identification and precise position. So, with a relatively simple receiver such as the Kinetics SBS-1, you can now have your own air traffic control display.

So, over to Barry, who also reports on the other side of the contact with Peter VK3KAI:

Another interesting morning up here amongst the frosted grass of Kyneton. Peter VK3KAI had travelled up to Broken Hill for the WIA AGM, and this morning had travelled out to a spot where I had operated from during the 2007 Summer Field Day, a ridge about 15 km ESE of Broken Hill - locator QF07sx. I had left the array parked in the Broken Hill direction, and had also left my ADS-B receiver running, so on entering the shack the only hold-up was waiting for the AM-17 to warm up its clogs... As it was doing this I noted on the Radar two aircraft; one Sydney to Adelaide flight that had just passed the area for potential enhancement, and a Jetstar flight from Adelaide to Sydney just crossing the beam heading. As soon as the AM-17 was on line I called, and there was Peter at a solid 56. I received 55. There was enough time for two exchanges, then the signal dived - by the time the aircraft was 5 degrees away from the beaming heading to Peter; he was 41 and headed for the noise. This was at 2134 Z.

The aircraft track and the beam heading cross at about 65 degrees to each other, so the enhancement is brief, but strong. This spot is about 277 km from my QTH; Peter was 634km distant, so the aircraft track is well positioned for mutual visibility. The aircraft was at 37,000' at the time.

Later, during the usual AE activity, I had just returned to 144.200 after working Les VK3TJ in Mildura on 144.180, when I heard Steve VK2ZT in Medowie QF57wf. The time was 2244 Z. I had been hearing plenty of Steve since rebuilding my 2 m array, but due to distance of the path, the brevity of the AE "openings", and the level of activity on 144.200 these days, we had never completed a contact. Steve was regularly a comfortable 51 at these times. This time, as he worked Rob VK3XQ, he peaked at 53. Again the brevity of the

opening beat me, as the signal fell away as the contact was completed. I made this observation on the VK Logger, and we agreed to try another frequency after 2300 Z. Settling on 144.140, we had two near misses at 2309 Z and 2314 with incomplete exchanges of 41, before completing at 2321 Z with reports of 51 both ways. Steve actually hit 52 in his last over. I still cannot tell for sure which aircraft are providing this path - it could be Melbourne>Sydney, or it could be Adelaide>Sydney, but it is reasonably regular. The path distance is 843 km, according to the distance calculator on the Logger. I think working over this distance via AE is actually more satisfying than the fact this contact was a new Grid Locator for me!

Once completed, I stayed on to try and do the same with Colin VK2KOL in Mt Druitt; this was a little harder but again, after two near misses we completed at 2337 Z with an exchange of 41 both ways. Colin's local noise issues (S2 at the end!) are not to be envied...

Unfortunately this morning there were no completed contacts on 1296 MHz with any of the VK1/2s - but we cannot have everything, I guess!

South-Eastern Australia Tour

It seems that it is the time of year for long drives through the countryside. Leigh VK2KRR penned the following piece on his ramble through southern VK5, visiting many amateurs and other sites that he has heard in various ways:

Went for a bit of a drive over the Queen's Birthday long weekend into VK5. I was lucky enough to be able to call into a number of operators' QTHs and get a look at their shacks and operating conditions at their QTH.

Left my QTH (The Rock, near Wagga) at 9 am Saturday. First up, I stopped in at Barry VK3BJM's QTH at Kyneton at around 2 pm. It was awesome to come up a road and see a huge 4-Yagi array towering over a house. It was good to catch up with Barry and he was kind enough to check some specs of my IC-910 and I also got a preview of an awesome aircraft tracker he was running.

Next, it was the Mt Gambier AR convention. Met up with heaps of operators there, some I have met before and others only on radio so it was great to meet the new faces and catch up

with others. Of particular interest was catching up with Chris VK5MC. Chris was kind enough to invite me to call into his QTH on the way up to Adelaide. He drew me a 'mud map' and told me to just go up and have a look. He did not really explain about what he was working on.

Leaving Mt Gambier at around 11.30 am, I drove north for 30 mins or so and found the VK5MC QTH. Driving up the driveway, I could see a massive EME dish towering over the top of the house! I had a huge grin on my face :-). I pulled up and have just gone 'oh my god'! I was looking at around a 40 ft diameter dish pointing at the horizon! It was huge. Extremely impressed by Chris's monster homemade dish on his property in the middle of nowhere.

I then drove for hours and hours and eventually ended up at the QTH of Jeff VK5GF who has recently moved from Alice Springs to Victor Harbour. Jeff is still getting everything set up for his new location but it is looking all pretty good so far. I also got to see the actual QSL cards from his famous 144 MHz TEP contacts into Japan from Alice Springs, which was quite amazing to see.

Next stop on Monday was to Goolwa to see Garry VK5ZK. Was great to call in to see Garry's setup and chat about radio things. Also Harry VK5HR came down to Garry's to meet me while I was in the area which was great too as I have worked Harry a few times. Garry is just getting going on 1296 now which is great and when I arrived was doing a test with VK5BC over at Corny Point.

Then with some great assistance on simplex I headed on over to catch up with Bill VK5ACY (ex Kangaroo Island). Bill is now located to the south of Adelaide. As Bill has only recently moved he is still setting up his new QTH and cement was going down for the new tower as I arrived. Although I think Bill was a bit reserved about AR-DX possibilities from near the city, things are looking up and tests have been promising. I cannot wait till Bill has everything set up on the new tower to see how it goes.

With more great simplex directions from VK5ACY and VK5AKK, I headed up the hills to catch up with Phil VK5AKK. Phil is way up at the top of the range and is an interesting drive to get there for sure. Firstly I could not even see Phil's tower and antennas - there are so many trees about. But up the back of

the block was the tower. The antennas are still slightly shielded by trees but the height is working well. I walked up to the highest point on the ridge and you could see virtually everywhere for a very long way. Phil has quite a long run of coax too to get to the antennas from the shack so quite a bit of loss, especially on 23 cm. I have to mention that I got the best meal of the whole trip while I was at Phil's QTH, as cooked up by his XYL. Thank you very much! I was never expecting to get a roast chicken with baked vegetables and gravy!! When she said something to eat I thought she meant like a piece of cake! OMG she should not have done that but I appreciated it!

By this stage it was around 3.30 pm and I really had to head off. I went via Murray Bridge then over to Loxton way. It was nice to use the legendary Murray Bridge repeater on a local level for something different. Out along the road to Loxton I tried to get Phil the QF04 grid square. I could hear him a fair way out but a vertical Yagi at his end would have been much better. Right out at some isolated little town for only a few kilometres was the NE corner of QF04. I could only hear him when near the Telstra tower, but Phil could not copy me.

Further along the track towards Loxton, now in the darkness I could see the red lights of a massive radio tower off in the distance, a long way away. As I got close I realised it was Renmark Channel 5A TV. (or closer to Loxton really). I got closer and the whole 4 MHz of the 2 m band began to get wiped out! It was a totally full scale signal for MHz and MHz on my mobile rig - amazing. I tuned down to 143.760 and listened for a bit to the audio. It was great for me to drive past this great big radiator all alone in the middle of nowhere, as Renmark TV audio is something I have always referred to as a beacon for the past 5 years or so and having studied the signals from it on many occasions. It was great to see its origin.

Next up, I called into Mildura and was greeted by Les VK3TJ who kindly drove down to McDonalds to catch up and have a chat. Garry VK3KYF kept me company on the Mildura and Robinvale repeaters for as long as they would go, then just the long, long trip home across the plains. I arrived home around 4 am

Tuesday morning.

Thank you to everyone for your kind hospitality, it was great and very inspirational to call into such a prominent group of DXers QTHs and see their setups and what challenges are presented with the local terrain and other issues. The knowledge and experience of these guys is amazing.

My apologies to VK5BC and VK5ZLX, just ran out of time to call up to the Barossa. I could have spent a whole day up there though I reckon. Next time hopefully.

SK - W4RNL and DJ9BV

It has been a sad time for the amateur community recently, particularly in the area of antenna development.

In April, it was announced that L.B. Cebik W4RNL had become SK. LB was the Technical Editor for the antennex Online Magazine and a regular monthly contributor with his antenna modelling column. I always found his web site to be of great value when researching antenna options. Fortunately this site will be maintained and is highly recommended - www.cebik.com. His valuable additions will be sorely missed.

Then in early June came the announcement that Rainer DJ9BV had passed away after a long illness. Any of you who have built your own VHF/UHF Yagi would be well aware of Rainer's work optimising the DL6WU Yagi designs. His designs are, in my opinion, still the best you can build. Again, he will be sadly missed.

VK logger improvements

The VK Logger (www.vklogger.com) has received a major overhaul. Adam VK4CP has been burning a lot of midnight oil in completely rewriting the code for the site to take advantage of new web technology. While the look and feel of the site is basically the same, there have been many detail improvements. Visit the Help section in the Forum area for more details.

As of early June, the VK Logger now has 573 registered users.

More stations on 23 cm

I reported some time ago on the increase in activity on the 23 cm band in the VK3 area. Brian VK5BC reports that VK5 is having a similar boom:

Activity and interest in 1296 in SA is on the increase. Latest stations to add 1296 capability to their stations are Garry VK5ZK, Graham VK5KGP and Jeff VK5GF. These stations are all located in the Goolwa/Victor Harbor region south of Adelaide and are ideally placed for

contacts to the east. I managed a scatchy contact with Garry this afternoon. This is just over 100 km over a less than ideal path.

There are several other existing active stations on 1296 including Phil VK5AKK, Roger VK5NY, Ron VK5KRA, Keith VK5AKM and Peter VK5ZLX. There are also some including John VK5BJE planning to be on 1296 shortly.

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

Digital DX Modes

Rex Moncur VK7MO

With winter upon us, meteor scatter using WSJT's FSK441 mode is a good way of working long distances on 2 metres – up to 2000 km. Activity sessions are held on each Saturday and Sunday morning as follows in local NSW/VIC times:

0500 to 0600: 144.330 ZL to VK with ZL transmitting first period

0600 to 0700: 144.230 ZL North Island to ZL South Island, South first period

0600 to 0700: 144.230 VK to VK – unstructured

0700 to 0800: 144.230 Saturday VK3/5/7, first period to VK1/2/4

0700 to 0800: 144.230 Sunday VK1/2/3/5/7, first period to VK4

Some of the regular ZL operators are Bob ZL3TY (Greymouth), Starr ZL3CU (Christchurch) and Peter ZL4LV (Dunedin). In VK, regular operators are Waldis VK1WJ, Dave VK2AWD, Colin VK2KOL, Mark VK2EMA, Gavin VK3HY, Peter VK3SO, Jim VK3II, Rhett VK3VHF, Wayne VK4WS, Phil VK4CDI, Alan VK4EME, John VK4JMC, Peter VK5ZLX and Rex VK7MO.

Joe Taylor K1JT is developing a new Digital mode called WSPR that is aimed primarily at propagation tests on HF. It runs in a total bandwidth of 6 Hz making it possible for a large number of stations to run tests in just 200 Hz of bandwidth. The program searches the full 200 Hz to which you are tuned and prints out a list of all stations it can decode. Rex VK7MO has been testing this program with Jim VK3II and David VK3HZ and it works well at two metres, with signal levels down to around -27 dB on the WSJT scale. Rex also tested it with K1JT via EME and despite the narrow

bandwidth it still works well and coped with libration frequency spreading. The initial tests gave decodes down to -27 dB but subsequently Joe was able to use these test files to improve the decoder down to -29 dB. Joe has advised that he is looking to develop a QSO version of WSPR.

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

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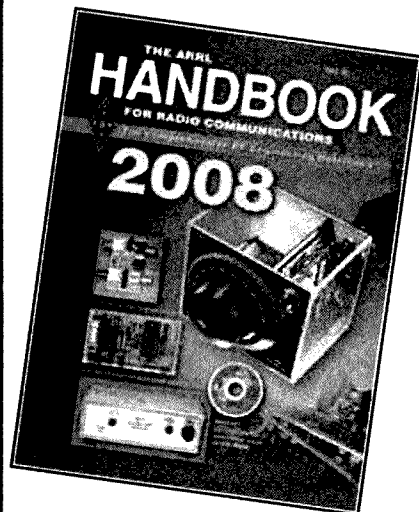
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Gridsquare Standings at 13 June 2008

144 MHz Terrestrial

VK2FLR	Mike	113
VK3NX	Charlie	106
VK2KU	Guy	102
VK3KAI	Peter	87
VK3HZ	David	80
VK2ZAB	Gordon	78 SSB
VK2DVZ	Ross	72 SSB
VK3CY	Des	71
VK3PY	Chas	71 SSB
VK5AKK	Phil	70
VK2KU	Guy	69 SSB
VK2ZT	Steve	64 SSB
VK7MO	Rex	63
VK2TK	John	62
VK3QM	David	61 SSB
VK2EI	Neil	59
VK3BJM	Barry	58 SSB
VK3BDL	Mike	54 SSB
VK3KAI	Peter	54 SSB
VK3ZLS	Les	51 SSB
VK3WRE	Ralph	50 SSB
VK2KU	Guy	47 Digi
VK3CAT	Tony	46
VK3VG	Trevor	46 SSB
VK5BC	Brian	46 SSB
VK4CDI	Phil	45
VK7MO	Rex	45 SSB
VK4KZR	Rod	43
VK7MO	Rex	43 Digi
VK4CDI	Phil	41 SSB
VK5BC/p	Brian	41 SSB
VK3II	Jim	39
VK3II	Jim	38 SSB
VK3KAI	Peter	36 Digi
VK2TK	John	35 SSB
VK2KOL	Colin	34 SSB
VK3ZUX	Denis	33 SSB
VK6HK	Don	33
VK2AMS	Mark	32 SSB
VK3DMW	Ken	32
VK2TG	Bob	30 SSB
VK3VHF	Rhett	29 SSB
VK4TJ	John	29 SSB
VK2EAH	Andy	29
VK2TK	John	27 Digi
VK1WJ	Waldis	26
VK3ACC	Gordon	26 SSB
ZL3TY	Bob	24
VK3TLW	Mark	23 SSB
VK4EME	Allan	23
VK1WJ	Waldis	22 Digi
VK3BG	Ed	22 SSB
VK3II	Jim	21 Digi
VK4CDI	Phil	20 Digi
VK6KZ	Wally	20
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK3UDX	Geoff	17 SSB
VK2EAH	Andy	16 SSB
VK3ECH	Rob	16 SSB
VK6KZ/p	Wally	16
VK3VHF	Rhett	12 Digi
VK4EME	Allan	12 Digi
VK2EAH	Andy	11 Digi
VK2EI	Neil	11 Digi
VK2KOL	Colin	9 Digi
VK2ZT	Steve	8 Digi
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 SSB
VK1WJ	Waldis	5 CW
VK4AIG	Denis	5 SSB
VK4JAZ	Grant	3 FM
VK3QM	David	1 Digi

144 MHz EME

VK2KU	Guy	278
ZL3TY	Bob	277
VK2KU	Guy	266 Digi
VK3AXH	Ian	207 Digi

VK7MO	Rex	155 Digi
VK4CDI	Phil	142 Digi
VK2FLR	Mike	120
VK3CY	Das	70 CW
VK2KU	Guy	39 CW
VK2ZT	Steve	29 Digi
VK3VHF	Rhett	20 Digi
VK3HZ	David	19
VK3II	Jim	10 Digi
VK3NX	Charlie	5
VK4EME	Allan	5 Digi
VK3AXH	Ian	3 CW
VK2DVZ	Ross	2 CW
VK3AXH	Ian	1 SSB

432 MHz Terrestrial

VK2ZAB	Gordon	57 SSB
VK3NX	Charlie	50
VK3PY	Chas	50 SSB
VK3QM	David	48 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3HZ	David	37
VK3BJM	Barry	36 SSB
VK2KU	Guy	34 SSB
VK5AKK	Phil	34
VK2DVZ	Ross	32 SSB
VK3CY	Des	32
VK3BDL	Mike	30 SSB
VK3KAI	Peter	30
VK3KAI	Peter	29 SSB
VK3WRE	Ralph	28 SSB
VK5BC	Brian	21 SSB
VK3VG	Trevor	20 SSB
VK7MO	Rex	20
VK2ZT	Steve	19 SSB
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2TK	John	17 SSB
VK3CAT	Tony	16
VK3BG	Ed	15 SSB
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK5BC/p	Brian	15 SSB
VK4KZR	Rod	14
VK4CDI	Phil	13
VK4CDI	Phil	13 SSB
VK6KZ	Wally	13
VK2KOL	Colin	12 SSB
VK2EI	Neil	10 SSB
VK2TG	Bob	10 SSB
VK3AL	Alan	10 SSB
VK2AMS	Mark	9 SSB
VK3VHF	Rhett	9 SSB
VK4TJ	John	8 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK2FLR	Mike	6
VK3ECH	Rob	6 SSB
VK4EME	Allan	6 SSB
VK6DXI	Mirek	6
VK2KU	Guy	5 Digi
VK1WJ	Waldis	4 SSB
VK2EAH	Andy	4 SSB
VK3DMW	Ken	4
VK3KAI	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK4CDI	Phil	4 Digi
VK3VHF	Rhett	3 Digi
VK4AIG	Denis	3 SSB
VK4JAZ	Grant	3 FM
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz EME

VK4KAZ	Allan	14 CW
VK4CDI	Phil	11 Digi
VK7MO	Rex	10
VK7MO	Rex	9 Digi

VK3NX	Charlie	5
VK3HZ	David	4
VK2ZT	Steve	1 Digi
VK3AXH	Ian	1 Digi
VK3VHF	Rhett	1 Digi
VK5BC	Brian	1

1296 MHz Terrestrial

VK3PY	Chas	39 SSB
VK3QM	David	39 SSB
VK3NX	Charlie	37
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2KU	Guy	25
VK2KU	Guy	22 SSB
VK3KAI	Peter	20
VK2DVZ	Ross	19 SSB
VK3KAI	Peter	19 SSB
VK3KWA	John	19
VK5AKK	Phil	19
VK3WRE	Ralph	17 SSB
VK3BDL	Mike	16 SSB
VK3BJM	Barry	16 SSB
VK3HZ	David	16
VK3VG	Trevor	12 SSB
VK3BG	Ed	11 SSB
VK7MO	Rex	11 SSB
VK2TK	John	10 SSB
VK3UDX	Geoff	10 SSB
VK4KZR	Rod	10
VK2ZT	Steve	8 SSB
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK3ECH	Rob	5 SSB
VK3VHF	Rhett	5 SSB
VK3ZUX	Denis	5 SSB
VK4TJ	John	5 SSB
VK6KZ/p	Wally	5
VK4CDI	Phil	4
VK6KZ	Wally	4
VK2KU	Guy	3 Digi
VK4CDI	Phil	3 SSB
VK4EME	Allan	3 SSB
VK5BC	Brian	3 SSB
VK6DXI	Mirek	3
VK7MO	Rex	3 Digi
VK2FLR	Mike	2
VK3CY	Des	2
VK3DMW	Ken	2
VK3KAI	Peter	2 Digi
VK3QM	David	2 Digi
VK4AIG	Denis	2 SSB
VK2AMS	Mark	1 SSB
VK4CDI	Phil	1 Digi
VK5BC/p	Brian	1 SSB

1296 MHz EME

VK7MO	Rex	27
VK7MO	Rex	24 Digi

2.4 GHz Terrestrial

VK3PY	Chas	15 SSB
VK3QM	David	15 SSB
VK3NX	Charlie	14
VK3WRE	Ralph	10 SSB
VK3KAI	Peter	7 SSB
VK3HZ	David	5
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

2.4 GHz EME

VK3NX	Charlie	17
VK7MO	Rex	9
VK7MO	Rex	7 Digi

3.4 GHz Terrestrial

VK3NX	Charlie	11
VK3QM	David	9 SSB
VK3WRE	Ralph	7 SSB
VK3KAI	Peter	6 SSB
VK6KZ	Wally	4

3.4 GHz EME

VK3NX	Charlie	5
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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
VK3KAI	Peter	2 Digi
VK6BHT	Neil	2 SSB
VK3ZUX	Denis	1 SSB

5.7 GHz EME

VK3NX	Charlie	11
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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
VK3HZ	David	7
VK6KZ	Wally	5
VK3TLW	Mark	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

10 GHz EME

VK3NX	Charlie	11
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24 GHz

VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK3NX	Charlie	2
VK6KZ	Wally	2

474 THz

VK3HZ	David	2
VK7MO	Rex	2
VK7MO	Rex	2 Digi
VK7TW	Justin	2
VK7HAH	Ben	1 Digi
VK7TW	Justin	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU.

The guidelines (and the latest League Table) are also available on the VK VHF DX Site at www.vhfdx.radiocorner.net - click on Gridsquares.

Next update of this table will close on or about 17 October 2008.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

ar

Morris William Cookson VK2BIG

1925-2008

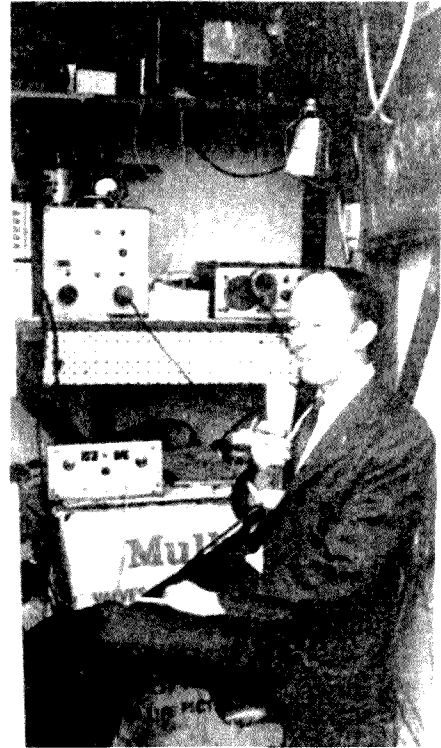
Morrie VK2BIG as he was known on-air and to his friends, had been ill at home for a couple of years. In October 2007 following a hospital stay, he went to The Abbey Nursing Home, Mittagong, NSW, and passed away on 26 February 2008.

In his younger days, Morris was a keen mobile amateur radio operator on the HF and 2 metre bands in NSW. In addition to the amateur radio call sign VK2BIG, Morris also held the scientific and experimental call sign VH2T. Following his WWII RAAF service, he worked as a hearing aid technician, ran his own transformer manufacturing business, and was an engineer and consultant for IBM and for AWA Marine Services. From the late 1970s he worked as a radio officer on ANL (Australian National Line) ships, both international and coastal. In the early 80s he was on the container ships of the Eastern and Australian Steamship Company. His final years at sea were with BHP Pty Ltd on coastal, Japan and Korea bulk ore trades, until in 1991 the radio officer's position was abolished due to introduction of maritime satellite communication and navigation. Morris

then retired, to live at Round Corner, Dural, NSW. During his years at sea, he often operated as VK2BIG/MM. Some of the ships he served on were MVs Lake Eyre, Mittagong, Yarra River, Lake Barrine, Ariake, Australian Escort, Iron Carpentaria, Australian Prospector, Iron Mittagong and Iron Kembla.

A summary of Morris' WWII RAAF service history follows: He enlisted with the Royal Australian Air Force in 1943 and following his initial training he was posted to Wireless School, Tuxedo, Canada, and then to Air Gunnery School, Alberta. Following these Canadian air training schools, he returned to Australia to be posted as an instructor to the RAAF Wireless and Gunnery School Ballarat and later to Air Observer School Mount Gambier. Morris was promoted to Flight Sergeant in 1945 and discharged from the RAAF in 1946.

Morris had excellent technical skills and until recently was active with computer support for his friends, home constructed electronics and his specialty, ensuring his dipole antennas were resonant and with low SWR on his home constructed



A younger Morris Cookson VK2BIG in his shack in 1972.

PC driven HF spectrum sweeper. For three months in 2001, Morris VK2BIG, Geoff VK2OI and David VK2AWD provided the invaluable service of almost daily contact with Australia for my wife Josette and me, during a medical mission trip to the Solomon Islands. At that time, when power was available I operated as H44MA from a small mission hospital at Atoifi, Malaita, where the only communication available was via HF radio.

Morris is to be remembered for his humour; when asked how he was, the answer was always "I'm fit as a scrub bull" and on parting the reply was "see you when you are older". Morris was a very good friend and is sadly missed.

Submitted by Allan Mason VK2GR



Morris assisting with a JOTA operation at Castle Hill in October 2000.

So you want to give CW a try?

Brett Rees VK2TMG

When they dropped the CW requirement for HF back in 2005, I thought 'Great, now I can get on HF and ragchew and work contests and DX'. And that I did, and it was fun. Then I played around with digital modes such as PSK31 and MFSK16, and digital decoding of CW, using a Linux program called fldigi – see <http://w1hkj.com/> if you are interested. This got me thinking about CW, as I could often hear CW in my radio's pass band whilst working digital modes. I did some investigation, and found that CW can be just as good S/N wise as the common digital keyboarding modes. I was hooked and had to learn more.

But what are some of the benefits of CW? That 10 W (if you are an F-call) or 100 W from the standard Japanese 21st Century set packs quite a punch when received at the other end through a 300 Hertz filter and an operator with years of experience. We are not talking PEP and compressors here, we are talking pure unadulterated carrier. And even a cheap radio when fitted with an optional CW filter will allow you to hear quite well. I started with a cheap Alinco radio and even with the standard SSB filter for receive was able to make DX QSOs. You can too.

Now, I researched how to learn CW before I started. It is not a matter of working at it - you need to have the desire as well as the ability to effortlessly work CW. Listening is the hard part, and is best enhanced by spending time listening to CW. But more of that later. Right now, if you want to learn CW you first have to learn the characters. As you progress, you will know them better and better. I used to be afraid that I would forget them but that feeling fades. The best way to learn the characters is to drill yourself using a computer program or friend with a key. You can do this on-air - your licence allows it and OTs love to hear newbies learning CW - you will only earn encouragement.

A great computer program for learning the characters can be found at <http://c2.com/morse/>, where you can find 'A Fully Automatic Morse Code Teaching Machine' by Ward Cunningham, first described in QST in May, 1977. Now this is the drill learning machine; it starts with a few characters and as you get them correct it adds more - 'automagically'. When you can confidently run it to the

end then you know your characters. Make sure you keep the character speed high - like 15 words per minute - as you want to learn the sound and rhythm of the characters, not hear dits and dahs and then decode them from a lookup table. That is the hard way. Ward has versions available for Linux, Windows, DOS and Mac, and it is good stuff.

I talked before about desire. You need to understand that you can do this - lots of people before you have. There is a great ebook available for free on the Net called 'The Art and Skill of Radiotelegraphy', by William G. Pierpoint N0HFF, and an html version can be found at <http://www.raes.ab.ca/TASRT/index.html>. A PDF version is also available if you Google for it - send me an email at breree@gmail.com and I will gladly send you a copy. This book by N0HFF is not only good in a teaching sense, but is also inspiration and confidence inspiring. It is definitely worth a read.

So, you know the characters, it is now time to move to the second stage of training. Find some locals doing code practice and participate. Call-backs and reading of the text are normally done in SSB so even if you can not copy the faster code you can still join in. Amateur Radio NSW runs slow code practice at 8 pm local on 3550 kHz, and Ross and Alan, I am sure, would like to hear from new operators. The format is that they start slow at about 5 wpm (easy after using the c2.com program) and move up in increments to 12 or 20 wpm. I found the best way for me was to copy on my computer as I work on a keyboard all day and can type much better than I can write. So listen, and soon you will get

the format, the callsigns and CT and AR and de. There are regular call-backs from VK7 and sometimes VK6 - if you are east coast and have a reasonable antenna (such as a dipole running East-West) then you should be able to participate in these sessions.

Meanwhile, passive listening can help you improve your skills with very little investment on your behalf, apart from leaving your HF rig sitting on the ARNSW beacon on 3699 kHz. Right now, at the bottom of the solar cycle, I can hear this beacon about 20 hours a day, with it only dropping out in mid-afternoon. Just leave it running in the shack, and let the CW permeate your brain. Program in your local repeaters as well on your VHF/UHF gear - soon you will be able to know which repeater ID'd without looking at the frequency. When you hear one, think of its call. Finally, there is a beacon network you can listen to on 14100 kHz run by NCDXF. You can run any number of 'International Beacon Network' or IBP clients that will show you which beacon is transmitting at any time. Just sync your computer's clock with NTP to make sure it is correct and run your client. For Linux, try (surprisingly) a program called *ibp*. With a zero sun spot number ZL6BP can be heard here most afternoons S9, and I also hear VK6RBP, North America, Hawaii and Sri Lanka, and the *ibp* program will tell you what you should be hearing at any one time. All with a wire dipole on the Alinco with a CW filter.

Once you have your listening progressing well you can try sending. I started on a straight key but found it extremely tiring. I considered a keyboard

for sending but wanted this to be about radio, not computers. I picked up on eBay a Bencher paddle and MFJ keyer combo, and I must say, playing with an iambic keyer is a lot of fun. Most modern radios have an iambic keyer built in, and you can make a paddle using a few paper clips if necessary, although sometimes if you wait to homebrew something then you may never get on-air.

So beg, borrow or buy yourself a key or paddle; I suggest one of each. Each has its virtues: I like to use my straight key when tuning up. It is nice to have that wooden knob and you press it and you radiate. You need text to send which reflects what you will send on air, with little punctuation. A club member list is good, as you can send call signs and first names and practice and learn some valuable information about people at the same time.

Oh yes, of course work out how to do this without putting a signal to air - most radios allow you to disable the break-in and just generate side tone. The final thing you can do is to learn to send in your head. Try it now - R - didahdi. Say it out loud. Now think it. See, it is easy, and a great source of practice is sending car number plates, road signs or any text to hand. I have even sent the text off a roll of loo paper!

Finally, it will be time to call CQ and make your first QSO. My first was with VK4BZ John in QLD - what an adrenaline exercise that was. 80 m is good for this as it can be relatively devoid of signals in the CW section so you can get away with a wide filter if that is all you have. I always found success at 3525 kHz: it seems to be a bit of a party line! Keep it short, just RST, name and QTH and then sign off - easy. And do not forget to QSL, and be a member of the WIA, and register your address with your local bureau as CW operators are great QSLers. The service is free for members, so all it costs is the occasional 50 cent stamp to send in a bundle of cards.

Now you are a CW operator. You can do EME, home-brewing or DX on the bottom end of 40 m - the world is your oyster.

73 es gud dx de VK2TMG

William (Bill) Simon Bond VK3BWS

15-11-1914 to 13-10-2007

Unfortunately we recently had to farewell one of our foundation members and past President of the Geelong Radio and Electronics Society. A well respected man who worked hard during the formative years of a club he was passionate about.

Bill was born in the small Victorian country town of Moriac. His father was a farmer, blacksmith and inventor. At the age of 14 and encouraged by his father Bill constructed his first crystal set. This radio is still in working order today. The family moved to Geelong, and it was here that Bill built a model railway in the garden of the family home. This was complete with lights and points, and the local children loved riding on it.

His military service was done at Queenscliff. At first he was in signals, but later due to his love of motor bikes he became a dispatch rider. Then, during World War 2 he was employed in a light engineering business where they made nuts, bolts and Morse code keys. These were for the armed services and because of this he was exempt from overseas duty.

After the war Bill started his own business repairing radios and operating a mobile public address van. Unfortunately due to ill health he spent a prolonged time in hospital, which ended his radio repair business. He then joined the PMG (now Telstra) as a technician. Initially he worked on country installation and then at the Geelong exchange, where he remained until his retirement. In 1958 he built the family's television receiver, which remained in use for the next 18 years.

When the GRES was formed Bill was a foundation member. He worked hard to help build the new clubrooms, and it was because of his efforts that one room was a superb audio studio. This was complete with control room that doubled as a projection room. Bill sourced many technical films from the PMG library and these were screened every month. He also started a museum which grew

to be quite large. It contained old domestic valve radios, military radios and telephone equipment. News of this collection spread and many people visited Geelong just to see the collection. A conservative estimate of its value in 1995 was \$50,000.

After years of gentle persuasion by club members Bill finally obtained his amateur licence and was issued the call sign VK3BWS. He was active on HF and loved to chase the many awards on offer. He was also active on two metres and part of a very active group on 70 cm transmitting fast scan amateur television. When not operating on air he would devote his time to restoring old valve radios. He had a vast knowledge in this area and his advice was often sought by other restorers when they encountered problems.

It is because of people like Bill that clubs and organisations prosper. People who are loyal and hard working. We were fortunate to have had Bill as a member.

Submitted by Rod Green VK3AYQ
On behalf of the GRES

Lloyd Cherry VK7BF

It is with deep regret that we announce the passing of Hobart local Lloyd Cherry VK7BF.

Lloyd lost his battle for life following a four year illness. Lloyd passed away in hospital with his wife Trish by his side. Lloyd was 62 years young.

Earlier in Lloyd's life, he was active with the local radio club and the WIA.

Farewell Lloyd from all your radio amateur friends.

David Ryan VK3DLR

(see also VK7 notes)

Plan ahead

16 & 17 August

**Remembrance
Day Contest**

Hamads classifieds **FREE**

FOR SALE NSW

• RACIAL AIMEC modulation meter type 409 3 MHz to 600 MHz up to 1200 MHz on harmonics. AIMEC wave analyser type 248A 5 MHz to 300 MHz. Consider any reasonable offer. Arthur VK2DKF QTHR Ph 02 4739 8695

• At this time I have 2 ICOM IC-F3 for sale. They are used but in good condition, and programmed with 32, 2 metre frequencies. I can get the programming changed for your favourite programs. 5 watts. They look like the CB IC-40s or the Amateur IC-T2. They use the same batteries. These radios are ready to go and you do not have to risk eBay business. Serial numbers will be given later. \$50, \$65 with antenna. You can buy a new battery at most 2-way radio shops or I will sell you a good second hand one at half price. These prices are negotiable. Victor.VK2XVS QTHR. Ph 0435 096 995.

• ICOM 7400 HF/50/144 MHz all mode transceiver purchased 28-04-05. Cost new \$2699.00. Will sell for \$1400 + post, operates on 13.8 volts D.C. Modes are USB, LSB, CW, RTTY, AM and FM. Output Power 5 to 100 watts continuously adjustable. General coverage receive 0.030 to 60.000 MHz. Transmit and receive all ham bands including 50 MHz and 144MHz. It also has 3 separate PL259 antenna connections on the back. It also has an automatic internal antenna tuner. Serial No.0301893. The unit is in exec. cond. with no modifications and no scratches at all. It has only been used a few times on 160 m and 80 m, and a few times on 2 m. It comes with everything – original purchase dockets, manuals, schematics, original packing, microphone etc. It is a very comprehensive unit which will do a host of things to numerous to mention here (104 page Manual). ICOM AH-710 folded dipole antenna. Purchased 3-05-05. Frequency range 1.9 MHz to 30 MHz. Power rating 150 watts. Length 24.5 metres (80.4 feet), with coaxial feed line. Cost new \$450.00. Will sell for \$220.00 + post. It has been strung between 2 trees but is in good to exec. cond. Again it comes with everything the same as the transceiver above – original purchase docket, manual, packing etc.

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- Separate forms for For Sale and Wanted items. Please include name, address STD telephone number and WIA membership number.
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FOR SALE VIC

• ICOM IC-751A inbuilt P/S, wkshop man. Desk mike, orig packing/one owner good condtn \$500. Twelve el 2 m beam on grd, constructed \$100. Alumin ext ladder 20ft \$100. Geoff VK3ED 03 9746 1438 or email gbutters@bigpond.com

• KENWOOD TM-2570A 2 metres FM 70 watt transceiver. In original box with cradle, microphone and handbook. In excellent condition. \$165 ONO. Yaesu FT-712RH UHF FM transceiver. 25 watts, in original box with cradle, microphone and handbook. Good condition \$150. KENWOOD TK-210 commercial VHF handheld. Programmable, has 12 channels on 2 FM (has five repeaters and six simplex channels) 1/5 watts with desk top charger. \$75 ONO. Ian Keenan VK3XI QTHR Parkdale. Ph 03 9580 6627 or email: ikeenan@bigpond.com.au

WANTED VIC

• Manual for BWD Model 521. kinoaf@bigpond.com

• I am looking for a GENERAL RADIO GR-1931A modulation monitor. John Eggington VK3EGG, email: vk3egg@optusnet.com.au, mobile:-0409 234 672

• I am looking for an optional AM Unit (CPB-1556) for a YAESU FT-301 transceiver. Also looking for the optional AM and CW filters (or suitable filters) for the FT-301. Roderick Wall VK3BKO. Phone: 0413 074 386 or email: vk3bko@wia.org.au

• Early YAESU HF Transceiver FTDX-100. These were on the market in the late 1960s. May be working or non working - but otherwise complete

and mechanically sound. Happy to discuss a suitable remuneration, external appearance to be reasonable considering age! Contact: Ian VK3XI QTHR, email ikeenan@bigpond.com.au or ph 03 9580 6627

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• The very popular 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

WANTED SA

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FOR SALE WA

• Log periodic array antenna. ATN 13-30-8. Never assembled. All fittings still in original packaging. Comes complete with CREATE RC5-1 rotator, also never used. Both items part of deceased estate of VK6MF. Items are located Perth Western Australia. \$1500 the lot. Inspection welcomed. Contact Kim Mellows, 08 9279 3588 or email kimbo@efel.net.au

MISCELLANEOUS TAS

• Swap early PMG Morse key 1912 12/2 G C. Will swap for Hi-Mound single paddle key. Contact VK7ZW phone 03 6426 2609

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• BUDDIPOLE portable HF antenna. As seen at www.ttsystems.com.au/index_files/Page642.htm Antenna length extended is 9.5 feet (length collapsed 56 cm). Rated up to 250 watts and weighs 1 kg. Covers 7-54 MHz and 144-148 MHz. Includes the 16 ft BUDDIPOLE mast so full height of ant is 19 feet. This Buddipole deluxe package includes 25 ft coax assembly, tripod, 8ft and 16ft portable masts, extra 3 stainless steel telescopic whips and the main two long telescopic whips. I purchased these 4 months ago from TTS Systems, the cost was BUDDIPOLE Deluxe Package \$630, 2 long telescopic whips \$60 and 16 foot Buddipole Mast \$165, TOTAL \$855 for me to buy new. Am selling this for only \$450 with free postage anywhere in Australia. Reason for sale is I am getting a tower and Yagi and don't need this antenna anymore. Call Craig VK8FGNT on 0427 197 220.

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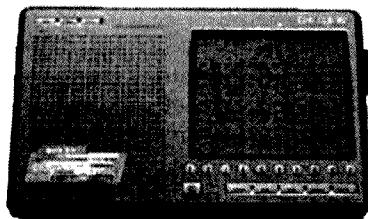
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Broadcast details

- VK1 VK1WIA: Sunday 0900 local on the Mt Ginini repeaters 146.950 and 438.050 MHz. The UHF repeater requires 123 Hz access tone and is linked to the Goulburn repeater.
- VK2 VK2WI: Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.6000, 147.000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning..
Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130, 147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. Also In 'Realaudio' format from the VK6WIA website.
- VK7 VK7WI: 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.

Chris Jones Award

2008

awarded to
Ken Fuller
VK4KF



A surprised Ken Fuller VK4KF receiving the Chris Jones Award from WIA President Michael Owen VK3KAI.



Ken and his wife Pat following the Award presentation

Only a year after it was first created and awarded, a second Chris Jones Award was presented at the WIA AGM Dinner in Broken Hill to Ken Fuller VK4KF

Following the sudden death of Chris Jones, Ken volunteered to take over the role of Secretary on a temporary basis. Ken undertook the role to the full, and also took the lead in many tasks that needed to be completed to ensure a smooth transition to a new national organisation.

Further information on this and other awards made at the AGM can be found in the WIA Comment column in the June issue of AR.

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Amateur Radio



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A WW II Biscuit Tin Radio



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The ICOM IC-7700

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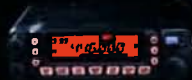
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Amateur Radio

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Our Cover this month

Quite a contrast in technologies: this month's cover shows the World War II vintage MCR-1 'Biscuit Tin' radio and the modern IC-7700 solid state transceiver.

You can read a brief outline of the MCR-1 on page 31 of this issue, with the detailed IC-7700 review commencing on page 27.

Photo of the MCR-1 by Jim Gordon VK3ZKK.

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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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

GippsTech 2008

The first weekend in July saw over 100 people at Monash University Gippsland Campus in Churchill for the 11th annual GippsTech technical conference. Yes – I must declare a conflict of interest, I am the Chair of the Organising Committee.

The program overflowed with technical content, primarily related to matters VHF, UHF and above. Novice and experienced speakers presented a wealth of material at a level that almost everyone could follow – even if sometimes only in principle, and not the details. While the amateurs enjoyed the technical content at Churchill, Gordon VK3PAA and Pauline Corrigan led the partners on a tour of regional highlights over the day and half of the conference. They visited three wineries during Saturday, with lunch at the Tinamba Hotel – well known in the region for the quality of its meals.

The technical program ran from 0945 to 1800 on Saturday and 0900 to 1300 Sunday. The tea/coffee breaks were shorter in duration than we usually plan, due to the number of topics on offer, and the lunch breaks allowed for good food provided by the local Lions Club, lots of discussion and some low key trading of a variety of goodies.

On behalf of the Eastern Zone Amateur Radio Club (Inc.), thanks to all who contributed: the club members and attendees who contributed in so many ways at the event and during the planning phase; the speakers, those who brought give away items, the Churchill Lions Club, Monash University Gippsland Campus and those that provided items for the raffle. Special thanks must go to Bryan and Richard, and their bosses, for the significant number of 24 GHz parabolic dish antennas, some included radomes, others were just the parabolic reflector. These high quality dishes sold rapidly at bargain prices. Even better for the local club, the proceeds were donated to the organising committee.

Many attendees enjoyed a get together on the Friday evening at a local bistro and almost 100 attended the conference dinner on the Saturday evening. During the breaks in the program and the meals, there was a large amount of discussion stimulated by the presentations during the weekend.

On Sunday afternoon, most started the often long trip home – we had attendees from VK1, VK2, VK3, VK4, VK5, VK6, VK7 and ZL.

Apart from following though on those thoughts stimulated by the weekend's presentations and informal discussions, there just remains the task of leveraging the documents from the presenters for the Proceedings volume – which should be available just in time for next year's event on the weekend of July 11 and 12.

August – a VK activity month

Traditionally, the August issue of AR has had some focus on the Remembrance Day Contest. We fitted a loose link to that focus onto the cover, with the MCR-1 'Biscuit Tin' radio, with a brief story about this radio on page 31. The contest rules are printed on pages 44 and 45.

This year the RD Contest coincides with the International Lighthouse and Lightship Weekend (ILLW) – not a contest but an international activity weekend. For further details, look at the official ILLW website at <http://illw.org/> Whilst most of the ILLW participants may not be focussing on the RD Contest (very understandable), I am sure that you will be able to request a report and number from them if you ask nicely.

The final weekend of August sees the running of the ALARA Contest. Open to all, this contest represents a great chance for the "paper chasers" – those looking to qualify for awards. There should be many YL operators active over the weekend, so you should have a good chance to find the contacts needed for the ALARA Award – VK & ZL amateurs need only 10 contacts with ALARA YLs in four Australian call areas to qualify.

Closing comments

The days are slowly getting longer. Here in the southern sates, the weather brings cold mornings, but occasional cool but sunny days. As the weather improves and the days grow longer, may you all make the time to progress the long list of outside amateur radio projects that have been accumulating over the wet winter months.

73, Peter VK3KAI

The Two Letter Callsign Ballot

In the April issue of Amateur Radio I wrote about the history of the ACMA embargo on the issue of two letter callsigns, and the quarantining of two letter callsigns when an amateur sought to renew his/her licence outside the time for renewal, and the process proposed for the conduct of a ballot, drawing attention to the request for comment on the process proposed.

The proposed process was set out in a paper published in that issue of the magazine. The paper was also placed on the WIA and ACMA websites.

As seems to be the case with everything associated with this issue, the times set out in the paper for the various steps to be taken turned out to be optimistic. That was because ACMA required the WIA to enter into a contract with it, and a number of quite complex issues arose.

Ultimately, on 15 July the necessary contract was finalised and signed, and so the final procedure is published in this issue of the magazine.

If you wish to participate in the ballot, you will need to complete the application form, which is downloadable from the WIA website, or may be obtained from the WIA office.

A list of the available two letter callsigns in each state and in the ACT and Northern Territory can be found on the WIA website.

A payment of \$59.74, including GST, is required to participate in the ballot. That charge is reasonably related to the anticipated cost of conducting the ballot. The costs associated with the ballot are considerable and it would not be reasonable for the WIA and its members to meet them.

The WIA will accept applications to participate in the ballot until 29 August 2008.

Full details can be found in the statement published in this issue.

But what was the result of our request for comment on the proposed process for the ballot?

Many amateurs took the time to offer comments, many going beyond the process issue and providing a valuable insight on many aspects of issues

associated with amateur callsigns. We have published a paper, "The result of the consultation", and it has been sent to all those who offered comments. While it will make this a very long Comment, because of the interest the subject attracted I set it out in full.

1. Introduction

On 1 April 2008 the WIA and ACMA published a joint paper, "Ballot for two Letter Callsigns", (the "Paper") following ACMA's request to the WIA to manage a fair and transparent process for the allocation of two letter callsigns in all states and territories by ballot, subject to certain broad principles imposed by ACMA.

As part of that process the Paper was published on the WIA and ACMA websites, published in the WIA's magazine "Amateur Radio" and publicised in the WIA Broadcasts.

The WIA sought comment on the proposed process for the ballot, and the time for comment ended on 30 April 2008.

This paper summarises the comments received, and sets out a response to a number of matters, and also indicates the further steps that will be taken in the process.

The ACMA has authorised this paper and the conclusions reached.

This paper will be sent to each person who lodged a submission as requested, and will also be published on the WIA website and in the WIA's magazine "Amateur Radio".

Comments received

The WIA received 84 submissions. A further anonymous submission was disregarded.

The submissions covered many points, and are summarised in the schedule to this paper.

The WIA is very grateful that so many amateurs took the time to make submissions in respect of the process proposed in the Paper. The comments have been most helpful, and we sincerely thank all who have assisted us in this way.

We address certain matters raised

specifically as set out under the following headings.

Seniority and CW

The major issue that emerged in the submissions was whether two letter callsigns should only be available to particular amateurs, able to demonstrate either "seniority" or a Morse code qualification, and not just an Advanced licence.

It was contended that two letter callsigns are a form of status symbol and therefore are highly sought after and submissions argued should therefore be restricted to those who hold a Morse code qualification.

16 submissions argued that two letter callsigns should be available only to amateurs who have held a licence for a number of years.

On the other hand, 31 broadly supported the process, so while many raised the issue, there was an almost equal number apparently supporting the method of qualification proposed.

ACMA is of the opinion that to restrict two letter callsigns to allocation on the basis of seniority or the demonstration of a Morse code qualification does not accord with the principles of equity and eligibility that it set when instructing the WIA.

It is the WIA's view that eligibility to enter the ballot should not be based on additional Morse code qualifications, which is one operating skill and is no longer required as a mandatory qualification.

Demonstrating how long an applicant has held an apparatus licence does not say anything about whether the licence has been used. On such a basis an applicant who has held an amateur licence for 25 years, but only operated over 5 years would take priority over an amateur who has operated extensively over 15 years.

It is really inviting the WIA to make value judgements of a kind that will simply lead to dispute.

Neither suggestion is supported by

continued on pages 19 & 21

Ballot for two letter callsigns

Purpose

This paper sets out the process for the equitable allocation of amateur callsigns with two letter suffixes (two letter callsigns) in accordance with the Principles specified by the Australian Communications and Media Authority (ACMA); and

This paper follows publication of the proposal paper in April 2008 (the "proposal paper") and a period of consultation with the amateur community. This paper is the final document referred to in the proposal paper.

This paper will be published in the August 2008 issue of the WIA magazine "Amateur Radio" and will be placed on the WIA website www.wia.org.au on 1 August 2008. It will be further publicised in August during WIA broadcasts. This paper will also be published on the ACMA website www.acma.gov.au

Background

In 2003-04, the Australian Communications Authority (ACA) carried out a Review of Amateur Service Regulation (the Review). The ACA conducted extensive consultation with the Amateur community throughout the Review process. The findings of the Review were published in Outcomes of the Review of Amateur Service Regulation. A key Outcome of the Review was the decision to consolidate amateur licence options and certificates into three options: Foundation, Standard and Advanced. This outcome was implemented on 20 October 2005.

Prior to these reforms, only holders of amateur unrestricted licences were eligible to hold a two letter callsign. One result of the new arrangements was that Amateurs who previously held amateur limited and amateur intermediate licences became eligible to hold a two letter callsign under the new arrangements. This resulted in a high level of demand in some states and territories that could not be met by available supply. Accordingly, on 19 October 2005 ACMA suspended the issue of two letter callsigns until an equitable arrangement for their allocation could be put in place.

On 7 February 2008, ACMA introduced several more outcomes of the Review.

These reforms included a series of changes to Amateur licence conditions and the introduction of a class licence to authorise amateurs visiting from overseas. In addition, to streamline services for Amateur licensees, ACMA decided to delegate certain statutory functions and administrative services associated with Amateur licensing to the WIA.

As part of these arrangements, ACMA has requested that the WIA manage a fair and transparent ballot process for the allocation of two letter callsigns in all states and territories in Australia (the "Ballot"). Two letter callsigns will be available on an equitable basis to all qualified operators who are eligible to participate in the Ballot.

Principles

The WIA is required by ACMA to give effect to certain broad principles and conditions in regard to how the Ballot should operate. These are:

Eligibility. This should be limited to holders of amateur (advanced) licences (or a certificate of proficiency that would entitle the holder to an amateur (advanced) licence. Applicants should only be able to apply for a callsign in the state or territory in which they reside.

Equity. Ballot process to be impartial (with an independent or ACMA representative present). Amateurs should only be eligible to participate in the ballot if they do not already possess a two letter callsign. In addition, each applicant should be limited to one two letter callsign.

Preference. The ballot process should enable amateurs to express their preferences for individual callsigns prior to the Ballot. A list of available two letter callsigns should be made available to applicants prior to entry.

Charges. The WIA may charge an entry cost for the ballot that is reasonably related to the cost of the process.

Outcome. The WIA is to finalise results of the Ballot and advise ACMA the names of applicants who were successful in the Ballot

together with the two letter callsign they should be issued with if an application to vary their licence is submitted.

Pre-Ballot review

The proposal paper invited applications for review from amateurs who had "lost" their two letter callsigns since 19 October 2005 and could demonstrate that their failure to renew was due to exceptional circumstances.

All amateurs who applied for a review were able to demonstrate exceptional circumstances. Accordingly, their callsigns will not be included in the ballot.

Callsigns of deceased amateurs

The two letter callsigns of all amateurs who died on or after 1 March 2006 whose death is known to either ACMA or the WIA have been excluded from the ballot. In addition, in exceptional circumstances, other two letter callsigns may be excluded.

Persons eligible to apply

Any person who:

- holds, or who is qualified to hold, an amateur licence (amateur advanced station);

and

- resides permanently in Australia;

and

- is not a person who is, or in the past two years has been, a director, a secretary or treasurer of the WIA or Editor of "Amateur Radio" magazine or an employee of the WIA or the spouse or partner of any such a person;

and

- does not already hold a two letter callsign in any state or territory in Australia

is eligible to participate in the Ballot for the state or territory in which the person resides.

List of available callsigns

ACMA will provide the WIA with a list of available two letter callsigns by state and in the Northern Territory and the ACT. The WIA will publish that list on its website on 1 August 2008.

Ballot invitation

By publication of this paper in the August 2008 issue of the WIA's magazine "Amateur Radio" and by publication on the WIA's website, the WIA invites applications from eligible amateurs wishing to participate in the Ballot in the state or territory of their residence.

This invitation will also be publicised on at least three occasions during WIA broadcasts.

Amateurs wishing to participate must complete the application form that may be down-loaded from the WIA website, or obtained as follows:

- By mail addressed to:
Two Letter Call
The Wireless Institute of Australia
PO Box 2175
Caulfield Junction
Victoria 3161
- By email addressed to:
2lettercall@wia.org.au
- By facsimile to:
Two Letter Call
03 9523 8191
- By telephone between 10 am and 4 pm on a working day: (03) 9528 5962

All applications will require payment of a charge of \$54.30 (plus GST). The total application charge is \$59.74 (including GST).

This charge is reasonably related to the anticipated cost of holding the Ballot.

Applications for the Ballot

The closing date for receipt of applications for the Ballot will be 4 pm AEST Friday 29 August 2008.

Applications must be sent to the WIA by mail as follows:

Two Letter Call
The Wireless Institute of Australia
PO Box 2175
Caulfield Junction
Victoria 3161

Or by hand to:

The Wireless Institute of Australia
Unit 10, 229 Balaclava Road,
North Caulfield
Victoria 3161

An application for participation in the Ballot delivered by hand to the WIA office must be delivered by no later than 4 pm EST on the closing date.

The WIA will treat mail received by postal delivery or by clearance from the Post Office box on the following Monday as being received in time. The WIA is not obliged to clear the box more than once on that day.

All applications for the Ballot must be accompanied by a cheque or money order for the charge of \$59.74 or a credit card authority in respect of the charge of \$59.74.

Any application for participation that is not delivered by the time specified or is incomplete or is not accompanied by a cheque or credit card authority for the Fee will be disregarded.

Processing of applications

All complete and eligible applications will be recorded on a secure electronic database.

A ballot number will be assigned to each application in the order in which they are received on a state or territory basis. The allocation of a ballot number does not infer any order or preferences in the ballot. For example, the first application received from New South Wales will be attributed the Ballot number 2001. Similarly, the second application received from New South Wales will be attributed the Ballot number 2002.

Under this process, the identity of the applicant will not be known before the Ballot. The Ballot number will be used to link the details recorded on the database for identifying callsign preferences.

Ballot methodology

The Ballot will be conducted on a day and at a place to be announced. The Ballot will be conducted no later than Friday 19 September 2008.

An application number will be drawn out of a barrel in sequence until all available callsigns have been allocated or no further applications remain. The Ballot for all states and territories involved in the process will be conducted on the same day.

The WIA will ensure the presence of at least two independent witnesses at the Ballot. A representative of ACMA may also be present.

As each successful applicant is identified, the eligibility of the applicant will be verified against the ACMA database. If the callsign is available, the first preference of that applicant will be allocated to that applicant. If the first preference of that applicant is not available, the second preference of that applicant will be allocated to that applicant. If the second preference of that applicant is not available, the application will be held until all other applicant preferences have been exhausted, at

which point the remaining callsigns, in alphabetical order, will be allocated to the applicants whose preferences could not be met in the order in which they were originally drawn.

ACMA will be provided with a list of all successful applicants and the callsign recommended to be allocated to each applicant.

ACMA licence variation process

The WIA will advise by letter all eligible applicants of the Ballot outcome posted within 5 working days after the Ballot day. Applicants will be advised of the Ballot outcome whether they are successful or not.

Successful applicants will be provided with an application for variation of an apparatus licence and will be advised to complete the form and return it to ACMA by 10 October 2008, accompanied by a cheque or money order for \$41 made payable to "ACMA". ACMA will not accept credit cards.

The process will be completed by 24 October 2008.

Any two letter callsigns not the subject of an application for the variation of an apparatus licence received by ACMA by this date will be returned to the list of available callsigns and thereafter will be allocated to applicants for licences or applicants for variations of licences on a basis to be determined, having regard to the number of callsigns involved and the number of people seeking the allocation of such callsigns.

Summary of milestones and timeframes

The timetable proposed in the proposal paper has been varied and extended as set out below:

Step	Date
Invitation to participate in ballot	1 August 2008
List of available callsigns released	1 August 2008
Ballot closes	29 August 2008
Ballot conducted	By 19 September 2008
Applicants advised of ballot outcome, letters posted	By 24 September 2008
Last date for applications for variation	10 October 2008
Ballot process completed	24 October 2008

ar

A 5 W CW transmitter for 1.8, 3.5 and 7 MHz with QSK

Drew Diamond VK3XU

Offered here are plans for a “sweet” little CW transmitter for three popular bands. It is an improved model, based largely upon a previous pattern published in the QRP journal Lo-Key (Reference 1).

Output power is adjustable between 0 and 5 W into 50 ohms from a 13 V dc supply. Frequency range is from 1.75 (1.8 MHz) to about 1.875 MHz, 3.5 to 3.75 MHz, and 7.0 to 7.5 MHz. Harmonics are measured at greater than 50 dB below fundamental.

The sturdy class-B power amplifier (Reference 2) can withstand extreme load mismatch (including accidental short or open-circuit load) for reasonable periods without damage, and remains stable, even when feeding less than perfect loads. In operation, solid-state break-in, or “QSK” T/R, allows the user to listen on the frequency in the spaces between words and some characters, as they are sent.

Circuit

To eliminate any warm-up drift between “overs”, the oscillator runs continuously at twice the highest output frequency, 14 to 15 MHz. Hence, the VFO signal cannot be heard during receive periods.

Output from the 2N5484 VFO buffer (Figure 1) is applied to the clock input pin 9 of a 74HC175 CMOS 4-stage counter, configurable to divide by 2 (to give 7 MHz), by 4 to give 3.5 MHz, and by 8 to give 1.8 MHz. The diode clamp moves the 6 V p-p sine signal (from the

buffer) fully into the positive region, thus driving the counter without need of a Schmitt trigger. The first stage must wait for a high at the (R)eset input, pin 1, in order to output a square-wave at pin 15. Configuration of the required division ratio is done using a 4066 CMOS switch, settable for each band by S1a.

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 Reset pin of the 74HC175. 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 potentiometer (which also functions as 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, the '555 timer will “time-out” (determined mainly by the 1 M Ω resistor and 470 nF capacitor),

whereupon the T/R will re-connect the antenna to the receiver's input.

Considerable harmonic energy exists at the output of the PA, so the signal must be passed through an effective low-pass filter, switched in for each band. Those shown were modelled according to data provided in Reference 3.

Construction

The home-made aluminium chassis/cabinet pictured in Photo 1 measures 60 x 210 x 135 mm HWD. The bottom chassis panel functions as a heat-sink for the IRF612 PA MOSFET (very little waste heat is generated).

Divider, driver, PA and T/R are accommodated upon a “paddyboard” circuit board (Reference 4) shown in Figure 2 and Photo 2. However, any preferred construction method will serve, provided that signal carrying component leads (for example coupling and by-pass capacitors, etc.) are reasonably short, the general plan is followed, and plenty of “ground-plane” copper is retained on the circuit board.

A rectangular hole of 12 x 18 mm should be provided in the main board so that the IRF612 may be attached directly to the bottom panel - include a silicone washer and insulated spacer. A solder tag for the drain connection is fitted under the 3 mm hex fixing nut. The 74HC175, 4066 and 74HC04 chips may be inserted into appropriate IC sockets, which in turn are soldered, tracks uppermost, 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 board foil). These are super-glued (sparingly - no glue on items that must take solder) upon the main circuit board as shown.

Do not mix chip “species” - TTL or LS ICs may not work in this circuit.

The NE555 chip may be accommodated in an 8-pin socket, which in turn is soldered to a 20 x 20 mm “substrate”. The angled cuts are at 65 degrees to the axis.

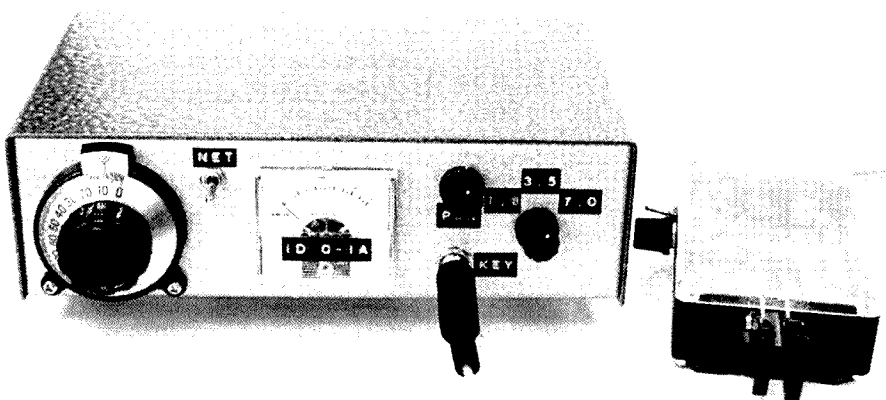
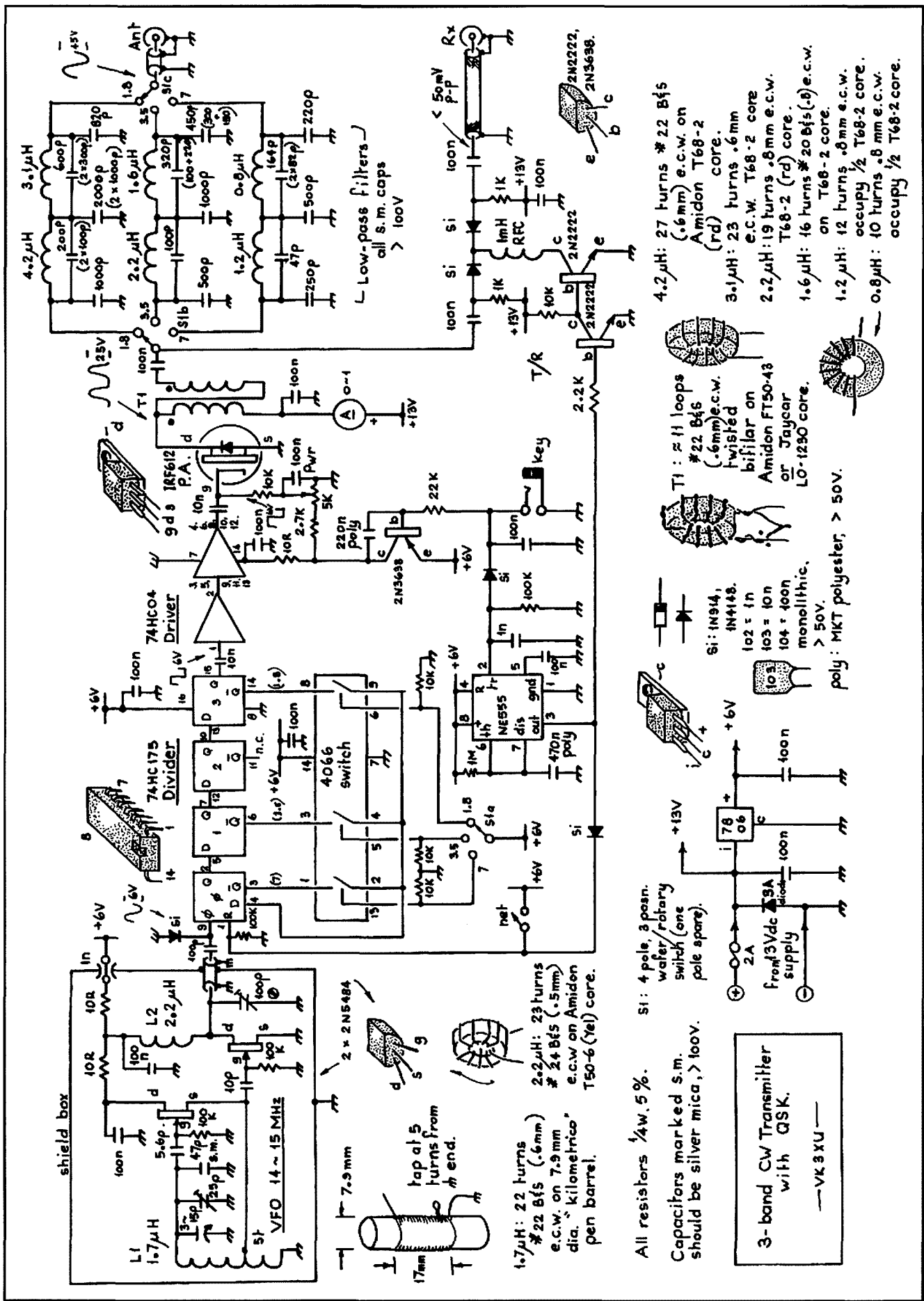


Photo 1: The 3-band QRP CW transmitter.



shield box

VFO 14 ~ 15 MHz

L1 1.7µH

L2 2.2µH

tap at 5 turns from end.

1.7µH: 22 turns #22 B&S (.6mm) e.c.w. on 7.5mm dia. "kilometric" pen barrel.

2.2µH: 23 turns #24 B&S (.5mm) e.c.w. on Amidon T50-6 (yel) core.

4.2µH: 27 turns #22 B&S (.6mm) e.c.w. on Amidon T68-2 (rd) core.

3.1µH: 23 turns .6mm e.c.w. T68-2 core.

2.2µH: 19 turns .6mm e.c.w. T68-2 (rd) core.

1.6µH: 16 turns #20 B&S (.8) e.c.w. on T68-2 core.

1.2µH: 12 turns .8mm e.c.w. occupy 1/2 T68-2 core.

0.8µH: 10 turns .8mm e.c.w. occupy 1/2 T68-2 core.

All resistors 1/4w. 5%.
Capacitors marked S.M. should be silver mica, > 100V.

3-band CW Transmitter with QSK.
—VK3XU—

Si: 1N914, 1N4148.
102 = 1n
103 = 10n
104 = 100n
menolithic.
> 50V.

Si: 4 pole, 3 posn. waf/r rotary switch (one pole spare).

7806
13Vdc supply
2A

poly: MKT polyester, > 50V.

T1: 2 H loops #22 B&S (.6mm) e.c.w. twisted bifilar on Amidon FT50-48 or Jaycar LO-1290 core.

Low-pass filters all S.M. caps > 100V

Figure 1: Schematic of the 3-band CW transmitter with QSK.

operated from a regulated power supply of (nominally) +13 V dc at up to 1 A.

Connect a suitably rated 50 ohm dummy load/power meter to the output. Turn the Pwr potentiometer to zero. If an oscilloscope is available, hook a x10 probe on to the gate of the IRF612. Upon key closure, observe a (perhaps raggedy) square-wave of about 6 V p-p. Re-adjust the 100 pF trim cap (at the drain of the second 2N5484) so that reliable operation of the divider occurs (that is, there is no "squegging"). 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 pot from zero to fully clockwise. You should observe a smooth rise in output power, up to 5 W, perhaps a bit more on 1.8 and 3.5 MHz (where efficiency is rather good). Drain current should be about 0.7 A for 5 W output on 7 MHz. With the 'scope time-base at (say) 0.2 μs/division, connect the probe to the output connector and observe a clean sine-wave signal of about 45 V p-p. Connect a 50 ohm termination to the RX connector. With the 'scope at greatest sensitivity

(say 5 mV/div), check that the T/R is working, in that little or no signal is present at the RX connector.

Verify CW keying - set the 'scope for ~10 ms/div and observe a nicely ramped keyed wave-shape, free of blips or spikes, and no trace of "back-wave". Some typical 'scope waveforms,

measured with an x10 probe, are shown on the circuit as an aid to any necessary troubleshooting.

Parts

All the ordinary components are available from our usual electronics suppliers, including Altronics, Electronic

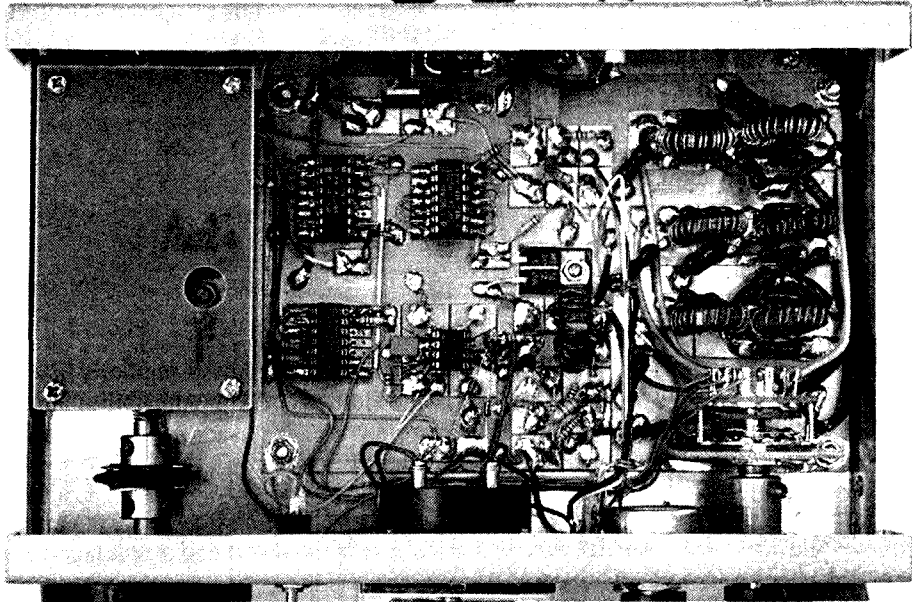


Photo 2 Internal view of the transmitter case showing component locations.

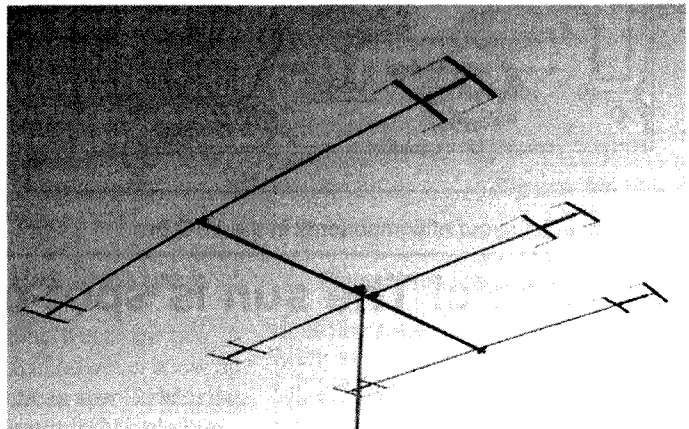
TET-EMTRON
TE-33M THREE
ELEMENT
TRI-BAND MINI BEAM

If you haven't the room for a full size three element beam, but you want more gain than the two element TE-23M, this is for you.

SPECIFICATIONS	
FREQUENCY	14, 21, 28 MHz BAND
MAX.ELEMENT LENGTH	5520 mm
BOOM LENGTH	4.0 m
GAIN	6 / 6 / 7 dBi
FRONT TO BACK RATIO	20/ 15/ 14 dB
FEED IMPEDANCE	50 ohm
TURNING RADIUS	3.74 m
WEIGHT	12 kg
POWER RATING	2 kW PEP

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If you already have a TE-23M, you can purchase the extension kit containing extra boom, director element, and everything you need to upgrade to this antenna..

See Website www.tet-emtron.com
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World, Jaycar, Rockby and Semtronics. Capacitors marked "10 n" and "100 n" are 50 V monolithic types. The capacitors marked "poly" should be MKT polyester types, > 50 V. The 100 pF VFO buffer trimmer is a Jaycar RV 5722.

For best efficiency and stability, capacitors marked "s.m." should be 100 V or 500 V silver mica. These may be mail-ordered from Antique Electronic Supply (www.tubesandmore.com). Do ask for their catalogue.

An IRF612 MOSFET, 1 nF feed-through capacitor, 74HC175, 25 pF "beehive" trim capacitor and many other parts may be purchased from Electronic World (03 9723 3860). 74HC175s (and much else) may be ordered from Semtronics (www.semtronics.com.au). Their 'phone number is 03 9873 3555.

Bandswitch S1 is a 4-pole, 3-position (one pole spare) Altronics S 3033.

The Amidon toroids may be ordered

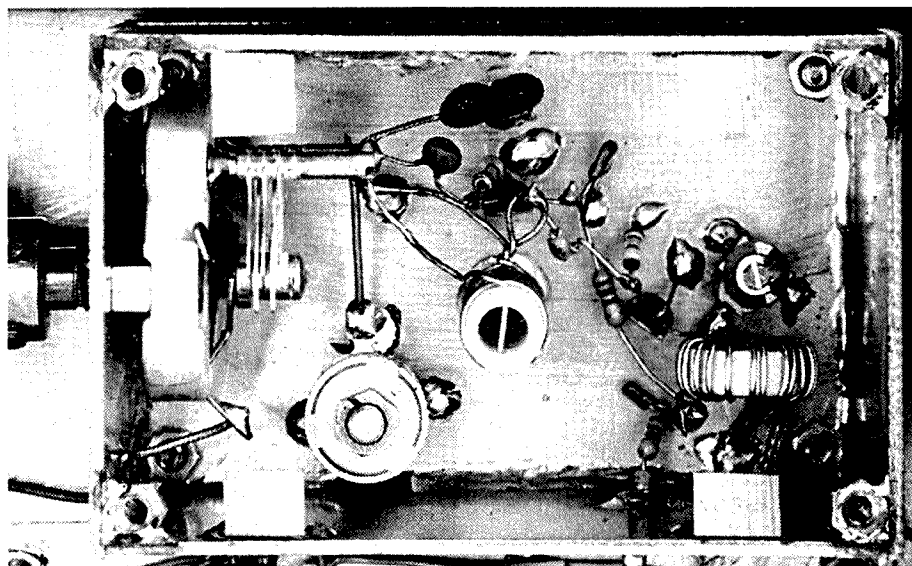


Photo 3: The VFO assembly.

from any of the suppliers regularly listed in the Hamads of Amateur Radio.

As mentioned, the 3 ~ 15 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" (I am not in the parts business, but please contact the

writer by 'phone [03 9722 1620] or letter if you cannot find a suitable variable capacitor, or are held up by one or two other items).

References and Further Reading

1. "A 4-band QRP CW Transmitter with QSK T/R"; Lo-Key #66, June 2000 (Journal of the CW Operators' QRP Club).
2. Experimental Methods in RF Design; W Hayward et al.; ARRL, pp 2.31 ~ 2.37.
3. "Low-pass filters for solid-state linear amplifiers"; K Shubert WA0JYK, Ham Radio, March 1974.
4. "'Paddyboard' Circuit Construction - Revised"; Amateur Radio, May 2005.

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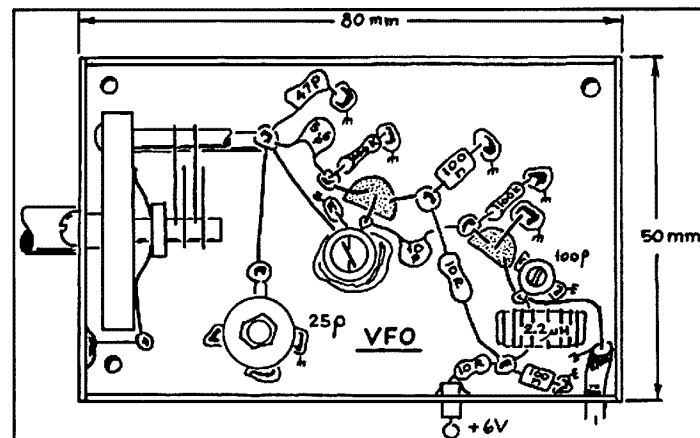


Figure 3: Layout of components in the VFO box.

Don't panic! The sun is spot-on

NASA solar physicist David Hathaway disagrees with the sunspot doomsayers. "There have been some reports lately that Solar Minimum is lasting longer than it should. Not so. The ongoing lull in sunspot number is well within historic norms for the solar cycle."

A careful look at the data suggests nothing odd is going on. "The sun is now near the low point of its 11-year activity cycle," says Hathaway. "This 'Solar Minimum' is the period of quiet that separates one Solar Max from another."

During Solar Max, huge sunspots and intense solar flares occur daily. Radiation storms knock out satellites, radio blackouts frustrate hams. The last

such 'Max' was around 2000-2001.

In Solar Minimums, Solar flares are almost non-existent while weeks go by, as now, without a single, tiny sunspot.

To questions about the 3 years of the ongoing minimum, Hathaway says, "In the early 20th century there were periods of quiet almost twice as long as now."

Hathaway has analysed data back to 1749 and says: "The average period of these solar cycle is 131 months with a standard deviation (SD) of 14 months. Current, decaying solar cycle 23 has lasted 142 months, well within the first SD and not at all abnormal"

The Maunder Minimum of 1645-1715, lasted an incredible 70 years

Dr. Tony Phillips Science@NASA
science.nasa.gov/headlines/y2008/11jul_solarcycleupdate.htm

and coincided with the Little Ice Age, with extraordinarily bitter winters in the northern hemisphere. Many think that low solar activity, plus increased volcanism and changes in ocean current patterns played a role in this event.

From early 18th century sunspot activity has had the familiar 11-year period.

But solar physicists are always on the look-out for signs that Maunder might come again.

"Not this time", says Hathaway. "We have already observed a few sunspots from the next solar cycle," predicting a return to Solar Max around 2012.

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Further reflections on A wideband return loss bridge

Paul McMahon VK3DIP

Since my article on a Return Loss Bridge appeared in AR, a number of people have contacted me with questions, comments, and the results of tests on their versions of the RLB. This article is a summary of these plus some additional work I have done on subsequent versions of the RLB. Also included are the results of some tests done on my prototypes using somewhat better quality test equipment than previously used.

The Balun

The vast majority of the questions I have been asked boil down to a request for more details of the Balun; how does it work, why four cores, should I (or can I) use more, less, why does it even need a Balun etc. The following is my description of the balun and how it works; I am sure this is not the only way this could be explained but hopefully this will give a better idea of why I built it the way I did.

Figure 1 reproduces the circuit from the original article (a), along with a simplified version of the circuit (b) that is the effective result if the Balun is ideal. As an aside, you may note that the circuit at (b) is effectively that of a 50 ohm resistive 6 dB splitter, and shares many of the characteristics of such a device.

The function of the Balun then is to transform the 50 ohm unbalanced input impedance of the detector (that is, one side of the real detector input is earthed), to a balanced, effectively floating (that is, neither side of the transformed detector input is earthed), 50 ohm impedance between the two Z connectors.

In the ideal Balun case, the impedance presented will be exactly 50 ohms and the detector will be exactly balanced. Minor divergence from this effective 50 ohm presented will only result in corresponding minor mismatches and losses. However even minor amounts of residual unbalance will result in the detected signal not correctly representing differences between the Z Unknown and Z Reference ports. For example, if the effective resistance presented was 40 ohms instead of 50, then, apart from a 20 dB return loss, so long as things are balanced, a null on the detector would still indicate that the Unknown and Reference were equal, and a peak would indicate

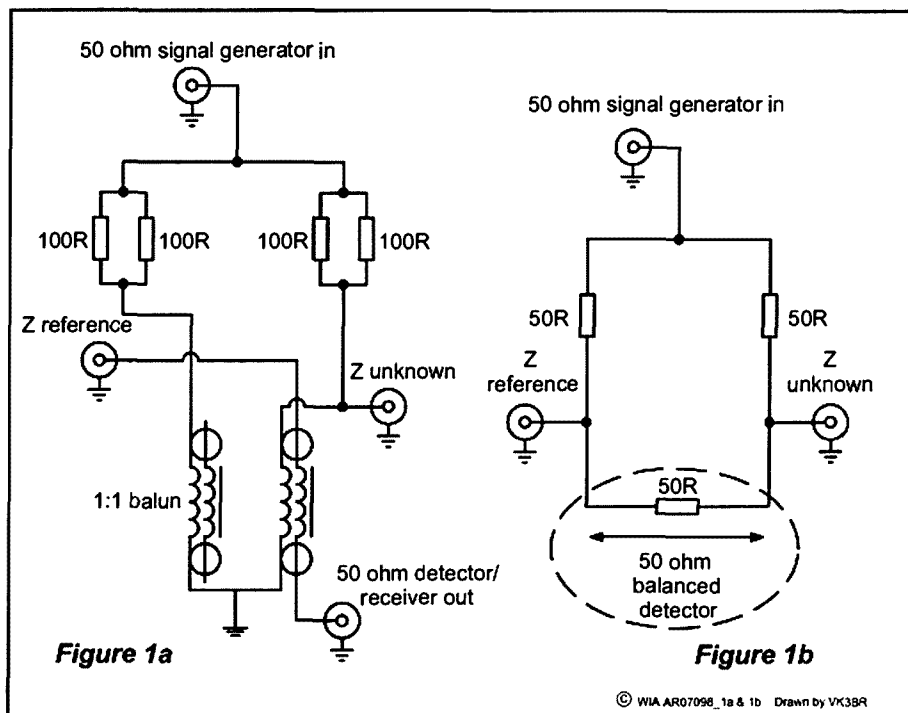


Figure 1 (a) The Mark 1 RLB circuit.

Figure 1 (b) The simplified circuit.

maximal difference between the two. A problem in balance will however show up as the detector indicating a null when the Reference does not equal the Unknown.

So what do balanced and unbalanced mean? In simple terms for a two terminal source or load, unbalanced means that one terminal is connected to earth, or at earth potential (a virtual earth), in the balanced case both terminals are not earthed but have symmetrical mirror images of each other about earth (or virtual earth). With AC or RF, in the unbalanced case the earthed terminal is always at zero volts while the other varies about zero to some positive or negative value with respect to earth. In the balanced case, the terminals will have potentials of equal magnitude but opposite sign. A physical analogy

could be something like a lever with the pivot at one end is unbalanced, while a see-saw with the pivot in the middle is balanced.

We can see this in Figure 2. (Note that while for simplicity I have shown a hard earth, the same is true with a virtual earth which has no actual connection to physical earth.)

Here, in both cases, a source of output impedance R feeds a load of impedance R via a transmission line of impedance $Z_0 = R$. Having the values of R the same is for matching and power transfer not balancing purposes. In the balanced case the value of R is effectively split in two either side of earth and that the equality of these values is what affects the balance. Put another way, the closer the

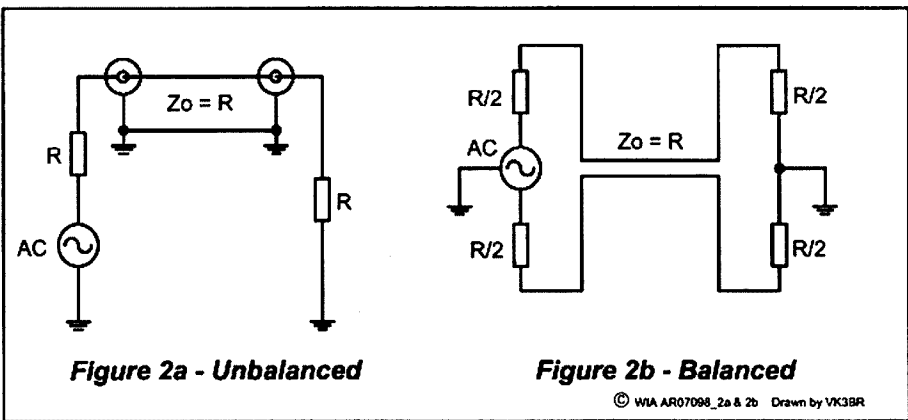


Figure 2. The Unbalanced and Balanced cases.

earth (or virtual earth) is to the middle, the better is the balance.

To understand the operation of this Balun, we also need to look at coaxial transmission lines. In the normal, and desired, mode of operation, RF energy flows only in the inside of the coax, that is, in the area between the outside of the inner conductor and the inside of the outer conductor/braid. In this case, the outside of the outer braid is actually at earth potential. This normal circumstance is enforced usually by the outer braid being physically connected to earth at both ends of the cable and sometimes along its length. In normal use, one connects a 50 ohm unbalanced source (a transceiver, say) to a nominally 50 ohm unbalanced load (a properly tuned Yagi with a gamma match say) via 50 ohm Coax.

Figure 3 shows what happens when we just connect up to a balanced load using intrinsically unbalanced coax.

We can see from Figure 3(a) that everything looks OK except for the fact that at point A the outer braid of the coax is effectively shorting out the lower of the two R/2 resistors in the load. Understanding what is happening here

can be a bit difficult at first and perhaps it helps to think of this as being a bit like a garden hose with the water flowing down the inside which is good, but something is not quite right at the nozzle end and water is running back down the outside of the hose. A similar thing is happening with the coax here, the RF power is flowing down the inside of the coax and because of the imbalance some is flowing back down the low impedance path formed by the outer of the coax which is connected to earth at the source end.

Note: This current flowing on the outside of the coax is not a reflection or a standing wave. All of that happens inside the coax.

The effect is perhaps simpler to understand in Figure 3(b), where the impedance of the outer of the coax is shown explicitly (as Zb) separately to the transmission line. Normally then, unless we have done something special to make the impedance of the outside of the braid (that is, Zb) high, just connecting up an unbalanced bit of coax to a balanced load is not a good thing.

Of course lots of people do just this with wire dipoles and other antennas, but

in this case there is usually a long bit of coax involved which in itself increases the inductance of the outer braid. In addition the current on the outside of the coax will radiate (or receive) also, so the main effect will be on radiation patterns.

As an aside, in the antenna case with, for example, a dipole where there is no hard earth centre connection and there is only a virtual earth, the net effect, apart from sharing the current between the antenna and outside of the coax, is to effectively move the virtual earth point along the dipole away from the centre of the antenna. Both the current on the outer of the coax and the movement of the virtual centre point will distort the antenna pattern.

One way to make this piece of coax into a balun is to increase Zb without otherwise interfering with the flow of power. This sort of balun is called a choke or current mode balun because we are dealing with the flow of currents and effectively turning the outer of the coax into an RF choke.

We can do this several ways:

- We can wind the coax into a simple coil and thus increase the effective inductance of the outer without affecting the other properties of the coax. This works best at higher frequencies as the impedance of a set value of inductance increases with frequency.
- We can increase the inductance of this coil by winding it on, or surrounding it with, some sort of ferromagnetic material.
- We can use an appropriate ferrite material that will add a resistive component as well as increasing the inductance. This is fine here, where we are not using too much power, but be careful in a transmitting case where this resistance may dissipate some power and get hot. If a ferrite gets too hot it loses its ferrite properties.

Some form of quarter wave shorted stub or sleeve can be added over the coax, though this is obviously more for a single frequency.

Note: there are other ways of making baluns, such as using transformers, which are not covered here.

What we cannot do is just add a resistor in series, as that would end up being in both the inner and outer paths.

The approach taken with the RLB here

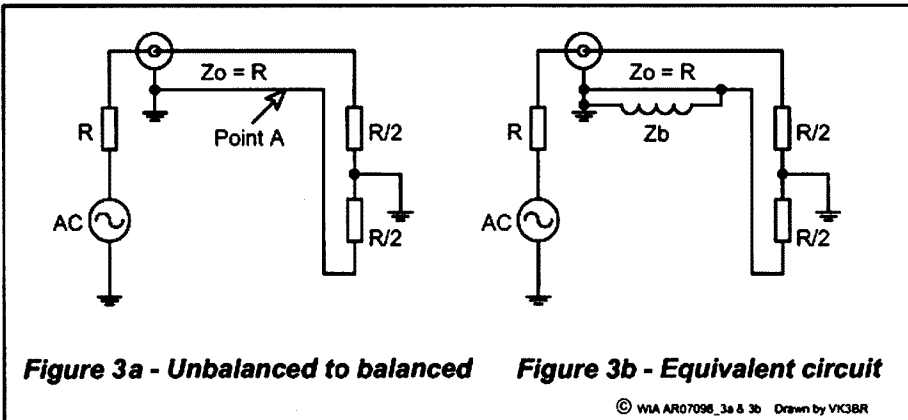


Figure 3. Connecting an Unbalanced source to Balanced load with some Coax.

then is option 3 above; the only hard thing is finding an appropriate ferrite that will work over the frequency range of interest. In my case the simplest way to get this ferrite was in the form of the two-hole balun formers intended for TV frequencies which cover most of the range we are interested in.

The nature of this ferrite is that the inductance of the windings has the main effect at lower frequencies, while at higher frequencies the effective resistance will predominate. The problem with this at the extremes is that at the lower frequencies we need very high inductances to get high impedances, while at the higher frequencies the resistive component tails off unless we have some very exotic ferrite.

So even if we manage to get a reasonably high value of impedance within a band of frequencies, at the edges things get less than perfect, that is, the shunt impedance across one half of the load (Z_b) will drop which will in turn effectively lower the value of this half of the load.

This is where the idea that balance is more important than matching comes in. The simplest way to maintain this balance at the extremes is to also shunt the other side of the load with the exact same value (that is, equal to Z_b). See Figure 4.

In Figure 4(a), the second Z_b is seen added across the other half of the load. To make sure these two Z_b s are as close to the same value as possible, no matter at what frequency, we make the second Z_b by duplicating as close as possible the winding that we have for the main coax line using the same sort of wire (that is, coax) even though in this case only the outer matters which is why we do not have any connection to the second coax inner.

The net effect of this is to get us to Figure 4(b), where we see that even if Z_b starts to shunt one side of the detector, the other side will be equally shunted maintaining the balance, thus only the match (and of course losses) will suffer not the balance, so we will still correctly show when Z Reference equals Z Unknown etc.

There are a couple of other factors that need to be considered in order to maximise the effectiveness of the balun operation.

Firstly we need to maximise the

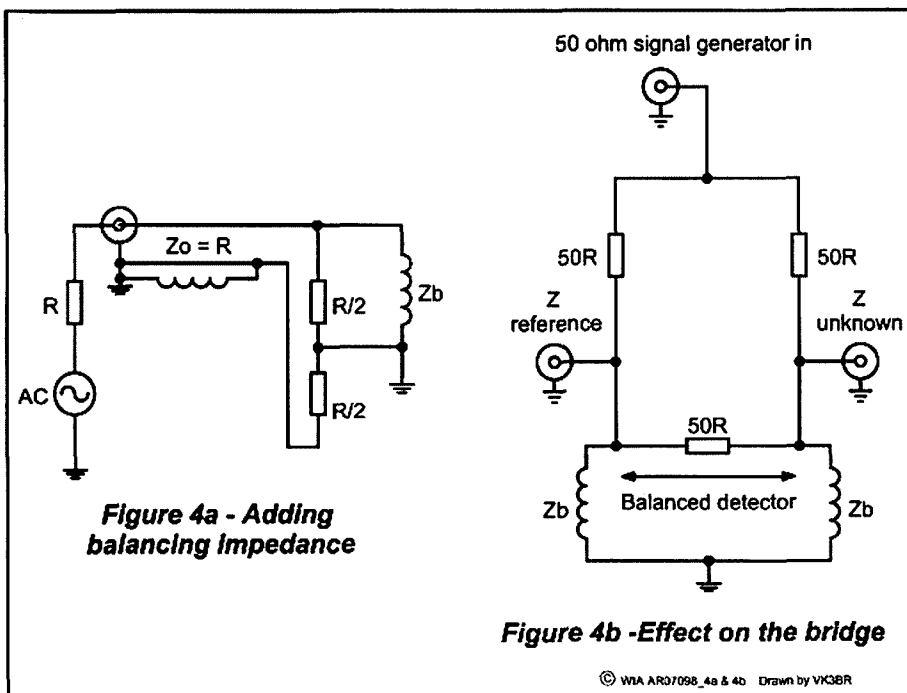


Figure 4. The effect of a balancing impedance.

inductance to get the balun to work well at low frequencies which means winding lots of turns, or using large bits of ferrite.

The problem with large numbers of turns is that this tends to increase leakage capacitance between those turns, which directly counteracts the effect of the extra inductance. This particularly affects working at higher frequencies, that is, we can make the balun work better down low by compromising at the high end, and the opposite is also true.

Secondly it can be very difficult to wind exactly the same coil twice and end up with exactly the same values of inductance as, for example, two supposedly identical ferrite cores can have slightly different attributes.

To try and address these two items in my RLB Balun, I used the configuration I did, that is, just one turn (or a half depending how you count it) to minimize capacitance and lots of ferrite with each individual ferrite core used half and half for the main and the balancing line. You can refer to the original article for further details of this.

The down side of this approach is that just the single turn even with four cores does not give much inductance and thus limits the impedance at the low end. In the case of the original prototype I stuck with the four cores that fitted easily in the box I had.

Possible improvements – not just to the balun

Several people who have made versions of this RLB have suggested improvements and I also have been lucky to have had some tests done on a couple of prototypes with some very expensive and thus theoretically very good test equipment.

1. Add more cores. A general rule of thumb seems to be the more ferrite the better. I have now built versions with up to 9 cores with improvements being seen particularly at lower frequencies.
2. Use N connectors instead of BNCs. This can be an almost religious thing with some people but from my tests with this RLB, Ns seem to be better especially at the high end.
3. Use as good a quality coax as you can find for the balun.
4. Try and get the transitions from connector to coax or resistor as smooth and as constant an impedance as possible. This means things like using special panel N or BNC connectors that are more like line connectors, and/or PCB microstrip line.
5. Get (or effectively make) some better ferrite. It is very difficult to find one ferrite material that has both high permittivity for high

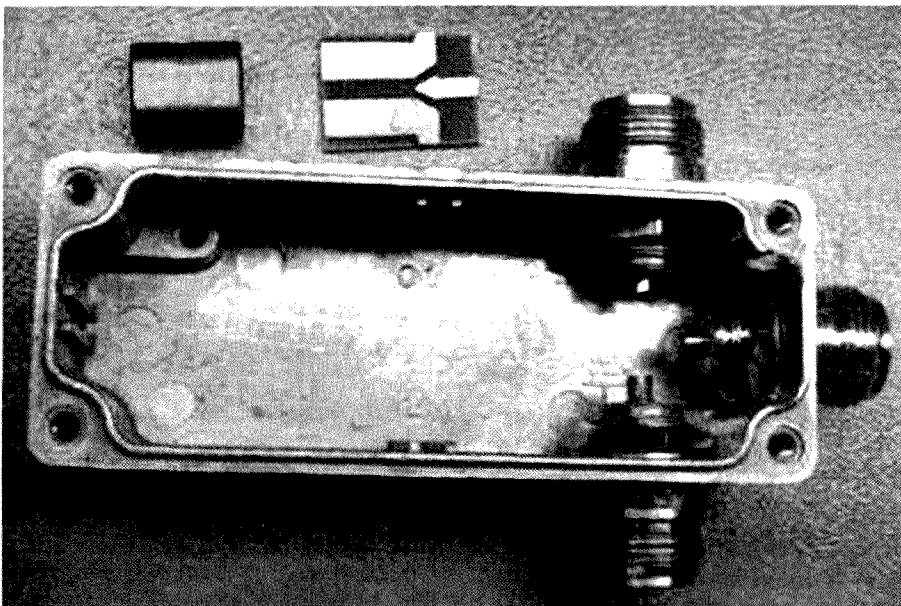


Photo 1. The box after fitting the N connectors, also the piece of microstrip (that is, PCB).

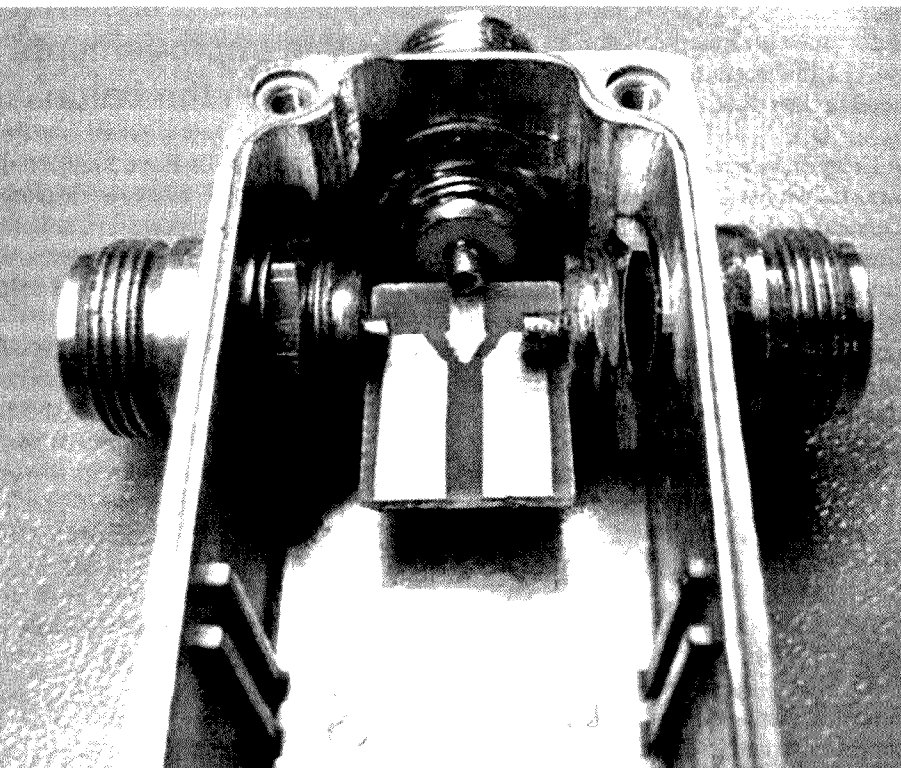


Photo 2. Close up of the connectors and the PCB.

inductance down low, coupled with high effective resistance up into the GHz.

An alternative to this is to use a mixture of different ferrite cores that span the range of interest, that is, it is quite possible to find some cores that have a higher permittivity that will work better down low, and some other cores that have higher effective

resistance for up high and just use both types together. If you do, be sure to put the lower frequency cores at the connector end working up to the higher frequency ones at the end going to the resistors in the bridge. Doing this optimises the high frequency response.

6. Use the best 50 ohm terminations you can. I have found that three

150 ohm surface mount resistors in parallel (or alternately six by 75 ohm in series-parallel) spaced at roughly 120 degrees around the end of an N panel plug works well. See later for details.

7. Unless you happen to know that the resistors you are using are specially made for microwave work, use as physically small a surface mount resistor/s as you can find.

Preferably a single 50 ohms (49.9 ohm is the closest standard value) mounted face down for each arm of the bridge. Face down supposedly gives you a shorter lead length. Also with respect to the size, there is a school of thought that says it is better to have the width of the resistor equal to the width of the conductor or track it is connecting too. This nominally makes the stray capacitance and inductance of the resistor the same as the conductor or track.

An improved version of the RLB

Taking a number of the ideas from the above I have made a number of improved versions of the RLB in the same sized box, and bigger. The one described here performs quite a bit better than the initial one, while the bits to make it are still reasonably readily available.

The major changes are; N connectors instead of BNC, nine cores instead of four, and a microstripline version of the small bit of PCB connecting it all. The circuit for this improved version of the bridge is basically identical to before and the best way to see how some of these things went in is to look at the following photos.

In Photo 1 and 2 you can see the small bit of PCB I used which was about one cm square sized to fit exactly between the connectors in the box.

It was made from normal double sided fibreglass board with three nominally 50 ohm strip-line arms going to the three N connectors which are the thinner lines you can see and two fatter lines which are nominally 25 ohms each (two unbalanced 25 ohms are equivalent to one balanced 50 ohms) for connection to the balun output.

In my case I made the board by covering both sides with tape and cutting

away the tape covering on the top side as required before etching. I have not given a definitive board pattern here as this will depend very much on what sort of board is used and the exact physical

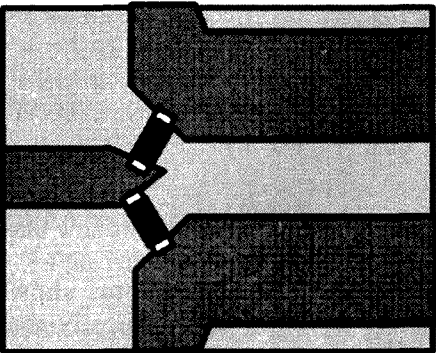


Figure 5. PCB showing resistor placement.

layout of the bridge.

In my case for the board I had, I calculated the line widths from some formulas in an old RSGB VHF/UHF handbook, at about 2.5 mm wide for 50 ohms and 7 mm for the 25 ohms. In my case I had to make the wider lines a bit thinner than 7 mm just to fit in the box, but this does not seem to have made too much difference.

It is very important that the ground plane (that is, the un-etched underneath) of the PCB must make good contact with the earth rims of the N connectors thus the need to size the PCB to make a good tight fit between the connectors.

On the PCB the two nominal 50 ohm resistors (either 2 by 100 ohms in parallel as in version 1 or a single 49.9 ohm which I used for this version) are mounted face down at the intersection of the three arms as indicated in Figure 5.

Note also in Photo 1 and 2 how the three N connectors are mounted. I realised afterwards it would have been a lot simpler to tap (that is, thread) the holes in the case and then just screw the connectors in, rather than as shown in the photos where I had quite a bit of trouble trying to make room to fit the nuts on the connectors.

You will also see I shortened the solder leads on the connectors slightly to fit the PCB better. If you want to use the same case as I used here and in the original version, they are available from Electus Distribution, the parent/wholesale arm of Jaycar, as part number HB-5026.

A number of people who have made

versions of this bridge have made their own case either out of PCB or in one case milled brass, this gives a lot more flexibility with respect to fitting things in, with the size and arms on the PCB just extended as required.

For this version the balun configuration I used was as shown in Photo 3 and 4. I taped three balun cores together as a stick and then assembled three effectively a single large six hole core held together with hot melt glue. The coax (again RG316 in this case) is wound through the holes as shown in the photos.

Also in Photo 3 you will see the panel mount N connector I used and how the outer of the extra bit of coax (that is, the braid only) is soldered to the side of the connector where the main RG316 line exits. Note that it is important to get the coax as close as possible to the cores with minimum air gaps.

Photo 5 shows the ends of the coax from the balun soldered on the board. Note the short section of coax inner from the main line on the left connecting to the other side braid and N connector inner.

On the right hand side there is a small piece of brass shim soldered on the board which can be bent backwards and forwards to slightly increase the C on one side of the bridge.

At least one person who has made a version of the RLB has found that this can be beneficial in balancing out remaining minor differences between the sides especially if the standard (that is, 50 ohm termination) or bridge resistors

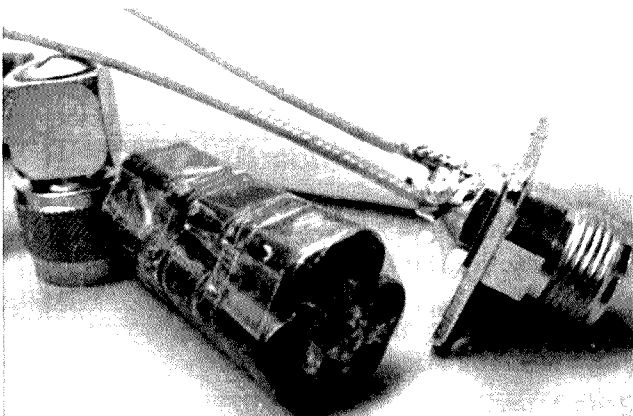


Photo 3. The nine cores and the coax on the connector.

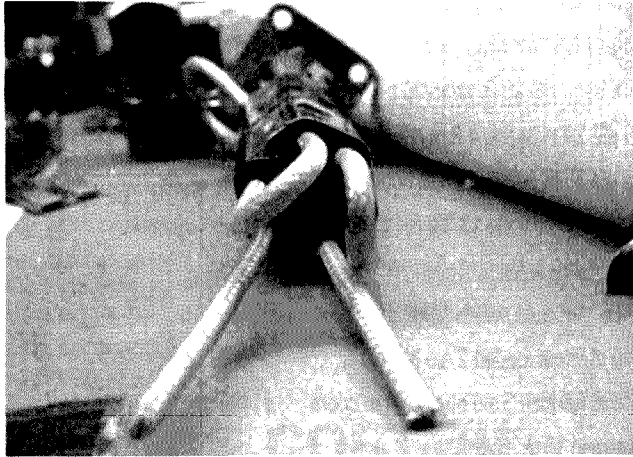


Photo 4. Close up of the coax on the cores.

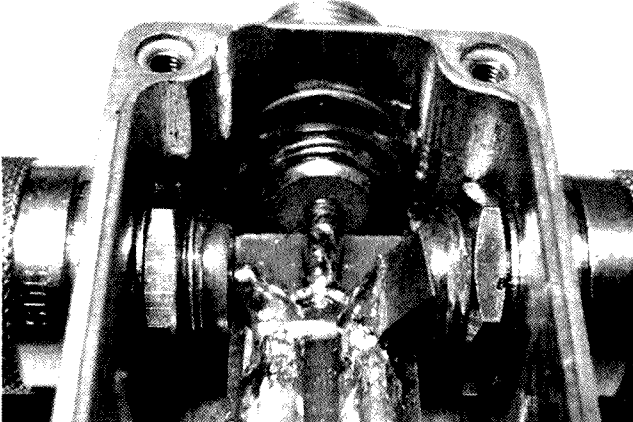


Photo 5. All wired up.

used are less than perfect.

In my case the shim did make a small difference but as it had to be basically adjusted to suit a particular termination and as I wanted to use a number of different terminations I ended up removing it.

The measured performance of this version of the bridge is shown in Figure 6. These tests were done with commercial equipment and should be

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pretty reliable. You can see that this version of the bridge is quite good for 70 cm and below and is probably still usable quite a bit higher given a suitable 50 ohm standard or reference termination.

Yet another version of the bridge

While I am more than happy with the Mark II RLB, I happened to pick up at a Hamvention cheaply a number of female

N chassis connectors with short lengths of semi-ridged coax fitted (RG401), so I thought I would try them out as an alternative. The following photos give some idea of how this worked out.

The photos show I used basically the mark II balun with the addition of three toroids that are rated to provide good effective resistance at 1 GHz.

Because the parts for the Mark III are not readily available I do not expect anyone else to be making one of these so only the minimum detail on construction is provided here.

An interesting thing seen in the overall

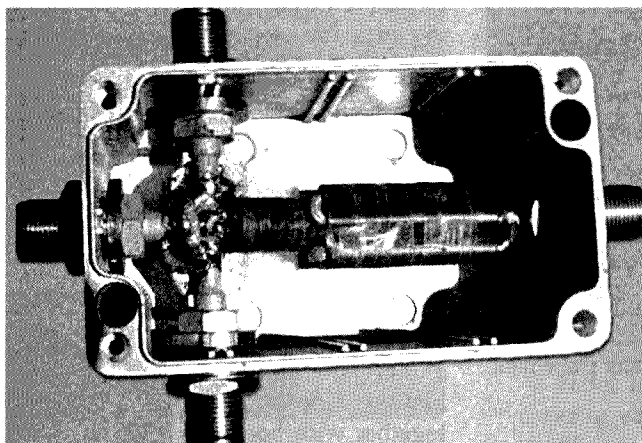


Photo 6. The Mark III RLB.

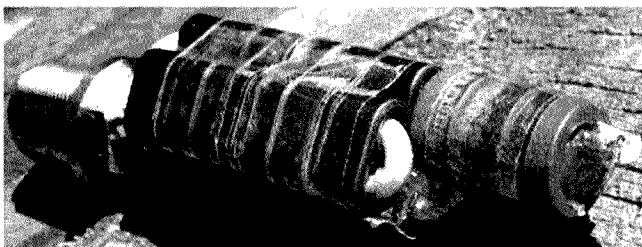


Photo 7. The Mark III RLB balun.

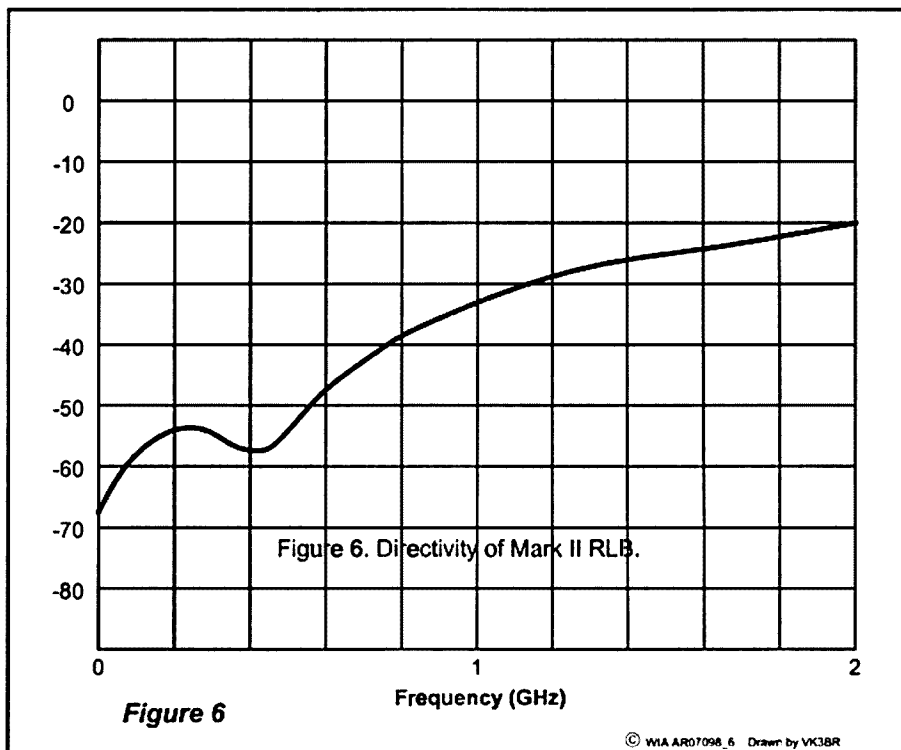


Figure 6

Frequency (GHz)

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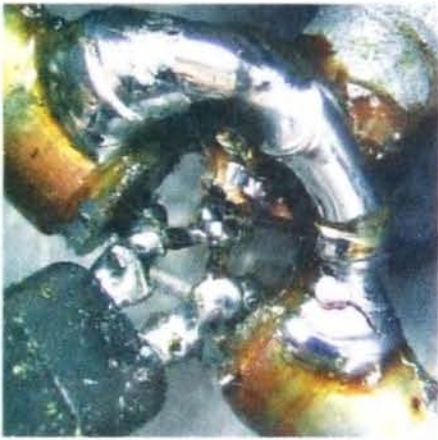


Photo 8. Close-up of connections.

directivity of the Mark III shown in Figure 7. We can see significant improvement at and above 1 GHz, yet the area below say 500 MHz is actually not as good.

This confirms my earlier statement that improving things at the high end often makes the low end worse.

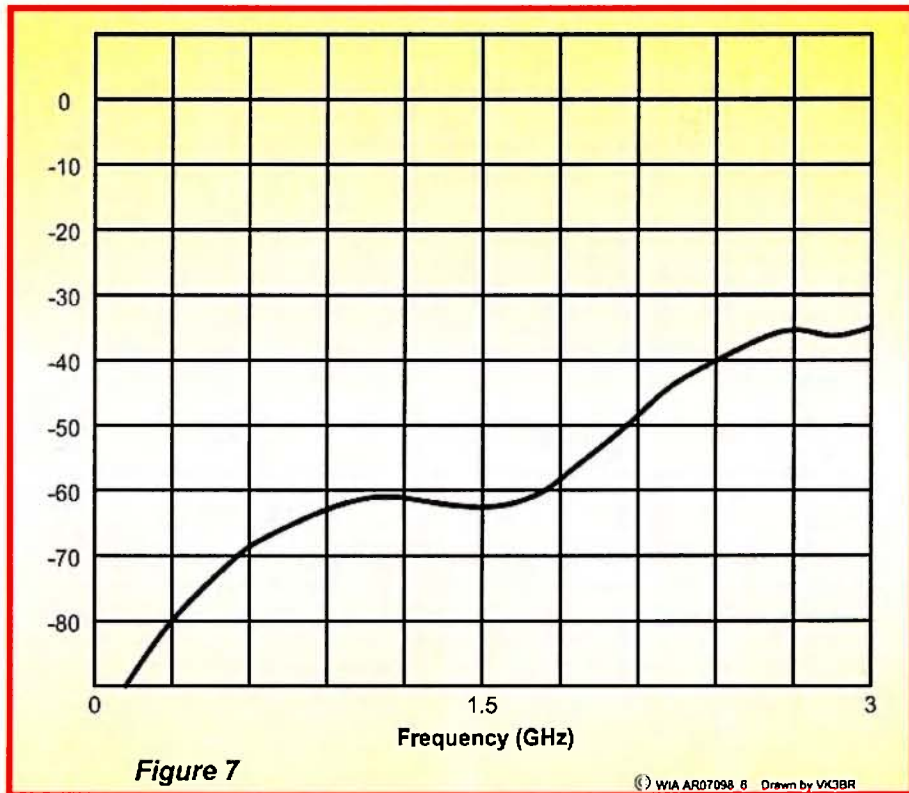


Figure 7

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Figure 7. Measured Directivity of the Mark III bridge.



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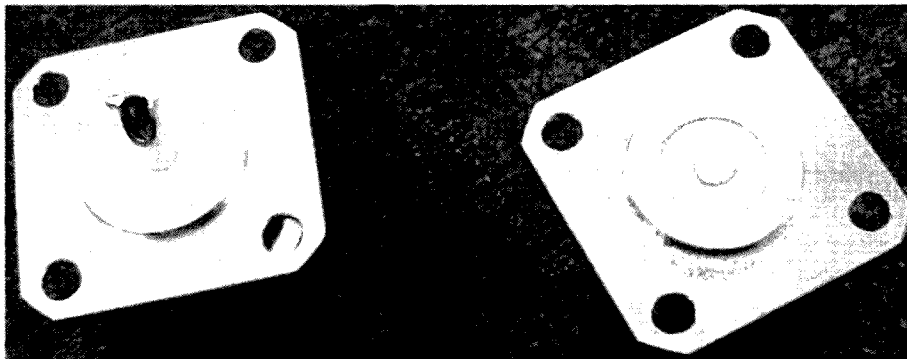


Photo 9. The panel mount connector, before and after modification.

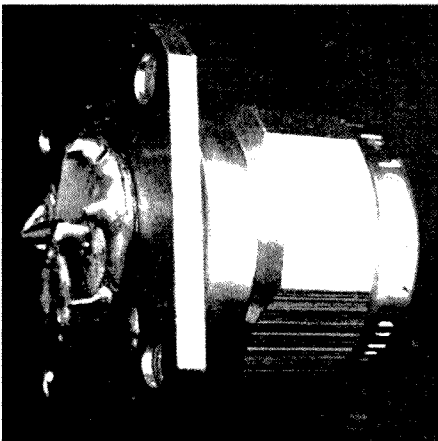


Photo 10. 3 by 150 ohm 7225 size.

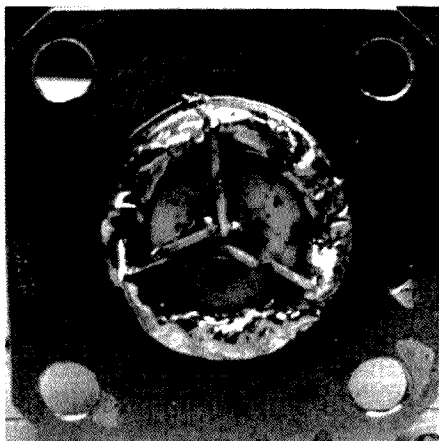


Photo 11. 6 by 75 ohm 1206 size.

A 'Good' Terminator

The key I have found to getting good performance from these RLBs is to have as good a reference 50 ohm terminator as possible. If you do not have a suitable terminator, the best I have managed to make so far is shown in the following photos.

I start with a good quality N solder tag panel mount connector. If you cannot find the panel mount male I used then the female with a male/male adaptor would be nearly as good.

As seen in Photo 9, I first modify the connector by sawing off the gold coloured centre solder tag flush with the body, and with a file both smooth this out and remove the surface plating on the ring around the outside of the dielectric to aid soldering.

Photos 10 and 11 show two versions of the terminator: one using three 150 ohm larger (7225) surface mount resistors, and the other with six 75 ohm smaller (1206) resistors. In both cases the resistors are mounted at about 120 degree spacing around the centre pin.

Using at least the three resistors seems to work significantly better than just one 49.9 or two 100 ohm resistors.

Note the resistors are mounted on edge to increase cooling efficiency in case of short power overloads. The larger SM 3 by 150 is a nominal 1.8 watt terminator while the 6 by 75 version is a nominal 0.75 W device.

The measured performance of the 6 by 75 ohm version is shown in Figure 8. This is for just the device as shown in Photo 11 with a small homemade metal box screwed on via the panel mounting holes to protect the resistors.

The response of the 6 by 75 ohm version is given here, despite being the more difficult to build, because it should be easier to obtain the 75 ohm 1206 resistors, and because it actually had the better performance.

It is also possible to improve this response if a small amount of variable C, such as a small piece of shim brass, is added from the centre pin to deck and tweaking it a bit.

Adjusting this without access to either (calibrated) commercial measurement gear or a known excellent termination is problematic; however the bare version is easily good enough for either the Mark II or Mark III bridge.

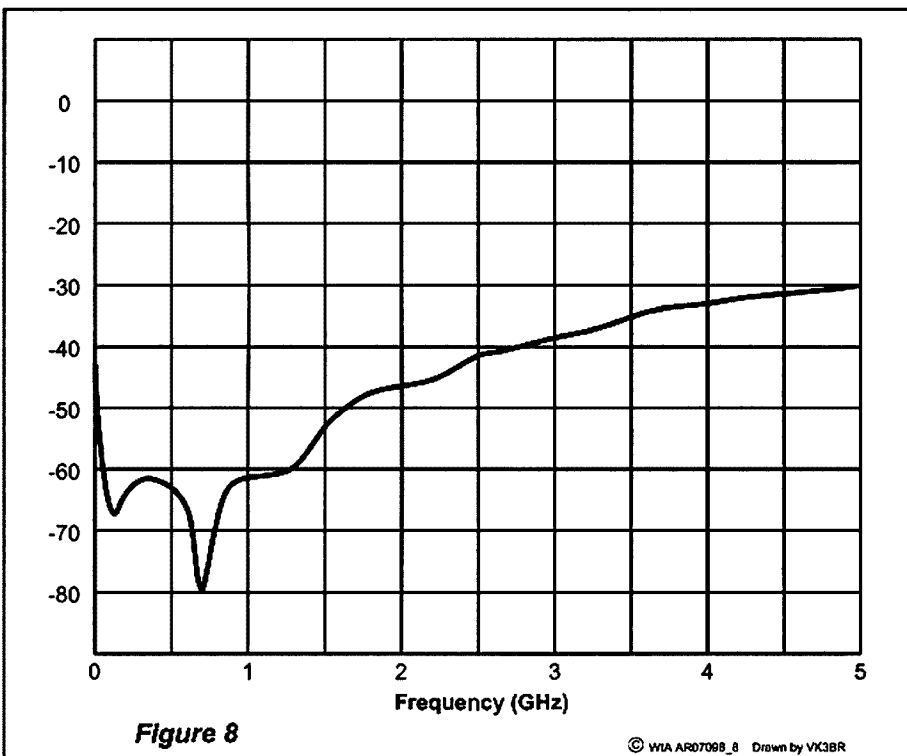


Figure 8

© WIA AR07068_8 Drawn by VK3BR

Figure 8. 6 by 75 ohm termination measured return loss.

WIA Comment

continued from page 3

the WIA and the ACMA principles will not be varied.

Persons moving interstate

There is however, one aspect of eligibility to participate in a ballot for two letter callsigns that did emerge from the submissions and was considered by the WIA to be an issue that should be addressed.

That is the position of amateurs who had two letter callsigns and through work or family circumstances have transferred to another state and were subsequently refused a two-letter call by the ACMA.

The situation of some amateurs holding a two letter callsign who have transferred to another state has had some unforeseen consequences. A number of those affected by the refusal of ACMA of a replacement two letter callsign in their new state of residence, continue to use their existing callsign in a portable capacity beyond the four month continuous period for portable operation as required in section 10 of the Radiocommunications Licence Conditions (Amateur Licence) Determination No.1 of 1997 (LCD) and therefore be potentially in breach of this requirement.

The WIA recommended to ACMA that amateurs affected by interstate transfer should be allowed to enter the ballot even if they already hold a two letter callsign in another state but subject to all the other requirements such as relinquishing their existing two letter callsign if they are successful and accept a new two letter callsign on same basis as other applicants.

ACMA rejected the WIA's recommendation, taking the view that such an approach was inconsistent with the principles it had set.

Who is excluded?

The Paper included the following (omitting parts not relevant): "Any person who is not a person who is, or in the past two years has been, or is currently elected to be or is appointed to be a director, officer or employee of the WIA or the spouse or partner of any such a person, is eligible to participate in the Ballot for the state or territory in which the person resides."

Some understood the term "officer" to

include any volunteer undertaking any task for the WIA.

The term "officer" was intended to be used in the Corporations Act 2001 sense, where by section 9 "officer of a corporation" is defined to include a person "who makes, or participates in making, decisions that affect the whole, or a substantial part, of the business of the corporation; or who has the capacity to affect significantly the corporation's financial standing", though this was not made clear.

A number of persons making submissions have indicated that they see no reason for any restriction at all.

We have decided to retain the restriction, expressing it to apply to specified positions and so making it clear that it is not intended to apply to the many volunteers who undertake tasks for the WIA, including WIA Assessors, on the basis that this was a one-off event and it is better to err on the side of caution, particularly given that some submissions expressed a concern that WIA members would be favoured, notwithstanding the process proposed.

Acknowledgement

We again thank all who made a submission.

We appreciate the supportive comments made in so many submissions, and assure all concerned that the ballot will be conducted completely fairly without any favour for any person. Hence the elaborate process proposed in the Paper."

We then provided a summary of the issues identified in the comments received other than on the issues of Morse Code and Seniority:

- End of hoarding two letter callsigns;
- allow interstate transfers;
- annual fee for callsign;
- issue to members of affiliated clubs only;
- no commercial companies
- Australian citizens only;
- no multi-callsigns;
- for ability to retention of old callsign;

- allocation of lost callsign;
- scrap two letter callsigns altogether;
- one application only;
- hand the callsign issue back to ACMA to sort out;
- only to original Full calls;
- longer time period before issuing deceased callsigns;
- callsigns should be portable across states;
- WIA needs to state eligibility of non-members;
- do away with deceased amateur freeze;
- establish seniority list; do away with transfer of callsigns;
- allow existing two letter callsign holders to relinquish existing call and be eligible to enter ballot;
- withdraw two letter callsigns held by non-advanced licensee over time;
- allow existing interstater with two letter callsigns to be eligible to go in ballot;
- do not allow existing two letter callsign holders to be eligible;
- shortage of two letter callsigns is not supported by the facts;
- allow for holders of two letter callsigns who transfer interstate to be eligible;
- return to previous application arrangements;
- do not see why WIA is involved – job of ACMA to issue callsigns;
- paper did not state privacy principles, appeal process under ADJR and FOI processes;
- two letter callsigns should not become elitist symbols;
- WIA volunteers should be eligible;
- seems the WIA has already agreed – disgusted;

continued on page 21

An essential piece of equipment every home-brewer must have: an RF probe

Grant McDuling VK4JAZ

It is bad enough when you have been afflicted with the amateur radio bug, but when you have a chronic dose of home-brewing sickness and choose to persist with the QRP strain of the virus, life can get pretty interesting.

The past few years have seen the list of 'must build' projects grow in my shack due largely to a dearth of QRP contacts. I am really talking about QRPp here, I should point out, because my particular strain of the amateur virus happens to be extremely weak signals. To give you an idea of what I mean, my most powerful rig at present (excluding the obligatory 2 m/70 cm base rig that saved my sanity during the quiet time of the last solar cycle) pushes out all of one watt. All the others can just manage half that on a good day with a tail wind.

A few months ago a nifty little kit that is produced and sold by that guru of the QRP world, Doug Hendricks (<http://www.qrpkits.com/>) caught my eye. It is known as the DC40A transceiver and is a remarkably sophisticated rig for only US\$40. And I really started salivating when I read that this little beauty was designed by Steve Weber KD1JV, who is a member of the QRP Hall of Fame. I just had to have one and, with weakened knees, placed my order.

Days later I received this nifty little parcel in the post and I was back in business, melting solder to my heart's content. I worked my way diligently through the excellent set of instructions as all good constructors do and performed the smoke tests at the appropriate times. So far so good, until it came time to check to see if there was actually any RF getting out. It was time

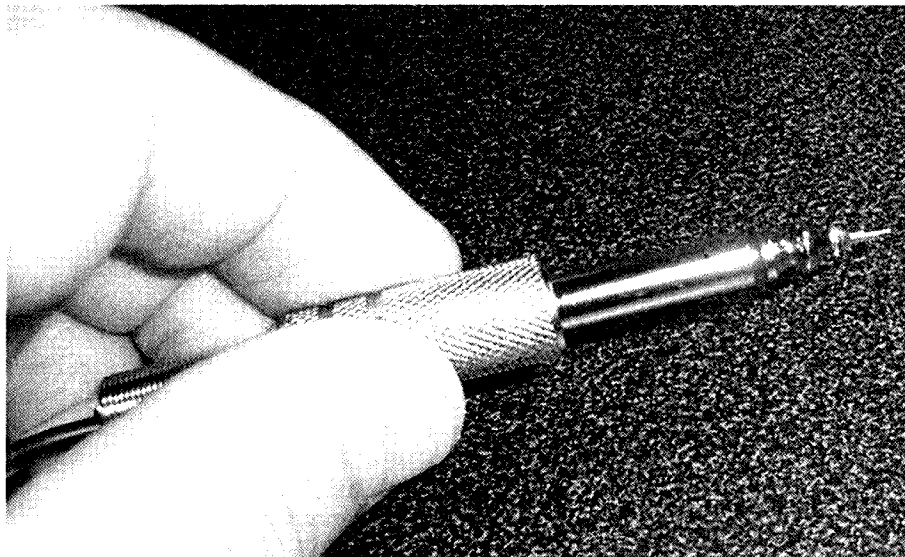


Photo 1. The finished RF probe.

for the final smoke test; the proof of the pudding as it were.

So I hooked up the dummy load, power supply, head phones, key and SWR/watt meter and held my breath as I keyed up for the first time.

Nothing.

Not a sausage.

Curse, I muttered (to myself, of course; the rest of the McDuling household think I am nuts and simply do not understand).

So I flipped over to the section in the instructions called Trouble Shooting Guide. I switched on my trusty DMM and proceeded to take readings at the relevant points on the PCB. All seemed OK, but still no RF output. So it must be one of the three pesky toroids, I thought, and proceeded to extract them for rewinding just to make sure. This proved inconclusive, so I put out a call on 2 m to Ray, VK4ZW, who is more handy than I am technically – he does this sort of thing for a living. See, I told you the 2 m/70 cm rig is for life or death situations! Anyway, Ray agreed to cast

his expert eye over the rig for me to see if I had perhaps missed something.

After a week or so, he made contact (again on 2 m) and said that all the tests he carried out were positive and to really get a handle on what was going on, we would need a cathode ray oscilloscope, which neither of us owned.

This called for drastic action, so I put out a call for help on the internet and received some advice from Chuck Carpenter W5USJ, another absolute guru and a gentleman to boot. Chuck told me that what I should do next was to test the FET in the final stage, which happened to be a 2N7000.

This rang a bell, because it was what Ray wanted tested. I then contacted John VK4TJ, this time on 70 cm, and asked if he had an oscilloscope. He replied that I should first build myself an RF probe and then take input and output readings from the FET in question.

Great, I thought, another homebrew project to add to my growing list. Well, I reasoned, at least this one would be dead simple to make and it would help me

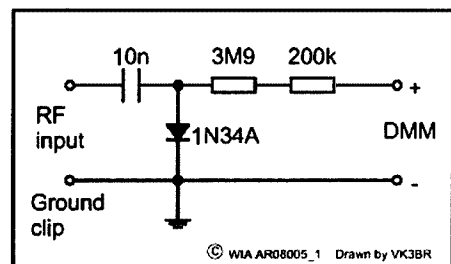


Figure 1 The schematic of the RF probe.

to complete the DC40A. So I set about sourcing parts for the project.

I soon discovered that the reason I needed to use an RF probe to take readings of the input and output of the FET was because most voltmeters will not read AC signals with a frequency above 10 kHz. I also learned that most common schematics for RF probes assume the DMM you will be using has an input impedance of 11 Megohms and not 10 like the ones commonly available today. This is where Chuck Carpenter came back into the picture. He sent me the details of an RF probe he made to correct for this. Instead of using a 4.7 Meg resistor, he said I should use two in series; a 3.9 Meg resistor and a 220 K resistor.

I chose to mount my RF probe inside the casing of a \$1.29 nickel 6.35 mm phono plug, to which I soldered a machined DIP pin contact. The result was brilliant.

Once this little project was complete, I hooked it up to my DMM and tested the FET in question. Bingo! I read 0.4 on the drain, 2.24 on the gate and 0 on the source. This looked like the culprit.

I did not have to think too hard to convince myself. As I watched, the FET burst into flames and began spewing a strong fire stream like a miniature flame thrower. Mesmerised, I watched and wished I had my camera handy. The fireworks would have made a great talking point among the QRP fraternity.

So now it just remained for me to extract the FET and install a new one. Chuck posted me two and within days my latest little rig had passed its final smoke test. A quick adjustment of the winding on two toroids and I was pleased to note a good one watt of power being recorded on my wattmeter as I keyed down.

Then came the big test; a QSO. I got onto my 2 m rig and arranged a sked with Ray VK4ZW and within minutes I was hearing the sweet sound of CW in my earphones. It worked!

I then craved for more. So I started pounding CQ and was astounded when Drew Diamond VK3XU answered. He gave me a good 539 to boot. Well, this was satisfying, especially when I computed that he was all of 1,342 km from my shack as the crow flies.

Now for some DX!

WIA Comment

continued from page 19

- concerned about my eligibility as WIA volunteer?
- applicants need to establish an association with and justification for a particular callsign;
- feel that am being discriminated against because of my age and WIA/ACMA should follow up if licence not renewed on time and allow further time to do so;
- provision must be made for long term amateurs with two letter calls to be able to retain a two letter call upon permanent transfer interstate;
- ballot should be dropped; if not a member of the WIA you would have no chance in getting a two letter callsign;
- if moving interstate should be able to get a two letter callsign in that state; concerned about eligibility of WIA volunteers;
- NCRG wishes to reserve call sign and forego existing two letter callsign;
- should only allow one call per person not 4-5 like some have and one in every state;
- should be able to change the two letter callsign for a two letter callsign in the state they are moving to, without having to go into a ballot;
- existing three letter F calls should be offered another three letter call to give more iteration between foundation and advanced callsigns;
- WIA volunteers should be eligible for ballot and those existing two letter callsigns that transfer interstate should be allowed to enter;
- Interstate transfers should automatically be given replacement two letter call, and WIA officials are excluded – this is rubbish;
- If first and second preferences already assigned then should be able to retain existing call – WIA officials being excluded from the draw is unwarranted;
- Allow two letter callsigns to be used anywhere in Australia regardless of the State in which resident;
- Allow existing two letter callsign holder to enter ballot to swap callsign, but retain if unsuccessful;
- Allow incorporated bodies to apply for callsign on behalf of clubs;
- Two letter callsigns should only be given to active amateurs;
- amateurs who fail to renew their callsign should be able to apply and have it back, if available, to not do so would be mean spirited;
- believe the issue of exclusion of WIA officers should be reconsidered, surely a public and/or fully audited ballot should satisfy everyone;
- holders of calls who neglected to renew them would have to supply compelling excuses for not renewing their licences –this is unfair and unreasonable;
- What happens in the future? Is it going to be Ballots every time you want a two letter callsign?
- Is there going to be a cost every time you want to take place in a ballot, even if you were not successful the first time?
- If there is an abundance of two letter callsigns in certain states (like Tasmania, for instance) will we be able to apply normally for a two letter callsign, if we qualify for that two letter callsign?
- WIA and ACMA to consider the adoption of the addition of a one letter callsign to expand the two, three and four letter callsign policy.

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DXing from the Mighty Mo

Bruce R Kendall VK3WL/9V1WL

In 2007 our eldest daughter Kristy shelved plans to marry her then fiance Michael at a winery in the Pyrenees district of western Victoria in favour of a beach wedding in Hawaii. A childhood dream was about to become an organising challenge, arranging the event via a wedding planner coupled with copious web based research for all manner of things ranging from accommodation and airfares, to the wedding planner, all via remote control from Ballarat and Ballan. Google wedding planner Hawaii and see how many listings you get!

I figured as we would be holidaying in addition to being part of the nuptials, I might as well take a hand held 2 m/70 cm rig with me to have a chat with some of the locals. Local knowledge can be very valuable. I emailed one of the amateur radio clubs in Honolulu, on the island of Oahu, that elicited several responses. Someone posted my email on a Hawaiian amateur radio WWW reflector, and the emails offering help and suggestions started to roll in tsunami style.

One came from Bill VE7ISV suggesting that I book a guest operating spot at amateur radio station KH6BB, as he had previously done, on-board the USS Missouri BB-63 (www.kh6bb.org) moored in Battleship Row, Ford Island, Pearl Harbour. The Missouri, known as 'Mighty Mo', was the last of the great battleships completed for the US Navy. She was the last active battleship in commission with any navy in the world.

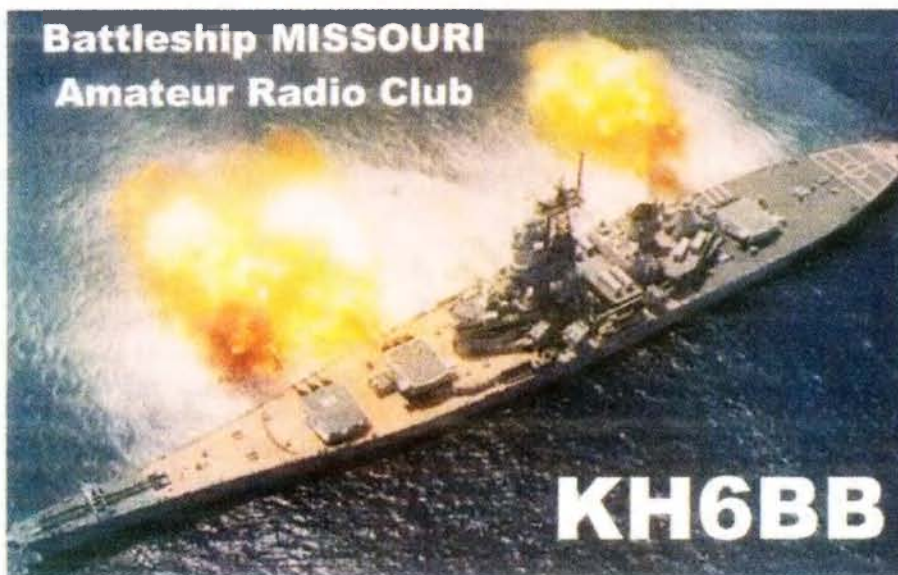
I subsequently received an email from Jim Davis WH6Q. Jim, a member of the Battleship Missouri Amateur Radio Club, offered to host my visit to 'Radio Central', the principal radio compartment on the main deck of the ship. Jim was assisted by Bill Kendall N0CO (no relation as far as we can tell, but we are working this one!).

With a keen interest in World War II history, having watched the movie Tora Tora Tora ad nauseam, and being a pilot,

Japanese at the end of WWII in Tokyo Bay. Her keel was laid in 1941 and she was commissioned in June 1944. In

1991 she served in Gulf War I, and was decommissioned 1992.

The US Navy designation for the Missouri is BB-63 and the club has the vanity call sign KH6BB. Its nominal SSB operating frequencies are 14263, 18163, 21363, 24963, and 28463 kHz. If you are a brass pounder, bring your own key/keyer unless you want to use the vintage J-38 straight key. There is a Vibroplex bug similar to the one



USS Missouri with all guns blazing.

I figured that a trip to KH6 would not be complete without a visit to Pearl Harbour. Infamous for being the target of the surprise Japanese attack on 7 December 1941 resulting in the USA finally being drawn into WWII, Pearl Harbour is also home to the USS Arizona Memorial (<http://www.nps.gov/usar/>), submarine USS Bowfin museum (<http://www.bowfin.org/>), Pacific Aviation Museum (<http://www.pacificaviationmuseum.org/>), and of course the USS Missouri (<http://www.usmissouri.com/>).

It was on board the deck of the Missouri that General Douglas MacArthur and Admiral Chester Nimitz, along with other US and Allied officers (General Sir Thomas Blamey was the Australian representative), accepted the unconditional surrender of the

used to send the surrender message, an electronic keyer, and a paddle is also connected. RF equipment varies, but will likely be a Kenwood TS-450 driving an AEA linear amplifier that usually runs at about 500 watts output. This was the line up during my visit.

The antenna most commonly used is an original Navy HF discone (cross between discone and birdcage antennas, omnidirectional, 10-30 MHz, vertically polarized) mounted on the bow of the ship, and installed as part of the ship's refit in the mid 1980s. KH6BB is also equipped for 2 m and 70 cm FM. Repeater KH6JPL is usually monitored and EchoLink node 302324 'OPENIRLP' and associated IRLP nodes are the station's primary means of VOIP. These facilities are useful for local



HF disage antenna on the bow of USS Missouri.



It was on the centre gun barrel of this forward turret that American singer Cher performed the video clip for her 1989 hit 'If I could turn back time'



View from the bridge of the Mighty Mo towards the bow showing the HF Disage, with the USS Arizona Memorial, and Honolulu, in the background.



Secure entrance to 'Radio Central'. This door has a combination lock. During its operational days, very strict security was maintained with only a limited number of security cleared personnel allowed entry.

communications, and to liaise with DX stations for contacts. In my case, they proved to be the only way to QSO back to VK during my visit.

I would recommend that any amateur

travelling to Hawaii consider arranging a guest operating spot aboard the Missouri. Details on how to do this are at the KH6BB website. The hospitality shown to me by Jim and Bill, along with Randy

KH6IB, was first class and I thank them all. Having met many fellow radio amateurs in my travels, I can attest to the



VK3WL operating KH6BB



Fortified bridge within the main bridge structure enabling navigation of Missouri whilst under attack. NB: Periscope, wheel, and 'peep' slots in the 300-400 mm steel enclosure.

Entry to the Memorial is free. If you plan to see the Arizona Memorial and you also wish to visit the other attractions at Pearl Harbour, consider being at the Memorial about 0730 and plan to stay until about 1700, or do the Arizona Memorial and USS Bowfin on one day, and the Pacific Aviation Museum and USS Missouri on Ford Island another day. These are not visitations to be rushed.

A tour of the Missouri is nothing short of spectacular, and regardless of whether you are interested in WWII, ships, or anything else specific to what you might associate war memorabilia with, the Mighty Mo is an engineering marvel of its time. She is big by definition, and a tour of this ship and the boat Bowfin provides a contrast of the differential in living and working space and conditions available to surface going sailors compared to their submariner colleagues.

Given the ship's vintage, some of the engineering design and construction is a marvel to see. Within the bridge for instance, is another bridge that is secured by armour some 300~400 mm thick. There is duplicate steering gear and navigation instrumentation within this compartment with slots to see forward and to the port and starboard flanks of the ship. This second piloting point enabled the captain, coxswain and others to navigate and command the ship during Peal Harbour battle, reducing the possibility of injury or death from enemy fire. The gun turrets are multi story and the barrels capable of firing shells about the size of a 100 litre garbage bin.

Prior to my departure, I advised Ballarat Amateur Radio Group (BARG), Amateur Radio Victoria (ARV) and Singapore Amateur Radio Transmitting Society of my schedule and operating frequencies, IRLP and EchoLink details that KH6BB would be using from 0000 – 0200 Z 25 March 2008, the appointed time for my operation. I was particularly looking for VK and 9V stations. The BARG and ARV circulated these details to their members. Unfortunately HF propagation south and west of Hawaii during that period was only average at best. Jim had previously advised me that this may be the case, hence my advice about the use of IRLP and EchoLink as a means for liaison.

Several contacts on 20 m were made with US and European stations, however

hospitality that is usually extended by our brethren, and these guys exceeded the norm.

If you plan to visit the Missouri, consider visiting the other attractions at Peal Harbour mentioned above. We were hosted at the USS Arizona Memorial by retired USNR medical officer John KH6HAM. John, a volunteer at the Memorial, provided valuable intelligence about ways to beat the ticket lines, security and carry-on baggage requirements, parking and bus routes, and so on.

The Arizona is a battleship sunk during the raid of 7 December 1941 and 1177 men are entombed in it.

all was not lost. We did manage to QSO VK3s BVI, MRK, HHK, FSTU, CC et al, via IRLP, and heard VK3KBC on HF. Not quite the same as a point to point HF contact but far better than nothing at all. The VK stations did indicate that they could hear us on 20 m; however we could not hear them under the pile-up. One gets a sense of what our northern hemisphere colleagues face by way of QRM when operating from KH6. To the stations we did work, a QSL card from KH6BB can be obtained and details are on its website.

Being able to run up to a kilowatt into an aerial driven against an earth that is about as good as an earth system ever gets (metal hull and super structure sitting in salt water), albeit an omni directional vertical, gives you a pretty good start when trying to work DX. However it was not enough under the prevailing conditions to work into Australia or Singapore on the day and beat the stateside stations. It is regrettable we do not have parity power privileges with our US colleagues.

Operating in the US is easy. Take your radio and your licence with you: I recommend packed in your checked-in baggage in lieu of carry-on, and sign portable your location. For example, VK3WL/portable KH6. KH6 repeater details are available on the WWW as are contact details for the local clubs.

We flew QANTAS (QF) to and from Hawaii. The price difference per sector between QF and the Low Cost Carriers (LCC) was about A\$100 per person. Given that a LCC fare only buys you a seat, with food, beverage, entertainment, domestic to international terminal transfers at Sydney Airport, and the like, being at additional cost, we figured that flying with QF and getting full service plus frequent flyer points was a better deal.

Inter island flights were with Hawaiian Airlines. Apart from its strict adherence to a 50 lb (22.7 kg) per checked in bag weight limit, they were OK. Excess weight over this limit will cost you US\$50 per bag. One of our bags exceeded this limit and it hurts, let me assure you, when you have to fork out for the excess baggage charge. We better distributed the weight around our three suitcases before flying Maui-Oahu-Sydney-Melbourne on our return flights and all was well.

The annoying thing about this strict

check-in luggage weight policy, and all LCCs to my knowledge do this, is that you are offered the opportunity to remove weight from your check-in luggage and put it into your carry-on baggage. This has the affect of bringing more weight into the cabin, which for safety reasons is the very place you do not want it, at the expense of having it where it ought to be in the cargo hold. Weight in an aircraft equates to extra fuel burn amongst other things.

Shifting weight from the cargo hold into the cabin overhead lockers does not reduce the take off weight of the aircraft. Save for the baggage handlers having to lift the weight in your cases, I am not sure what the US\$50 fee actually achieves as the baggage handlers still have to lift your case regardless of the excess baggage fee you pay, and if you take the excess weight into the cabin the aircraft still has to burn extra fuel to carry it. Caveat emptor.

Accommodation in Hawaii is expensive compared to Australia and very expensive when compared to Asia. I was warned about low cost accommodation (A\$150-250/night) in Hawaii being old and not well kept or cleaned. Unfortunately this advice was correct. If we could rewind the tape so to speak, we would seek accommodation outside of Honolulu, which when all is

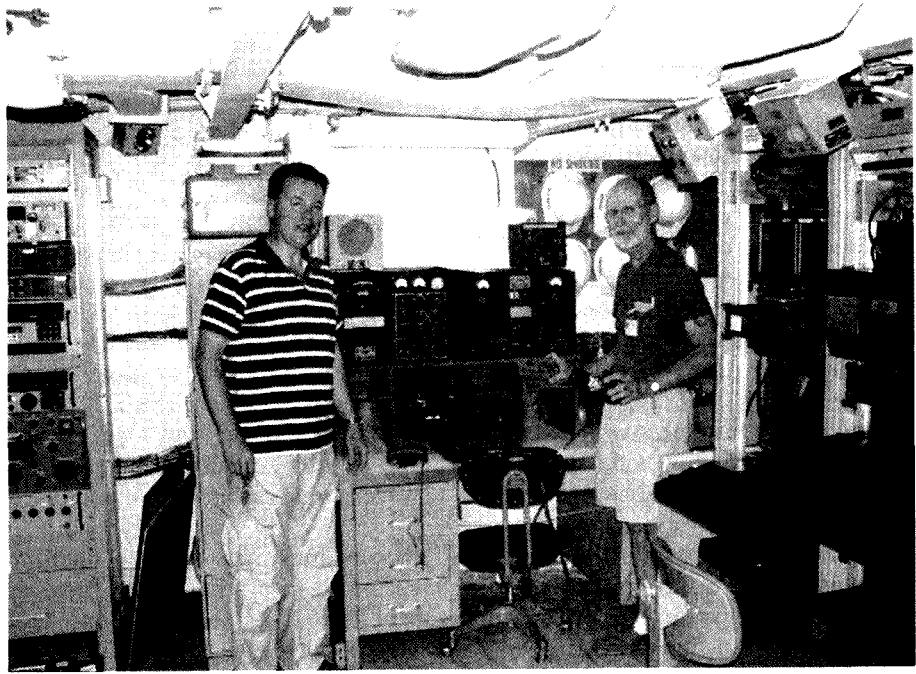
said and done is very similar to our Gold Coast in Queensland. Accommodation on Maui was much better and more affordable.

Our room in Honolulu was on level 22 of the Aqua Island Colony a few blocks from Waikiki Beach, which is about the same size as Bondi Beach in Sydney and not what you might imagine it to be from watching Elvis Presley movies or Hawaii Five-O!

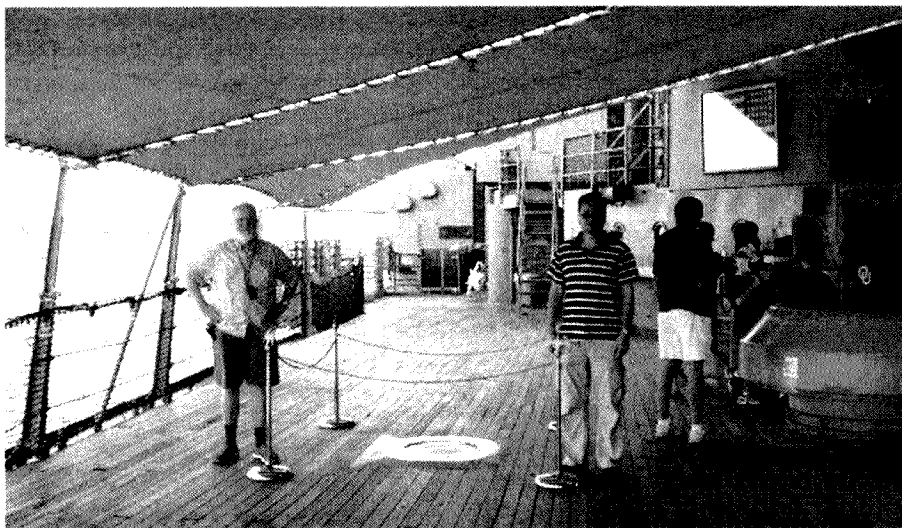
This circa late 1960s hotel has some renovated rooms that are good value, and others that are poorly preserved and not well kept examples. We use www.tripadvisor.com extensively when planning travel and this site has candid photos and comments from travellers about hotel rooms and not just the publicity shots used by the hoteliers. I would recommend this website to readers. In our case we read the reviews, took a risk, and left with mixed feelings.

My FT-470A runs about 2.3 W output, which was adequate from our high sited location. Some repeaters in Hawaii are not located on the abundant mountain tops but in lower lying areas and you will sometimes find the constraints imposed using a compact antenna and low power an issue from low elevation areas depending on where you and the repeater are located relative to each other.

WH6F, which can be accessed using



Bruce VK3WL and Bill N0CO with some of the WWII vintage equipment remaining within 'Radio Central'.



Jim WH6Q and Bruce VK3WL at the place of the signing of Japan's formal instrument of surrender on 2 September 1945.

EchoLink via KH6IB-L, is a good example. This repeater is located 5.6 km north of Honolulu International Airport. I found accessing it from Waikiki, for instance, impossible. This surprised me in one way, but then again there are a lot of steel reinforced concrete high rise buildings around Honolulu to contend with and once away from the coast the terrain is undulating and spectacularly mountainous. Access to this repeater with a hand held radio is not easy even from the deck of the Missouri.

If you plan on some serious operating then choose accommodation close to the top floors in a high rise hotel or condominium. For VHF/UHF, consider a ¼ wave vertical that can be clamped to a balcony rail, or a dipole or J-pole that can be taped to a hotel room window will be an advantage.

For HF, a piece of wire dropped over the side of your balcony driven against the hand rail reportedly works OK, however this is likely to be location specific. If you are staying in a low rise, there are often plenty of palm trees to throw a wire up.

Vehicle hire through Avis was good value. Be aware however that unlike in Australia where a basic amount of insurance cover is automatically included in the hire contract, in the US this is not the case. I understand that if you have insurance for your private car in the USA, then this extends to hire vehicles as well. Hence the reason this is not a standard integral feature of the hire contract.

Clothing, shoes, alcohol, tools, cars,

and fuel were significantly less expensive than in Australia. I purchased several pairs of Levi jeans for US\$30 that are usually A\$80-160 in Australia. Sports and casual runners and shoes were about 25-30% of the VK price, and petrol about 40% less at the time of our visit.

Fast food and the famous US\$2.99 breakfasts are excellent value for money, however good healthy food with decent portions of vegetables available at restaurants is relatively expensive, and more so when you consider that you will be expected to pay a 15-20% gratuity on top of the bill! Interestingly, our youngest daughter told us that some McDonald's hamburgers and deserts were more expensive in Hawaii than here in Victoria.

The wedding took place on the island of Maui and went well. There is an entire industry built around couples wanting to tie the knot on one of the Hawaiian Islands. If you plan a visit, Pearl Harbour is a must, as is the Polynesian Cultural Centre on the north coast of Oahu. Consider visiting one or more of the outer islands. A student of mine spent a week on each of the four main islands in the group and tells me that each one is worth a visit and is unique in its own way.

It took me three days to become accustomed to driving on the 'wrong' side of the road. My XYL is an excellent navigator but we hired a GPS with the vehicles. I would recommend such a device in addition to using a paper map to see the bigger picture. A talking GPS makes entry and egress from Honolulu's

freeway network simple, and if you miss a turn recalculates your route meaning you do not have to worry about becoming geographically embarrassed or distracted whilst trying to find a way to fix the mess you have just got yourself into.

Using mobile phones and radios whilst driving in Hawaii appears to be legal, not that I would recommend this under any circumstances, and more so if one is not accustomed to piloting left hand drive vehicles. If you plan to partake in amateur radio activities other than operating or visiting KH6BB and perhaps operating portable, contact the local radio clubs and make yourself known via on-air contacts and email.

I would like to thank Jim WH6Q, Bill N0CO, John KH6HAM, Randy KH6IB, the Battleship Missouri Amateur Radio Club KH6BB, and the many other Hawaiian amateurs who extended or offered their hospitality to my family and myself during our visit. It was this amateur radio spirit that will endure in my memory for a long time to come. If you hear KH6BB on-air, give it a shout. The folks there are very friendly and willing to share their knowledge about their mount, the USS Missouri.

Having experienced operating from an historical monument such as the Missouri, one wonders about the possibility of amateur radio stations being established at some of our national memorials and places of historical interest where radio played a significant role in operations. Military, aviation, maritime, communications and airborne medical and education facilities, museums and memorials immediately come to mind.

Take a look at the links to other retired USN assets on the KH6BB WWW site that have an operational amateur radio station attached to them (I understand this list is indicative and not exhaustive). Having experienced operating from a piece of living history such as the USS Missouri, one begins to suspect that perhaps our US amateur radio colleagues are doing something we down under need to consider.

The USS Missouri ARC participates in the annual Museum Ships Weekend, as do many others, apparently including the HMAS Diamantina VK4RAN.

Details can be found at <http://users.tellurian.com/freddie/nj2bb/ship-event.html>

ar

Icom IC-7700 HF – 6 m all mode transceiver

Bill Roper VK3BR

The IC-7700, a mains powered base station radio, is a new addition to the comprehensive Icom range of HF transceivers, slotting in between the mid-range IC-756 Pro III and the top-of-the-range IC-7800. In many ways it is an upgraded version of the IC-7800, but without the second receiver, and at half the price; or perhaps you could look at it as an IC-756 Pro III on steroids. Whichever way you see it, there is no doubt that this transceiver is a superb example of modern communications technology.

The IC-7700 has so many features that the challenge I faced in preparing this review was not what to write about, but how to keep the review within a reasonable size for publication. To give you an example, the users' operating manual for the excellent mid-range IC-756 Pro III consists of 117 pages, whereas the operating manual for the IC-7700 contains 216 pages. It is the first amateur transceiver manual that I have seen which is not a bound volume but comes as loose-leaf pages in a four-ring folder. Incidentally, as with other Icom equipment, the full operating manual for the IC-7700 is downloadable from the internet in PDF format.

First impressions

My first impression on seeing the IC-7700 in its box was that it is HUGE! It is double boxed, and very well packed, weighing in at around 37 kg in the cartons. It literally takes two people to get the transceiver out of its box. Depending on how fit you are - the unboxed IC-7700 weighs around 22.5 kg - you may even need the second person to help you lift it up onto your operating table.

It is very similar in size and weight to the IC-7800 and also includes an AC power supply. Dimensions for the IC-7700 are 425 mm wide, by 149 mm tall, by 437 mm deep. Also, it comes with rack-mount handles installed, but they can easily be removed.

The main tuning knob comes unattached to the transceiver, and one of the first tasks after un-boxing the IC-7700 is to carefully install it according to the instructions supplied using an included hexagonal wrench.

This is one impressive looking radio with the large (15 cm wide by 8 cm high – 800 x 480 pixels) colourful matrix TFT screen dominating the front panel, and the black controls on a black background clearly marked with white lettering (see Photo 1).

Many controls, when activated, light up or produce readout on the very clear TFT screen. A noticeable exception to this is that the band select keys to the right of the screen do not illuminate when pressed (even though it says they do in the manual!).

Surprisingly, the front panel does not seem cluttered, particularly compared to the IC-7800 (which has the second receiver controls included on its front panel). I found that operating the IC-7700 was remarkably intuitive compared with some other transceivers in its class. Those who have operated one of the IC-756 Pro series of transceivers will immediately feel right at home.

What can it do?

It might have been easier to detail what the IC-7700 cannot do. I found it difficult to imagine what I would like the transceiver to do that it does not already do, apart from the dual-watch capability which a second receiver would provide (such as in the IC-7800 or my FT-1000D), or perhaps make me a cup of coffee.

Incidentally, I understand Icom made the decision to omit the second receiver from the IC-7700 in order to keep the price down, and also to attain no-

compromise performance in the single receiver. An interesting decision, but the end result seems to be a transceiver, which is virtually an updated IC-7800 without the second receiver (there are connectors on the rear panel of the IC-7700 to enable easy connection and synchronisation of a second receiver), at half the price of the IC-7800, and with arguably one of the best transceiver receivers available.

Let me run through some of the features of the IC-7700, only expanding on those features which I believe are worthy of further comment. If you want a full list of the IC-7700 features and specifications, you can look them up on the internet from the sales brochure and the user manual.

First of all, the IC-7700 is a leading edge performance HF/6 m transceiver, with a separate receiver front end for 6 m. The transmitter will only operate on the amateur bands, but the outstanding receiver provides full coverage from 30 kHz to 60 MHz. A useful feature is the warning beep when you tune past an amateur band edge.

The transceiver has two independent 32-bit floating point DSP ICs (of a later generation and faster than those in the IC-7800), one for the transmitter and one for the impressive spectrum scope.

The double-conversion receiver performance is outstanding with a 110 dB dynamic range measured on 14.100 MHz, and an incredible better than +40 dBm third order intercept point also measured. A built-in tracking pre-

There is no doubt that this transceiver is a superb example of modern communications technology



Photo 1: A front panel view of the IC-7700 transceiver



Photo 2: A rear panel view of the IC-7700

AGC action is outstanding. Not only can the AGC time constants be set in three presets – slow, medium and fast – which are adjustable from 0.1 to 6 seconds, but the over-riding AGC VR control on the front panel enables quick and easy manual adjustment of the AGC reaction time.

The DSP noise reduction facility works very well. Push the NR button and the level and intensity noise reduction can be adjusted by turning a rotary knob. It is fast acting and very effective at reducing all sorts of noise and static. Signal readability is enhanced with minimal colouring of the received audio. However, in action it does attenuate the received audio output somewhat.

In addition, the IC-7700 has a standard, adjustable noise blanker which is quite effective on pulse noise such as that produced by car ignition systems.

A main feature of the IC-7700 is the multi-function spectrum scope, with adjustable resolution bandwidth, which is excellent. I am not sure how I will live without it when I return the transceiver under review to Icom!

One of the many features of the brightly coloured TFT screen, which carries a wealth of information, is that you can set the multi-function meter to be an edge meter, a bar graph meter, or an extremely realistic analogue meter. It is hard to imagine that what you are seeing on the screen is not an actual analogue meter!

Two types of screen images and five types of frequency readout indication fonts are available. The frequency readout is in large, clear characters and reads out to 1Hz.

In addition to frequency and the spectrum scope, the IC-7700's screen can vividly display just about anything you need to know about the operating parameters of the transceiver, including mode, antenna, memories, and graphical displays of the IF filters, plus two 24 hour clocks which display local time and UTC time in digital format in the top right hand corner of the display.

There are four SO-239 antenna connectors on the back panel. Once the operating bands are programmed into the ATU memory, the IC-7700 will automatically select the correct antenna as operating bands are changed.

In addition to the four SO-239 antenna connectors, the rear panel of the IC-7700

selector, DIGI-SEL, which automatically tracks the operating frequency (but does not operate when either of the two RF preamplifiers are in circuit), together with mechanical relay-switched (instead of switching diodes) front end band-pass-filters with large capacitors and toroidal coils, offers superb strong-signal HF performance.

Receiver performance is further enhanced with selectable 15 kHz, 6 kHz and 3 kHz roofing filters before the first IF amplifier, DSP IF filters with twin pass-band tuning (graphically displayed on the screen - very helpful in reducing noise and signal interference), very effective manual and automatic notch filters (the automatic notch filter can effectively handle two or more interfering heterodynes at a time) with a stop-band attenuation of 70 dB, a variable noise blanker and separate DSP noise reduction, and a precision oven controlled master crystal oscillator with ± 0.05 ppm frequency stability and a 10 MHz Reference I/O jack (which allows the IC-7700 to clock other equipment, or be clocked from a higher-level master clock source).

Band changing is quick and easy with dedicated buttons for each amateur band and one for general coverage. You

can also use these buttons for direct frequency entry. The triple band stacking registers for each amateur band are extremely convenient for band hopping. The RIT and the transmitter independent tuning both operate over a range of ± 9.99 kHz

There are 101 memory channels with the usual access and scanning facilities. Memories can be tagged with a 10 character alphanumeric label and the memory list screen displays up to 15 memory contents at a time, making it easy to scroll through the memories. There is a separate memo pad facility which enables quick storage of a frequency which can be recalled with a single key press. This memo pad facility works on the basis of last in, first out.

With the DSP IF filtering, a variable choice of selectivity options is available from 3 kHz on SSB out to 9 kHz on AM. The filter shape 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 band pass). As when testing the IC-756 Pro III, I found the 'sharp' setting to be preferable on SSB, whereas the 'soft' came into its own on CW.

There are two AGC loops and the

carries a large number of connectors (see Photo 2). There are sockets for a separate receive-only antenna or a separate receiver. In-line front-end filters can also be inserted here. There is a transverter drive capability which gives about -20 dBm on transmit with display offsetting. The usual accessory sockets are there including switching for linear amplifiers. There is also a CW key jack in addition to the one on the front panel.

The HF/6 m transmitter delivers a maximum of 200 W output at full duty cycle from a pair of MRF-150 MOSFET transistors running from a 48 V dc supply. The power is easily variable by a control on the front panel from 5 W to 200 W (5 W to 50 W in AM mode).

There is a built-in high speed automatic ATU which covers all the HF bands and 6 m. 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

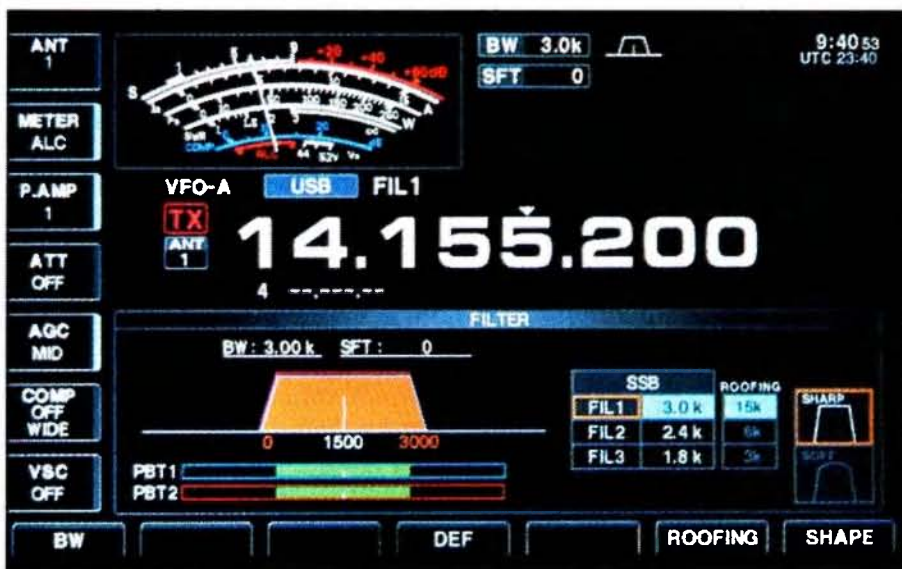


Photo 3: The IC-7700 filter set screen

less, and it will automatically reactivate when the SWR exceeds 1.5:1.

All modes are available on the IC-7700, and a great feature is that you can operate RTTY/PSK31 from the IC-7700 without any peripherals needing

to be attached except a USB keyboard. There are two USB ports on the front panel which can be used for the external keyboard and for a USB memory drive to download settings or upload information such as updated firmware. There is also

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- High stability
- Power cord, test leads included

a VGA socket on the rear panel so that you can connect a computer screen and display a facsimile of the transceiver's TFT screen.

A nice feature is the in-built digital voice recorder with REC (record) and PLAY buttons on the front panel. The digital voice memories hold up to four messages for transmit, and up to 20 messages for receive. A maximum message length of 30 seconds can be recorded into receive memory (with a total message length for all channels of up to 209 seconds) and a total message length of up to 99 seconds can be recorded in transmit memory. This voice recorder records not only the received audio, but also the information such as set operating frequency, mode, and the recording time for future reference.

On the air

When out of its boxes, installed on the operating table, and switched on with the POWER switch on the front panel (there is a catch here as you need to first switch on the power supply with the rocker switch on the back of the transceiver), the transceiver springs into life after four to five seconds of relay clicking, with the colourful and large TFT screen dominating the front panel.

One of my first impressions of the IC-7700 receiver was how quiet it is. With the two receive pre-amps out of circuit, the internal noise was barely discernible. Also impressive was the clean audio response from the internal speaker emanating from the top of the transceiver case. A good test of receiver audio is when listening to a local commercial broadcast station, and the IC-7700 passed with flying colours. The audio was even better when using a good quality external speaker.

This radio is easy to set up and operate. Unlike some other radios, which have a multitude of layered menus, most of the functions of the IC-7700 are accessed by dedicated front panel controls. For example, instead of pressing the FILTER button momentarily to cycle through the available filter settings (the default for SSB is 1.8 kHz, 2.4 kHz and 3.0 kHz), if you hold it pressed for one second the filter set screen appears (see Photo 3), enabling you to select the required roofing filter, the pass-band shape, and see the effect on the filter shape of varying the two passband tuning

controls. If you push the SHAPE (F7) for one second (instead of pressing it momentarily to cycle through selecting the SHARP or SOFT shape), the filter shape set mode screen appears.

Similarly, if you press and hold for one second the NB button, the noise blanker mode set screen appears and allows you to adjust the noise blanker depth and width. All very intuitive and much simpler than paging through 100 or more layered menus.

The 55 mm diameter main tuning knob, with a weighted flywheel and adjustable drag, is very smooth in operation and controls the A and B VFOs with the usual switching available. Normal tuning is in 1 Hz steps, but a quick push of the TS button enables quick selection of a faster rate (hold the TS button for one second and the fast tuning rate screen appears). You can select 0.1, 1, 5, 9, 10, 12.5, 20, or 25 kHz as the fast tuning rate.

When a fast tuning rate is selected an indicator appears over the kHz digit in the frequency readout (which reads down to 1 Hz). When the tuning knob is turned fast the tuning rate increases. I set the fast tuning rate at 100 Hz and pushed the TS button to enable the 1 Hz tuning steps when I needed to accurately tune in a received signal. A ¼ tuning rate is selectable for fine-tuning data signals.

The receiver front end can be optimized to suit different operating conditions. There are two selectable preamplifiers, four levels of signal attenuation, and an RF gain control. In order to improve the front end's ability to handle very strong out-of-band signals, a sharply tuned preselector, using relay switched capacitors and inductors to automatically track the signal, can be enabled by pressing the DIGI_SEL button.

I particularly liked the comprehensive spectrum scope. It has an 80 dB dynamic range and will display the spectrum on either side of the transceiver receiving frequency with spans selectable from ± 2.5 kHz to ± 250 kHz

All of the features of the receiver worked exceptionally well. The AGC, over which you have full control, was outstanding.

The IC-7700 is arguably the best HF receiver I have ever used, virtually lacking for nothing in either facilities or performance.

On SSB transmit it is very easy to tailor the transmitted bandwidth, and

also the audio bass and treble boost and cut. Reports received on the transmitted audio were excellent using an Icom SM-20 microphone (no microphone is supplied with the IC-7700, Icom arguing that dedicated radio amateurs who buy this rig will want to use their own choice of microphone).

The speech compressor did not appear to introduce any distortion but made a worthwhile improvement to audio 'punch'. All reports were that the transmit audio was very clean.

The cooling was very efficient and relatively quiet even when running the IC-7700 at its full 200 W output.

Conclusions

The IC-7700 is one of the most outstanding transceivers I have ever used. Its performance and features are virtually unequalled unless you are prepared to spend at least twice as much. Incidentally, each IC-7700 comes with its own laboratory test report. The unit under review matched or exceeded all specifications.

The features that impressed me most, apart from the ones you would expect from a top of the line transceiver like the IC-7700, were the receiver performance, which was outstanding, the receive and transmit audio quality, the usefulness of the spectrum scope, and the overall user friendliness of the whole transceiver.

The only thing that could be said to be lacking from the IC-7700 is a dual-watch facility. Keen DXers generally use split frequency operation when chasing a rare DX station and therefore need to be able to monitor their transmit frequency simultaneously with the receive frequency.

The IC-7800 uses an independent second receiver which is one of the reasons it costs so much more than the IC-7700. The IC-756 Pro series have a dual watch facility whereby both receive channels use the same IF/audio path, and one wonders why a similar facility was not made available in the IC-7700.

Personally, I did not consider the lack of a dual watch facility a major problem. When operating split, both the receive and the transmit frequency appear on the TFT screen, and a push on the conveniently located XFC button switches the receiver to the transmit VFO frequency.

I did not try the IC-7700 on any

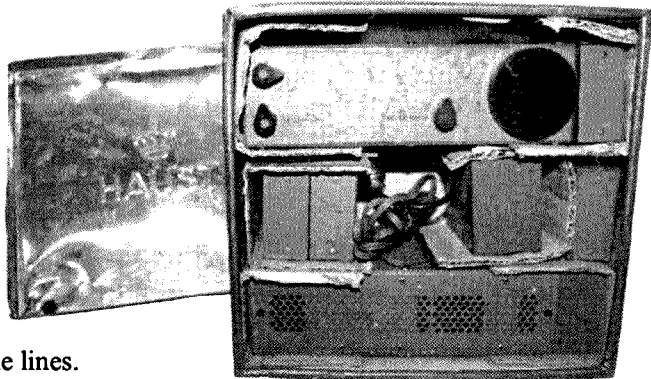
The Spy in a Biscuit Tin

Miniature Communications Radio MCR-1

John Nieman

The Biscuit Tin Radio shown is more formally known as the MCR-1 Miniature Communications Receiver. Between 10,000 and 30,000 of these were manufactured by Philco in the second half of WWII,

Mainly designed for clandestine operation the sets were often packaged in a tin similar to that marked 'Huntley and Palmer Biscuits 2lb'. At least 5000 of the radios found their way to Occupied France where they went to war behind the lines.



The receiver had four interchangeable coils and was a five valve superhetrodyne with amazing sensitivity. It could also receive CW.

Included in the tin as well as the receiver were the four interchangeable coil boxes, associated batteries for portable operation, a set of light-weight low resistance headphones (120 ohm), AC/DC multi-input voltage power supply, 30' of antenna lead and a 10' earth wire.

This small device, the radio little bigger than a fat paperback, played an important part in the communications between De Gaulle's Free French Forces in England and the Maquis or French resistance in Occupied France. Using the BBC broadcasting system, thousands of strange coded messages swamped the airways and kept the German intelligence system overworked.

The BBC news broadcast into France would always begin with the opening bar from Beethovens 5th, *didididah* which CW people will recognise as V (for Victory) and the words "And now before the news, some personal messages"

Then followed a series of strange statements, eg 'the dice are on the table', meaning sabotage railway lines; and 'it's hot in Suez', meaning attack telephone lines. These messages went to air some days prior to the D-day invasion.

But probably the most important

message ever received was a line by the French poet Verlaine: 'Blessent mon cœur d'une langueur monotone' or 'Wound my heart with a monotonous langour'.

This informed the Resistance that Operation Overlord, the D-Day invasion, would occur within hours and that they should rise up and harry the Germans behind the lines. Strangely enough, the German intelligence service, monitoring the broadcasts, knew that this was the code line for the invasion and yet with 'monotonous langour' German forces reacted extremely slowly.

Our common image of the Resistance is of small guerilla groups, but uprisings were sometimes large: reportedly 7000 maquisards, including Nancy Wake, an Australian, fought 22,000 SS troops in the Auvergne region in late June 1945.

For a full technical description of the MCR-1 please go to www.vk2bv.org/museum, part of Waverley Amateur Radio Club's website for the Kurrajong Radio Museum managed by VK2ZIO Ian O'Toole.

Other Reference:

Assembled by John Nieman, Newsletters Unlimited from sources including VK2ZIO, Kurrajong Radio Museum, BBC archives, Royal Signals Museum(UK) and various other archives.

mode other than SSB, nor did I try it on 6 m. However, I have no doubt that it will provide a similar outstanding performance on the other modes and band as it did on the HF bands and SSB.

My thanks to Kitty Mau and Peter Willmott VK3TQ from Icom Australia for the loan of the review transceiver. It was hard to give it back!

The list price of the IC-7700 is \$7,700. However, by shopping around the Icom dealers, you may be able to do better than that.

Editor's note:

Peter Willmott from Icom Australia comments:

My only comment on the review is that Bill said that Icom removed the extra receiver to keep the price down, which is not quite right.

The fact is that Icom were looking for an affordable, no compromise transceiver that pleased the majority of users. The IC-7700 was born.

ar

Over to you

FISTS Down Under

I am hoping you will allow me to use "over to you" to propagate details of a net I have started on behalf of FISTS Down Under (FDU) CW Club, which comprises mainly VK and ZL hams.

Though mainly a club net, all are welcome: members and non-members; old hands and new fingers. As net control is on SSB, even those who cannot use CW but are thinking of taking it up can call in for a chat.

Operators are requested to check in on SSB unless conditions (or the lack of a microphone, hi) dictate CW. They will then be directed to a CW frequency in pairs.

The net is held each Wednesday at 7.00 pm EST (0900 Z) on 3546 kHz.

Anyone wanting more info can ring me on (03)5756 2084 and I will ring them back immediately, thus minimising their costs. Or write: P.O. Box 217 Porepunkah Vic 3740. Sorry, I do not have email facilities, being somewhat of a dinosaur!

Hoping to see you on the net. 73

David VK3FGE

VK2

Tim Mills VK2ZTM
arnews@tpg.com.au

Activities this month in VK2 include the AGM of the Oxley Region ARC on Saturday the 2nd. The Mid South Coast ARC hold their next quarterly meeting on the second Saturday. The Summerland ARC SARCFEST is on Sunday the 10th. Blue Mountains Winterfest is Sunday the 24th and the Twin Cities field day on Sunday the 31st. Check detail on VK2WI news bulletins at 10 am and 7.30 pm Sunday or on the ARNSW web site.

WICEN recently had Nick VK2ZNF volunteer to act as Secretary/Treasurer. WICEN will provide communications to the Shahzada horse enduro in the week 25th-29th August.

Manly Warringah RS had Dick Smith VK2DIK as their guest in June. Dick recounted his world adventures to the well attended meeting. The Society meets each Wednesday evening at Terrey Hills. Their AGM was last month. Contact via the repeater on 146.875, or phone on Wednesday evening to 02 9450 1746 or the web site www.mwrs.org.au

Liverpool and District ARC and the Fishers Ghost ARC have joined forces to provide assessments for the region.

Central Coast ARC had their AGM and principal office bearers for this year are President Col Hodgson VK2ZCO, Vice President Bob Ridgley VK2ZAR, Secretary Greg James VK2GRJ and Treasurer Ray Tooby VK2HAY. Many attended the major working bee at their Somersby repeater site on June 21st.

Summerland ARC plans to activate several regional Lighthouses this month. Repairs and maintenance at the club rooms for the annual SARCFEST are in progress and a Sunday afternoon BBQ is planned, most likely September 14.

They are seeking a 10-15 amp 240 AC to 13.8 V DC power supply with auto battery change over and charging capability for the planned new Tenterfield Acacia Plateau 2 metre repeater.

Orange and District ARC meets on the first Friday evening at 1930 at the club house, RAAF 29 Flight building at

64 Warrendine St. Orange. Their AGM was this month. Contact point is an email to secretary@odarc.org

Waverley ARS held their AGM recently and annual auction last month. Their club rooms at the Rose Bay Scout Hall have been renovated. The building is now being used regularly by other groups which reduces the available slots. Located in the eastern suburbs of Sydney they provide regular exams.

Six months to go to the Mid North Coast Expo in January 2009. The Group produces a range of kits, all proceeds support repeater facilities in the region.

RD contest and Lighthouses

Every VK2 is encouraged to take part in the annual RD Contest and send in a log to help the State battle against smaller States who can achieve big scores. The number of logs count! VK2WI will provide a news bulletin and opening address from 1730 hours Saturday. Normal news on Sunday the 17th.

The International Lighthouse/Lightship event suitable for those near a bit of water is on the same weekend. See page 23 of July AR for details.

Both events need your support.

The Home Brew Group of ARNSW meets at North Parramatta first Tuesday evening of each month and the afternoon of the bi-monthly Trash and Treasure at the VK2WI site, next T&T is last Sunday of September.

Contact points for ARNSW. Mail to P. O. Box 6044 Dural Delivery Centre NSW 2158. Fax to 02 9651 1661. Office phone 02 9651 1490 – into a message bank. VK2WI phone at broadcast time 02 9651 1489. The freecall number for NSW outside the Sydney region 1 800 817 644, email and web addresses are scheduled to be upgraded shortly. Advice will be given in due course. News for inclusion in the VK2WI sessions by Friday afternoon to arnews@tpg.com.au Advise if for more than one week although a different version each week is preferred. The service is available to

all as a means of spreading the word locally.

The VK2WI Morse transmission on 3699 kHz had a replacement transmitter, purpose built by Station Engineer Mark VK2XOF, installed in June. It operates continuously except at broadcast times with a power of about 40 watts into a half wave dipole. Reports are welcome via arnews@tpg.com.au Soon to be upgraded is the 23 cm beacon on 1296.420 MHz. A new transmitter is being constructed which will lift the power output from the present 2 to about 20 watts. It feeds a horizontal slot antenna 20 metres high at the VK2RSY/VK2WI site. The Morse ident will change from a FSK to CW keyed mode.

A technical segment has been added to the VK2WI evening news session. Listeners are invited to contribute input with segments of about 100 words. Details are given in the news session. Send your contribution via email to the news address given above.

73 – Tim VK2ZTM.

Twin Cities Radio & Electronics Club AGM

Geoff Atkinson VK3AFA

The Twin Cities Radio & Electronics Club held their AGM in Albury on Monday 14 July. It was acknowledged another good year had been had by the 50+ members of the Club.

WIA Secretary Geoff Atkinson VK3AFA, representing the WIA President and Board, attended from Melbourne. Geoff presented the 2007 Club Grants cheque to TCREC Club President Tom Sanders VK2XAU to assist the projects submitted to the Awards Committee for consideration.

He also presented the AI Shawsmith Award to Graeme Scott VK2KE for his article in July 2007 AR on Teaching Amateur Radio Classes. Graeme had been invited to conduct the Club elections and was surprised to receive his award in front of fellow members.

VK3

Jim Linton VK3PC

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Lightship & Lighthouse Weekend

For its fourth year, Amateur Radio Victoria will activate the Williamstown Lighthouse and Time Ball Tower during the International Lighthouse and Lightship Weekend, 16-17 August.

The operation will be led by our

visited the site in the Point Gellibrand Coastal Heritage Park overlooking Hobsons Bay.

A special QSL has been struck which pictures the lighthouse on the front and gives historical information about it on

Bad apple operators

Positive action is now likely to be taken by the ACMA against the few 'bad apple' operators who disregard the regulations and licence conditions determinations.

When you next hear someone on air who says 'no-one is going to tell me how I use my radio', it appears at long last they will eventually need to adopt an attitude change.

ACMA Manager Compliance and Investigations Section, Allan Major, initiated discussion on concerns about some operating on the amateur bands with the WIA, resulting in a way forward to address them.

The ACMA has a range of actions it can take that include warning notices leading to licence suspension or cancellation, re-testing the competency of licensees, through to criminal prosecution.

Those who instruct amateur radio licence classes or provide mentoring for new licensees may also consider the need for a greater emphasis on operating ethics and standards.


Foundation class

The next weekend training and assessment sessions for the Foundation Licence will be 23/24 August and 20/21 September. Enrolments close soon. For inquiries or to enrol contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Membership inquiries

It is easy and affordable to join and support Amateur Radio Victoria. Membership for two years costs \$30 Full or Associate Member and \$25 Concession. Email us for a membership application form or download one from the website.

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Amateur Radio Victoria

VK3WI

Williamstown Time Ball Tower AUS-170
International Lighthouse & Lightship Weekend
Melbourne, Australia, QF22KD

Confirming QSO with				Day	Month	Year
UTC	MHz	Mode	RST	Amateur Radio Victoria 40G Victory Blvd, Ashburton 3147 Victoria, Australia		

Events Coordinator, Terry Murphy VK3UP and again a warm invitation is extended to others to visit and operate the station at the end of Nelson Place, Williamstown.

During the ILLW 2007 there were more than 400 contacts made including 21 other VK lighthouses in all states and two from New Zealand. More than 30

the back.

Listen also for other VK3 lighthouses: VK3ANR *Split Point*, VK3ARK *Cape Liptrap*, VK3ATL *Point Lonsdale*, VK3EG *Point Hicks*, VK3EMF *Cape Schanck*, VK3GER *Eastern Lighthouse MacRae*, VK3YME *Cape Otway Light Station*, and VK3ILH *17 Currie Lighthouse King Island*.

New operating awards

The Victorian Local Government Award has been initiated by Amateur Radio Victoria to encourage on air activity based on communicating with and between the 79 local government areas in the State of Victoria, Australia.

The basic rules are that VK3 stations need 40 different municipalities, other VK stations 30 and DX stations 20. Contacts on or after 10 July 2008 are valid for this award, but must not be via a Repeater, IRLP or Echolink.

The other award is the Keith Roget Memorial National Parks Award that existed up until the mid 1980s and is now being updated.

The aim of this award is to encourage portable operation in Victoria's 40 National Parks. More details about this award and the Victorian Local Government Award can be found in the Awards section of the Amateur Radio Victoria website.

News from

Geelong Amateur Radio Club The GARC

The Geelong Amateur Radio Club's 60th Anniversary

The Geelong Amateur Radio Club began when a small group of radio enthusiasts gathered at the home of Bill Brownbill in Gheringhap Street on the 7th of June 1948. From the first gathering a committee was formed and a second meeting was arranged by Jack Mathews at the studios of 3GL in James Street, Geelong, after which the call sign VK3ATL was acquired.

The 60th anniversary dinner of the formation of the GARC was held at the Geelong RSL and was well attended by the membership and their partners. The MC for the evening was Barry VK3SY, a past president.

The opening address was given by Ian VK3VIN the GARC club president, in his second term, who welcomed the attendees and during the course of his presentation identified that the GARC would, amongst other community activities, be focussing on the next generation of amateurs sourced in part from local schools



Ian VK3VIN

The first guest speaker was the President of the WIA Michael Owen VK3KI, who identified that there had been a marked decline in the VK amateur population in the mid 1990s and this had been turned round by the creation of F calls and that there is now, and has been over a number of years, a steady

growth, at the rate of around 500 licences per annum taking place. In addition, Michael stated that there were two self evident issues that are paramount to the hobby:

That the WIA is the principle voice of the Australian Radio Clubs and their members with the ACMA in matters relating to the operating conditions we currently enjoy and that it behoves Radio Club members to also take on WIA membership.

Equally it is to be understood the WIA cannot function meaningfully without support from the Radio Clubs and their membership, so there is a logical synergy between the two.



Michael Owen VK3KI

The second guest speaker was David Tilson VK3UR, who was persuaded to talk about his role in the development of communications in Australia slanted towards his activities in the field of amateur radio.

David's list of achievements, covered during his presentation, must be second to none in both its scope and technical content; being at the forefront of RF technology with an impressive collection of firsts in pretty well every aspect of our hobby as identified in last month's VK3 column. This was coupled with a strong indication that this trend will continue.

A lot of the above David put down to the fact that these were mainly accomplished whilst he was of a singular

Tony Collis VK3JGC persuasion and in order to minimise domestic hassle had also convinced both his parents to get Amateur licences. This latter achievement was somewhat of a double edged sword in respect of who had access to what equipment at any one time!



David Tilson VK3UR

Museums on the air

Earlier, on the anniversary day, the GARC had again established a station operating as VK3ATL at the Geelong Regional Museum, as the guests of Beck Gurrie, the museum director. The GARC and the Geelong Regional Museum have had a long relationship over many years with several club members also being members of the museum.

Principal bands used were 2 metres and 40 metres, where one of the contacts on 7.050 MHz was VI2AMW60, the Illawarra Amateur Radio Society, formerly Wollongong Amateur Radio Club, also celebrating the 60th anniversary of their formation in June 1948. This special call sign was made available from the 10th to the 30th of June.

Training

The two Peters – VK3ZAV and VK3APJ – are currently conducting classes at the club house in Storrer Street, East Geelong between 7 and 8 pm on Fridays: all interested parties are welcome.

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

Something for everyone describes our syllabus over the last 3 months. Educational sessions on theory of baluns, were followed by a practical evening where members constructed their own baluns to be eventually incorporated into portable HF antennas. Another evening, organized by Keith VK3AFI was devoted to the theory of AM and FM sidebands

Members built up a dummy load/power meter at another practical evening. Designed by Drew Diamond this was described in the January/February edition of *Amateur Radio 2007*. This proved to be a very popular project and we are indebted to John VK3TKH who organized the project, prepared the materials and supplied most of the components.

Practical projects have been an integral part of our syllabus for many years and allow those who do not have a workshop at home to build their own equipment.

In addition to this effort, John VK3TKH has also been out teaching electronics in a local primary school. This follows on from last year when he taught a foundation licence course to pupils in grades five and six at the same school. Three pupils from last year's course passed the foundation licence exam. John has been teaching at the clubrooms and we have some new foundation licensees and one new advanced licence holder. John and Keith VK3AFI will be holding classes at the end of July for all classes of licence.

A regular informative and entertaining guest speaker is Bob Tait VK3XP who every year gives us a talk. This year the topic was the identification and elimination of electrical noise in a car, of particular interest to all who operate mobile on HF. As a result of his talk one member said he was going to modify the mobile installation in his car. Bob is a regular and has been visiting us for many years now. His talks are looked forward to and are always well attended.

Rod VK3AYQ spoke on "Remote Imaging". Details were given on the operation of weather satellites and the equipment necessary to receive the

pictures transmitted on 137 MHz from the orbiting satellites and 1.7 GHz from the geostationary satellite. The talk was illustrated with pictures received from both satellites. Members also visited the home of John VK3PJE where they enjoyed a social evening watching a movie on his impressive home theatre.

Every year our members participate in a WICEN exercise to provide communications for a triathlon event. We provided communications for a kayak section along approximately 30 km of the Barwon River. Operators at each check point communicated directly with the control station at our clubrooms in Belmont.

We also participated in the inaugural Winter VHF/UHF Field Day using the club call sign VK3ANR. Eight members set up a station at Balliang, north of Geelong, in cold, windy, lightly raining weather. They did manage to make some contacts and it was a good learning exercise for newer members to set up a station out in the field.

Visitors are invited to attend our club meetings at 237A High St. Belmont each Thursday at 8 pm local time.

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At right Jim VK3VBC with the quad almost ready to brave the elements.

Below Jim VK3VBC preparing the 2M quad. Note the smart use of the vehicles as windbreaks.



News from

EMDRC & The Belgrave Lantern Parade for the Winter Solstice, 2008

Carolyn VK3FCAR

Saturday 21st June saw a gathering of intrepid and optimistic members of the club assemble at 3.30 pm prepared for wind, rain and mayhem as the longest night of 2008 descended on the main drag in Belgrave.

Alongside the festival committee coordinators, David VK3DLR set up his trestle tables and folding chairs in front of "Belgraphic" and "The Wicked Lady". Radio transceivers and upside down aerials were set up beside glowing plastic tubes and candles.

Technology met Celtic celebration. VK3s and QSLs blended with dancing fairies, fire-eaters and drumbeats.

Local police and various council and CFA teams shut down the streets and redirected traffic with only a car chase and a few minor bingles to mar their progress.

Our major role was to provide communications for the festival organisers and that aim was achieved. It was a learning experience for everyone as well as a great deal of fun. Our thanks go to the selfless club members who couldn't even see the parade while maintaining assigned posts. Those who saw the parade thoroughly enjoyed the variety of lanterns lighting the faces of old and young with a cheerful glow.

Perhaps by divine intervention or the magic of the "wicked ladies", the rain held off during the parade. But throughout it all, David VK3DLR plied the airwaves with unimpaired good humour as he passed messages to and fro despite loud music, singing and competing demands.

While some may say they preferred a warm fire and mulled wine to braving the elements of the winter solstice, those who participated enjoyed the parade and still had time for garlic pizzas and bubbly.

Happy Winter Solstice, 2008.

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Photo 1: Bill VK3FBIL points out the club banner outside "The Wicked Lady".



Photo 2: A few of the eager participants from the EMDRC – (L to R) John VK3JRB, Bill VK3FBIL, Joe VK3FJBC, Mark VK3FMGF, David VK3DLR, Jim VK3AMN, Catherine (VK3FCJD's daughter), Michelle VK3FEAT, Chris VK3FCJD and Robert VK3LOL.

S.A.D.A.R.C SHEPPARTON HAMFEST

14th Sept 2008 St. Augustine's Church Hall Orr St.
Shepparton (usual place)

New and used amateur and electronic gear for sale by commercial and private traders
Traders access from 8 am, doors open to public at 10 am.

Entry fee \$5. Children under 15 free.
Trestles \$10.

Early bookings would be appreciated.

Contact Daryl Hitchcock VK3KL phone 03 58711444, or e-mail: churr@netspace.net.au

Food available as usual on site.

Call on the club 2 m repeater VK3RGV
146.650 MHz for directions

VK4

Don Bryant VK4FNQA

News from Central Queensland

Wally Douglas Memorial Charity Ride

The Breakaway Horse Riders Club Inc in conjunction with Nurse of the Year entrant Katie Edwards announce that the Wally Douglas Memorial Charity Ride will be held in support of the Call to Arms campaign for Men's Cancer Saturday 23 August, 2008.

The ride will start from Mia Mia Creek and end at Denison Creek Station near the Retreat Hotel with an evening BBQ dinner from 6pm to help Katie's fund raising efforts.

Some background

Wally Douglas VK4AIV sadly passed away this year from cancer. Wally had been a member of the Mackay Amateur Radio Club since 1979.

In 1989 Wally and members of the radio club joined forces with Breakaway Horse Riders club to provide radio communications for the first endurance ride held by the club at Oakdale Station. This partnership proved to be long term with Wally thoroughly enjoying going out in the bush where he enjoyed the quietness.

Wally has been an asset and friend to both Breakaway and Pioneer Valley horse clubs. He successfully organised the radio communications for three State Championships. We would like

to honour Wally's memory by hosting this Charity ride.

So this is a call to all riders and radio amateurs, who can make the event to attend, remember Wally and help with fund raising to aid the fight against cancer.

Catering Details

Saturday Lunch: Sausage Sizzle (\$1.50), cold drinks, tea and coffee at Tallyho Creek (funds to go to Katie).

Saturday BBQ Dinner: 6 pm Katie will also be putting on great Steak Burgers (\$5.00) to help with her fundraising.

Camping Details

We encourage you to camp Saturday night at Denison Creek Station, behind the Retreat Hotel, and support Katie's fund raising efforts. Hot showers and toilets are available.

Sourced from information provided by George Glendinning VK4AJL and the Breakaway Horse Riders Club Inc.

George VK4AJL can be contacted by E-mail addressed to: vk4ajl@wia.org.au

'News from North Queensland' from 6th July 2008

Editor's Note:

Don has indicated that he has received very little in the way of contributions from clubs. Therefore he will not continue to collate this column - nil input means nil output.

SUNFEST 2008



Doors Open 0900 hrs
Saturday
13 September
2008

(Sellers from 0700 hrs)
at
Woombye School of Arts

Blackall Street, Woombye (USD Map 66 F12)

Reservations for table space: Contact:
Richard VK4YRP
(07) 5492 9898.

Email:
randwphilp@bigpond.com

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

At our meeting in June we heard a very interesting talk by Andrew VK5ZUC all about those magic hospital machines we "know" about but do not really understand.

Andrew has been involved with echocardiographs, MRI machines and angiography almost since their

inception, so he could explain clearly how they worked, what they each did and the differences between them. He also could tell us how these machines had changed and improved over the years.

There were many questions at the end of the talk, indicating how interesting we all found the subject.

Whether we want to or not, we all either have been or will be involved with one or other (or all) of these modern tools of medicine.

Our next meeting on the third Thursday of the month will be a display of members' equipment with several members giving a brief talk about their devices.

This is always an interesting meeting and usually the source of new ideas.

Visitors are welcome. For more information please contact the President John VK5EMI or the Secretary David VK5AMK (both are QTH the callbook).

VK6

Keith Bainbridge VK6XH
vk6xh@wia.org.au

This is my second attempt at these notes so hopefully things will eventually fall into place. Little input from the groups so I will provide some up to date news.

The NCRG Hamfest will have taken place on August 3rd by the time you read this. Hopefully for all those concerned it will have been a great day out. The location was the Cyril Jackson Sports Centre, Fisher Street, Ashfield.

At present the traders list reads Vertex, City Online, Bushcomm, Tet Emtron, Outbacker, Tower Communications / Icom, AllComm and others.

The special attraction was a visit from the Gravity Centre, located near Gingin, and a source of interesting astronomical and astrophysical interest. There was a display of telescopes and associated equipment provided by Camera House Midland. Many Amateurs display considerable interest in astronomy. I personally would like to try out radio astronomy 'one day'.

Many traders including Icom, Vertex, Quansheng, Vibroplex, Terlin, Bushcomm and others have promised excellent raffle prizes and a full list of winners will appear here in due course.

The Hills Amateur Radio Group's (HARG) 80 metre on-air Morse generator is operational and transmitting on 3.686 MHz from approximately 1900 to 2100 WST. A morning timeslot may also be activated between 0600 and 0800 WST if there is enough interest.

The callsign is VK6AHR, the Group's callsign and it is transmitting CW text at varying speeds, so look out for the transmissions. Reception reports are welcome to hargsec@inet.net.au The HARG will also be active in the RD contest.

I received a report from Eddie VK6ZSE, our VK6 NTAC representative and WIA Director regarding the possible linking to Albany for coverage on the News West repeater network. Apparently the Albany members feel it could demand a large commitment of resources to provide an RF link so Rob VK6JRC is investigating the use of EchoLink or IRLP to bring the news on VHF to the South. More news when it becomes available.

The contest season is upon us and all keen contesters are fine tuning their equipment to get the most out of it in these lean RF times. The weekend of 12/13 July saw the NCRG Club premises being used by Bernd VK6AA/VK2IA in a serious CW attempt on the IARU Contest. Bernd has used the club premises before and was extremely successful. The going was hard but he really enjoyed himself. Now there is a much better selection of antennas for

him to choose from so hopefully he will be up there with the best again.

The RD Contest will also be upon us, and I am sure VK6 will put the usual massive effort into winning it again! It is the contest that galvanises amateurs here into action. I do not recognise many of the callsigns on air that weekend, I am sure they hibernate for the rest of the year. It would be nice to see them in the VHF contests as well. I would like to hear from the contesters in VK6,



Photo 1: Bernd VK2IA explaining how to contest



Photo 2: The NCRG clubhouse and antenna farm – very impressive

Amateur Radio

EDITORIAL.

W.I.A. (Vic.).

President (Geo. Thompson Esq.) Introduces "Amateur Radio."

With this, the first issue of "Amateur Radio," a long-felt want is being satisfied. It is a far cry from our old Magazine which appeared in 1921 to the present time, and during the intervening years, many and varied attempts have been made to offer the army of radio enthusiasts in Australia something worth while, which would be of real interest, value and help. It is the intention of the magazine committee, the council, and all concerned, to see that every section of our vast radio community is catered for in these pages. With that object in view, pithy news of general interest will regularly find space in its pages. To all members of the W.I.A., especially those of the Victorian Division, the R.A.A.F.W. Reserve, and all radio enthusiasts, we confidently look for wholehearted support in this undertaking.

This magazine is the official organ of the Victorian Division, every financial member of which will receive a copy post free, and every Ham should see that they receive one. We have in Victoria approximately 300 members and three affiliated clubs, but there are quite a number of holders of the A.O.P.C. who have not yet enrolled. In view of the fact that the officials of the Institute do an enormous amount of work voluntarily (not only in the interests of our members but also of the non-members), it is not in keeping with the Ham spirit to take a share of the advantages which the other fellows' fees and energy provide. Our ranks are open to anyone who is genuinely interested in the science of Wireless, irrespective of their knowledge of the subject, and a hearty welcome is assured to all members with a definite promise of assistance and help, in any desired direction within our scope.

The country experimenter will now be in closer touch with the city enthusiasts and will be kept informed of all Institute activities right up to the minute.

The Institute, in a general sense, is divided into four sections (with a possible fifth to be formed later). Of these, the chief is, of course, the Executive, known as the Council,

which consists of the President, Secretary, Treasurer and ten full members elected annually, whose duty it is to shape the destiny of the Division, control its funds and do all such acts and deeds which are essential for the successful functioning of the whole, within the limits of the constitution.

The Short Wave Group, which is the latest section, is devoted to the Experimental side of short wave transmitting and receiving, and much good work is being done by this very enthusiastic body.

The "Key" Section, probably the largest numerically of all the sections, is a very active group whose work largely constitutes filling the atmosphere with "dits and dahs," burning much midnight Yallourn energy, and in general communication with the uttermost ends of the earth, with as low power as possible. It is largely from this group that the Royal Australian Air Force Wireless Reserve was recruited, and so successful has been the experiment, that it has now been officially accepted as an indispensable unit of our country's Defence Forces. The "Key" Section is largely responsible, in conjunction with other Amateurs the world over, for the successful pioneering of the many frequencies or wavelengths which were at one time considered impossible, but which are now in general use.

The Telephone Section, which is undoubtedly the best known to the general body of listeners, is also very live, energetic and enthusiastic. Their work generally needs no amplification—the very high standard of their transmissions, excellent arrangement of programmes from a purely listener's viewpoint and the high entertainment value of their labours, are a real asset not only to the W.I.A., but to the Government and the Radio Trade generally. There are 22 Country and 24 Metropolitan Amateur Stations actively engaged in entertaining listeners during non-broadcast hours on week nights and Sundays. In many cases in the country, they provide the only programmes that can be received decently owing to atmospheric conditions, particularly during daylight.

what are your interests and aspirations; do you want others to join you in your endeavours?

I have been liaising with Don VK6HK, Phil Casper VK6ZKO, and others about the possibility of erecting a new 144 MHz beacon at the NCRG premises in Whiteman Park. The idea is to mount 4 x 5 element Yagis on a 25 metre tower, horizontally polarised and stacked vertically, pointing at South Africa and Reunion Island.

There is an existing beacon, VK6RBU, down south that was set up with this in mind, it has been off the air for some time. The new proposal is for a dedicated beacon with internet reporting to several club members who would do a 'mad dash' to the clubhouse to make the first 144 MHz trans Indian Ocean contact. Pie in the sky some may say, but unless it is attempted it will never occur.

At the other end there is a tremendous support from the ZS VHF group and keen amateurs on Reunion Island. Any assistance from interested amateurs in any State would be warmly welcomed. A six metre beacon could also be set up if there was sufficient interest and support from NCRG and other amateurs.

I would also like to hear from the F calls: what do you want from the groups, clubs and so on in this state of ours? There have not been too many of you at NCRG meetings I know, but you will be made most welcome.

Nigel VK6KHD reports the Lighthouse activity will be going ahead on the 16-17th August with Wally VK6YS at Cape Leeuwin with the callsign VK6CLL, and Nigel VK6KHD, Jane VK6FJPD and Bernard VK6FBRB at Cape Naturaliste using the callsign VK6CNL; we wish them the best of luck!

I have just downloaded the October 1933 first edition of AR magazine as scanned and presented by Will VK6UU, what an excellent job he has done. I wish him every success in the future documentation of the history of Amateur Radio in Australia and I will be ordering my copies as they become available.

That is it for this month: good DX and hope you do well in the RD.

73 Keith

Central Highlands of Tasmania HAMFEST

The date for the biannual Ham Fest has been announced and it is on Saturday December 6, 2008 starting at 10 am.

It will be held in the community centre at Miena next to the Great Lake in central Tasmania. Major traders have again agreed to attend and the entry fee will be \$5.00 per person or family. There will be a lucky door prize, free tea and coffee and soft drinks at reasonable cost. Inexpensive BBQ type food will be available between 11.30 am and 1.00 pm.

There will be space for pre-loved equipment for sale and this year even a white board to advertise other equipment along with some help from the Master of Ceremonies on the day.

As many previous attendees will attest, the facilities are second to none and very well heated...HIHI! With fuel prices the way they are, car pooling will be the go. So, get together with a group of people and make your way up to Miena for a great day of amateur radio.

See you there!

WICEN Tasmania (South)

June saw WTS members gather at The Lea Scout Camp for a field weekend of activities which included: HF, 2 m, 70 cm, APRS and NVIS stations, dual band dipole construction with Gary VK7JGD, back packable APRS trackers with Roger VK7ARN and Peter VK7KPC.

John VK7ZZ provided electronic slides of his recent voyage from Chile to Antarctic and the excellent DVD from James Brooks 9V1YC on the Kerguelen 2005 FT5XO DXpedition.

Sunday saw Gary's video of the extraction of the rare grid square team from Cape Hauy, an NVIS presentation, APRS activation and also a Radio Mobile propagation mapping software demo. All in all, a full weekend of very interesting activities.

Contests, News and Rebroadcasters

It was great to see Ray VK7VKV and Vince VK7VH come equal second with their multi-operator station totalling 2459 points in the 2007 VK Trans-Tasman 80 m Contest. Congratulations Ray and Vince.

Did you know that the VK7 Regional News broadcast is available on both the web and via email along with the normal on-air broadcast? Take a look at <http://reast.asn.au/news.php> for the web version along with archives of previous broadcasts.

If you would like to receive the broadcast via email each week then send a blank email to: vk7regionalnews-subscribe@yahoo.com and follow the instructions.

A big thank you to Trevor Spargo VK7TS who has been a long standing 40 m rebroadcast operator for the VK7 Regional News broadcast. We are always looking for rebroadcasters on a wide range of frequencies (take a look at the directory on the last page of this magazine).

If you listen to the broadcast on a Sunday morning and would like to try rebroadcasting only once a month then please contact me.

Northern Tasmania Amateur Radio Club

The June NTARC meeting saw Norm VK7AC showing his very impressive collection of QSL cards, as well as his HF equipment which included a very impressive Icom IC-7800 and a linear amplifier.

In the last AR we mentioned Bryn VK7FBAW and his involvement as a base radio operator for the Tamar Sea Rescue Association. Well Bryn even broadcasts severe weather warnings to amateurs on VK7RAA, and NTARC would like to say a big 'thank you' to Bryn for his time and dedication to this task.

North West Tasmania Amateur Radio Interest Group

The high quality nightly broadcasts produced by Tony VK7AX have returned to the 2 m repeater VK7RAA on Mt Barrow along with the NW repeaters. Take a listen from 2000 (8 pm) for a different program each night.

Lighthouse weekend planning is well under way for NWTARIG with Winston VK7EM, Wayne VK7FWAY and Eric VK7FEJE planning to operate from the Bluff Lighthouse at Devonport and the Table Cape Light at Wynyard. Anyone interested in taking part or assisting with this activity, should contact either Winston, Wayne or Eric.

Radio and Electronics Association of Southern Tasmania

Rex VK7MO and the author presented a paper to GippsTech 2008 on their Over the Horizon Optical Communications experimentation which was well received.

Due to a late cancellation of REAST's July presentation the club got a sneak preview of the presentation a few days before GippsTech...HIHI!

Due to the WICEN South team being involved with an Endurance Ride for most of the week end of JOTA/JOTI (18/19 October), REAST is looking for radio amateurs to help out for this very special 100th year of Scouting in Australia JOTA.

Please let Gavin VK7HGO know if you can help by phoning 03 62724437 or mobile 0407 724 431 or call him on VK7RAD/RHT or RAF.

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Contest Calendar for August 2008 – October 2008

August	2	TARA Grid Dip	PSK/RTTY
	2	Waitakere (NZART) Sprint	CW
	2/3	10-10 International QSO Party	SSB
	9/10	Worked All Europe	CW
	16/17	Remembrance Day Contest	CW/SSB/FM
	16/17	Keymen's Club of Japan Contest	CW
	30/31	ALARA Contest	CW/SSB
September	6	ARDF Championship (80 m)	CW
	6/7	All Asia Contest	SSB
	6/7	RSGB SSB Field Day	SSB
	6/7	Region 1 Field Day	SSB
	13/14	Worked All Europe	SSB
	20/21	SRT (Italian) HF Contest	SSB
	27/28	CQWW RTTY DX Contest	RTTY
October	4/5	Oceania DX Contest	SSB
	11/12	Oceania DX Contest	CW
	18/19	JARTS WW RTTY	RTTY
	18/19	Worked All Germany Contest	CW/SSB
	25/26	CQWW DX Contest	SSB
	25/26	ARRL International EME Competition	CW/SSB
	25/26	CQWW SWL Challenge	SSB

Welcome to this month's Contest Column.

OCDX Contest 2007 Results

As mentioned in last month's column, the Lockyer Valley Radio and Electronics Club VK4WIL achieved the highest score from Oceania for the M/M Phone category in the 2007 Oceania DX Contest. A superb effort! VK featured even more in the results however, with a good number of VKs appearing in the logs around the world.

John Loftus VK4EMM has repeated his 2006 feat of leading Oceania in both the PHONE and CW Single-Op All Band categories. John has come a long way in honing his station and skills from originally entering the contest in 1995 using a setup in the back of the family car. Well done John!

Overall, participation was down in

2007 with approximately 10 percent fewer logs compared to 2006. The reduction appears to have been mainly due to poorer than usual propagation between Oceania and Europe over the SSB weekend, but despite the depressed conditions, the contest never fails to deliver the goods as regards good fun and a bit of inter-VK competition. There is a VKCC sponsored plaque usually awarded (The Australia Club Plaque) but it is not being awarded this year as there were no VK clubs meeting the eligibility criteria. The criteria require an eligible club to have at least five members participating and with each participant making a minimum of 50 valid QSOs. Surely VK clubs could assemble sufficient interest to gather suitable teams for this award in the 2008 contest?

It's great to see foundation licence callsigns in the listing. Andre VK3FASW entered the contest this year – his first contest ever! A rookie section would

be a good addition to the award listing maybe?

Tony VK3TZ had an unexpected 'semi-multi operator' event late on Saturday night, with his neighbour wishing to speak to Tony about his burglar alarm system going off every time he transmitted on 20 m. The request to converse came in the form of walloping the living daylight out of Tony's front door. A gentleman to the core, Tony refrained from transmitting on any other bands for the sake of neighbourly relations.

Operating from VK4WIL, I can testify to the somewhat lacklustre band conditions during the contest. I operated on 40 m and 15 m, but found 15 m to be very hard work indeed – even with a 5 element beam at a reasonable height and QRO power. Many of the QSOs were very weak indeed and required a lot of concentration to dig stations out of the noise. This is what contesting is all about though – pushing the limits of the

equipment and the operator. VK4WIL won't be operating in the 2008 contest however due to family commitments taking the hosts away from the operating chair. VK6ANC had a hard time of it in WA, with conditions even more dire than us 'lucky' few in the east.

VK4WIL = VK4ZD VK4KYL VK4SN VK4VCC VK4TI
VK4NDX VK4HAM VK4BAA
VK6ANC = VK6NU VK6XH VK6HX VK6APK VK6TT
VK6WPX VK6HRC VK6YEL

SSB - VK Only

Callsign	Category	QSOs	Score
VK4EMM	Single - Op All Band	683	1079364
VK7GN	Single - Op All Band	405	471410
VK3YXC	Single - Op All Band	348	387846
VK3TZ	Single - Op All Band	380	304634
VK8NSB	Single - Op All Band	347	156404
VK4BUI	Single - Op All Band	196	95160
VK2FHN	Single - Op All Band	200	76544
VK4NEF	Single - Op All Band	190	73304
VK3AVV	Single - Op All Band	127	29234
VK2BJ	Single - Op All Band	109	24893
VK2GR	Single - Op All Band	57	18920
VK4ATH	Single - Op All Band	75	15410
VK7WPX	Single - Op All Band	62	12210
VK7ARN	Single - Op All Band	62	10560
VK3AAK	Single - Op All Band	32	8100
VK3KE	Single - Op All Band	38	5472
VK2HBG	Single - Op All Band	51	5064
VK7BEN	Single - Op All Band	40	4988
VK6LXU	Single - Op All Band	36	4896
VK3FASW	Single - Op All Band	39	4600
VK2XF	Single - Op All Band	40	4060
VK3GRS	Single - Op All Band	35	3700
VK5ZQV	Single - Op All Band	31	3080
VK2ZQX	Single - Op All Band	25	2805
VK1XYZ	Single - Op All Band	20	2210
VK4DX	Single - Op All Band	22	1760
VK5UE	Single - Op All Band	17	1425
VK4TGL	Single - Op All Band	14	616
VK7ZGK	Single - Op All Band	16	176
VK2KDP	Single - Op All Band	8	168
VK2WL	Single - Op All Band	10	144
VK6ATU	Single - Op All Band	6	144
VK3ZGP	Single - Op All Band	2	30
VK3FNBL	Single - Op 40 m	10	400
VK5MAV	Single - Op 20 m	26	572
VK6ANC	Multi - One All Band	446	424278
VK3FRC	Multi - One All Band	127	49932
VK4WIL	Multi - Multi All Band	1177	2524200
VK2ATZ	Multi - Multi All Band	375	431730
VK3SAT	Multi - Multi All Band	134	54760
VK3ER	Multi - Multi All Band	53	6698

Operators of Multi-Multi Stations

VK2ATZ = VK2KRM VK2JED VK2AEA
VK3ER = VK3WWW VK3AMN VK3LOZ VK3XGT
VK3VOL
VK3FRC = VK3GB VK3EW VK3MMM
VK3SAT = VK3ZPF VK3FAWB

CW - VK Only

Callsign	Category	QSOs	Score
VK4EMM	Single - Op All Band	1192	3287315
VK7GN	Single - Op All Band	741	1453896
VK2AEA	Single - Op All Band	720	1324452
VK3TZ	Single - Op All Band	508	804487
VK2AYD	Single - Op All Band	447	473396
VK4XY	Single - Op All Band	416	437762
VK4BUI	Single - Op All Band	356	312674
VK4SN	Single - Op All Band	347	248948
VK2BJ	Single - Op All Band	264	226458
VK6ZH	Single - Op All Band	408	208453
VK2NU	Single - Op All Band	229	166452
VK2GR	Single - Op All Band	155	116816
VK3TDX	Single - Op All Band	75	13080
VK4TT	Single - Op All Band	69	12532
VK5MAV	Single - Op All Band	57	3250
VK2WL	Single - Op All Band	16	915
VK5ZQV	Single - Op All Band	11	528
VK4AN	Single - Op 80 m	74	32560
VK4BAA	Single - Op 40 m	70	18900
VK2AR	Single - Op 40 m	69	18285
VK4DX	Single - Op 40 m	66	12210
VK6DU	Single - Op 40 m	46	9200
VK5DC	Single - Op 40 m	25	2250
VK2CCC	Single - Op 40 m	3	45
VK2FHN	Checklog All Band	11	594

Skimmer Revisited

All sports draw a line and ban certain technologies or activities when it is time to preserve the basic nature of the sport. There are numerous examples in sport of technology which is considered inappropriate and therefore placed outside the rules. Examples such as Grand Prix motor racing, yachting, or many disciplines within athletics. Within ham radio contesting we have already considered packet cluster to be sufficiently different from straight single-op that it has its own section within the contest scoring system or it tends to be bracketed with multi-op. Those whose satisfaction comes from making software work will always do so, and they are very welcome. There is room for all. They simply enjoy different challenges. We just need to consider the creation of category rules to separate users from non-users.

There are those who believe that Skimmer will diminish the skills that have always been integral to the sport. Perhaps some CW Contesters believe that the line should be drawn and CW Contesting should not be turned into an activity that is based even more on how well equipped your station is and how many rigs you can sequence to pick off every signal that can be copied by a computer.

In radio contesting we have absorbed various new technologies. Some of this absorption has been part of the radio circuit: better antennas that are not only bigger and

higher but better use of terrain data; Fast band change radios and linear amplifiers; Improved auto selection of antenna to band and easier to use radios (allegedly).

Other technologies have improved the human to radio interface such as: Computer logging; computer control of radios and rotators directly to the computer. Yet other technologies have assisted the operator in acquiring information about stations to work: callsign check lists in logging programmes; automatic identification of new multipliers and dupes in logging programmes; packet/internet spotting and now Skimmer.

For most people in contesting the urge to win is only part and often quite a small part of the fun. The fun is in running a pile-up, finding the last multiplier for a clean sweep of a band, finding a new country, or possibly catching an opening that the other competitors missed. In other words maximizing the cards you are dealt. With all the help from this operational technology the single op in the future may not have the apparent stress of worrying whether he should have moved to 40 m an hour ago, or whether there may be an opening on 10 m as 15 m is sounding good. They will miss the pleasure of "knowing" now is the time to move and realizing you got it right. They will miss a lot of the pleasure, fun and challenge that radio contesting has given many. I believe that is what is at the heart of radio contesting, not just winning, having fun striving, pushing yourself, and sometimes getting it right! The more that technology is used to facilitate that particular part of the contesters operating skill-set the less attractive contesting might be considered to become for some current participants at least.

So, what is 'Assisted'? It is unlikely that the contesting community will be able to agree what "Assisted" means in this context, so it's probably best for the term to be defined by the sponsors and organisers themselves. However, the requirement for the category has quite a bit of history as it was an attempt to cope with packet networks while not changing rules too much and losing comparability of past contesting records. It might be considered questionable to persist with using the word as a major rules segmentation device. Maybe the way

forward is to have a section along the lines of 'Single Operator Open' to provide for the potential use of technology. This would encompass one operator, one transmitted signal, and one location, but as much technology as you could shake a stick at, full legal RF power and no limit on antenna hardware. All other categories then become a dilution or alteration of the basic 'section' to allow for QRP, antenna provision, multiple operators etc.

Calling all Luddites!

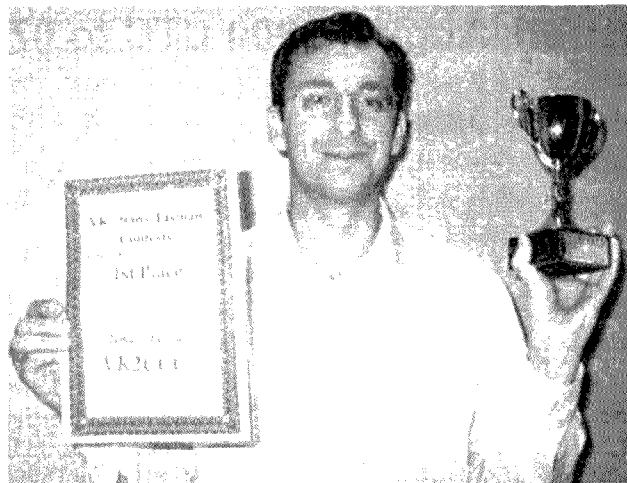
If, after a few generous snorts of Talisker, one wishes to be able to be whisked away to a perceived perfect world, do you wish you could turn the clock back to the time when the person who won the contest was the most skilled radio operator?

Do you feel that nowadays, the person who wins the contest is the one who has the biggest amp; the biggest antennas; the largest computing power and is a touch typist located close to the equator in a semi-rare location?

Do you find yourself craving to get back to the good old days where computers are not invented yet; Morse code has to be manually sent and received; the DX cluster or any of its derivatives are a twinkle in their inventor's eye and spotting networks are forbidden?

You might not be alone, but the reality of it is that the technology is here to stay and cannot be 'uninvented' no matter how hard we try to ignore it. People will use it and drive the technology forward for revisions and people will work hard to upgrade systems to make it faster, better facilities and more accurate. It is, however, within our power to recognise that technology might change the

80 metres VK/ trans-Tasman Contests



The Winner of the 2008 80 Metres VK/ trans-Tasman Contests is Dr Tomas Magyla, from Hornsby Heights, NSW.

This was his first attempt at a VK/ trans-Tasman Contest.

He received the 80 m Over-all Winner's trophy, and certificates for "1st 80 m Phone", and "1st VK".

Bruce Renn VK3JWZ - Contest Manager

approach for future contesters and that contest sponsors should accommodate and adapt as considered necessary. Time will tell.

While I wait for things to happen, I have an appointment next week to get some surgery to add a couple of hands for easier typing and an extra pair of eyes off-set at an angle so I can see all my computer screens at the same time. My optician is working on a heads-up display for my glasses so I can dispense with the screens, with a direct neuron-data feed into my febrile brain. A mere thought of a competitor's demise would bring a huge Faraday Cage over their antenna farm (after I have worked them as a multiplier) and allow me to carry on filling my log while they CQ into oblivion.

Ahhh - contesting - the sport of gentlemen. And ladies of course!

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton

Remembrance Day Contest

Sat 16th August 0800 UTC to 0759 UTC Sun 17th August 2008

Contest Rules

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.

Categories

- (a) Single Operator; and
- (b) Multi-operator.

Sub Sections

- (a) Transmitting Phone (FM, SSB);
- (b) Transmitting CW (CW); **
- (c) Transmitting Open (a) and (b);
- (d) Receiving (a), (b) or (c).

**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.

Location

All amateurs licensed in Australia, and not physically within VK/P29/ZL as VKs outside VK may enter the contest, whether their stations are fixed, portable or mobile. See Rule 16.

Crossband

Cross-band and/or cross-mode contacts are not permitted.

IRLP & Echolink

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.

Satellites

Contacts via satellites are also not allowed for scoring purposes.

How To Call In The Contest

Call "CQ RD", "CQ CONTEST" or "CQ TEST".

Duration Between Contacts

On ALL bands, stations may be contacted at intervals of not less than two hours since the previous contact on that band and mode.

Contacts within same call area

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.

10 m FM mode

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 29.0 MHz for an additional score.

50 MHz and above

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.

VHF Category

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.

Single and Multi Operator Stations

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.

Using more than one callsign

Holders of more than one licence or callsign MUST submit a separate entry for each callsign used.

Multi Operator Stations

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.

Automated operation

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.

Valid contacts

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).

Logs

Separate logs are required for entrants competing in both HF and VHF sections, although all allowable modes can be contained within each log.

Contacts via repeater or satellite

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.

Receiving Section Rules

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.

Rules are the same as for the Transmitting Section. The only double points will apply to ALL received CW contacts, and contacts received between 01:00 and 06:00.

Only completed contacts may be logged, it is not permissible to log a station calling CQ.

Contest Scoring

- On 160 metres two points per completed valid contact.
- On 23 cm 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.

Submitting Your Log

Logs should be in the format shown in the sample available on the WIA web site 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.

Entrants operating on both HF and VHF are required to submit separate logs and summary sheets for both categories. Separate serial numbers for HF and VHF operation. Logs must be serial numbered sequentially on any band within the High Frequency for operation on bands below 50 MHz; Logs must be serial numbered sequentially on any band within the Very High Frequency for operation on and above 50 MHz; 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).

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**

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. 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.

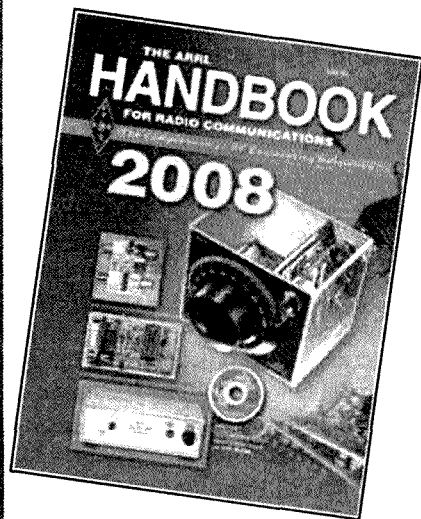
On completion of the contest you can email the VK?XXXX.csv, which is a comma delimited file format be, which can be imported into our database. See Software download links below.

In all cases, logs must be received by last mail on Monday 10 th 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.

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, the "Reply Form" is available for download from the WIA web site.

HOWEVER in all circumstances the rule above WILL STILL APPLY. So get the logs in early.

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ar

ALARA

Christine Taylor VK5CTY

This month's Contests

Are you ready to participate in the Remembrance Day Contest and also in the ALARA Contest? I hope you enjoy them both.

Listen to the opening of the Contest to hear some reasons we hold the RD Contest, and why we hold it on the weekend closest to the date WWII ended. It a special way amateurs can acknowledge the debt we owe to our service men and women, and for us, the debt we owe to all the amateurs who used their skills to help us win the war.

Be sure to keep a log of your contacts! Make a copy of the RD log, ready to send to the Contest manager! Details of how you can send your log in, and the addresses are all listed in the Contest rules in this month's *Amateur Radio*.

The rules and log submission details for the ALARA Contest were in the July issue. The contrast between the rush, rush, rush for contacts in the RD and the more leisurely, time for a chat, aspect of

the ALARA Contest is important. That is why we can make multiple contacts on the same band in one Contest and are not allowed to do that in the other. Both are the kind of rules you will find in other Contests throughout the year.

Some people really love contesting. They can probably find a Contest, somewhere in the world each weekend of the year. This is a great way to "shake hands" with someone in another country, and to maybe gain another country as you work toward your DXCC award.

Others only join in one or two Contests a year, but still find they meet new people each year and renew an acquaintance from another year. There are many different ways to enjoy amateur radio.

The ALARA Award

Every year, associated with the ALARA Contest I urge YLs and OMs to apply for the ALARA Award certificate. It is an attractive addition to your "brag wall" where you pin your Certificate of Proficiency in your shack, and it is not difficult to make the right collection of contacts to gain the certificate.

The cost for the certificate is only A\$5 or four IRC (International Reply Coupons). IRCs can be bought from a Post Office and have been the standard exchange system between amateurs for many years. They are used for most awards and certificates, and often when exchanging QSL cards.

If you are a VK or ZL amateur you will need 10 contacts with ALARA members from at least four call areas for the award. If you are a DX amateur you will only need contacts with five ALARA members from three call areas to qualify. The ALARA Contest is a perfect opportunity to hear those less common call areas to complete your list.

You write out the list of contacts you are using to claim your award, including date, time, band used and signal reports exchanged, along with your payment and your own address and send the list to Kathy VK3XBA either QTHR the callbook or by email at kathyg@spacelink.com.au. She will be delighted to printout your certificate, then, once it is signed by the President of ALARA, it

should arrive in the mail

Birthday luncheons - this year we are 33 years old!

This year there will be a special Birthday Luncheon at the end of the month in VK5 and in VK3 about which you will hear more in the next AR. The tradition of having special lunches for our Birthday started from the very first birthday. We are proud of our organisation and enjoy an excuse to celebrate. Sometimes they have been held at someone's home, but nowadays they are mostly celebrated in a restaurant.

This year ALARA turns 33. And as 33 is a special greeting exchanged between YLs (like 73 or 88), this is an extra special year.

HAPPY BIRTHDAY EVERYONE

VK3 – metropolitan ALARA net

Jean VK3FJYL is the VK3 Representative for ALARA.

Jean extends an invitation for any YLs to join us on VK3REC 147.175 MHz for our regular ALARA net which goes to air at 8:30 pm Thursday. The net is open to all YLs – you do not have to be a member and in fact we have been known to talk to OMs when they have called into the net.

We would also like to see as many YLs as possible also take an active part in the EMDRC, it would be great to see you at the club meetings



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Amateur radio – a bridge to careers in radio communications technology

Plan ahead

30 & 31 August

ALARA

Contest

Local ARISS identity interviewed on TV

Australian Telebridge coordinator and ARISS member Tony Hutchison VK5ZAI appeared on the Australian Channel 7's *Today Tonight*. He described his work with the educational ARISS program. WIA posted the news clip on its website with permission from Channel 7.

CUTE-1.7+APDII Earth pictures available

The camera on board CUTE-1.7 has been activated a number of times and now you can see the pictures in living colour by visiting the following web sites:

<http://lss.mes.titech.ac.jp/ssp/cute1.7/blog/01-04.jpg>

<http://www.ne.jp/asahi/hamradio/je9pel/cut17ap2.htm>

Other cubesat pictures are available on Mineo Wakita's web site. Mineo does a great job in alerting us to events like this via the AMSAT-NA bulletin board.

<<http://www.ne.jp/asahi/hamradio/je9pel/>>

Delfi-C3 / DO-64

Thanks from the control team. Wouter Jan Ubbels PE4WJ reports that the control team has received over 270,000 telemetry frames from amateurs around the world.

That makes them very happy of course and Wouter expressed thanks and the hope that amateurs would continue to support the experiments. DO-64 carries a linear transponder which will be turned on when the main experiments are done. You will find lots more information on their web site.

They have been very up front about this project with news coming regularly via the AMSAT-BB.

Software called RASCAL is available for making sense of the telemetry but some people have reported difficulties in decoding. Alan ZL2BX came up recently with a tip that may help.

"DO-64 can be difficult to sync without some sort of tuning aid. The signal has two strong components equally spaced about the centre frequency and these can easily confuse RASCAL.

If you display the signal on any program that has a 'Waterfall' display e.g. 'Spectran' or 'Ham Radio Deluxe',

you can then tune your receiver so that the centre component is exactly on 1600Hz and then RASCAL should decode OK".

Thanks Alan.

Ron Parise, ARISS founder SK

Astronaut Ron Parise WA4SIR passed away on Friday May-9. Ron was a key player in the development of the ARISS program and a strong supporter of educational outreach activities. He spoke with hundreds of hams on the ground during his Shuttle flights STS-35 and STS-67 and was the first to operate packet radio on the Shuttle.

He was instrumental in developing both the ISS Ham radio systems and the telebridge station concept with the specific purpose of encouraging students to pursue studies in technical fields.

One of my prized QSL cards is from Ron for a contact via SAREX-II on the Space Shuttle Columbia in 1990.

New Russian satellite

A launch from Plesetsk on May 23 carried a number of payloads into orbit, including a new Amateur Radio satellite

The AMSAT group in Australia.

National Coordinator: Paul Paradigm VK2TXT

Secretary: Judy Williams VK2TJU

Website: www.amsat-vk.org

E-mail for National Coordinator: coordinator@amsat-vk.org

E-mail for Secretary: secretary@amsat-vk.org

In New South Wales

VK2RMP

Maddens Plains repeater on 146.850 MHz

VK2RIS

Saddleback repeater on 146.975 MHz

VK2RBT

Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3JED Preston, Melbourne
on 144.296 MHz SSB simplex

VK3JED Preston, Melbourne
on 439.175 MHz FM simplex
with a 91.5 Hz CTCSS tone.

VK3RTL Laverton, Melbourne,
438.600 MHz FM, -5 MHz offset

Operators may join the net via the above repeaters or by connecting to EchoLink and either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email.

AMSAT-Australia HF net.

Members and interested parties are also reminded of our HF net which is held on the 2nd Sunday of each month.

See www.amsat-vk.org or www.ozsatgroup.info for details.

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started.

You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.

The organisers wish to thank the Illawarra Amateur Radio Society for carrying our net on the Coastlink repeater network and Tony - VK3JED for the use of his linking system.

Should you wish to join AMSAT-Australia, details are available on the web site. You will be made very welcome.

named Yubileiny. It was designed to be part of the 50th anniversary of Sputnik-1 celebrations. It has since been dubbed RS-30. Operational details are still vague at the time of writing. Its signal has been heard throughout the world on 435.315 and 435.215 MHz. Some report hearing CW telemetry while others report what appear to be image transmissions from the satellite. RS-30 is orbiting at a maximum altitude of 1500 km. This is higher than most LEOs and gives RS-30 a mighty footprint. The Russian publicity claims it will transmit audio and video about the history of the Russian space programs, and an imitation of the original Sputnik-1 signal from 1957.

CubeSat information

The cubesats keep on coming and it is difficult to keep up with them. For information on future launches, ESA have a web site which you should find informative regarding the cubesats. <http://www.esa.int/esaED/SEM2BPUG3HF_index_0.html>

Time to pass the baton

This will be my last AMSAT column for AR magazine. Twenty years ago, sitting at my BBC Acorn computer, the first monthly article on "Getting Started in Amateur Radio Satellites" took shape.

Shortly afterwards Graham Ratcliff asked me to take on the writing of the monthly column. The amateur radio satellite scene is so dynamic that breaking news can often be old hat in a week so the columns take on more of an archival role.

Our new AMSAT-Australia coordinator Paul Paradigm VK2TXT will be taking on the task of writing these columns from now on. In wishing him well, it is my hope that Paul will receive the same welcoming and encouraging feedback that has been my good fortune.

Paul will be ideally placed at the centre of things, keeping an eye on the bigger picture so the AR column will serve as a powerful tool for him to record the passing parade of satellite happenings from an Australian perspective.

A lot has changed in the AMSAT scene in the past 20 years. The changes have echoed those in amateur radio as a whole. An inexorable move higher in frequency. The introduction of exotic modes of operation. A greater dependence on computers with increasingly

sophisticated software.

Twenty years ago microwaves were in the too-hard-basket for most of us. The internet was in its infancy and known only to a privileged few. Computing itself was a black art when the first amateur radio satellite was launched. Its practitioners were portrayed as hunched, square-eyed people who rarely left their smoke-filled back rooms.

Please allow me a few pars to briefly review the history of the Amateur Radio Satellite Service as seen from the beginning. The 4th of October 1957 stands out.

Sputnik-1 was so tiny but what a punch it packed. Itself too small to see easily from the ground but part of the launch rocket also went into orbit along with the Sputnik. Many Melbournians including myself watched in awe as it soared over the darkening evening sky that night.

Due to a fortuitous inclination and launch time, Melbourne was the first large populated area in the world to witness the passage of an artificial earth satellite. The 20 MHz beacon was loud and clear as it zoomed across our sky. Those were the days when AM and Morse still ruled.

My old cobbler Neil Towne VK3ANK, now a silent key but then a Melbourne Herald newspaper photographer, took the world's first published picture of an artificial satellite that night. With a thin stripe of light his aging Rolleiflex camera told the story. The picture was broadcast over every wire service in the world and graced the front page of the following morning editions.

What followed is documented history – but what may not be so well known is that almost immediately a group of radio amateurs in America met to discuss the impossible dream of building and launching an Amateur Radio Satellite.

Without their contacts in the then infant space industry, it would have been impossible. A mere 4 years later, with the first commercial communication satellite still on the ground, we saw the piggy-back launch of Oscar-1.

The saga of Oscar-1 is remarkable. ARRL

publications proudly record its story. But just imagine the excitement when the builders, straining their ears at the receiver heard the first Morse "didididit, didit" - "hi-hi-hi" the telegraphic laugh as the tiny amateur built satellite appeared over the horizon an hour or so after launch. Amateur radio satellites were a dream no longer. Oscar-1 was a very simple device but its message was heard by tens of thousands of radio amateurs.

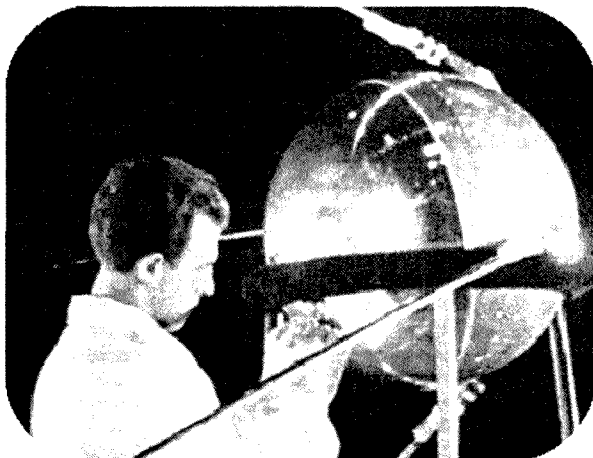
We predicted the return of the early Oscars with cut-out cardboard devices that became known as Oscar-locators. Oscar-3 carried the first amateur radio transponder aloft in 1965.

Australia featured in the construction of the electronics box for Oscar-5. It was designed and built by Melbourne University's Astro-physical Society aided by local radio amateurs. Proudly known as "Project Australis", it was the first amateur satellite to transmit telemetry and the first to have an element of ground control.

When AMSAT-VK was formed, it was one of the first AMSAT groups outside the USA, so we have a long, proud history.

Later digital transponders became a reality and earth pointing cameras produced finely detailed images from the Oscars. Again an Australian featured prominently with an image processing program developed by Colin Hurst VK5HI quickly becoming the industry standard.

In the very early days, Bob Arnold VK3ZBB had access to late information which formed the basis of the local HF and VHF nets which allowed Chas Robinson VK3ACR and Graham Ratcliff VK5AGR to relay the EQX data to users.



Sputnik 1 where it all began

Spotlight on SWLing

Robin Harwood VK7RH

No one had heard of Keps, hardly anyone owned a computer. Graham took over as co-ordinator of AMSAT-VK and the net in 1983.

So – here we are today more than 20 years on and poised between HEOs as it were. AO-10 is approaching the end of its long life and AO-13 re-entered after giving years of service. We shared the disappointment when AO-40, AMSAT's most recent flagship HEO met an untimely end while commissioning was still taking place.

We now eagerly await the launch of P3E and in the meantime the so-called easy-sats reign. They are catering for newcomers and oldies alike and will continue to do so even after the much anticipated HEO launches. The International Space Station has filled the gap left when MIR was de-orbited. MIR provided us with many fine contacts using simple ground station equipment.

Again we in VK can be proud of outstanding local efforts like those of Maggie VK3CF1 who figured prominently in early contacts with MIR. Her packet radio contact with Musa Manarov on 16 January 1991 was a world first.

We are still reaping the benefits of the positive effect that amateur radio had on the early Russian crews. It helped cement amateur radio's now privileged place in manned space operations. We sometimes take that for granted. But it required goodwill.

The kind of goodwill generated out of events like Maggie introducing the girls from her high school class to the Russian Cosmonauts back in the 90s. The result of this and many similar events can be seen in AMSAT now having a firm, long standing relationship with NASA, ESA and other launch agencies. Our name is up there and we can look forward to participating in future Moon missions and even Mars exploration. Seems impossible, does it not, but then Oscar-1 was just a dream in 1957.

Thank you to all those who have helped with contributions to the column over the past (gasp) 20 years. It has been a great pleasure, a wild ride and a wonderfully exciting and on-going learning experience.

73,

Bill Magnusson VK3JT
Mllawa, Victoria.

ar

At last the Beijing Olympics have arrived and from the eighth of this month, I do expect that these will be extensively covered on shortwave.

As you are aware, the Chinese have an extensive shortwave platform, both inside the PRC and over several senders in other regions. I know that it is going to be very easy to hear Chinese coverage of these Games, as they want to capitalise on them. Of course, other international broadcasters will also be live or have delayed coverage of the various events.

However it will be a very different story on the Internet as the IOC has severely restricted any live coverage for many years. Many broadcasters opt out of streaming altogether on the Net whilst the Olympics are on because of the rights issue.

Austria has announced that it will be closing its shortwave senders yet has not given a date when these shall fall silent. Deutsche Welle also would like to phase out shortwave but knows that alternative platforms are difficult or non-existent within certain regions, such as Africa.

Radio Singapore International also ceased on the 31st of August but it remains unclear if shortwave will continue to relay the domestic services after that date. The parent organisation of the VOA, the International Broadcasting Bureau, also has announced further cuts in their various language sections of Radio Free Europe and the VOA.

I also note that there has been an increase in transmissions beamed to Africa. The reduction or cancellation of services to other target audiences means that senders are now available to concentrate on Africa.

Internet access to this region is very poor, so streaming is beyond the reach of many. Also some governments in Africa are very reluctant to permit local broadcasters either relaying international programming or permit broadcasters, such as the BBC, DW or the VOA, from installing their own FM senders.

Zimbabwe has been in the news for some time and has now banned citizens listening to overseas stations or having satellite dishes. It also recently banned the possession of wind-up radios.

I have noted that the Voice of Indonesia

in Jakarta now broadcasts in English at 1300 on 9526 kHz. It has been heard in North America and should be easily heard here but the modulation is well down. There has been a steady decline in the number of domestic Indonesians now broadcasting on shortwave.

I also have heard that those domestic Nuiginian stations on the tropical bands may not be there for much longer. The big powerhouse signal from Port Moresby has not been there for some time. If only the propagation would improve. This solar cycle seems to be longer than was initially predicted.

Well that is all for now. Spring is just around the corner and hopefully there will be more to hear.

73 de VK7RH

ar

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DX - News & Views

John Bazley VK4OQ

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352. Email: john.bazley@bigpond.com

First I want to thank Ernie VK3FM for writing last month's edition of DX News & Views - as I write this I look forward to reading his article!

So what DX do we have coming up? **Willis Island, VK9W**, will be a big DXpedition to look for in October. This is the sequel operation to the February, 2007 VK9DNX Norfolk Island expedition which logged 60,000 QSOs.

The same team, DJ7EO, DJ9RR, DL1MGB, DL3DXX, DL5LYM, DL6FBL, DL8OH and DL8WPX, plan to be on the island, with four high power stations. They will be on for 17 days, 160-10 m CW, SSB and RTTY. Landing permission has been received. They say they have already secured a suitable charter boat. They arrive in Cairns, October 5th, embark the 6th, and arrive on Willis the 8th. They leave the island October 28th. <http://willis2008.dl1mgb.com/> Due to the saltwater QTH, the Willis Island ops have chosen to mainly use vertical antennas. They do not plan any 60 m operation, or 6 m and above. There will be no SSTV this time.

G3RWF, Nick, is once again heading back to Fort Portal, in western Uganda where he will be QRV as 5X1NH from June 25th to August 15th. QSL via G3RWF.

Prasad VU2PTT will be active in the IARU Contest using his special call sign AT6T as the HQ station. Look for AT6T giving out the ARSI multiplier on 80-10 m CW & SSB during the IARU contest. Prasad has permission to use this callsign from 1st July until end of September 2008 and you may work this special call in other contests as well. As usual, all QSOs will be uploaded to the ARRL Logbook of the World (LoTW) and QSL requests may be made to VU2PTT direct (QRZ.COM) or via the ARSI bureau. Please use one current IRC for direct requests, green stamps have a habit of disappearing in the postal system along with your QSL card. It is also not legal in India to send or receive currency by postal mail, and the recipient can get into trouble!

Four operators will be on **OC-181**, the Witi Islands, and **OC-041**, the

Ninigo Group, both belonging to Papua-New Guinea, P2, for an operation between October 18th and November 4. Operators G3KHZ, G4EDG, CT1AGF and W5GAI are still looking for two more operators. Contact G3KHZ, Derek, using his QRZ.com info. Last year the same guys went to Nukumanu, Taku'u and Kilinailau. They are hiring the same scuba dive boat this year that transported them last year.

Sigi DL7DF and his crew have announced that their next DXpedition will be to Botswana in late September and early October. The crew includes Manfred DK1BT, Wolf DL4WK, Andy DL5CW, Sigi DL7DF, Frank DL7UFR and Leszek SP3DOI. They will operate as A25/DL7DF from September 23rd to October 6th. Activity is expected on 1.8 through 28 MHz on CW, SSB, RTTY, PSK31 and SSTV. They will have several stations QRV, one of which will be exclusively dedicated to RTTY, PSK31 and SSTV.

The crew has a Web page at <http://www.dl7df.com/a25>. Two pilot stations will be used for this operation. They are Bernd DF3CB (bemd@df3cb.com), and Floyd N5FG (n5fg@mdxa.org). QSL cards can go to DL7DF either direct to: Sigi Presch, Wilhelmsmuehlenweg 123, D-12621 Berlin, Germany or via the German QSL bureau. Direct QSLs should go with SAE and 1 IRC or 3\$ US for outside of Europe or 1 IRC or 2\$ US for mail within Europe.

DL2AH goes to **ZK3** and **KH8** in September and October. He has applied for the ZK3AH callsign for 14 days in September, the exact dates dependent on the ferry schedule. The ferry can only be booked upon arrival in Apia, Samoa. KH8/DL2AH will be on Manua Island, OC-077, some time between October 8 and 27. Uli works 40-10 m SSB and RTTY. He will have an FT-897 and a Windom.

Harry 7Q7HB is now in Malawi for an indefinite stay. He particularly wants to help people needing PSK31 and RTTY. QSOs with Malawi. QSLs should go via G0IAS only.

It was good to hear from Allan **VK2GR** with a list of DX that he has worked over the past three months using wire antennas. Incidentally, Allan is the only person that I know who has received a QSL card for last year's VK9 Willis Island operation!

April:

40 m - HP8/JA6REX, E74EW, 9M6XRO, F/EA8AY;
30 m - TI8/DL4MO, HL0HQSC, AI5P/KH0, YT30FOC;
20 m - KH0/JE1RRK;
17M - KH0/JE1RRK, XW1B, V63JY, V85SS;
15M - HS0AC, 3W3W

May:

160 m - KH0R;
80 m - NH6V;
40 m - YN4SU, XE2S, 4O3A, 3D2A, 8J3GOSE;
30 m - VQ9LA, 3D2A, CO8LY;
20 m - 3D2A, TI2OY, V73NS, 4Z5AD/60, FK/JK1FNL

June:

40 m - XW1B, KH0N;
30 m - 4W6R;
20 m - 4W6R, V85SS;
17 m - 4W6R

Allan found that 160 m, 80 m and 15M were poor for DX from Sydney. Only 27 prefixes were worked in the CQ WW CW Contest in May with a modest score of 12,609 points.

Clay Brown K7HC plans to be in Belize from September 1st to 15th with planned activity on CW and SSB on 80 through 10 metres, as V31HC. He will be running 100 watts and a Big IR vertical, as well as an 80 metre dipole. QSL via K7HC.

Antonio Duarte Bebiano CT1CPP is expected to be active soon as TT9/CT1CPP from Chad. He should remain in that country with the United Nations for one year. QSL via home call, direct only.

Freddy F5IRO and **David F8CRS** will be visiting the French islands of **Martinique** and **Guadeloupe** from August 4th to 21st. First they will be

QRV as TO8S from Les Saintes Island (NA-114), Martinique from August 4-17. They will have two stations with activity mostly on CW on 3.5 to 28 MHz, with some SSB and RTTY. During that same time period the two will try to operate from Guadeloupe (NA-102) for three or four days. They will take with them one station and will use FG/F5IRO and FG/F8CRS.

They will also operate from Martinique (NA-107) from August 18th to 21st using FM/homecall. QSL via F8CRS either via the bureau or direct (with SAE and postage).

India's National Institute of Amateur Radio's (NIAR) "Ham News" has some details of the prospective VU4/VU7 operations for October 24 - November 3. If you wish to register to go, details are at <http://www.niar.org/sj/form.html>.

Look for Jean-Louis F5NHJ to be operating as FK/F5NHJ from Grande Terre (OC-032), New Caledonia from August 12th to 29th. Activity will be mostly on CW and the digital modes on 30 metres. While there he will also try to activate one or more other New Caledonian islands. He plans to upload his logs to LOTW and will have a log search at <http://www.f5nhj.fr/logsearch>. QSL via operator's instructions.

Tom LA4LN will be QRV from Spitsbergen Island (EU-026), Svalbard from September 12-18. While there he will be QRV on 60 metres as JW1V. He will also operate JW4LN on 160 metres through 70 cm, mostly on CW with some SSB, digital modes and possibly Satellite.

Tom will have an IC-7000, various wires, and a beam for 10, 15 and 20 metres and possibly on 6 and Satellite. QSL cards must go direct only to LA4LN, Tom V. Segalstad, P.O. Box 15 Kjelsaas, N-0411 Oslo, NORWAY. More details can be found at www.qrz.com/jw1v.

Happy DXing.

Special thanks to Ernie VK3FM and the authors of The Daily DX (W3UR) -- 425 DX News (IIJQJ) 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 of The Daily DX from www.dailydx.com/order.htm

Francis [Frank] Alec Eastick VK4VN

4 June 1923 - 25 March 2008.

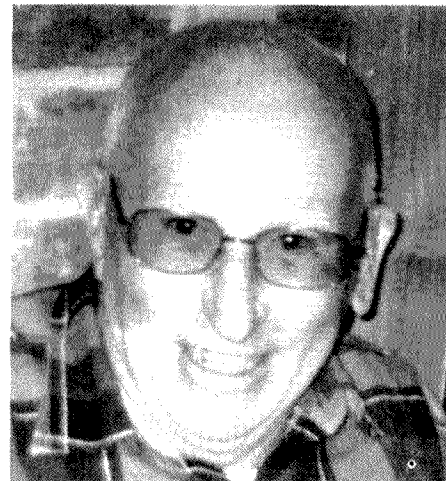
Frank went to school in Kingaroy; his teacher was a Mr Tyas, an amateur radio man, with the result that he was hooked on radio for the rest of his life. He gained his Amateur Radio Licence and also the Broadcast Station Operators Certificate of Proficiency.

In 1941, he enlisted in the Army, doing communications until his discharge in 1946. At the time of his discharge he was in Rabaul and Lae, Papua New Guinea, and stayed on working with Posts and Telegraphs. He also worked in Honiara, British Solomons, from 1950 to 1954. On return to Port Moresby, he worked with the DCA and it was here that he met his future wife Nancy Kemp, a Girl Guide Trainer.

Frank and Nancy enjoyed over 40 years of a busy, interesting and contented life together, for which Nancy is so grateful and she thanks him sincerely.

Frank was a perfectionist in all he did; he always took great care of Nancy and their properties. Nancy is so grateful for the comfort she received from the many cards, beautiful flowers, phone calls and visits. She did appreciate the love, care, time and practical help and support from many friends at this stressful time.

In 1976 Frank and Nancy bought 4 acres at Horseshoe Drive, Mudgeeraba (The site of the first Gold Coast Hamfest 29/07/1978), where they lived until they sold it in 1983 and moved to Earle Haven



in Nerang. It was here that Frank passed away with acute leukaemia on 25th March 2008.

The Memorial Service held on the 10th April 2008 in Earle Haven Chapel was an appropriate farewell to Frank. Nancy wishes to thank all those friends who attended and those who were able to help organize the service including the Nerang RSL.

Time will not erase the many happy memories Nancy has of her Frank.

Frank was a happy man and supported the group meetings and parties conducted by The South Coast Amateur Radio Group.

A good dependable man loved by many and sadly missed.

Submitted by Ken Ayers VK4KD.

Cliff Donoghue VK3DQ

I am sad to advise that my husband Cliff VK3DQ, of East Brighton, passed away on 2 October, 2007, after a short battle with prostate cancer, at the age of 87 years.

Cliff was active almost until his passing, talking both around Melbourne to his local amateur friends, and internationally, in particular to amateurs throughout the USA.

Cliff was a wonderful source of advice, knowledge and wisdom to his family and

friends, of which knowledge he gave freely and cheerfully at all times.

Perhaps a highlight of his amateur life was in being involved with a distress call from Alaska, which he heard one day whilst on air, wherein he then advised the US government of the situation. He subsequently received an award from the US government for his assistance.

Cliff left a wife Patricia, and two sons Philip and Peter.

Submitted by Patricia Donoghue.

VHF/UHF – an expanding world

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

There has been a bit of winter action during the last month. On the evening of 14th June, Brian VK5BC worked Mark VK2EMA on 2 m – a distance of 840 km. Bill VK5ACY, who recently pulled up stumps from Kangaroo Island and is busily re-establishing his station in the suburbs of Adelaide, also worked Mark – an 880 km path. The following afternoon, the path from Adelaide to northern Tasmania was up with Phil VK5AKK working John VK7CEJ – 1014 km.

On the morning of 23rd June, the Hepburn Tropo Prediction site was showing some interesting conditions. A high-pressure cell over the Bight brought a prediction of enhancement from southern WA into central NSW, moving to the northeast. Sure enough, Mark VK2EMA reported the VK5VF 2 m beacon at 5x9 and worked Brian VK5BC on both 2 m (5x9) and 70 cm (5x7). At 0115Z, Leigh VK2KRR worked Jeff VK5GF on 70 cm at 5x9 (768 km). Leigh then reported hearing the VK6REP 2 m beacon at Esperance – 2312 km away! A double check of the FSK frequency shift confirmed that it was indeed the Esperance beacon. Leigh quickly telephoned Bill VK6AS in Esperance to see if he could come up on 2 m. Unfortunately, Murphy had got in ahead of Leigh, and the power company had chosen this particular day to upgrade the power feed to Bill's area, so he was without power for the next 5 hours. Leigh continued to hear the beacon on

and off for the next 2 hours, but could not raise any stations at the other end of the path.

However, that was not the end of the excitement for the day. Late in the evening, at 1300Z, Phil VK5AKK reported hearing the VK4RTT 2 m beacon at Toowoomba – 1525 km away. Brian VK5BC and Bill VK5ACY could also hear the beacon peaking to 5x1 with the callsign easily copied. The beacon continued to QSB in and out until about 1500Z by which time everyone had retired for the night. Unfortunately, it was again the case that nobody could be raised at the other end of the path, so no contacts were made.

Winter VHF/UHF Field Day

The resurrected Winter Field Day was held on the weekend of 21/22 June. Participation was good despite the cold conditions in the south of the country, although it seemed that many chose to enter the 8-hour section, retreating to the warmth of the home QTH after operating on Saturday afternoon.

Rod VK4KZR dragged his 2.4 GHz system up to Maleny to provide a contact and grid square for Doug VK4OE (and to enjoy the good coffee at the Swiss Bakery/Café in the main street of Maleny). Rod's setup consists of an FT-290RII driving a Minikits transverter and 300 mW PA with a HEMT LNA into a WA5VJB 2 - 6 GHz PCB Log Periodic

antenna. He reports that signals were understandably excellent over the 85 km (near LOS path).

Ron VK4KDD reports on the VK4WIE/3 operations at Byron Bay:

Ron VK4CRO woke us up 3.15 am with loud music and lights, because he heard on the BBC World News that it was 5 am ... It was about 9 degrees outside so it was sort of OK, but the real chill factor came from the wind. Eric VK4NEF was the real diehard of the group. He slept outside in his sleeping bag. The tower with the 23 cm antennas moved quite a bit because of the gusty winds, and we had a number of reports of heavy QSB on the signal ... I think we knew where QSB was coming from.

Operators: Eric VK4NEF, Ron VK4CRO, John VK4MJF, Ron VK4KDD.

Total Contacts: about 200.

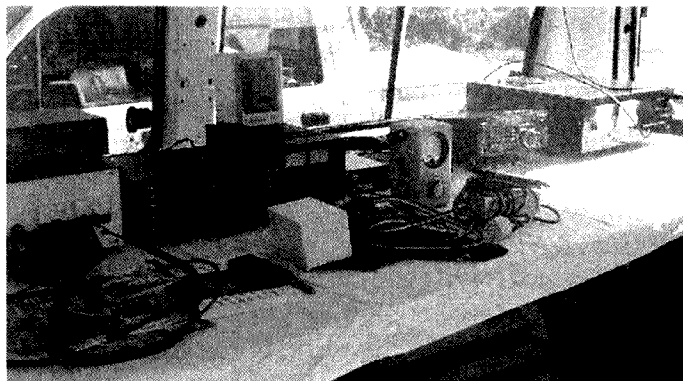
Propagation was not real flash. But we could work any station any time in a 500 km range. Nothing in or beyond Sydney was heard or worked.

Our antenna farm consisted of a 2 m / 70 cm vertical, single 2 m Yagi, 6m Yagi and vertical, 2 x 23cm Yagi with 70cm Yagi above and 2 x 2 m Yagi.

Below is a photo showing the interior of one of the vans used for 2 m, 70 cm and 23 cm. The 23 cm IF (FT-817) is behind the Bird wattmeter - the transverter and PA were all fitted on the mast and "waterproofed" by a plastic bag and tape. The box on the right under the



VK4WIE/2 Antenna Farm



VK4WIE/2 Operating position

table is the 2.5 kV power supply for the 70 cm amp. On the left is the 2 m amp with built-in HV supply. On top of the 2 m amp sits the 2 m transverter.

On the far left (not on the picture) are the rotator controls. Because of the ice cold wind and possible rain we thought it would be more comfortable to operate inside one of the vans. And so it was. The temperature inside was still 19 degrees, while outside the temp had dropped to 9 degrees. The warm air from the tube amplifiers was more than welcome.

Hugh VK1YYZ describes a more modest approach to the Field Day:

I had not really planned on participating actually. Still, on a lovely clear if cool Sunday morning I thought I might as well at least give a few numbers out for the locals, and try a new QTH, which is about 810 m ASL.

Radio-wise, the plan was to use the IC-706 with a Gel Cell for a bit of grunt - Gel Cell which I meant to keep on float charge, but did not and at 7.8V was not going to help anyone. Scratch radio option #1.

I have a love-hate relationship with my FT-817 - love the rig, hate the fact that it never seems to keep charge. But, it had been connected to the PSU so ought be good, I thought. The Power button seemed to confirm this.

A Diamond X50 vertical (2x1/2 wave on 2, 3 5/8ths on 70 cm, I think) is set aside for such occasions, so that was the antenna sorted. A length of LMR400 Ultraflex for feed is likewise on hand for such times.

Antenna mounting - hmm, isn't there a burnt out tree stump at the top of the hill? Sure is, and it turns out that it is conveniently rotted down the middle allowing easy insertion of a metre or so of the aluminium mast.

I grabbed a folding chair and a notepad and headed up to the top of the hill.

The antenna went together quickly and I heard Chris 2DO and Andrew IDA pretty much straight away. Worked a couple of locals on 2 m but could not hear anything on 70 cm - just assumed it was antenna efficiency (or lack thereof).

Chris commented that I was very weak on 70 cm and the penny dropped that I still had the front antenna socket selected for 70 cm - I had forgotten that the FT-817 selects per band. Chris being

less than 300 m away was hearing me operating into the empty BNC socket on the front of the rig - an often-overlooked antenna option.

With 70 cm setup a little better, the rig immediately shutdown when I selected high (5 W) power. The battery had not charged as much as I thought, it seems. Went to ultra low power and managed to give out a few more numbers on 2 m and 70 cm before calling it a day.

Seems to be a good location - very quiet. Next time I will fashion a mount for the Arrow portable beam to get around the vertical polarisation losses and have a bit of directivity.

Oh, and I will make sure I have charged batteries...

Andrew VK1DA put in Saturday afternoon and Sunday morning on a mountain near Canberra in winter ... and survived to tell the tale:

I made about 97 contacts on 4 bands. DX conditions did not seem too good. Red Hill was an adequate site but nothing special. The weather was so mild I may as well have gone to Ginini, where the forecast was for very similar temperatures to Canberra - about 2 to 14 max.

I operated from the car and several times started the engine and ran the heater on max to thaw my feet out - forgot to take the Ugg boots and beanie. It was only mild though compared with what I expected. In the morning there was no frost so I could carry the cold mast and antennas without much pain.

The nice surprise was some local interest with a number of people operating from hills using their multiband radios, or from mobile setups. In particular, Ian VK1FOTO borrowed a 3-el beam from



The FAMPARC Team



FAMPARC on Mt Donna Buang

me and then drove up to Mt Coree on Sunday morning, working several grid squares for his first ever operation on 2 m SSB using a new FT-817.

I had four licensed amateurs visit the site during the contest. They were interested to look at the setup, talk about why I had done things this way or that, and were pleased to be able to look at a working portable station. They also provided some much-appreciated help in walking the antennas up and down, assembling the mast and moving the generator.

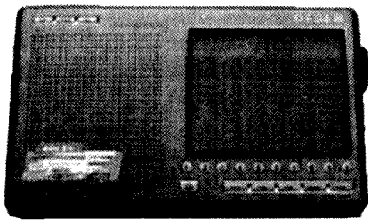
Stjepan VK3TSN reports on the FAMPARC VK3FRC effort on Mt Donna Buang:

The night before the contest we loaded everything into our vehicles - and even more, just in case, so that we did not have to improvise at the mountain.

The next morning, we departed around 7 am, stopping along the way to fill the generator and extra 10 L canister. By that time Andrew had already arrived in Warburton, so he took another 30 minutes nap until we arrived.

.....
continued next page

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VHF-UHF – an expanding world

continued from previous page

When approaching the mountain, we could not see the whole mountain as it was hidden in the clouds. I was hoping that we might be lucky later during the day - from my past experience it can be sunny at the summit (above the clouds) and rainy in the valley. But this time it did not happen - the clouds were much higher and there was rain and wind as well. In fact, we had rain for the whole day, from arrival to departure, with only a few short breaks. Plus we were inside the clouds all the time. The temperature hovered around 5 C and even my CFA waterproof boots somehow leaked.

At the summit we met two Park Rangers with whom I had an email correspondence. We exchanged a couple of courtesy words, thanking them for the use of the site.

Due to harsh weather conditions it took us double the time to set up everything compared to our trial run. We decided not to erect FM antennas due to cold fingers, running noses, wind and rain.

We finally completed setup of all equipment and antennas around noon and then started calling CQ Contest. The first hour was finished with 12 contacts on all three bands. Then BANG! Leigh VK2KRR was telling me that we have a very strong signal near Wagga Wagga and that we should work many stations in NSW, but unfortunately it did not happen.

Two hours later, it was very relieving when Andrew fired up his portable BBQ. Warm pumpkin soup and hot sausages gave us plenty of energy to continue.

Five hours later, the enthusiasm was waning and stations thinning. My radio started playing up with high SWR - I suspect the coax or antenna connector became wet due to constant rain. We then packed everything within an hour and departed the site.

Total number of contacts: 72. The longest distance: 301 km (VK2KRR)

Equipment we used:

6 m – IC-706MKIIG, J-Pole Vertical Ant

2 m – FT-100D, Amp Dick Smith K-6313, 12 el Yagi, Rotator

70 cm – IC-706MKIIG, 23 el Yagi, Rotator

It will be interesting to see how we stack up on the score list.

First 10 GHz Contact

Dave VK2TDN is happy to report his first 10 GHz QSO:

Sunday 22nd June saw my first QSO on 10 GHz SSB. It has been a long time in the construction and planning.

The contact was over a 95 km line-of-sight path from the inner west suburbs of Sydney to Mt Gibraltar, southwest of Sydney.

Ted VK1BL at Mt Gibraltar was using a DEMI transverter with a 3W amp into a 650 mm offset dish. I was also using a DEMI transverter with no amp and initially, an offset dish, then moved to a pennyfed prime focus 1 m dish.

Ted's signal was extremely strong - whilst changing dishes, I could still receive Ted's signal easily with no antenna connected to the coax! A tribute to both the power Ted was transmitting and the hot receiver in the DEMI transverter.

With the prime focus dish, Ted gave me a 5x9+ signal and I gave him a 5x9+++ - off the end of the scale. A 20 dB attenuator inline brought Ted's signal down to 5x9+20 or so and my signal down to a 5x4 - and my Tx level down to 0.2 mW at the antenna.

Looking forward to increasing the path distance and improving my offset dish feed, which was far from optimum as demonstrated when we moved to the second dish.

At Ted's end of the link helping out was Owen VK1OD and at my end Jack VK2TRF, my regular "partner in crime" when it comes to microwave hilltopping activities.

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

ar

**A new
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has been started and can be
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WANTED NSW

COLLINS 312B-4 station control unit, preferably in good operating and physical condition. If you have one not being used and are prepared to part with it, please contact me. Steve VK2XWL; email steve_b@internode.on.net Phone QTH 02 4952 5443 or mobile on 0412194513.

WANTED VIC

Still seeking a CODAN 6801 Mark 2, complete and fully working, not gutted and missing parts. In particular I need a couple of RF coils with purple dot (10-16 MHz) and would like an original of the service manual. Damien VK3RX phone 03 5427 3121 or email vk3rx@arrl.net

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FOR SALE SA

KENWOOD TS-50S s.n. 41001359 with mic., power cord, mobile mount bracket and handbook with 20 A. PSU \$700 ono. Deduct \$100 without PSU. Both good cond. Don Peterkin. PO box 12, Alford SA 5555. 0418919299 <vk6djp@inet.net.au>

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- VK2 VK2WI: Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.6000, 147.000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning..
Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130, 147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. Also in 'Realaudio' format from the VK6WIA website.
- VK7 VK7WI: 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.

Twin Cities celebrate...



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WIA Secretary Geoff Atkinson VK3AFA,
representing the WIA President and Board
presents the 2007 Club Grants cheque
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*More details in
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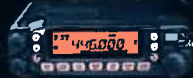
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Our Cover this month

The cover photo this month shows the 10 GHz transverter system mounted at the antenna at the home of Alan Devlin VK3XPD. Located in Burwood in Melbourne's eastern suburbs, Alan is ready to explore just what may be possible using the 10 GHz band. Also look at the inside back cover for more views of Alan's gear: you can see part of the three metre diameter dish that Alan uses for EME operation, and part of the internal workings of the transverter mounted in the radome behind the small dish that features on the cover. Photographs by Alan Devlin VK3XPD.

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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Photostat copies

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Disclaimer

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Editorial Comment

Spring is almost here

As you read this, spring has officially arrived. It is hard to believe here in Churchill, after more than a week of very cold and wet weather blowing up from the Southern Ocean. I am really not complaining: we can certainly do with lots more rain, provided it arrives in only moderate quantities on each occasion.

With September comes the equinox and the chance of extended propagation on the VHF bands via various ionospheric modes. "Magic Band" aficionados will be listening as much as possible, intent on catching any opportunity that may arise.

Contests and activations

The Remembrance Day Contest is happening as I write, as is the International Lighthouse/Lightship Weekend. Coming up is the ALARA Contest. Yes it is fun to just participate in a Contest (or an event such as the ILLW). But do send in your log, especially for the RD Contest – every point counts for your home state.

The Shack in Winter

Many have been tackling various projects on the cold winter days. The weather has not been good here in Victoria for antenna projects or outdoor tasks. Many will have taken the opportunity to tackle indoor construction projects, as evidenced by at least a couple of VHF amateurs in this issue.

Well known microwave operator Alan Devlin VK3XPD shows us what can be done in repurposing ex-commercial equipment – just look at the cover and inside back cover! Having previously operated 10 and 5.7 GHz EME (Earth-Moon-Earth) from his house in Burwood, Alan has recently commissioned a 10 GHz transverter system for terrestrial operations. With the local oscillator chain referenced to a GPS locked 10 MHz oscillator, Alan will have overcome one of the key potential stumbling blocks for microwave operations – am I on frequency? It is common for errors of several to tens of kilohertz to be observed in transverter systems. And that is just with your equipment. Add the same uncertainty to the contact station, together with antenna pointing

requirements, and sometimes you may not make contact, even with care by both operators. Having solved this, at least at his location, Alan has mounted the transverter system almost at the feedpoint of the dish antenna (just behind the dish). But he has also mounted the dish on a fully steerable azimuth-elevation mount. How long will it be until we see some long distance rainscatter or troposcatter contacts?

The VHF/UHF column shows some brief reports of experiments between Rex VK7MO in Hobart and Rhett VK3VHF at Bairnsdale. Both now run their IC-910 transceivers with the master oscillators locked to a GPS reference. The increased accuracy of the operating frequencies means that these operators can begin to explore new limits of station performance and propagation, as evidenced by the recording displayed in this month's column. I am sure that many more weak-signal VHF and UHF operators will be moving toward similar schemes, especially following the discussion of this topic at GippsTech back in July.

As more operators explore the possibilities of digital modulation and demodulation schemes, one can only wonder how long it will be before the major equipment manufacturers include a 10 MHz reference input/output port on all their transceivers? Icom has provided such a port on the IC-7700, reviewed last month. How about the IC-910H, the IC-7000, and equivalent radios from the other manufacturers? Not every amateur will demand such performance for everyday operation, but many are already exploring how to modify their equipment so that it meets their needs.

More spring

September: football finals, soccer season starting, the end of the VK snow season. Your last opportunity to work the special Olympic stations in China. Time to prepare for coming contests. Then it is not too far until Christmas – where did those last few months go?

Get ready for the improving weather and hopefully improving propagation on HF – surely it must come soon?

73,

Peter VK3KAI ar

WIA Membership

In the period following the restructure of the WIA on 16 May 2004 it was hard to identify who were members, because of the transitional arrangements.

Before that, "members" were members of a "Division" of the WIA. There were seven Divisions, one from each of the six states and the seventh from the ACT. Each Division was a company of one kind or another. The South Australian Division was really the Wireless Institute of Australia SA & NT Division Inc.

Each of the Divisions was a member of The Wireless Institute of Australia, which was then the federal company. So, then the company had only seven members.

Individuals were members of a Division, each governed by its own "Council".

After the restructure, which was really the adoption of a new constitution by the representatives of the Divisions, replacing the then existing Constitution (but then called the Memorandum of Association and Articles of Association) individuals could become members of the WIA.

The Divisions from South Australia and the Northern Territory, Queensland, Tasmania and Western Australia were wound up, transferring all or some of their assets to the WIA and entering into a series of agreements with the WIA.

Three of the previous Divisions continued, no longer as a part of the WIA but as affiliated radio clubs.

The ACT Division became the Canberra Region Amateur Radio Club. The New South Wales and the Victorian Divisions also continued as radio clubs, Amateur Radio New South Wales and Amateur Radio Victoria.

The WIA is very reliant on the clubs, as the many clubs across Australia provide the local social meeting point and, importantly, the attractive focus for potential amateurs.

It is the clubs that can promote

amateur radio in a local area, can provide the training and it is from the clubs that the Assessors and Learning Facilitators come, the people who conduct the assessments of potential amateurs within the examination framework of the WIA.

That is why the WIA has encouraged club membership. We believe that most amateurs should be a member of the WIA and a member of a club. Everyone can decide for themselves which club suits them, which club has the people, the social activities, the interesting meetings and other activities and is conveniently located.

The WIA supports the clubs by making available facilities for the clubs on the WIA website, arranging public liability insurance at attractive premiums and making available grants under the club grant scheme.

In the period following the restructure, members of a Division were "provisional" members of the WIA, and when their Divisional membership ran out, they were able to become full members of the WIA.

That is why I said that it was hard to identify who were members of the WIA.

But after that it became a lot easier, and the WIA has enjoyed a very steady increase in membership. Steady, but not as fast as some would have liked.

Thanks to the introduction of the Foundation licence in October 2005, there has also been a steady increase in the number of amateurs in this country.

Now, for the first time, there has been a very small drop in the number of members. In many ways, and this is one of them, things are "quiet".

I believe this is very much a product of the current economic climate. Many people are being at least cautious, with fuel and food now much more expensive than only a year ago.

But the role of the WIA goes on. The

preparatory activities for the ITU's next World Radiocommunication Conference have started, work continues on the issues being looked at by the ACMA, including the 400 MHz band, amateur examinations continue, and the WIA continues to manage the examination system.

The broadcasts go to air every week, the magazine continues to be published, and work continues on the next edition of the Call Book.

I know that a few people believe (or, at least, say) that the WIA is a very wealthy organisation, and that it makes unreasonable profit from its activities such as examination management. If only that was the truth. In fact, the reverse is the truth. If anything, membership subscriptions are subsidising the cost of exam packs.

On the restructure, back four years ago, the new WIA membership subscription was set low, as a part of the transition process. The subscriptions have stayed low. One reason why subscriptions have been able to remain low is that interest from the WIA's reserves has, in effect, subsidised membership subscriptions.

But that is a very short run solution.

The WIA faces a dilemma. I have no doubt our subscriptions are less than they should be, particularly if we are to maintain our services.

If we had more members, then we would not need to increase subscriptions. But if we increase subscriptions, would our membership drop further?

I started by talking about the clubs. We look to the clubs to encourage WIA membership. We also look to you, the members to encourage others to become WIA members.

And, please, do not forget to renew your membership.

It is never too late to do that.

Arrangements for callsigns after the ballot

On 7 February 2008, ACMA announced that it would seek to implement contractual arrangements with the WIA for the provision of certain services, including the management of amateur examinations, the issue of certificates of proficiency and certain administrative functions, including the ongoing management of callsigns.

ACMA and the WIA are in the process of formalising the contractual arrangements. Subject to the outcome of these negotiations, it is expected that the WIA will be managing callsigns following the Ballot process – most likely to commence at or shortly after 24 October 2008.

At this stage, it is expected that callsigns (including two letter callsigns)

will be treated by the WIA in the same way they were treated prior to October 2005 (that is, they will be available on a “first come, first served” basis).

Neither the WIA nor ACMA is in a position to accept any applications for two letter callsigns at this time.

Further announcements will be made before 24 October.

Ballot for two letter callsigns

On 1 August 2008 the WIA placed details of the ballot for two letter callsigns, a list of the available callsigns and the necessary downloadable application form on its website. The WIA is conducting the ballot on behalf of ACMA.

In the first few days, the WIA published answers to various questions on its website.

Here is a summary of those questions and answers.

The fee of \$59.74 is a fee to enter the ballot and represents the costs that the WIA is likely to incur for its conduct and is therefore non refundable in the event of an applicant not being successful.

The other question was could someone who was prepared to meet the fee in each case put in multiple entries for the ballot. The answer is no.

Can clubs participate? The answer is “no”.

Can I have more than one three letter callsign and participate? The answer to that is “yes”.

If someone succeeds in the ballot, can they keep their current callsign and have the two letter callsign as an additional callsign? The answer is “no”.

If someone who has more than one three letter callsign is successful in the ballot, we expect that person to vary the licence for their primary callsign, that is, the callsign for the state or territory where they are resident and which they ordinarily use.

What about two letter callsigns that become available in the time between the list of available callsigns on the WIA website was prepared and the close of the applications to participate in the ballot on 29 August 2008? Any two letter callsigns that becomes available after the list of available callsigns was compiled

will remain quarantined until the whole ballot process has been completed on 24 October 2008.

Before the first two weeks of August had passed, more than 600 forms had been down loaded and more than 150 applications had been received.

By the time this issue of AR is distributed, the ballot will have closed.

WIA Club Grant Scheme

On 28 July 2008 applications for grants under the WIA's Club Grant Scheme closed.

This year, the Board increased the total Grants to \$6,000 and the Scheme was broken into two sections, one part providing for up to three grants of up to a total of \$3,000 for useful but not innovative projects or activities, including projects involving repeaters or associated links. The other part will be for projects or activities that are innovative, with provision for up to three grants up to a total of \$3,000.

15 applications for Grants were received from clubs across Australia.

WIA at Northern Corridor Hamfest

The Northern Corridor Radio Group held their annual Hamfest on Sunday 3 August.

The WIA was happy to be involved with the NCARG, and attended the Hamfest with a table manned by WIA Director Eddie Saunders VK6ZSE, with assistance provided by Keith Bainbridge VK6XH and Neil Husk VK6BDO.

A number of people took WIA membership application forms, promising to return them to the WIA office.

WIA at Gippsland Gate Hamfest

On Saturday 19 July 2008 the Gippsland Gate Amateur Radio Club held its annual Hamfest at the Cranbourne Public Hall, Cranbourne.

The WIA was represented by directors Peter Young VK3MV and Robert Broomhead VK3KRB and Diane Ashton VK3FDIZ from the WIA office.

Submission of Articles

Articles submitted for publication in Amateur Radio are accepted on the understanding that:

- the article is not currently on offer to any other publication;
- the article is an original work written and created by the Author;
- the article is subject to editing for length, style, grammar, spelling and taste,
- and, if published, the Author grants to The Wireless Institute of Australia (WIA) for the term of the copyright therein an irrevocable, royalty-free, non-exclusive licence throughout the world to:
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 - to permit any other IARU national radio society to publish the article in its national magazine.
 - provided always the article is fully and clearly attributed to the author and, where appropriate, to the WIA and *Amateur Radio*.

Detailed Instructions to Authors are available on request, or from the AR section of the WIA website.

Any request to reproduce any article or item in any form must be submitted to the Editor in the first instance.

A 50 W CW transmitter for 137 kHz

Drew Diamond VK3XU

At the time of writing, there is a real possibility of our gaining access in the near future to an LF band near 2200 metres, 135.7 to 137.8 kHz. Offered here are plans for a small CW transmitter for that band, based largely on previous models for 1.8 MHz and 507 kHz.

Output power is adjustable between 0 and nominally 50 W into 50 ohms. Harmonics are measured at greater than 50 dB below fundamental. Frequency range is from 135 to about 141 kHz. The robust class-E power amplifier can withstand extreme load mis-match (including accidental short or open-circuit load) for reasonable periods without damage.

Circuit

So that the VFO may run continuously, and thus dodge any warm-up drift between “overs”, the oscillator operates at 32 times the output frequency, 4.32 to about 4.5 MHz. Therefore, the VFO signal cannot be heard on the operating frequency during receive periods. This frequency was chosen simply because it employs reasonably dimensioned oscillator tank components for a physically small, yet very stable, VFO assembly.

Output from the 2N5484 VFO buffer (Fig 1) is applied to the clock input pin 10 of a 74HC4040 modulo-2 divider chip, where the divide by 32 output appears at pin 3. The diode clamp at pin 10 moves the 6 V p-p sine signal (from the buffer) fully into the positive region, thus driving the '4040 without need of a Schmitt trigger. The divider must wait for a low at the (R)eset input, pin 11, in order to output a 137 kHz square-wave at pin 3.

An NE555 timer chip performs the transmit 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 11 of the '4040.

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 power

output control) and the 74HC04 driver chip, 5 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 clean, click-free keying.

Directly keying (sending) stops, and between words and some characters, the '555 timer will “time-out”, and allow reception (on a separate antenna - see “Operation” below).

The class-E PA and low-pass filter (Reference 6) are evolved from those used in previous models for 1.8 MHz and 507 kHz. Efficiency for the prototype is about 75%, where 65 V dc @ 1 A produces 50 W RF output (the lesser efficiency than the 1.8 MHz model is attributed to the higher copper losses in the rather large ‘fly-back’ coil (yes, I did try Litz wire, among other things - same result). The curious are pointed to References 1 to 4 for a description of class-E operation.

Do also explore Lloyd Butler’s (VK5BR) excellent Web site (Reference

5) for further contemporary practical information on building LF transmitters, receivers, and lots more.

Construction

The homemade aluminium chassis/cabinet pictured in Photo 1 measures 70 x 265 x 230 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 are each accommodated upon “paddyboard” (Reference 7) circuit boards. Suggested layouts are shown in Fig 2. However, any preferred construction style will serve, provided that signal carrying component leads (eg coupling and by-pass capacitors, etc) are reasonably short, and the general plan pictured in Photo 2 is followed.

A rectangular hole of 12 x 18 mm should be provided in the RF board so that the BUZ90A may be attached 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.

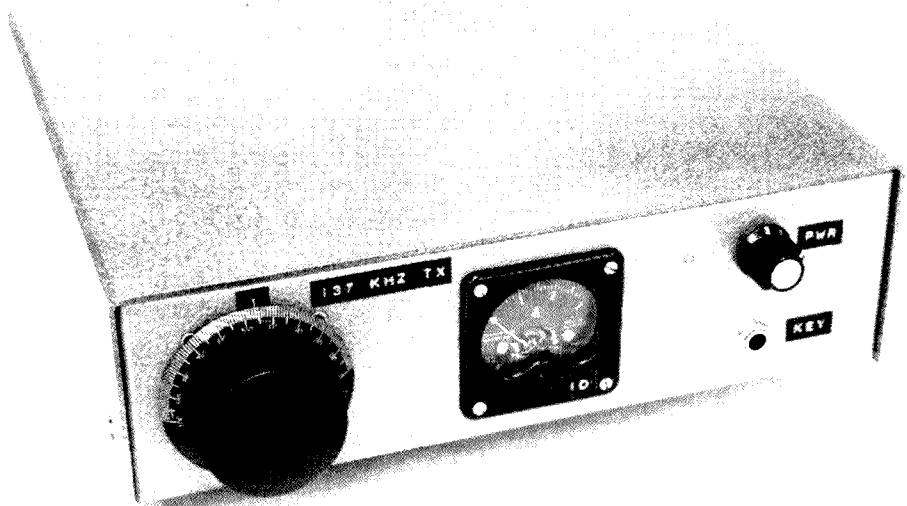


Photo 1: The 137 kHz Class-E 50 W CW transmitter.

The 74HC4040 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 "substrate". Do not poke the socket pins right through (so as not to short to board foil). These are super-glued (sparingly - absolutely no glue on items that must take solder) upon the RF circuit board as shown.

Or consider using hot-melt glue. Place a small sliver (in solid form) upon the underside (fibre) of your pad or substrate, and then melt it evenly with the tip of a soldering iron. When the glue is liquid, quickly stick the pad on to the main board in the exact spot required.

The NE 555 timer chip may be installed in an 8-pin socket that is in turn soldered upon a suitably sized substrate,

copper side up, as shown in Fig 2. The angled cuts (modellers' mitre box) are made at 65 degrees to the centre line.

The drain choke coil is 100 turns of 0.8 mm (#20 B&S) ecw wound as two layers upon a 66 mm (approximately, which is 1/3rd of a) length of Neosid (Altronics) 9.5 mm diameter 200 mm long ferrite rod/loop-stick material. The start and finish of the winding may be secured with a plastic cable-tie fitted over the coil.

As a simple means of adjusting the fly-back circuit, the series coil is comprised of two mutually-coupled 60 μ H solenoids wound upon loop-stick material. By altering the spacing between these, their combined inductance is variable from about 130 μ H to 220 μ H, thus allowing the fly-back circuit to be "fine-tuned" for best efficiency.

The coils each comprise 31 turns of 1

mm (#18 B&S) ecw wound upon 66 mm lengths (the remaining 1/3rds) of 9.5 mm loop-stick rod. Note that they must wind in the same direction. Again, their ends may be secured with cable-ties.

The VFO and buffer should be accommodated in an RF tight box measuring 50 x 50 x 80 mm HWD made from soldered-together single-sided circuit board, as shown 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 soldered to the box walls in four places to ensure reliable electrical contact with the lid. Drill a suitably sized hole in the lid to admit a plastic trimmer adjusting tool.

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

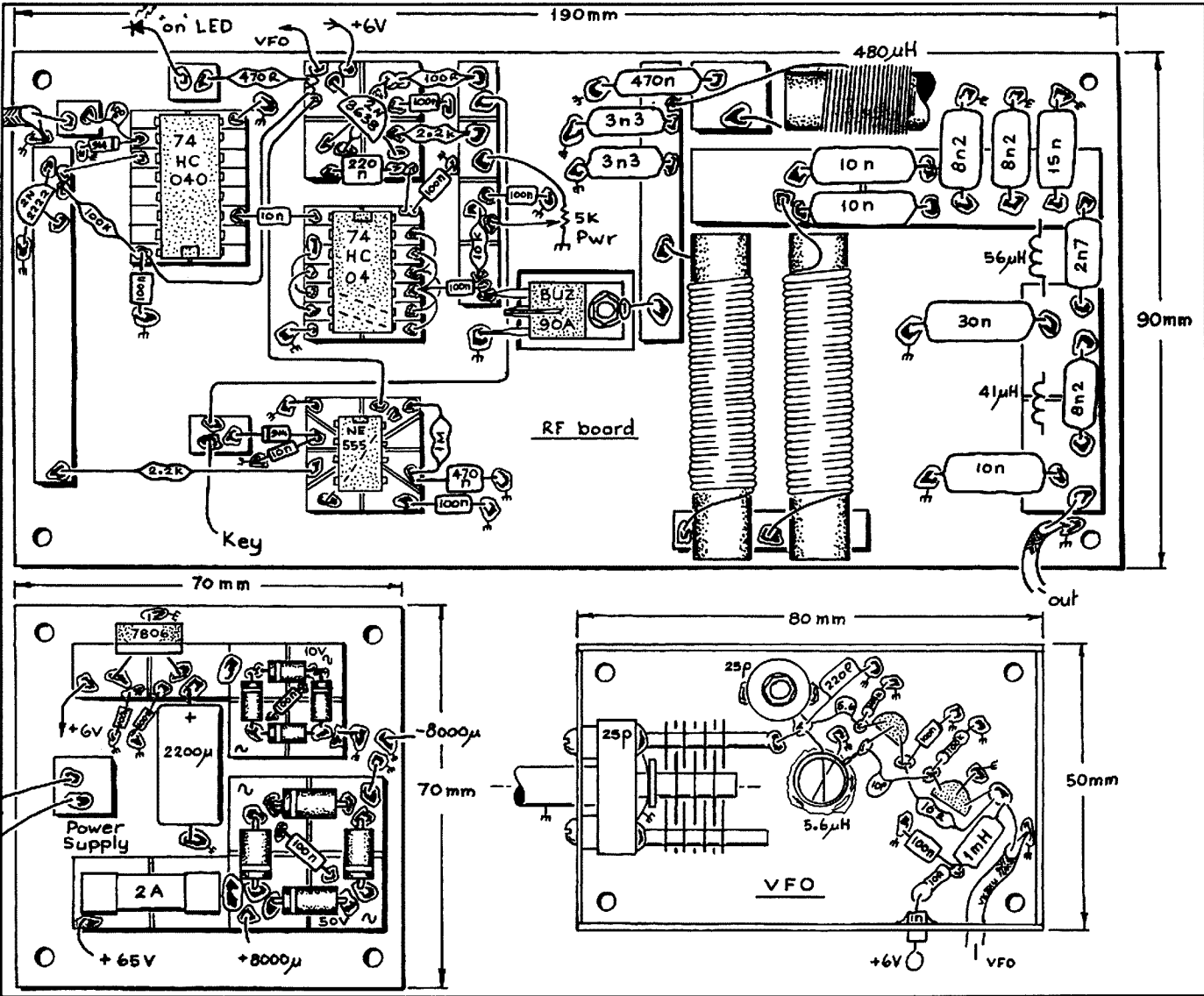


Figure 2: Layout of the components on the "paddyboards" and in the VFO enclosure.

lengths are short and components are mounted rigidly, your oscillator should be remarkably stable.

The VFO coil is 50 turns of 0.5 mm (#24 B&S) ecw wound firmly 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 in two places across the former's diameter, as shown in Fig 1. The source tap (a twisted "pig-tail") is at 8 turns from the "earthy" end. The coil may be fixed to the VFO board with a blob of hot-melt glue.

All wiring on the 240 V ac mains side of the transformer MUST be suitably covered to prevent accidental contact. Include a 4 A "slow-blow" fuse in the line side.

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, e.g. ICs, electrolytics, diodes, regulators, transistors, FETs, etc.

It would be shrewd 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) +65 (70 V dc no-load) and +6 V dc where indicated.

If an oscilloscope is available, close the key and observe (with a x10 probe) the signal at the gate of the BUZ90A. You should see a ~137 kHz square-wave of about 6 V p-p. Some salient signal waveforms 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 135 kHz is generated with the variable cap at full mesh, and about 141 kHz at minimum mesh.

Replace the 2 A fuse. Connect a suitably rated 50 ohm dummy load/power meter to the output. (Confirm that your power meter will work down to 137 kHz. The current meter part of the recently outlined twin-meter SWR/current meter reads about 20 % low so, at 50 W, you should read about 0.8 A. The SWR meter, being a relative indicator, reads normally). 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.

Hook the 'scope x10 probe to the drain of the BUZ90A. Turn the Pwr potentiometer fully clockwise. You should see a pulse waveform with a p-p

amplitude of about 250 V. Adjust the fly-back coil inductance by moving the coils together (better efficiency) or further apart (more power) until the smaller "pip" on the right side of the main pulse is reduced to a flat-line. The voltages are not dangerous but, as you can receive an RF "bite" from the fly-back components, take care. Drain current should be about 1 A at 50 W output.

Now hook your x10 oscilloscope probe to the output connector. With the 'scope time-base at (say) 1 μ s/division, observe a clean sine-wave output signal.

Verify CW keying. Set the 'scope for ~10 ms/div and observe a nicely ramped keyed wave-shape, free of blips or spikes (you may notice a smidgen of 100 Hz ripple which is quite acceptable).

In the opinion of this writer, it is not recommended that the main transmitting antenna be used on receive. Rather, better results will probably be obtained where a receiving loop is employed (Reference 8). It is hoped to address this application in a future article.

You will find much of interest concerning LF/MF antennas and propagation on VK3ACA's Web site (Reference 9).

Parts

All the ordinary components are available from our usual electronics suppliers, including Altronics, Electronic World and Jaycar. The mains transformer should have a secondary of 50 Vac (two series 25 Vac windings) @ 3.2 A, such as a Jaycar MT 2114 or Altronics M 5325. The 74HC4040 is known to be available from Electronic World (03 9726 3860).

Capacitors marked "10 n" and "100 n" are 50 V monolithic types, except for that across the 50 V rectifier bridge, which should be a 100 n/200 V polypropylene. For good frequency stability, the 220 pF VFO capacitor marked "s.m." (silver mica) should be a >100V silver mica type. For best efficiency, all capacitors in the fly-back and low pass filter should be "s.m." (if you have them) or low-loss "Orange Drop" capacitors. These may be ordered from Antique Electronic Supply (www.tubesandmore.com).

A single length of Neosid 37-256-31 ferrite rod (Altronics L-2540), when divided into three equal pieces, supplies enough material for the job. To cut the rod to length, grind a shallow groove around the circumference, then grip the rod with thumbs each side of the groove,

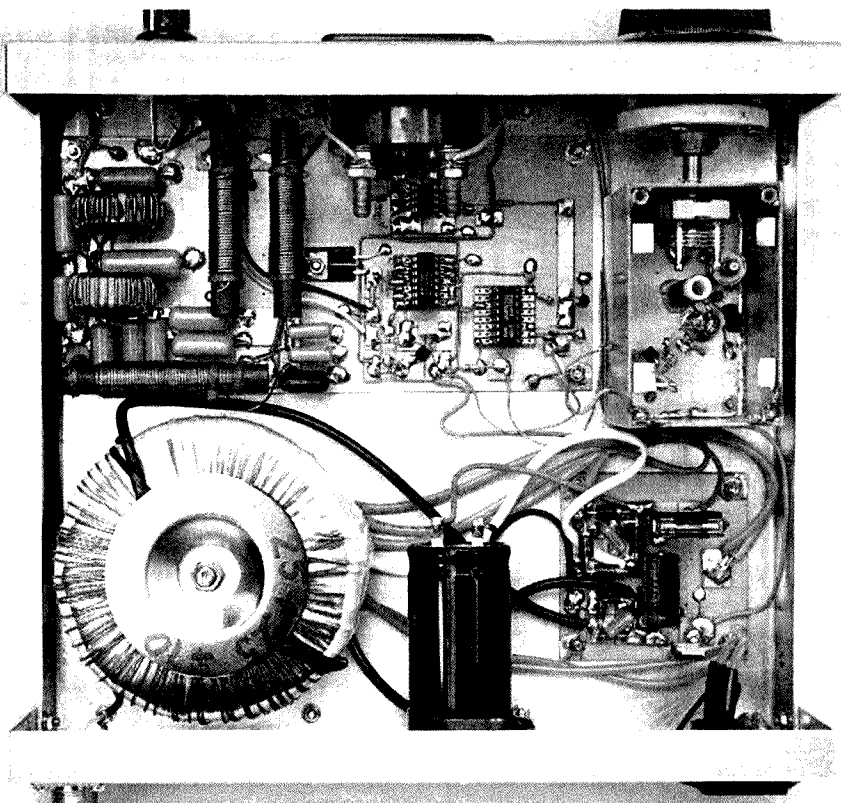


Photo 2: View inside the transmitter with the cover and VFO lid removed.

and snap it, as you would break a stick. Siemens BUZ90A MOSFETs (P/N 12329) may be purchased from Rockby Electronics (<http://www.rockby.com.au>). Rockby also stock some values of silver mica capacitors.

Amidon T106-2 toroids may be ordered from any of the suppliers regularly listed in the Hamads of *Amateur Radio*.

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" (I am not in the parts business, but do please contact me by 'phone [03 9722 1620] or letter if you cannot locate a suitable variable capacitor, or are held up on one or two other items).

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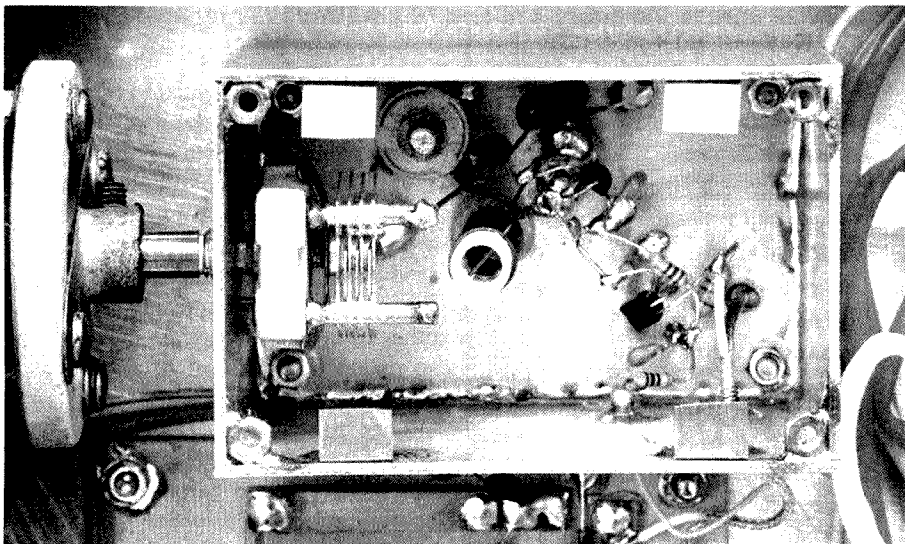


Photo 3: The VFO assembly.

Photos: Karlen Dockrey

TET-ENTRON

TE-33M THREE ELEMENT

TRI-BAND MINI BEAM

If you haven't the room for a full size three element beam, but you want more gain than the two element TE-23M, this is for you.

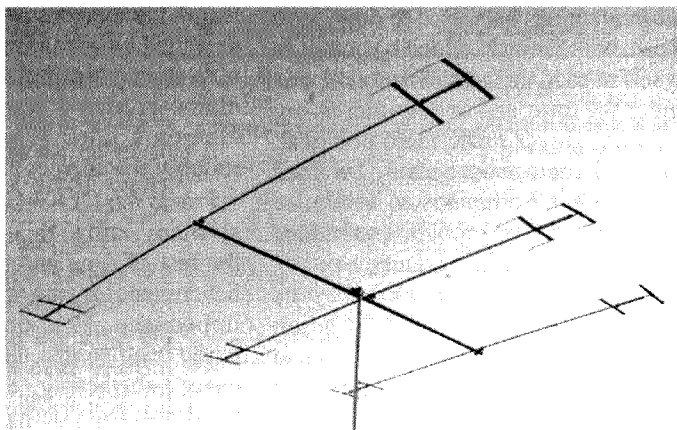
SPECIFICATIONS

FREQUENCY	14, 21, 28 MHz BAND
MAX.ELEMENT LENGTH	5520 mm
BOOM LENGTH	4.0 m
GAIN	6 / 6 / 7 dBi
FRONT TO BACK RATIO	20/ 15/ 14 dB
FEED IMPEDANCE	50 ohm
TURNING RADIUS	3.74 m
WEIGHT	12 kg
POWER RATING	2 kW PEP

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Simple wideband Yagis for 2 m and 70 cm

Paul McMahon VK3DIP

I recently had the need to build a couple of new antennas and they worked out so well I thought I should share the details. The two Yagis described here are simple to make, use readily available materials, have no tuning or matching requirements, and work well across the entire 2 m and 70 cm bands respectively.

The description here covers some background and theoretical analysis of the two Yagis as well as the construction details.

Designing Wideband Yagis with Yagicad

Some 16 years ago I wrote and started distributing, via shareware, a computer programme to analyse and design Yagi antennas called Yagicad (Reference 1). Over the years this programme has seen many changes from the early DOS versions to the most recent Windows version 5.2.

I have long since given up trying to make money from this program and for some years it has been free to download and use, with features added basically as I myself needed them for whatever I was doing at the time, and as ever-increasing computing power made them practical. Version 5.2 came about because I wanted some wideband antennas to minimise tuning and matching problems so I added the ability to do multi-frequency, multi-parameter optimisation. For obvious reasons, this discussion will focus on doing this with Yagicad, but of course other packages should give equivalent results.

The approach I took when designing these two antennas was to first work out roughly what I wanted and in my case this worked out to be:

Simple matching across the band - while programs like Yagicad help to calculate gamma and other matches these are often problematic in terms of physical and multi-frequency aspects. Ideally this would be a straight connection directly to the driven element.

- Modest but uniform gain across the band.
- Uniform pattern across the band.
- Simple construction with bits

that could be bought as cheaply as possible mostly at the local hardware store.

- Could fit both 70 cm and 2 m on the one small rotator.
- As immune as possible to environment and bird damage.

Putting a number of these things together I came up with an approximate boom length of 1.5 metres as being something that would fit comfortably on the rotator, give reasonable gain, and not offer seating to too many birds. Similarly sticking with a non conductive boom simplifies the whole process and maximises the accuracy of the models used.

Once I had the approximate boom length I loaded the 20 element DL6WU-designed long Yagi into Yagicad, scaled it to the centre frequency and element diameter size I wanted, and deleted elements until I had something of roughly the correct boom length.

I used the DL6WU as a base because as many know this design has stood the test of time and is pretty much the benchmark for gain and reasonable input impedance. This design also readily lends itself to just adding, or as in this case, subtracting, elements with the resultant Yagi being still pretty close to optimum. This worked out to be five elements at 2 meters and eight at 70 centimetres.

Both of these cut down designs showed reasonable performance in terms of gain and input impedance, at least for the band mid points, however as I wanted something that was pretty much constant across the whole of the bands for both gain and input impedance this is where the genetic optimisation comes in.

Mentioning genetics and antennas in the one sentence may seem a bit strange to many people, but using genetic algorithms to optimise all sorts of things

from antennas to engines is now pretty commonplace. A full description on how genetic algorithms work is beyond the scope of this article, suffice to say the method as used in Yagicad generates a large population of random Yagis, evaluates this population for relative fitness, breeds the most fit with each other to create the next generation and so on until some sort of end point is reached.

This method works really well with antennas like Yagis where there are a very large range of possible configurations, and where it is desired to optimise multiple parameters at the same time. The only downside is, as can be imagined, it needs a PC with a fair amount of grunt to do it in realistic times.

The resultant antennas obtained from this process after expending quite a bit of PC time in Yagicad are detailed in the following sections. In general however the designs have approximately the same gain figure as the starting point cut down DL6WU design, but with that gain effectively constant across the entire band, similarly the input impedance is shown as very close to 50 Ohms, again flat across the band. The patterns are fairly uniform also with most side-lobes and front-to-back over 20 dB down.

These designs fall within the class of the so called Optimised Wideband Antenna or OWA, physically characterised by, amongst other things, a close spaced first director. OWA Yagis have been around for quite a while in the HF bands, and people like L. B. Cebik W4RNL (Reference 2) have been doing considerable work to show the applications of this class of Yagis in the VHF and UHF bands. The designs here have ended up being similar in many ways to those of W4RNL; however in this case it is literally "parallel evolution", or if you like simply a validation that these designs

meet the requirements of bandwidth and impedance.

The 2 m, 5 element design

ELEMENT NO.	LENGTH	SPACING	DIAM.
1	1.030	0.000	0.012
2	0.984	0.421	0.012
3	0.919	0.616	0.012
4	0.914	1.007	0.012
5	0.852	1.489	0.012

Table 1: 2m5el OWA.

Note: all dimensions are in metres, with spaces measured from the reflector.

The resultant 2 m, five element design worked out to have just under the 1.5 metre boom length, and at the frequency of 145 MHz had a calculated gain of 8.1 dBd (ie. dB over a dipole, add 2.15 for dBi). The input impedance at this point came out at $47.93 + 1.46j$ Ohms. All of these calculations were made using Yagiacad with the NEC2 engine set at 33 segments per element.

Performance across the band is what I was after, and this can be most readily seen in the 144 to 148 MHz swept and overall plots given in Figures 1 and 2 respectively. In Figure 1 the gain is pretty much a straight line at just over 8 dBd, with front-to-back always over 20 dB, and impedance also pretty constant across the band. The impact of that impedance is seen in Figure 2 with the overall VSWR (for a direct 50 Ohm connection) staying basically flat at under 1.1 to 1 across the band.

The patterns at the band extremes (i.e. 144 and 148 MHz) as shown in Figures 3 and 4 are also pretty similar and free from side-lobes.

This design is included in the Yagiacad 5.2 distribution as 5el2MOWA.yag

The 70 cm, 8 element design.

ELEMENT NO.	LENGTH	SPACING	DIAM.
1	0.342	0.0	0.01
2	0.313	0.15	0.013
3	0.288	0.246	0.01
4	0.285	0.415	0.01
5	0.274	0.628	0.01
6	0.267	0.882	0.01
7	0.265	1.142	0.01
8	0.255	1.35	0.01

Table 2: 70 cm 8 el OWA.

Note: all dimensions in metres, with spaces measured from the reflector

The resultant 70 cm, eight element design also worked out to have just under the 1.5 metre boom length, and at the frequency of 435 MHz had a calculated gain of 11.1 dBd (ie. dB over a dipole, add 2.15 for dBi). The input impedance

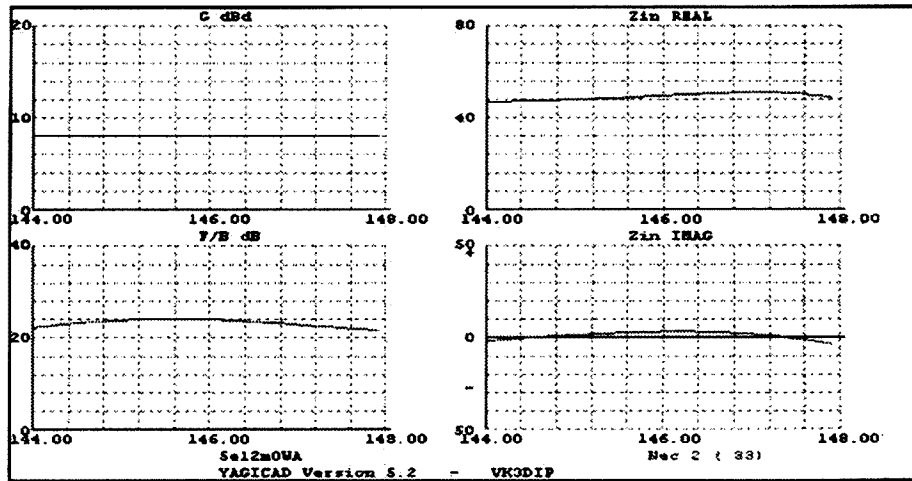


Figure 1: Swept result for 2 m 5 el OWA

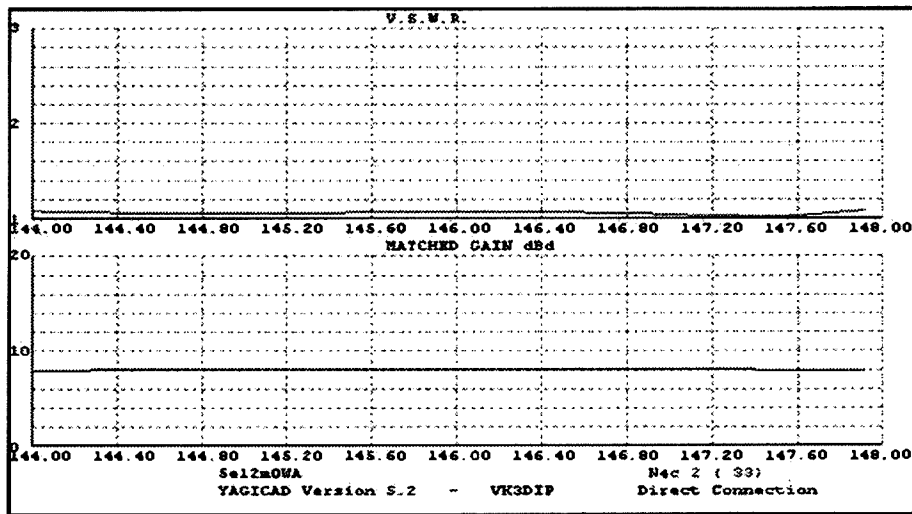


Figure 2: Overall results for 2 m 5 el OWA

at this point came out at $49.33 + 1.26j$ Ohms. Again all of these calculations were made using Yagiacad with the NEC2 engine set at 33 segments per element.

The performance across the band is given in the plots in Figures 5 and 6. In Figure 5 the gain is pretty flat at over 11 dBd, with front-to-back again over 20 dB, and impedance also pretty constant across the band. Figure 6 shows the overall VSWR (for a direct 50 Ohm connection) staying basically flat at under 1.1 to 1 across the band.

Again, the patterns at the band extremes as shown in figures 7 and 8 show relatively small variation with a few more lobes than the 2 m version but none that should cause problems as they are all at low levels.

This design is included in the Yagiacad 5.2 distribution as 8el70cmOWA.yag

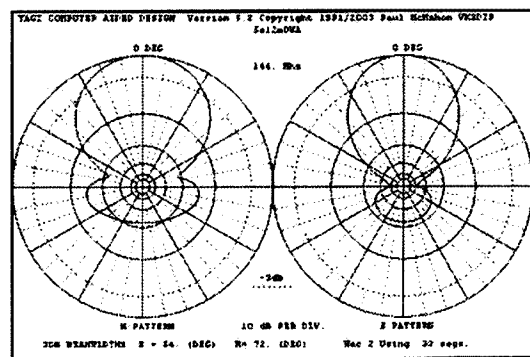


Figure 3: Pattern for 2 m 5 el OWA at 144 MHz.

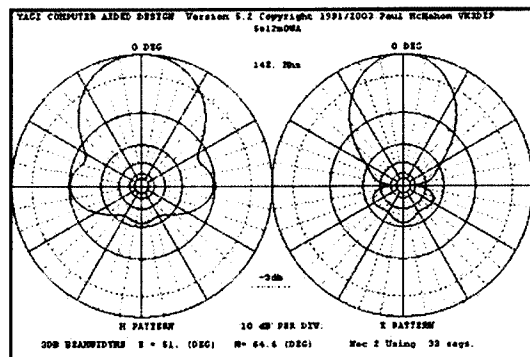


Figure 4: Pattern for 2 m 5 el OWA at 148 MHz.

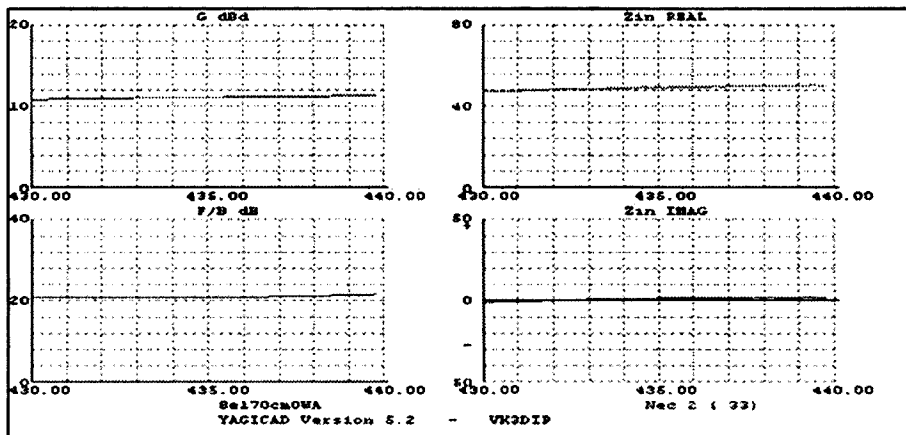


Figure 5: Swept result for 70 cm 8 el OWA

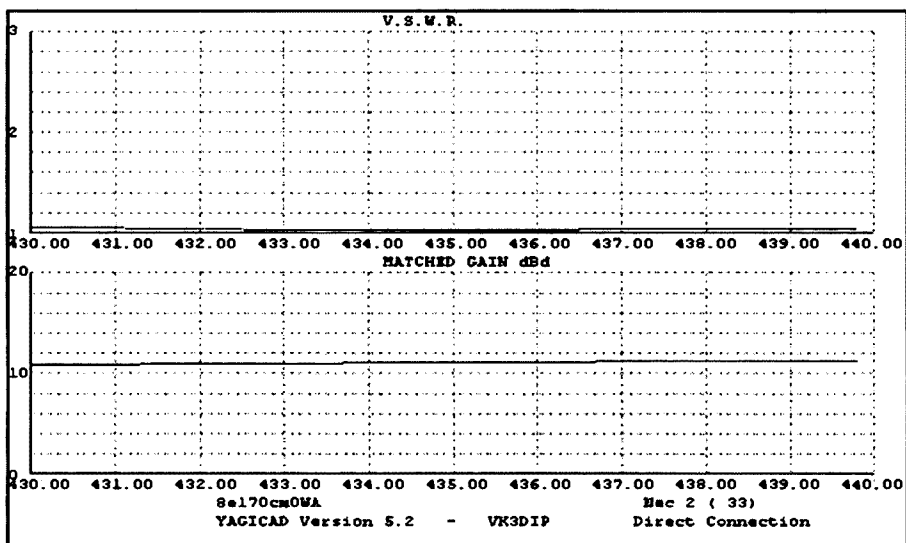


Figure 6: Overall result for 70 cm 8 el OWA

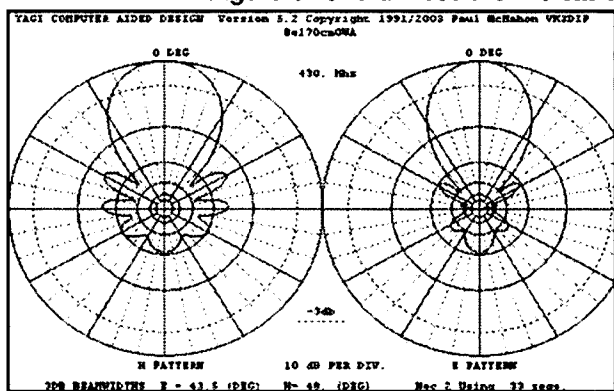


Figure 7: Pattern for 70 cm 8 el OWA at 430 MHz.

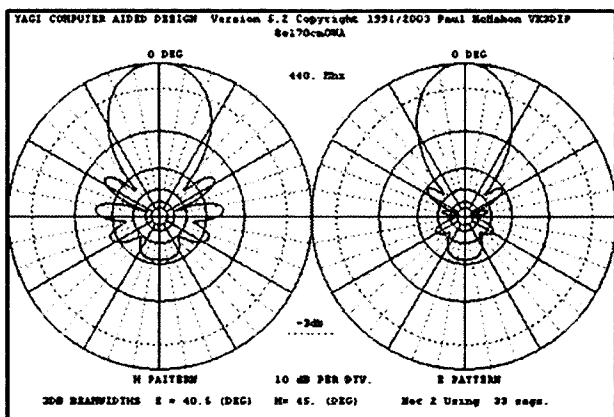


Figure 8: Pattern for 70 cm 8 el OWA at 440 MHz.

Construction.

Both antennas were constructed using a boom made from 32 mm outer diameter heavy duty "Orange" electrical conduit. I bought a single 4 m length from the local hardware and cut it to suit. Similarly the elements for the 70 cm Yagi came from a single 2 m length of 10 mm aluminium tube, and the 2 m Yagi ones from two 2 m lengths of 12 mm aluminium tube.

In both cases the driven elements came from a single 2 m length of 12.7 mm copper water pipe, stiffened and insulated by segments cut from a 1.5 m length of 10 mm OD fibreglass electric fence support. The problem with copper is that it can be a bit soft and without some sort of support, especially in the 2 m case, it can bend. This is why I used the fibreglass rod to both be an insulator and to support the element.

If the birds are heavy in your area you can stiffen the conduit boom by gluing some 25 mm OD wood dowel inside the conduit before drilling. Remember to either replace the rear section of the dowel from the driven element back with a short section of 25 mm OD conduit, or alternatively mount the balun and coax on the outside of the boom.

The relevant dimensions of the two Yagis are shown in Figures 9, and 10 which are hopefully pretty self explanatory.

The first step is to stiffen the boom if you are doing this. A 25 mm wood dowel fits neatly in the conduit and glue on the dowel as it is 'screwed' in spreads it evenly.

For neatness, weather, and bird, proofing I built the balun and coax connection to the driven element inside the boom. If you are going to do this ensure the dowel only comes up to just before the driven element, coming from the front of the Yagi of course.

The rear section can also be reinforced by using a short length of 25 mm outer diameter conduit, this also makes a nicer fit to the inline coax connector if used. Just about any glue works here; I have used both normal PVA and even silicon sealant.

Before the glue is set it is a good idea to tape the boom to a length of straight timber, say a 1.8 m piece of 20 x 40 mm pine. Taping the boom to the timber helps the boom to set straight, and later when it comes to drilling the holes for the elements, it helps keep them parallel. I

use masking tape as it holds well for this job if you use it in enough places.

The next stage is to mark off the spacing for the elements from the tables and drawings. The boom being taped down makes this easier and if you are making more than one of these antennas, using a piece of wood previously marked and drilled as a template can speed things up. This is then put aside to set/dry.

While the boom is drying the elements can be cut. All the elements except the driven one are cut from aluminium tubing, 10 mm diameter for the 70 cm antenna and 12 mm for the 2 m antenna. As always, measure twice; avoiding having cut the tube only to find that it is now useless because it is the wrong length. File the ends to remove any burs and sharp points, for both safety and to minimise fringing capacitance effects.

For each driven element two pieces of copper pipe should be cut as these two pieces will form the dipole. The drawing has the element half lengths marked (inside the boom) but do not forget we need a 3-4 mm gap in the middle between the halves so the dimensions given allow for that. For example in the 70 cm case the driven element length is 313 mm, but the two sections of copper are only 155 mm long allowing for a 3 mm gap. The other component of the driven element is the 10 mm fibreglass rod. This rod is cut to the exact length of the driven element, e.g. in the 70 cm case this is 313 mm. (Photo 1)

The driven element is assembled by sliding the two halves of 12.7 mm OD

copper tube over the fibreglass and fixing in place with some sort of glue. Here the glue should be capable of handling the high temperatures involved in soldering and I find silicon gasket (RTV) works well. The two outer ends of the copper tube should line up with the ends of the fibreglass rod leaving the 3-4 mm gap between the two halves in the middle.

Once the glue has set, a crimp with the die for a RG8/213 coax crimp, towards the inner ends of the copper tube, ensures that nothing is going to move.

Once dry you can drill the element holes. Using a drill press helps to keep the holes neat and parallel. Use 10 mm and 12 mm drill bits for the 70 cm and 2 m Yagi respectively, with 12.7 mm

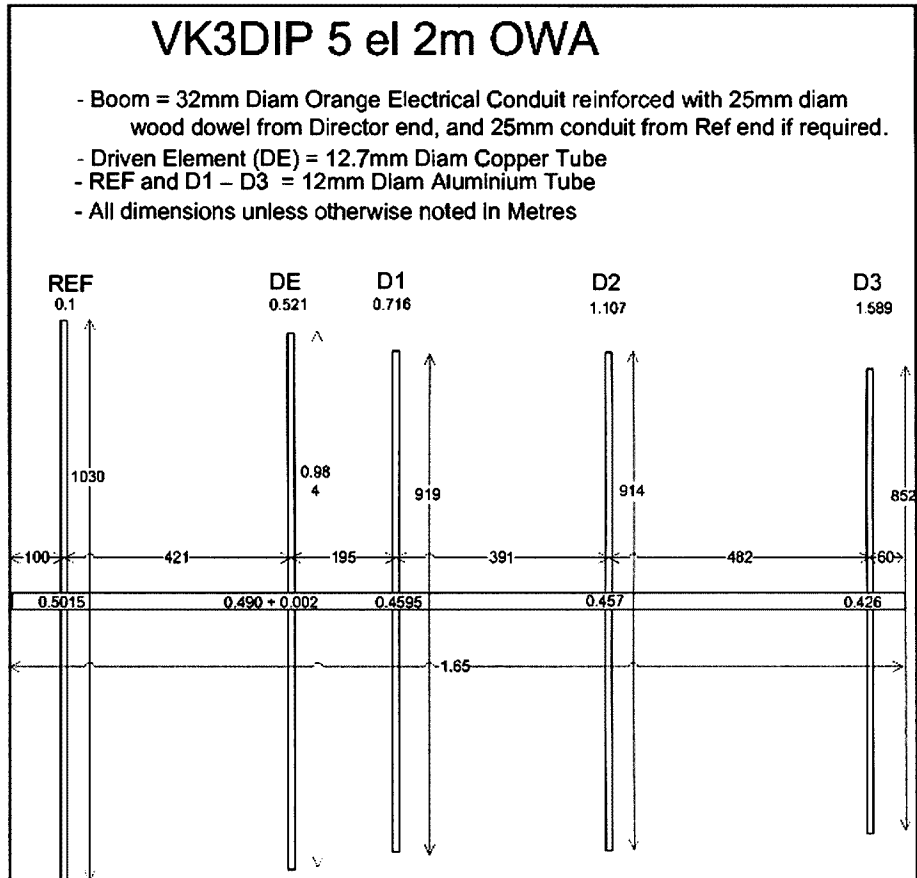


Figure 9: 5el2mOWA Yagi Dimensions

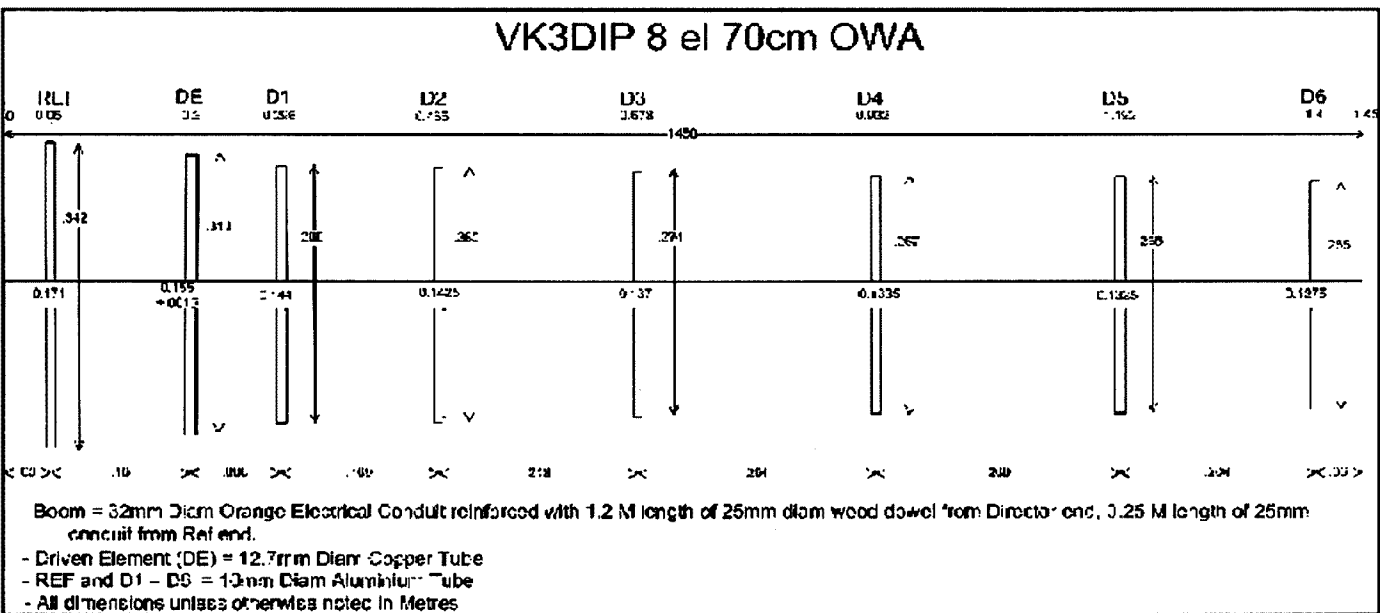


Figure 10: 8el 70cmOWA Yagi Dimensions



Photo 1: Close up of the 70 cm two driven element halves and the fibreglass support before assembly.

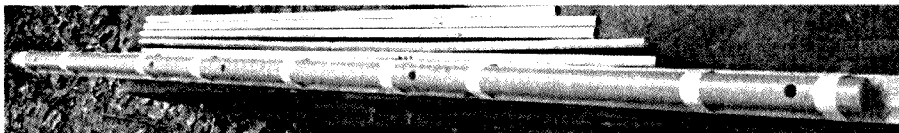


Photo 2: 2 m Boom still taped to wood after drilling, elements cut, driven element assembled.

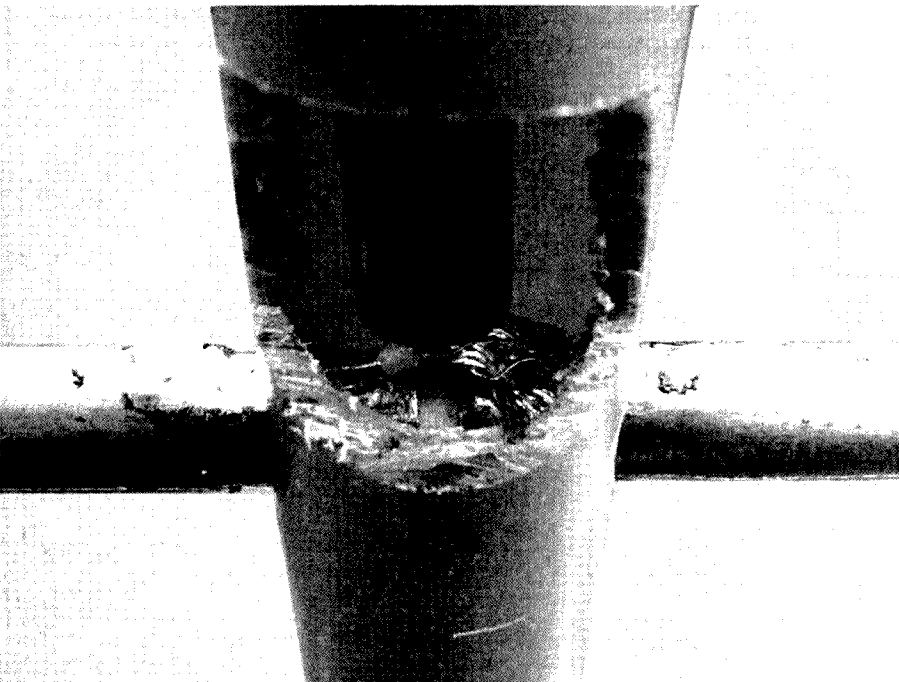


Photo 3: Balun after soldering to the Driven element.

for both driven elements. This point in assembly can be seen in Photo 2.

Before inserting the driven element, the centre of the two halves of copper tube should be solder tinned, the bigger the soldering iron, the better as the copper takes a bit to get it up to temperature.

The directors and the driven element can now be inserted, but not yet the reflector. For securing the directors I found that long reach (1/8 inch diameter (3.3 mm), for securing up to 1/2 inch (12.7 mm) spacing), aluminium pop rivets worked simplest, cheapest, and not least, best from a corrosion perspective. A 1/8 inch hole is drilled perpendicular through the side of the boom into the element and pop rivet inserted. This can be repeated on the other side if required.

The driven element is held in place by the solder connection of the balun and subsequently a large amount of hot melt glue. You can see the solder connection prior to the glue in Photo 3. Note a small

hole has been cut in the boom to facilitate the soldering. I found the simplest way to do this soldering was to apply heat to the copper elements by touching the soldering iron to the copper outside the boom, and then just poking the solder in through the hole which then melted onto the connections, without trying to get the soldering iron itself inside the boom. Once the soldering is done (and checked) a large amount of hot melt glue can be squirted into the hole to effectively pot the connection protecting it from water and securing the driven element in place. (Photo 3)

In both cases coax connection is made directly to the two halves of the driven element. As my experience with getting good long lasting electrical connection to aluminium is not good, I used copper for the driven element so that the coax/balun can be soldered directly on.

The balun that I used is a simple choke type made using three ferrite sleeve

cores threaded on a short length of RG58 or equivalent coax. I used Jaycar part number LF1258 for the ferrite sleeves which seem to work fine.

My tests showed that two cores would do the job, but as they are 6 in a packet I put three on each antenna to be sure. These sleeves with reasonable RG58 coax should have no real problems with the normal sub 100 watt power levels used by most amateurs on these bands.

If you intend to use higher powers you should test after transmitting for a while to see if the ferrite sleeves become warm. If they get too hot (greater than 140 degrees C) the ferrite can lose its properties and will not act as a balun.

Do not feel the cores while transmitting or else they will not be the only thing getting hot. If they are getting too hot just add more cores along the coax to increase the impedance, and thus lower the losses, as well as share out the decreased heat load.

The layout of the balun and connector is shown in Figure 11. In my case I used a female line N connector, but obviously you could use whatever suits your setup, for example just continuing the coax out of the boom and down the mast.

The partially assembled balun for the 70 cm case next to the driven element prior to insertion is shown in Photo 4.

Once the balun is connected and the coax connector (if used) is glued in place, again using hot melt glue or equivalent, the reflector element can be inserted in the boom, ensuring that you notice which side on the element that the coax is passing.

This is very important, if you get the side wrong and then drill the hole for the pop rivet, then you will end up drilling through the coax and destroying the antenna. Obviously in the reflector case you can only pop rivet from one side, the side that does not have the coax.

The completed Yagis are in Photo 5.

Initial Testing

There are no adjustments anywhere on these Yagis, so they either work or not. My experience with the prototypes is if you are careful with measurements, and soldering, then they work.

Photo 6 shows the result of the prototype 70 cm version being driven at 25 watts at 435 MHz by my TR-851 with the VSWR shown as 1.02 to 1. The measured VSWR at the band edges for the two prototype Yagis versus the values

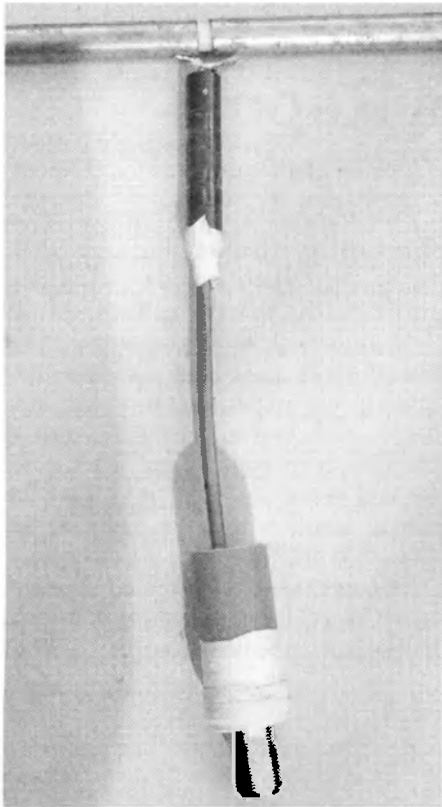


Photo 4: Balun for 70 cm case.

predicted by Yagcad are shown in Table 3. As can be seen there is remarkably good agreement here. Note: The tests on the prototypes were done at the end of approximately 15 metres of RG213, so the VSWR at the actual antenna would actually have been a little higher than measured but still very good. I have only done very limited on-air tests with the prototypes but indications are that they are working well with good level signals heard throughout the bands.

Yagi	Frequency (MHz)	Yagcad Prediction VSWR	Prototype Actual Measured VSWR
5el2MOWA	144	1.074:1	1.06:1
	148	1.095:1	1.08:1
8el70cmOWA	430	1.06:1	1.08:1
	435	1.029:1	1.02:1
	440	1.04:1	1.03:1

Table 3: Measured VSWR c/f Calculated.

It is early days with these antennas. I will not have them installed in their final

positions for some months, nor have I had the chance for on air testing.

Only time out in the weather and exposure to wildlife will tell how robust these Yagis are. Notwithstanding this, all indications are that these Yagis will give me good service for years to come.

References:

- 1 Yagcad 5.2 can be freely downloaded from a number of sites including:

<http://www.nerg.asn.au/software.htm>

and

<http://mywebsite.bigpond.net.au/pmvk3dip>

- 2 "Notes on the OWA Yagi" by L. B. Cebik W4RNL, QEX, Jul, 2002, pp. 22-34

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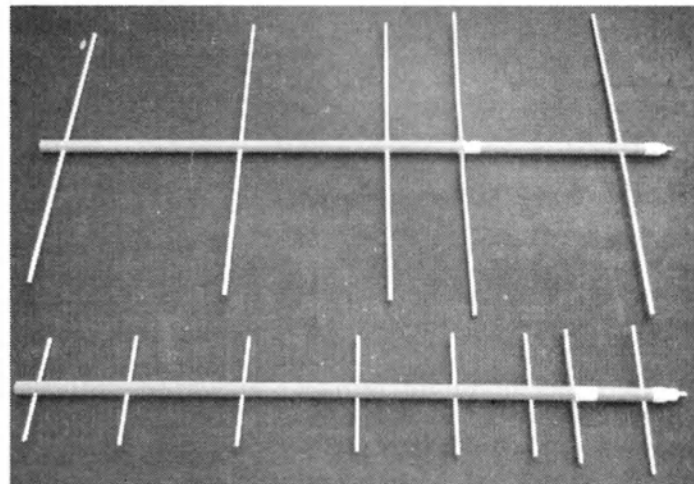


Photo 5: The two completed Yagis.

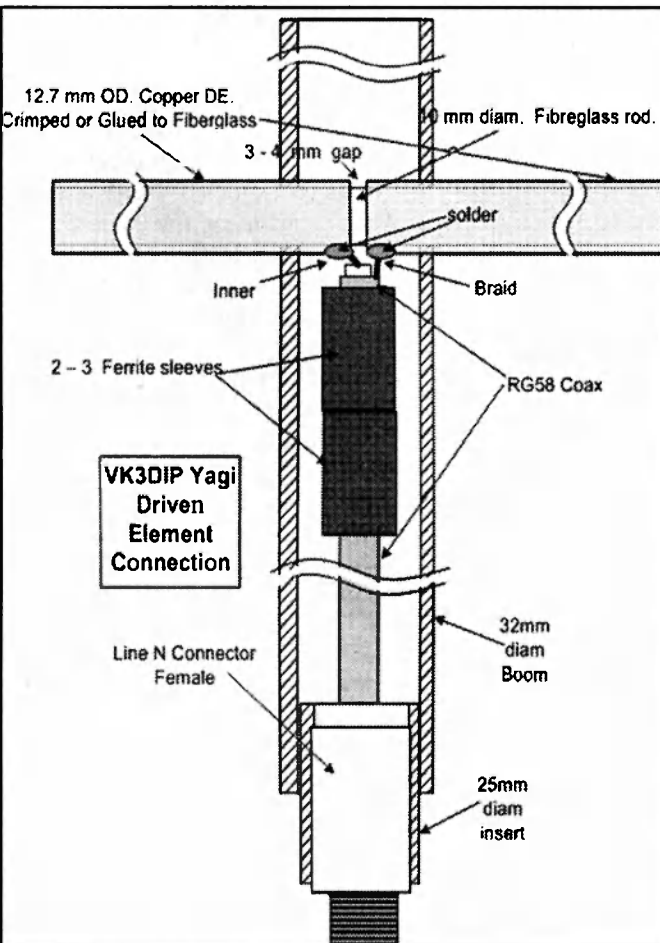


Figure 11: Balun and coax connection to the driven element.



Photo 6: Prototype 70 cm beam driven with 25 Watts at 435 MHz.

2008 Victorian ARDF Championships Report

Jack Brarham VK3WWW

On Sunday 20th July 2008, 14 participants travelled to the township of Enfield in Western Victoria to contest the Victorian Amateur Radio Direction Finding Championships.

This event was held in conjunction with the Eureka Orienteering Club based in Ballarat. A section of the Kurucaruc Creek North Orienteering map was used to set both the Orienteering course and the ARDF course: the Kurucaruc Creek area is well forested but is fairly clear allowing competitors to head mostly in the direction of the signal quite quickly.

Five transmitters were placed in the forest and were transmitting Morse code idents, the frequency for the transmitters was 145.300, the VK national ARDF 2 m frequency, and the antennas were horizontally polarised. Transmitters operate on a five minute cycle, this means each transmitter takes a turn to transmit for one minute and then is quiet for four minutes. Competitors leave the start at 5 minute intervals, reducing the chance of one following the other.

This event was also a lead up event to the World Championships to be held in Hwaseong Korea from 2nd to 7th of

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Results

Name	Call	Course	Max TX	TX Found	Total Time
Bryan Ackerley	VK3YNG	Old Timer	4	4	1:14.18
Bruce Paterson	VK3TJN	Old Timer	4	4	1:10.28
Gary Panter	VK3TXO	Old Timer	4	4	1:40.20
Darian Panter	VK3FAST	Junior Male	4	2	1:41.16
Marta Salek	SWL	Open Female	5	2	1:31.20
Ryordan Panter	SWL	Junior Male	4	0	2:34.20
David Beard	VK3XAJ	Old Timer	4	4	2:14.40
Pam King	SWL	Veteran Female	3	2	2:57.00
Peter Malony	SWL	Veteran Male	3	3	2:34.59

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Frequency range IF	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz
Output power	typ. 2.5 W	typ. 1 W	typ. 400 mW	typ. 250 mW	typ. 200 mW
RF input power	max. 5 W, adjustable (0.5 ... 5 W)	max. 5 W, adjustable (0.5 ... 5 W)	max. 5 W, adjustable (0.5 ... 5 W)	max. 5 W, adjustable (0.5 ... 5 W)	max. 5 W, adjustable (0.5 ... 5 W)
10 MHz reference freq. input	typ. 2 ... 10 mW	typ. 2 ... 10 mW	typ. 2 ... 10 mW	typ. 2 ... 10 mW	typ. 2 ... 10 mW
Noise figure @ 18 °C	max. 0.8 dB	max. 0.8 dB	typ. 0.9 dB	typ. 1 dB	typ. 1.2 dB
Receive gain	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable
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September 2008 (<http://www.2008ardf.org/>). Two of the competitors from this event will represent Australia and compete against ARDF competitors from 29 countries, having used this event for training.

Competitors were categorised by age and gender. These were Junior (under 19), Old Man (no age restriction), Old Timer (over 40) and Veteran (over 50). There is one other category, Super Veteran (over 60) but this one was not available for this event. Also, only the OM competitors need to locate all five transmitters for a perfect score. Competitors in any of the other categories need only to find a maximum of four transmitters.

Time limit for this event was 90 minutes, all competitors had to find as many of the three, four or five transmitters in their category as possible and be finished before the 90 minutes are up.

If a competitor is over time then that results in disqualification, so the best score for each category would be the competitor with the most number of transmitters located in the shortest possible time.

Looking at the results from the event some of the competitors misunderstood this rule or were not concerned about



Waiting at the start. L-R Marta Salec (ARDF Group), Pam King (ARDF Group), Jack VK3WWW, Bruce VK3TJN and Cianne Shalders (ARDF Group).

being disqualified as they found it more of a challenge to locate all of the transmitters in their category.

All went pretty smoothly on the day but there was one problem with the location of transmitter 1: it was placed just off the map by about 50 m – this

was not intentional and the course setter (me) must apologise for the error. This confused those who were able to follow their map but for the competitors not really using the map and finding the transmitters by signal alone it was not a problem.

ar



VK3WWW Waiting to make sure the transmitter comes on in sequence before moving on to set the next transmitter. Note: to meet International regulations the antenna is a horizontally polarised turnstile.

Working Mildura on 2.4 GHz

Chas Gnaccarini VK3PY

A recent business trip to Mildura in February by Bert VK3TU provided the opportunity to test the path back to Lara (near Geelong) on the 2.4 GHz band.

David VK3QM, Charlie VK3NX and I would be the “home” team while Bert and his colleague John VK3VN would take one of our 2.4 GHz portable systems with them.

The distance to Bert’s chosen location (about 15 km west of Mildura, QF15xs) is about 460 km. The path of course is way beyond line of sight and further compounded by mountainous terrain at the southern end.

Under the expected weather conditions we would need to rely on aircraft enhanced propagation (AEP) for a successful contact as no tropospheric ducting was forecast.

AEP exploits the presence of high-flying aircraft passing near the mid-path of the two stations. Providing the aircraft is large enough (for example, a passenger jet) and flying high enough (8,000 to 13,000 m - 25,000 to 40,000 ft) to be “visible” to the antennas at both ends, sufficient signal will be forward-scattered to sustain a brief contact.

Previous experience over the same path on 1296 MHz gave us reasonable confidence of success on 2.4 GHz. At these frequencies it is almost impossible to do weak-signal work from a suburban location due to the clutter of buildings and trees, both of which introduce prohibitive signal attenuation.

Additionally, on the 2.4 GHz band, QRM from WiFi-enabled consumer electronics raises the background noise to unacceptable levels. For these reasons, we took the “home” station to an elevated ridge a few kilometres west of our home town of Lara, in grid square QF21 dx.

Bert and John would be in the sparsely populated plains some 15 km west of Mildura – no hills to exploit, but then none to get in the way either. There would also be no WiFi QRM to desensitise the receiver.

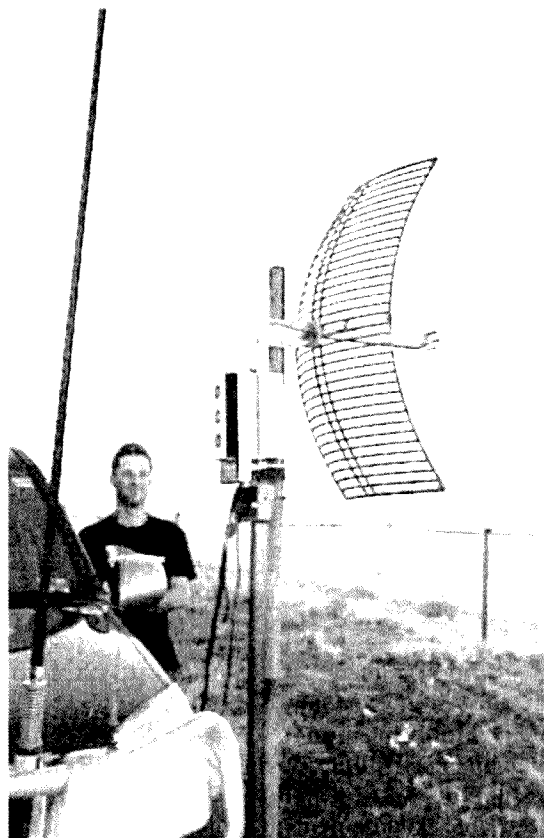
The equipment at both ends consisted of David VK3QM’s two home-brew transverters, each running 25 W PEP. The Lara antenna was a 1.2 m diameter dish with a VK2AES-designed cavity-backed dipole feed, while due to vehicle luggage

space constraints, Bert had to make do with a 90 cm ex pay-TV grid-pack dish. Operational co-ordination was on 80 m SSB.

On the micro-does not usually call CQ! Contacts need to be pre-arranged and a reliable means of communication is necessary to co-ordinate operations. To convey some idea of the difficulties facing long-distance microwave operators, consider that:

- The antenna half-power beam width is about 8 degrees in both azimuth and elevation (slightly wider for the smaller grid-pack dish). Pointing accuracy is critical.
- The combined frequency uncertainty of the Tx/Rx systems could be as much as +/- 4 kHz. While this is better than one ppm each at 2.4 GHz, it is enough to ensure that we would need to tune around to find each other.

Continued over



Bert VK3VN and his gear set up near Mildura. Photo by Bert VK3VN.



Charlie VK3NX and Chas VK3PY with the equipment at Lara. Photo by David VK3QM.

A Power Distribution Box Using Anderson Powerpoles

Henrik Stenstrom VK2HHS

Here is a small project that should only take an evening or so to put together.

Inspiration came after the recent John Moyle Memorial Field Day. A benefit of a day in the field is seeing how others set up their portable stations, and what works and what doesn't.

I was particularly impressed with the small 12 V distribution box of fellow amateur, Laurie VK2JAH. Checking websites for prices for similar products was all the extra motivation I needed to build a few of these together.

The bill of materials is quite modest; it may all be in your magic box. I sourced my parts from Altronics as I was ordering other bits and pieces at the same time. Cost was about \$6 not including the Anderson Powerpole connectors.

Construction is simple if you adopt the adage of measure 20 times: cut once.

The Anderson Powerpole contacts are crimped and soldered to 20 mm lengths of 1.5 mm solid copper wire. I used hard drawn copper antenna wire leftovers.

The circuit board is drilled 1.5 mm to accept the Powerpole sets, 3 mm for the standoff and slotted at one end for the blade contacts of the rocker switch.

Use the circuit board as a template

Materials Bill

UB5 Jiffy box - H0205
Automotive style fuse 25A - S5910
Blade fuse holder - S6040
Switch - S3247
Additionally:
Anderson Powerpole connector sets x 7
Solid copper wire 1.5 mm x 30 cm approx
Single sided circuit board 40 x 75 mm
15 mm M3 standoff x 1
M3 screws x 2

to position and nibble out clearance holes in the bottom of the Jiffy Box for Powerpole sets, fuse and switch. Install the switch (press fit) in the bottom of the jiffy box.

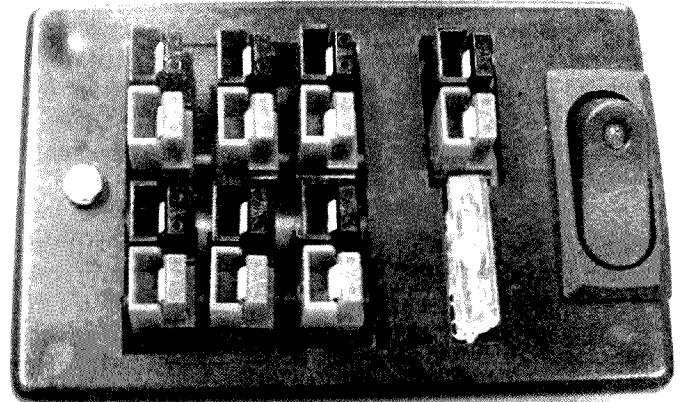
The Powerpole sets and fuse holder are then soldered into place on the circuit board. Use a Dremel tool with cut-off wheel to engrave the copper side of the circuit board to produce "tracks" as required. In my arrangement there is one input; all outputs are fused with three being permanently on and the other three switchable.

The completed circuit board is then installed upside down in the jiffy box from the top with one end supported directly upon the switch blade contacts and soldered in place. The other end of the circuit board is

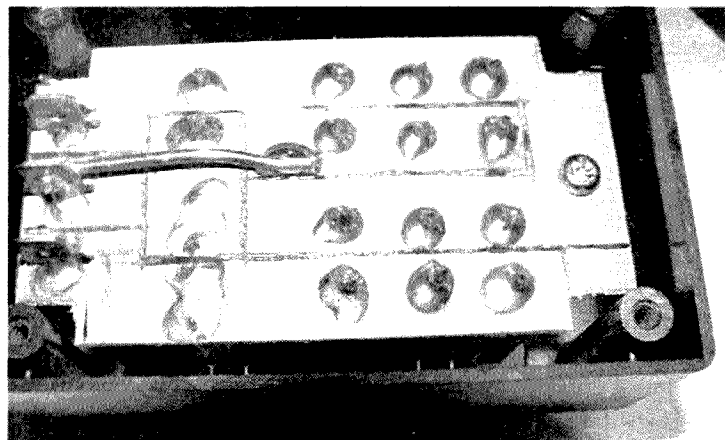
supported on the 15 mm standoff. The jiffy box lid forms the base of the box.

There you have it and I hope the pictures are worth their respective 1000 words.

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The completed distribution box.



The underside of the distribution box, showing the circuit board and how it fits neatly into the chosen Jiffy box.

Mildura on 2.4 GHz continued

Neither of us could hear the other station unless an aircraft was present in the right spot.

A typical aircraft pass over this path would produce an "opening" lasting less than a minute.

The procedure we adopted was to point the antennas on the right bearing as best we could, using GPS to establish this with reasonable accuracy.

We agreed that the Lara team would

run a CW keyer on 2403.200 MHz while the Mildura team would listen, carefully tuning a few kHz either side of the expected frequency. If signals became audible, they would alert us on 80 m following which we would establish SSB contact on 2.4 GHz.

At around 0845 UTC, after about an hour of trying, Bert alerted us that signals were becoming audible.

We immediately went over to 2.4 GHz and quickly completed a contact

with reports of 5x2, rising to 5x5 within seconds. The entire aircraft pass lasted less than 30 seconds. David and Charlie missed out, so we agreed to continue until another aircraft went over.

A little over one hour later, signals came up again and this time both David and Charlie made contact, albeit at somewhat lower peak signal strength.

Yet another grid square in the bag for each of us on 2.4 GHz!

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Crystal Clear - The struggle for reliable communications technology in World War II

Richard J Thompson

Reviewed by Peter Holtham VK4COZ

If you go to any hamfest, anywhere, you will find someone selling a box of crystals. In amongst the modern units in sealed metal holders you will probably see crystals dating from World War II. Easily identified in their bakelite holders, they come in two common styles: the FT243, and the slightly larger DC11 crystals.

Look at the plate on the front of any FT243 crystal. You will see maker's names from A to Z. From Aircraft Accessories Corporation of Kansas City, Missouri, to Zenith Radio Corporation of Chicago, Illinois.

Have you ever wondered why they are so common? Or why there seem to be so many different makers? A new book by Richard J Thompson, "Crystal Clear" provides the answers.

At the start of World War II, the United States military was still trying to decide the best way to control transmitter and receiver frequencies in the field. Was

it best to use the proven but fiddly master oscillator approach, or gamble everything on simpler crystal circuits?

Crystal control of oscillators was not new. Amateur radio operators and commercial radio stations have used them since the 1920s. But the military wanted the flexibility of being able to change frequencies at will. So they leaned towards the fully tuneable master oscillator. However, tests in the late 1930s showed the value of crystal controlled radios. It was quick and easy to change frequency, even while bouncing around in a tank or a jeep.

But any decision to go with crystal control would raise a new problem. In 1941 only about 100,000 crystals per year were being made in the United States. Millions would be needed. How could enough be made?

The task of putting what was a small cottage industry onto a large-scale wartime footing fell to the U.S Army Signal Corps.

The problems they faced were enormous. Raw crystal with the right properties was only found in Brazil. The conditions under which it was mined and sold were primitive. Men and machines had to be sent to Brazil to improve the flow of raw material. Getting the quartz to the U.S by ship took two to three months. Crystal makers could not wait that long and from 1942 the raw quartz was shipped by air.

New manufacturers had to be shown how to inspect raw crystals using X-rays, how to saw off blanks to minimise wastage. They had to be convinced to use small but common raw crystals instead of the increasingly rare but easy to work large crystals.

Just when the early difficulties of supply and large-scale manufacture seemed to have been overcome, a crisis broke. In 1943, reports of crystal failure started to come in from all theatres of war. Oscillators stopped oscillating or drifted off their correct frequency. Vital

communications were threatened. As a stopgap measure, grinding teams were formed and sent out to repair defective crystals.

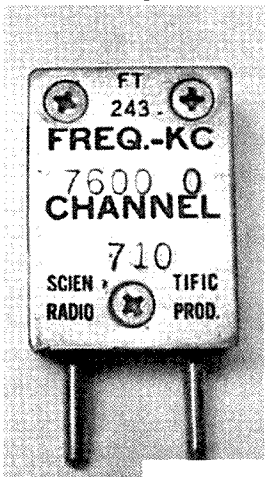
Meanwhile, the Signal Corps put a huge effort into finding the cause of the problem. Research showed that the original grinding process left minute particles of broken quartz in surface cracks. Once the crystal was in use, these particles vibrated free, damping or stopping the oscillation. Water vapour penetrated the cracks causing further damage. By July 1944, a simple solution had been found. After initial grinding, the crystal was acid-etched to its final frequency, removing all traces of loose quartz. Crystal controlled oscillators now started every time and stayed on frequency. The crisis was over.

By the end of the war, over 100 manufacturers were producing nearly 30 million crystals a year. No wonder they are still so plentiful at hamfests.

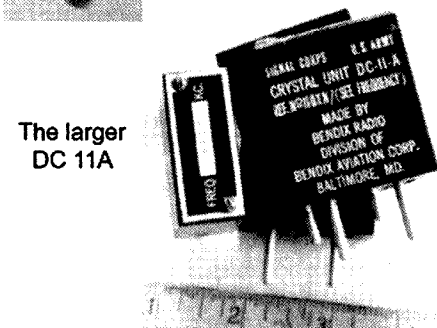
Richard Thompson's history of the early US crystal industry is not light bedtime reading. But if you have an interest in one of the basic technologies of modern electronics you will find it well worth the effort. It can be argued that the development of reliable mass-produced crystals during World War II was as important to the final outcome as radar and the atomic bomb. On the basis of the evidence in this book, it is hard to disagree.

Crystal Clear - The struggle for reliable communications technology in World War II

(ISBN 0-470-04606-6) is published by Wiley Interscience for the IEEE Press. It is illustrated with 25 black and white plates.



The ubiquitous FT 243



The larger DC 11A

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Disaster communications Sichuan earthquake and GAREC-08

Jim Linton VK3PC*

A vital resource for any community is its radio amateurs who have the knowledge, skill and equipment to step in 'when all else fails' to provide communications in times of natural and other emergencies.

This is what occurred in the aftermath of the devastating Sichuan Province earthquake in the Wenchuan area of China's Sichuan province and thousands stepped up to help with the enormous disaster recovery and relief efforts. It was a solid example of radio amateurs being rapidly deployed to help maintain vital communications so first responders and critical personell could more efficiently manage the crisis.

The magnitude-8 earthquake struck on the afternoon of 12 May. The Chinese Government has put the death toll at almost 70,000 people, 374,176 injured, and nearly 20,000 people considered missing. In the worst hit areas 80-90 per cent of houses were destroyed and 46 million people left homeless.

Tremors from the powerful 'quake were felt throughout the region including in Vietnam, Thailand, Mongolia, Bangladesh, Nepal, India, northern Pakistan and Russia.

China's central government responded quickly. The Prime Minister took off from Beijing within two hours of the 'quake, heading for Chengdu, while a massive mobilisation of army rescue forces rushed to the epicentre by foot due to road access being cut.

The Chinese Radio Sports Association (CRSA) reported that soon after it struck, radio amateurs travelled into its epicentre trekking across severely damaged roads to set up communications.

Two ham radio operators had a repeater set up by the morning of 13 May, enabling the transmission of rescue instructions, status reports and as a main communication channel for public use. Among the repeater traffic were communications for the Mayor of Mianzhu City, who gave orders to those on the front line rescue and recovery activity.

Hams around Chengdu, Mianyang



Photo 1: Survivors amid the devastation.

area were among the first to setup their emergency stations. Liu Hu BG8AAS of Chengdu reported soon after the earthquake that the local UHF repeater had survived and more than 200 hams were using it, kept busy directing vehicles transporting the wounded. Yue Shu Qiang BA8AB was also active from Chengdu on the 40 metre band.

Liu Hu, after sheltering in his office for several minutes after the earthquake struck, then set up an emergency communications station using portable equipment. He learnt that the 'quake epicentre was Wenchuan, 90 km to his north, and that communications there had been cut. Hams in the province began to gather information and provide communications. Liu Hu continued radio operations at home that evening noting that many of his neighbours had left the area having been made homeless.

An emergency command centre for the Sichuan Amateur Radio Emergency Service (SARES) was set up on 13 May in an art museum at Sansheng that was considered to be a safe structure. The centre used the callsign BY8AA, and under its control many vehicles helped with relief work and thousands of injured were evacuated. SARES also set up radio relays with other centres.

SARES had three groups. The Information Group was responsible for organising information from the disaster areas and reporting urgent needs, so that Command Group arranged the thousands of ham volunteers to send supplies while the Logistics Group dealt with getting it where it was needed.

On the day of the earthquake the CRSA called for a series of frequencies, 7050 kHz, 7060 kHz and 14270 kHz, to be kept clear during the critical period after

the earthquake. It readily acknowledged with thanks the cooperation and efforts made by all amateur radio societies and individual radio amateurs to keep those frequencies clear.

The CRSA issued a QSP to all radio amateurs which said, "Amateur radio stations in the disaster area and surrounding areas... should be used unconditionally to assist the local earthquake disaster relief authorities".

"If any radio signal is heard from the disaster area, please do your best to understand what is most needed by people in that area and report it to the local government authority".

"For emergency communications purposes, amateur radio stations may also be used to pass messages for local residents on a temporary basis until local telecommunications services resume."

Long distance telephone lines were either cut or congested in the early days of the disaster and this is where amateur radio HF links were used, including one in the provincial city of Chengdu to give the Red Cross a link to Beijing.

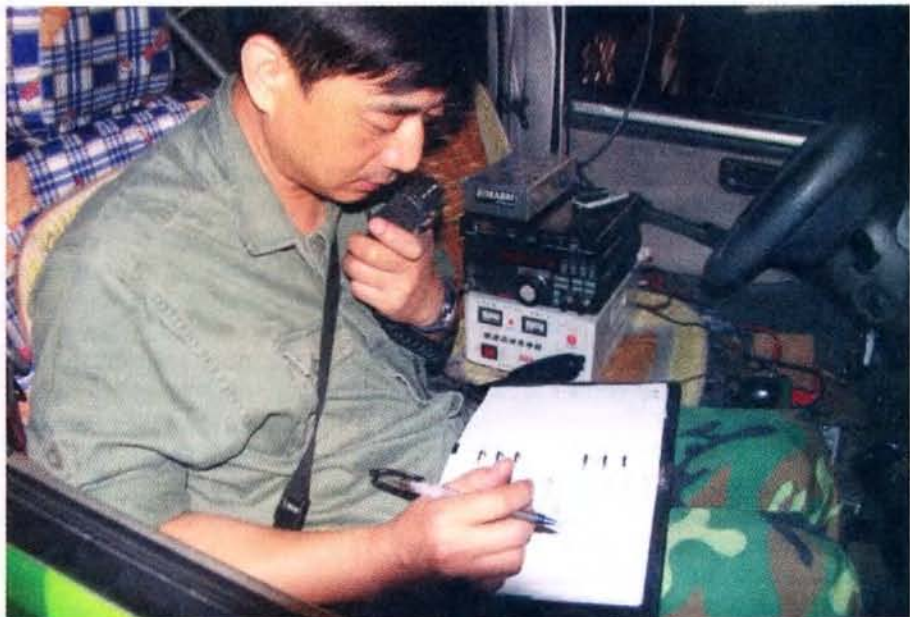
VHF and UHF repeaters were in heavy use, both those which survived the quake and others pressed into service to provide much needed local communications including front line rescue and recovery activity. They enabled communications for a 100 km radius from Chengdu, the capital of southwest China's province of Sichuan. More repeaters were set up in both Beichuan and Mianyang, among the worst hit areas outside the epicentre, to form an effective amateur radio communication network.

Government officials and news media recognised that when communications failed after the Sichuan earthquake, it was amateur radio operators who stepped in to provide vital links. China Central Television (CCTV) reported on 26 May, "When all other communication means failed, amateur radio operators came out! An amateur radio emergency communication network was set up and one of the commanders, Liu Hu called for amateur radio operators on air to provide services for disaster relief".

"Thankfully one main repeater survived during the earthquake, this repeater provided 100 km coverage to Mianyang. Amateur radio operators from Chengdu, Shenzhen, He'nan went to the centre of the disaster area, set up repeaters in Beichuan county, and provided various valuable first hand



Michael Owen VK3KI (right) and Hans Zimmermann F5VKP/HB9AQS at GAREC-08.



BD8ABM operated HF from his vehicle in the epicentre.



Sichuan Amateur Radio Emergency Service: BY8AA plays a key control station role.

information from the centre.”

The radio amateurs involved in front line areas came face to face with the horrific reality of the disaster and its chaos, experienced hundreds of after shocks and endured extremely high temperatures.

The CRSA, through Fan Bin BA1RB, informed the international amateur radio community of what was happening, including three situation reports.

According to Liu Hu, the emergency communications effort resulted in about 300 pages of written logs and information, with 30 hours audio, two hours video and 2 GB of photos taken in six days following the earthquake.

The CRSA also produced a visual presentation to give an overview of the role emergency communications provided during the disaster, and what that radio society proposes for the future.

The slide show and additional information was delivered to a keen audience at the fourth Global Amateur Radio Emergency Communications Conference (GAREC-08) in Friedrichshafen, Germany, 26 and 27 June, by the IARU Region 3 Chairman, Michael Owen VK3KI.

The conference organisers and delegates were very pleased to see the CRSA presentation and learn more about the role played by amateur radio after the Sichuan earthquake. IARU International Coordinator for Emergency Communications Hans Zimmermann

The ITU Radio Regulations were changed at WRC-03 to read:

25.3
Amateur stations may be used for transmitting international communications on behalf of third parties only in case of emergencies or disaster relief. An administration may determine the applicability of this provision to amateur stations under its jurisdiction.

25.9A
Administrations are encouraged to take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief.

If the Amateur Service is to adequately prepare for, and play its role in emergency communications, 25.3 must be applied to the national regulations of individual nations. In order to be able to fully prepare for emergency communications, as encouraged by (25.9A), it is critical that national regulations do not inhibit third party traffic (TPT) for such preparation.

F5VKP/HB9AQS was very impressed by the timely arrival of the CRSA slideshow and its content. Hans said much of the discussion at GAREC-08 was on how to create a disaster response capability for those IARU member societies who do not have the necessary structures and mechanisms in place.

Some countries, he noted, have not aligned their radio regulations with changes made at the World Radio Conference in 2003, to enable their radio amateurs to train for and provide communications in times of emergencies.

Michael Owen said prior to WRC-03, the ITU Radio Regulations required agreements to be entered into between individual countries before their radio amateurs could pass third party traffic. He said, “What these changes mean is that an administration may allow its radio amateurs to pass international messages on behalf of a third party, at least in the case of emergencies or for disaster relief. They also encourage the administrations to take steps so their radio amateurs can prepare for and participate in disaster relief communications. The changes showed that the ability of radio amateurs to provide emergency communications was recognised, and the WRC-03 acknowledged that in many cases national laws would have to be changed to allow such communications.”

Hans said, “Only a short time ago, there were very few hams in China - the Chinese Radio Sports Association (CRSA) sets a great example for what can be achieved very fast in a favourable regulatory environment and with personal engagement.”

In 2000 there were only 500 amateur stations, but now there are well over 20,000 thanks to the efforts of the CRSA, with continued strong growth expected.

Hans said, “Through their immediate and effective response, our fellow hams in China have shown what amateur radio can contribute to disaster response.”

He said the ITU sent a message to all national administrations through the revision in 2003 of Article 25 of the International Radio Regulations.

Hans said, “It’s now in the hands of the national authorities, to implement the authorisation of third party traffic in emergency communications training. Only those who are prepared can respond to an emergency. And it is up to the national societies and

the groups specialising in emergency communications to make the respective administrations aware of this need. It’s a sad fact, that always, ‘something has to happen, before something happens’. The tragic events in China and the role of the Amateur Radio Service in the response to it are a great opportunity to create such awareness!”

GAREC-08, in its closing statement, congratulated the Chinese Radio Sports Association (CRSA) for its outstanding contribution and the Chinese amateur radio operators in their support to humanitarian response to the tragic events in May 2008.

The ITU is now more aware of the need for action on the regulatory changes and that goal will be sought through its contact with national administrations. The ITU representative at GAREC-08, Dr Cosmas Zavazava, took a copy of the CRSA slideshow for presentation to the ITU.

The CRSA is also responding to the lessons learned from the Sichuan earthquake by seeking the help of other IARU radio societies to further improve disaster communications procedure and documentation. In its action plan is education for radio amateurs and achieving closer cooperation with the Chinese *Red Cross* Foundation and government organisations involved in disaster relief. The CRSA has an annual disaster communication simulated emergency test (SET) each July, and actively joins the regular global SETs.

It encourages hams to take part in field day operation and enforces the need for them to have skills such as message handling, the use of simple antennas and setting up portable equipment.

With statistical evidence that the number of disasters occurring around the world has steadily increased, these types of preparations are vital for amateur radio to effectively play its role in disaster relief communications.

Immediately after GAREC-08 the IARU Administrative Council met in Germany and praised the CRSA for its achievements and contributions. It also decided on the theme “Amateur Radio: Your Resource in Disaster and Emergency Communication”, for the next World Amateur Radio Day, April 18, 2009.

*Jim Linton VK3PC is the Chairman of the IARU Region 3, Disaster Communications Committee.

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The ham trip of a lifetime

J.A. (Tony) Hutchison VK5ZAI
National ARISS Coordinator & ISS Telebridge Earth Station

VIP tours through NASA's Johnson and Goddard Space Centers, BBQs with Astronauts, guided tours personally arranged for us of the Smithsonian and Dulles Air and Space Museums, two days at the Dayton Hamvention, sailing on Lake Ontario, and chauffeured around Toronto and Niagara Falls. If this was not enough, add sightseeing in the Canadian Rockies, more BBQs with Amateurs, a chauffeured tour of Vancouver, visiting Pearl Harbour and relaxing on Waikiki beach before returning home, all in a month.

It all started back in May 2007 when Dieter KX4Y, a close friend and an ARISS colleague, suggested that I visit the Dayton Convention in 2008. He said to let him know by October so he could book accommodation. I mentioned the trip to Kevin VK4UH/VK5KJ who said he would be interested in coming and could we have a look at the Johnson Space Center as well along the way.

On mentioning the idea to other members of the SERG (South East Radio Group) we soon had a group of six interested in the trip, the others being Col VK5DK, John VK5DJ, David VK5HDW and John VK5JA.

After a discussion of what everyone's interests were and what we would like to see, we all agreed we needed a month to make the trip worthwhile. As our interests were all very similar planning was easy.

We decided to fly into Los Angeles and across to Houston then work our way north (and east) through the US to Dayton then on up to the lakes region of Canada. From here we would travel east to west taking in the Rockies along the way and stopping a couple of days in Hawaii on the way home.

We booked our thirteen aircraft flights through a travel agent and I handled the accommodation side, a combination of staying with friends and at hotels along the way.

Everyone agreed they would like an "in depth" tour of both the Johnson and Goddard Space Flight Centers if possible. This required forwarding everyone's personal details several months ahead to NASA so they could do security checks.

In September I emailed Dieter to say that six VKs would be attending Dayton, and could he handle the accommodation for us? This he did at the University of Dayton South Campus for three nights.

Five of us departed from Mt. Gambier Airport on May 4 for Melbourne to catch our international flight the next morning for Los Angeles via Auckland. Kevin flew direct from Brisbane to Auckland.

On arriving in LA we booked a four hour tour for the following afternoon of Hollywood, Beverly Hills, Marina del Rey, Venice Beach, and Santa Monica etc. We went for an exercise walk down the street the next morning. We had only gone for half an hour when we spotted a beam on a tower behind a house. Curiosity got the better so we knocked on the door and were greeted by Bob K6CUK and wife Norma WA6MIK. In typical amateur fashion they welcomed the six of us in and showed us their shack and we chatted for an hour or so before returning to catch our bus tour of the glitzy parts of LA.

On May 8 we left LA at 7:50 am arriving Houston Hobby Airport at 12:55 pm flying South-West Airlines. At LA,

the hostess gave the six Australians on board a special welcome on the PA before singing to the passengers then asking everyone to fasten their seat belts for takeoff.

Nick KC5KBO met us at Hobby Airport and took us all back to his home where Renee KC5VMA had lunch waiting. My wife Jill and I have known Nick and Renee for some years; they are both engineers, Nick having been with NASA for forty years and Renee with Boeing for a slightly lesser time.

Nick is also an ARRL Examinations Officer and sits most of the astronauts for their amateur licence before flying.

He is also very active with getting youth into amateur radio and has a group of "Hamsters". They both visited us in April and spoke to the SERG about their work. They hosted the six of us for four nights, taking over the whole top floor of their home. The first night they put on a BBQ for us all, inviting staff from JS.



Photo 1: Amateurs gathered for a BBQ at Nick and Renee's home. NASA astronaut Barbara Morgan KD5VNP is second from left in the front row.

Astronaut Barbara Morgan KDSVNP was a guest: Barbara flew in the Space Station last August and did her astronaut training with Christa McAuliffe who lost her life in the Challenger disaster in 1986. I was privileged to handle the contact she did between the ISS and her old school, McCall-Donnelly in Idaho. Later in the evening Barbara personally autographed photos for everyone in our group.

We met young amateurs from Nick's "Hamsters Club" who had gained their licence through a special young persons training program. Americans are very good at encouraging young people and they are exceptional at running emergency nets. As a result their governments are very encouraging and even allow 'Amateur Callsign Vehicle Plates' for \$1 per year.

The following morning we went with Nick to the Johnson Space Center where our security details were checked and our passes issued. The six of us along with Nick and guide then boarded a 35 seat NASA coach and were first taken to the Neutral Buoyancy Laboratory.

This is an enormous swimming pool

12 m deep and the size of a football field with a full sized mock-up of the space station on the bottom along with a mock-up of the Hubble telescope. This is where the astronauts train for around twelve months before flying into space. Working in the pool under neutral buoyancy conditions wearing gloves and a space suit is as close to the real thing as they can get.

After spending an hour here and meeting John Grunfield, who will be doing repairs to Hubble in a month or two, we were bussed back to Mission Control where we inspected both the ISS and Shuttle Mission control centres before being taken into the original Mission Control Room where they handled the lunar landings. One looks at this equipment now and thinks how basic it is! Kevin did get a chance to call on the RED phone but the President did not answer!!

Next we went onto the building that houses the full size mock-up of the ISS; this is used for astronaut training purposes as well. Waiting to meet us here was Bill McArthur KC5ACR. He is a devoted amateur, licensed for many

years. Bill is a veteran astronaut, having four space flights to his credit, the last flight on the ISS in 2006 for six months duration and logging nearly 2,000 amateur contacts during that time.

He is a retired Colonel with the US Army and is classified as a Master Test Pilot with over 9,000 flying hours in 41 different aircraft. After a walk through the ISS with Bill explaining everything, we went onto the shuttle they train in, again with Bill explaining everything in detail.

After presenting Bill with a gift from the Mt. Gambier and Kingston Councils, we had lunch with Nick and Renee before heading to the JSC Tourist Center where everyone inspected the capsules that returned from space, watched a movie, and made purchases from the souvenir shop before returning back to Nick and Renee's for the evening.

During the next two days Nick and Renee took us on a Houston Harbour cruise, toured a TV station, walked the Houston underground, went shopping at several electronics stores and tried our hand at pistol shooting and horse shoe throwing.



Photo 2: The Neutral Buoyancy Laboratory, a key venue for astronaut training. The people at top left show the scale.

On Sunday May 11 we said goodbye to Frank and Renee and caught our flight to Baltimore where Frank Bauer KA3HDO met us at the airport. Frank is now Chief Engineer for the Space Explorations Systems at Goddard Space Flight Center. He is involved with the development of sustained human presence on the moon.

In 1997 Frank received NASA's Exceptional Achievement Award for his work on the space-borne GPS network. He is also International Chairman of ARISS (Amateur Radio on the International Space Station).

Here again all six of us were hosted by Frank and Janet, taking over their home! Another BBQ was organised for us so we could meet other members of the ARISS team and local amateurs. The next day after the mandatory security checks we went through the workshops at Goddard and saw the new Lunar Orbiter being assembled and tested along with a hands-on inspection of the new equipment to repair the Hubble telescope. The NASA workshops at Goddard are really an engineer's dream.

On Tuesday, May 13, Will Marchant KC6ROL set up a conducted tour for us of the Smithsonian Air and Space Museum: one could spend several days viewing this complex. The Flyer, Wilbur and Orville Wright's aircraft, is on display there.

The following day Will arranged a conducted tour at the Udvar-Hazy annex at Dulles Airport. This is new, only around 3 years old and is spectacular; again an air and space museum and part

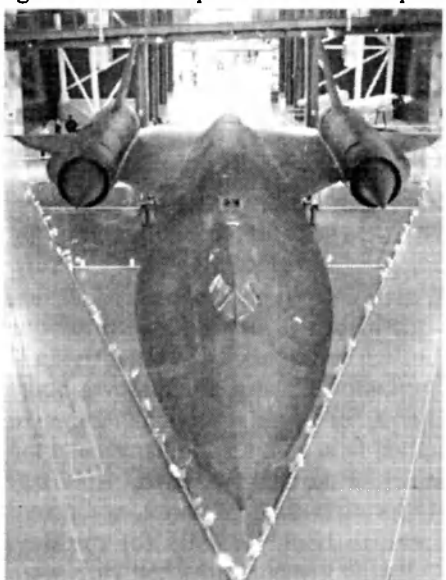


Photo 5: The Blackbird at the Udvar-Hazy Center.



Photo 3: John VK5JA, Col VK5DK, Kevin VK4UH, Bill KC5ACR, Tony VK5ZAI, John VK5DJ and David VK5HDW outside the Johnson Space Center's reception area.

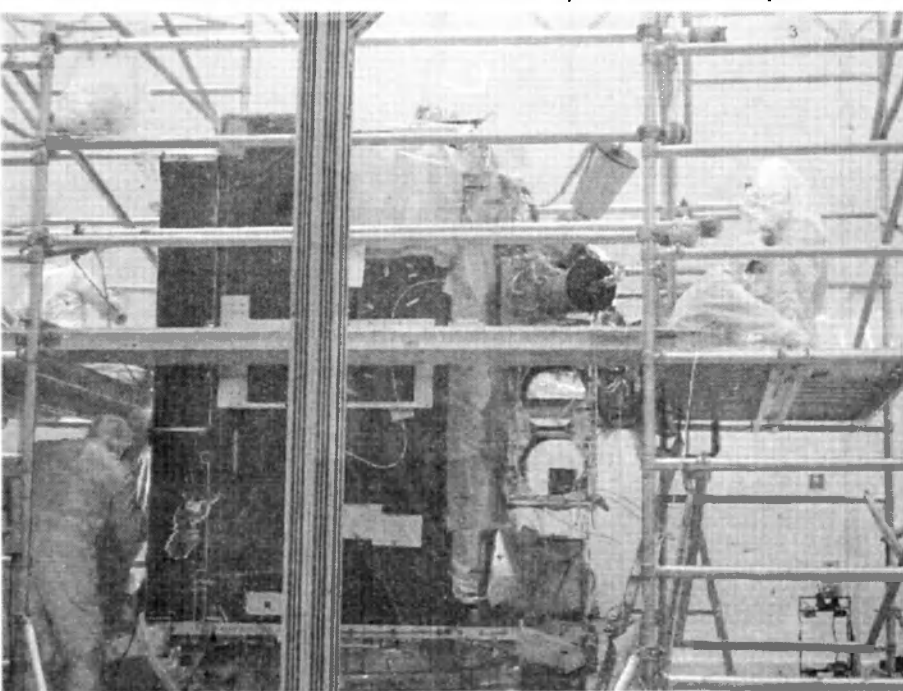


Photo 4: Lunar Reconnaissance Orbiter being assembled at Goddard Space Center.

of the Smithsonian. As you walk in the main entrance the first thing that greets you is the Blackbird SR-71A, the fastest aircraft in the world, behind this is the Enterprise, the first space shuttle. There is a great display of aircraft including Phantoms, the Enola Gay, the B-29 that dropped the atomic bomb on Japan, a Boeing 707, a Concorde, plus dozens of other aircraft from the Wright Bros era

till today. There were also many missiles and aircraft engines on display.

As well as all the above during our four days in Washington DC, we somehow squeezed in a tour of the Historical Electronics Museum in Baltimore, visited the White House (outside only!) and Arlington War Cemetery.

Thursday May 15 was a 4:30 am start: after saying goodbye to our hostess,

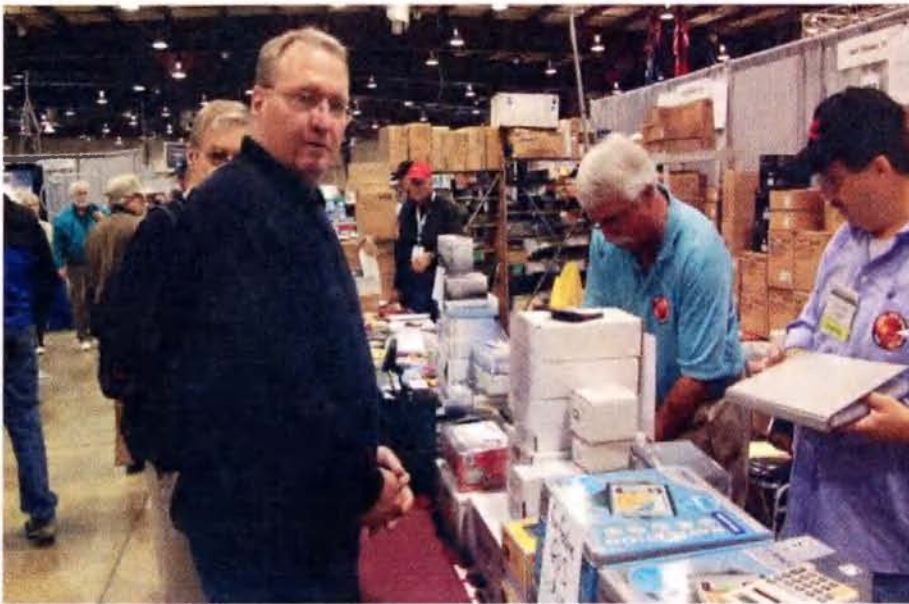


Photo 6: David VK5HDW buying up at Dayton Hamvention.



Photo 7: Niagara Falls from the Observation Tower.



Photo 8: Part of the Hammond Radio Museum at Guelph, Ontario

Janet, and Michelle, their daughter; Frank drove us to Baltimore Airport to catch our flight to O'Hare Airport in Chicago where we had to wait an hour or two to board our next flight to Dayton, arriving there around lunch time. Here we caught a taxi to the University of Dayton, South Campus, where Dieter had booked us in.

Dieter took ill earlier this year and has recently had surgery. Unfortunately his recovery is slow and he could not make Dayton this year. It was a big disappointment for us both – after working together on many ARISS projects we still have not met.

The next day it was the Dayton Hamvention, with 25 to 30,000 amateurs attending, trade stalls and hundreds of flea market stands outside. Dayton has to be experienced to be believed, every amateur should make the trip at least once in a lifetime.

We all took or bought handheld radios and were surprised that we found a frequency on 70 cm with little or no QRM so we could stay in contact.

This worked out well as we all went our own ways to look at things but could all meet for lunch or contact each other when needed. We ended up with several other VK amateurs on the frequency as well.

Several in our group made bulky purchases and organised shipping back to VK from the Convention. That night we split up and attended various dinners. Kevin and I attended the Dayton AMSAT dinner where I was guest speaker on the Friday night. Mark N8MH drove us back to the Dayton University where we were staying.

Robin Haighton VE3FRH, a past president of AMSAT-NA, and Diana, his wife, stayed with us when travelling “down under” and kindly offered to show us around Ontario after Dayton. They had beds for three of our party, the other three stayed in a motel close by. We left Dayton on the Sunday morning with Robin in his van, with all our luggage and went via Detroit arriving at Burlington, Ontario, around seven hours later. After a walk to stretch our legs we settled in at Robin and Diana's and the motel for the next five days.

The next day, May 19, we drove down to Niagara Falls for the day. Although it was raining, the Falls were quite spectacular. Many photos were taken from alongside as well as from

the tower overlooking the area. Kevin VK4UH, John VK5JA and John VK5DJ took a helicopter flight to get even better photos.

The next day was another full one: Rob took us up to Toronto where we ascended the CN tower; this was the world's tallest building, the top being 1,815 ft above the ground. We went to the observation level at around 1,000 ft and it took a bit of convincing to get one's feet to walk out onto the glass floor and look down! In the afternoon we visited the Ontario Science Museum.

At this point of our trip, Kevin left our group and flew out for London to catch up with his family. The following day, with one less, we went sailing on Lake Ontario for three hours and visited the Hammond Museum of Radio in Guelph.

This is really well worth the visit especially for anyone interested in vintage radios. They have sections on Broadcast, Military, Amateur, Hammond Radios, and Tubes etc. They also have an active Amateur Station with the call signs of VE3BJ and VE3HC. Visiting



Photo 11: Dick AH6NM and Nancy WH6PN at the ARISS Earth Station at Sacred Heart Academy in Honolulu.

amateurs are welcome to use the station if they desire and we found it interesting to swing the beam west to call VK but nothing was heard.

STOP PRESS

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We are the WA agents for these famous brands



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This is some of what Jason Reilly VK7ZJA had to say Quansheng in AR in November "... solid and rugged ...comfortable to hold...the audio qualities are superb! This is one of the nicest sounding handheld radios ...

For \$100 (yes, Australian Dollars)...this radio represents absolutely phenomenal value.

.....The Quanshengs come highly recommended by me; I am sure you will be tickled by just how well these radios work for the money!"

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SPECIFICATIONS:

- 1) Voice Prompt on Keypad
- 2) CTCSS with 39 codes
- 3) 99 Storage channels
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- 5) Large screen LCD
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- 14) Auto power save
- 15) Output power: 4 - 5 W
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Extra Battery (1100 mAh)	\$12
Speaker Microphone	\$12
Headset/Microphone	\$8
SMA to BNC Converter	\$5
\$7 shipping charge on Items ordered separately	

Victor Frequency Counter

\$119
Delivered!!



- 8-digit LED display.
- High stability
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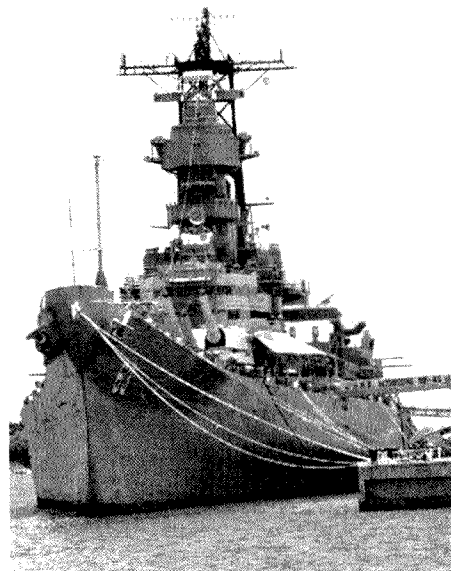


Photo 10: USS Missouri (Mighty Mo)

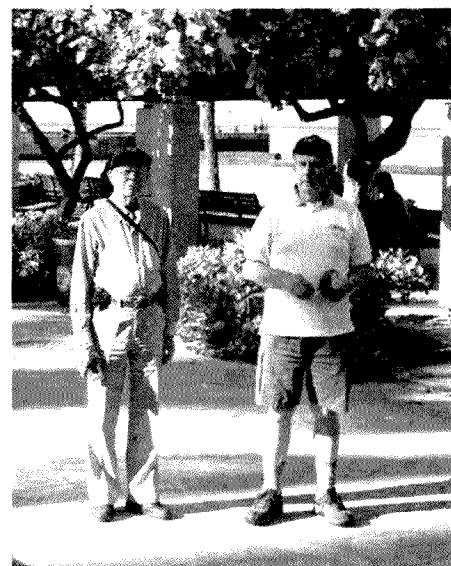


Photo 9: John VK5JA and Col VK5DK at Waikiki Beach.

During the three days here we went sightseeing with nothing in particular planned. We took in Lake Louise, Sulphur Mountain, The Cosmic Ray Station and the surrounds. This is really some of the most beautiful country you could ever imagine; photos just do not do it justice. We walked the length of Lake Louise which was just thawing with ice and snow still on top. We found Banff expensive, but being a tourist area this was expected.

Tuesday May 27 saw us on the way back to Calgary again to catch our flight over the Rockies to Vancouver. Our one regret here was that we did not drive to Vancouver through the Rockies from Banff, we had gained that much confidence in David's driving.

Shortly after arriving at our motel in Vancouver a little after lunch time on May 27, Barry VA7GEM and Jane called in two vehicles to pick us up and take us to their home in the mountains overlooking Vancouver Harbour. There we enjoyed a BBQ tea. I met Barry and Jane several years ago when they were travelling Australia, they are both avid gem collectors hence the call sign. Barry had the call VK2GEM while in Australia.

The following morning they arrived again in two vehicles, this time to take us on a sightseeing tour of Vancouver for the day before flying onto Hawaii that night. Vancouver is a lovely city with all its parks and gardens and a beautiful harbour. Most of the ships depart and return from here to cruise the Alaskan coast.

We did not arrive at our hotel on Waikiki Beach till nearly midnight Hawaiian time. We noticed the change in temperature coming from Banff with snow all around to Honolulu in a little over 24 hours.

I had an appointment at 9:00 am the next morning with friends of Barbara Morgan's and Dr. Luke Flynn, the Director of the Hawaii Space Flight Laboratory to discuss the deploying of a new satellite they propose to launch in 2010.

After this meeting we visited Pearl Harbour and spent the rest of the day there. After watching a movie on the bombing of the Harbour, we did a boat cruise over to the Arizona Memorial. This memorial is built on top of the Battleship Arizona lying where she sank

with the loss of nearly 2,000 lives. The outline of the ship is quite visible just under the water with a few parts just above. One can still see droplets of fuel oil seeping to the surface after all these years.

After catching the launch back to the shore, we then caught a bus to Ford Island to board the Battleship USS Missouri. The Missouri last saw service in the Gulf war and is now retired and open for inspection in Pearl Harbour. On September 2, 1945, Japan signed the surrender document on the deck of the USS Missouri in Tokyo Harbour.

"Mighty Mo" as she was affectionately known, has nine sixteen inch (406 mm) guns that could fire a shell 40 km. The ship's communications centre has been taken over by amateurs and has been restored close to the original with an active amateur station on board, call-sign KH6BB. Luckily we were given a guided tour of the radio room by Ned KH7JJ after the guides at the gate spotted the call-signs on our hats. The radio room is usually off limits to visitors.

Friday May 30. After some last minute shopping and a walk along Waikiki beach in the morning, it was back to the Queen Kapiolani Hotel where I had arranged to meet Dick AH6NM and Nancy WH6PN. They are part of the ARISS team and run the Hawaiian ISS telebridge station.

Following the inspection of their station at the Sacred Heart Academy, we had an enjoyable lunch together after which Nancy drove me back to our hotel to join the others. We all relaxed around the pool till it was time to make our way to Honolulu Airport for our flight back to Melbourne via Auckland.

Five very tired amateurs arrived in Melbourne around 11:00 am then had to wait half a day to catch our regional flight back to Mt Gambier, which arrived at Mt. Gambier a little after 7:00 pm that night. Kevin had returned to Brisbane from London a couple of days earlier.

Summing up the trip, we all agreed that it was the trip of a life time. The hospitality of everyone in the US and Canada was unbelievable. Apart from the phone, we used IRLP links to keep in touch with amateurs back in the south east of South Australia, and yes the Australian nextG mobile system is compatible with the US and Canadian systems.

ar

VK2

Foundation course for Girl Guides

Tony LaMacchia VK2BTL

The NSW Girl Guides showed interest in bringing Amateur Radio into their courses offered to their girls. Hornsby and Districts Amateur Radio Club (HADARC) was asked to run a pilot course to determine whether it was suitable as a Girl Guide training module in their activities program. The Hornsby club was keen to run the course, as some of their family members were involved with the Guide movement.

The course was run as a normal two-day Foundation Licence class by Peter Tolmie VK2ZPT with assistance from Tony Farrow VK2AJF and Tony LaMacchia VK2BTL.

Six Girl Guides attended at the Waitara Girl Guide Hall on the 14th and 15th June, with two of them coming from Maitland. Peter's presentation of the material was excellent and presented with such clarity that the candidates appreciated his time and effort in making sure each subject was clearly understood. The youngest candidate was ten year old Leah McNamara who inspired us with



The six successful Girl Guides.

her determination to pass. It seemed that the older candidates were more nervous than the younger one but the smiling faces and sighs of relief said it all when they were told that they had all successfully completed both theory and practical levels. The two from Maitland are planning to help with JOTA later this year.

RoseMarie LaMacchia (now VK2FRLM), the Waitara Girl Guide Leader, reported back to NSW Girl Guides of the success of the weekend. They are now planning to hold it as one of their courses offered to girls at the Glengarry Training Property, North Turrumurra, using the HADARC Training Team as teachers. **ar**

VK6

Keith Bainbridge VK6XH

Another month has come and gone, I have only just received my copy of the August issue and now the September one is upon me.

Hills Amateur Radio Group news

The Hills Amateur Radio Group (Inc.) held its Annual General Meeting on 26 July 2008. The following office bearers were elected:

- President Mick Crowley VK6YXL
- Vice Pres. Geoff White VK6NX
- Secretary Richard Grocott VK6BMW
- Treasurer Allan Wood VK6ANT
- QSL Manager Graham Rogers VK6RO
- Shack Manager

Craig Adams VK6ACA
Social & Contest Coordinators

Marty Martin VK6FDX and
Martin Stretton VK6ZMS

The annual reports were presented, and members will look forward to a continuation of the revitalisation of HARG in 2008-2009.

The VHF Group meeting for July had a very interesting presentation by Phil VK6APH. For those not in the know, Phil is our VK expert on HPSDR, or high performance software defined radio and a columnist in the RSGB's RadCom magazine, with Steve VK6VZ, on this subject. He reproduced the presentation he had given at Dayton this year for members and I for one finally understand how the principle actually works. He also gave an insight to the full HPSDR project and the amazing performance possible with this latest set of boards that can be

combined into a true top end transceiver. This aspect of the hobby is advancing at a tremendous rate and I personally feel that the time is not too far off before all radios will be using this technology, not just the few top end transceivers that are currently available.

Now, from Neil VK6NE, the VK6 QSL manager.

Where are my bureau cards? Well they are certainly not in the VK6 QSL bureau. The delivery of cards from overseas has been dismal.

Here is a run down for the last three months, and remember that the quantity as quoted has to be spread over the membership using the buro:

May - VR2, 10; LZ, 31; EI, 13; PA/ON, 130; UA, 330; VE, 20; YO, 12.

June - SP, 280; HL, 65; YO, 65; UT,

16; HL, 385; UT, 16; OZ, 35.

July - PY, 14; EA, 280; 9M, 3; YL, 28; PA/ON, 50; DL, 640.

Notice that no cards have been received recently from the big societies. There was a delivery from W in January 2008, as there was from JA, and from both G and I in April. And so on. Received from SV was a package of 600 cards, the first since June 2005. Some cards were five years old! Another package from XE was the first since August 2006, with some cards eight years old. Now that is really slow bureau operation.

No wonder amateurs are sending QSLs by direct mail! And people complain that VKs are terrible QSLers!

Hamfest

The NCRG Hamfest was a huge success with an attendance figure close to 400 and a great show of support from the traders present. Unlike the other states, we only have one hamfest per year in the west, so it has to be a good one.

The organisation of the event by the Northern Corridor Radio Group once again excelled, with many commenting for days afterwards that it had been the best ever.

Just to give you an idea of the prizes that were won, how is this for a \$2 ticket? Yaesu FT-7800, Icom IC-V82 handheld, Bushcomm Mobile HF vertical, Quansheng UHF handheld, Vibroplex Mini Morse key, 23 cm beam and a soldering station. A full report will follow shortly.

WARG

The WA Repeater Group (WARG), at its last meeting, had a special meeting to resolve the insurance issues facing all incorporated groups in WA.

We decided many years ago to insure our members for personal injury when taking part in organised events such as placing antennas on towers. This is outside the cover provided by the WIA and it recently expired. WARG have graciously paid the premium for all the incorporated groups and will invoice them based on a financial member status. To the groups in the state who are not incorporated and wish to be involved in this policy and the other benefits available to incorporated groups, I suggest you look into it as soon as possible. It opens doors for possible grants from the Lotteries Commission, for example, but note they are only available if you are incorporated.

I am writing this a few days before the annual rat race, sorry, RD contest. Hopefully there will have been a big turn out around the state as usual and we will be in the winner's chair once again. I would like to hope there will be some propagation on HF as well.

I received an email from Chris Lord VK6BHI relating to the Astronomy display at the Hamfest this year. Regarding Radio Astronomy, have you had a look at the West Australian Radio Observatory web site: <http://members.westnet.com.au/waro/> ? I have been out to their premises at Chittering a few times and have spoken to Mike Handley, their Technical Director, about the possibility of using their nine metre dish

for EME experiments. They are a small group and would welcome more interest in, and support for, radio astronomy.

I am sure there are many like Chris who would be interested in the activities above and, if so, contact me and I will put you in touch. I do know A1VK6ZAY is involved in radio astronomy and I believe there are others interested in moonbounce around the state as well.

Now to D-STAR

And what is happening in the west. Tonight I spent a few hours up at the D-STAR site working on the gateway and 23 cm. I did several tests to VK3RWN and VK3JFK with 5/9 reports. At this stage, only a select few will be registered on the gateway as we have some more testing to do. Once this testing is complete, registration will be open as it is at other D-STAR gateways.

23 cm DD is now up and operational also. It is unfortunate that I have no one here in Perth to do any high speed Digital Data links with, however via the Gateway I can connect to any ID-1 in the world so I now do not feel so alone! Hurry up VK6NOW and VK6ZMS, I am waiting! I will most likely be doing some 23cm.

2 m D-STAR is still operational on 146.8375 (-600), however this will only be whilst I am on site (weekends and so on), so keep monitoring it. Whilst the D-STAR repeaters are off the air, there is still plenty of activity on the Si.

Please ensure your settings are as follows:

- MYCALL: VK6xxx(insert your suffix)
- URCALL: CQCQCQ
- RPT1: VK6RWN C
- RPT2: VK6RWN G

If your settings are always set to this, you will be able to speak on the repeater and access the gateway. The D-STAR repeaters should be up again all weekend so please feel free to do some signal/propagation tests.

Heath VK6TWO/VK3TWO
VK6 D-STAR co-ordinator.

Things are happening!
I would like to thank all those here in VK6 who have taken the time to contact me regarding the VK6 notes, it makes it all worthwhile. That is it from the west for this month, good luck and good DX to you all.

I am waiting for your input! 73

ar



A view of some of the action at the NCRG Hamfest.

VK3

Jim Linton VK3PC

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Radio active national parks

Details and rules for the Keith Roget Memorial National Parks Award have now been posted on the Awards section of the Amateur Radio Victoria website.

Already there is a level of interest in this operating award that encourages portable operation in Victoria's 40 National Parks. Individuals, groups and clubs are talking about going portable in their local National Park.

Chris Chapman VK3QB, Award Manager has initiatives planned that will help promote the award and facilitate those seeking to activate a park or chase such activations. An online notification of intended activations is also set up.

A full list of the National Parks, a map showing their distribution throughout the state, the rules and a set of printable optional log sheets are also available.

A grandfather provision in the rules recognizes the award's history, dating back to circa 1971. Holders of the initial WIA Victoria National Parks Award or the earlier Keith Roget Memorial National Parks Award can claim them as a credit towards the new award.

RadioFest 2009

The Centre Victoria RadioFest No. 3 will be held at the Kyneton racecourse on Sunday 15 February, 2009.

Over the next couple of months the latest news and developments about this major event will be on the website radiofest.amateurradio.com.au

The organising committee has representatives from Amateur Radio Victoria and the Central Goldfields Amateur Radio Club.

For inquiries email radiofest@amateurradio.com.au, mail address Box 6296, White Hills 3550, Fax: (03) 5442 8025 Phone: (03) 5442 8022.

Broadcast invitation

In response to an invitation from the WIA Broadcast Producer Graham Kemp VK4BB, the weekly VK1WIA Sunday

broadcast on 14 September will be the product of Amateur Radio Victoria.

Members involved in this project include four announcers on the former WIA Victoria VK3BWI broadcasts, so in some aspects it will be an on air reunion or encore broadcast for them.

The aim of the project is to put together a 30 minute broadcast of the standard and style set by VK1WIA while also having scope to do some things differently.

There is a rich heritage of amateur broadcasts in Australia dating back to 1921. Prior to the formation of WIA National in 2004, there were six state based broadcasts and some of these continue today serving mainly local requirements.

The weekly broadcast is an integral part of amateur radio in Australia and a primary means of getting information out to radio amateurs.

If you are not a regular VK1WIA listener but can tune in Sunday 14 September then please do so. Comments on this project broadcast will be welcomed either via the callbacks or email.

Warm winter tales from the EMDRC

Winter at the Eastern and Mountain District Radio Club seem to be the time for frenzied activity on every front.

Whether it is contesting, socializing or playing radio, the outside temperature seems to have little or no effect on our enthusiastic members.

The start of July saw the new committee get into gear under the able guidance of our newly elected President Harry Kraehenbuehl VK3KBA.

Around the same time was the presentation on the workings of the Australian Synchrotron by Michael Roberts Senior Education Officer of Monash University's Science Centre. The event was a huge success.

Then came Greg VK3FUNK our 'funky man' who delivered a most informative and professional presentation about St John Ambulance to the members of the EMDRC at their July coffee shop meeting.

Membership renewals

Membership renewal notices up until October this year have now been posted to members.

Thank you to those who have already responded to their renewal notices issued earlier this year. A special mention of our Amateur Radio Victoria office volunteers who have efficiently dealt with the hundreds of the two-year membership renewals.

Membership of the state-wide organisation costs \$30 Full or Associate and \$25 Concession, for two years. New members are most welcome and an application form can be found on our website or posted out on request.

Foundation class

The next weekend training and assessment sessions for the Foundation Licence will be 20/21 September. Enrolments close very soon. For inquiries or to enrol contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Greg works as a volunteer in the St John communications department and his talk covered pretty much all aspects of the St John operation before focusing on the details of the comms centre.

It would be fair to say that most who attended went away with a much deeper appreciation and understanding of the community services that St John provides and some will be considering taking up the opportunity that Greg put out, to join the St John team as a volunteer communications officer.

The rest of July was filled with a visit to the GGREC Hamfest and lots of hot beverages to keep warm in the shack. And just when we thought that the winter momentum was lost, along came another edge-of-the seat presentation at the 1st August meeting.

The subject this time was Infrared Thermography.

continues over

News from

What is Infrared Thermography? I hear you ask.

Well... What is worn under a Scotsman's kilt? Or... what does Ross Gardner VK3UB wear under his skirt?

All was revealed at the August meeting when guest speaker Roger Christiansz, of FLIR Systems Australia Pty. Ltd., gave a most interesting presentation on a stunning technology, Infrared Thermography.

Infrared Thermography is the technique for producing an image of invisible (to our eyes) infrared light emitted by objects due to their thermal condition.

A typical thermography camera looks similar to a camcorder and produces a live TV picture of heat radiation. Sophisticated cameras can actually measure the temperatures of any object or surface in the image and produce false colour images that make interpretation of thermal patterns easier.

The image produced by an infrared camera is called a thermogram or sometimes a thermograph. Roger's presentation covered both the technical operation and practical applications of this amazing technology. The looks on some of the faces in the room told the rest of the story!

As if to drive home the point that the EMDRC folks know how to keep warm in winter, a room full of people attended the winter luncheon at the Mountain View Hotel a couple of days later.

Our spy-cams located outside the venue recorded their attendance at 12 noon and then showed no activity up to 4 pm indicating that it was a long and fulfilling lunch!

The rest of August will have seen us participate in the RD contest and made ourselves heard at the ILLW. Some members may even manage QSOs with special event stations of Beijing 2008 while others will be gearing up for the ALARA Contest at the end of the month. Foundation classes and CW sessions continue, as does the club's telescopic Porta-Mast project to be completed shortly. It will be followed by the Diplexer project.

What a year this is shaping up to be!

www.emdrc.com.au email - vk3er@emdrc.com.au

Contributors:

Robert Broomhead VK3KRB Joe Chakravarti VK3FJBC

Photos by Robert Broomhead VK3KRB



Roger Christiansz, Managing Director FLIR Systems Australia Pty Ltd., presents Infrared Thermography.



Infrared Thermography in action...is that you Charles...What happened to you??

BARG

Ballarat Amateur Radio Group

HAMVENTION

Great Southern Woolshed, Ballarat
SUNDAY 26th OCTOBER 2008 10am

(NOTE ADVANCED DATE)

Trestles Available Booking Essential

Roger VK3ADE

03 5330 3081 hamvention@barg.org.au

S.A.D.A.R.C SHEPPARTON HAMFEST

14th Sept 2008 St. Augustine's Church
Hall Orr St. Shepparton (usual place)

New and used amateur and electronic gear for sale by
commercial and private traders

Traders access from 8 am, doors open to public at 10 am.

Entry fee \$5. Children under 15 free. Trestles \$10.

Early bookings would be appreciated.

Contact Daryl Hitchcock VK3KL phone 03 58711444, or e-mail:
churr@netspace.net.au

Food available as usual on site.

Call club 2 m repeater VK3RGV 146.650 MHz for directions

The Geelong Amateur Radio Club – The GARC

Tony Collis VK3JGC

The Ionosphere

At a moment's notice, Chas VK3PY gave an impromptu and absorbing presentation on the above topic with an accompanying slide show. The talk lasted for nearly 2 hours and drew on material from the Australian Government IPS Radio and Space Services and other sites.

The IPS information in particular encompassed a large number of factors that explained clearly the attributes of the various ionospheric layers and their impact on the RF spectrum during the day and night time.

The solar cycle varies over a period of typically 10 to 11 years from trough to peak and then back to another low point. The conventional index of the cycle is known as the sunspot number which is defined from observations of the sun by optical telescopes. This index can be defined on a daily basis but is more normally averaged over a month or a year. The yearly average is mostly used as an indicator of the progress of the solar cycle we are slowly exiting.

Of particular interest was the double peak of solar activity during the sun's 11 year cycle and the manner in which radio communications are distorted in the presence of an Aurora; this was illustrated by actual recordings of QSOs when this phenomenon was present.

One of the more impressive illustrations provided by Chas was the time lapse photography from a satellite monitoring the sun's corona over several days, showing the extreme violence of the eruptions. Ejections of material from the sun may follow these solar flares and if the material reaches the earth, it can produce magnetic and ionospheric disturbances with consequences for our HF communications, geomagnetic surveys for minerals, the operation of long pipelines and power lines; as happened in Canada when one such burst caused widespread blackouts as well as a host of other effects.

Also covered was the use by the Australian Government of ionosondes. An ionosonde transmits a signal vertically and records all reflections - it is basically



A flare taken in the USA in 1993, at right Chas VK3PY

a radar for scanning the ionosphere. The highest frequency reflected back from the ionosphere is usually written as foF2, the F region critical frequency, and relates to the MUF for the circuit.

Sleep apnoea

As a complete contrast to the ionosphere talk, Gavan Byrne from Melbourne CPAP Services gave an illustrated talk on sleep apnoea and the complications that arise for sufferers. Gavan explained that people with sleep apnoea snore loudly and have restless sleep.

Often these symptoms are not noticed by the person with sleep apnoea but by the partner, who may also notice frequent pauses in breathing and snoring lasting between 10 seconds and a minute. Each pause ends with a very deep gasping or snoring noise and a brief awakening as the person struggles to breathe.

Several GARC members could directly relate to the symptoms that Gavan identified but in the main asserted that it was their wives that had the problem

not them! This was a very well received presentation with most of the 'mature' members availing themselves of the leaflets provided.

GARC Supported Repeaters and Beacons

Ken VK3NW confirms that all repeaters and beacons are operational and working properly. Peter VK3ZAV confirmed that the VK3RGC repeater has been selected for IRLP operation and will be available in due course.

On July 6, the main club repeater VK3RGL went to CTCSS on 91.5 Hz.

Training

Currently there are five new members preparing for their F call examinations and a number of existing club members with F calls progressing towards their standard licences.

VK5

Christine Taylor VK5CTY

Adelaide Hills Amateur Radio Society

It has been a busy month for AHARS. An assessment event for six students was held on the second weekend of July. All passed: a very satisfactory result.

A number of our members were radio operators for the Coppers' Rally of South Australia (ROSA) in the Mount Crawford Forest two weeks later. They had a very cold, damp weekend but also enjoyed using our hobby to add to the safety of the cars and spectators. It was another valuable opportunity to operate in a mobile, self-sufficient sense.

Amateurs are very proud of the fact that we often provide important

emergency assistance in the event of a disaster anywhere in the world.

Our monthly meeting in July was a particularly interesting one. Eight or nine different members showed and talked about a project they have recently completed. For a full set of photographs of the offerings go to our website, listed on the WIA website under Clubs.

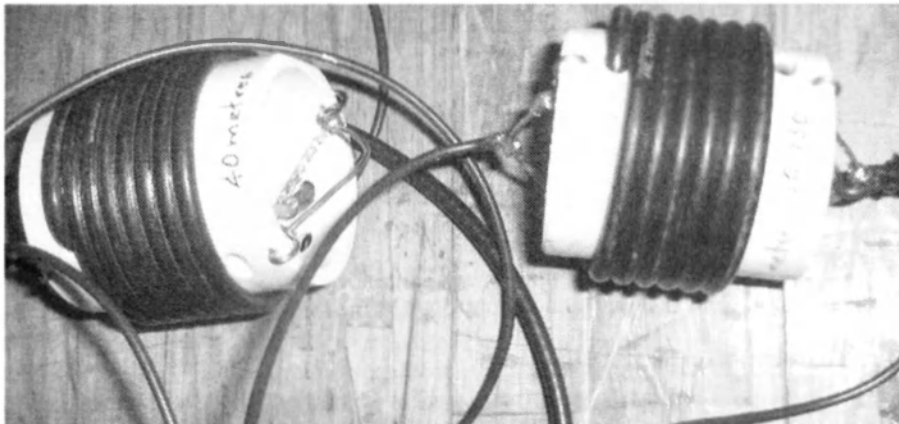
With the ROSA so soon after the meeting, the first of the member's projects was of particular interest. John VK5EMI has converted one of the multi-compartment hobby boxes on wheels into a portable radio station. He

was tired of carrying four or five separate boxes out of the car to his operating station whenever he participated in events such as the ROSA. The box provides him with a battery operated radio and lighted recording table.

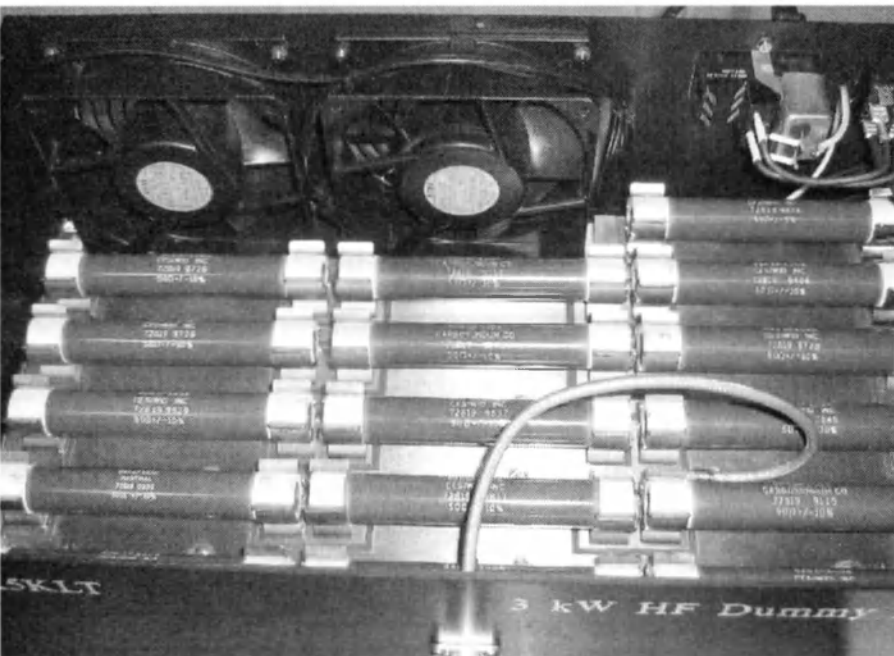
There were several technical ideas, including a "over" timer to use for repeater operation made by Keith VK5OQ, a superhet transceiver from George VK5ZG, a filter for a valve amplifier by Dean VK5LB and a high voltage filter shown by Darryl VK5ZJS. Leigh VK5KLT showed us a dummy load capable of managing a kilowatt without problems, Jim VK5JST had a sine wave generator to show, and VK5RG showed us a replacement power supply from Heathkit that was still available.

Hans VK5YX had brought along his second K2 Elecraft (he made one of these from the kit several years ago and, after using it for a while with great results, decided to sell it, and then regretted that he had done so). Hans gave us a very interesting lecture, with photos, some time ago, about the building of the first one and this one was as immaculate as the first.

There were several less technical but equally interesting devices shown by other members. Barry VK5ZBQ demonstrated how to make your own ladder line; Lyle VK5XNB had a light, portable aerial made of light weight coax with traps wound in different sized short pieces of plastic pipe, and



Simple traps for 40 and 30 metres built by Lyle VK5XNB



Dummy load for a kilowatt built by Leigh VK5KLT



John VK5EMI's travelling radio box

Radio Amateurs Old Timers Club of SA

Annual luncheon Thursday 23 October 2008

(12 noon for 12:30 lunch). (Please bring your Seniors Card.)

Marion Hotel, Marion Road, Mitchell Park

Public transport Bus M44, Stop 24

RSVP to one of the following committee members
before 20 October 2008:

Secretary: Ray Deane VK5RK. Phone: 8271 5401

Assistant Sec.: Ron Coat VK5RV. Phone 8296 6681

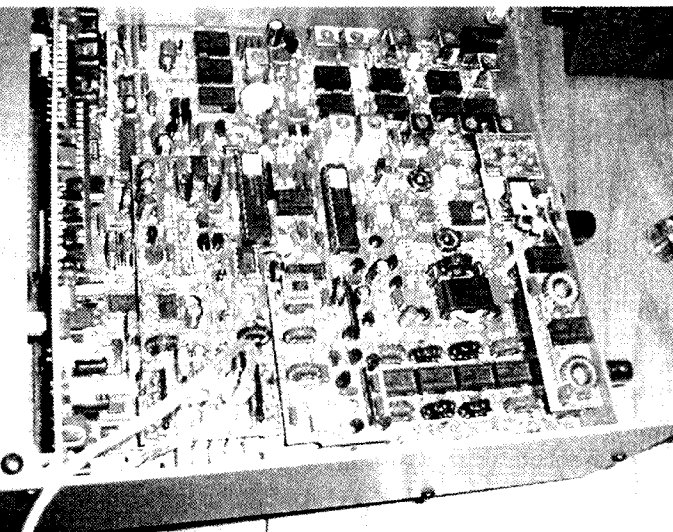
Ray Deane, Honorary Secretary

AHARS Buy and Sell SUNDAY 9th November

New Venue **Goodwood Community Centre,
Rosa Street off Goodwood Road**

**Doors open 9.30. ALARA food and drink plus
Barbecue lunch**

BIGGER AND BETTER THIS YEAR Come and meet all your
friends



A view inside the Elecraft K2 transceiver built by Hans VK5YX

Steve VK5AIM showed off the demountable Yagi used to demonstrate these aerials showing the effect of reflector and director elements and how spacing is also important.

All in all a very varied and interesting Show and Tell.

AHARS followed that meeting with the mid-year dinner a couple of nights later. This was pronounced a success and enjoyed by all

A special luncheon in VK5

The formation of the new WIA has been a marvellous change but, in VK5 amateurs have missed the regular meetings of people from all clubs, so Paul VK5PH decided we needed a group gathering.

He organised it as a luncheon at the Mount Osmond Golf Course. This is just out of the city off the South Eastern Freeway, so it is relatively central.

A Sunday was chosen and members of all the clubs were personally invited by Paul. He attended meetings all over the city to urge everyone to participate and to bring their wives and families.

On the day 80 people sat down to a marvellous meal served smorgasbord style so you could go back for seconds if you wished. All who stopped either before or after the meal to look at the view were swept away. The restaurant is on the top of Mount Osmond with almost 180 degree views, and an expanse of green of the golf course as a contrast.

Paul was determined that we were not going to stay sitting at the same table talking to the same people all the time, so he had designed a crossword about us all. Many of the answers were callsigns but some were names. To find all the answers we had to get up and go to other tables to ask:

“Is this you?”, and “What is your callsign so I can fill in these boxes?”

It is doubtful if anyone filled all the boxes but it served its purpose to get us moving around and meeting people. We never did find all the answers on the day but they have been posted on the AHARS website.

One story heard that day was about a very young YL amateur, Laura VK5FLKM, ex VK2FLKM, who participated in the fox-hunts at the SERG Convention with considerable success. She was third in the mobile competition and did almost as well in the pedestrian mobile.

At age 11, that is remarkable. Lauren would love to find a VK5 club who runs fox hunts but so far has not found one. Laura's OM is Robin VK5ZAT and they live in the Hills. Robin is a driver so unfortunately they cannot often attend club meetings but maybe someday that will change. Laura also has a younger



Laura VK5FLKM with Robin VK5ZAT and sister Miranda.

sister Miranda who may one day join Laura as an amateur.

Laura's callsign filled some of the boxes in the crossword!

Paul had some Icom radios and Icom caps to give away as prizes, as well as a number of other gifts. The gathering was amused to see that, despite many different ways to choose winners, everybody at one particular table won a prize!!

Chance is a strange bedfellow.

ar

VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

New 13 cm World EME Record

Congratulations to Rex VK7MO, who was ably assisted by Eric VK7TAS, who on 27 July broke the world 13 cm Earth Moon Earth record twice in one session! Details can be found in the VHF/UHF section of this magazine.

National ALARA Meet 2008

As you read this the 9th ALARA National ALARA Meet 2008 in Ulverstone will almost be underway. It also celebrates 33 years of ALARA. At the time of writing there were already 70-80 people booked from all over the place. Susan Brain VK7LUV is the coordinator of the Meet and can be contacted on vk7luv_susan@yahoo.com.au. I hope to see you there.

NW Tasmania Amateur Radio Interest Group

The August meeting was very well attended. After a short business meeting there was a presentation by Rex VK7MO and Justin VK7TW on their over the horizon optical communications experimentation. The talk was well received and many questions were answered along with discussion about possible locations for the Bass Strait contact using the technology sometime in the future. Stay tuned!

Tony VK7AX has added three new amateur radio podcasts to his nightly broadcasts schedule. These include "Practical Amateur Radio", "Resonant Frequency" and "ICQ". For more details about these broadcasts please take a look at: <http://203.24.120.3/spectrum/>

Northern Tasmania Amateur Radio Club

The August NTARC BBQ meeting night at the Mount Barrow interpretation centre went very well. The fire was stoked up, the food and drink flowed and of course the company was second to none!

The event was declared a great success. We welcome Kevin Warrick VK7FKAW to the bands. Kevin is harmonic of Bryn VK7FBAW so, stay tuned in the North for this new callsign. Peter VK7PD would like to know if anyone would be interested in attending classes to upgrade their licence to Advanced, or maybe Standard level. Contact Peter on 6331 7761 or Al VK7AN on 0417 353 310 if you are interested.

Radio and Electronics Association of Southern Tasmania

Welcome to three new Foundation Licensees, Brett VK7FMMM, Warren VK7FEET and Shane VK7FOOT. Brett and Warren have already been heard on repeater VK7RAD/RHT. Welcome to the airwaves.

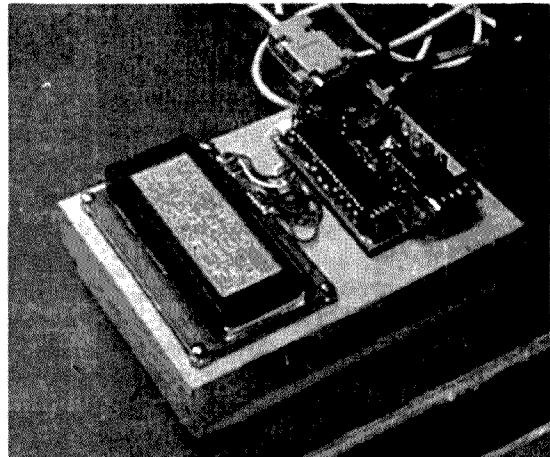
Danny VK7HDM gave the August presentation on the packet radio systems that he runs from his home QTH. This comprehensive and complex system makes available many packet applications including TNOS, Xrouter, DXSpider, packet BBS, Telnet, AXIP, AXUPD, WWW, FTP, Chat, Converse, SMTP/POP3 Mail services and of course packet radio! This was a great talk, thanks Danny.

Scott VK7HSE also brought along and described his beta version of the TinyTrak4 packet modem which he helped the developer debug recently. A very impressive device and cheap for what it can do! Thanks Scott.

WICEN Tasmania (South)

August was busy for the WICEN South team. The team provided safety checkpoint radio communications for the Southern Endurance Riders. (See story next page). The next weekend they operated in the ILLW and RD Contest at the Cape Bruny Lighthouse and then August 30 was their AGM at the Brookfield Winery, Margate.

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Scott VK7HSE's TinyTrak4 beta modem displaying APRS traffic



Danny VK7HDM describing his packet radio configuration.

ALARA

Christine Taylor VK5CTY

Did you participate in ALARA's birthday?

The Birthday Net on Saturday 26th July was extremely well patronised with 13 members on at one time or another during the hour of the Net. It was fun to wish each newcomer "Happy Birthday".

The net was notable for the many people calling in from 'out of home state's. Marilyn VK3DMS and Jenny VK5ANW had exchanged states, which added to the pleasure of the unusually good propagation conditions.

The birthday luncheons

The earliest birthday luncheon was held in VK4 by the Gold Coast group, with 12 YLs present. A dozen met at Melbourne's Southbank, and eleven enjoyed each other's company at the Morphett Arms in Adelaide. VK6 will hold the last Birthday luncheon on their regular Thursday in September.

Within ALARA and other YL groups, we exchange the greeting "33" instead of "73" or "88", exchanged between amateurs worldwide, as this was the 33rd year for ALARA was recognised at each of the special luncheons.

Those of us who live in cities with enough numbers to have regular lunches are fortunate. All welcome visitors from interstate if they are there on lunch day and can sometimes arrange lunches if they are there at another time.

The two VKthrives attended the Birthday lunches in the visited states, which in VK5 meant that, unusually, the President and the two Vice-Presidents were at the same venue.

There were also two of the ALARA dolls, VK5GAL and VK3GYL, present. I wonder if they (and others) will be at the ALARAMEET in Ulverstone? They make an interesting addition.

By the time you read this....

You will have participated in the RD Contest, and the ALARA Contest and already be in Tasmania joining in the ALARAMEET. WOW!

I hope joined in both contests and have sent in your logs. Sending off those logs matters because every Contest Manager remarks that more call signs were heard than logs submitted. It is a shame not to join in all the way.

Remember to apply for the ALARA Award, too. Look back at this column in last month's issue to find the conditions. It really is a most attractive award to add to (or to start) your Brag Wall.

The 222 net

At 0500 Zulu – the middle of the afternoon for us – is the time to tune in to the YL NET on 14.222 MHz. Some of the overseas YLs are there, usually including a number of ZL girls.

The Net is being run very efficiently by Lesley VK5HLS – who is working her way towards her DXCC. June VK4JS wandering in VK6 is often heard. June is well known on the air for her DX exploits, being one of the rare DX operators to hold a Worked All Counties (in the US). Recently there have been some ZS calls heard, as we near the next YL International Meet in South Africa.

Propagation conditions seem to be improving. We seem to have been at the bottom of the current sunspot cycle for a long time. Now is the time to start to look for those DX stations.

The Traveller's Net

If you are a newish licensee, you may not know about the Traveller's Net run by and for amateurs travelling in VK.

Each day, at 1200 EST, there is a net run from VK6 on 14.116 MHz for the benefit of amateurs. The OMs who run the net start listening about half an hour before the official start.

If you are travelling you will want to stop for lunch, so if you make the stop between about 1130 EST and 1300 EST, tune up your rig and let others know where you are located.

Mostly the net is used for that purpose. You call in and say where you are and where you intend to 'overnight' or stay anywhere for longer. If you want to know where anyone else is, the OMs list the people who have called in early and say where they are at the time.

At the official beginning of the net there is always a call for any emergency or urgent stations, someone will be listening on that frequency to help you out. Several stations around Australia listen in every day and will act as relays for those that cannot be heard in VK6, so you are never out of touch.

If you want to speak to someone you call in and nominate a frequency then you both move to that spot and leave the net frequency clear for others.

Any messages for another amateur or to or for your family can be dealt with.

It is a marvellous service run by amateurs for the benefit of amateurs. It is also interesting to just listen in to. You hear about places you never knew existed or maybe places you have heard of but have not got to yet. It makes for good lunchtime entertainment!

June VK4SJ and Maria VK5BMT have been heard travelling somewhere in the North where it is warm.

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The gathering at one of the birthday lunches. VK5GAL and VK3GYL at centre front.

WICEN Tasmania (South) goes Horseback

Roger Nichols VK7ARN

WICEN has provided communications support for Southern Tasmanian Endurance Riders (STER) events for the past three years. Initially involvement was confined to rides in the Wielangta Forest, south of Orford on Tasmania's East Coast. Lately the team has been involved in each of the four annual rides each at a different location.

In August we returned to Wielangta's familiar area, so another dimension was proposed to STER President and ride organiser Ossie Owens. Would one of the riders carry a backpack APRS tracker unit? Ossie came to the party and found us a "willing" and, as it turned out, a winning rider.

The tracker unit, made up of a Byonics TinyTrak 3 Plus, SiRF 3 GPS and a Puxing handheld radio, was packed into a stripped out backpack rehydration unit. (They used to be called water carriers, but these days, we rehydrate, not drink). The GPS was Velcroed to one shoulder strap and a 'rubber ducky' antenna attached to a bracket providing an antenna mount via the drinking tube hole on the other shoulder strap. A 1.3 amp hour SLA battery powered the Tracker and GPS; overkill but a nice fit in the bag. The standard lithium ion battery looked after the radio. Earlier problems were overcome by wrapping the Tiny Tracker in aluminium foil, ferrite on all cables and wads of foil around the antenna mounting bracket, made up from scraps of aluminium fabricated to sit firmly in the bag. Total mass was 1.7 kilograms.

The project had multiple purposes. One, to give us something interesting to do; two, to give the waiting supporters (mainly parents and partners) something interesting to look at, and last but not least, to show how clever we are. (It is taking a long time to get our horsey friends to stop calling us the Cbers!)

All the WICEN vehicles carried APRS trackers to enable them to be guided from the Base to their checkpoint locations. On the ground checks confirmed indications gained from the Radio Mobile propagation and mapping software. Voice comms between Base and the checkpoints was easy with normal mobile 2 m gear, so the Base 12 metre telescopic mast and antenna was

devoted to APRS. To ensure good coverage around the course, a digipeater was set up on an accessible hill top. The display medium was a 17 inch (43 cm) notebook PC running AGWPacket Engine Pro and AGWTracker, USB linked via an Elcom micro TNT to an Icom IC-208H. All mounted on an eye level shelf on the WICEN trailer and powered by Honda to complete the PR picture.

The rider encountered the only problem a constant tapping on her helmet by the antenna. This was fixed for the second circuit by adjusting the bracket to give 45 degree polarisation and helmet clearance.

The tracking was perfect around the two 40 kilometre circuits of the course, 80 kilometres in total. Being able to see the speeds travelled on the varying topography, ranging from flat paddocks, through steep rocky tracks to soft beach sand was a bonus in the "We are not Cbers" stakes! To top it all off, our horse came in first!

Roger VK7ARN
Operations Coordinator
WICEN Tas. (South) **ar**



matt bennet 0408 339 675

The tracker unit on Janine Parr's back, who in turn is on Madam Pandora, a pure bred Arab mare and a winner.



Chris VK7FCDW (left) and Roger VK7ARN (right) working hard at Base

for about as long as he had been writing the AMSAT column, and wish him well for the future.

Bruce R Kendall
VK3WL/9V1WL
Ballan Victoria.

OTY Cover story August 2008: Spy In A Biscuit Tin

John Nieman finds it odd that although the German Secret Service (the Abwehr) was monitoring radio traffic between England and France, the German forces were slow to react to Overlord.

There is nothing strange about it at all. The Abwehr from the very top to the agents in the field were heavily infiltrated with traitors. Admiral Canaris, the chief of the Abwehr, was a traitor from the very beginning of the war, a key player in the 20 July bomb plot, as was his deputy Colonel Hans Oster.

The intelligence regarding the allied landings was deliberately withheld from the commanders in the field.

Regards
Terry Rumble VK2HGQ

CELEBRATING BEING LICENSED FOR 10 YEARS?

Congratulations!



Now you can join the

Radio Amateurs Old Timers Club of Australia

as an associate member

If you have been licensed more than 25 years then you are invited to join as a **full member of the RAOTC.**

In either case a \$5.00 joining fee applies. The annual fee is \$8.00 or only \$15.00 for two years. The Club journal, OTN, is published twice each year and there are monthly news broadcasts. We also guarantee good fellowship. Write to

RAOTC,
PO Box 107,
Mentone, VIC., 3194

or call Derek VK3XY on 03 9563 6909
or Bill VK3BR on 03 9584 9512.

More details of the Club and membership application forms are available from our web site:

<http://www.raotc.org.au>

New building block for microwaves PLL-stabilized Crystal Oscillator for 12 GHz

Kuhne have sent information on how an external 10 MHz reference frequency can be connected to achieve highest frequency accuracy. This is necessary for EME, WSJT and Tropo DX. The frequency of 10 MHz can be supplied by a highly stable OCXO, a reference oscillator of a frequency counter, a rubidium frequency standard or a GPS controlled frequency source.

If a 10 MHz reference frequency is not available, the internal crystal oscillator of the unit can be used. This crystal oscillator is frequency stabilized by a 40°C precision crystal heater QH 40 A.

Features

- Fixed frequency PLL-stabilized crystal oscillator
- Internal temperature stabilized crystal oscillator with QH 40 A
- Input for external 10 MHz reference frequency
- Automatic activation of PLL if external 10 MHz signal is supplied
- Lock Detect status: internal LED
- Over voltage and reverse polarity protection
- Helical filters and microstrip filters for high spurious and harmonic rejection
- Compact construction in a German Silver case

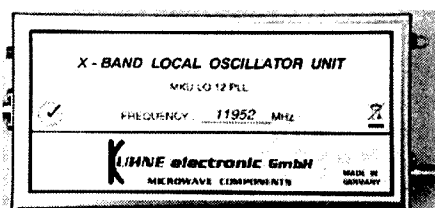
Specifications

Type MKU LO 12 PLL
Output frequency 11952 MHz (for 24 GHz)
12024 MHz (for 24 GHz USA)
11736 MHz (for 47 GHz)
Output power min. 35 mW
Frequency stability @ 0 ... 40 °C typ. 5 ppm (without 10 MHz reference frequency)
Ext reference in 10 MHz / 2 ... 10 mW
Supply voltage +12 ... 14 V DC
Current consumption 260 mA
Input connector for 10 MHz SMA-female, 50 ohms
Output connector SMA-female, 50 ohms
Dimensions (mm) 111 x 55 x 30
Case German silver
Weight typ. 140 g

Accessories

As a 10 MHz frequency source Kune recommend the GPS-stabilized oscillator by James Miller, G3RUH.
- GPS-stabilized 10 MHz oscillator (James Miller, G3RUH)

More information is available on the company website www.db6nt.de



Bill Magnusson

I wish to congratulate Bill Magnusson VK3JT for the informative 20 years he has given the amateur radio fraternity writing the AMSAT column for this journal.

It was in 1988, when we were both members of the former RAAF Williams Amateur Radio Club VK3APP, and I was on the Publication Committee that produces AR, that I approached Bill to write an article about amateur satellites for publication in our journal.

In quick time, Bill did not produce one, but a series of articles titled *Getting Started in Amateur Radio Satellites - A Hitch Hikers Guide to the Galaxy*. The series was so well received both locally and internationally that he was the recipient of the coveted Higginbotham Award for 1988. Subsequently of course, he went on to author the AMSAT column, so I accept part of the blame for your infliction, Bill, over the past two decades.

Bill eats, drinks, and sleeps satellites. His knowledge and enthusiasm for all things orbiting is legendary. However his interests do not stop there. I dined with Bill in July, and afterwards over coffee at his home he showed me some of his other radio and non-radio projects he is currently working on. Keep up the good work with that spectrum analyzer application you are using Bill. I look forward to hearing more about it when we catch again up in October!

Writing a regular column like Bill has done for the past 20 years is a monumental task, and is not an achievement to be over looked or taken lightly. Like the many other long-termers that continue to make, and have made, AR the success that it continues to be, Bill has made his mark and quite deservedly hangs up his keyboard to pursue other activities, or perhaps enjoy a well earned break. He might even find time to get on the air and chat to some of his many friends.

Thank you Bill for an enjoyable double decade of reading. Although I am not an active satellite enthusiast, I do have more than a passing interest in them and maybe one day will eventually find the time and enthusiasm to do more than just read about, or listen to them. I have had the privilege of knowing Bill

Contest Calendar for September — December 2008

September	6	ARDF Championship (80 m)	CW
	6/7	All Asia Contest	SSB
	6/7	RSGB SSB Field Day	SSB
	6/7	Region 1 Field Day	SSB
	13/14	Worked All Europe	SSB
	20	Westlakes Contest (Unconfirmed)	SSB/AM
	20/21	SRT (Italian) HF Contest	SSB
	27/28	CQWW RTTY DX Contest	RTTY
	27	Old Timers Contest	CW/SSB/FM
	October	4/5	Oceania DX Contest
11/12		Oceania DX Contest	CW
18/19		JARTS WW RTTY	RTTY
18/19		Worked All Germany Contest	CW/SSB
25/26		CQWW DX Contest	SSB
25/26		ARRL International EME Competition	CW/SSB
25/26		CQWW SWL Challenge	SSB
November		8/9	Japan Intl. DX Contest
	8/9	Worked All Europe DX Contest	RTTY
	15/16	Spring VHF/UHF Field Day	CW / SSB / FM
	22/23	ARRL International EME Contest	All
	29/30	CQWW DX Contest	CW
	29/30	CQWW SWL Challenge	CW
December	5/7	ARRL 160 m Contest	CW
	6	RTTY Melee	RTTY
	13/14	ARRL 10 Metres Contest	CW/SSB
	20	OK DX RTTY Contest	RTTY
	26 to 15 Jan 2009	Ross Hull Memorial VHF Contest (VHF/UHF)	CW / SSB / FM

Welcome to this month's Contest Column.
CQWW SSB Contest 2007 SSB - VK Only

VK was very well represented in the contest, with a good spread of entry categories – but nothing in Multi-Multi!

With the demise of the Westlakes contesting contingent, VK2ATZ might

take some time to recover and be again the force that it once was. Alternatives have been arranged and the driving forces behind the rise of VK2ATZ will rise, phoenix style, to do battle again on the bands – but with an alternative callsign by the time this goes to print.

Plan well ahead

**Make this year the
biggest**

**Ross Hull
Contest
ever**

CQWW SSB Contest 2007 Results

SSB - VK Only

Callsign	Section	Score
VK4CZ	All Band, HP	1,291,560
VK4EMM	All Band, HP	841,340
VK6DXI	All Band, HP	666,532
VK3TZ	All Band, HP	603,464
VK2FHN	All Band, HP	65,340
VK3YXC	All Band, HP	45,448
VK3AVV	All Band, HP	45,450
VK1MJ	All Band, HP	24,985
VK2BCQ	All Band, HP	24,832
VK3TDX	All Band, HP	2,992
VK2UZ	28	1,600
VK4AN	7	39,767
VK7WPX	All Band, LP	34,782
VK5MAV	All Band, LP	12,110
VK2XF	All Band, LP	8,400
VK4FJ	All Band, LP	5,371
VK6CR	All Band, LP	5,088
VK6LXU	All Band, LP	3,560
VK2HBG	All Band, LP	2,914
VK7BEN	All Band, LP	48
VK3ZGP	All Band, LP	6
VK4EJ	21	82,646
VK6LW	14	3,640
VK4ZD	All Band, Assisted	49,536
VK6DU	14	7,800
VK4TI	Multi-Operator, Single Transmitter	844,806
VK1CC	Multi-Operator Two Transmitter	2,094,448
VK4WR	Multi-Operator Two Transmitter	1,733,501
VK6ANC	Multi-Operator Two Transmitter	377,600
VK2ATZ	Multi-Operator Two Transmitter	201,951
VK4ATH	QRP	12,640

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.

New entries into the records table shown in bold italics – congratulations to all concerned!

Noted for pounding his brass in the twilight hours, Steve VK6VZ holds the record for 160 m in this contest. Steve has been on the band for quite a number of years and has a considerable antenna system set-up at home. Mike VK6HD is also a veteran of Topband and has held the top slot for a not inconsiderable number of years – since 1985 in fact.

Getting a reasonable signal onto 160 m is no mean feat in itself, but arranging an effective receiving system takes yet more hard work and careful design.

Radials for the inverted 'L' antenna and working 'split' for that juicy DX add a modicum of spice when working the band. And to be effective, 'work' is exactly what it takes as 160 m is not for the easy pickings as such. Noise on receive from Mother Nature tends to be a major limiting factor when trying to grab that elusive DXpedition.

Table of CQWW CW Records for VK

L Low Power, Q QRP, A Assisted, MS Multi-Single, MM Multi-Multi

Category	Call	Score	QSOs	Yr 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	VK4EMM	173,472	487	06
1.8	VK6HD	12,330	97	85
LAll	VK3DXI	1,867,762	1706	92
L28	VK4DX	638,950	1771	00
L21	VK4EMM	815,850	1923	00
L14	VK4DX	761,634	1757	01
L7	VK6LW	533,696	1453	92
L3.5	VK6LW	83,300	346	96
L1.8	VK3TZ	12	2	00
QAll	VK2BAA	56,810	210	05
Q28	No entry recorded			
Q21	VK6AA/2	378	9	01
Q14	VK2BEX	84,739	304	91
Q7	VK2BAA	240	10	04
Q3.5	No entry recorded			
Q1.8	No entry recorded			
AAll	VK5GN	1,090,795	1662	98
A28	VK6DU	31,776	272	06
A21	VK4AN	388,926	1113	06
A14	VK1AA	921,052	1905	04
A7	VK1AA/4	437,970	1251	03
A3.5	No entry recorded			
A1.8	VK6VZ	7,955	79	04
MS	VK6LW	3,404,906	2968	90
M2	VK2ATZ	624,101	952	06
MM	No entry recorded			

Topband is a night time band, so even the location of the station may require some negotiation with family members. You will not be very popular if sleep patterns get an unwelcome interruption or you wake your 'Junior Op' up whilst working a pile-up into NA.

Getting started on Topband

So, how to get started on the band if the bug has bitten you?

The first thing to do is to get a copy of ON4UN's book "Antennas and Techniques for Low Band DX'ing" and read it from cover to cover. It is considered to be the Bible of Topband and is crammed full with excellent practical designs and advice.

If you have a tower at least 50 feet (15 m) high with a decent sized tribander, you have the makings of a good vertical antenna on 160 meters. You will need to ground mount at least 32 radials - try to make them at least 60 feet long – but 130 feet long is ideal. Some stations feature elevated radials instead of ground mounted, so if you have the real estate to consider this approach, have a search on the Net for the best approach

for your situation. Next, run a wire or “cage” of wires (this effectively increases the bandwidth of the antenna) from the base and then up to the top of the tower and connect them to the tower. Separate the wire (or cage of wires) from the tower about 2-3 feet. You now have a folded unipole (a vertical half of a folded dipole). You can use an “L-network” or an omega match (if the tower resonates above 1.83 MHz) or a gamma match (series capacitor) if the tower resonates below 1.83MHz. Clean the tower with pipe cleaning sand paper and apply some NOALOX aluminium paste to the spot where the wires connect to the tower - hose clamps will work very nicely for this. Build the wire spacers with an insulating material such as electric fence fibre rod or something similar.

Six wires in a “cage” is a simple configuration, running from the matching network (just a 1000pf vacuum variable in series if you are lucky to have a nicely stocked junk box!) in a box at the base up to the 50 foot point on the tower and just connect them directly to the tower.

A tower? I'd dream of one!

If, like the majority of Hams, you do not have a tower available to you, a tall tree is an excellent alternative. A vertical might still be achievable if you can get a rope over a well placed branch to haul a wire into the air, but you might also be able to erect an inverted ‘V’ antenna to get onto the band.

Odds are, that the support available to you is likely to be less than a halfwave for the band – 80 m trees are quite a find in a suburban lot for example – so the radiated pattern is going to be omnidirectional even for a dipole. To get you onto the band, this is not an issue as such and there are many stations to work around the globe with such an antenna and 100 watts of RF.

Chasing Topband DX

Next, it is advisable to put up a receiving antenna. If you have the space a directional Beverage antenna is one of the best and can help to contend with the static crashes. The downside, is that the receive antenna requires a large amount of real estate as 550 feet (168 m) is minimum – but 1100 feet (336 m) is better if you can manage it – and it needs to ‘see’ in the direction of interest.

A typical direction of interest might be towards North America or possibly Europe. There are smaller receiving antennas such as the EWE, Pennant and Flag which are getting more and more use by Topbanders who do not have lots of real estate – and with some excellent results. There are also plenty of other antenna designs around that will get you onto the band with a smaller footprint – you just need to cut your cloth according to the amount of space that you have available and the desired efficiency of the antenna system.

You might even want to erect a temporary antenna towards an area of interest on the globe for chasing a particular DXpedition, for example. There are a number of radio societies around the world that organise specific contests for 160 m but the CQ Magazine series of contests provide some of the best opportunities for working the world on this fascinating band.

Of course, this has been a very simple introduction into the world of 160 m, but it is a good idea to subscribe to the Topband reflector digest via www.contesting.com/topband.

All the “big guns” subscribe with many years of experience and they are very helpful to newcomers. Remember, the only daft question is the one that does not get asked. There are a number of experienced Topband operators on the VKCC reflector also of course!

CQWW SSB Records for VK

L Low Power Q QRP A Assisted MS Multi-Single MM Multi-Multi

Category	Call	Score	QSOs	YR record set
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
<hr/>				
LAll	AX4EJ (VK4EJ)	1,203,124	2061	00
L28	VK2ARJ	479,987	1601	00
L21	VK5AM	613,168	1578	01
L14	VK4EMM	667,056	1533	00
L7	VK4EMM	97,836	438	01
L3.5	VK3TZ	105	8	99
L1.8	No entry recorded			
<hr/>				
QAll	VK4WPX	343,804	624	01
Q28	VK4VHY	26,964	153	83
Q21	VK3NDS	76,380	394	96
Q14	VK2BAA	17,171	96	05
Q7	No entry recorded			
Q3.5	No entry recorded			
Q1.8	No entry recorded			
<hr/>				
AAll	VK5GN	1,844,180	1841	97
A28	No entry recorded			
A21	VK4NEF	54,780	322	06
A14	VK1AA	535,248	1213	05
A7	VK6DU	14,805	128	05
A3.5	VK4AN	1827	42	06
A1.8	No entry recorded			
<hr/>				
MS	VK4UC	4,961,152	3939	99
M2	VK4CZ	4,126,800	3309	04
MM	VK4UC	4,356,970	3394	06

New entries into the records table shown in bold italics – congratulations to all concerned!

As can be seen from the tables, and as per last year’s discussion in this journal, there is still plenty of opportunity to set a VK record. Some records have stood for quite some time, such as the SSB Multi-Multi record set by VK2DZZ in 1981 but VK4UC took the crown in 2006 to raise the MM bar by quite a degree. Go on, have a crack at a record!

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton.

SPRING VHF-UHF FIELD DAY 2008

Contest manager: John Martin VK3KM

Dates: Saturday and Sunday 15 and 16 November 2008.

Duration in all call areas other than VK6:

0100 UTC Saturday to 0100 UTC Sunday.

Duration in VK6 only:

0300 UTC Saturday to 0300 UTC Sunday.

Please note that the UTC times differ from those of the Winter Field Day because daylight saving time will apply in most states.

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.

Entrants may enter more than one section.

Single operator stations: 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.

Two operators: 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.

Multi-operator stations: Stations with more than two operators must enter Section C or D. If the winners of Section C have also entered Section D, their log will be excluded from Section D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours – please include details in your cover sheet of which 8 hour period should be used for scoring purposes.

General Rules

One callsign per station.

Operation may be from any location.

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.

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.

No contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for contest activity. Suggested procedure is to call on .150 on each band, and QSY up to make the contest exchange.

Contest Exchange

RS (or RST) reports, a serial number, and your four digit Maidenhead locator. The Maidenhead locator is optional if it has already been exchanged in a previous contact during the Field Day and neither station has moved since then.

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.

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.

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 1

Then total the scores for all bands.

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 shown in the table at below left for your scoring table. In this example the operator has operated from one locator and worked four locators on each band:

A blank cover sheet, with scoring table, is available on the Field Day page of the WIA web site.

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, 3 December 2008.

Early logs would be appreciated.

Band	Locators Activated	+	Locators Worked	+	QSOs	x	Multiplier	=	Band Total
	(10 pts each)		(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
etc.									
Overall Total								=	680

WINTER VHF-UHF FIELD DAY 2008: RESULTS

Contest manager: John Martin VK3KM

Here are the results for the inaugural Winter Field Day. Not surprisingly, activity was not at the same level

Here are the results for the inaugural Winter Field Day. Not surprisingly, activity was not at the same level as the spring and summer contests, but for a first off event at a chilly time of year,

it went extremely well. The winners of the five sections were: Doug Friend VK4OE; Michael Coleman VK3AAK; the crew of VK4WIE; the Geelong group VK3UHF; and Leigh Rainbird

VK2KRR. Congratulations to these winners and to all who braved the elements to make this first Winter Field Day a success.

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											
VK4OE	Doug Friend	QG61, QG62	50	330	450	424	630	-	-	470	2354
VK1DA	Andrew Davis	QF44	34	465	400	312	-	-	-	-	1211
VK3CT	Damien Wright	QF31	-	459	270	168	-	-	-	-	897
VK2AMS	Mark Swannack	QF68	40	324	350	-	-	-	-	-	714
VK5AR	Alan Raftery	PF94, PF95	36	231	330	-	-	-	-	-	597
VK4HEC	Ewen Cameron	QG62	-	228	270	-	-	-	-	-	498
VK1FOTO	Ian Stevenson	QF44	-	171	145	-	-	-	-	-	316
Section B: Single Operator, 8 Hours											
VK3AAK	Michael Coleman	QF21, 22, 31, 32	-	402	565	536	-	-	-	-	1503
VK3WRE	Ralph Edgar	QF31	-	195	270	392	-	-	-	-	857
VK3HV	George Francis	QF31	-	144	300	-	-	-	-	-	440
VK5AR	Alan Raftery	PF94, PF95	31	150	210	-	-	-	-	-	391
VK5OM	Jim Bywaters	QF03	-	132	220	-	-	-	-	-	352
VK4EV	Ron Everingham	QG62	32	132	165	-	-	-	-	-	329
VK4DFG	Harry Debnam	QG62	32	66	105	-	-	-	-	-	203
VK6ZYX	Mike Beall	OF76, OF86	35	141	-	-	-	-	-	-	176
Section C: Multi Operator, 24 Hours											
VK4WIE	(1)	QG61	72	603	495	416	-	-	-	-	1586
VK3JTM	(2)	QF12	39	450	500	576	-	-	-	-	1565
VK2BTW	Tamworth RC (3)	QF58	21	390	510	-	-	-	-	-	921
Section D: Multi Operator, 8 Hours											
VK3UHF	LUMEG (4)	QF22	-	402	440	472	320	-	210	210	2054
VK2HRX	(5)	QF46	-	321	300	184	-	-	-	-	805
VK3FRC	FAMPARC (6)	QF22	37	393	370	-	-	-	-	-	800
VK5SR	SERG (7)	QF02	-	168	-	-	210	-	210	-	588
VK1BL	(8)	QF45, QF55	-	99	170	-	-	-	-	210	479
VK3WT	(9)	QF22	-	207	240	-	-	-	-	-	447
VK1WJ	(10)	QF44	27	174	225	-	-	-	-	-	426
Section E: Home Station, 24 Hours											
VK2KRR	Leigh Rainbird	QF34	21	477	430	576	-	-	-	-	1504
VK3AAK	Michael Coleman	QF21	-	309	300	376	-	-	-	-	985
VK4KZR	Rod Preston	QG62	-	153	-	272	210	-	-	-	635
VK2EI	Neil Sandford	QF68	26	264	315	-	-	-	-	-	605
VK3YLV	David Timms	QF13	24	111	180	192	-	-	-	-	507
VK5LSB	Simon Brandenburg	PF94	-	195	265	-	-	-	-	-	460
VK3ECH	Rob George	QF23	-	288	170	-	-	-	-	-	458
VK4TJ	John Kirk	QG52	-	237	180	-	-	-	-	-	417
VK2ZTY	Nick Repin	QG61	21	63	105	168	-	-	-	-	357
VK4FJON	John Cockinos	QG62	-	141	130	-	-	-	-	-	271
VK3BG	Ed Roache	QF24	-	249	-	-	-	-	-	-	249
VK2CZ	David Burger	QF56	22	78	120	-	-	-	-	-	220
VK1PAR	Al Long	QF44	-	153	-	-	-	-	-	-	153
VK2ZQX	John Watson	QF58	-	141	-	-	-	-	-	-	141

- | | | |
|--|--|---|
| (1) Ron Croucher VK4CRO, Ron Meiring VK4KDD, John Morris VK4MJF, Eric Fittock VK4NEF | (4) Lara UHF - Microwave Experimenters Group: Chas Gnaccarini VK3PY, David Learmonth VK3QM, Ken Jewell VK3NW | (7) South East Radio Group: Chris Skeer VK5MC, Trevor Niven VK5NC, Andrew McKinnis VK5KET, Colin Hutchesson VK5DK |
| (2) Tim Morgan VK3JTM, Dylan Cator VK3JWC, G. Richards VK3FIQ | (5) Compton Allen VK2HRX, David Sims VK2HSS, Taylor Allen VK2FTEC | (8) Ted Garnett VK1BL, Owen Duffy VK1OD |
| (3) Tamworth Radio Club Inc - John Hams VK2JH, Cris Perrett VK2FBOZ | (6) Frankston and Mornington Peninsula Amateur Radio Club: Stjepan Nikolic VK3TSN, Andrew Stewart VK3AEJ, David Roitman VK3LDR | (9) Max Chadwick VK3WT, Jack Bramham VK3WWW |
| | | (10) Al Long VK1PAR, Waldis Jirgens VK1WJ |

RAOTC 2008 QSO PARTY

Date : Saturday 27th September 2008.

Open to all Amateur Radio operators

Bands: 160, 80, 40, 20, 15, 10, 6, 2 m and 70 cm

Category: Single Operator

Modes: CW, SSB, FM. (Please submit separate logs for separate modes.)

Times: Session One:
0600 - 0800UTC (1600 - 1800 EST)

Session Two: 1000 - 1200 UTC (2000 - 2200 EST)

Calling: On CW "CQ OT". On Phone "CQ Old Timers"

Suggested Calling Frequencies:

CW 1.825, 3.520, 7.020, 14.040 MHz
Phone 1.845, 3.595, 7.090, 14.140, 52.525, 146.500, 439.000 MHz

Exchange: RST; serial number starting at 001 and incrementing by one; RAOTC Membership Number. Non-members send "N" in lieu of Membership Number.

Scoring: One point per contact. 25 bonus points may be added to the final score for equipment that is between 25 and 49 years old and 50 bonus points may be added to the final score for equipment that is 50 or more years old. Stations may be worked on more than one band, each contact scoring one point.

Foundation Licensees will score one point per contact, but may claim a bonus of 15 points for 10 to 15 contacts, 20 points for 16 to 25 contacts, or 30 points for 26 + contacts.

Award: A Certificate will be available to the highest RAOTC Member, non-member and Foundation Licensee scorer in each mode (CW, SSB, FM) in each Session separately and for highest scorers in combined Sessions.

Logs: Logs must contain the name, postal address, callsign and scores for the station submitting. Please clearly mark logs "Session One", "Session Two" or "Combined", and send separate logs for separate modes (no Mixed Modes).

Send Logs to:

Secretary, RAOTC,
PO Box 107, Mentone, 3194;
or via email to

vk3js@inboxnow.com by 10th October, 2008.

Please use email for preference (not forgetting to include postal address of your station) and send your log as soon as possible after the contest.

ar

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Doors Open 0900 hrs

Saturday

13 September

2008

(Sellers from 0700 hrs)
at Woombye School of Arts

Blackall Street, Woombye (UBD Map 66 F12)

Table space: Contact: Richard VK4YRP

(07) 5492 9898.

Email: randwphilp@bigpond.com



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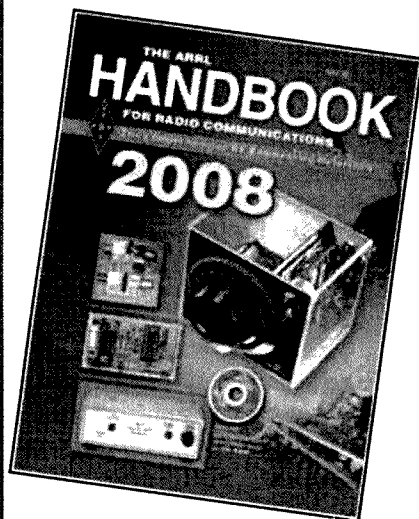
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Outlining the future

Hello, my name is Paul Paradigm and I am the National Coordinator of AMSAT-Australia and formerly the Coordinator of the OZSATGROUP. As you may be aware, I have taken on the task of writing the monthly AMSAT column in AR from Bill Magnusson VK3JT who has retired from his position in order to devote more time to his other interests.

Before I go on to talk about the various changes in AMSAT-Australia and our plans for the AR column, I would like to take this opportunity to thank Bill for his work in supporting the amateur satellite operators of Australia for the past twenty years or so. Bill's commitment to this column and AMSAT-Australia in general has been outstanding, and his monthly updates in AR will be missed by all. On behalf of AMSAT-Australia I would like to wish Bill all the best in his retirement from AR and with his continued interests in amateur satellites, EME and astronomy.

This year has been quite monumental

for the Australia amateur satellite community. In the first few months of the year, the OZSATGROUP continued its growth and has risen to become the major organisation representing active amateur satellite operators in Australia.

Changes in the wind

By way of a little background, the OZSATGROUP was formed in mid 2005 to fill a need for an open electronic discussion forum for active satellite operators by the creation of an interactive mailing list based on a Yahoo Group.

Within a very short period of time, almost every active amateur satellite operator had joined the OZSATGROUP and the group had begun to morph into a club-like organisation. In late 2005 the OZSATGROUP contacted Graham Ratcliff VK5AGR at AMSAT-Australia with a view to minimize duplication of services when the members of the OZSATGROUP decided to run a monthly HF net. In January of 2006

the OZSATGROUP and AMSAT-Australia joined forces in a manner of speaking with the OZSATGROUP taking the decision to join in with the AMSAT monthly EchoLink net rather than running its own HF net. Those members of the OZSATGROUP who were keen to communicate via HF were encouraged to join with the members of AMSAT-Australia in their unofficial HF get-together on the evening of the EchoLink net.

Throughout 2006 and 2007 the OZSATGROUP membership continued growing and continued its work with AMSAT-Australia to promote amateur satellite operations. The OZSATGROUP began assisting Graham with the running of the EchoLink net and eventually the OZSATGROUP took over the running of the HF get-together, reinstating it as an official OZSATGROUP and AMSAT net.

Earlier this year, the OZSATGROUP determined that the Sunday afternoon

AMSAT-Australia

National Co-ordinator:
Paul Paradigm VK2TXT,
email: coordinator@amsat-vk.org
Secretary: Judy Williams VK2TJU,
email secretary@amsat-vk.org
Website: www.amsat-vk.org

About AMSAT-Australia

AMSAT-Australia is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites.

Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-Australia is the primary point of contact for those interested in becoming involved in amateur radio satellite operations.

If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-Australia monthly nets

Australian National Satellite net
The net takes place on the 2nd Tuesday of

each month at 8.30 pm eastern time, that is 9.30 Z or 10.30 Z depending on daylight saving.

The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news.

The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater on 146.850 MHz
VK2RIS Saddleback repeater on 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3JED Preston, Melbourne on 144.296 MHz SSB simplex
VK3JED Preston, Melbourne on 439.175 MHz FM simplex with a 91.5 Hz CTCSS tone.
VK3RTL Laverton, Melbourne, 438.600 MHz FM, - 5 MHz offset

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email.

AMSAT-Australia HF net

Members and interested parties are also reminded of our HF net which is held on the 2nd Sunday of each month. See www.amsat-vk.org for details.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Should you wish to join AMSAT-Australia, details are available on the web site. Membership is free and you will be made very welcome.

time slot and the exclusive use of EchoLink were contributing to low participation in our joint net, and with the blessing of Graham we changed the monthly net to the current arrangements – see Box. To date, the new Tuesday night net has been a great success taking the participation rate from 4 to 8 members to from 10 to 25! At the time of the change-over to the Tuesday net in February, the OZSATGROUP took over the running of the net to give Graham more time to devote to his family after running the various nets for some twenty five years.

On April 7 this year, after serving as the National Coordinator of AMSAT-Australia from 1983, Graham tendered his resignation to the WIA in his annual report. After discussions with Graham, it was determined that the OZSATGROUP and AMSAT-Australia had two options. First was to approach the WIA to have the OZSATGROUP recognised as the successor to AMSAT-Australia and to let AMSAT-Australia fall by the wayside. The second option was to amalgamate the two entities and to retain AMSAT-Australia and its relationship with the WIA as it stood.

On 8th April AMSAT-Australia contacted the WIA to inform the Institute that the OZSATGROUP and AMSAT-Australia had chosen to amalgamate and we immediately began the process of reorganising our resources and membership. At this time, I took over the role of the National Coordinator of AMSAT-Australia and sought the official Coordinator's position with the WIA. Since then, the WIA Board has confirmed my appointment as the AMSAT Coordinator.

Once again, on behalf of AMSAT-Australia, I must take time out to thank Graham for his outstanding contribution to the amateur satellite community in both Australia and around the world. Graham has been a shining light throughout the history of the AMSAT movement since its inception.

Graham has been one of the most prominent radio amateur operators in our time, having received in 1991 an Order of Australia for his service to amateur radio organisations. Graham, it has been a pleasure working with you and I hope to catch up with you on a 'bird' real soon.

AMSAT-Australia today

Since the formal amalgamation with the OZSATGROUP, we have seen some minor changes to the organisation of AMSAT-Australia in order to formally integrate the OZSATGROUP forum and its members. In the past, membership to AMSAT-Australia was conveyed by joining the AMSAT-Australia mailing list. As of July 2008, the only way to become a member of AMSAT-Australia is by signing up to the AMSAT-VK forum, which is administered via a Yahoo Group, mirroring the prior OZSATGROUP arrangements. Membership to AMSAT-Australia continues to be free of charge.

The former members of the old mailing list were invited to sign-up to the new AMSAT-VK Group, and the earlier list was phased out over three months or so.

Membership to AMSAT-Australia is open to all who are interested in amateur satellite and space operations. Licensed amateur radio operators need only supply their first name, callsign and email address at the time they register with the AMSAT-VK Group.

Those who are not licensed need to also supply their full name and address in addition to their email address. As soon as the registration has been completed, you will automatically become a member of AMSAT-Australia.

As far as the day-to-day operation of AMSAT-Australia is concerned, it is almost completely run via the internet through the AMSAT-VK Group. All members have access to our mailing list and forum, in addition to our file library, picture gallery, a shared calendar and access to our membership and other databases. When AMSAT-Australia needs to consult with our members, we conduct polls via the AMSAT-VK Group website.

At this point I should introduce Ms Judy Williams VK2TJU, the secretary of AMSAT-Australia. Judy is responsible for the AMSAT-Australia paperwork and mail. Judy also manages and moderates the AMSAT-VK Group website. If you ever have any questions about AMSAT-VK, please feel free to contact Jude.

Another significant change has been to our main public website. Our site, which can be accessed at www.amsat-vk.org, has been completely rewritten and updated. We look forward to adding

new features to the site in the coming months, including the introduction of the Australian Satellite FAQ, which is currently under development.

Moving forward

With the reorganisation of AMSAT-Australia and the retirement of Bill Magnusson, I would like to take this opportunity to rethink the monthly AMSAT column in Amateur Radio magazine.

While I will continue to provide updates on pertinent news, and to publish a six monthly satellite update, I would like to begin to use the column to publish other material of interest to satellite and space enthusiasts. This may be in the form of a tutorial on using a particular software package, on how to get started on a particular bird or mode, or any other topic suggested by AR readers or the members of AMSAT Australia.

AMSAT-Australia is driven by the wants and needs of our membership and I would like to take the same attitude with the AR column. I would ask that if you have any ideas or suggestions for the column, please send me an email to coordinator@amsat-vk.org

All the best, 73 and catch you on one of the birds soon.

ar

News Updates

DO-64 now available to hams

The amateur-band linear transponder on board the Delfi-C3 satellite, now known as DO-64, has been activated. Here are details.

CW beacon: 145.870 MHz

Linear transponder downlink passband: 145.880 - 145.920 MHz

Linear transponder uplink passband: 435.570 - 435.530 MHz

FO-29 re-emerges

After being off the air over Australia and New Zealand for many months, FO-29 is once again available for operators down-under and around the world. The bird is active for SSB voice subject to solar power availability.

DX - News & Views

John Bazley VK4OQ,

P.O. Box 7665, Toowomba Mail Centre, QLD 4352. E-Mail: john.bazley@bigpond.com

Although activity on the HF bands is still quite low, the 'pundits' tell us that the Sunspot Cycle is still on track with an expected peak in 2012. It is hard to believe that the peak is only four years away. The current minimum seems to have gone on for much longer than that!

In spite of this minimum, it is surprising the long haul DX that can be worked relatively easily. For example on 20 metres the other day, on a comparatively dead band, at 0520 signals from C9 and 3DA0 were a genuine 599 on the long path. That is a path length of nearly 29,000 km – that is DX in anyone's book!!!

So what DX news do we have this month?

First a note from Bernie W3UR:

"Recently DXers in the US have been reporting receipt of the VP6DX QSLs. My neighbour and I have also received ours. Let me start by saying I did make a donation after the DXpedition was over.

The 36-page booklet QSL was definitely worth the wait. The booklet QSL shows multiple photos along with captions of the DXpedition. It also tastefully recognizes the major sponsoring organizations, several corporate sponsors and the early major individual sponsors.

A big thank you to each of the sponsors, as this operation would not have been possible without their support!

The VP6DX Ducie Island team not only set many DXpedition records, but more important some very good DXpedition standards. Was it a perfect operation? No, but it has been judged one of the best by quite a number of DXers. This group does have plans for future operations and will no doubt set the bar higher. The QSL booklet is well worth the wait."

Good to hear that the ARRL DX Bulletin reports that 2008 operations from 5X4X have been approved for DXCC credit.

Mike KM9D, and his girlfriend Jan

KF4TUG, have not yet begun their next sailing season.

They plan to begin this junket after the RSGB IOTA Contest and expect their first Amateur Radio stop to be Temotu Province (H40), a separate DXCC entity from the Solomon Islands (H44). Mike is hoping to be able to operate from Vanikolo Island (OC-163), Temotu Province. This is one of the rarer IOTA groups within the province.

Willi DJ7RJ has booked his August 26th flight via Los Angeles LAX to Samoa, 5W. He and Ulli DL2AH will also go to ZK3, then back to Samoa, and they are looking at another stop after that, maybe the Marquesas (FO/M) or Wallis and Futuna (FW).

Ulli would like to visit KH8 again, where he was a few years ago. Willi's flight back to Germany is October 27th but he plans to spend a couple of days in California during his trip homeward. On the 5W plans, everything is coming together.

They are in touch with the shipping company in Apia and two ships leave within days of their arrival on Samoa. They have a good chance of getting passage on one of the ships. They hope to arrive on Tokelau September second or fifth.

They have to stay at least three weeks on Nukunonu before going back to Apia, putting them back in Apia at the end of September. Then they will decide where to go next. QSL via their call book addresses. Willi's last trip to Tokelau was in September 2003.

Svalbard is going to be a busy place; JW5X will be there on September 25-29 for the Scandinavian Activity Contest, phone. Before and after that, operators LA7XK, LA6VM and LA9DL will be on with the call signs JW6VM, JW7XK and JW9DL on CW, SSB, RTTY and BPSK. QSL via the Norwegian bureau or direct to their published addresses.

JW7WCA will be on 160-10 m SSB and some CW September 19-26 from Svalbard. Operator LA7WCA will be joined by LA8BCA using the JW8BCA callsign and by JW/LB9UE.

VP8LP goes to Ascension Island August

15th or so, staying until September 14th. He has the ZD8LP callsign. Bob will only have a vertical but plans to be very active on 40 through 10 m, following the best propagation. QSL direct only, to his VP8LP home call.

Martyn G3RFX, also known as ZB2FX and 8P9FX, has started getting reports of QSOs with ZB2F including some listings of him as the QSL manager. He is convinced ZB2F is a pirate station, and certainly he has never been the QSL manager for this one or anything like it. But, he says he will, himself, be back on the air as ZB2FX, September 5-15.

Andrew 8Q7AK, home call G7COD, will be operational from Kaafu Atoll, Republic of Maldives, October 12 at 0730Z until October 25 at 0800Z. He will have an IC7000 to a Carolina Windom "CWS 160 Special" antenna from 38-foot-high coconut palms, and a 9-metre-long homebrew vertical. He will be on 40 through 12 m, SSB and CW. Andrew expects to be on every day from 0730-0830 Z, 0900-1030, 1300-1500 and 1730-1745. Look for him on 7063, 14147, 18133, 21253 and 24953 SSB, 7003, 10103, 14003, 18073, 21003 and 24893 CW. QSL direct to G7COD with SAE.

T32CXX, Eastern Kiribati will be the CQWW SSB callsign for operators NY0V and K0DAS, Tom and Rod, October 23-28 inclusive operating dates. T32CXX is Tom's call and T32DAS will be Rod's call. They plan to be multi-single during the contest. QSL T32CXX via W0CXX and T32DAS via K0DAS. W0CXX being the Collins Amateur Radio Club call, I wonder if they will be using Collins equipment? KWM2-As and 30L1s perhaps.

According to news from Mehdi F5PFP (FT5ZH), there is now a possibility for easy access to FT5X, FT5W, and FT5Z. 'Marion Dufresne', a ship well known from several DXpeditions, is now open to be booked by ten to twenty tourists. The ship will stop at Crozet (FT5W), Kerguelen (FT5X) and Amsterdam (FT5Z) for three, or up to eight, days at each location. Operators from CEPT countries will get their permission easily

The Olympic Games in Beijing commenced and as expected the Chinese really celebrated the honour of staging the 29th Olympiad, going to great lengths to maximise publicity and prestige. One thing that has eluded them is the smog, with drastic efforts made to try and curtail it and this has had little or no effect. As expected the Opening Ceremony was extensively covered over short wave, especially via the numerous Chinese outlets. Other broadcasters also covered it live but I mainly concentrated on watching on TV. Since the last Olympics in Athens, we now have digital TV with much clearer vision. I personally watched the Opening Ceremony to almost 2 am and retreated to bed.

In the days prior to the Olympics there was no let up with the Firedrake jammers and this continued unabated. As you may remember, the Internet was not freely available within the PRC to certain sites deemed to be against the Chinese national interest. This naturally led to the question – if the Net is easily blocked, why do many international stations increasingly stream their programming? The number of listeners online at any time to a particular stream is considerably less

than via radio, whether it is domestically or via short wave. A plus of course for streaming is the ability to download these files for later playback via your computer or on Ipod. For example I am at present listening to a very interesting discussion from a remote receiver near Berlin in French on Internet censorship. True, the audio quality is far superior to a signal over HF.

Radio Singapore International did close down at 1400 on July 31st and two hours later the short wave relays of the domestic networks were also finally switched off. This has freed frequencies in the 49 metre allocation but other stations quickly filled the vacant channels or were audible after being buried by RSI. Even the BBC senders at Kranji, which is close to where the RSI senders were located, seem much weaker here.

The VOA made a surprising decision to stop broadcasts in Russian on the 26th of July. It has been on in that language since 1942. The International Broadcasting Bureau (IBB), which supervises all US Government broadcasting, upset some in the Congress over the decision. The semi-clandestine Radio Liberty/Radio Free Europe took over the frequencies and

some times of the former Russian VOA programming. This has led to questions being raised about the future of the VOA and the incoming administration, due to be elected on the first Tuesday in November, will probably make a decision next year. Meanwhile you can hear the VOA in English to Oceania at 2200 on 9415 kHz.

Radio Romania International recently inaugurated new senders for their short wave transmissions and they definitely have improved both the signal strength and clarity of their audio, compared to the tired old transmitters that dated back to the Cold War era. It is interesting that Poland no longer uses its own senders and now buys airtime over transmitters in Germany, and DW in Bonn also no longer broadcasts from German sites but buys airtime from a variety of senders in the UK, Canada, French Guyana and the Commonwealth of Independent States (CIS). DW still owns and operates the Kigali, Rwanda senders and at Trincomalee in Sri Lanka.

Well that is all for this month. Do not forget you can email any news or comments to vk7rh@wia.org.au.

73 from Robin L. Harwood

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DX - News & Views continues

from the licence administration "TAAF" and will use FT5X/, FT5W/, FT5Z/home call. With a proposed cost of 6,500 Euro (nearly A\$ 11,000), it is not a cheap trip but the outstanding helicopter flight to Amsterdam and Kerguelen is included. The next voyages from Reunion will take place November 3rd through December 1st 2008 and December 3rd through 31st 2008. Time schedules for 2009 will be published soon.

A large group from Belgium, South Africa and Australia have announced plans to operate as C91FC from Mozambique between April 8th and April 17th 2009 (I hope they will not forget the Long Path Openings to VK!). Operators include ON4AEO, ON7BK, ON4CJK, ZS6GC, ZS5AYC, ZR6APT, ZS6IMO, VK4AHT, VK4EMH, and

possibly others. Sometime in January 2009 they will have a Web page up at www.c91fc.be. QSL this operation via ON4CJK.

A group of YL operators will be active from the Falkland Islands (SA-002) from the 17th to the 31st January 2009. They will be using VP8YLx callsigns, with the third character of the suffix assigned to each lady at the start of the event. Further information, in due course, will be available at http://www.radioclubs.net/aa_vp8yl/

Twelve members of the Tennessee Valley DX Association (<http://www.tvdxa.com>) will operate as W4PL from Hatteras Island (NA-067) from 27th September to 4th October. They plan to be active from 80 to 10 metres SSB and CW (with some PSK and RTTY),

and on 6 metres SSB and CW. QSL via K4KWK, either direct or via the bureau.

We hear that Lee K5UN is heading back to Martinique for this year's CQ World Wide CW DX Contest. He will be there from November 24th to December 2nd and using the special call TO5X. During the contest he will be SOAB. QSL via K5UN.

Happy DXing.

Special thanks to the authors of The Daily DX (W3UR), 425 DX News (I1JQJ) 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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VHF/UHF – An Expanding World

David Smith VK3HZ vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

Mid-June showed good conditions in the south as a high-pressure cell crossed. Barry VK3BJM reports:

“June 14/15 weekend was interesting on 2 m plus. Saturday am was flat, peak being a 53 contact with Chris VK2DO/m (in his driveway) and a 53/52 exchange with Phil VK5AKK at 2314 Z. I monitored the VK5VF 2 m beacon that pm and, while audible, it was not hair-partingly loud.

Unlike Sunday morning! At 2210 Z, VK5VF 2 m was 10 over 9. The VK5VF 70 cm beacon was also heard. Swinging to Mt Gambier, VK5RSE 23 cm beacon was 56 and touched 59. Back to Adelaide, I worked Brian VK5BC (56), Jeff VK5GF (53), Phil VK5AKK (57), and Bill VK5ACY (54) on 2m. Brian VK5BC was also worked on 70 cm at 41-51. No joy working Phil on 23 cm. At 2250, I swung to the northeast for the last 10 minutes of the AE hour. After working VK1BG on 2 m and 23 cm, I went west as I could hear Peter VK5ZLX through the back of the 2m array. Reports of 59++ were exchanged on 2 m, followed by 23 cm (52 both ways) and 70 cm. Working Peter on 23 cm for the first time from home provided a new grid locator for me on that band, thanks, Peter. An attempt was also made with VK5BC on 23 cm, but nothing truly readable was heard.

“VK7 was also coming in well, and at 0014 Z I worked Joe VK7JG for more than 10 minutes, with reports again at 59+. Also worked John VK7CEJ for the first time (55) at 0028 Z. At 0042 Z I heard Norm VK3DUT through the back of array at 52; with array pointed at Johnsonville, Norm was 58.

“I kept the array pointed at VK5 for the rest of the day; the Mt Lofty beacon did not drop below 57 until Monday morning, after 2300 Z. Worked Phil VK5AKK at 1300 Z Sunday night and again at 2151 Z Monday morning - Phil was 59+10 both times, but 23 cm continues to elude us. We exchanged 52/53 reports on 70 cm at 2159 Z.

I did not note all the unfamiliar callsigns heard during the enhancement,

but I heard many working Phil - his logbook must be much fuller today!”

24 GHz World Record

In Australia, there is increasing interest in operation on the higher microwave bands. 10 GHz ops have been going on for many years, but recently, a number of stations have acquired 24 GHz capability and discovered that this is quite different from 10 GHz with path losses sharply increasing with the amount of moisture in the air. Best results seem to be well before sunset (after which humidity rises rapidly), and in very dry conditions - e.g. in a cold-climate winter with the moisture frozen out!

With this in mind, it is interesting to hear of world record contacts in France in their mid-summer. On June 23, Marc F6DWG/P near Picardie in the north and Guy F2CT/P in the south-central had a remarkable 637 km QSO late in the night. This exceeded the previous tropo record of 544 km by some margin. Christophe ON1CFX in Belgium heard Guy F2CT/P on 10 GHz at 805 km for 45 minutes, but nothing on 24 GHz. Next day, Guy worked Willi LX1DB in Luxembourg on 24 GHz via rainscatter, resetting the record to 710 km.

By comparison, the VK 24 GHz record between VK3ZQB/P and VK3XPD/P currently stands at 230 km.

VK2DO mobile ops

With a change of work vehicle, Chris VK2DO redesigned his mobile 2 m DX setup. His old twincab ute had a 2 m Yagi mounted low above the canopy. Pressures from offspring, who (understandably) refused to be seen in the vehicle, meant a more stealthy system.

Chris built a Yagi using the supporting cross spar inside the fibreglass canopy as the boom. His route to work in Canberra (generally NW) has the Yagi usually pointing right for Melbourne and Sydney (I gather the F/B ratio is not great). Chris reports on operations:

“Last Saturday, on my way to work, I listened to the 2 m aircraft operations on 144.200 MHz when Ian VK1BG took

Mark VK2EMA up to 70 cm. I flicked up to 432.150 and of course, through my 4-element beam that is a good match on 432, I could hear Ian. As I changed direction, I was also copying Mark at about S5. During one handover, I called Mark and he gave me 5x7. (The IC-7000 uses the same connector on 2 & 70 cm so without additional bricks in circuit, you are automatically able to work on 70 cm if the 2 m antenna will take power). The new antenna, in the canopy support, is four elements with I suppose a beta match of a kind, but the radiation efficiency is an odd one surely?

“Do not rush out and start using a 2 m beam on 70 cm. It was just one of those astonishing contacts that might not be readily repeated. On 70 cm, everything in the driven element of the Yagi is just an odd number of half or quarter waves, but who knows what the radiation pattern truly is, or whether there is really any gain to speak of. Also, although the feed line is not long, 2.5 m of RG214 probably starts to hide an odd match. 350 km on 70 cm is not that amazing, especially with Mark running EME type antenna gain. But with just my 35 watts it was a lot of fun to see it take place.”

Meteor Scatter

While Rex VK7MO normally reports on digital mode MS contacts, there has been a small revival of interest in SSB MS contacts, driven by an apparent increase in large meteors recently. On July 27, Ron VK4KDD reports:

“I was alert for possible SSB MS contacts, because I saw VK3SO reporting on the VK Logger a 15 sec burn on the digital stuff more than an hour earlier. Just seconds before the opening, I heard an indication and reported on the logger that I was hearing “weak signals”. I started to call and ... woops ... heard the world coming back - VK2's, VK3's, so many letters and voices at the other end, that I got no single callsign. There were at least a dozen stations peaking S9 and stronger. I heard them all replying, but that does not make it any easier. No reports were exchanged.

Mike VK3AAK was also trying hard to make an SSB MS contact. A few weeks later, he succeeded:

“After weeks of teasing, the delta Aquarids meteor showers produced an SSB MS contact between VK2 and VK3. During the regular Aircraft Net on Sunday 16th August at 2249 Z, Steve VK2ZT’s CQ was heard in Melbourne. Several stations responded with Steve hearing my report of 5x7. He immediately confirmed and returned a 5x7. The contact was less than ten seconds, but long enough for Steve to also hear Peter VK3KAI, but I believe it died before exchanges were completed.

This contact comes after several weeks of one way signals including one very strong burst from Ron VK4KDD being heard in VK1,2 & 3; Steve VK2ZT being heard in Melbourne, and I in Sydney. These events have all been observed between 2200 Z and 2300 Z during the Aircraft Net on 144.200, obviously coinciding with the high activity level on 2 metres at this time.

Beacons

Mark VK2XOF reports that the VK2 beacons are being resurrected. Work is progressing on the 2 m and 70 cm beacons. The 23 cm beacon on 1296.420 MHz is operational at the Dural VK2WI QTH. Power is now 20 W and the signal is generated from a cavity oscillator locked to a 0.1 ppm oven. It has been running since mid July and Mark would appreciate any signal reports. Ian VK1BG has already reported hearing it consistently in Canberra at S1, lifting to S4 with aircraft enhancement – the first time Ian has heard the 23 cm beacon from Sydney.

Doug VK4OE reports VK4RBB beacons are back on air on all of their licensed frequencies: 432.440 MHz; 1296.440 MHz; 2403.440 MHz, and 10368.440 MHz. They should all be within 100 Hz of frequency after a soak test. Doug would appreciate any reception reports from SE Queensland and further afield.

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

Digital DX Modes

Rex Moncur – VK7MO

Welcome to these new operators who are joining in or listening in to the 144.230 MHz FSK activity sessions – Rex VK3OF, Nigel VK3KSD, Owen

VK1OD, Glenn VK4BG and John VK7CEJ. Rex completed his first FSK441 contact with VK4WS and Owen his first with VK4JMC.

After GippsTch presentations on locking rigs to GPS and the use of the ADS-B virtual radar system for aircraft tracking, Rhett VK3VHF has his IC-910H GPS locked and has been monitoring the Doppler shift from aircraft on two metres as shown in the Spectrum Lab waterfall display below. Also shown is a diagram of the aircraft tracks at the same time from the ADS-B system. The aircraft producing the reflected signal left Launcston (JST748) and headed roughly north before crossing the direct line between the transmitting and receiving stations, heading for Sydney. The Spectrum Lab waterfall display shows the direct troposcatter signal as a straight line at 1000 Hz with the aircraft reflected signal starting high in frequency at 1001 Hz crossing the tropo-scatter frequency at about the same time as it was seen to cross the path between the transmitting and receiving stations and then falling in frequency to 995 Hz as it moves further away from the direct path.

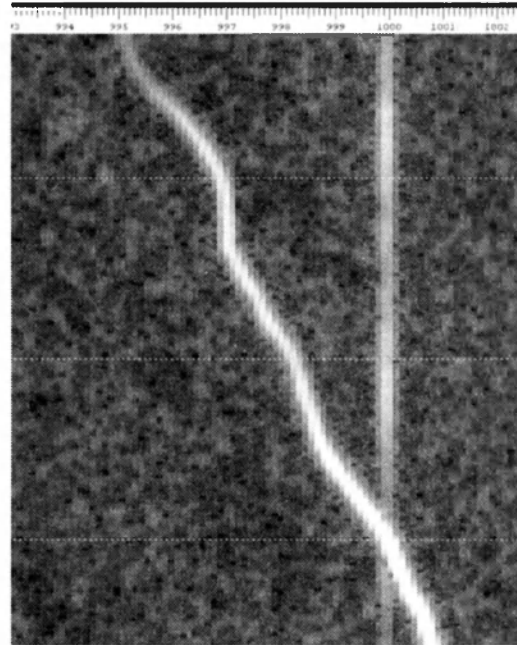
On 26 July 2008, Rex VK7MO, assisted by Eric VK7TAS as dish driver, broke the 13 cm (2300 MHz) Earth Moon Earth World distance record, twice!!!

Rex was running 120 watts to a 2.3 metre dish. The record was held by Charlie VK3NX and Peter G3LTF at 16970 km. Eric’s job was to keep the 2.3 metre dish antenna directed at the moon within less than half a degree. A sked had been set up with Howard G4CCH and shortly after the moon cleared the trees at Howard’s QTH, weak digital signals were copied at 25 dB below the noise. At 13 cm or 2300 MHz, frequency drift is a major issue and Howard’s signals were difficult to copy due to drift of 60 to 80 Hz each transmission. Nevertheless, after a few missed decodes, a QSO

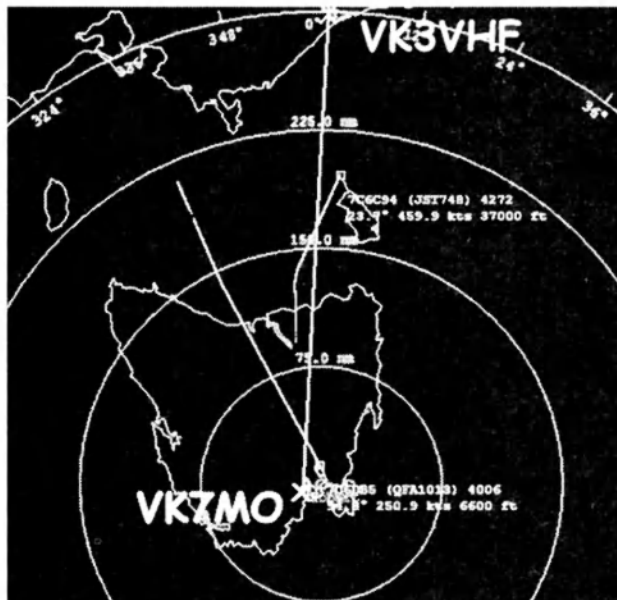
was completed for a new 13 cm EME World record of 17385 km. As the moon cleared the trees in England, signals improved to the point that they were audible and a CW QSO was also completed. Peter G3LTF, at 17491 km, then called on CW and the World record was extended a second time in less than half an hour by a further 106 km.

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

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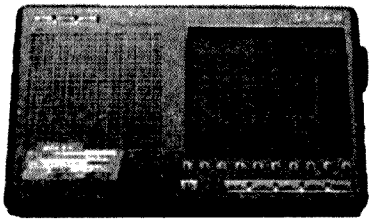
Spectrum Lab waterfall display showing Doppler Shifted frequency from aircraft as the slanted line and the direct troposcatter signal as the straight line at 1000 Hz.



ADS-B Virtual Radar view of aircraft JST748 which produced the reflections shown on the waterfall. The line between the stations shows the direct path between the stations.

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I am looking for a GENERAL RADIO GR 1931A modulation monitor. Thanks. John Eggington VK3EGG. Mob: 0409 234 672 Email: vk3egg@optusnet.com.au Mobile: 0409 234 672 (9)

My cousin in Latvia, YL2GRE, needs a QUARTZ FREQUENCY STABILIZER to repair his home made transceiver. Where do I go to buy one? Jack Ziedars 11/30 Thomas Street, Doncaster East, Vic 3109. Tel: 03 9841 9373 jekabs@techinfo.com.au (9)

I am looking for a suitable CW filter for the YAESU FT-301 transceiver. It is a Yaesu type XF-90C crystal filter and may have been used in other Yaesu transceivers. Or any suitable CW crystal filter with an input/output impedance of 500 Ohms and 9MHz centre frequency. Roderick Wall VK3BKO. Phone: 0413074386 or email: vk3bko@wia.org.au (8)

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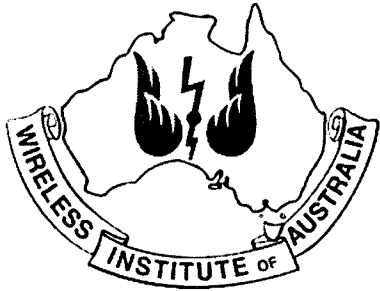
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The Wireless Institute of Australia represents the interests of all amateurs throughout Australia.

The WIA offers one year and five year memberships for Full Member \$75 (\$356), Overseas Member \$85 (\$403) and Concession Member - Pensioner \$70 (\$332), and one year memberships for Concession Member - Student \$70 and Family Member \$30.

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Broadcast details

- VK1 VK1WIA: Sunday 0900 local on the Mt Ginini repeaters 146.950 and 438.050 MHz. The UHF repeater requires 123 Hz access tone and is linked to the Goulburn repeater.
- VK2 VK2WI: Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.6000, 147,000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning..
Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130, 147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. Also in 'Realaudio' format from the VK6WIA website.
- VK7 VK7WI: 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.

VK3XPD gets serious about 10 GHz



The dish elevated to 45 degrees, pointing west.



Pointing north, with the Surrey Hills Radio Terminal again visible.

Alan Devlin VK3XPD and
Peter Freeman VK3KAI

Are you interested in microwave operations, especially on 10 GHz? The pictures show the latest effort by Alan VK3XPD, well known by most interested in amateur microwave activity in Australia.

Alan has a GPS Locked, 10 GHz Transverter which is tower mounted with full azimuth and elevation control which can be operated from the radio shack.

Alan is currently running about 4-5 watts but has something bigger to install when time permits.

Of course, Alan reports:

I am looking forward to working ANYONE!

The much modified MITEC hardware sits atop a tower section attached to my garage at about 7 metres above ground.

The Pan Tilt operates on 115 V ac and the Transverter has a 24 Volts dc supply regulated down.

All Power cabling is supplied from a garage mounted controller. The shack controller is fed power from the garage controller. It has circuitry for AZ/EL drive and indication together with status indicators for the transverter and the GPS locking. The only other cabling from the Shack is the 432 MHz IF and the GPS Locked 10 MHz reference signal.

Some of the internal modules: MITEC RX & TX modules with oscillator and IF switching.



Another view of internal modules: a modified four (4) Watt PA from a Ku uplink unit (behind the fan) and a SM6VFZ oscillator with GPS Locking.

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Volume 76
Number 10
October 2008

Amateur Radio



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Jim Tregellas VK5JST

An amplitude modulation monitor
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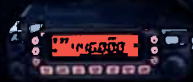
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VX-6R



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Dual Band FM Mobile
FT-8800R



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Our Cover this month

With permission from the Devonport City Council to camp at The Mersey Bluff and with a key to the reserve, Winston VK7EM was able to set up his station next to the lighthouse and participate in the ILLW from a location with a million dollar view! Story on page 23.

Photograph by Winston Nickols VK7EM.

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 \$8.00 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

A stalwart retires

At the September meeting of the Publications Committee (PubCom), long-standing member Ron Fisher VK3OM announced that he was retiring from the Committee.

Ron has had a long involvement with the publication of Amateur Radio magazine, commencing from 1954. He retired from the Committee for a short time in the late 1960s, but was persuaded to return after a break.

As well as providing insightful contributions to discussions at our meetings, Ron has published many reviews of equipment and a variety of other articles over several decades. His knowledge of older equipment has been shared at times in articles outlining some of the veteran gear that is still very useful in the shack. In addition, he has played a key role in the preparation process of Hamads in each issue of AR.

Some months ago, Ron had suffered an accident in the garden which resulted in surgery and the ensuing recovery process. Forced to slow down considerably, Ron has recognized that he is no longer as young as he may have felt. He has decided that many tasks will need to be tackled in a different manner, perhaps even left to others. As part of his considerations, Ron decided that the monthly travel at night to the PubCom meetings was one undertaking that could, reluctantly, be dropped.

President Michael Owen VK3KI and the members of PubCom all thanked Ron for his extensive contributions and wished him well in his retirement from this activity. Ron did indicate that he is willing to continue the checking of Hamad material prior to publication, so he will still be making a regular contribution. Of course, you cannot keep a good man down – he also remarked that he may still prepare the occasional article for publication.

As Editor, I thank you Ron for all your work – it has been most valuable during my tenure in this position. I am sure that all readers will join me in wishing Ron the best for all that is still to come.

Callsigns

By now, many amateurs will be tackling the task of adopting a new habit – using a new callsign. The ballot for two letter callsigns has been completed and I have already heard some on air. Of course, it will be not only the new callsign holders attempting to learn the new callsign, but many of their regular contacts will also need to change their habits!

It is hoped that most of the processing of the resulting changes will by now be completed, as we have just taken a critical step in the preparation of the next Callbook – the ordering of the database information from the ACMA.

If you end up without your callsign in the next Callbook, just remember that it can only reflect the information as it exists at a single date – that is always a constraint of a printed publication.

Readers are reminded that it is their individual responsibility to promptly notify the licensing authority of any change to their details.

Photographs

The growing popularity of digital cameras means that many now use them to record a variety of activities – amateur radio activities included. Most of the photographs contributed to AR with articles and news items are now digital images.

Unfortunately, many are not suitable for publication. Others are very good in subject and composition, suitable for the cover of AR or the inside back cover, but are not useable for either of these purposes.

Why is this so?

Many people set the camera to record the maximum number of images and to save the image as low or medium quality jpg format files (or do not alter the default settings on the camera when they start using it). The result will be an image of only 200-300 kilobytes, even though the camera is often capable of much better.

Such images are fine to use inside AR,

continued on page 7

The WIA Office.

For most of this year we have been looking for a new office for the WIA.

Our current office is in Balaclava Road, North Caulfield, near Hawthorn Road. It has some real advantages. It is only a 20 minute drive from the Melbourne CBD, and is very close to a tram stop. And above all, it is cheap. Very cheap.

One of the usual concerns about premises in a membership organisation (indeed, in any service business) is that if you have premises that are too flash, everyone will accuse you of wasting the member's money (or charging fees that are too high because of the extravagant premises you occupy).

We do not have that problem with these offices. Even if you like carpet on the walls, and the rather genteel run down feeling of the building generally, there are other features that most people would be surprised are not there.

It no longer meets our needs.

It is small. Very small.

It is, well, OK, when there are only two people there. But it gets instantly crowded when there are more than two. Very crowded.

A number of people assist in the office, undertaking such tasks as sending out the Foundation Licence Manuals or the Call Books to either clubs or individuals. We often have meetings of different people there. So, often, we need more space.

Indeed, we have Publication Committee meetings there and, frankly it only "sort of" works. We get out a folding table and put it in one of the two clear floor spaces. It really is much better if a few Publication Committee members cannot come. When we had a Board meeting last March, we used other premises – it was just too crowded for a two day meeting, as we had learnt the hard way the year before.

Among the facilities it does not have is a sink, or even a tap. If you want a cup of tea or coffee, someone will fill the jug from the tap in the ladies loo.

During summer, it can be very hot – indeed too hot. In winter, it is the opposite. So we have two stand alone air conditioners that make the place bearable, in both winter and summer, and really are not all that noisy.

Quite apart from office facilities, we need storage space. We have to keep examination documents for some time. Indeed, we hold every paper since the new assessment system commenced in October 2005. And there are plenty of other business documents that we are also bound to keep.

But we also have stock. Like, every year, the Call Book. But we also have the Foundation Licence Manual. We also have old copies of the magazine, and other historical documents.

At present we rent storage space at Williamstown, on the other side of Melbourne. We keep a lot of things there. We store the Foundation Licence Manual in a room rented to us by a friendly Scout group.

We need to find a storage space for the unique QSL collection, put together for the WIA by the late Ken Matchett VK3TL.

Currently, the WIA bookshop is run out of two places – the WIA office for the financial aspects and with the books consigned to, stored at and dispatched from the home of our wonderful bookshop manager, Chris Flak VK2QV in Mount Riverview, NSW. Chris wants to retire at the end of this year, so it really would make sense to handle all aspects of the bookshop from one place – but again, we need the place to store them.

Apart from storage space, we have some other criteria. Hardly surprisingly, we have found that the further from Melbourne, the cheaper it gets. But we need to have somewhere that is reasonably accessible. Accessible not only for

volunteers and members, but also for our staff.

So, we started looking at commercial developments, small offices with attached warehouse space. There are many of these being built around Melbourne.

We also needed some sort of parking space.

Initially we considered buying premises. We do have some reserves, thanks the wonderful bequest of the late Henry Andersson, and the fact that a number of the previous Divisions, when they wound up, transferred all or part of their assets to the WIA. It would obviously be better to own property, because then when you improve it, you keep the benefit, rather than giving a benefit to a landlord.

But the trouble with that was that we are using the interest from these reserves to, in effect, subsidise membership fees.

The Directors have discussed what we would ideally have. A place we would be proud to call the home of the WIA.

But, in the end, it all comes down to money. We think we will have to rent premises and very likely will move into premises that will be just adequate, much better than we have now, but a series of compromises on location, neighbourhood, and quality.

And even then, to get what we must have as a minimum, we will be paying more than we are paying now.

So, we are looking.

But one thing is certain.

We do have to move!

How we solve the problem will be a story for another day.

But also, what the WIA really needs is more income, and that means more members, more sales and more income generating activity.

But that is also a story for another day.

Amateurs operating improperly - ACMA acts

Many amateurs have expressed concern at the on-air behaviour of a small number of amateurs, and have expressed that concern to the WIA. The WIA has made representations to ACMA and participated in a face to face meeting with ACMA officers on 28th June 2008.

The WIA has stressed that certain on-air behaviour was unacceptable to the majority of amateurs, particularly as amateur radio sought to attract younger people.

ACMA has now advised the WIA that it has taken a number of regulatory actions against amateur licensees operating in breach of the amateur licensing conditions.

ACMA received information from a number of sources about the activities of a small number of amateur operators.

Investigations were conducted and ACMA took compliance enforcement action against one amateur licensee for operating his station contrary to the Radiocommunications Licence Conditions (Amateur Licence) Determination No. 1 of 1997, the Amateur LCD. Two other operators were cautioned in regard to their operating activities.

Gary Ryan, Acting Manager, Interference Management Section, ACMA, said that during discussions with the operators it became apparent that they lacked understanding of the possible consequences of their actions. "Generally, they did not appreciate that breaches of compliance with licence conditions and other legislative provisions may result with intervention by the ACMA in the form of warnings, fines, prosecution or administrative action such as suspension or cancellation of licences" said Mr Ryan.

The WIA hopes that the action taken by ACMA would be seen by all amateurs as a reminder of the importance of being aware of and complying with the Amateur LCD.

ACMA releases submissions on spectrum options for 400 MHz spectrum

In April this year, the ACMA released a discussion paper that sought comment from interested stakeholders for the development of future arrangements for spectrum in the range 403 – 520 MHz, otherwise known as the 400 MHz band. The ACMA received 73 submissions in response to the discussion paper. Details of the submissions can be found on the ACMA website.

The discussion paper in particular sought comment from the amateur community on its continued use of the segments 420 – 430 MHz and 440 – 450 MHz in the amateur 70 cm band. The WIA lodged a submission on behalf of all Australian amateurs. A copy of the submission can be found on the ACMA website as well as on the WIA website.

The review of the 400 MHz spectrum is driven by the increasing use of this valuable piece of spectrum by government, industry and recreational users.

ACMA has indicated that it proposes to form a Working Group to assist in developing the new spectrum arrangements for the 400 MHz band. The WIA has been invited to participate in the Working Group, representing recreational users.

World ARDF Championships in Korea

The 14th World ARDF championships were held from the 2-7 September in Gyeonggi Province in Korea under the auspices of the Korean Amateur Radio League.

WIA members Bryan Ackerly VK3YNG and Bruce Paterson VK3TJN were amongst 320 representatives from 31 countries competing in the program.

In the 80 metre competition in the M40 section, Bryan was placed sixth out of a

field of 46 and Bruce was placed 23rd. As a team, they were 6th in their category.

In the 2 metre competition in the M40 section, Bruce was 15th and Bryan was 26th. As a team they were 8th in the category.

Two Letter Call Sign ballot conducted

The ballot for two letter callsigns was conducted on Friday morning, 5 September at the WIA's offices in North Caulfield.

There were 315 valid applications to participate received, and every application was successful in that each will be offered a two letter callsign. All but 67 of the applicants were successful in receiving either their first or second choice.

The ballot was conducted by WIA Director Peter Young VK3MV as Ballot Manager.

The ballot was conducted under the supervision of the WIA's independent auditor Evan Mudie. Also present was Andy Byrne, of ACMA.

Letters to each successful candidate were posted on Monday 8 September.

Applications for the two letter callsigns must be received by ACMA no later than 10 October 2008.

The WIA urges successful applicants accepting their allocated callsign to lodge their application with ACMA as soon as possible, because if they do, their new callsign is likely to be included in the 2009 issue of the WIA Call Book.

WIA Club Grant Scheme

On 28 July 2008 applications for grants under the WIA's Club Grant Scheme closed.

There were 15 applications for Grants received from clubs across Australia. The applications are currently being reviewed by the Grant Committee and the WIA Board expects their advice soon.

continued on page 7

The Sniffit - an over timer for 70 cm and 2 metres

Jim Tregellas VK5JST
endsodds@internode.on.net

This article outlines, in significant detail, how to build a timer that will ensure that you not time out your local repeater, whether on the 70 cm or 2 metre amateur bands.

One of the prime (and untested) prerequisites for successful amateur radio operation is the ability to talk the leg off an iron pot. Here in South Australia we have a number of aspirants for world title status, with the result that our two metre and 70 cm repeaters are regularly timed out. This little timer is a response to that pressing need, and gives the potential offender a number of very obvious visual prompts as to when to start closing his (or her) mouth.

Circuit Operation

During transmission, high RF currents produce a small magnetic leakage flux around the coaxial cable interconnecting transceiver and aerial.

A few turns of wire wound around this cable consequently produces an AC voltage which is then rectified by a half wave voltage doubler. In turn, the DC produced is applied to the input of an op amp (gain 48) to form a signal indicating presence or absence of RF energy to the microprocessor chip following.

The op amp non-inverting input is protected from excessive DC levels by a clamp diode connected to the 5 volt rail.

The input detector circuitry has a very short discharge time so that the disappearance of RF will be almost instantly indicated to the microprocessor. It

is also very broadband in design. The original design idea was to capacitively couple the detector circuitry to the aerial cable by simply winding a few turns of pickup wire around it, but this was a disaster.

If enough circuit gain was provided to sense the cable leakage generated by a 1 watt VHF transceiver, then there was also enough gain to sense the RF being emitted by an ABC AM broadcast band transmitter some 6 km away. This caused the timer circuit to lock on permanently, and so the slightly less convenient pickup coil connected between detector input and ground evolved. This technique is very effective in getting the detector to just sense RF cable leakage, rather than 50 Hz AC hum, AM broadcast transmissions and any other spurious signal which

happens to be floating around.

Anyway, once the transmit key is pressed, the output of the LM358 goes high (pin 1) starting the microprocessor timing routines and turning on a green LED. These routines are developed around a fundamental period of 100 milliseconds and when this basic time expires, a test is conducted to see whether RF is still present. If there is

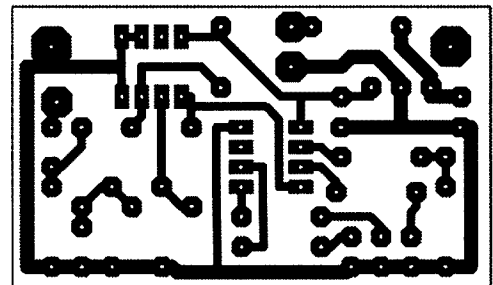


Figure 2: Circuit board.

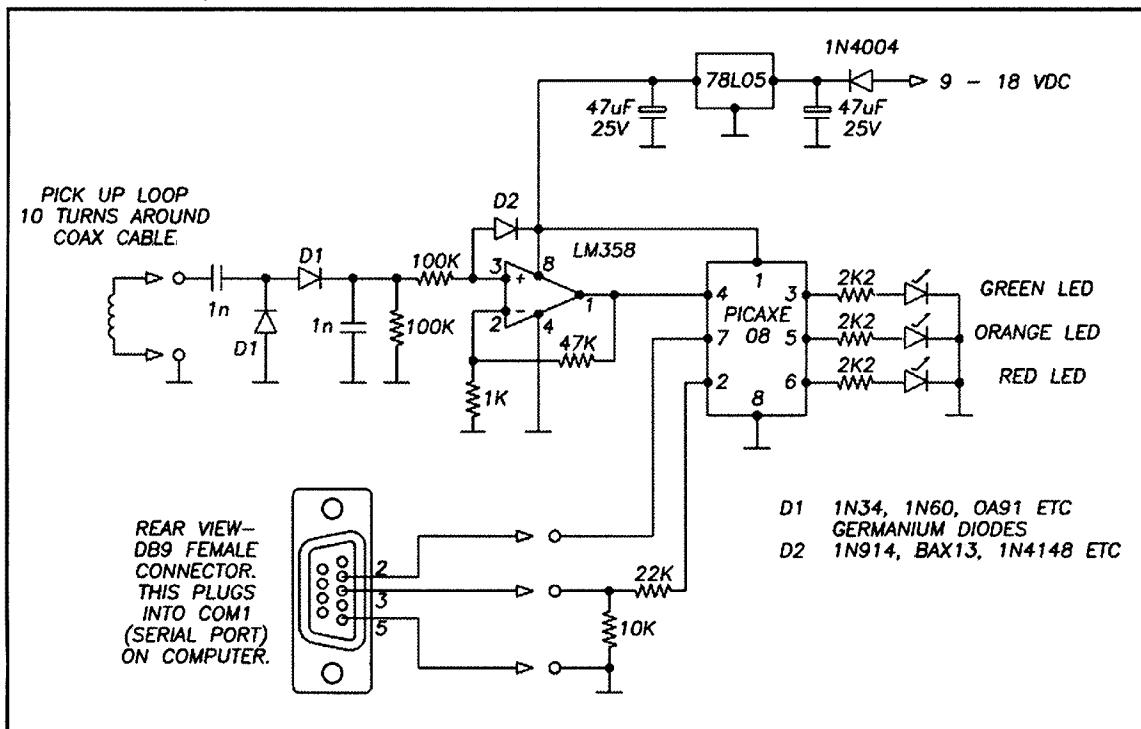


Figure 1: Circuit diagram..

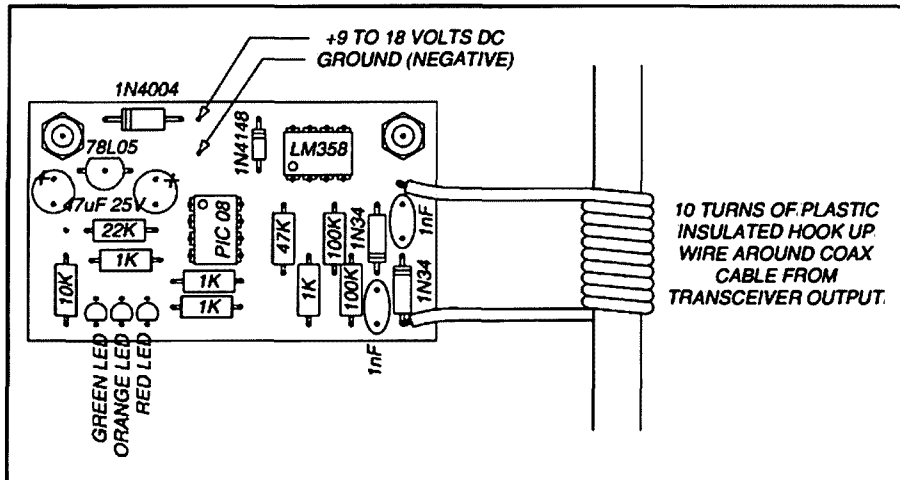


Figure 3: Layout diagram

Sniffit timer routine - VK5JST

```

let dirs=%00010110 'define inputs and outputs
pause 500           'let everything settle

start:
  low 1             'turn all leds off
  low 4
  low 2
  b0=0              'preset all variables to zero
  b1=0
  if pin3=0 then start 'check rf present
  high 4            'turn on green led

time:
  for b0=0 to 9'set up 1 second delay loop
  if pin3=0 then start 'check rf still present
  pause 100           '100mS delay
  next b0
  b1=b1+1            'set up 165 second counter loop
  if b1>165 then flash 'for times >165 secs, flash all leds
  if b1>160 then red  'for times >160 secs, turn on red led only
  if b1>150 then orange 'for times >150 secs, turn on orange only
  goto time

red:
  low 2             'turn off orange led
  high 1            'turn on red led
  low 4             'turn off green led
  goto time

orange:
  high 2            'turn on orange led
  low 1             'turn off red led
  low 4             'turn off green led
  goto time

flash:
  'routine flashes all leds until rf vanishes
  low 1             'turn off red
  low 2             'turn off orange
  high 4            'turn on green
  if pin3=0 then start 'check rf still present
  pause 50          '50mS delay
  low 1             'turn off red
  high 2            'turn on orange
  low 4             'turn on green
  if pin3=0 then start 'check rf still present
  pause 50          '50mS delay
  high 1            'turn on red
  low 2             'turn off orange
  low 4             'turn off green
  if pin3=0 then start 'check rf still present
  pause 50          '50mS delay
  high 1            'turn on red
  low 2             'turn off orange
  low 4             'turn off green
  if pin3=0 then start 'check rf still present
  pause 50          '50mS delay
  goto flash
  'loop, flashing leds alternatively until rf disappears

```

no RF then the program returns to the start and continues endlessly testing until RF reappears. If RF is present then a number of logical tests are done.

For periods of less than 150 seconds, the green LED stays on. For periods between 150 and 160 seconds an amber LED appears. For periods between 160 and 165 seconds a red LED is turned on. Finally, for periods greater than 165 seconds, all LEDs are sequentially flashed until RF disappears.

If the RF disappears during any part of these sequences, everything is switched off and the program returns to the start, waiting for RF to reappear

and recommence the timing sequence.

All of these periods (and the actual program operation too if you feel the need) can be simply adjusted by changing a few numbers and reloading the revised routine into the microprocessor EEPROM. This is very simple to do, and a lot of fun, and clearly demonstrates how user friendly the PICAXE processors are relative to other chips on the market. After you have done it the first time, the old grey matter will start bursting with all manner of devious schemes.

Construction

First, make the printed circuit board. There are a number of ways to do this, but my favourite technique (very cheap!) involves the use of clay surfaced paper, a laser printer or Xerox machine, and a steam iron.

The method can be found on my home page at <http://www.users.on.net/~endsodds>. Mount all components, starting with those of lowest profile. When you finish, double check the value and orientation of parts, particularly electrolytics, diodes and ICs. Add the DB9 female connector and three wires which allow the PICAXE to be programmed.

Those of you who have wrestled with other micro chips will definitely appreciate the amazingly simple interface of this device family.

Programming the PICAXE

Programming PICAXE chips is simple. As a first step, obtain the Picaxe Programming Editor, which is the software produced by Revolution Education of the UK, to allow programming of all PICAXE chips released.

The program goes by the real name of BAS805.EXE and can be downloaded free under the 'Software' tab on the front page of the Revolution Education site: <http://www.rev-ed.co.uk/picaxe/> You will probably need an ADSL Internet connection as the file is some 33 Mb in length.

Once you have the file, use the Windows 'RUN' feature to install the editor on your desktop. Now open the editor and select either PICAXE 08 or PICAXE 08M depending on which chip you bought. You can use either but the

08M provides four times the program storage space.

Type the routine listed elsewhere in this article into the worksheet provided and save it if you wish with a name such as UPSHUT.BAS (the extension is necessary as it is a BASIC file). Plug in the programming cable to COM1 on your computer and apply power to the timer PCB.

Find 'PICAXE' on the program header and then click on 'RUN'. After a short delay, the control routine will be squirted into the PICAXE EEPROM. That is it! Your project should now be alive. If you have made any errors, correcting them is as simple as typing the changes into the routine and then clicking on 'RUN' again.

Testing

Temporarily solder a wire to the junction of the two germanium diodes D1, and connect the other end to the 5 volt rail (via a switch if you feel like it). Immediately you do this, the green LED should light.

You can now check out the accuracy of the timing. As the clock in the

PICAXE is not crystal controlled, do not expect better than 5% accuracy. You can trim this tolerance out by changing the numbers in the decision tree within the routine.

Finally

When you have finished, unsolder the programming cable from the PCB and install the unit in a box. The unit will happily run from any DC voltage source between 9 and 18 volts and draws around 5 mA.

The most likely power source is the 13.8 volt supply for your VHF/UHF rig. The most convenient way of making the RF pickup coil is to solder two wires of around 150 mm in length to the PCB, one to the RF input and the other to ground. Strip the other end of these wires, and after winding them around the coaxial cable to make a continuous coil, join them centrally by twisting the stripped ends together.

Copyright August 2007

The software for this article should be available for download from the AR archive on the WIA website.

Sniffit timer – parts list.

Resistors (all 0.25 watt 5%)

1 @ 1k 1 @ 22k
3 @ 2k2 1 @ 47k
1 @ 10k 2 @ 100k

Capacitors

2 @ 47 uF 25 VW aluminium electrolytics
2 @ 1000 pF 100 VW disc ceramics

Semiconductors

1 @ 78L05 1 @ LM358
1 @ Picaxe 08
1 @ 3 mm dia 5000 mcd red LED
1 @ 3 mm dia 5000 mcd orange LED
1 @ 3 mm dia 5000 mcd green LED
1 @ 1N914 or 1N4148
2 @ 8 pin DIL sockets
2 @ 1N34 or 1N60 or OA91 (or equivalent) germanium diodes

Miscellaneous

1 @ printed circuit board, hookup wire, solder.

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Editorial continued from page 2

but we need higher resolution images for the cover.

If you think that your planned photograph may be cover material, think about checking the file size settings before pressing the shutter button. We need images of at least 1 MB, preferably larger. And look at the cost of memory cards now – the prices have fallen considerably.

You can always send in a smaller version – say around 200-500 kB. Let us know that the image is available at higher resolution. If we think it will be useful at higher resolution, we will be in touch regarding a higher resolution file.

Beware of contributing photos via some of the software tools that many seem to use: some email client software converts the photo to a much smaller file – any image less than 100 kB may make the email transfer quicker but is unlikely to be usable anywhere in the magazine!

73 Peter VK3KAI

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News continued from page 4

The Grant Committee this year consists of Don Wilschefski VK4BY, Deane Blackman VK3TX and Bob Fincher VK3BRF.

ITU Leadership Visits Asian Amateur Radio Exhibit

The ITU Telecom Asia conference was held in Bangkok, Thailand, in the first week of September.

An IARU booth promoting amateur radio was established by IARU Region 3 with assistance from the Radio Amateur Society of Thailand (RAST), the IARU Member-Society in that country.

ITU Secretary General Dr Hamadoun I Toure HB9EHT and Dr Eun-Ju Kim, Head of the ITU Regional Office for Asia and the Pacific, visited the IARU booth, staying and talking with hams and visitors for more than half an hour.

Region 3 Directors Meet

The IARU Region 3 Directors met in Tokyo over two and a half days from 20 to 22 August 2008, hosted by Japan Amateur Radio League (JARL).

The Directors are Chairman Michael Owen VK3KI, Shizuo Endo JE1MUI, Peter Lake ZL2AZ, Gopal Madhavan VU2GMN and Joong-Geun Rhee HL1AQQ. They were assisted by Secretary Keigo Komuro JA1KAB and Assistant Secretary Jay Oka JA1TRC. IARU Vice President Tim Ellam VE6SH also participated in the meeting.

The Directors reviewed the ITU World Radiocommunication Conference that had been held in Geneva in November 2007 (WRC-07). The next WRC will be held in 2011 (WRC-11) and has agenda items that may directly and indirectly affect the amateur services. The Directors recognised the importance of ensuring that those involved in the preparation for that Conference at a regional and national level are kept fully informed.

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NEScaf – an essential addition to any QRP shack

Grant McDuling VK4JAZ

Operating a QRP shack can be challenging at the best of times. This little device is as easy to make as a cup of instant coffee and it has a similar wake-up effect on your reception.

Trying to catch the attention of distant QRO operators is a task that can test the very best QRP operator to the limit. We accept this as part and parcel of the thrill of QRP. However life can be made very much more pleasant given perfect operating conditions such as frequencies clear of QRM and QRN as well as a co-operative Sun!

The world of QRP is definitely improving of late, and I have been able to add some wonderful contacts to my log. One down side has been the unstable weather patterns resulting in much static interference, making copying difficult and tiresome.

While talking to Ray VK4ZW recently on 2 m, he mentioned how impressive his Digital Signal Processor is on his main rig. I listened in awe as no QRP rig to my knowledge has anything like this. So I decided to do a search on the internet to see what I could discover.

I quickly came across the site of the New England QRP Club (<http://newenglandqrp.org>) and read with more than a little interest about an intriguing kit called the NEScaf that they produce.

This is a switched capacitive audio filter that plugs straight into the audio out socket of any QRP rig. A quick discussion with VK4ZW and an order for three of these little beauties was placed.

The NEScaf has two panel-mounted controls - a single centre-detent potentiometer that sets the centre frequency of the filter's bandpass and a dual-ganged potentiometer that provides a continuously variable bandwidth control from about 60 Hz to around 1500 Hz.

This kit uses all through-hole components, and the construction and adjustment is simple and easily tackled

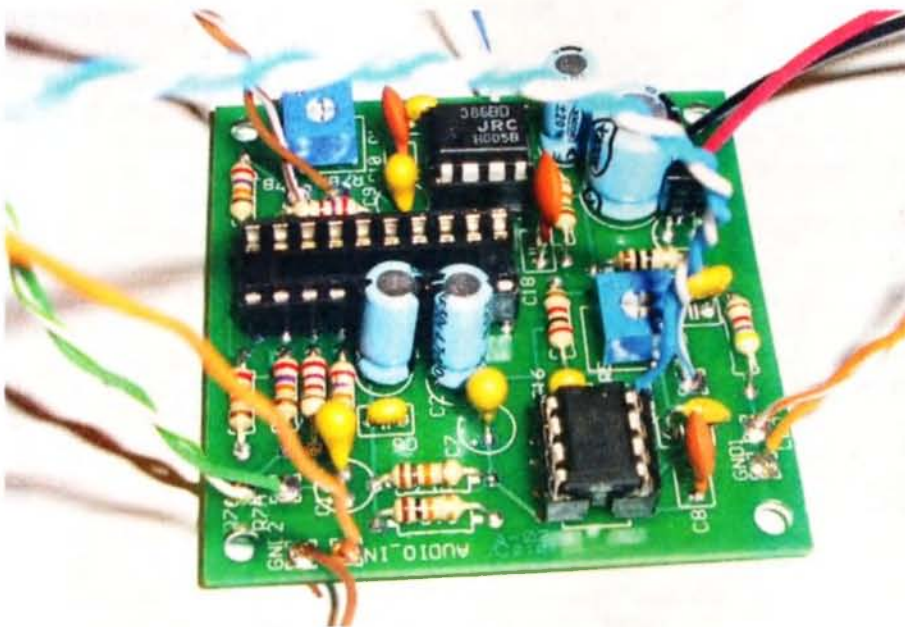


Photo 1: The circuit board with all components in place.

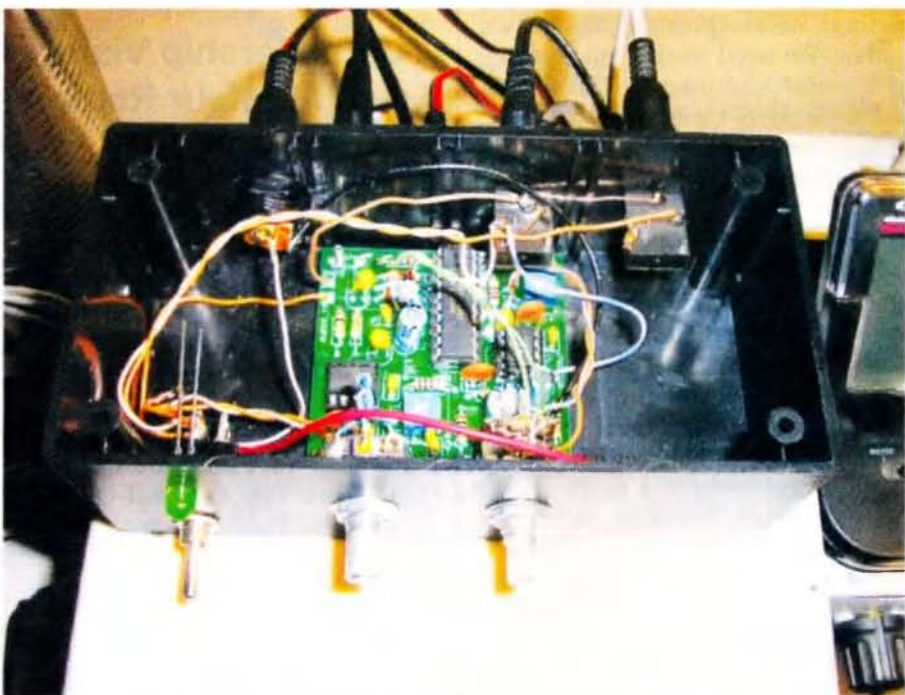


Photo 2: The circuit board mounted in the enclosure.



Photo 3: The completed NEScaf unit.

by the novice constructor. It all went together quickly and I was amazed that it worked first time.

For me that was a pleasant surprise because I always seem to hit snags with the kits I build.

The kit is built in stages and this I think makes it so easy to build and test as you go. The first stage is the power supply, which supplies 4.5 V and 9 V to the various stages, an audio amp (LM386), a clock generator and the SCAF IC chip (MF100).

There are two internally-mounted trimmer pots, one being used to calibrate the centre frequency pot and the other to adjust the audio level into the filter's output amp. Setting this to match the audio level of your rig means the NEScaf can be connected to your rig of choice but only switched on when needed without any noticeable change to the audio level. I find this a most useful feature.

So how does one operate the NEScaf?

Once the trimmer has been set up for the rig (to take into account the transmit offset), the filter can be used

as a tuning aid. The frequency pot is left at the centre detent with the bandwidth set wide.

Then, as you come across a signal of interest, the bandwidth can be narrowed until the signal sounds best in the headphones or speaker. When you are right onto the station's frequency, the signal will peak.

Another useful function of the NEScaf, when using it with a fixed frequency QRP rig, is to be able to bring the incoming signal in when the responding station answers slightly off frequency. This allows you to adjust the receiver response without changing your operating frequency; a very powerful tool indeed.

I have found the continuously variable frequency and bandwidth controls to be very useful and enabled me to pull in weak signals that I simply could not hear at all with the filter turned off.

At a price of around \$35, what more could any QRP operator desire?

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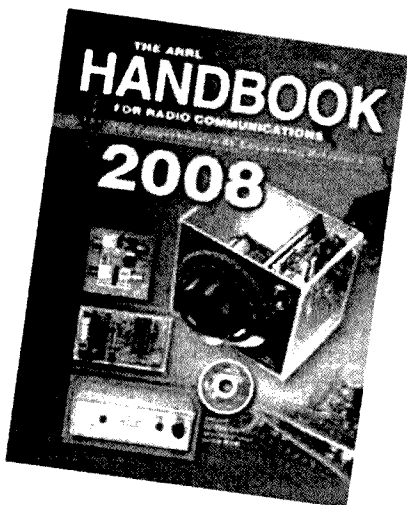
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An amplitude modulation monitor

Drew Diamond VK3XU

Amplitude modulation is enjoying renewed interest from various individuals and groups.

The usual method of assessing modulation depth (or percentage) is to observe the modulated signal on an oscilloscope, either as a trapezoid, or modulated envelope (Reference 1). Yet the average amateur may not own an oscilloscope, or, if s/he does have a 'scope, it may not have sufficient high-frequency bandwidth, being suitable only for displaying audio frequency signals.

Moreover, an oscilloscope display does not provide much 'qualitative' information about what the signal actually sounds like. Reports from other stations may be sufficient, but it is much better if the transmitted signal can be sampled 'off-air'. Hence, any problem, such as sudden loss of modulation, or an intermittent fault, or noise and/or hum, or distortion, will be immediately detected.

Offered here is a handy little modulation

monitor that provides amplified 'crystal-set' reception of AM on 1.8 and 3.6 MHz up to a radius of about 300 m from the transmitter, and at reduced but quite adequate sensitivity on 7 MHz.

When used in the shack, an oscilloscope, of only modest bandwidth, may be connected to the monitor's output, allowing the detected audio waveform to be observed directly.

Circuit

One potential problem with crystal (diode) detectors is where, under low signal conditions, the turn-on 'knee' of the diode is a significant part of the operating curve of the diode, resulting in some distortion of the detected waveform. In this instance, the Schottky diode (a germanium will also serve, see Figure 1) has some forward bias - about

90 mV applied, thus greatly reducing distortion at low signal levels, and fortuitously, improving sensitivity. In all other respects the circuit is quite conventional.

Detected audio is applied to the input of a popular LM386 audio amplifier to power low or high impedance headphones. Or the signal may be cabled to the input of an oscilloscope whereupon the transmitted modulation may be observed.

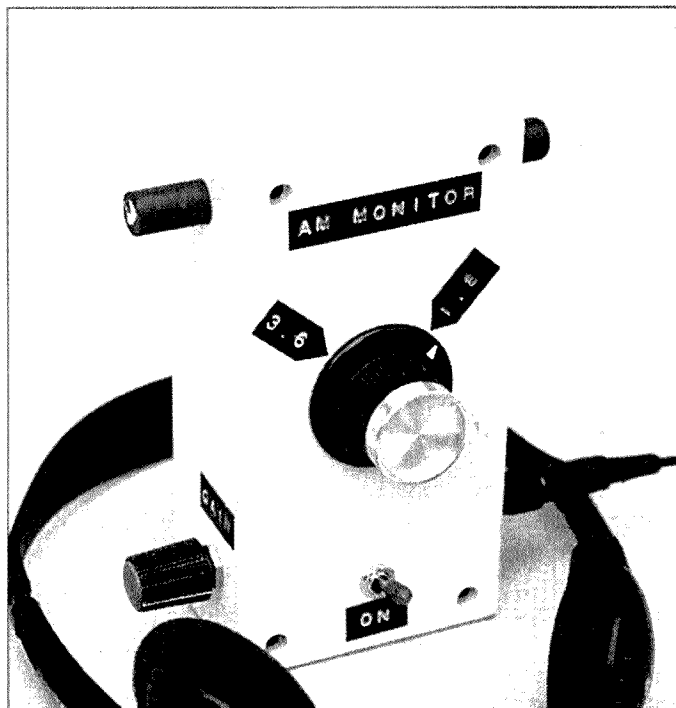


Photo 1: The amplitude modulation monitor.

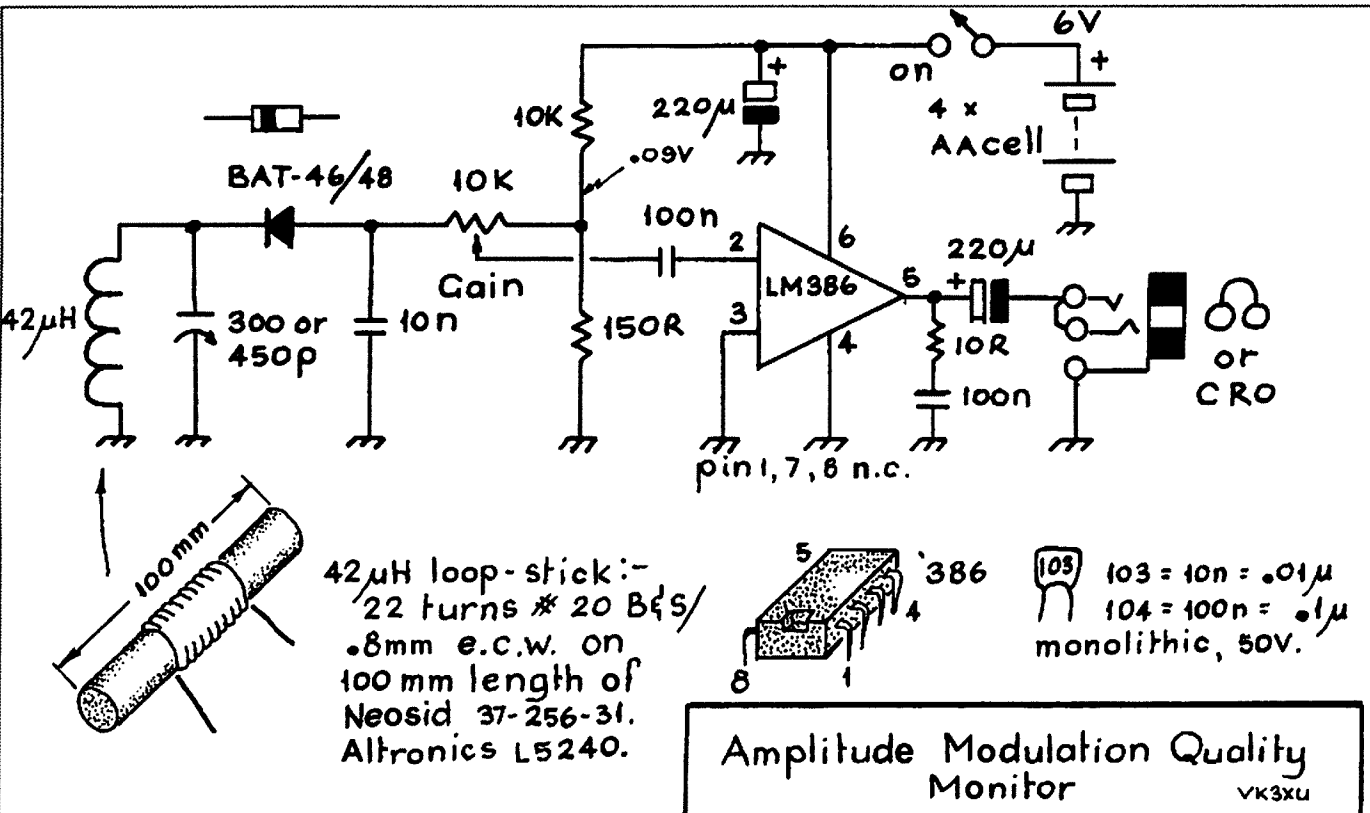


Figure 1: Circuit diagram of the amplitude modulation monitor.

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Construction

The prototype model, shown in Photo 1, is housed in a plastic 'jiffy' box measuring 130 x 67 x 40 mm. The variable capacitor, amplifier chip and associated components are accommodated upon a 'paddyboard' circuit board (Reference 2) measuring 80 x 50 mm, although any preferred construction style, even 'ugly', should serve provided that component leads are reasonably short, and the general layout suggested in Figure 2 and Photo 2 is followed.

The LM386 chip may be fitted into an 8-pin DIL socket, that is in turn soldered upon a 'substrate' pad of circuit board, segmented as shown. The angled cuts are at 65 degrees to the centre line of the chip. The substrate and pads may be fixed, copper side up, upon the circuit board with just a dab of super glue.

Or, consider using hot-melt glue. In this case, put a sliver of solid glue upon the underside (fibre) of the pad, then apply your soldering iron tip to the glue and melt it evenly. Quickly place the pad on to the board in the exact spot required. A 'handle', such as a 1 W resistor may first be temporarily soldered to the pad as an aid to this procedure.

The antenna coil is wound upon a 100 mm length of Neosid 37-256-31

F14 ferrite rod. As sold, the rod is twice as long as needed. To halve the rod, grind a shallow groove around the circumference, then, with fingers and thumbs each side of the groove, snap it as you would break a stick.

Close-wind 22 turns of #20 B&S/0.8 mm ecw (winding length about 18 mm) on to the rod. The coil may be wound on, then removed, allowing the rod to be re-inserted into the coil as it is passed

through suitably sized holes each side of the box, as pictured in Photo 2. A blob of hot-melt or epoxy glue should be applied to the join between the rod and the inner wall of the box.

The four AA cells for the 6 V battery supply may be accommodated in a 4-cell holder (eg Jaycar P/N PH 9200), attached with hot-melt glue to the lower rear of the jiffy box, as illustrated in Photo 3.

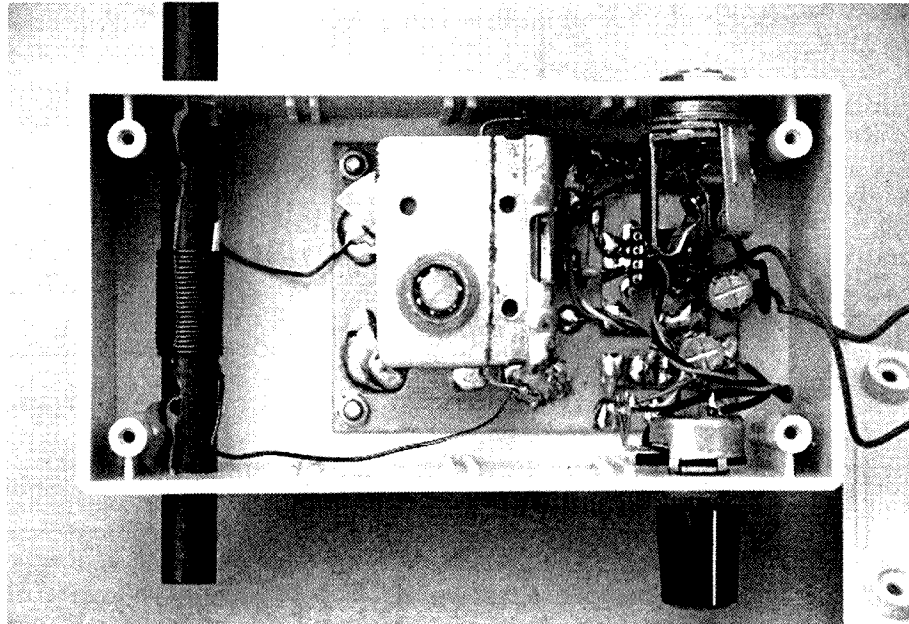


Photo 2: An internal view of the modulation monitor.

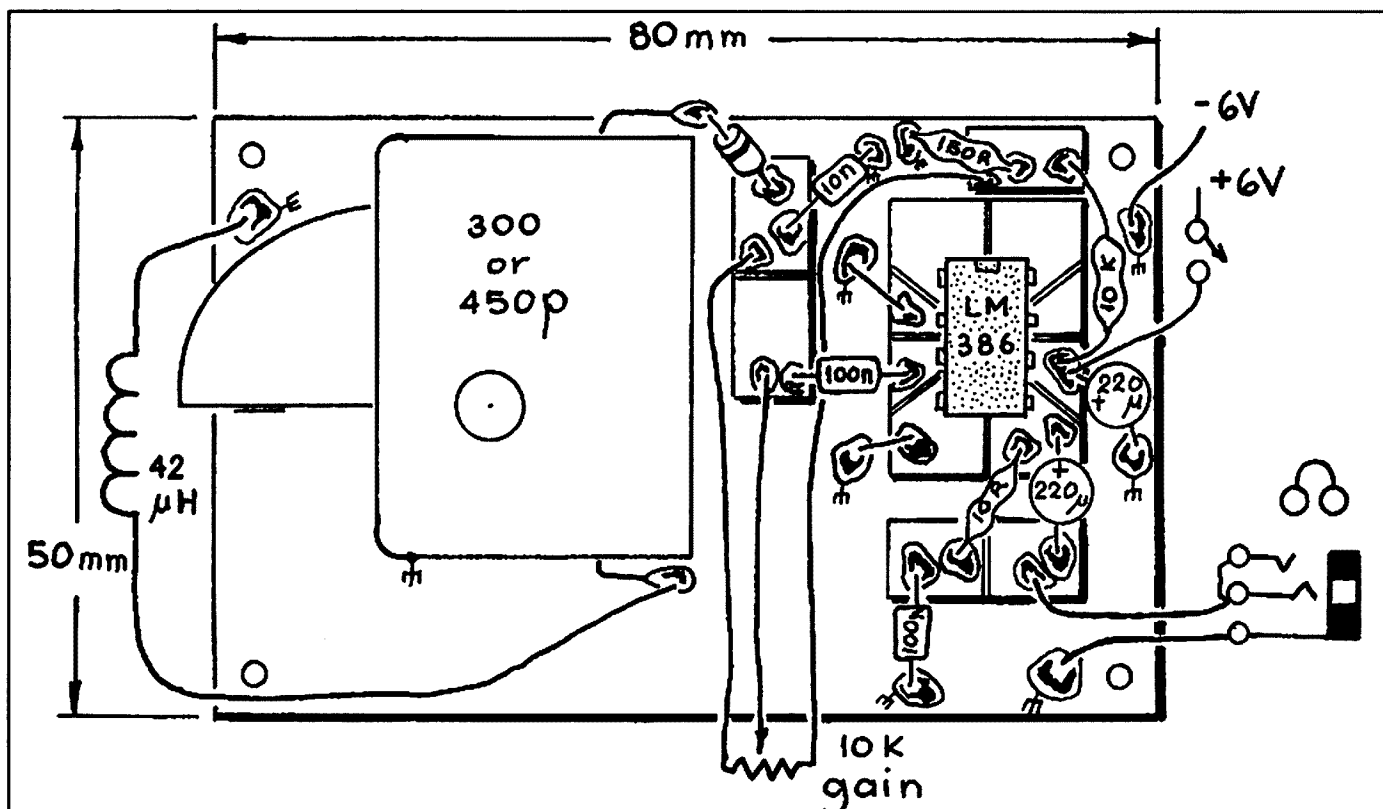


Figure 2: General layout of components inside the modulation monitor case.

Operation

Carefully inspect your soldering for quality and accuracy. Confirm that the diode, LM386, electrolytic capacitors and the 4 x AA cells are installed correctly.

Plug in headphones, and then turn the gain potentiometer to minimum. Upon switch-on you should only hear a soft 'plop'. For a simple preliminary test that the amplifier is working, hold the monitor near a powered mains transformer, where hum from leaked 50 Hz flux should be heard within about 300 mm of the source (in actual use the monitor must be adequately distanced from mains and modulation transformers).

Key the transmitter on-air and apply some modulation. Tune the signal in by peaking the variable capacitor and you should hear a close approximation of what your signal actually sounds like on a good, distant receiver.

One caution. There is an observed 'over-load effect' with such monitors, where (it is thought) mains harmonics from diode rectifiers in the shack environment impress an apparently larger amount of background hum or buzz on to the monitored signal than is actually the case. This can occur when the signal

is very strong. The solution is to simply rotate the plane of the monitor's loop-stick antenna so that the signal is reduced to a more reasonable level, thus giving a truer representation of the signal as it is received at a distance.

To view the modulation waveform, cable the monitor's output to the vertical input of the 'scope, set at an appropriate sensitivity (say 100 mV/division initially). Being remarkably sinusoidal, a 'whistle' of about 1 kHz into the microphone is a handy signal source for testing the linearity of the entire transmit chain. Over-modulation is indicated by 'flat-topping' or 'flat-bottoming' on the observed waveform.

Parts

All of the ordinary electronic components are available from our usual electronics component suppliers, including Altronics, Electronic World, Jaycar, Rockby and Semtronics. The preferred Neosid ferrite rod is available from Altronics - P/N L 5240. My plastic 'jiffy' box is a Jaycar HB-6023 (confirm that your variable capacitor will fit, together with the other circuitry). A BAT46/48 diode may be obtained from Jaycar - P/N ZR-1141.

The variable capacitor may be a one or two gang broadcast type with a total capacity of 300 or 450 pF. The capacitor in the prototype (visible in Photo 2) is an MSP 95 + 205 pF transistor radio part, very commonly available at ham-fests and swap meets.

If you have genuine difficulty in locating an item or two, do please write (or 'phone on 03 9722 1620). I am not in the parts business, but usually have spares on-hand, or can suggest a source.

ar

References and Further Reading

1. Test Equipment for the Radio Amateur; C Smith G4FZH, RSGB, Ch 11 (excellent).
2. "Paddyboard' Circuit Construction - Revised"; Amateur Radio, May 2005.

Photos: Andrew Diamond



Photo 3: A suggested way to mount the battery.

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Now for something completely different Part 2:

A Class-D amplitude modulator for the 40 metre Class-E transmitter

Phil Wait VK2DKN

There are many ways to achieve amplitude modulation of a radio frequency carrier.

High-level plate-screen modulation was considered the “ant’s pants” for many years, but acquiring a suitable modulation transformer was always difficult, especially for amateurs building medium-high power transmitters. Unless a DC shunt choke is used, modulation transformers must pass considerable unbalanced DC current to the final RF amplifier without core saturation, a factor which makes them large and expensive devices compared to common power transformers.

Efficiency modulation techniques such as screen grid or control grid modulation never seem to sound quite as good as high level modulation, and modern solid state rigs which use low level AM modulation techniques often sound “thin”.

Excellent audio can be achieved with series modulation, where an active device (valve or solid state) is placed in series with the power supply to the final RF amplifier, as there is no modulation transformer to add distortion or limit the frequency response. However simple series modulators operate in Class-A and are very inefficient devices, dissipating large amounts of heat, and modulation techniques were developed to improve efficiency and lower the running costs of high power broadcast transmitters. The two most popular commercial high level modulation techniques are Class-H and Class-D modulation.

Class-H Modulation

A Class-H modulator actively varies (or switches) the power supply voltage up and down, so that at any time the series modulator device only just has

the voltage that it needs to supply the RF amplifier, (i.e. it runs near saturation). Because the voltage across the series device is held to a minimum, efficiency is dramatically increased and heat dissipation minimized. Naturally the power supply voltage must be varied very quickly to be able to track the instantaneous voltage of the audio waveform. Simple Class-H modulators may just switch between two fixed power supply voltages.

A Class-H modulator is very suitable for use on a transmitter up to several hundred watts output, and would be very suitable for this transmitter, and perhaps simpler. However, the greatest efficiency can be obtained with a Class-D modulator, and in the spirit of presenting something different, that is the technique chosen for this design.

Again, this is not a project for the inexperienced constructor and many components in this design are not available from hobby electronics retail outlets. Hard to get components are available at outlets such as Farnell Electronics and RS Components, and Mouser Electronics in the US. A microphone pre-amplifier is not included in this circuit as many commercial microphone pre-amplifiers/mixers are available at low cost, (such as the Behringer ‘Tube Ultragain MIC100’ (yes- it has a 12AX7 in it!), the Eurorack range, or the simple KC-5166 preamplifier kit from Jaycar).

Class – D modulation

A Class-D modulator is very similar to a switching power supply where the output voltage is proportional to the duty cycle of a pulse width modulated (PWM) waveform. Instead of controlling the duty cycle of the pulse with a control voltage, in an audio amplifier/modulator

the PWM duty cycle is controlled by an audio signal.

A Class-D modulator can produce broadcast quality audio when correctly designed, and the system is widely used in modern AM broadcast transmitters. Class-D amplifiers are also very commonly used for high power low cost audio amplifiers, like those “duff-duff” amplifiers in hot street cars.

The theory of Class-H and Class-D is very well covered in various websites, including Steve Cloutier’s (WA1QIX) site at www.class-e.com. Many elements of this design are taken from information on that website.

The diagrams below show the basic generation of a PWM waveform.

See Figure 1. A comparator compares an audio signal to a triangle waveform, so that a pulse output is produced which varies in duty cycle in relation to the audio input voltage. As audio increases and decreases in voltage, the pulse output increases and decreases in time, (i.e. a pulse width modulated waveform). If the triangle waveform is many times the maximum audio frequency, the PWM output will faithfully track the instantaneous voltage of the audio signal.

As the series modulator device will now be switching a digital signal, it will be either switched hard on or hard off, achieving very high efficiency and low heat dissipation. However modulating an AM transmitter with a high frequency PWM square wave will produce multiple switching frequency sidebands (and not make you very popular), so the high frequency PWM switching signal must be removed by a low pass filter. After filtering, what is left is the average (integration) of the energy contained in the PWM waveform – the original audio signal.

Analysing the circuit

The block diagram (Figure 2) shows the functions of the Class-D modulator.

The low-side audio filter and PWM generator

This section is represented by the top four blocks in Figure 2 and the circuit diagram in Figure 3.

Line level (about 1 V p-p) audio, either balanced or unbalanced, is input via a 600 Ohm isolation transformer. The audio from the isolation transformer is fed via anti-aliasing network (R3/C3), to a LTC1063 5th-order Butterworth CMOS low-pass filter (IC1). An internal oscillator running at 50 times the desired cut-off frequency sets the filter bandwidth to about 4.5 kHz and the total transmitted bandwidth (both sidebands) to about 9 kHz.

Filtered audio then passes to an NE5534 op-amp (IC2), chosen for

its capacity to drive low impedance loads. IC2 sets both the quiescent dc level (R22) into the input of the PWM modulator and also the overall audio gain (R23). The dc level sets the quiescent pulse-width output when no audio is present, and therefore the no-signal carrier power. The Modulation Level adjustment sets the input audio level required for full pulse width range (maximum modulation).

The UCC35701 pulse width modulator (IC3) has all the components necessary to generate the PWM signal. Also a sample of the power supply is fed back through R24 which is adjusted to cancel (null) any power supply hum. (Be careful not to use phase reversed variants of IC50 and IC52 as the hum-null feature will become a hum peak feature!). The UCC35701 also holds the internal triangle oscillator which is set by the value of C12 to about 125 kHz (not critical).

The high-side MOSFET driver

This section is represented by the middle three blocks in Figure 2 and the circuit in Figure 4.

So far all the circuitry has operated from a 5 volt power supply referenced to chassis ground. As it is most convenient to place the series modulator device (MOSFETs) in the positive supply to the RF amplifier, the PWM signal will need to be level shifted and referenced to the source of the series MOSFETs. A 74OL6010 TTL to CMOS Buffer High-Speed Logic-To-Logic Output Optocoupler (IC50) provides the level shifting and voltage isolation required.

A UCC37322 MOSFET driver (IC52) provides the low impedance and high current drive required to overcome the large gate capacitance of the MOSFETs, achieving typical switching times of less than 50 ns. Longer switching times would lower efficiency and increase heat dissipation in the MOSFETs, and if very long the modulator may not achieve 100% modulation.

For simplicity, both the 74OL6010 and the UCC37322 are powered by an isolated 12 volt dc supply (IC53), which is referenced to the MOSFET source. The series MOSFETs (Q50 & Q51) are International Rectifier IRFP22N50 A 500 V 22 Amp HEXFETS designed primarily for switch mode power supplies/high speed switching applications. These MOSFETs are selected simply because they are the same type as used in the transmitter, and other similar MOSFETs with a drain voltage above say 200 volts should be suitable.

The output filter

This section is represented by the final block in Figure 2 and the last part of Figure 4.

If the PWM signal was used to directly AM modulate a transmitter the switching frequency would appear as multiple sidebands separated from the carrier by multiples of the switching frequency. So if you were transmitting on 7.125 MHz and had a PWM switching frequency of 100 kHz, an output would be produced on 7.025 MHz and 7.225 MHz, and every 100 kHz up and down the spectrum. Clearly the PWM output must be filtered (integrated) to remove the switching frequency and leave only the original audio information.

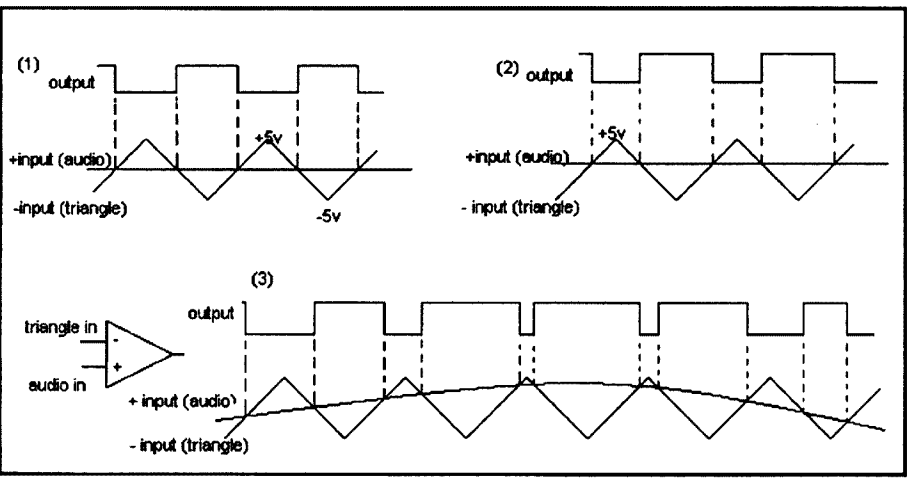


Figure 1.

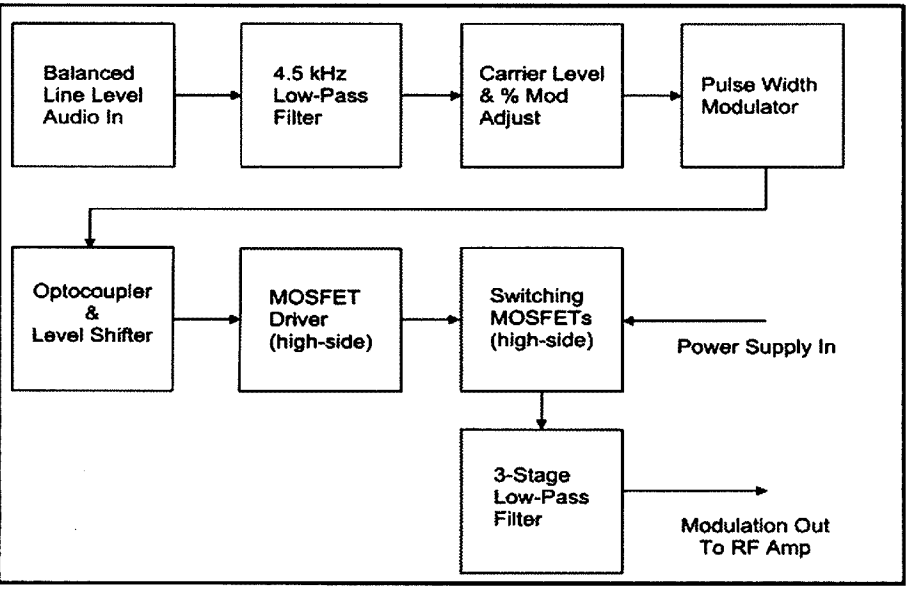


Figure 2.

The output filter network is a 15 kHz, 3-section Butterworth low-pass filter (L50-L52 & C64-C66) designed to operate into the transmitter's dc load resistance. The design and construction of this filter, especially the input inductor, is critical to the successful operation of the modulator. If the core of the input inductor (L50) cannot store sufficient energy (saturates), serious distortion will result. Also the permeability of the core material will decrease as flux density changes. Correct core selection is very important as the cores must be designed to handle the large peak modulation

currents superimposed on a carrier level dc current.

The cores used are CWS/Bytemark Hi-Flux series CH777060, (AL = 60, 12.7 mm x 78.9 mm x 49.2 mm), available from Mouser Electronics and other US suppliers; they are large cores in order to ensure stability. Alternatively, smaller lower flux density cores such as the Neosid 17-745-24 (1006 material, AL = 120, 16.5 x 44 with 24 mm hole) can be stacked to increase core area and current handling, naturally the number of turns will need to be recalculated, (stacked Neosid cores gave good results on the

first prototype - 4 cores for L50, 3 cores for L51, and 2 cores for L52). Winding details for single CH777060 cores are shown on the circuit diagram - use 12 gauge ECW or heavy gauge multi-strand insulated wire.

The output filter shown is calculated for a Butterworth response with a dc load resistance of 3.5 Ohms and a cut-off frequency of 15 kHz, but in practice it is not too critical. If you wish to use this circuit with a different transmitter, or simply experiment, you will need to re calculate the filter values to match the dc load resistance of your transmitter.

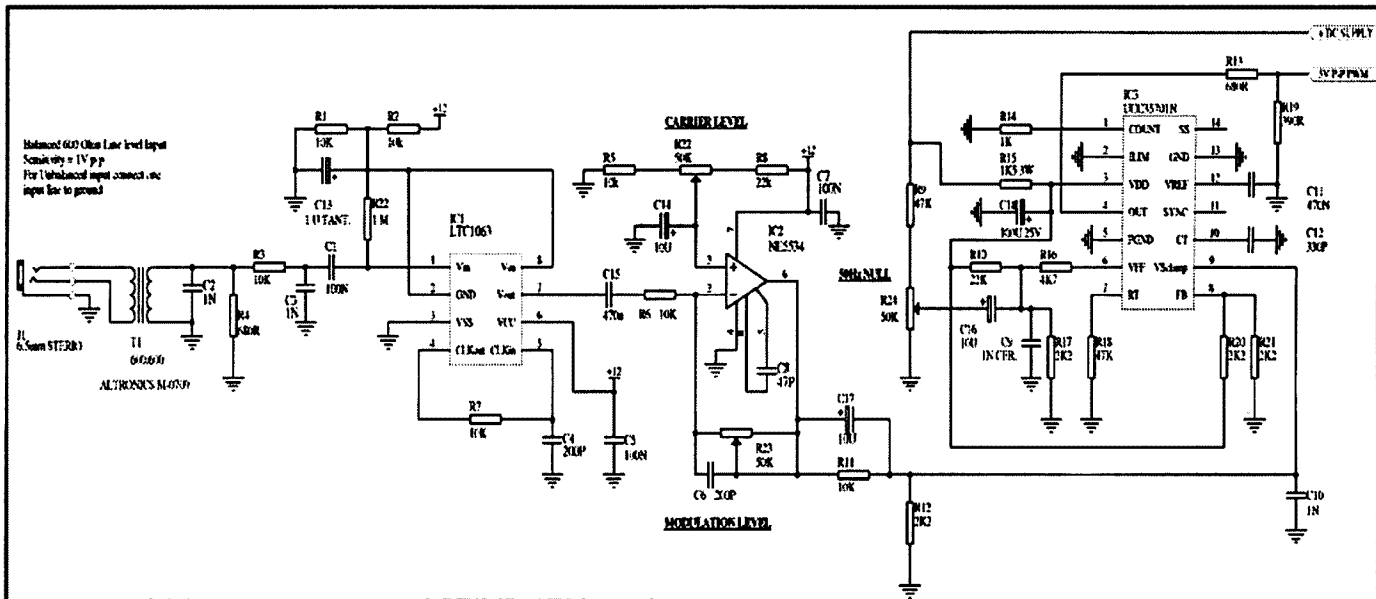


Figure 3

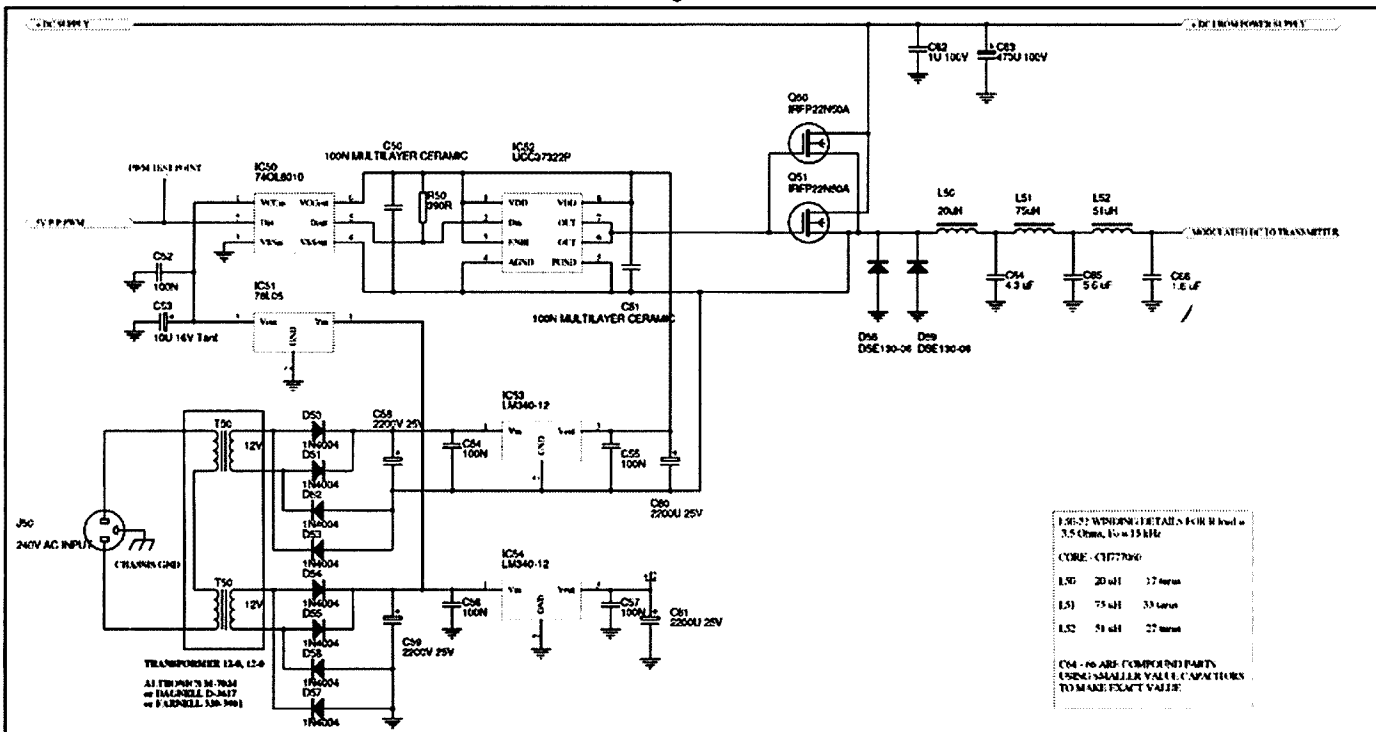


Figure 4

FIG. 42 WINDING DETAILS FOR R load = 3.5 Ohms, f_c = 15 kHz

CORE - CH777060

L50	20 μH	17 turns
L51	75 μH	33 turns
L52	50 μH	27 turns

C64 - 66 ARE COMPONENT PARTS
CORES SMALLER VALUE CAPACITORS
TO MAKE EXACT VALUE.

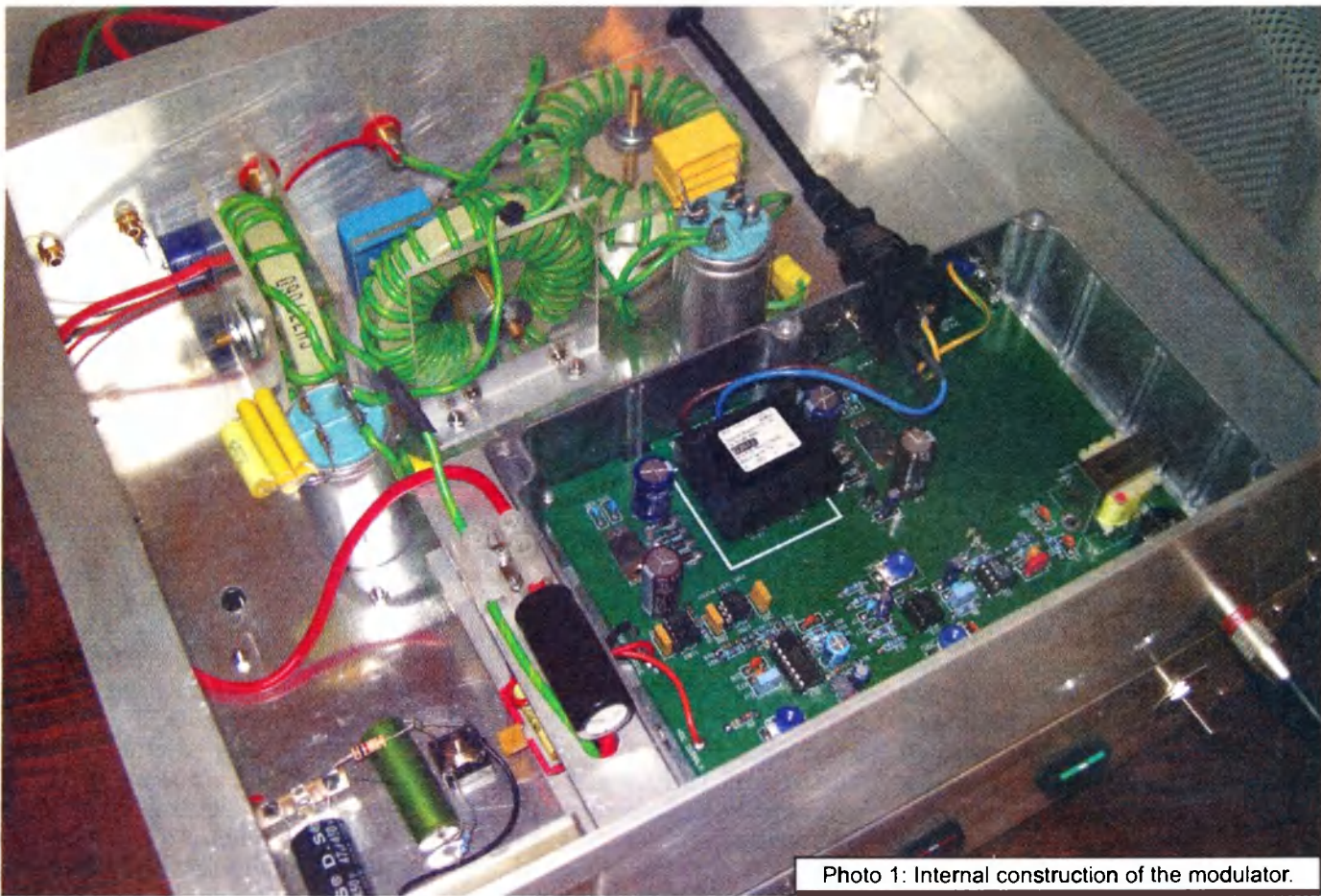


Photo 1: Internal construction of the modulator.

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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 lie 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.

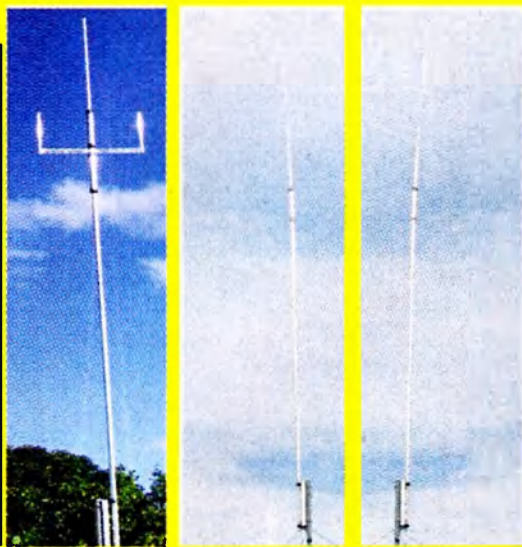
40 Blackburn Street
 STRATFORD
 Victoria 3862 AUSTRALIA
 www.tet-emtron.com
 Email: rawmar@hotmail.net.au

Ph: 61 3 5145 6179
 Fax: 61 3 5145 6821
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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



Photo 2: Mounting the MOSFETs and damper diodes. Note the thick short leads used even at audio frequencies to minimise switching times and avoid ringing.

To determine the load resistance, use a Variac to set the transmitter output power to about 25% of the maximum obtainable, tune for maximum efficiency (see transmitter article) and then calculate the load resistance from the power supply voltage and current. A convenient filter program, "SVC Filter Design" is available at www.tonnesoftware.com

The filter capacitors (C64-C66) are compound parts with the bulk capacitance provided by high current metallised polypropylene motor run capacitors. Use smaller value polypropylene capacitors in parallel to make the correct value.

The diodes D58 and D59 are damper

diodes which clamp the flyback energy from the filter when the MOSFETs turn off, in the same way that a reverse diode absorbs the back EMF from a relay coil. The damper diodes must be very fast recovery types and about equal in power capacity to the MOSFETs, and must be located immediately next to the switching device, and connected with VERY short leads.

Construction

Refer to photo one: Internal construction of the modulator.

The chassis is identical to that of the transmitter and power supply described

in the previous article.

All components except the MOSFETs, the damper diodes, and the output filter are assembled on a double sided pc board (with top side earth plane) designed to mount in a standard aluminium diecast box. Any construction which provides a high degree of RF shielding for the low level audio components would be suitable.

Switched mains power is connected from the transmitter power supply, through an IEC male chassis connector on the diecast box, to a pc board mounted transformer, (see photo 2).

The MOSFETs and the damper diodes are mounted on a length of U-channel which is mounted on an outside end face of the diecast box. Capacitors C62 and C63 are located near the MOSFETs. To preserve the switching rise-time and prevent ringing of the output waveform, keep all leads from the MOSFETs to the driver (IC52) and the damper diodes (D58 & D59) very short.

The output filter cores are mounted between acrylic end plates bolted to the chassis with 12 mm aluminium angle. The number of turns for each inductor is shown on the circuit diagram and was determined using an inductance bridge and the published AL values of the CWS/Bytemark Hi-Flux series CH777060 cores.

Motor run capacitors are used for the filter as they conveniently bolt to the chassis and can support smaller capacitors in parallel to make up the exact value. If you intend mounting the transmitter unit remote from the modulator, the inductance of the lead connecting the modulator to the transmitter will need to be taken into account as part of the output filter. In that case mount the output filter capacitor C66 in the transmitter chassis and reduce the inductance of L52 to compensate for the extra lead inductance.

Turning on first time

Connect power to the modulator circuit but do not connect the main transmitter power supply to the modulator.

Set the carrier and modulation level adjustments to mid range.

Check all voltages using a multimeter.

Connect an oscilloscope or frequency counter to the PWM output of the UCC35701 pulse width modulator (IC3). Observe a 5 V P-P pulsed output which varies in duty cycle as the carrier level

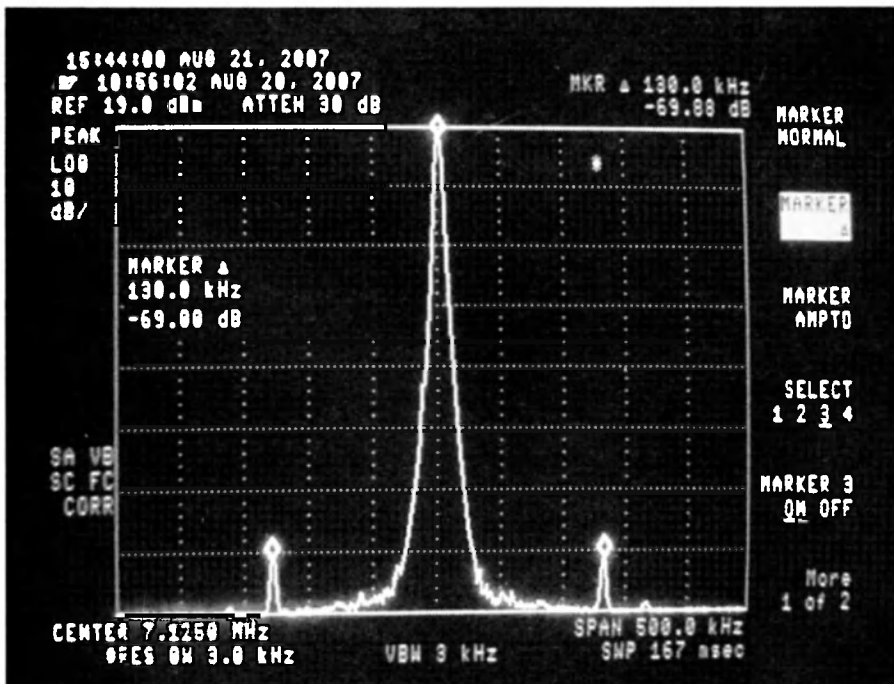


Photo 3: PWM switching frequency sidebands show as two signals equally spaced 130 kHz from the carrier, about 70 dB down. The vertical axis is 10 dB/div.

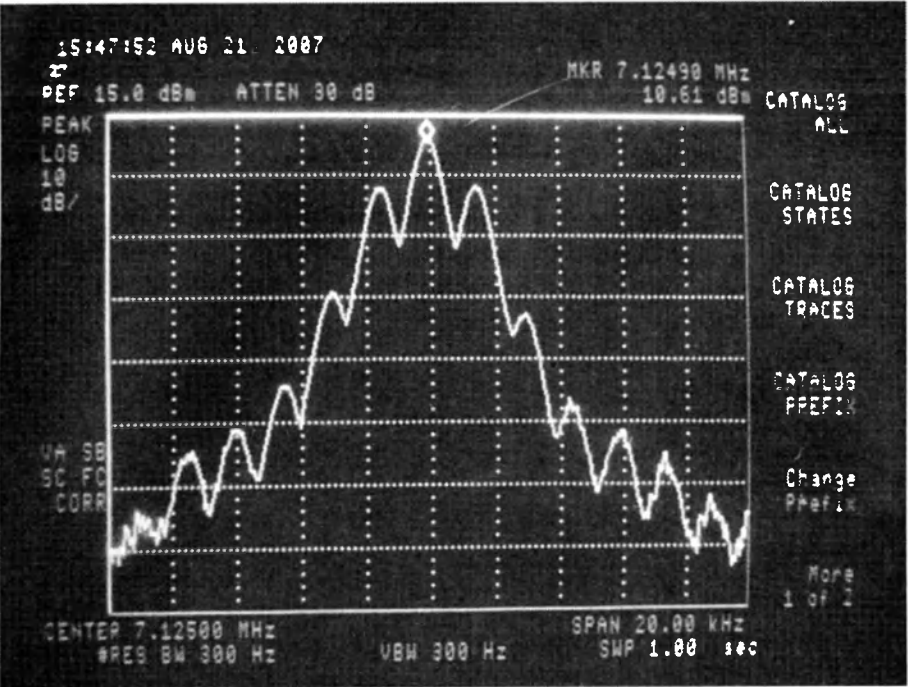


Photo 4: A 20 kHz frequency span showing the carrier and audio sidebands with a single 1.5 kHz tone and 80% modulation. Audio harmonic distortion can be seen as successive peaks to the right and left of the two inner sidebands. 2nd harmonic is about -20 dB and 3rd harmonic is about -35 dB.

audio signal) dc output voltage of the modulator. Set the carrier level adjustment (R22) to give a dc output voltage from the modulator of about 40% of the power supply voltage. You will need to repeat this adjustment several times as the power supply voltage will vary with load.

When sure all is well, connect the transmitter in place of the dummy load, connect the microphone and pre-amp, and check your off-air signal with the oscilloscope. Monitoring the off-air RF signal with an oscilloscope will allow you to set the modulation level for a clean output waveform without clipping.

There is one more thing to do - the human voice is not symmetrical and positive pressure peaks have a greater intensity than negative pressure peaks. Correct audio phase is necessary to achieve the maximum peak power output, or the loudest received signal. Many good microphone pre-amplifiers have a phase reversal switch, used in studio applications to avoid phase distortion when wearing headphones (phase cancellation between body conducted sound and sound in the ears from headphones - listening to yourself speak through headphones is never a good test of sound quality without a phase reversal switch). Change the phase of the balanced audio input (or operate the phase switch if your microphone pre-amp has one) to give the highest peak RF output signal observed on an oscilloscope or a peak reading watt meter.

adjustment is rotated. Check the PWM frequency is about 130 kHz (not critical - change the value of C12 if necessary). Connect an audio source to the audio input and set the level to 1 V p-p. You should see the PWM waveform (as shown in the oscilloscope screen shot) vary in duty cycle as the audio input voltage is varied. Adjust the modulation level adjustment (R23) so a 1 V p-p input signal just achieves the maximum

obtainable pulse width variation. Make a resistive dummy load approximately equal to the design impedance of the output low-pass filter, in this case about 3.5 ohms, and capable of dissipating at least 100 watts. Connect the dummy load from the modulator output to ground, (i.e. after the low-pass filter where the transmitter would normally go). Connect the oscilloscope across the dummy load.

Performance

This modulator has been in operation for many months without any problems and has received glowing on-air audio quality reports. It runs extremely cool and is very efficient. The 3 dB frequency response is about 50 Hz – 4 kHz (15 kHz without the input audio filter), maximum obtainable modulation is over 100% with slight negative peak clipping. The screen shots from an HP8591E spectrum analyser show PWM switching frequency spurs are attenuated by about 70 dB, and transmitted audio harmonic distortion is acceptably low (photos 3, 4 and 5).

All things considered a very good performer well worth the effort. See you on AM.

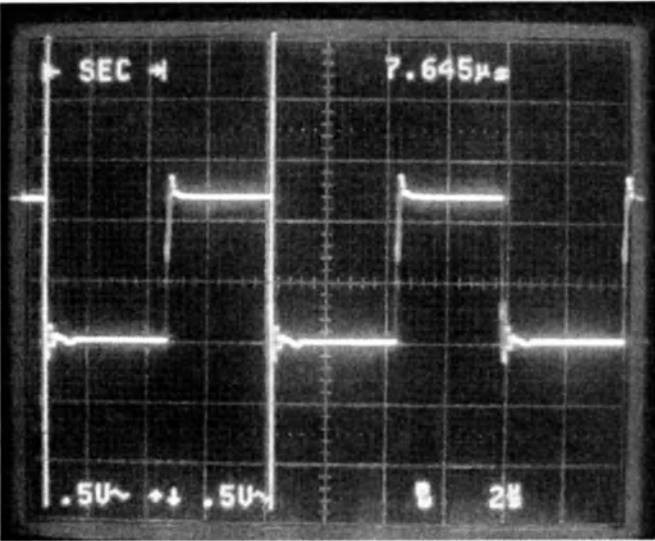


Photo 5: The drive signal to MOSFETs, measured differentially between gate and source, (with x10 probes). The two vertical lines measure the time of a single pulse cycle to 7.6 us or a pulse frequency of about 130 kHz. Voltage is 12 V p-p. No-input duty cycle set to about 40% - will vary with audio input.

Connect the transmitter power supply to the modulator, preferably using a mains Variac to slowly increase the voltage. You should see a clean audio waveform across the dummy load superimposed on a steady dc level. The audio waveform should reproduce the audio input, and the no-audio-signal dc level should vary with the setting of the carrier level adjustment (R22).

The carrier power level is determined by the quiescent (no

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Book review

Radio Projects for the Amateur Volume 4

by Drew Diamond

Review by Evan Jarman VK3ANI

Book: Quarto size, 124 pages

ISBN 978-0-9578689-2-2

Amateur Radio readers will be familiar with the work of Drew Diamond. His projects have shown a consistent quality that has earned many technical awards. The author has shown that you can still build reasonably sophisticated equipment using simple techniques. Now he has combined some of his more recent projects together in one book, his fourth collection of radio projects.

This book is a compendium of separate, stand alone, articles, the majority of which have appeared in past copies of *Amateur Radio*.

All the equipment described is beautifully built and a credit to the author.

The projects are within the capability of anyone with soldering ability but a multimeter and oscilloscope would be required test equipment. It is equipment for the experimenter, not the beginner. Some of the projects could occupy a weekend while others do require a great deal of time and care.

Receivers and transmitters account for nearly half the book. The equipment covers bands and modes that the mainstream commercial equipment operators do not, medium frequency and high frequency. CW and some AM are the transmitter modulation methods chosen as they are simple to design and construct.

The test equipment described is specialised, but is radio specific. It includes items like a tetrode tester, a leakage detector for capacitors and diodes, a crystal frequency reference, a dummy load and an SWR/power meter.

The workshop section concentrates on handy hints, rather than as an instruction book, in building techniques. Construction techniques are simple and occasionally ingenious. The articles on using transformers from old microwave ovens and adding extra windings to toroidal transformers show how

redundant equipment can be reused as a source of unobtainable parts.

The 'paddyboard' is used extensively as the construction technique of choice to bypass the printed circuit board. This style of construction is ideal for experimenters as it caters for a far easier rearrangement of components than printed circuits. There is an explanatory article on this construction method for those not familiar with it. The ideas described show that a professional result can be achieved with simple homemade jigs.

Some component construction techniques are also covered. RF transmitting coil construction provides most of the material in the section on antennas. In fact, there are only two antennas described in the entire book and they are used for noise reduction.

This book concentrates on projects for use inside the radio shack. Apart from two projects (both of which carry warnings), the most dangerous part of construction is wiring the primary side of a mains transformer.

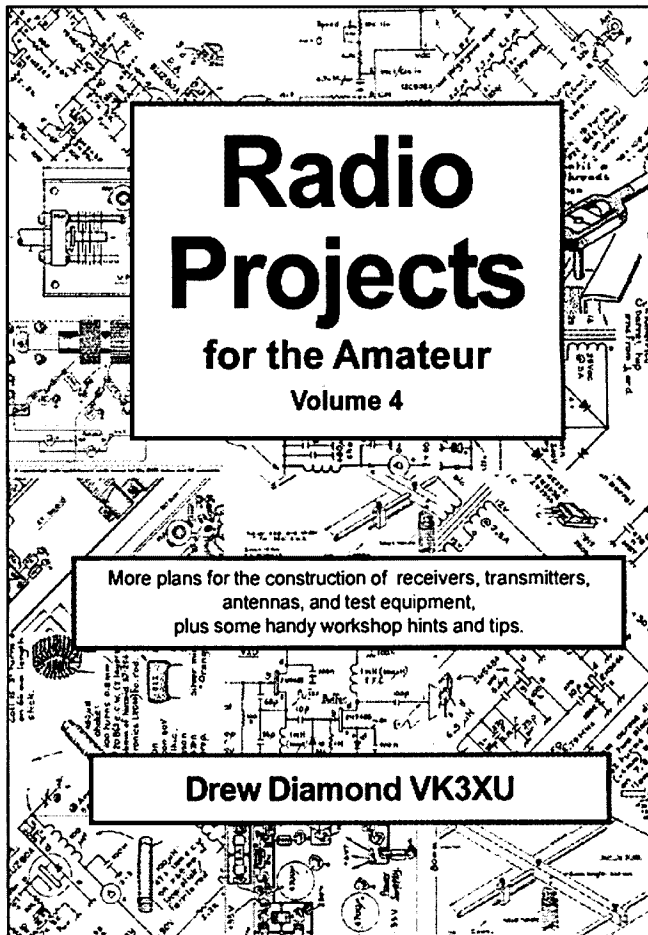
This book is for those who enjoy constructing equipment. All of the equipment described is beautifully built and a testimony to what can be achieved in the home workshop with simple equipment and care. I find it is quite valuable as a source of construction and design ideas that can be adapted.

Complete design information is provided, right down to the pin layouts for transistors, FETs, and most integrated circuits.

Having built some of the equipment described, I found that they have all met specifications claimed; some having (more than) a bit in reserve. Building some of the author's projects and then using them (which I still do) has, for me, put a lot of fun back into amateur radio.

The review copy was provided by the author. Copies of the book are available from a number of sources, including the WIA Bookshop. Retail price is between \$20 and \$25.

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International Lighthouse/Lightship Weekend — ILLW

All about the ILLW

The idea of a lighthouse and lightship weekend of radio contacts originated in 1994 at Ayr in Scotland with Mike Dalrymple (GM4SUC) and other members of Ayr Amateur Radio Group.

Initially designed for Scotland as the Scottish Northern Lighthouses Award weekend it soon became international.

The group is committed to the longterm ownership, development, administration and non-commercial operation of the event on behalf of the world-wide radio amateur community. At the last weekend, 50 countries and 406 sites were active, (Australia with 50 lights 'radio active' was the most represented country)

How it works

Groups of amateurs set up portable stations at or in lighthouses on the 3rd full weekend in August. They then establish contact with other such lighthouse stations around the world. This is not a contest, but a fellowship and awareness weekend, designed to raise knowledge of both amateur radio and lighthouses; both great communicators of the twentieth century.

Starting at 0001 UTC on Saturday and finishing at 2359 UTC on Sunday, the event now coincides with the International Lighthouse Day organised by the International Association of Lighthouse Keepers, with many lighthouses open to the public on the day.

Many visitors show interest in both the lights and the radio. Each station's operators decide how they will operate their station regards modes and bands. Participants need not be on the air during the entire period. There are no restrictions on aeriels or power.

As most available space in many lighthouses is usually filled to capacity, the activity does not have to take place inside the tower itself. Field-day type set-ups at the light or other buildings next to the light is OK with appropriate permission to operate there.

NEXT YEAR 15-16 AUGUST 2009

There are about 350 Lighthouses in Australia, Let's try for 100 'on the air' next year.

Kevin VK2CE maintains the ILLW website, <http://illw.net> and wrote an article about the weekend in July 2008 *Amateur Radio*.

SERG International Lighthouse Weekend

Charles Prime VK5XCP

On Saturday morning a number of South East Radio Group (SERG) members set out from their homes in Mount Gambier and Millicent on the journey to Kingston to meet up with Tony VK5ZAI at the Cape Jaffa Lighthouse.

Cape Jaffa lighthouse was originally located approximately eight kilometres out to sea from Cape Jaffa but since had been relocated to the foreshore in Kingston and is now under the care of the National Trust. Tony's QTH is in Kingston and he has a good relationship with the local members of the National Trust resulting in the radio club being able to set-up the operating station inside the original lighthouse building.

Established in 1872 on Margaret Brock Reef, the Cape Jaffa Lighthouse was built to protect ships from the treacherous currents that had seen the demise of many ships in the area. The original multi-wick oil burner was replaced by a pressurised kerosene burner in 1909. When turned off in 1973 it was believed to have been the last of its type to operate in Australia.

This type of lighthouse is known as 'Wells Screw Pile', chosen for this location as the narrow wrought iron piles allowed the heavy seas that break across the reef to pass harmlessly through. All

the parts were manufactured and pre-assembled in England then dismantled and shipped to Australia.

Extreme difficulties were encountered during its construction which took three years instead of the proposed one year. Apparently when the site was first chosen the sea and weather was unusually calm but by construction time the sea was wild and the weather rough. Early construction was washed away and sometimes the contractors could not go out for days.

On 1 April 1973, a low powered temporary beacon was attached to the tower. The then Department of Transport had decided to dismantle the lighthouse and replace it with a beacon on the platform. The National Trust of South Australia (Kingston Branch) successfully lobbied for the lighthouse to be re-erected at Kingston where it could be preserved as a museum to show what life was like on the platform.

Dismantling began in February 1974 and was complete by March 1975. The reconstruction began at Kingston in June 1975 and was completed in December 1976. The Lighthouse was officially handed over to the National Trust of South Australia (Kingston Branch) in January 1976 and is now a museum.



Photo 1. The SERG 2008 ILLW participants.

International Lighthouse/ Lightship Weekend

Tony did some set-up work on the Friday, so some antennas were already strung up on the available halyards. When the travelling group arrived they quickly unpacked the cars and moved the operating gear and supplies into the lighthouse. After a quick tour, the initial set-up was changed so that the open wire feeder for the dipole could be brought into the operating room without sharp bends around metal objects.

We were able to install two operating stations and had enough space and equipment for a third if required. The club's Kenwood TS-2000 was connected to an MFJ Tuner and the open wire feeder to an 80 metre dipole. The TS-2000 worked contacts primarily on 20 metres.

The second station used an Icom IC-

7400 connected to a Diamond trapped dipole for 80 and 40 metres. Initially the Icom was operated on 40 metres. The lighthouse has two halyards (see photo) allowing the two antennas to be raised up either side of the lighthouse.

During the day we had visits from other SERG club members as well as friends from our neighbouring Naracoorte club. A local journalist, Helene, popped in to see us while we were operating and asked many questions about the lighthouse and the reasons for operating from there. Helene took some photos of us hard at work. The lighthouse was also open to the public on the Saturday with some local volunteers as guides, so the visitors got a tour of the lighthouse and as a bonus, got to watch us operate.

Tony and his XYL Jill really looked

after us. While we were operating Jill brought over hot homemade soup and some great sandwich fixings. We had been under instructions to bring some sliced ham as a contribution, so there was an abundance of food. Having soup, sandwiches and coffee brought to you while calling CQ is a wonderful thing.

The first contact on 20 metres was to a ZL lighthouse, so indications were good that we would be working some DX as well as local stations, many on lighthouses. Forty metres also showed signs of life with many good signals.

There was a little interference between stations but it was manageable and there was a good friendly amateur spirit evident. A station calling from Chile was heard but we could not get back

to them, although there were plenty of VK stations that did.

It was getting late in the afternoon and those that were staying the night in Kingston were invited to stay at Tony's home and have a barbecue tea. The RD contest was discussed and Tony offered to let the club operate from his home, and as lighthouse operation on such a cold night was not attractive, the offer was too good to refuse. After a barbecue tea a number of us operated in the RD contest from Tony's home station, eventually retiring for the night at various sleeping locations around the QTH.

After a good night's sleep and a nice breakfast under our belts, thanks again to Tony and Jill, we were off to spend Sunday morning at the lighthouse. We were to continue with the RD contest as well as making some additional lighthouse contacts if we could. The bands were busy with RD stations and we were fortunate enough to make contacts with some more lighthouse stations as well as adding to our RD score.

Just before noon we packed up from the lighthouse and went back to Tony and Jill's house for some lunch. After lunch it was decided to go to the repeater site at Mount Benson for a quick look as the repeater was having some problems on receive.

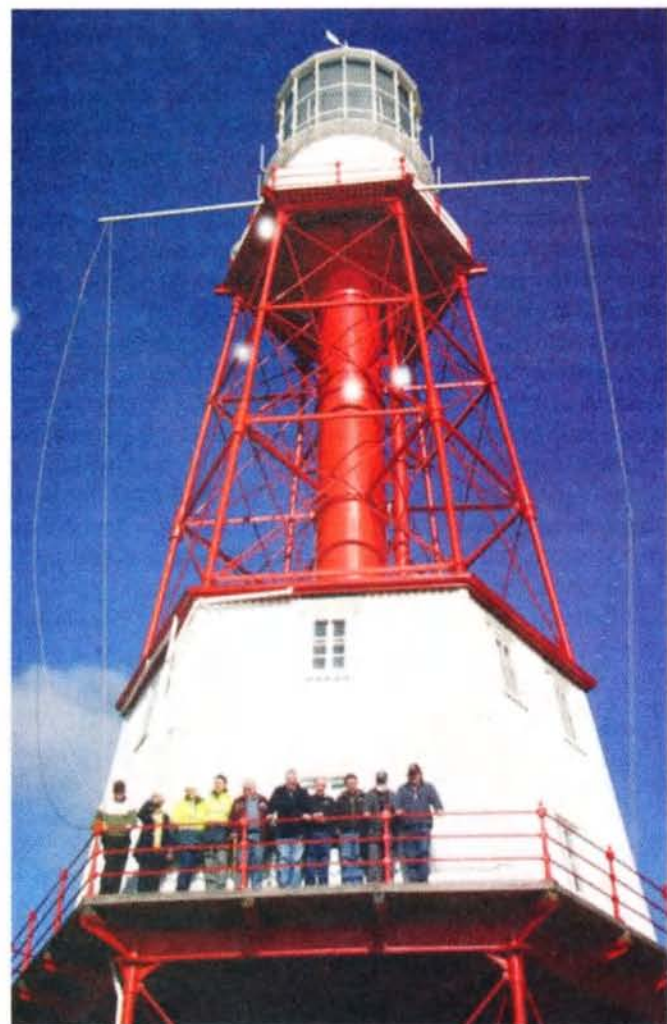
Well, a quick look sometimes turns in to a long look. We found the problem and Tony decided he would fix the antenna the next day. The SERG club members from Mount Gambier now were on the way home. We got back to Mount Gambier after dark, exhausted after such a fun filled weekend.

Amateurs attending for some or all of the weekend included Andrew VK5KET, Tony VK5ZAI, Jill VK5ZAI (second op), Bill VK5WCC, Phil VK5PCL, Ross VK3KBO, Trevor VK5NC, David VK5ZOO, John VK5DJ, Linley VK5FRED, Charles VK5XCP and Col VK5DK

On behalf of SERG I would like to thank Tony and Jill for their hospitality for the weekend and look forward to next year when the international lighthouse weekend comes around again.

Photos thanks to 'The Coastal Leader'.

ar



The SERG group pictured on the Cape Jaffa Lighthouse, now relocated to a park at Kingston after its removal from the nearby Margaret Brock reef.

International Lighthouse/ Lightship Weekend

VK3WI: Williamstown

Terry Murphy VK3UP

Wintry weather did not dampen the enthusiasm of those who took part in the lighthouse activation at Williamstown in Melbourne's inner southwest.

For the 4th year Amateur Radio Victoria set up VK3WI/portable at the Williamstown Lighthouse and Timeball Tower AU0036.

Despite depressed propagation almost 300 contacts were entered in the log including DX in Canada, Chile, Israel, New Zealand and Russia, plus 30 other lighthouses.

A highlight is the 40 m contact with 3G1F, the Arica, Chile lighthouse CL0010 activated by the Atacam Desert DX Group operators.

That may well be the longest distance lighthouse to lighthouse contact of the entire weekend on the 40 m band.

While primarily aimed at the lighthouse weekend activity, VK3WI also readily exchanged sequence numbers for the Remembrance Day Contest.

The station was put to air over the two days by about ten operators including five Foundation licensees who enjoyed the experience of operating a portable station.

The main station was a Kenwood TS-440SAT on 80 m, 40 m and 20 m feeding either an inverted vee attached near the top of the lighthouse or a refurbished Werner Wulf multiband trapped vertical

that performed excellently. While 70 cm and 2 m was set-up, it achieved only minimal contacts.

There were members of the public who stopped by, with special visitors being Peter Vaughan and his wife Rhonda, descendants of the tower's last time-keeper Richard T. Vaughan who died aged 76 in 1926.

The time-keepers job was to haul a metal sphere to the

top of the tower and let it drop at precisely 1 pm so ships anchored nearby could accurately set their chronometers.

Among the others popping in to see what was happening were two adults and a teenage boy who expressed interest in learning more about amateur radio with the view of possibly taking out the Foundation Licence.

Congratulations to the Ayr Amateur Radio Group and its webmaster Kevin Mulchay VK2CE for a record setting International Lighthouse and Lightship Weekend 2008.

ar



Michele VK3FEAT working ZL with Peter VK3QF logging.



Jim VK3PC working a station in Prince George, Canada on 40 metres.

VK7EM at Mersey Bluff

With Devonport City Council's permission to camp at The Mersey Bluff and their key to the reserve, I arrived at 9.00 am on Saturday 16th August and set up my station. I erected a multi-dipole inverted vee antenna for 80, 40 and 20 metres, with five car batteries connected in parallel to power an FT-757 and a 2 metre rig. I parked near the mast.

All was going well, but just then Murphy appeared. Having checked my antenna and cables many times, an SWR check revealed a reading of over 3 to 1. After a hasty check with a dummy load, I found that a SO239 socket on my SWR

meter needed tightening. Once corrected, 80 and 40 metres were near 1:1 but 20 metres was still poor. Removal of the 20 metre loaded whip from my vehicle cured that – interactions were occurring between the 20 metre antennas.

I started operation at around 11.00 am. The next few hours were most enjoyable as I contacted lighthouse stations across the country and New Zealand: Cape Naturaliste in WA, Cooktown in the north and many others along the east coast of Australia, all with interesting tales. Like the difficult four hour trip across Fraser Island to Sandy Cape, the

storm that flattened ZL2SEA's antenna and dumped a covering of hailstones on Puniho on Cape Egmont.

I kept in frequent contact with Wayne VK7FWAY and Eric VK7FEJE at Table Cape lighthouse and Bill VK7MX and Duncan VK7FLAK at Low Head. Bryan VK7KBE, Shirley VK7HSC and Max VK7KY visited me. Many curious on-lookers called by wondering just what was going on..... and some took away brochures on Amateur Radio.

It was a great weekend in a place with a 'million dollar view'.

Winston VK7EM

ar

International Lighthouse/ Lightship Weekend Cooktown 2008

Ross Anderson VK4AQ and Wayne Richter VK4ARW

For the fourth year running, the Tableland Radio Group (Atherton Tablelands) activated the Grassy Hill Lighthouse at Cooktown for the International Lighthouse and Lightship Weekend on 15 – 16 August.

Preparations for this annual adventure started as the 2007 weekend drew to a close. From our very first ILLW activity we realized that the learning curve was to be fairly acute and this has proved to be the case over the years. Much equipment checking and revamping was undertaken during the year and old ideas improved upon. A new vertical antenna for 20 metres was constructed. This was a back-up in case the notorious Grassy Hill high wind gusts made it unwise to launch the three element 20 metre mono-bander.

Another new project for this year was the production of a series of notch filters made up by Bill VK4WL and Mike VK4MIK. Dennis VK4JDJ had done much work on tower stanchions during the year and from which he was able to swing a full wave 80 m square loop for the 2008 activity. Well, sort of square, as the lay of the land dictated. Its configuration certainly did not diminish the performance of this fine antenna on the day.

Our Group members travelled from Innisfail, Ravenshoe, Herberton, Atherton and Mareeba to join up in a seven car convoy for departure from Mareeba at 9 a.m. on Friday morning. Convoy communications was set on Ch 50 and planned stops at Mt Molloy for smoko, Lakeland Downs for lunch and fuel and arrival at Cooktown by 2 p.m. The road to Cooktown is all sealed now and much of it is zoned 110 kph.

However extra care is needed as much of the road is unfenced and livestock, kangaroos and pigs roam at will. By travelling after 9 a.m. such encounters are significantly reduced.

We used a different motel this trip; a very popular choice. The location was ideal, facilities first class and the owners were extremely kind and friendly. Friday afternoon was spent relaxing over drinks

and the conversation ranged between the serious and hilarious. As ever, everyone present managed to learn something new from the gathering. However one does need to have a thick hide to survive one of these weekends! A lovely poolside BBQ on Friday evening rounded out a rather marvellous, power-packed day.

On Saturday Mike VK4MIK and Wayne VK4ARW were up by 5 a.m. ready to start their early morning walk and, despite my protestation, they would not have it that I had already been for a brisk walk. I wonder if my pyjamas gave it away?

An 8 a.m. start saw the team assembled at Grassy Hill ready to begin the task of erecting a 10 metre mast for a three element 20 metre beam and an 80 metre loop. The antennas were erected without incident, if you do not count a ring barked shin, a split toe and a gravel rash or two from going over the side of the hill. You will wear those thongy safety boots, Dennis!

The shack, a three metre square pergola, was the next item put up and duly wind proofed before the rigs and ancillary

equipment was installed. Leisurely but competent progress throughout the forenoon saw everything in place, checked out and ready for the 1000 start. Well, we had about ten seconds to spare, anyway.

Two operating positions were set up with one dedicated to 20 m and the other to the 80 and 40 m bands. Two FT-897D transceivers were used for the entire operation. Back-up rigs were on hand but were not needed, fortunately. Power was provided by banks of gel cells topped up by solar power.

Right on commencement time a call was put out and before long a steady stream of stations was being logged.

The 20 metre station performed better than expected with strong signals received and excellent transmitted audio reports. Wayne VK4ARW was quite pleased to be rewarded for all the hard work he had put into getting this station together.

The group callsign of VK4GHL was used for the event and we were on air continuously from 1000 Friday until 1200 Sunday. The number of stations



Mike, Ross and Dennis "at the controls".

worked on Saturday belied the state of the ionosphere but that was short lived when the RD contest started. To continue getting contacts we had to resort to giving numbers in the contest which did not sit well with our operators.

Throughout our time on the hill, Rossco's camp kitchen got its baptism under fire and passed with flying colours. A couple of tent pegs were required to stop it blowing off the hill and a modification to the wind break was needed but it worked overtime nonetheless. Plenty of brews were made to keep the cold out – and it did get cold during Saturday evening and early Sunday morning despite two thermometers showing 19 degrees at the time.

On Sunday morning Mike VK4MIK was interviewed by Macca on the ABC's Australia All Over where he made it known what we were doing. Before long, we had a steady but interested stream of visitors, locals and tourists, at our site asking any manner of questions.

The strength of the wind on Grassy Hill is well known and operating from there involves being able to work DX whilst keeping all the gear firmly located on the hill. It was quite amazing the number of the stations we worked who had first hand experience of our wind from previous visits to Cooktown.

It was after some unusually strong gusts of wind on Sunday, around noon, that we decided it would be wise to take the 20 metre beam down. Unfortunately, dropping the beam meant we had to take the rest of the station down as well, so cessation of operations occurred at midday, some three hours sooner than we would have liked.

Apart from young Stanley VK4MFA going for an untimely slide down the side of the hill, the disassembly of the station went without incident and we were back at our accommodation by 1.30 p.m. We suspect young Stan really had the right idea in that as soon as his knee was swabbed and bandaged he was made sit in an easy chair with his leg up and was the only member of the group allowed to have an early beer.

Sunday afternoon saw the group, XYLs included, sitting around on the lawn yarning, having a beer and discussing next year's weekend, new ideas and areas for improvement. A communal supper of fish and chips, great company and incessant hilarity brought

the day to a very successful close.

On Monday morning the group attended the Long Tan Remembrance Day service at the Cooktown cenotaph. It was really lovely to see the whole group support our four returned veterans who laid a wreath on behalf of the TRG at this ceremony.

After such a successful weekend, one's mind always turns to how the event could be made better next year.

Perhaps a more wind-tolerant shack? Better equipment? A better location even?

After thinking through the different aspects of this most recent weekend, it really is difficult to think of anything that needs to be changed. Having the power to turn the "big fan on the hill" down would be nice though.

This does not mean that improvements cannot be made, however, and every event sees the members' skills improve and increased confidence pushes the boundaries further. There is always something to learn and existing knowledge tested and shared. One thing is assured, and that is that the more technically minded of our group will have something new up their sleeve for next year.

The road leading up to the Light will be sealed shortly, as will the turning circle on which we set up our base camp. As a result we will lose some of the space we currently enjoy and a reduction in manpower on site time seems inevitable.

For the statistically minded, a total of 232 contacts was made during 26 hours of continuous operating, including stations from New Zealand, the United Kingdom, Germany, Russia, Indonesia and Guam. We managed to contact most Australian Lights over the weekend. Not as many CW contacts were made as was hoped and problems with our laptop saw the early cessation of PSK operations.

One particular highlight was our QSO with GW0VMK/P operated by Ian at

Port Hollyhead in Wales. Ian said his weekend was made by the contact with a VK Lighthouse.

TRG operators participating this year were Mike VK4MIK, Wayne VK4ARW, Stan VK4MFA, Billy VK4WL, Dennis VK4JDJ, Jeff VK4BOF, Dave VK4FUY, Pat VK4MUY and Ross VK4AQ.

The running of two events, the ILLW and the RD Contest on the same weekend polarizes participants and that is not good for the hobby in my view. I hope some sort of compromise can be sorted out before next year.

Summarizing the weekend, I think I could say our hobby is alive and well. We established an effective and efficient portable amateur station equal to most home stations and we were on air for the maximum time possible. All activities were carried out safely, professionally and in good order.

As usual, all participants worked particularly well together with abundance of humour and good intent and always in keeping with the Amateur Operators Creed. These expeditions mean something different to each Group member and we all went home with our expectations met. During the year, TRG members had expeditions to Karumba on the Gulf of Carpentaria, Conjoboy Cattle Station in the western gulf district, Koombooloomba Dam, as well as Laura and Cooktown on separate visits.

Work now begins on ILLW 2009.



(Back L-R) Billy VK4WL, Wayne VK4ARW, Jeff VK4BOF, Mike VK4MIK (Seated L-R) Rossco VK4AQ, Dennis VK4JDJ, Stan VK4MFA at the base of the light.

Silent Key

Reg Galle VK5QR - SK.

All those interested in long distance VHF/UHF/microwave propagation will regret the death of Reg Galle VK5QR on 12 September 2008. Reg was a leading pioneer of the use of these amateur radio bands.

On 31 December 1951, Reg made a 144 MHz Australian record distance of 2,122 km with a contact with the late Rolo Everingham VK6BO in Perth (just short of the then world record of 2,253 km). He then continued to seek answers to questions regarding the propagation on the higher bands.

Reg became the Adelaide end of record breaking distances on 432, 1296, 2304 and 3456 MHz across the Great Australian Bight with Wally Green VK6WG in Albany.

Reg and Wally, as true amateurs with no professional engineering backgrounds, built equipment for these UHF/microwave bands and were nearly 2,000 km apart so that there were no 'local' tests with each other. There were no precedents in Australia, and few in the world, for trying to make contacts over this distance.

In 1977, on 25 January, they bridged the 1296 MHz path for a world record distance of 1,885 km. The following year, on 17 February 1978, Reg and Wally made their first contact on the 2304 MHz band. Reg used SSB that was processed in a divide by six circuit and mixed to 28 MHz. The 28 MHz signal, with processed SSB, was then transverted to 384 MHz and

then tripled and doubled to 2304 MHz. This multiplication by six restored the original SSB!

To give you a feel of the type of gear in use 30 years ago, Wally Green VK6WG used a modified World War II SCR522 which, from a 7 MHz crystal, produced 128 MHz. This was then multiplied to 384 MHz with a BAY96 varactor tripler to 1152 MHz, in a modified Microwave Modules MMV1296, and then doubled in by a 2C39 which drew 90 mA at 600 V.

In 1986, Reg and Wally completed their first 3456 MHz contact using CW. This distance of 1885 km and that on 2304 MHz remain the Australian record distances.

Both Wally and Reg built equipment for the 5.7 GHz band and made tests

on that band without success although Reg claimed that they could have had a contact had Wally not been in the midst of making apricot jam on that day!

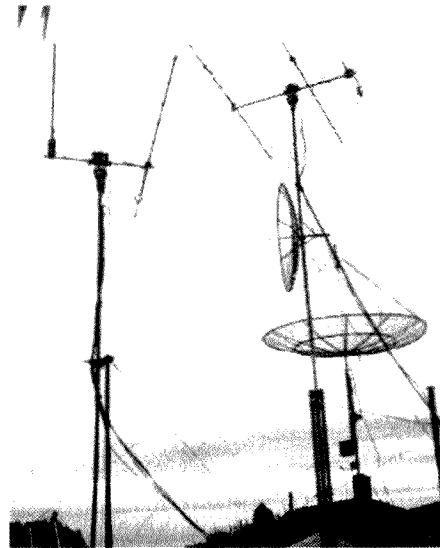
Reg gradually lost interest in pushing the boundaries further and had been in poor health in recent years. His death followed several strokes. The most recent one returned him to hospital just over a week ago but he insisted that he wanted to go home despite living alone and with no close relatives in Adelaide. A nurse watched over him and he was able to fulfil his wish of dying at home in his own bed! Reg was 96 years old!

Farewell to a tremendous pioneer on the higher bands! 73

Wally Howse VK6KZ



Reg Galle VK5QR.



VK5QR's antenna farm.

Over to you

7th September 2008

Dear Editor

Westlakes contesters

The September issue of Amateur Radio arrived during the week. An article at the foot of the contest page which, in part read:

"With the demise of Westlakes contesting contingent, VK2ATZ might take some time to recover and be again the force that it once was. Alternatives have been

arranged and the driving forces behind the rise of VK2ATZ will rise, phoenix style, to do battle again on the bands - but with an alternative call sign....."

came as a surprise to me and no doubt our Contest Manager, as well as the majority of Westlakes members.

Those members who called themselves the contest team, for reason best known to themselves, did not wish to join the club and operate portable as VK2ATZ at Norah Head, opting

instead to break away and operate as VK2AWA.

That does not mean that VK2ATZ has or had intention of leaving the contest arena.

Members operating as VK2ATZ portable participated in both the RD Contest and the Lighthouse Event and acquitted themselves well.

Frank Lusa VK2FJL

Tower and TH6DXX raising at VK3PDX QTH

David Helyar VK3PDX

Moving house is quite a task for everyone but amateurs have a very special problem: the tower! Not only is it an awkward shape and tricky to get down but it needs to be refurbished and then mounted securely when you get it to its new location. As David shows, the upside of a rural location is the access to mates with skills and big machines. The downside is the birds.

I shifted from Traralgon to Tinamba, about 50 km to the north east, almost eight years ago. In Traralgon I had a Nally tower with a TH6DXX atop, and a detached flat for a radio shack (three rooms including toilet), but no rotator, except for Mr Armstrong.

Having moved to Tinamba, I began the slow process of rebuilding my amateur station. This started to come along when an opportunity came up to buy the house next door. This was on a block and a half with a two hectare paddock - just fine for amateur radio, so we moved again.

Once we had done all the important things associated with the shift, I again began to re-assemble my radio shack and tower. Photo 1 shows the Nally on the ground in Traralgon.

The Nally tower has, in itself, had an interesting 'history'. I purchased the tower from another amateur, Barry VK3BDG, in Mirboo North. Barry, Peter VK3NPI and I moved the tower to Traralgon and eventually put it up.

Through circumstances we had to shift from Traralgon, and so did the tower. Before leaving Traralgon I had acquired a replacement in-ground section from a local fabrication shop for the price of a box of beer, a fair exchange I thought!

I now had to get it joined. As it happened, the people to whom we sold the first Tinamba house was a welder by trade. He was able to roll a joining section for the tower and, on Christmas Eve, welded it together.

Next I had a hole augured into the ground using a local contractor, and a few weeks later stood the pole in the ground and poured the concrete. Refer to Photo 2.

Then I needed to (1) fix the TH6DXX, (2) buy a rotator, (3).make a base for the rotator, (4) get new coax, and (5) do 100 other things to get ready to raise the tower and get the antenna in the air.

Photo 3 shows the condition of the trap covers on the TH6DXX. I wanted to improve on this and try and make them bird proof! After some thought, I decided on a two pronged attack. First was to strengthen the trap caps and then make it more difficult for the birds to attack them.

The first I achieved by using a very strong and thick heat shrink product (Butyl heatshrink), and the latter by spiking them with cable ties, hoping that both of these things would not affect the performance of the traps too much. You can see the result in Photo 4.

Once the TH6DXX had been prepared, which was prior to the tower raising day, there were a number of other things to prepare on the day itself. First was the base mount for the rotator and secondly was a thrust bearing to take the weight of the antennas, and allow the rotator to do the job of just turning the antenna array.

The rotator came with a template for the base mount, but this was slightly inaccurate; it also did not allow for centring the rotator, so the fixing holes in the base plate were elongated to allow this to happen. Then the base plate was welded to the tower.

I also had to find approximately 20 meters of eight core cable for the rotator controller, join the cable to the plug and socket, test the connectors by metering, and then undertake the real test - connection to the rotator and a bench test. This worked first time.

I also decided to use as low a loss coax as I could afford (get away with!), so I sourced and purchased two thirds of a roll of Belden RF400 (although I am yet to buy the appropriate connectors, and am currently using PL259s).

Photo 5 shows the welding of the base plate to the tower. Once this was

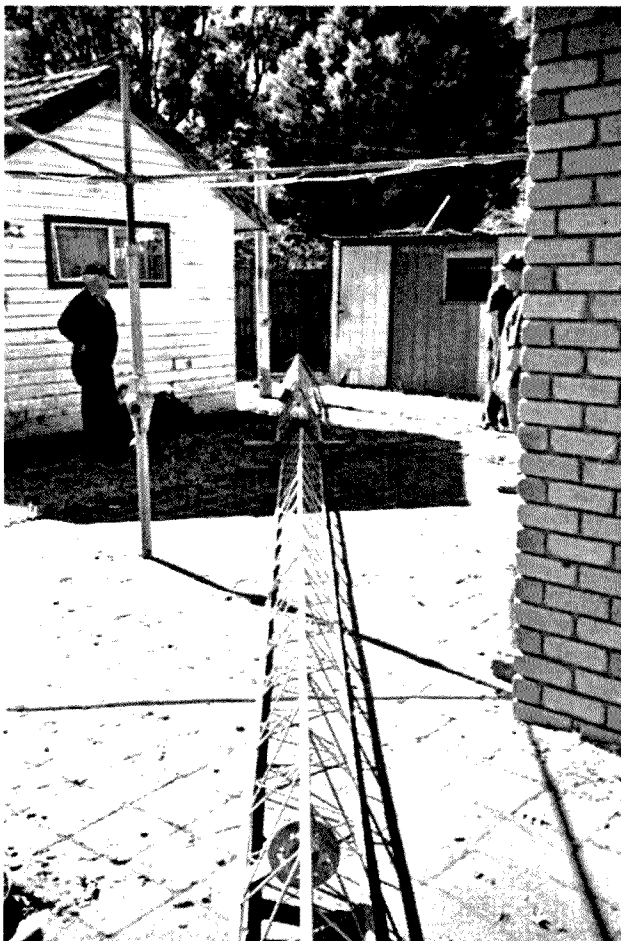


Photo 1: The Nally on the ground, in Traralgon.

complete a thrust bearing was put in place. This I decided to do by simply making a collar to fit around the mast tube, and then I used a piece of scrap switchboard material, which was flat, smooth and impervious to water, as a 'bearing' between the base of the collar and the top plate of the tower.

The advantage of this arrangement over a conventional bearing is that it requires no lubrication, is self cleaning

and has low frictional resistance. That is what I hope anyway!

Photo 6 shows the lattice section of the tower being placed onto the base. We utilized a neighbour's tractor to lift the lower tower section into place; it made the task very simple and very safe, as the load was steady and secure.

Once the tower and associated hardware was attached (winch cables, inner section and so on), we were able

to centre the rotator and attach the mast pole. For a mast pole I purchased a 4.9 m length of thick walled scaffold tubing, perfect for the job. This was sourced from a local metal supplier, after some phoning around and bargaining!

The next task was to assemble the TH6DXX and attach it to the tower, a difficult job as it is a large antenna and requires many screws, nuts and washers, as well as ensuring that all the elements are in the correct position and at the right length. I had previously measured and fitted all the elements together.

I used stainless steel screws, as all previous screws (metal and aluminium) were rusted or damaged. I also used an aluminium joining compound between



Photo 7: The TH6DXX elements assembled and ready for erection.

all element joins. You can see the elements ready for assembly in Photo 7.

After getting it all in the air, I took it all down just a few days later in order to bird-proof all the coax on the antenna, as I had used RF400 coax, which is not inexpensive. I did not want to have the birds make a meal of it!

On the top of the mast pole is a dual band J pole constructed by Mike VK3XL, which I am currently testing. The tower will also eventually support a 2 m and 70 cm Yagi. Photo 8 shows the completed TH6DXX atop the tower.

I would like to thank some of the people who encouraged me with this project.

First off my wife Nelly, who may now have second thoughts about the radio shack, Peter VK3NPI and Mike VK3XL for months of egging on and much help and assistance on the day, along with George VK3GWK and, finally, two neighbours, Graeme and Craig.



Photo 2: The tower pole in ground outside the shack, at Tinamba.



Photo 3: The TH6DXX traps before refurbishment.



Photo 4: The traps as they appeared after the two pronged refurbishment was completed.



Photo 5: Welding the base plate to the tower.



Photo 6: The lattice section being placed onto the in ground pole.



Photo 8: The TH6DXX atop the tower.



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VK2

Tim Mills VK2ZTM
arnews@tpg.com.au

Clubs

It was good to see so many VK2 clubs and groups taking part in this year's Lighthouse operation. Manly Warringah RC had a story and picture in the local paper. Illawarra ARS was covered on the local TV news. Others taking part were Waverley, Taree, Oxley Region and Summerland. If you have some pictures and a story, send it off to AR. Also do this with any other of your activities that you think news worthy.

Oxley Region ARC, covering the Port Macquarie and Wauchope sector of the Mid North Coast has for many years met at the SES HQ in Port. The SES has been building a new headquarters in Port and during this period the Club has been meeting at the Port City Bowling Club. Following a period of discussion, the Oxley Club, by becoming more involved with the local SES, will be able to utilize the new SES facilities. The Club station - VK2BOR - was active in both the Lighthouse and RD in August in the comfort of their new acquisition: "the caravan". Oxley had a busy month in August, it was also the AGM but there was very little rearrangement of the chairs. You can check out more on the happenings at www.orarc.org

The Central Coast ARC has advised that the date of the 2009 Field Day is confirmed as Sunday 8th February, a slight adjustment to an earlier date. Those under 17 will have free admission. If you have suggestions about the event to put to the Field Day committee, contact Ray VK2HAY on 02 4325 2182. The CCARC have been opening the Club rooms at Kariong on Saturday morning, both for the social gathering as well as a bit of a working bee. They have also been active at the Somersby repeater site with maintenance and upgrade.

The Illawarra ARS have a major auction for their November meeting, the second Tuesday.

The first field day in VK2 for 2009 will be that offered by the **Mid North Coast ARG** with their Radio Expo on

Sunday 18th January. The same venue as in previous years: the St Johns Church Hall in McLean Street, Coffs Harbour. The Group has recently commissioned a 70 cm repeater for the region: VK2RMG on 438.125 MHz with a 123 Hz CTCSS tone. A two metre system is to follow and will be above 147 MHz. The Group produces several kits; the proceeds go to setting and maintaining these repeater facilities. One such kit is the HF Ozi-Wire antenna, details of which are in October Hamads, in the 'For sale NSW'. More details about the Group at www.mncarg.org

The Blue Mountains Winterfest, held for the first time this year on a Sunday, a perfect winter's day last August, was well attended. **The BMARC** meet at a Scout Hall in Glenbrook on the first Friday of the month.

ARNSW

The ARNSW Home Brew Group, who met for some time in the party room at McDonalds North Parramatta, took up an offer from one of the Group to meet in his garage, a location suitable for more hands-on activities. The new venue is in the district of Ryde, down near the Parramatta River. Details and contact details on the ARNSW web site and the VK2WI news bulletins.

Terry VK2UX, the ARNSW Education Officer, was interviewed late May, on ABC 702 Sydney during the afternoon drive show. Terry got a ten minute plug in for the hobby, Foundation licences and the history of communication by Morse code.

The VK2WI news sessions, since the late 1970s, have used AWA J54-800 transmitters for the lower HF frequencies: 160, 80 & 40 metres in the AM mode. These transmitters were built in the early 1950s and spent their first 25 years in service at Coffs Harbour with DCA. They then found their way to VK2WI where they have provided faithful service. Now showing their age, the rubber shielded wiring is starting to

fail in some of the units. The 80 metre transmitter has this problem and has been retired and will be replaced by a later generation unit, also from the AWA stable. In the meantime the service is being provided in the SSB mode. AM will be maintained to serve those listeners, of which there are many, using shortwave receivers.

Memo to clubs, groups and VK2 amateurs that VK2WI, with the coverage provided direct and via the various relay stations, welcomes your news segments. Send it via email to arnews@tpg.com.au to arrive by Friday afternoon. Other, older addresses may introduce delays. The other slow way is mail to P. O. Box 6044, Dural Delivery Centre NSW 2158. This is also the contact point for ARNSW, the trading name used by the NSW Division.

Daylight saving is with us again. Time to renew those smoke alarm and clock batteries. VK2WI broadcasts are in the final quarter for the year and the evening session will end on December 21st. It will then be morning only until January 18th 2009. We need more announcers and engineers to join the team in 2009 to help spread the load. Please consider joining the team.

As mentioned in the VHF/UHF notes last month under 'beacons', the VK2RSY 23 cm beacon, located at the VK2WI site has a new transmitter with a power increase to 20 watts. There was some interaction with the 23 cm repeater, the input and beacon frequencies are not that far apart. The beacon has filtering on its output and has been heard in VK1. 1296.420 MHz, keyed in CW. The repeater is now diplexed to a lower antenna until some rearrangements are carried out.

Modes come and go. A few decades ago Packet was the data mode with many digipeaters throughout the country. VK2WI still has a 2 m and 70 cm system. Are there any other systems still operational?

73 - Tim VK2ZTM.

ar

VK3

Terry Murphy VK3UP

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

National Parks award begins

The rules and requirements for the new Keith Roget Memorial National Parks Award have been released just in time for the warmer weather months.

As part of its planning for the revival of this award, which ceased in the mid-1980s, Amateur Radio Victoria held discussions with Parks Victoria which is very supportive and it has notified its park rangers of the details.

Check out the website for the locations of the 40 parks which include some eight within the Greater Melbourne area alone. No matter where you live in the state there will be a national park within easy travel distance. Suggested log sheets are available for downloading.

Award Manager Chris Chapman VK3QB advises that a special activity period has been declared for 1-4 November which includes the Melbourne Cup holiday.

Those intending to activate a park at any time are encouraged to publicise their plans by sending an email to awards@amateurradio.com.au

Details of the Victorian Local Government Award can also be found in the Awards section of the website.

VK3RTV to go digital

A proposal has been announced to digitise the amateur television repeater VK3RTV on Mt Dandenong that covers Melbourne and Geelong.

Peter Cossins VK3BFG has drawn up a plan for a project to use German made commercial modules and a linear amplifier to convert this repeater to digital transmission.

To receive the digitised ATV repeater would require one of the now readily available set-up boxes that convert off air digital TV signals so they can be seen on an ordinary analogue receiver.

Peter VK3BFG believes the project should stimulate more activity on ATV. The plan is start in December and its

completion will depend on securing the necessary funding.

Western Victoria repeaters

Amateur Radio Victoria's Peter Mill VK3APO and Barry Robinson VK3JBR last month visited the Mt Arapiles and Mt William repeater sites.

The Mt Arapiles 2 m repeater VK3RWM has been put back on air, although there is still more work to be done.

A new commercial specification transmitter and new filtering were installed. The antenna system checked out okay.

The repeater is experiencing some desensing and interference. These matters have been fully identified and are being addressed as quickly as possible. Users of the repeater will find that weaker signals experience difficulty at times.

The Mt William 2 m repeater VK3RWZ had a faulty antenna and failed transmitter. A new antenna and rigging at a cost of several thousand dollars is required before this repeater can be put back on air. Amateur Radio Victoria is arranging for that work to be done.

The VK3RWU 70 cm repeater on Mt William was also checked and found to be working well.

Foundation class

The next weekend training and assessment sessions for the Foundation Licence will 18 & 19 October. For inquiries or to enrol contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Ham radio in new film

A television drama called Tangle was shot in the suburb of Kew last month, and the ten part series includes amateur radio in contact with cosmonauts in space.

The production company, Southern Star, asking Amateur Radio Victoria

for help and it has loaned it suitable equipment plus other items. Tangle is due to premiere in 2009.

Help wanted

The great grand-daughter of Australian inventor Henry Sutton would dearly like to know about his amateur radio activities and in particular the callsign he used.

Lorayne Branch has found that he was issued the No. 2 amateur experimental radio licence in 1909.

Henry Sutton lived in Erskine Street, Malvern. If you can help please email her at my_lulu27@hotmail.com

ar

BARG

Ballarat Amateur Radio Group

HAMVENTION

Great Southern Woolshed,

Ballarat

5 k Melbourne side of Ballarat, south side of Western Highway

SUNDAY 26th

OCTOBER

2008 10am

(NOTE ADVANCED DATE)

Trestles Available Booking
Essential

Roger VK3ADE

03 5330 3081

hamvention@barg.org.au

Adelaide Hills Amateur Radio Society

VK5 has, for at least 40 years, had a Sunday morning broadcast. In the beginning different people, in turn, made their reports. Later one person gathered the reports by going to different houses and making a recording on the spot.

When Murray VK5ZQ became broadcast operator he took recordings from the phone and collated them into a cohesive broadcast with additional information or stories that he gleaned from the magazines and later from the internet.

By the time Murray was relieved of the regular commitment, instead of originating the broadcast from his home via the Adelaide repeater, Murray (or sometimes a substitute) would take the composite recording to the Burley Griffin Building and transmit it to the repeater from the WIA (SA) headquarters.

Toward the end of Murray's time, the National Broadcast became a reality so the VK5 session was added after that finished.

In VK5 we still have a local session after the national broadcast, at the August meeting Brian VK5VI gave AHARS members an insight into how this session is now produced.

Most local clubs give a report of recent activities and advise listeners of forthcoming events, by creating an MP3 file though their computer. This is sent by email to the coordinator who collates it all ready for transmission.

For a time this transmission originated at the EARC Water Tower, initially when someone went to the tower and started the transmitters. Now everything is done remotely so no-one has to get up early enough to be there on time, even including setting the repeater to continuous operation.

Over the years, with the assistance of local amateurs, the VK5 broadcast can be heard over almost all the state, and into several areas bordering the state,

including via the Darwin repeater.

Brian's talk was very interesting and well received.

After supper we had a mini-talk from Robin VK5ATT, about his battle to prove that the voltage he was getting from the Electricity Trust was both fluctuating and over-voltage.

Robin bought an expensive but useful multimeter that could make a continuous record of whatever it was measuring and could be connected to a computer where it could be looked at in more detail and so a permanent record could be kept.

The multimeter had a visual display, read voltages etc both digitally and as an analogue record and could even be set to show the readings graphically, on the spot.

It was when a number of the modern, folded fluorescent tubes failed after too short a time that Robin set out to find out why.

The story and demonstration of how Robin won the argument with the local electricity supplier and had them do something about his over-voltage, made an interesting lecture.

All AHARS lectures are digitally recorded and made into DVDs for borrowing by club members. If clubs from elsewhere are interested in any particular lecture the club would like to hear from you perhaps to arrange a loan or copy for you.

Our meetings are held on the third Thursday of the month and visitors are always

welcome. Please contact either John VK5EMI or David VK5AMK for more information.

Corrections from September news.

Lyle's callsign is VK5ZNB not VK5XNB.

In the article on the luncheon, VK5FLKM is Lauren not Laura.

VK5ZAT is Nick, her father not OM nor is he called Robin. He is an executive with Foxtel not a driver.

My apologies, Christine.

ar

DO NOT FORGET THE AHARS BUY AND SELL

It is on Sunday 9th November at the Goodwood Community Centre in Rosa Street Unley. Doors open to public at 9.30 am. See the flyer included in this issue of AR: New day – Sunday, new venue – Goodwood Community Centre.

Radio Amateurs Old Timers Club of SA

Annual luncheon Thursday 23 October 2008

(12 noon for 12:30 lunch). (Please bring your Seniors Card.)

Marion Hotel, Marion Road, Mitchell Park

Public transport Bus M44, Stop 24

RSVP to one of the following committee members before 20 October 2008:

Secretary: Ray Deane VK5RK. Phone: 8271 5401

Assistant Sec.: Ron Coat VK5RV. Phone 8296 6681

Ray Deane, Honorary Secretary

AHARS Buy and Sell

SUNDAY 9th November

New Venue Goodwood Community Centre,
Rosa Street off Goodwood Road

Doors open 9.30 am.

ALARA food and drink plus Barbecue lunch
Come and meet all your
friends

VK6

Keith VK6XH
vk6xh@wia.org.au

It is unfortunate that I have to start off this month's notes with a silent key announcement.

Bernie Sommerhayes Smith VK6BSS passed away on 27/8/2008.

Bernie was born in Carnarvon on 16 October 1927 and spent most of his youth near Gascoyne Junction on Towrana Station. His wife Enga tells me he left school at about age eleven and was a self educated man who could turn his hand to almost anything.

He returned to the area in 1971 and had lived in East Carnarvon ever since. He was licensed as VK6BSS and for many years was an extremely active controller of the 21.185 MHz Novice Travellers' Net, a vital link in communications from the West Coast.

He met many travellers as they passed through Carnarvon and I am sure there are quite a few Grey Nomads who will remember him and Enga.

He is survived by his wife and three children and has left a gap that will be hard to fill in amateur radio in the West. Vale Bernie.

Hamfest 2008

As promised in last month's column, here is a further report on this year's Hamfest.

The NCRG Hamfest was once again a huge success. Held at the same venue as previous years, the organisers were delighted with the presence of eastern states traders this year.

Vertex put on a large display with the assistance of their local dealers, City Online and Tower Communications. Tower Communications also represented Icom and City Online represented Kenwood, QuanSheng and Vibroplex to name a few.

Bushcomm were also present, accompanied by Tet Emtron, and Allcom showed their range of CB and commercial radio equipment. Unfortunately Terlin Outbacker had to cancel at the last minute due to family health problems; Terry is a staunch

supporter of Hamfest every year.

The many groups in the state had their individual stands including the VHF Group, Peel Group, WARG and the D-STAR group, and of course the WIA.

The bring and buy did a roaring trade this year and the raffle was well patronised. A list of prizes was published in last month's column and once again I would like to thank all those who donated.

In 2007 the special attraction was the Tesla Display which certainly caught everyone's attention. This year the featured display was by the Gravity Centre, located in GinGin north of Perth. This is a scientific display centre featuring the effects of gravity, astronomy and other interesting related subjects. Well worth a visit if you can.

To compliment this display, Midland Camera House and BTOW both displayed telescopes to tempt us into yet another hobby!!

The problem facing the organisers is what to have next year!

One feature that attracts people to take a table at the Hamfest is the NCRG do not charge for table hire at all: top that, other Hamfest organisers. Almost 400 people had a great time and enjoyed a great social get together.

ILLW

The lighthouse weekend saw Wally VK6YS at Cape Leeuwin and Nigel VK6KHD, ably assisted by Bernard VK6FBRB and Jane VK6FJPD, at Cape Naturaliste. Over the weekend around 25 lighthouses across Australia and New Zealand were worked at both locations plus a large number of other stations in the Remembrance Day contest. Special event call signs were used, VK6CLL for Cape Leeuwin and VK6CNL for Cape Naturaliste.

Shaun VK6FSAP helped Wally VK6YS set up the antennas at Cape Leeuwin on the Friday afternoon, and then came back to assist with operations

on the Sunday. Help which was greatly appreciated given that there were literally hundreds of visitors to the Lighthouse over the weekend and on the Saturday most of the time was spent talking to the visitors rather than on the radio making contacts.

There were many other activities at the Cape Leeuwin lighthouse during the weekend, with talks by retired lighthouse keepers, discussions with people born and raised at lighthouses, and local craft and country ladies adding displays. All the lighthouse guides and even the ladies running the cafe/restaurant were dressed in costumes from 100 years ago.

Overall a wonderful weekend for the many tourists and local visitors to the light with the added bonus of seeing an amateur radio station in action.

The log for VK6CNL is available on line at:

<http://www.westozdx.net/LIGHTHOUSES/LIGHTHOUSES.html>, with the log for VK6CLL to follow.

Contesting

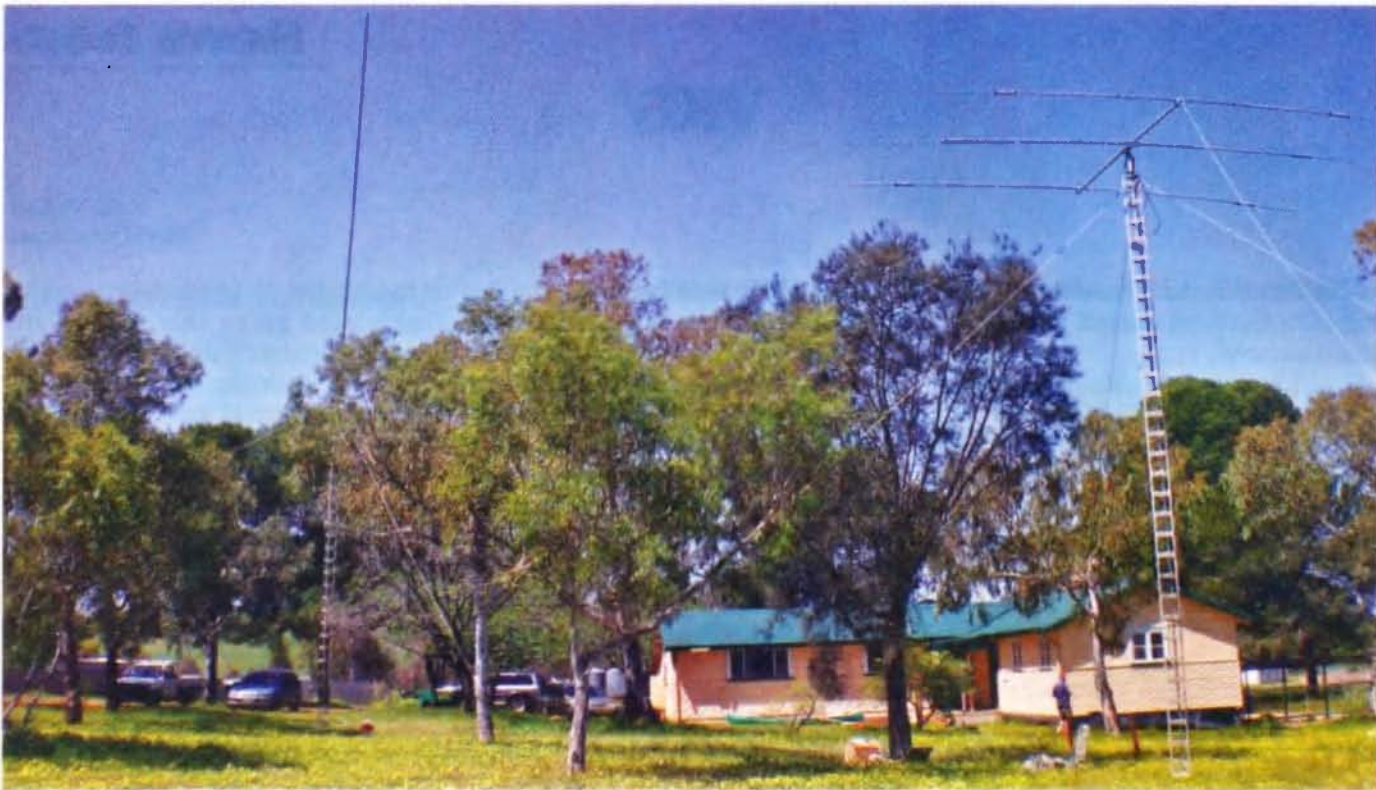
The contest season is now upon us and the RD contest results will be available soon, I hope, but do not forget the other contests happening.

The All Asia DX Contest was held on the weekend of 6/7 September and a good participation by the NCRG team saw them hopefully take first place in the multi single section for Australia.

The same team but with a few more operators will also be active in the Oceania DX contest on the weekend of 4/5 October, but from the portable location at Muresk Agricultural College near Northam, a good weekend away with lots of antenna experimentation and the occasional beer!

This is a good contest for us VK/ZL operators as the rest of the world is trying to contact us for a change, give it a go.

Now from the South West Capes



The NCRG contest station at Muresk for the 2007 Oceania DX contest.

region of WA, a message from Phil VK6SO:

We are seeking expressions of interest from amateurs, electronics enthusiasts and like minded souls to determine if it would be possible to form a club in Busselton, covering the South West Capes region of WA.

As it is 50 km from the nearest club in Bunbury, it would be more practical if local amateurs could meet here. I have booked the Senior Citizens Club, 22 Peel St, Busselton for Saturday 18

October from two to four pm for those who may be interested to get together to see if a club is a practical possibility.

Interested persons can contact Phil on 9751 5560 or 0419040388 or by email to phil.vk6so@gmail.com

Good luck guys and let me know how it goes.

That is it for this month - may your antennas pick up at least some DX!

73 Keith VK6XH vk6xh@wia.org.au

ar

Silent Key

Keith Roy McCarthy VK3JNB.

Keith Roy McCarthy VK3JNB succumbed to cancer on Sunday 27 July 2008, aged 68.

The Moorabbin and District Radio Club Committee and members would like to offer our condolences to Lyn and her family at this time. Keith was a gifted man who had many interests. An accountant by profession, he loved listening to music and working at oil paintings. The earliest entry against Keith's name in our club records was 17 May 1996, being \$50.00 for classes. His involvement with MDRC had begun.

Keith became Treasurer in July 1999 and was a steady hand and prudent steward. As Club Treasurer and later as President from 2001 to 2003, Keith served

with distinction. He was loyal, passionate, professional and a strategic thinker.

One of Keith's outward looking MDRC initiatives was the "APC News weekly broadcast" co-established by him in 1999. APC News won instant acceptance with listeners and readership in the state and beyond. As Keith said, 'its reach extended beyond the MDRC, benefiting both it and amateur radio generally'. If any club wanted to publicise a special event, it would be submitted to APC News. And if it was not submitted then the details would probably be found, and it would go to air anyway!

APC News ran for four years. Keith wrote and presented 200 broadcasts involving over 100 hours of air time and 600,000 words. This required a professional level of commitment that only Keith could give.

One of the many items Keith wrote was 'Ham Sandwich'. A product of Keith's perceptive mind and sharp wit, 'Old

Man Ham Sandwich' caused laughter or introspection, depending on the item. All this was part of the bigger picture that Keith could see so well. Other club activities Keith immersed himself included the Tuesday night meetings, crystal set competitions at the Club's Hamfest, appearance on Southern FM Community radio, promoting the club at the St Kilda Hobby Show, ATV and more.

More recently he attended the MDRC Tuesday morning meetings. Keith was a researcher and would photocopy information on issues or problems that needed a solution and distribute it to those who may be interested.

Keith served amateur radio well, through his contributions and membership of the Moorabbin and District Radio Club, the Wireless Institute of Australia and the CW Operators QRP Club. He was a great friend to me. He will be missed.

Submitted by Ian Morris VK3IFM.

ar

North West Tasmania Amateur Radio Interest Group

NWTARIG has formed a Radio Experimenters and Social Group which met for the first time on August 23. The meeting convenor was Vernon VK7TVF and it was well attended with nine amateurs, and three partners attending. It was resolved to regularly meet with a social and experimenting focus.

The International Lighthouse and Lightship Weekend (ILLW) saw Winston VK7EM at Mersey Bluff and Wayne VK7FWAY and Eric VK7FEJE at Table Cape lighthouses and by all reports it was a great weekend of contacting other lighthouses all over the region.

Northern Tasmania Amateur Radio Club

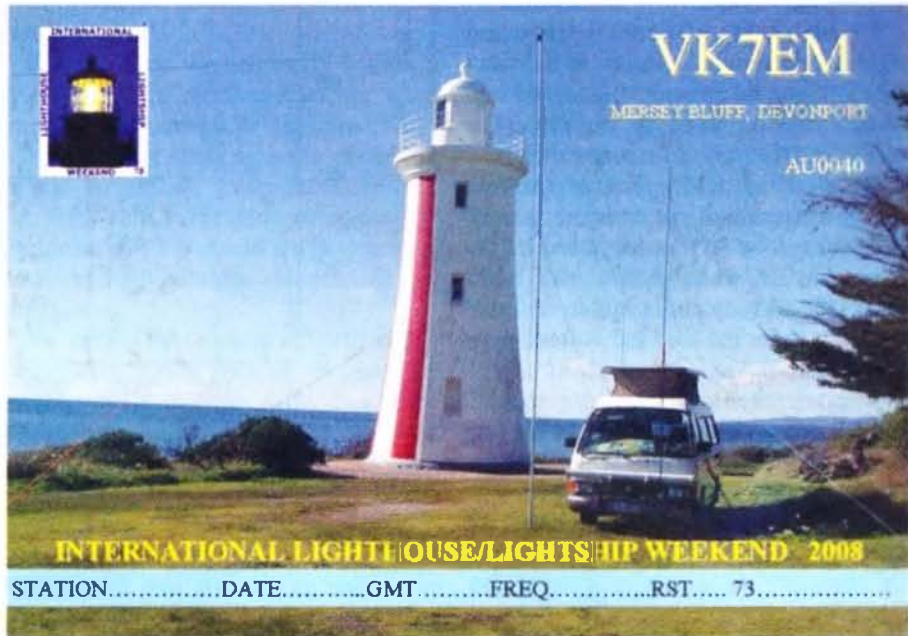
In the North, the ILLW saw Bill VK7MX and son Duncan VK7FLAK based at Low Head Lighthouse.

There was some sad news from the North with an AR institution coming to an end: the regular coffee mornings at the Hunga Munga Cafe in Launceston owned by David VK7YUM. The cafe has been sold and NTARC is looking for a new venue. Thanks to David and family for a great five years of service to the AR community in Launceston.

The August NTARC meeting was a dinner meeting with Professor Nigel Fortheath presenting a thought provoking talk on what it means to be a Justice of the Peace: Thanks Nigel.

118 km Non-Line-Of-Sight Optical Contact

Monday 8th September saw the next milestone reached in the VK7 optical experimentation with a one way non-line of sight optical communications contact made. More information can be found in the Digital DX section of the VHF/UHF column later in this magazine.



The impressive QSL card of Winston VK7EM.

National ALARA Meet 2008

Joy Batchler (formerly VK7YL), who was the first woman amateur in VK7, opened the ALARA Meet with a video greeting to all attendees.

Joy recorded the greeting on her 93rd birthday before flying off to Queensland for a birthday celebration. On ya Joy! I am sure there will be more in the ALARA reports in a future AR.



Joy aged 21 in her 1936 shack.

continued on page 36

Over to you

Dear Editor

Diode RF Probe

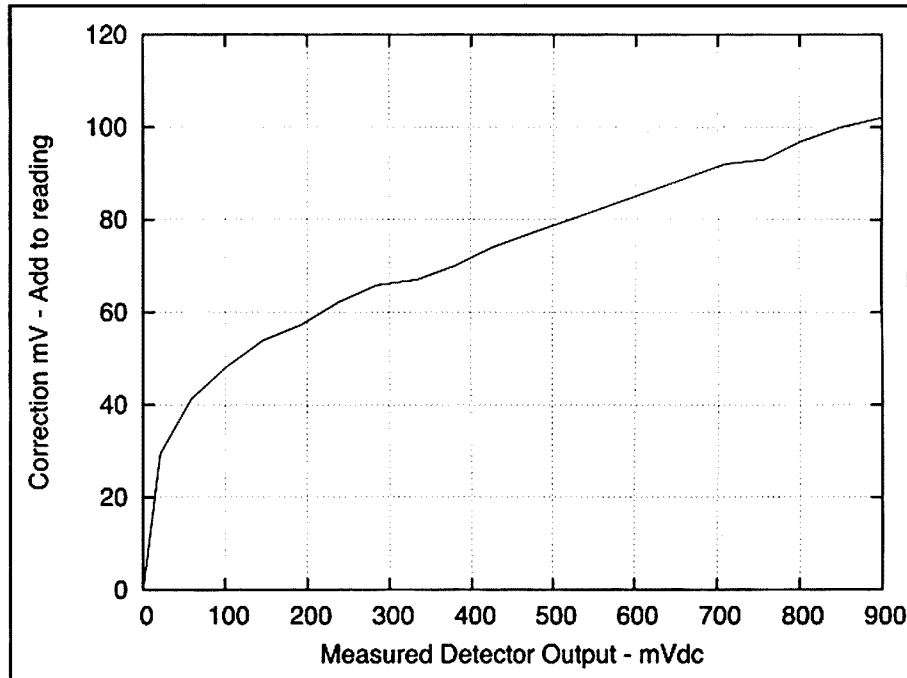
I would like to add some useful information to the Diode RF Probe article by Grant McDuling in the August 2008 issue of AR.

I built a copy of Grant's probe and calibrated it against a Rohde & Schwarz CMT-52 signal generator. The attached graph can be used to improve the accuracy of low level measurements.

Above 1 volt RMS, the probe should be "good enough for amateur work" (error less than 10%) - Just interpret the measured DC voltage as the RF RMS value (or add say about 100 to 200 mV to account for the forward voltage drop of the diode).

I also checked its frequency response. I think it is within ± 1 dB all the way up to 300 MHz. That is very impressive for such a simple circuit.

I did cheat a little - I tried to minimise the "capacitance to ground" from the



probe tip. I did not use a phono plug as the probe body. Other than that, the circuit was identical.

Regards,
Phil Rice
VK3BHR

VK7 continued from page 35

Radio and Electronics Association of Southern Tasmania

REAST's September presentation was by Rex VK7MO who gave two illustrated talks, firstly on GPS Disciplined Oscillators and then on Aircraft Enhancement using the 1090 MHz Kenetic Avionics ADS-B Receiver. With the help of Jim VK3II transmitting a stable 1 kHz tone in the direction of Hobart, Rex was able to demonstrate the Doppler shift pattern and signal enhancement by a plane flying from Melbourne to Hobart. Even the Doppler zigzag was evident when the plane did its autopilot correction around Devonport for its run into Hobart. A wonderful practical demonstration of the theory, thanks Rex.

Early Notice — Hamfest at Miena

Every two years the Central Highlands Amateur Radio Club of Tasmania (CHARCT) sponsors the major VK7 Ham Fest. This year it is at the community centre at Miena near the Great Lake in Central Tassie on Saturday the 6th of December.

The major traders are attending. The \$5.00 entry fee per person or family includes a lucky door prize chance and free tea and coffee. BBQ type food will be available from 11.30 am until 1.00pm. There will also be other opportunities to win prizes. CHARCT have table space for a pre-loved equipment sale, with a white board available to advertise any other

WICEN Tasmania (South)

Thanks to Roger VK7ARN for an updated Tasmanian Amateur Repeater map and a Google maps version which are now available from <http://tas.wicen.org.au/index-old.htm>

During the ILLW weekend the WICEN South crew activated the Cape Bruny lighthouse as VK7WCN. Three operators and two XYLs made the trip and were greeted by gale force winds. Despite the wind, a good weekend was reported. The lighthouse keeper and host for the weekend was Andy VK7WS.

Roger also reports that Tad VK2LNX and XYL Sue, who is also an amateur, will be the next caretakers on Maatsuyker Island. So, stay tuned for IOTA OC-233 becoming active.

equipment for sale without the need to man a site.

A master of ceremonies will be available to advertise these items through out the day along with trader specials. Anyone requiring space should contact the coordinator and register an interest. Ample car parking is available We are seeking some volunteers to provide a small amount of time on the day to assist with the running of the event and anyone who is prepared to assist, please contact the coordinator

Dave VK7KDO on telephone (03)62730642 or mobile 0429 123080 or email: penstock@tassie.net.au

ar

AMSAT-Australia “Worked All States” Award.

About a year and a half ago, the OZSATGROUP created a “Worked All States” award which was made available to the members of the group. I am pleased to announce that this award has been relaunched under the AMSAT-Australia banner, and we are now making the award available to our members.

The award has been established primarily to recognise the efforts of the current generation of amateur satellite operators, who have been restricted to the use of low-earth-orbiting (LEO) birds.

We see the “Worked All States” as an encouragement award for operators who regularly make contacts via amateur satellites.

Some members of AMSAT-Australia have been asking about the structure of the award requirements as set out below, and others have expressed their opinion

stating that the award is too difficult to obtain.

Firstly, when we originally came up with the award requirements, we were keen to include all of the Australian call sign prefix areas with the exception of the Australian Antarctic Territory, i.e. VK1 – VK9. We understood that the inclusion of VK0 would not be practical and that VK9 contacts are rare, but not unheard of.

To make the award a little more obtainable, it was decided to create an award with a little flexibility. For those who are anxious to obtain the “Worked All States” award, and who do not want to wait for that rare VK9 satellite contact, we have provided an alternative path.

The applicant may choose to substitute a VK9 with two overseas contacts, one being with New Zealand and another with a station in any other country. Furthermore, the second country may

be substituted with a contact with any manned spacecraft. Also, should a contact be made with a VK0 station in the future, this contact will also be acceptable.

It is understood that it is a little unusual to accept contacts with other countries when applied to a “Worked All States” award, however we feel that it is important to reward those who are dedicated to working amateur satellites.

For the record, the “Worked All States” has been awarded to operators in all three categories i.e. group A, B & C, see below.

I would also like to respond to the second query from our membership. I can understand that it may seem a bit difficult to obtain the “Worked All States”.

However, as I have stated in the past, the key to obtaining the award is

AMSAT-Australia

National Co-ordinator:
Paul Paradigm VK2TXT,
email: coordinator@amsat-vk.org
Secretary: Judy Williams VK2TJU,
email secretary@amsat-vk.org
Website: www.amsat-vk.org

About AMSAT-Australia

AMSAT-Australia is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites.

Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-Australia is the primary point of contact for those interested in becoming involved in amateur radio satellite operations.

If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-Australia monthly nets

Australian National Satellite net
The net takes place on the 2nd Tuesday of

each month at 8.30 pm eastern time, that is 9.30 Z or 10.30 Z depending on daylight saving.

The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news.

The format also facilitates other aspects like making ‘skeds’ and for a general ‘off-bird’ chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater on 146.850 MHz
VK2RIS Saddleback repeater on 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3JED Preston, Melbourne on 144.296 MHz SSB simplex
VK3JED Preston, Melbourne on 439.175 MHz FM simplex with a 91.5 Hz CTCSS tone.
VK3RTL Laverton, Melbourne, 438.600 MHz FM, - 5 MHz offset

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email.

AMSAT-Australia HF net

Members and interested parties are also reminded of our HF net which is held on the 2nd Sunday of each month. See www.amsat-vk.org for details.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM ‘repeaters in the sky’ with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Should you wish to join AMSAT-Australia, details are available on the web site. Membership is free and you will be made very welcome.

patience. Unlike some other awards, putting in hour-after-hour behind the microphone over a set period of time is not going to get you this one.

What is required is dedication to working the birds on a regular basis and keeping in touch with other operators. A number of operators have obtained the award by arranging skeds with members of AMSAT-Australia who have travelled to islands in VK9 and in the Pacific.

Frankly, if awards are made too easy to obtain, they become a bit pointless.

If you wish to apply for the AMSAT-

Australia "Worked All State" award, you need to be a current member of AMSAT-Australia, and to email us with details of your contacts – Callsign, time, date and the satellite used to make the contacts.

If you satisfy the requirement in more than one 'group', please include these contacts, and they will be noted on your award certificate.

Required contacts:

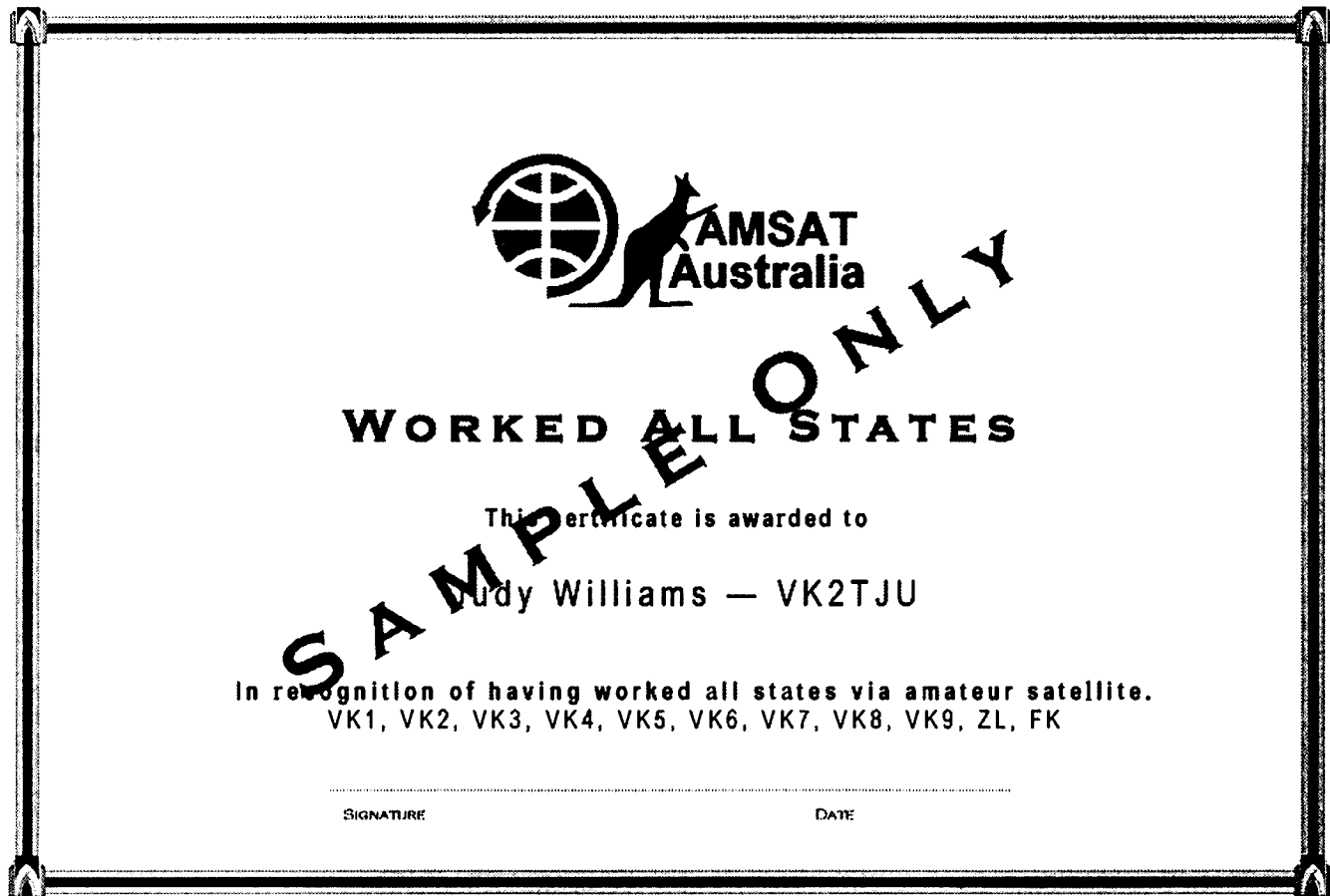
One confirmed contact with a station in: VK1, VK2, VK3, VK4, VK5, VK6, VK7 and VK8, plus one of the groups as below;

Group A – a VK9 or a VK0 confirmed contact.

Group B – a confirmed contact with a ZL and a station in one other country.

Group C – a ZL and a direct confirmed contact with any manned spacecraft e.g. an ISS crew member, space shuttle crew member, etc.

There is no set time limit to obtain the award. Generally, contacts will be confirmed via email when necessary.



The much treasured Award

Tips from George VK2WEL

This month, I would like to share some tips sent in by one of the members of AMSAT-Australia. George – VK2WEL who is one of the regulars you will find on AO51 on most morning passes. George is an experimenter and home-brewer who has much knowledge to share – PP.

"I have been home-brewing gear since I was first licensed in 1955, as I have always been as poor as a church mouse. It has not always been possible for me to

run out and buy all the latest equipment off the shelf.

Things have changed a lot since the time from when we converted disposals gear through to working with Surface Mount devices today. I would like to list a few sources of information which may be old hat to some, but may not be known to others. These tidbits have helped me and may be useful to newcomers.

Surface Mount Devices

Building gear with Surface Mount Devices (SMDs) seems to put fear into the minds of some people. However, I have found that by doing a little reading, and learning some basic techniques with hand tools, working with SMD components is achievable by most electronics enthusiasts. There is a plethora of information about working with SMD components available on the internet, and I would encourage home-

brewers to become familiar with this technology, as I believe that it is the way of the future. This is particularly true when building devices which operate at the frequencies required for satellite and space based communications.

One of the most useful pages I have discovered is: <http://www.talkingelectronics.com> This website shows the various sizes and types of resistors and capacitors etc. and covers in detail how to solder them.

Antenna Design

The "VK5DJ Yagi Calculator" by John Drew is a brilliant program. You simply decide on a frequency for your antenna, the number of elements and the materials you plan to use to build your aerial from and then press the "calculate" button. In next to no time, the programme displays all the dimensions for the various elements, as well as details on building baluns and folded dipoles.

I have found that if you stick closely to the dimensions generated by this package, the SWR of your creation will be close to zero. The software can be found at <http://vk5dj.mountgambier.org/Yagi/Yagi.html>

Antenna Analyser

I refer you to the July 2006 issue of Amateur Radio and to the article by Jim Tregallis VK5JST for the design for constructing VHF and UHF Antenna analysers. The VHF unit uses standard components and the UHF model SMD components. The UHF model is suitable for working with frequencies of up to 500 MHz. I have built one of the UHF models and have learned a lot about antennas just by using one of these units.

Preamps

In recent months, I have been asked about various preamps for satellite operations. Here are a number of sources which provide information about Preamps.

Filip Zaliain in the June 2008 issue of Amateur Radio details a state of the art device using a pHEMT ATF54143 device. Note the use of surface mount inductors here. While this design looks interesting, I am yet to build one for myself.

I have however, built two Preamps using ATF54143s from kits sourced from David Bowman GOMRF: see <http://www.g0mrf.com/> They work very well.

They cover 432 to 1296 MHz.

MiniKits in South Australia (<http://www.minikits.com.au/>), which is run by Mark VK5EME, supply a very well designed kit using standard components and bypass relays.

One very important thing to remember is that when you are using the same antenna for transmitting and receiving, it is essential to use bypass relays. When switching from transmit to receive and back it is also important to include a relay delay mechanism, so that RF does not get into sensitive receiver chips or relays.

MiniKits also sell an excellent kit for this purpose which I have constructed. Thankfully, I am no longer burning out ATF54143s!

Another site worth looking at is <http://www.w6pql.com> which is operated by Jim Klitzing who markets a kit for US\$20, which will switch four events.

Station Control

I use the SatPC32 Windows satellite tracking and station control software package to drive my radios and antennas. I built a FODTRACK interface from a circuit supplied by Graham VK5AGR. At the time I built this device, there were no PCB layouts available, so I built it on Veroboard. This tracker has been working faultlessly for years and is another good example of building it yourself when you are on a tight budget.

For more information on Fodtrack see <http://ludens.cl/Electron/fodtrack/fodtrack.html> The software and circuit diagram is also available for download in the files section on the AMSAT-VK Group site <http://group.amsat-vk.org/>

amsat-vk.org/

You should be aware that Fodtrack communicates with the PC via the parallel printer port. This may be a problem as most modern laptops/notebooks and many PCs do not have one!

For Doppler control via CAT on my Icom IC-821H, I use a four transistor device designed by Nigel Thompson KG7SG which was published in the July 1992 issue of QST magazine. The circuit diagram can also be found on page 14 of the Ham Radio Deluxe Interfacing Manual (<http://www.ham-radio.ch/doc/Interfaces.pdf>) No external power is required as it is powered by the serial port. Again, like parallel ports, RS232 serial ports may be missing on modem computer systems.

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George Adams VK2WEL"

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Geoff VK2ZAZ working SO-50 using his home brew "IOIO" satellite antenna. Photo by Paul Paradigm VK2TXT.

Constructing a 50 W 23 cm power amplifier

Chas Gnaccarini VK3PY

This article describes the construction of an RF power amplifier for the 1296 MHz band. Using a combined pair of Mitsubishi RA18H1213G modules, it can deliver a linear output of over 50 watts and in excess of 60 watts at saturation.

Introduction

Some years ago I constructed a Minikits⁽¹⁾ 1296 MHz transverter. Its power amplifier was the then newly introduced Mitsubishi RA18H1213G MOSFET power module. Mitsubishi rates this module at 18 W output from a 12.5 V DC supply.

To my surprise and delight, the power module easily exceeded its published specifications for gain, output power and efficiency when operating from a 14 V supply. It reliably delivered 25 W and could be driven beyond 30 W.

More recently I got to thinking about higher power on 1296 MHz. One possibility was to combine two of these modules to give twice the RF output.

This is not a new idea. Several such designs exist for the superseded M57762 bipolar transistor power module. Down East Microwave⁽²⁾ in the USA produces versions with two and four combined RA18H1213G modules claiming 60 W and 120 W output respectively. So the concept was clearly viable.

Combining RF power devices

Combining RF power devices presents several challenges which need to be confronted if the result is going to be an efficient, stable and reliable unit. Ideally, all the following criteria should be met:

- The RF drive power must be equally distributed to each device.
- The amplified output of each device must be combined in phase at the output.
- The combination should present a 50 Ω impedance at its input and be matched to 50 Ω at its output.

- Little or no power should be lost in the combining networks. This is most important at the output where the power is high and losses cannot be recovered.
- Each amplifying device should be "isolated" from the other(s) at both input and output. That is, each device should operate entirely independently of the others without interacting with them.



Photo 1: Trial assembly of the circuit board on its mounting base.

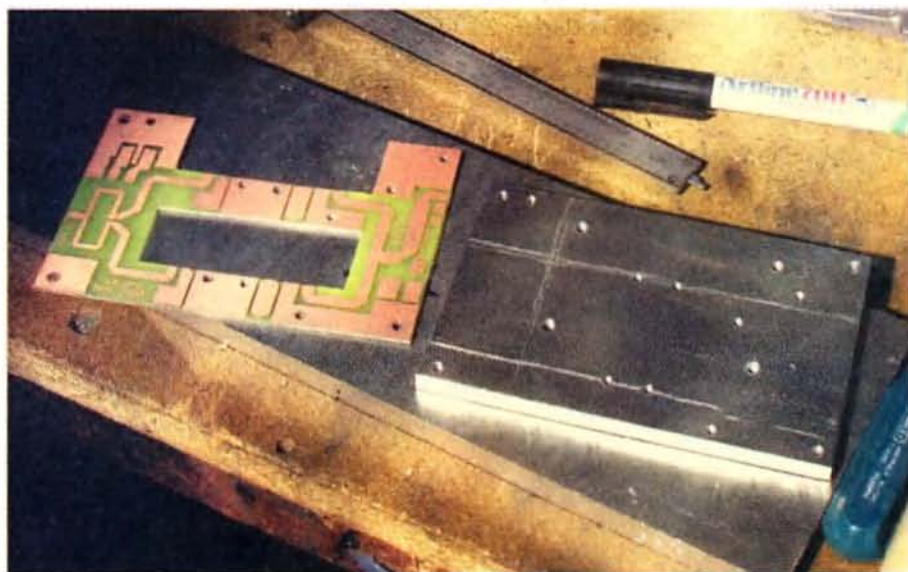


Photo 2: The printed circuit board and heat spreader in preparation for assembly.

f. All the above conditions must be maintained over the entire operating bandwidth.

It seems a daunting task, but at these frequencies we have several options for combining RF power devices. Two common techniques are the quadrature hybrid and the Wilkinson combiner, either of which can be implemented in transmission line form. Both approaches can be made to satisfy all the criteria set out above.

An alternative technique is to simply connect the amplifier inputs and outputs, respectively, in parallel, and transform the resulting nominal 25 Ω impedances to 50 Ω with quarter-wave transformers. This would meet all the criteria except (e). As such, it is a less than ideal approach in that it may invite instability where high-gain amplifying devices are used.

The wavelength, 23 cm, is such that printed-circuit “microstrip” transmission line techniques can be readily employed. The velocity factor of microstrip transmission lines on 1.6 mm (1/16th inch) G10 or FR4 epoxy-fibreglass

circuit board is of the order of 0.55. Thus a quarter-wave transformer is only about 30 mm long. The printed circuit approach has the major advantages of reproducibility and simplicity of construction, obviating the need for

precisely cutting and terminating miniature transmission lines.

In the end, my choice of combining techniques was to a large extent dictated by the space available for housing the amplifier. I really wanted an amplifier that

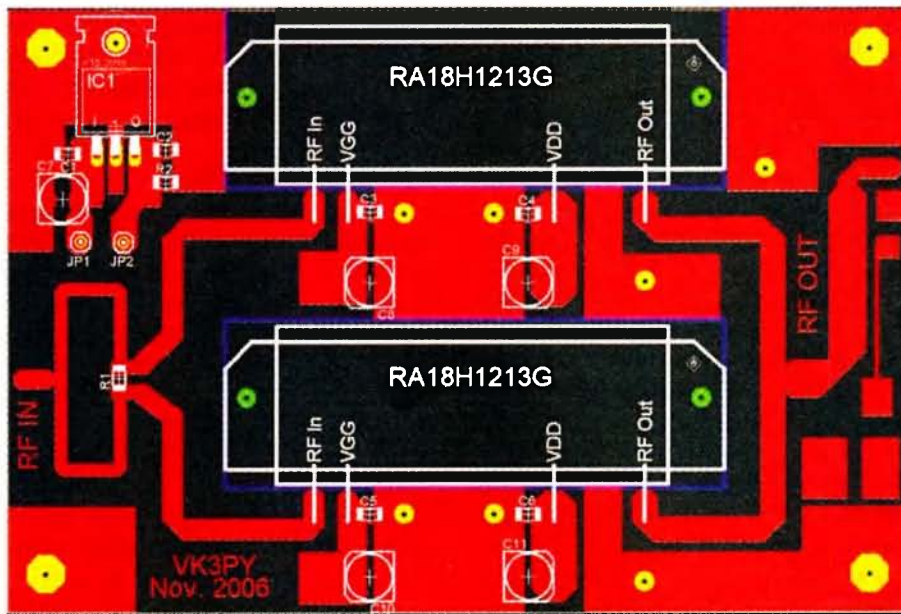


Figure 4: Circuit board and component layout diagram.

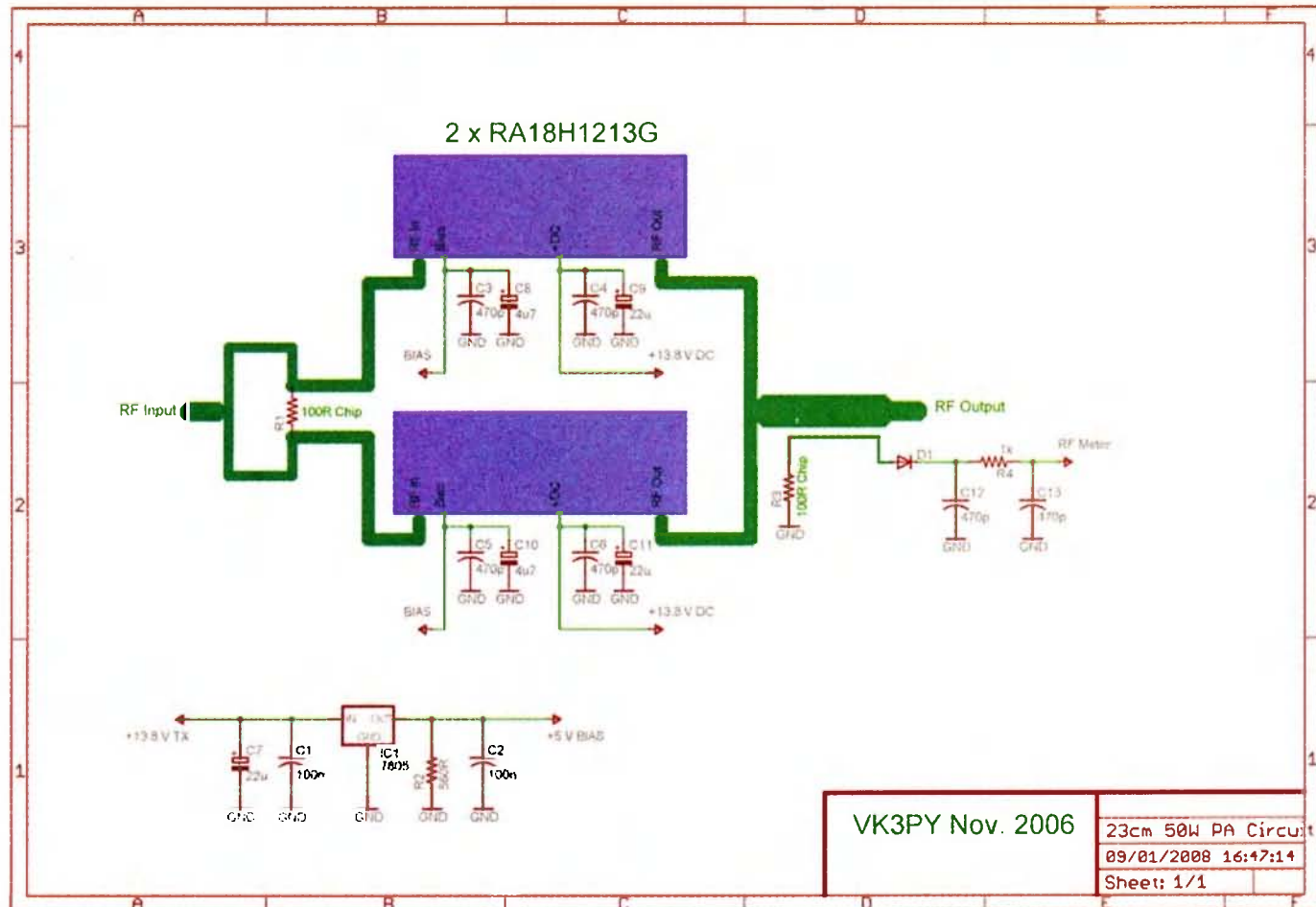


Figure 3: Circuit diagram of the amplifier.

could be retrofitted into my transverter in place of its existing single-module unit.

I had a maximum width constraint of 165 mm which had to include the SMA RF connectors and UT-141 coax radius bends. This meant that printed-circuit quadrature hybrids were out of the question due to the circuit board area they occupy⁽³⁾.

A Wilkinson hybrid could be used at the input, but as its 70 Ω tracks are only 1.6 mm wide in printed-circuit form, I felt they might be somewhat marginal for the power at the output.

As an experiment, I decided to compromise by using a Wilkinson power divider at the input and just parallel the module outputs with equal-length lines to maintain an in-phase condition. A microstrip quarter-wave transformer would be used to transform the resulting 25 Ω impedance to 50 Ω ⁽⁴⁾. At least the inputs would be isolated from each other.

The result was an immediate, resounding success. The amplifier was completely stable and delivered well over 60 W at saturation, limited somewhat by the supply voltage drop in the DC power cable (14 V at idle, dropping to 13.2 V at 60 W). It is very linear to 50 W, reaching its 1-dB compression point at 56 W output, again somewhat compromised by power supply voltage sag in my tests.

Description

The prototype amplifier is constructed on a printed circuit board measuring 120 mm X 80 mm, mounted flush onto a 6 mm thick aluminium base of the same dimensions which is in turn fixed to a heat sink. Alternatively, the amplifier could be built directly onto a heat sink.

Somewhat counter-intuitively, the board is of single-sided construction, the earth back-plane being provided by the mounting base. Careful thought has been given to the positioning of the mounting screws to ensure good earthing of the top side earth areas so the by-pass capacitors provide a low-impedance path back to the power module mounting flange. This is critical for stability.

DC power, bias and RF output metering voltages are brought through 500 pF feed-thru capacitors penetrating the enclosure. The SMA RF in/out sockets are mounted so their centre spigots enter directly through the enclosure walls

onto the circuit board at the appropriate points.

The entire unit is firmly mounted onto a heat sink of adequate size. Adequate means big! My heat sink measures 170 X 115 mm with 25 mm deep fins. Even so, with combined power dissipation for the two modules exceeding 100 W at idle and rising to nearly 150 W at maximum output, a cooling fan was required for prolonged transmissions.

Construction

It is assumed that prospective constructors are thoroughly familiar with UHF/microwave construction techniques, or have access to an experienced constructor who can offer guidance.

A suitable signal source and RF power meter are absolutely essential for testing

the completed amplifier.

Construction begins with the production of the printed circuit board. This has to be a high-quality product without pin-holes or rough edges on the tracks. The artwork file is in Eagle⁽⁵⁾ format and can be downloaded from Amateur Radio section of the WIA website – see this month's issue summary.

After the circuit board has been etched, drill out the mounting screw holes including those for the power modules using a 2 mm or so diameter drill bit. Do not cut out the mounting areas for the power modules just yet. The board will be used as a template for drilling holes in the aluminium mounting base or heat sink.

Place the circuit board, copper side up, onto the mounting base (or heat sink) and

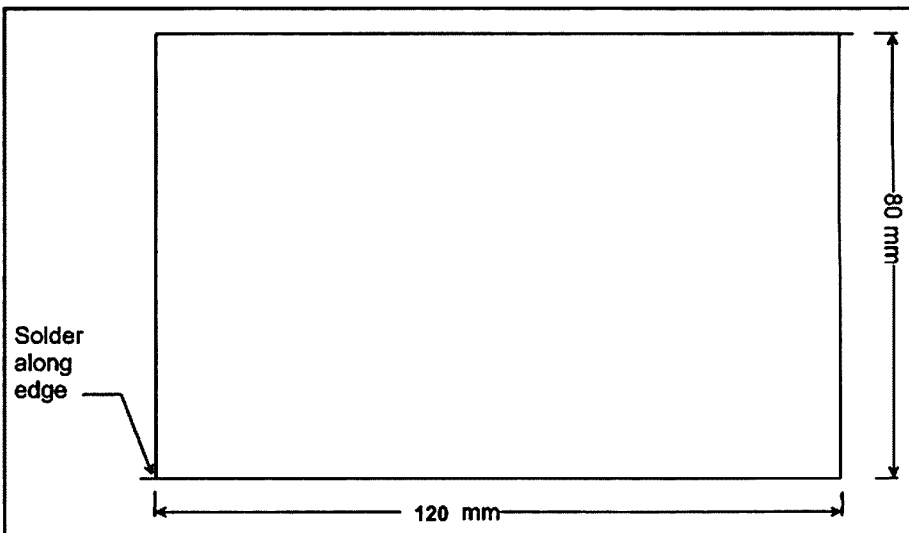


Figure 1: Brass shield enclosure. Note that the two pieces of brass sheet will need to be soldered at diagonally opposite corners.

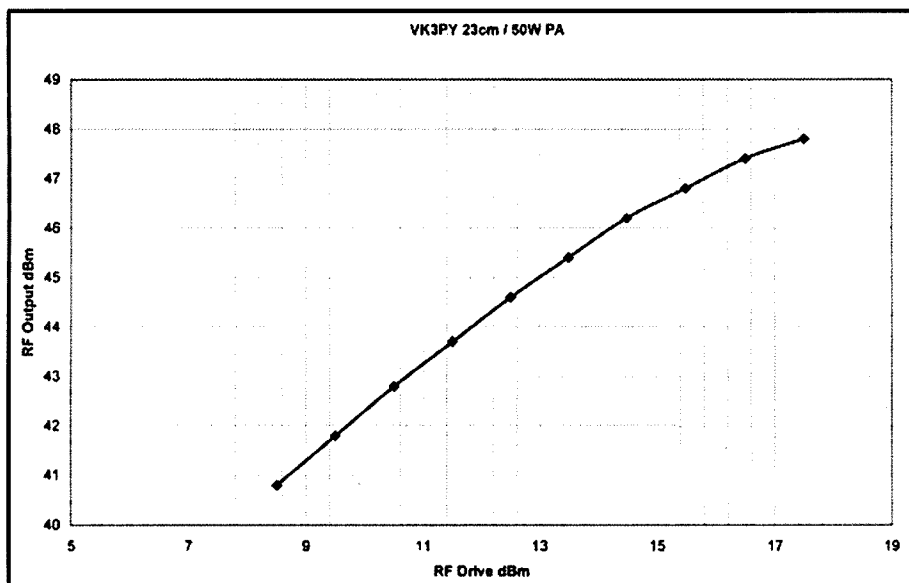


Figure 2: Graph of output power versus input power for the completed amplifier.

firmly tape it in place around its edges. Using the pilot holes in the circuit board as a guide, drill 2 mm holes into the base. Remove the circuit board, then drill out and tap all holes except the four at the corners. I used M4 screws for the power module flanges and M3 to retain the circuit board to the mounting base.

Drill out the four corner holes of the circuit board and mounting base to clear M3 screws. These four corner screws are used for mounting the completed amplifier unit onto a heat sink. De-burr all holes. Photo 1 shows a trial assembly of the circuit board on its mounting base. The location of each screw can be clearly seen.

Drill out the holes in the circuit board to a suitable clearance diameter for the screws and carefully cut out the areas where the power modules are to be mounted. Use photograph 2 as a guide to the general appearance of what you are aiming to achieve.

Using 100-grit wet and dry sandpaper laid on a flat surface, lap both sides of the aluminium mounting base to ensure it is flat. The objective is to ensure you have a very flat surface to achieve good thermal contact between the power module mounting flanges, aluminium base and heat sink.

Cut two strips of 0.5 mm brass sheet, 30 mm wide and bend them into an L-shape as per figure 1. These form the shield enclosure for the amplifier. They are retained with M3 screws drilled and tapped into the edges of the mounting base. Two screws along each edge are sufficient. The two mating corners of the enclosure are soldered along their outer edges.

Take a close look at the power module mounting flanges. They are not flat. The mounting lugs are stepped about 0.2 mm above the rest of the surface, and the surface itself is noticeably bowed inwards. It is imperative that these surfaces be ground flat. One way is to use a belt sander, grinding until the surface is a flat, even, copper appearance.

Alternatively, the surface can be carefully filed flat, then lapped on wet and dry sandpaper in the manner described for the mounting base. Either way, take care not to overheat the modules while doing this. Do not dunk them in water to cool them as they are not hermetically sealed. Instead, use a well-saturated sponge and place the module onto it to cool.

Alternate between the two modules as you work. Note too that the plastic covers will not prevent copper filings from entering the module. **I strongly recommend sealing the edges around the covers with neutral-cure silicone sealant and letting it cure before commencing the grinding operation.**

Lightly tin the areas around the circuit board's mounting holes then fit it to the mounting base and firmly screw it in place. Assemble all peripheral components according to the circuit diagram, paying particular attention to the placement of the ceramic chip bypass capacitors at the modules' bias and drain supply connections.

These capacitors must be mounted as close to the power module as practicable and such that their earth end is close to the nearest mounting screw. **Do not fit the power modules yet.**

Fit the brass shield to the assembly. Check that the bottom edges of the shield do not extend below the bottom surface of the mounting base. File them if necessary. Mount the feed-thru capacitors for the bias, DC supply and RF metering connections and the RF connectors.

Before proceeding further, apply +12 V DC to the bias supply connection and measure the output voltage of the 5 V regulator. Be certain that it is +5 V DC. If it is not, solve the problem. Failure to do so will surely destroy the power modules if the voltage is any higher.

Having satisfied yourself that the

bias voltage is indeed 5 V, you can now proceed to mount the power modules. For each, smear a small quantity of thermal transfer grease on the module's mounting flange ensuring a very light, even coating over its entire surface. Place the module into its position and carefully "work" it in a circular motion to ensure that its surface mates well with that of the mounting base. Finally, screw it in place using appropriate flat washers under each screw head. **Do not tighten these screws excessively** as doing so may stress and crack the internal ceramic substrate, rendering the module useless. Cut the module pins to the appropriate length and solder them to the circuit board.

Wire the DC supply and bias connections between the modules and the respective feed-thru capacitors, slipping several mix-43 ferrite beads over each wire. Fit the RF connectors. If required, fit the components associated with the RF output metering. Note these are not indicated on the circuit board layout due to board size limitations imposed by the free version of the Eagle program. However, the circuit diagram should give a good idea of their placement.

This pretty much completes the assembly of the amplifier. Mount the entire assembly onto a heat sink using an even, liberal layer of thermal transfer grease between the mounting base and heat sink. Photo 3 shows the completed amplifier mounted on its heat sink ready for testing.

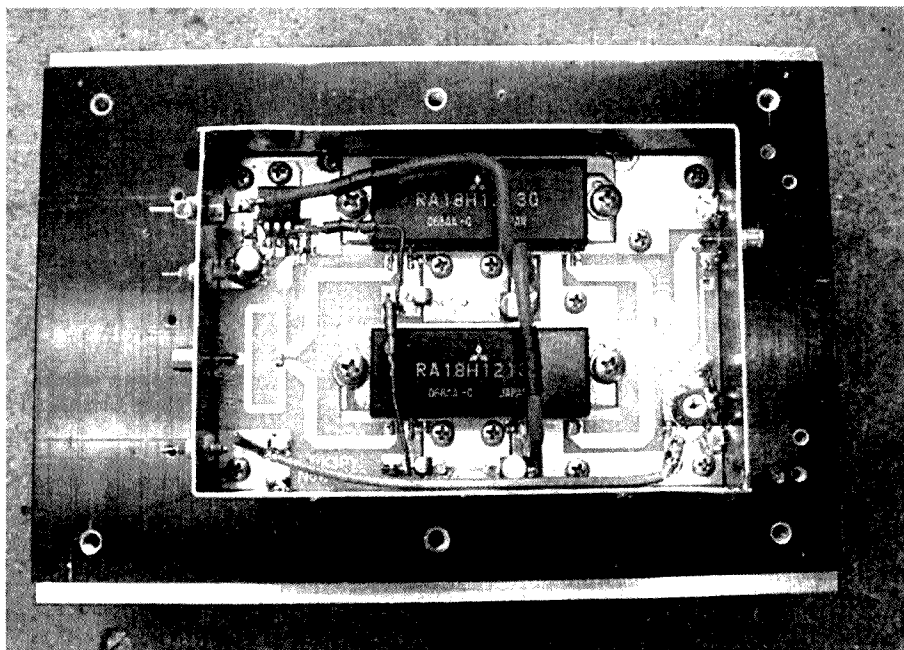


Photo 3: The completed amplifier mounted on its heat sink ready for testing.

Testing

Terminate the amplifier's output into a suitably rated (for power and frequency) RF power meter and dummy load.

Begin by applying 13.8 V DC to the supply voltage connection. The power supply must be capable of delivering in excess of 14 amps. Use a short power cable rated for this current, with a 20 A fuse, and place an ammeter in series. The amplifier should be drawing negligible current at this stage.

Apply 13.8 V DC to the bias input connection and note the idling current. It should be of the order of 7 amps. The power meter should indicate no RF output. Any sign of RF output is an indication of instability and should be checked out (none of the four units constructed to date have misbehaved). If all is in order, disconnect the bias and remove the ammeter from the DC supply line.

Re-connect DC power and bias. Apply a low level (+10 dBm or so) of RF drive and verify you have around 17 W output. While monitoring the output power, increase the drive and verify that you can achieve 50-60 watts. Use the graph of figure 2 as a guide to the drive power requirements.

This completes construction of the amplifier.

My thanks are extended to David VK3QM, Barry VK3BJM and Charlie VK3NX who each constructed copies of this amplifier to verify its reproducibility.

The photographs used in this article were taken by Barry Miller VK3BJM.

Notes

- (1) Minikits <http://www.minikits.com.au>
- (2) Down East Microwave <http://www.downeastmicrowave.com/>
- (3) For an example of a 1296 MHz combined module PA using quadrature hybrids see <http://www.g3wdg.free-online.co.uk/35wpa.htm>
- (4) There is some speculation that

the output impedance of the RA18H1213G power modules is lower than 50 Ω at high output levels. For this reason the output microstrip lines have been made closer to 40 Ω .

See http://downeastmicrowave.com/PDF/MOSFET%20PA_.pdf PDF

- (5) The free version of the Eagle printed circuit board editor may be downloaded from: <http://www.cadsoftusa.com/>

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Parts list:

Most components are available from Minikits: <http://www.minikits.com.au>

Resistors

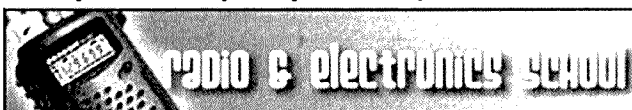
R1, R3	100 Ω SMD 1206 or 0805 size
R2	560 Ω SMD 1206 size or 1/4 W leaded
R4	1 k Ω SMD 1206 or 0805 size

Capacitors

C1, C2	100 nF either SMD or disc ceramic
C3, C4, C5,	
C6, C12, C13	470 pF SMD ceramic 0805 size
C7, C8, C9, C10, C11	22 μ F Electrolytic, SMD or leaded
500 pF feed-thru capacitors, 3 required	

Miscellaneous

IC1	7805 or 78L05 regulator
D1	1N4148 or similar
RF Modules	2 x Mitsubishi RA18H1213G
SMA Coaxial sockets, 2 required	
mix-43 ferrite beads, 12 required	



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Spotlight on SWling

Robin Harwood VK7RH

What a difference a month can make. The Olympics were overshadowed by a major political crisis and then came the hurricanes in the Caribbean. The airwaves reflected the activity.

The trouble erupted in Georgia when their troops tried to re-assert their authority in two breakaway provinces of South Ossetia and Abkazia.

This naturally provoked an immediate response from the more powerful Russian military machine and they quickly drove the Georgians out of the two provinces and captured a large chunk of Georgian territory.

Abkazia and South Ossetia were quickly "recognised" as independent republics by Moscow and the European Union negotiated a cease-fire. But the more powerful Russian military were extremely reluctant to completely withdraw and their continued aim is to politically destabilise Georgia.

This caused a rapid deterioration in relations between Russia and both the European Union and the United States.

The plug was finally pulled on domestic relays of Radio Free Europe and consequently shortwave was again utilised to get RFE programming into both Russia and Georgia.

There was also a major programming escalation of the output of the Voice of Russia to all target areas. America was vilified as the instigators of the crisis and Russia naturally restated that Georgia was within their sphere of influence.

Both parties also suspended cooperation in NATO. A major military exercise between Russia and NATO was also cancelled with NATO told to stay out of the region by Russia.

The Internet was also a battleground with repeated Denial of Service attacks on Georgian and Ukrainian websites from Russia. The domestic Radio Rossi network, which services Russia and the various CIS republics, was hastily moved off AM and shortwave to FM and given a name change.

This crisis has caused a major re-assessment of strategies and political alignments.

You can be sure that shortwave has

not taken a backseat and incidentally this international crisis came just a few days after the VOA decided to axe Russian and Georgian broadcasts off shortwave. RFE/RL has taken over most of the channels previously occupied by the VOA and there has been an increase in output to cope with this crisis.

Utility monitors have for some time been reporting Georgian forces using the ALE protocol over HF but since the routing of Georgian troops by the Russians, these ALE networks have disappeared.

Shortwave has been busy with HF communications taking a major role with the aftermath of hurricanes in the Caribbean Sea.

Three hurricanes came in rapid succession and the various HF nets swung into immediate action before any of them made landfall. One channel to monitor over the next six weeks is 14300 kHz, which is designated for hurricane related traffic.

I also have received advance notice that Radio St Helena will be making another broadcast from this windswept Atlantic island. It will be on November 16th between 2000 and 2300 which is very early Sunday morning locally. The broadcast will be on their regular channel of 11092.5 and on USB.

I do not hold out much hope of hearing it direct, judging by past experience, expecting that it will be more easily observed from one of the remote website receivers.

Do not forget that the month of October is when the clocks go back or ahead, depending upon in which hemisphere you are located. New Zealand will be the first to put their clocks ahead on 28th of September whilst NSW, Victoria, Tasmania the ACT and South Australia will do this on October 6th.

WA has been on trial with one year to go whether DST will be a permanent summer fixture. WA introduces DST on October 26th.

This day is also the commonly agreed date when most International broadcasters alter their frequencies to take account of propagation when the Northern Hemisphere goes off DST. North America reverts to Standard Time on the first Sunday in November. Confused? Why do they not all agree to make these changes on a common date and avoid weeks of confusion?

Well that is all for this month. Do not forget you can e-mail me your news or comments to vk7rh@wia.org.au

Robin L. Harwood VK7RH

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DX - News & views

John Bazley VK4OQ

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With an increase (hopefully) in band conditions just around the corner, the following announcement should increase activity on digital and CW modes.

The ARRL Board of Directors, at a meeting held 18th to 19th July 2008, voted to create a new "Triple Play Award" for Worked All States on voice, CW, and digital modes, 150 QSOs, the confirmations done exclusively on Logbook of the World, LoTW. QSOs must be made after January 1st, 2009.

More from the ARRL minutes:

"The Board also acted on the Programs and Services Committee report, voting to eliminate Rule 5 from Section III of the DXCC Rules. The Committee realized that while publishing log data can have a detrimental effect on operating awards, it was not possible to control such actions and the rule cannot be enforced. As part of an effort to maintain the integrity of operating awards programs, the Board called on staff to create resources and guidelines for QSLing and for QSL managers. These guidelines will help people who QSL to understand the "best practices" and help to support the work of the QSL manager so that access to log data won't degrade Amateur Radio's long tradition of the "honour system."

Another item of 'Administrative news'. E73Y reports that after more than four months reviewing the applications, effective 1st September 2008, Bosnia and Herzegovina Communications Regulatory Agency has granted 54 one-letter suffix licences for Radio Amateurs in Bosnia and Herzegovina. That is 46.96% of the total number of applications received (115). A complete list of the issued callsigns is available at the BH CRA WEB Page (unfortunately English version is not yet updated): <http://www.rak.ba/hr/freq-mgmt/msword/OdlukaE7naRadiamateriHr.doc>.

QSL manager Ralph K2PF is now handling QSL work for E70A and E73U.

So what have we to look forward to in the coming weeks?

Possible activity from Glorioso Islands? There also seems to be a problem with the promised activity from Marion Island ZS8. Up to now I

understand that there has only been one QSO, but they are on the island for a few more months so it is a question of 'wait and see' for both operations!

A group from the South Texas DX and Contest Club (STXDXCC), including Jay K0BCN (V31MX), and Tom AB5XZ, plan to operate the CQ World Wide SSB DX Contest (October 25/26) from Cay Caulker (NA-073), Belize. They will fly to V3 on October 22nd. This will be a multi-single. They will most likely use V31MX in the test and will have other V31 calls. They will leave on October 29th. QSL V31MX via K0BCN.

Nicolas F8FQX (ex 5T5SN) has been in Congo since August 20th. He will be there for the next 3-4 years and is working on getting his TN ticket.

Mike KM9D and Jan KF4TUG are stuck on Ndende Island, Temotu Province (H40), due to "an enormous (1040 mb) high pressure system NE of New Zealand", reports Paul A35RK. The two expect to sail to Vanikolo (OC-163) where they will operate as H40MY.

OH0I is the Aland Islands callsign for OH9MM, single operator single band 10 metres in the CQWW CW November 29-30. QSL via OH3BHL.

Massimo IW0HEU is now in Kosovo until January 2009. He has been QRV as YU8/IW0HEU on 40 metres SSB. Look for him to be QRV during his afternoons. Suggested frequencies are: 7050, 7080, 7085, 14280, 14290, 14295, 18150, 21200 and 21250. QSL via IW0HEU either direct or via the bureau.

PJ2/PA0VDV will be on from Curacao October 2-29, CW only.

TC3EC in Turkey, operators TA3YE and TA3GO, will be on for the CQWW SSB Contest October 25-26. They will be multi-op all band. QSL to TA3GO.

J3/DM2AYO and J3/DL7CM, Sid and Hans, will be on from Grenada (IOTA NA-024) November 6-25. They are renting a nice QTH near Sauteurs on the north end of the island. They will operate on 160-6 m CW, SSB, RTTY and PSK with a pair of IC-706 rigs to 700 watt amps, with a Yagi for high bands and a ground plane for low bands. QSL via their home calls.

Paul K1XM plans to do the CQWW,

both modes, from French St. Martin, single operator all bands on SSB and CW multi-two or multi-single with WA1S and KQ1F. He may go in the "assisted" category on the SSB weekend if the Internet connection works well. The callsigns for both will probably be TO4X. QSL via KQ1F.

David EB7DX updates us on the December 2008 IOTA 6 day DXpedition to Bangladesh's St. Martin's Island (AS-127). Tutul S21RC and Manju S21AM will be just two of the operators. A Web site has been set up at <http://s2iota.eb7dx.com/> There will be a log search after the DXpedition. The callsign will be announced later. QSL via EB7DX, David Lianez Fernandez, P.O. Box 163, 21080 Huelva, SPAIN. Logs will be mailed to LOTW one year post-operation.

From October 20th DK3TNA, Stephan, will be QRV from Fuerteventura Island, Canary Islands (AF-004). He will be on 3.5 to 28 MHz on CW and SSB running 100 watts and a dipole until November 3rd. QSL via DK3TNA either direct or via the DARC QSL Bureau.

Look for Ulf DL5AXX to be operating from Grenada as J3/DL5AXX November 25th to December 9th, including the CQ World Wide CW DX and ARRL 160 Meter CW Contests. QSL via DL5AXX.

Following my comment on QSLs from VK9WWI, I was pleased to receive this note from Bill VK2MWG:

"Have just read your article in AR and wish to add that I have received a card direct from VK9WWI and give you a list of DX that I have been lucky enough to have worked mobile, with a FT-857D and a home-brew 3 metre whip.

April: DU9/G4UNL, VE7AV, SP75N, P29GQ, JR1BLX, W4DOM, H44MS, H44MD, T20HC, KH7DX, YB4IR, ZS6B, 9A9A all on 20 m. YC2IQ, XU7ADV, YB1ALL, YB8OUN/9, on 15 m.

May: ZK2PM, ZS1ARC/4, RW0CD, JH4IQZ, K6MYC, 3D2A, K6OKW, 9J2BO, FK8FB, VE6PR, all on 20 m, KQ6PK on 10 m.

June: 4W6R, KK5NC, KI6FFB, VA6UK, VE7YY, W0GLG, HP3EFS, 5W0JM, VE6AO, WN7M, XE2GAG, K6MCL, V63WWA, all on 20 m,

The contest

Well, conditions were good this year. It was especially good on 80 metres on Saturday. There was a bit more interference on Sunday night but everything was better this year than it has been some other years.

Thank you to all the OMs who participated and thank you for staying around to make several contacts during the two evenings and the daylight hours.

From the scores heard on Sunday night, some of our members had been very busy. We look forward to seeing the results published.

Unfortunately I had other engagements so I could only join in at night, but I certainly finished up with a satisfactory score and I think I worked all states as well as a couple of ZL YLs.

If you also worked a number of different states remember that you can apply for an ALARA Award with 10 YL contacts from at least four states. Look at some of the earlier ALARA columns for the full details.

I do hope you sent in your log, because by the time you read this it will be too late. The logs had to be in by the end of September.

International YL Meet

There will be an amateur station at the International YL meet in South Africa. The station will be ZS08YL. It could be heard from several locations as the YLs move around the country or it may be at a fixed location.

At the time of publication there is no information about times or frequencies. If these become available, they will be passed on to you, possibly through the WIA Sunday broadcast. Please listen out for us and give us a call.

JOTA is on this month

If you participated in JOTA with your local scout group, let me know so I can let everyone know. Send me a story and photos and see them published in AR.

There are many more YLs 'doing their bit' for the Scouts and Guides than we ever hear about. Please change that. Let me know so I can let you know.

Early YL Amateurs

The history project ALARA has undertaken over a number of years has been mentioned before but we were thrilled recently when Justin VK7TW (a regular reporter in this magazine) had an interview with one of these early YLs.

Joy VK7YL is now in her mid 90s, but was happy to talk to Justin for about 45 minutes. The people attending the ALARAMEET may see part of this interview. Joy got her licence in 1936 and, unlike some of the early amateurs, took it up again after the War.

It will be interesting to hear what she has to say.

If you have any memorabilia of an early YL, we would love to add it to our collection. We are also interested in hearing from current amateurs who might tell us why they went for their licence, or of an interesting experience they have had through amateur radio.

Please send any material to me VK5CTY, QTHR in the callbook.

The Alarameet

There will be a report of the ALARAMEET in next month's AR. Everything is under control and many travellers are on the road as this column is being written.

Sponsorships

Almost from our earliest days YLs in ALARA have sponsored YLs in other countries. It is another way of extending the hand of friendship across the world. Sometimes it is someone we have met; sometimes it is someone we have spoken to on air, but often the YL we sponsor is offered to us by our Sponsorship Secretary.

Whoever takes on this position in ALARA usually is a regular operator on the DX bands or has, herself, enjoyed the experience of sponsoring someone. Currently our Sponsorship Secretary is Maria VK5BMT, QTHR in the callbook.

If any YL is interested in being a sponsor, contact Maria and ask if there is anyone looking for a sponsor. Sometimes we exchange regular letters (or emails), sometimes we only exchange Christmas cards, with others we arrange a sked on radio or even on EchoLink. How deeply we become involved is up to us.

I have been lucky enough to meet some of my sponsors when I have been overseas; other people have had their sponsors visit them in Australia.

It is usual but not always applicable that the YL we sponsor, in return sponsors us. We pay a sponsorship fee to join each other into our YL organisation and then we receive newsletters from each other. We get to know what is happening around the world in amateur radio circles.

Talk to some of the sponsored YLs to hear about their experience.

73 de VK5CTY Christine

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continued from page 46

KL7IYD and KI6KFB on 40 m.

July: WINDY, FK8HW, KE5WZ, K2MLB, WD8CQB, N8QS, KH6KW, AD4GB, KI6WE, KF8UV, all on 20 m.

August: KC3RIV, WA4YDO, AD1L, K3MJW/250, KI0Z, N9N, on 20 and WA4YDO on 40 m.

Since installing the mobile rig in July 2007, I have worked 116 DXCC Countries, with 70+ confirmed so far."

Great Bill – look forward to hear what you work when conditions improve!

So until next month, 'Happy DXing'.
Special thanks to the authors of

The Daily DX (W3UR), 425 DX News (11JQJ) 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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VHF/UHF – An Expanding World

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

Reunion to South Africa Contact

Many people have speculated about the possibility of a 2 m contact between VK6 and the islands in the Indian Ocean, far to the west. While it is a large distance to cross, the Hepburn Tropo Propagation Forecast page for that area often shows large areas of significant enhancement during the summer months.

Recently, a milestone contact was achieved across that part of the Indian Ocean, in our direction from Africa. On August 14th, FR5DN (Reunion) successfully worked ZS2GK (South Africa) on 2 m SSB. This was the first FR-ZS 2 m QSO, and possibly the longest 2 m tropo QSO for either country. Full details may be found at:

http://www.astrorun.com/~fr5dn/radio/tropo/14aout2008/zs2gk_14august2008.html

A critical success factor was Phil FR5DN's use of his home station as a beacon, pointing towards South Africa. His station is a Kenwood TR-9000 and 160 watt amplifier into a 17-el long Yagi.

Early on August 14th, Glenn ZS2GK reported hearing the FR5DN beacon

from Reunion Island. At 0339 SAST, he established a two-way contact with Phil FR5DN on 144.2 MHz SSB and also on 144.4 MHz FM. Reports were S5/6 with no QSB over the VHF path of 2875 km. ZS2GK was running 400 W into 4 x 9 el Yagis.

This contact has stirred interest in the area, with other stations planning to establish informal beacons. Unfortunately, most of the population of Reunion is on the west coast, with mountains to the east, so an FR-VK contact may be very unlikely.

144.150 Net Revival

The popular VK3 "150" Net has been running for a number of years. Recently Robbie VK3EK, who has been Net controller for all that time, has been tied down with other commitments. So, Mike VK3AAK and Rob VK3ESE have stepped forward with an offer to take over the Net as joint controllers.

On their first night of operation – September 10th – they report having 20 stations from all over the state, and interstate, call in including VK3FELA (Doncaster), VK3NJP (Geelong), VK5LA (Beri SA), VK3AXH (Ballarat), VK3KQB (Wendoree), VK3NPA (Geelong), VK3IDL (Ballarat), VK3LM (Koorumburra), VK3HV (Morwell),

VK3DMW (Yarrum), VK3ACC (Cobram), VK5DK (Mt Gambier), VK3FMCQ (Morwell), VK3GND (Dereel), VK3MCW (Colac), VK3NCR (Somerville), VK3ART (Heathmont), VK3TPR (Glen Waverley), VK3ESE (Mt Dandenong) and VK3AAK (Mt Eliza).

Their second night also yielded 20 stations, including VK2KRR (The Rock) and VK2YB.

If you are looking for some activity on Wednesday nights in the country's south-east, tune to 144.150 at 8:30 pm EST.

Don VK2RS SK

There was sad news recently of the sudden passing of one of the veterans of VHF – Don VK2RS in Corryong. Don was one of the true gentlemen of the air and was a regular on the morning 2 m SSB Aircraft-Enhancement net. He had a long-term project investigating AE propagation and was constantly trying different antennas. He had meticulously recorded several thousand contacts via AE on VHF and UHF and was continuing to refine his analysis. His presentation at GippsTech several years ago showed the depth to which he had gone with his investigations. His cheery voice will be missed on the air.

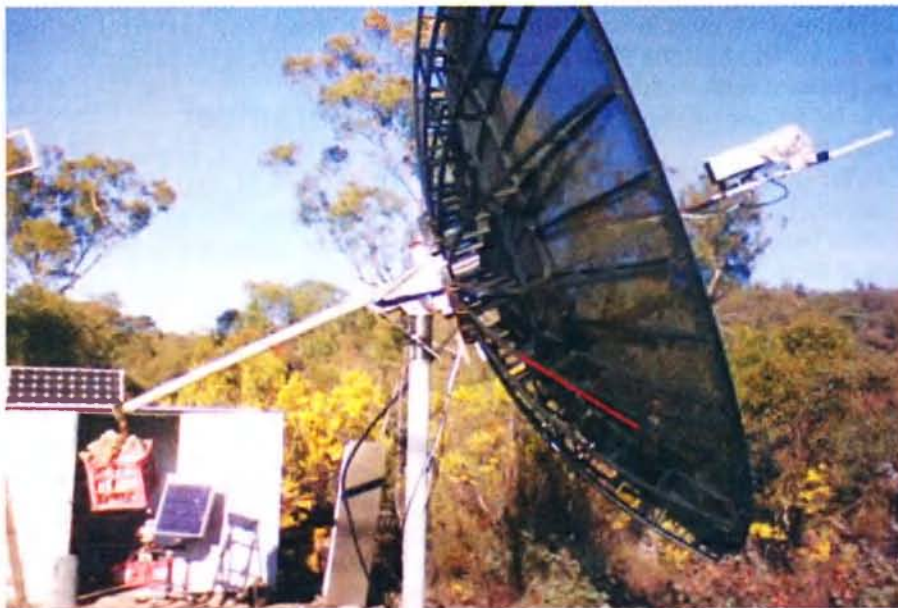
Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

Dave VK2JDS has a solar powered EME station operational on 1296 MHz. He has been operational since March and has been reporting his trials and tribulations and receiving advice on the forums of the VK logger. He says "this is a great resource". Dave tells of his proudest moment: "My wife Phillipa VK2XPH came out to the radio hut and I explained the latest improvements to the system, I said "press the Morse key for 3 seconds", she did and we clearly saw the return ping from the moon on Spectran and could just hear it audibly."

Dave runs a 4.6 metre TVRO dish with an IC-910H to 65 watt amplifier from Alan VK3XPD. He balances his dish with a milk crate filled with rocks (see photo).



The VK2JDS solar powered EME station with solar panels in the background and milk crate balance mechanism.

Dave has worked G4CCH, HB9Q, SM5LE (2.2 metre dish), RD2DA, and DJ9YW all on JT65c.

118 km Non-line of sight

On 8 September Rex VK7MO and Justin VK7TW achieved one way optical communication using JT65a on a 118 km non-line of sight cloud bounce path. This almost doubled their previous best distance of 66 km. Rex trekked to Coles Bay on Tasmania's east coast and set up his Avalanche Diode receiver and Justin operated the transmitters from Rex's QTH in Hobart.

Initially, to check for propagation Justin sent a tone using a 60 x LED Luxeon array. Almost straight away it was received at 40 dB above the noise in 20 MHz bandwidth. Rex and Justin then swapped to WSJT using the JT65A mode and sent callsigns one way at a consistent signal level of -9 to -10 dB (which means there was about 18 dB to spare).

They then swapped to a small transmitter using four red and four blue Luxeons with tones spaced around 6 Hz apart so that the red and blue signals could be compared.

The red signal peaked at 20 dB above the noise but the signal was hardly evident on the blue. This result confirms theory that red light is much better than blue for optical through-the-air communications. The reason is that blue light is more readily scattered and thus lost as it propagates through the air (physicists call this extinction). This preferential scattering of blue is also the reason why the sky is blue.

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

The Magic Band – 6 m DX

Brian Cleland VK5BC

Firstly I apologise for the lack of notes in the last 3 months but I was travelling in northern Western Australia, in particular the Kimberley, Pilbara and gold mining areas.

From the little information I received as well as watching the logger there seems to have been very little 6 m activity during this period with only a few minor openings from northern Queensland to VK2 and 3.

In summary our WA trip included the Kununarra/Wyndham areas, Kimberley via the Gibb River road, Mitchell Plateau (magnificent waterfalls), Derby, Broome, Pilbara area including Karratha, Dampier, Millstream and Karijini national parks and finally through the gold mining areas of Meekathara, Sandstone, Leanora and Kalgoorlie.

After Kalgoorlie, it was the long drive home across the Nullarbor where we stopped off to see the whales at the head of the Bight. In total we covered about 12,000 km and used about 2,500 litres of petrol which averaged \$1.73/litre, the most we paid being \$2.29/litre at Mt Barnett in the Kimberley.

Whilst travelling WA I could operate all bands from 80 m to 70 cm and I did monitor 6 m from time to time as well as keeping an ear on 10 m for any activity which may have indicated some 6 m openings.

I only once heard anything on 6 m whilst on Cable Beach in Broome. This was on the 26th July when I heard the Alice Springs VK8RAS and Darwin VK8VF beacons both up to S9, but despite several calls no contacts were made or stations heard.

I did find operating on the HF bands somewhat different from down south, could hear very few VK signals but signals from Asia/Malaysia were very strong, particularly on 80 m, 40 m and 20 m and I did manage a few contacts into the 9M Malaysian areas on 10 m. For skeds back to VK5, I found 30 m good in the morning and 20 m in the afternoons.

I only had one VHF contact on 2 m whilst travelling WA which was via the VK6RWR Wickham repeater which unfortunately was the only active repeater I could access throughout the trip - even the Kalgoorlie 2 m repeater is not operational.

I happened to be in Kalgoorlie during the RD contest weekend and whilst listening on 20 m on the Sunday morning heard a regular Kalgoorlie 6 m operator in Noel VK6ZAK.

Gave Noel a call and he came and met me at the Kalgoorlie Gold "Superpit" and then spent the remainder of the day showing us the sights of Kalgoorlie. Noel has lived in the area for over 40 years and still works at one of the gold mines in the area.

Having looked at the sights of Kalgoorlie, Noel

took us to his home and showed me his station which consists of a Yaesu FT-1000 MkV with a Quadra VL-1000 amp, 6 m transverter Yaesu FTV-1000 and an Icom IC-7000 (which Noel mainly uses to monitor 6 m).

His antennas are a 4-element KLM KT34 Tri-bander, G5RV and a 6 m & 2 m 2-element quad. Noel's favourite band is 6 m and he also enjoys 20 m. The picture below shows Noel in his shack.

Hopefully we will start seeing a little more activity on the band in September/October but with the sunspot cycle still appearing to be bottoming out it will probably be the summer Es that will be the main activity.

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

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Noel in his well appointed shack at Kalgoorlie. See larger picture on inside back cover.

Contest Calendar for October 2008 – December 2008

October	4/5	Oceania DX Contest	SSB
	11/12	Oceania OX Contest	CW
	18/19	JARTS WW RTTY	RTTY
	18/19	Worked All Germany Contest	CW/SSB
	25/26	CQ WW DX Contest	SSB
	25/26	ARRL International EME Competition	CW/SSB
	25/26	CQWW SWL Challenge	SSB
November	8/9	Japan Intl. DX Contest	SSB
	8/9	Worked All Europe DX Contest	RTTY
	15/16	Spring VHF/UHF Field Day	CW/SSB/FM
	15/16	JT Ham Radio 50 Contest	CW/SSB
	22/23	ARRL International EME Contest	All
	29/30	CQWW DX Contest	CW
	29/30	CQWW SWL Challenge	CW
December	5/7	ARRL 160 m Contest	CW
	6	RTTY Melee	RTTY
	13/14	ARRL 10 Metres Contest	CW/SSB
	20	OK DX RTTY Contest	RTTY
	26 to 15 Jan 2009	Ross Hull Memorial VHF Contest (VHF/UHF)	CW/SSB/FM

Welcome to this month's Contest Column

I have recently noticed within the CW WW SSB Results of CQ Magazine that the VKCC Koalas, consisting of VK6DXI, VK3TZ, 9M2CNC and VK4EMM, were placed number six in the world with a very respectable total score of 2,368,241 points, in the Team Contesting listing. An excellent achievement Gents – very well done indeed!

Five contesters from anywhere in the world can join together to form a team, so hopefully we can assemble another VKCC team or two for 2008.

Guide to CQ WW DX Contest UBN Report

With the SSB contest results now published, the CW results will not be far behind, it is appropriate to have a think about the dreaded UBN report and what we might learn from it.

The report is to inform and assist and not be a source of criticism or derision. The CQWW DX contests are nearly on us, so it is time to review last year's approach and make adjustments to strategy for 2008 to get your score to defy those elusive sun spots. I am not expert at UBN reports – but I hear that a new format might emerge at some stage if not already – so this is intended as a general overview only and is based upon information generally available from the

CQWW Contest Committee.

The UBN report is the CQ World-Wide Contest Committee's computer analysis of your submitted adjudicated contest entry. It contains an initial computer calculation of your score as well as a computer re-calculation of your score that includes the effects of the computerised log checking.

Score calculations for all submitted logs are made using the same multiplier-reference data and scoring algorithms, so that the different entry categories are measured by the same yardstick.

The report also shows QSOs found by the computer that definitely impact and those that might impact the adjudicated final score. This includes QSOs for which credit was denied (-B and -N) as well as unique (U) QSOs.

What do the codes mean?

Credit is automatically removed for QSOs that have been adjudicated either as being bad (-B), or found to be not-in-log (-N) during cross-checking with no evident receiving error found in the cross-checked log.

The computer then tries to determine if the claimed station miscopied your call. If the computer finds potential close callsigns in the other log, they will be listed as POSSIBLE CALLS.

It is possible that the copying station can make a copying error that the computer algorithms are unable to recognise. Some large logs from stations with complex callsigns often lose credit for a few 'computer unrecognisable' errors, so be careful when selecting a callsign on DXpedition!

The word 'Bad' in the report refers to an incorrectly logged callsign, not that the callsign does not exist. If a callsign is miscopied as someone else's call, this does not warrant credit.

It is worth mentioning that no credit is removed from the log because the call might be unique (U). The use of the word 'unique' means that the call only appears in your log and not in anyone else's.

This makes sense as to win the contest, you have to work more callsigns than everyone else with more multipliers and so unique callsigns are to be expected.

A 'Zeroed-out-contact' is shown as a Z in the report. This contact was removed from your log with no penalty, just as if it had never occurred. Z applies to contacts judged to be with pirates or stations using illegally assigned callsigns. Z might also be applied to "contacts" deemed to be outside the spirit of the contest.

The UBN reports are usually provided as abbreviated log-analysis reports showing only contacts for which credit has, or may be, denied. If needed, the adjudicators can produce a report showing the status of every entry in your log. This report, rarely generated, shows detailed scoring information for each contact, which contacts were actually cross-checked and the number of total claimed database QSOs made with every callsign in your log.

UBN Report Columns

The initial review of the report can be a little daunting to say the least. The report appears to be a series of titles and numbers that, without knowing what is

going on, tells the reader precious little about the log under examination. The following column titles can be found within the report:

LINE = QSO number on a particular band for your log

(QSO)CODE = Status of flagged callsign (U, -B, N, -N, or Z) in your log

CALLSIGN = Flagged callsign found in your log

#-BAND-LOGS = number of times this call was worked by other stations in the adjudication database

POSSIBLE CALLS = Computer determined possible callsigns similar to the flagged callsign

#-band-logs = Number of total database entries for the possible callsign

In the report header, your callsign is shown followed by the band. Band designations for CW are 160, 80, 40, 20, 15, and 10. You could be forgiven for thinking that the band designations for SSB would be the same, but unfortunately they are not always! For SSB, band designations may be one number greater, such as 161, 81, 41, 21, 16, and 11, as these band numbers are for internal CQWW Contest Committee use.

Yet more codes

At this stage, take a deep breath and relax. The UBN report has a few more tricks up its sleeve. There are a few more codes that can sneak into your report which can tell the reader a bit more about their performance in the contest.

The 'possible calls' list can give clues to where the perceived logging error might have occurred. For (U or -B) callsigns in your log, possible calls are computer estimates of what the correct callsign might be.

For (N or -N) callsigns in your log, possible calls are calls in the other station's band-log that might be miscopied versions of your callsign. So, you can get an idea if the logging error is your hiccup, or the other operator.

Information on the further codes is freely available on the Net. Suffice to say that the report can be a handy tool with which an informed reader can analyse their logging accuracy performance during the contest - but it can get a little bit cerebral after a while.

The summary the end of each of the band listings, shows, amid other data the number of QSO entries on that band; the

number of Unique or Bad call QSOs in your band log and their percentage $(U + B)/(\text{calls})$.

This piece of information has generally been found to be one of the measures of accuracy for almost all logs and could be used as a yardstick with which to measure yourself, if so desired.

The summary also lists the number of QSOs that are Unique, or Bad or Not-in-Log; the number of cross-checked QSOs on that band against logs in the adjudication database; QSOs that you claimed were not found in other stations' logs and a list of lost multipliers is included for that particular band.

Penalties

Nothing to do with the footy, but a similar approach. If you are perceived as having done something wrong then there is a price to pay! It is worth closely examining the log prior to submission for adjudication. Some see this as a form of cheating, but if the QSO is valid but the operator suffered from some keyboard weary errors, then it is up to the conscience of the operator to decide if he or she wishes to check the log prior to submission. Personally, I have no problem with it and it makes sense to me to look for 'silly' or obvious errors.

For each -N or -B callsign, contact-point and multiplier credit is denied and a point penalty of 3 times the claimed contact score value is assessed. The scoring is done by first crediting the claimed point value and then removing 4 times that value. If another same-multiplier station is worked on the band, multiplier credit will automatically result from the good QSO.

The CQWW Contest Committee emphasises that the penalty system is implemented to encourage accurate operating. Improperly logged contacts adversely impact the scores of others and generate extra work for the log-checkers, so now you can see why I am keen to check my log prior to submission.

The message that I get from the Committee is, that if you are not certain of all the details and you do not want to risk losing the equivalent point tally for 3 QSOs, simply either ask for a repeat or tell the caller, "No QSO."

Do not put a guess at the call in your log, as your delight in 'working' that juicy multiplier will come home to roost as a potential penalty with a reduced score.

It is also worth mentioning that the information in some PC logging program files can sometimes not tally with the data exchanged during the contest. I have heard of some stations stating a different zone to that offered by the software, but I prefer to log whatever the station tells me during the QSO and use the software as general guidance only.

Is log checking perfect?

It would be nice if that were the case but the reality is that log-checking is neither perfect nor purported to be perfect. It is intended to be accurate enough to determine the correct order of finish in the various categories.

Where two stations are extremely close to each other as regards final score, there may be a case to examine the data even more closely so as to ensure a fair and accurate result.

I am far from being an expert in these matters, but I hope that this brief overview serves to assist when you next receive your UBN report for the CQWW series of contests coming up in the next couple of months.

RD Contest 2008

Well, the sun spots still did not come out to play – regardless of the various expert opinions, so 10 m and 15 m were tough going for the contest.

Quite a number of stations reported hearing a good level of activity from Tasmania, with Martin VK7GN and Laurie VK7ZE and John VK7WPX all making good inroads into the bands.

WA contesters were also active, including VK6ANC putting on their usual high standard from Ham Heaven just north of Perth and using the contest to try-out some new antenna hardware that the guys have been working hard to get erected for the contest season. VHF and UHF were also activated from the club station to raise the QSO tally for the weekend by around another 240.

The Northern Corridor Radio Group which operates VK6ANC has got the contesting ethic just about right. The club has competitive contesters and non-contesters, so has many hands available for getting the station going and future planning, leaving the operators to hammer the bands.

The group then make the weekend a social occasion with a BBQ and a get-together. I am sure that there are others

who do much the same thing – let me know who you are and I would be grateful for any details for this column.

If you want to stay Single – forget Skimmer

The CQ WW DX Contest has recently changed its rules to say that use of the controversial program CW Skimmer will put a 'Single Operator' entry into the 'Assisted' category.

The ARRL still has not officially decided what to do on the issue for its range of contests. It will be interesting to see how this ruling is policed!

Oh, for the love of Contesting

There are very few radio hams that I have met for whom their first interest remains their primary or sole interest throughout their radio ham 'career'.

For example, I may have started by operating in contests quite some time ago, but I have also dabbled in QRP, home brewing radio equipment, RTTY, antennas and other aspects of the hobby from time to time. From a purely personal point of view, my interest in and enjoyment of these various activities ebbs and flows over the course of time. I am sure that I will be no exception in this aspect.

Some of us might have a list of call signs in our memories that are no longer seen in our contest logs. I cannot help but wonder sometimes what happened to those familiar calls.

Assuming the person is alive and well, are they still radio hams? What are they doing these days? Why did they give up on an aspect of ham radio that they do not have the passion for now? Sometimes, in addition to the perceived politics and the nuances of Radio Clubs or contest groups, it is possible to lose a contester due to 'burnout'. They focussed so intently on the competitive chase that eventually it takes its toll, wears them down and they call it a day. For them at least, it simply ceased to be fun.

This happens in all sorts of activities, of course; at work, social groups, even just groups of friends. What was once a rewarding or relaxing activity now holds one captive until escape is the only

recourse. This is particularly sad in ham radio because it is somewhat unique as a hobby in that it has so many different facets to offer.

If running a radio club or contest team, for example, is getting to be a chore instead of a pleasure, then maybe it might be for the best to take a little time off to gather your thoughts and consider what you want to do before throwing in the towel or venting your spleen at others and burning bridges that you may wish to resurrect at a later date but feel unable to for historically limiting reasons.

Even within the contesting aspect of the hobby, there are plenty of opportunities to freshen up an activity that might be considered to have got a little stale. If slugging it out during an HF DX contest starts to seem too much like hard work, why not get out of the shack and do a VHF hilltop expedition or try any of the WIA VHF / UHF contests for a different slant? If you are a single-band enthusiast, then maybe try changing bands. If it all seems a little too easy after a while and the challenge no longer seems to be to the fore, then possibly try EME for a technical and operating challenge if you have the real estate!

Another approach might be to host a small multi-single operation as a refreshing change from a solitary SOAB existence. I suppose the point of this diatribe is: change modes, change bands, change whatever it takes to turn that perceived hard work back into pleasure.

Maybe, under these circumstances, it could be best to take a step back from whatever you are currently doing, reappraise things and take stock. Ham radio is a big world with lots of exciting things going on – some of which you may not have heard about. Take a possibly higher "less travelled" road and take some time to reinvigorate your appreciation for a terrific hobby and the people also enjoying it much like yourself.

But it is, after all, only a hobby.

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton.

ar

2008 - 160 Metre VK/trans-Tasman Contests

Complete Results

Participation factor Phone:
24 ZLs and 112 VKs participated. 24/112 = 0.2143.

All ZL VK contacts points (not including prefix groups or QRP bonus points) multiplied by 0.2143.

Participation factor CW:
11 ZLs and 23 VKs participated. 11/23 = 0.4783.

All ZL VK contacts points (not including prefix groups or QRP bonus points) multiplying by 0.4783.

Category 7 (Phone)

	Call sign	Score	Contacts
1st.	VK3YXC	1421	185
2nd.	VK3FRC multi-op	1310	190
3rd.	VK3HJ	1180	185
4th.	VK2AWX multi-op	1148	191
5th.	ZL4RMF	1043	124
Eq. 6th.	VK2MA multi-op	972	176
Eq. 6th.	ZL3UR	881	115
8th.	VK2BTW multi-op	825	161
9th.	VK3IO/Qrp	797	118
10th.	ZL4AL multi-op	680	97

11th	VK2XN	502	113
12th	VK3SAT	438	84
13th	ZL1FF	431	66
14th.	ZL1AAO	403	60
15th.	VK4XY	392	98
16th.	ZL3AKM	385	51
Eq. 17th.	VK4RD	381	102
Eq. 17th.	VK2BV multi-op	381	98
19th.	VK2BMU	365	91
20th.	ZL2AGD	359	48
21st.	VK7ARN	346	77
22nd	VK7ZE	335	66
-	VK3JWZ	321	75
23rd.	VK2EPH	313	78
24th.	VK4SN	292	70
25th.	VK4AMC	246	73
26th.	VK2ENG/Qrp	228	46
27th.	ZL4AS	226	28
28th.	VK4ATH/Qrp	217	52
29th.	VK2YJS	188	50
30th.	VK2GR	162	62
31st.	VK2ACH	135	42
32nd.	VK5ZUC/Qrp	108	26
33rd.	VK6ADI	88	15
34th.	VK2BJT	79	18
35th.	VK3BKO	54	27
36th.	VK5YX	46	11
37th.	ZL4IM	37	7

Category 9 (CW)

	Call sign	Score	Contacts
1st.	ZL3IX	306	43
2nd.	VK2CCC	240	41
3rd.	VK3QB	233	36
4th.	ZL2JU	218	32
5th.	VK3IO/Qrp	196	37
6th.	VK4IZ	166	41
7th.	VK3TSN	152	32
8th.	ZL3ARC	132	21
9th.	VK2ADB	117	30
10th.	VK2ENG	77	25
11th.	VK3XU	66	14
12th.	VK2AVQ	59	16
13th.	ZL3AKM	55	16

Category 8 (QRP Phone)

	Call sign	Score	Contacts
1st.	VK3IO	797	118
2nd.	VK2ENG	228	46
3rd.	VK4ATH	217	52
4th.	VK5ZUC	108	26

VK3JWZ Phone score of 218 is ineligible.

ar

Silent Key

Theo Marks VK4MU – SK

On behalf of the amateur radio operators of Australia, we pay homage to one of our most respected members.

Whilst always interested in the 'dark art' of radio as a youngster in the 1930s, he would play records on air after the official radio stations had closed down for the evening. His music broadcasts grew in popularity so much so that he would receive requests to play certain musical items by telephone, and his record collection grew by donations from listeners.

When WW II broke out he promptly enlisted as a driver and served with the AIF in the Middle East. While serving there in the field as a driver it happened one day that the duty wireless operator was ill.

When Theo heard this he volunteered to the officer present that he could read and transmit Morse code. He stood in for the missing person and was subsequently seconded to the signals branch; spent a

hectic 6 months in Officer Training prior to training signals personnel in Morse code and procedures.

On the return of the AIF to Australia to defend our homeland against the advancing Japanese, Theo was posted to the University of Queensland.

The site had been taken over by the military and as Theo was a communications specialist, he was posted to General MacArthur's and General Blamey's Signals HQ for the entire South West Pacific theatre. There at St Lucia, for three pressure packed years, he handled top secret communications traffic and whilst proud of his work, always kept his oath of secrecy.

After the war, Theo returned to 'Civvy Street' and to amateur radio. His callsign VK2ATM became VK4MU when he moved to Queensland. VK4MU became well known on the air and his cultured voice was a signature of the 40 metre "Coral Coast Net" for nearly 30 years.

He was involved from 1992 until 2006 in jointly broadcasting on HF radio the Wireless Institute of Australia, Queensland Division's weekly News. The news broadcast was a joint effort each week with Bruce VK4AMV and before that with Jack VK4AGY; each week the news was preceded by an informal net with Theo making regular contact with fellow amateurs.

Theo was active in the Wireless Institute of Australia as Divisional Secretary in the 1980s, and his tact, wisdom and tolerance were greatly valued. Virtually every honour that his life long hobby could bestow upon him was granted but in his unassuming way, he never boasted of his achievements but continued to do his bit for his fellow amateur.

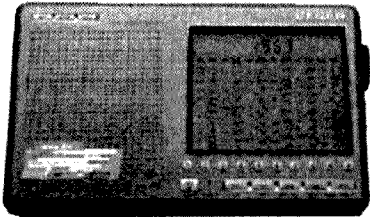
Farewell Theo, you were a true gentleman of the airwaves.

Contributed by Guy Minter VK4GUY and Malcolm McIntosh VK4ZMM.

ar

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POWERTECH 13.8 volt 40 amp Switch Mode adjustable power supply MP3090. In pristine cond. 2006 model including power cord and instruction manual. \$230 + Postage. Brian VK2MQ. Ph. (02)69471213, Mobile 0407004071, Email oey66@bigpond.com (10)

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VHF HANDHELDS. Two Icom IC-F3 Top quality made in Japan. Cover 136 to 174 MHz. Alphanumeric display shows frequency in use. Used but in good condition, programmed with thirty two 2 metre frequencies. Can get programming changed to suit you. Thirty repeater channels should cover every Australian repeater. Five watts. Similar to CB IC-40s or Amateur IC-T2, key pad is a little different to T2. They use the same batteries. Radios are ready to go with no risky ebay business. Serial numbers will be given later. \$25 per radio. Another \$15 with Antenna. You can buy a battery pack to put in your own cells for about \$22 at most 2 way radio shops. I will sell you a good second hand rechargeable pack at half price. Also UHF handhelds usable on commercial frequencies and for UHF C.B. prices are negotiable. Victor VK2XVS.PH.0435096995 email: victorstafford@hotmail.com QTHR (10)

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WANTED NSW

My Yaesu FT-767GX transceiver will not transmit. I suspect that the finals have blown. Is there any qualified technician that may be able help? Please contact me: 02 6343 1469. Graham. (10)

COLLINS 312B-4 station control unit, preferably in good operating and physical condition. If you have one not being used and are prepared to part with it, please contact me. Steve VK2XWL; email steve.b@intemode.on.net Phone QTH 02 4952 5443 of mobile on 0412194513. (10)

FOR SALE VIC

ICOM IC-701PS for sale. Has a fault in the voltage regulator circuit, otherwise O.K. \$140. VK3BV. Phone 59750306. Mornington Vic. (10)

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I am looking for a GENERAL RADIO GR 1931A modulation monitor. Thanks. John Eggington VK3EGG. Mob: 0409 234 672 Email: vk3egg@optusnet.com.au Mobile: 0409 234 672 (9)

My cousin in Latvia, YL2GRE, needs a QUARTZ FREQUENCY STABILIZER to repair his home made transceiver. Where do I go to buy one? Jack Ziedars. Tel: 03 9841 9373 jekabs@techinfo.com.au (9)

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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 (P)

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Broadcast details

- VK1 VK1WIA: Sunday 0900 local on the Mt Ginini repeaters 146.950 and 438.050 MHz. The UHF repeater requires 123 Hz access tone and is linked to the Goulburn repeater.
- VK2 VK2WI: Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.6000, 147,000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning..
- Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130, 147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. Also in 'Realaudio' format from the VK6WIA website.
- VK7 VK7WI: 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.

Mining gold on the Magic Band



Noel at the operating position.

The amateur in his shack:

**Noel Sanders VK6ZAK
Kalgoorlie**

Brian Cleland VK5BC

Noel's home station consists of a Yaesu FT-1000 MkV with a Quadra VL-1000 amp, a Yaesu FTV-1000 50 MHz transverter and an Icom IC-7000. The IC-7000 is mainly used to monitor 50 MHz.

His antennas are a 4-element KLM KT34 tribander, a G5RV and a 6 m & 2 m 2-element quad. Noel's favourite band is 6 m and he also enjoys 20 m. The pictures show Noel in his shack and his antennas.



The HF triband beam.



The nested two element quads for the six and two metre bands.

(See story in VHF – an expanding world, page 49)

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Our Cover this month

The West Australian DX Chasers Club (DXCC) voyaged to the little known and never before activated wildlife preserve Faure Island (IOTA OC-206) in Shark Bay about 900 km north of Perth. Overcoming cyclonic weather and flies, they made many contacts and also had time to assist with research into indigenous fauna. Read about it on page 27.

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 \$8.00 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

Club advertising in AR

Many Clubs have come to expect that an advertisement can be placed in AR, at no cost to the Club. Some Clubs seem to expect that an advertisement can be run for several issues. Other Clubs, especially those running large events, may wish to purchase space for their promotional material. Several Clubs request loose-leaf inserts to be printed and included with the magazine prior to posting.

The preparation and inclusion of such material has a cost which is predominantly hidden in the cost of producing AR. The situation is slightly different for inserts, where Clubs currently do pay for the printing of the inserts.

Both PubCom and the Board are sympathetic to the needs of Clubs, and we feel that we should provide some clarity on the situation. Accordingly, PubCom plans to recommend a final draft "Club Advertising Policy" at its November meeting. The recommendation will then be forwarded to the Board for approval. Once approved, the policy will be circulated to all affiliated clubs and posted to the WIA website.

I believe that most members of the WIA would agree that running an advertisement of a reasonable size once per year at no cost to a Club is a reasonable provision. The Policy will clearly indicate what Clubs can expect – the maximum size, the frequency of placement, preparation costs and so on.

PubCom intends that the policy will come into effect as of the January/February 2009 issue of AR.

Those pesky faux pas

We all make mistakes occasionally, for we are all human. When one is busy, you sometimes do not check things as thoroughly as you should. Mea culpa!

I think that most readers will clearly see one example of me missing something that should not have been missed: look at the Inside Back Cover of the October issue of AR – the captions of the two lower photographs should be swapped. Yes, I made an error when sending off the material and then we missed it at proofing! Sorry folks.

And then on page 16 of October AR,

We failed to recognise that the schematic (Figure 4) was not large enough to ensure that it would reproduce adequately when printed. The schematics have been available for download on the AR website since I became aware of the fault – see the October 2008 issue page.

We have been striving to improve our preparation and proofing processes and will continue to do so. But remember, we are all human!

Office move

The WIA office will be moving later this month. Details are included elsewhere in this issue and the WIA website will be updated at the appropriate time. The new premises are in Bayswater – I am told that the location is not far from "The Toy Shop" – as a well known retail amateur radio equipment outlet is fondly referred to by many amateurs in Melbourne.

I am sure that the new venue will greatly improve the circumstances for the WIA staff and volunteers. The plans include the operation of WIA Bookshop sales from the office. But more detail will come at a later time. I hope to be able to provide a story on the new premises, including some photos, in a future issue – probably our January/February issue, given that the move will occur when December AR will be in the final stages of preparation.

73

Peter VK3KAI

ar

The changes – now three years on

My “WIA Comment” in Amateur Radio a year ago was headed “The changes – two years on”. I reviewed the effect of the changes to the Australian amateur licence structure, particularly the introduction of the Foundation licence, then two years earlier, in October 2005.

It is now three years on, and so it seems sensible to see what has happened in the last year and see whether there are any changes since then or any new issues that may need to be addressed.

The answer is “yes”, there is some good news, and some issues that we should address.

An important question is whether there has been an increase or decrease in the total number of amateur licences in Australia, a very relevant question given the trends in some countries. A valid broad generalisation is that in many countries the number of amateurs has been dropping, as has the membership of the national amateur radio society.

I looked at that question a year ago.

After discussing the number of people we had qualified for the Foundation licence, I pointed out that one effect of the introduction of the new entry-level licence had been the reversal of the trend of ever reducing amateur licence numbers in Australia.

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. By 30 June 2006 the number had started to increase, then to 14,475. On 3 September 2007, the date of the ACMA data used for the 2008 Call Book, the total number of amateur licences current in Australia had risen to 15,326, and by 1 October 2008, the date of the ACMA data used for the 2009 Call Book, the total number of amateur licences current in Australia had risen again, to 15,469.

In short, the introduction of the entry level licence continues to reverse the trend of ever decreasing amateur licence numbers.

A year ago we published a graph showing the Foundation licence exam

candidates by age group, looking at some 1,500 people who had been qualified from March 2006 to the end of September 2007.

That graph showed the middle to higher age group as the largest group, but I also commented that the number of younger Australians undertaking the entry-level examinations was increasing. I stressed the importance of that age group because they will be the area where career choices will be made, and the Foundation licence may be a factor in these choices.

This year we have compared the age group of Foundation candidates in the year ending 30 September 2008 with the age group of Foundation candidates in the year ending 30 September 2007.

Let me set out each age group with the number of candidates in the year just passed, compared with the number the year before, shown in brackets.

8 to 15 years,	60 (95)
16 to 25 years,	100 (92)
26 to 35 years,	224 (135)
36 to 45 years,	126 (198)
46 to 55 years,	128 (160)
56 to 65 years,	34 (160)
65 to 90 years,	43 (79)

That is probably the most significant of all the information we have, as it shows clearly a shift to a younger age group of Foundation qualification candidates.

That is really good news.

Also very interesting is analysis of Foundation qualification assessments by state, comparing the number in the year ending 30 September 2008 with the number the previous year (in brackets).

New South Wales, ACT	188 (283)
Victoria	207 (315)
Queensland	117 (145)
South Australia	63 (91)
Western Australia	55 (59)
Tasmania	21 (30)
Northern Territory	5 (8)

We compared those figures with the number of Standard and Advanced assessments, over the same periods.

New South Wales, ACT	123 (100)
Victoria	130 (111)
Queensland	72 (43)
South Australia	34 (34)
Western Australia	38 (48)
Tasmania	26 (8)
Northern Territory	4 (7)

Let me suggest a couple of conclusions that may be drawn from those figures.

First, the number of those undertaking Standard and Advanced assessments has increased, and we know that many of those are Foundation licensees upgrading. That is very encouraging, and should be an effective answer to those who doubted the wisdom of the entry level licence.

But there is a clear decline in the number of Foundation candidates. Let me tell you what this suggests to me.

When the Foundation licence was introduced, there was an immediate demand that was met over the first two years. These were the people who believed the Novice had become “too hard”, very often CB operators. These were the people who, after May 2004, when the introduction of the Foundation licence was announced in the ACMA’s Outcomes of the Review of the Amateur Regulation, waited until it was formally introduced in October a year later. These were the people who knew all about amateur radio and were encouraged by the new entry level licence to participate.

But now that pent up demand has been largely met.

I believe that our task must now change. We must now start promoting amateur radio, getting the message to people who do not know very much about it, particularly younger people.

We must now look to sailing groups, travelling groups, Scouts, schools and just the general population.

Perhaps the WIA can assist by making a “package” of material available for clubs in regional areas to use for their local radio station, or their local newspaper. Perhaps clubs will have to sell their weekend Foundation classes a little harder in their local community.

There is no answer that fits everywhere in Australia. I have just come back from a weekend in Perth, where I asked those questions of the WA Advisory Committee members and others.

I ask you to consider how to best promote amateur radio in your environment, and how the WIA can help you do that.

And, please, share your thoughts with us.

Future Management of Amateur Call Signs

On 8 February 2008, ACMA announced that it would implement contractual arrangements with the WIA for the ongoing management of amateur examinations, the issue of certificates of proficiency and certain administrative functions associated with amateur call signs.

As part of these arrangements, on 5 September 2008 the WIA conducted a ballot for two letter call signs. All amateurs who participated in the Ballot were offered a two letter callsign. The ballot arrangements, including the WIA recommendations for specific two letter call signs to ACMA, will be concluded on 24 October 2008.

The WIA and ACMA are currently finalising the ongoing contractual arrangements. This process includes suitable cost recovery arrangements for amateur examinations, certificate issue and call sign administration. Once these arrangements have been finalised, the WIA will be responsible for providing recommendations to ACMA on the allocation of all amateur service call signs.

At this stage, it is expected that the ongoing contractual arrangements will be in place by the end of 2008. Until a commencement date for the new arrangements can be announced, however, neither ACMA nor the WIA

will accept any applications for two letter callsigns in any states or territory. The issue of amateur licences with three and four letter call signs will not be affected.

Further announcements on the new arrangements, including information on the commencement date and the applicable charges for examinations, certificate issue and callsign administration, will be made before the end of 2008. These announcements will be made in WIA broadcasts and on the WIA and ACMA websites, and in the next *Amateur Radio* magazine.

WIA to move to new premises

The WIA Board has announced that it has leased new premises to replace its present premises in Balaclava Road, Caulfield North.

The present premises are too small, do not have the ordinary facilities that are necessary, and have totally inadequate storage space. So much so that the WIA is renting additional premises in Williamstown and East Burwood to store records, and books such as the Foundation Manual.

After an exhaustive search, the WIA has leased premises in Bayswater, in an industrial estate. Details of the address are published elsewhere in this issue.

Some painting and cabling, and other work is required before the office is actually moved, but it is hoped that the

new premises will be fully occupied during the second half of November.

"We hope that the lease of these premises will give us urgently needed breathing space to plan a longer term solution to our requirements" said WIA President, Michael Owen VK3KI.

WIA Submission on Spectrum Plan

Before the changes made at the ITU's WRC 07 can be implemented, and in particular the new secondary allocation to amateurs of the segment 135.7 – 137.8 kHz can be made available in Australia, the statutory Australian Radiofrequency Spectrum Plan must be amended.

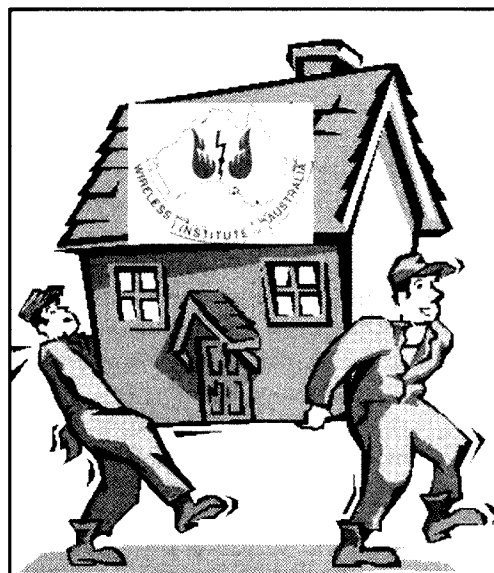
ACMA has published draft amendments to the Spectrum Plan and invited comment.

In its submission, the WIA notes that apart from an experimental licence held by the Brisbane Amateur Radio Club, there was only one other user of the LF segment.

The WIA looked at the inefficiency of antennas that amateurs would be able to use at this part of the spectrum, and concludes that the risk of interference is very small.

The WIA noted that the New Zealand administration allows New Zealand amateurs a larger segment in this part of the spectrum (but on a temporary

continued on page 20



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A loading/tuning coil for 137 kHz antennas

Drew Diamond VK3XU

Doubtless the most significant and difficult challenge for the urban amateur intent on doing some low frequency (LF) transmission is the antenna problem. Few of us have access to a pair of 30 m masts spaced hundreds of metres apart, or a nearly ideal ground through the steel hull of a ship, for instance.

However, we are fortunate in this country as much good theoretical and practical LF work has already been published by Australian (References 1, 2 and 3), New Zealand, and European amateurs and experimenters. Indeed, the RSGB Handbook (Reference 4) has contained an LF chapter for the past few editions, where may be found details of the sort of equipment and techniques needed to radiate an effective LF signal from an ordinary suburban location. Much of what follows is derived from these sources.

A back-yard inverted-L or T antenna, worked against ground, or counterpoise, can only be a few percent of a wavelength long at LF, and so the radiator must operate far below its natural resonant frequency. We therefore require a large amount of inductive and/or capacitive loading in order to present a resistive load to the transmitter. Such electrically small antennas are very inefficient, typically 0.2%. Never-the-less, our UK, European and NZ colleagues have achieved good results from home stations.

The usual 'standing-wave' concept of understanding HF antennas cannot readily be applied to an extremely short radiator at LF. It is conjectured that vertically polarised radiation is produced by the combined electric field established between the top wire and ground, and the displacement current* between the top wire and ground. The voltage on the wire is almost equal along its length, whereas the current will be maximal at the feed point, falling to zero at the far end(s) of the wire.

To find the amount of loading inductance required, the natural capacitance of the radiating wire is first determined. A workable 'rule of thumb' for estimating the total capacitance of

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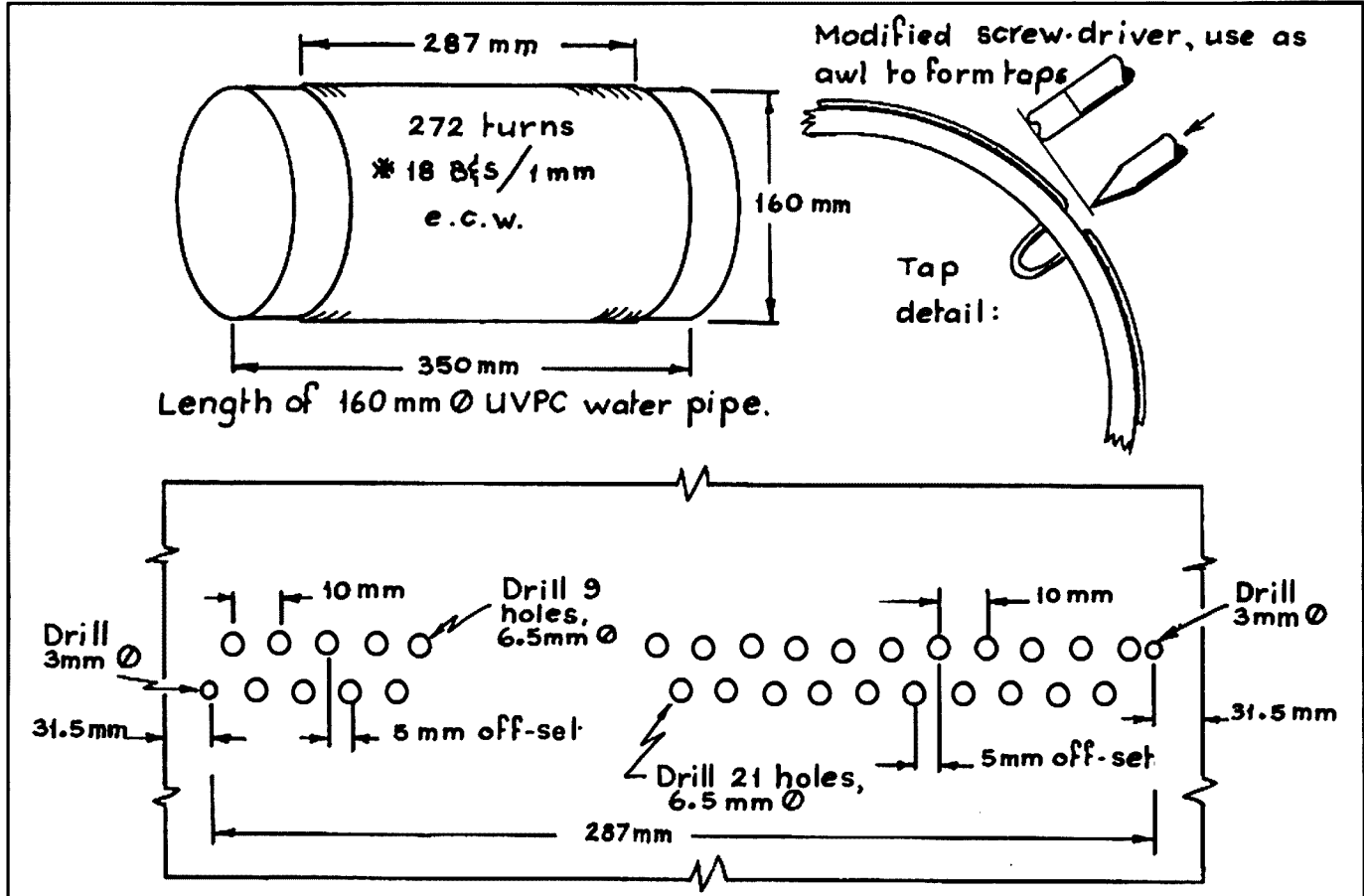


Figure 1: The layout of the coil, drilling for the taps, and how to form the taps.

the radiator (that I have found applies quite well) is given in Reference 4, which gives a figure of 6 pF per vertical metre, and 5 pF per horizontal metre of ordinary 7.067 mm PVC covered electrical wire.

Next time you see an LF beacon antenna site: have a good look at the configuration. Notice that the horizontal top part of the T is (generally) composed of multiple wires that run out from the feed wire, these separated by spreaders of perhaps a few metres in length, thus significantly increasing the capacity of the antenna, thereby reducing the amount of loading inductance required.

It is quite possible that some amateurs may have enough space for an inverted L or T composed of, perhaps, 12 metres vertical and 42 m horizontal (total 54 m). The natural capacitance is estimated: 12 x 6 = 72 pF, and 42 x 5 = 210 pF. Total = 72 + 210 = 282 pF. We therefore need to 'tune' our 282 pF with an appropriate amount of loading inductance in order to bring the system into resonance at (say) 137 kHz.

$L = 25330 / (f \text{ MHz}^2 \times C)$ (Ref. 5)
 where L = inductance in uH, C = capacitance in pF.
 $L = 25330 / (0.137^2 \times 282) = 4785.7 \mu\text{H}$, rounded to 4.8 mH.

To allow for any changes in antenna capacitance, it is a good plan to make the loading coil (or helix) rather larger than calculated, so I shall describe construction of a 5.2 mH coil.

A study of practical coils constructed by our overseas colleagues (and here, see Reference 3) makes fascinating reading. Some specimens, using edge-wound copper strip, or large diameter Litz wire, are truly legendary. Big is good. And bigger is better. Just where do we draw the line?

Let me try an example. The 5.2 mH tapped coil shown in Photo 1 is wound upon a 350 mm length of ordinary 160 mm diameter UVPC pipe. Measured Q at 137 kHz is 280 - pretty much as expected. Its RF resistance at 137 kHz is therefore about 16 ohms.

Assuming an optimistic radiation resistance of 0.05 ohm, and an earth ground resistance of 10 ohms (0.05 + 16 + 10 ohms, all effectively in series - see Reference 2), 100 W of input power should produce an antenna current of about 1.96 A (192 mW radiated power). Now, if a second coil of larger dimensions and thicker wire with a Q of 560 (0.05

+ 8 + 10 ohms) were substituted, then current should rise to 2.35 A (276 mW radiated), where, for the same input power level, the radiated signal would increase by about 1.6 dB.

Coil

My aim in this instance was to make an acceptably efficient coil of reasonable dimensions using readily available materials and tools. 160 mm white UVPC storm water pipe is quite good electrically, easily machinable, and obtainable in short lengths from Bunnings. 1 mm ecw is a common wire size used by transformer makers, armature winders and other electrical trades. And ordinary round 1 mm wire is easily 'workable', so that tapping points may be readily made during the winding process.

The oft quoted, and quite accurate Wheeler's (metricated) formula for finding the inductance of a single-layer solenoid coil is:

$L = (d^2 \times n^2) / (4572d + 1016l)$ (Reference 4, pA3)
 where L is in uH, d = diameter in mm, n = number of turns, and l = coil winding length in mm.

My coil has 272 turns, winding length 287 mm, 160 mm diameter.

Substituting: $L = (160^2 \times 272^2) / [(457.2 \times 160) + (1016 \times 287)] = 5192 \mu\text{H}$, rounded to 5.2 mH.

The measured inductance at 1, 137 and 250 kHz agree very closely with this result.

Method

A suggested way of winding the coil is pictured in Photo 2. The wire spool is supported upon a wood frame with a length of round timber (e.g. part of an old broom handle) passed through the spool's centre. The frame is clamped upon the 'work-mate' saw bench with two G clamps (not visible, behind the bracing panel of the frame).

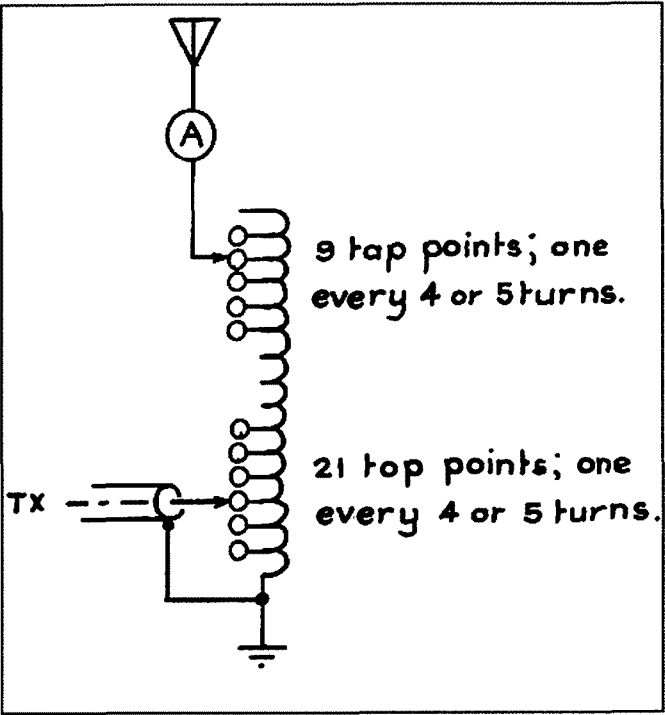


Fig. 2: A suggested configuration for using the loading/tuning coil.

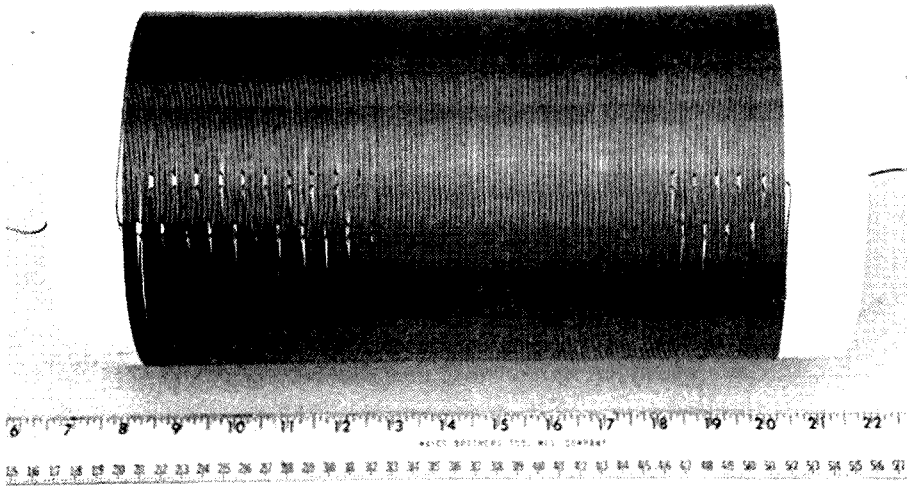


Photo 1: The completed loading/tuning coil for 137 kHz.

To prevent damage to the winding, two strips of carpet should be fixed upon the bench leaves with masking tape, as shown. The coil former may now be placed upon the leaves, and the coil wound on, as depicted in Photo 2.

The length of wire required in metres may be estimated by $(\pi \times d \times n) / 1000$ which substitutes to $(3.142 \times 160 \times 272) / 1000 = 136.7$ m, which is then rounded up to 140 m to allow for tails, taps and errors. Self fluxing ecw should be used if available.

Taps are formed by carefully pressing the wire into the 6.5 mm holes, stagger spaced 5 mm, pre-drilled in the former, as shown in Figure 1 (the drawing is a guide only, actual dimensions are not critical - add extra taps if required). A useful tool, or awl, for the job may be made from an old screw-driver. A smooth U-shaped notch should be filed in the blade so that the wire is formed into a loop as the awl is pushed into the hole with just sufficient travel to form a solderable tap, as shown in Figure 1 and Photo 3.

One handy benefit of making internal

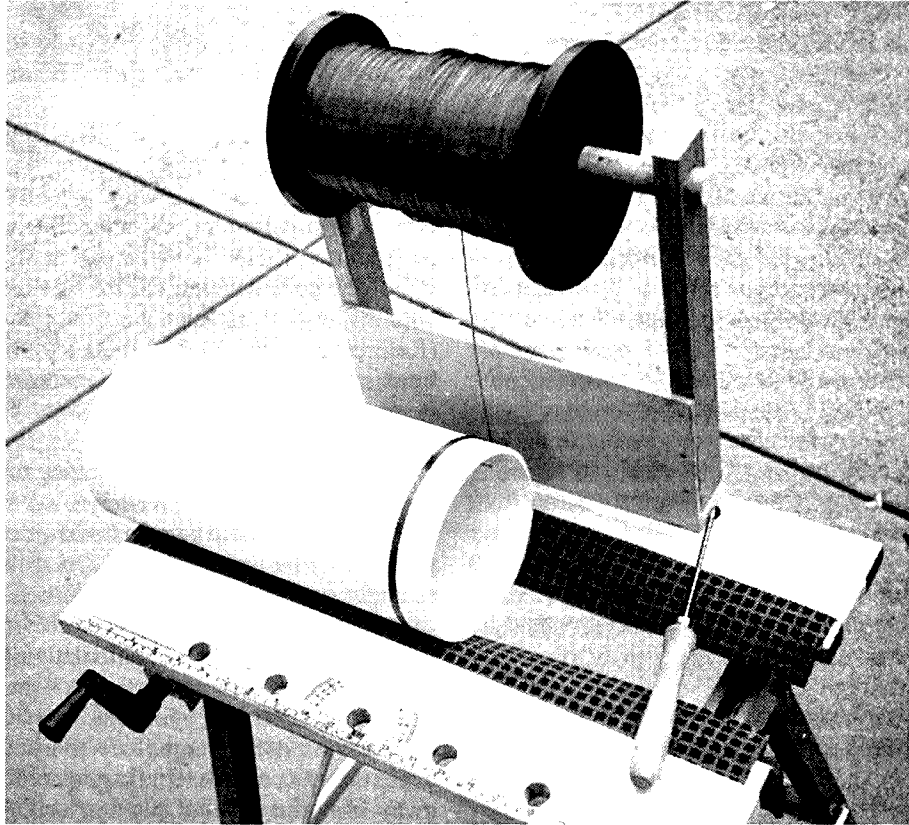


Photo 2: The set up for coil winding.

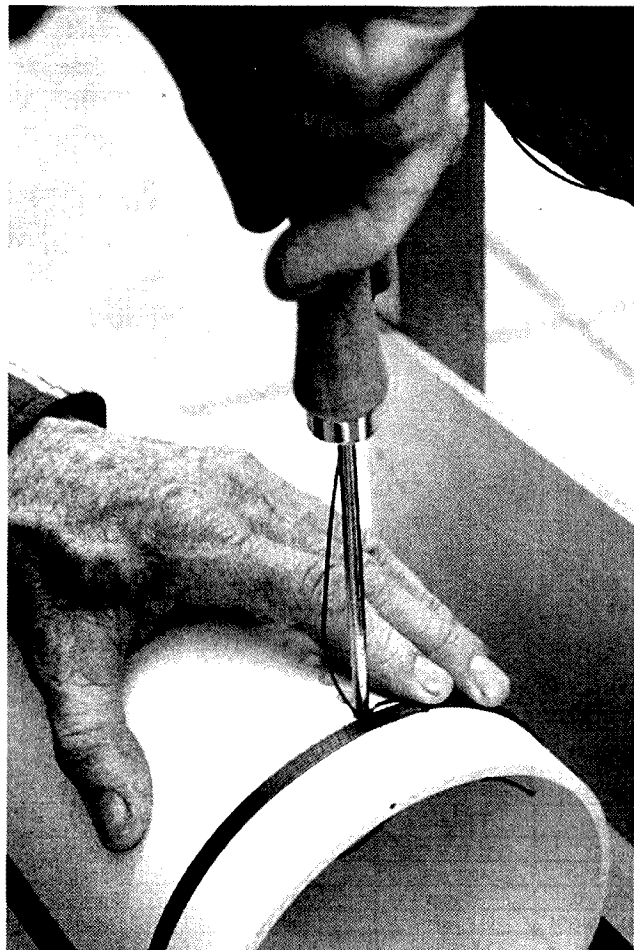


Photo 3: Forming a coil tap.

tapping points in this manner is that the coil is prevented from unspooling at each tap, so the worker can take a break at regular intervals, as needed (except, of course, for

the 'long haul' in the middle section of the coil).

Operation

A suggested configuration is shown in Figure 2. It would be prudent to initially adjust the coil inductance for resonance, and find the 50 ohm connection point

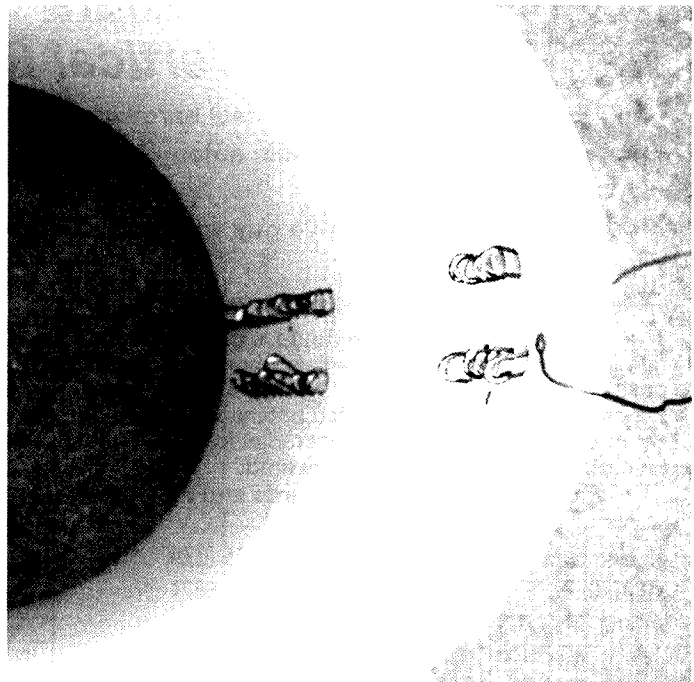


Photo 4: A view inside the coil former showing the coil taps.

using a small-signal test set-up. For example, the RF resistance bridge of Reference 6 works well at 137 kHz, as no doubt other patterns do too.

When the coil inductance and the antenna capacitance are resonated, and matched into a 50 ohm signal source, a (perhaps surprisingly) high RF potential is obtained at the top of the coil, even when energizing the antenna with a few milliwatts. So an initial adjustment may be done using a signal generator (that covers 137 kHz), and an oscilloscope.

Using a suitable length of coax cable, connect the generator's output to the coil in lieu of the TX, as shown in Figure 2, initially about one quarter way up from the bottom.

Now position the oscilloscope's X10 probe tip near the top of the coil (loosely capacitively coupled, but not physically connected). Sweep the generator's frequency through 137 kHz, altering the antenna connection near the top end of the coil, and the coax connection near the bottom, so that the amplitude displayed on the oscilloscope peaks at about 137 kHz.

At the milliwatt power level, we can put our hands inside the coil and alter the connections with no risk of burning fingers! These two adjustments interact, so some

juggling may be required.

If found necessary, the coil may be inverted to provide more tapping points at the top of the coil.

When doing these adjustments, we soon realise that the high potential end of the coil (and hence the whole antenna) is very sensitive to stray capacity effects, such as one's hand anywhere near the top of the coil, which confirms that the antenna insulators must be first class (References 7 and 8), and there should be a minimum of dielectric material (example tree limbs) in the vicinity of the antenna wire.

Having thus found an initial setting for the taps (and that we have approval to use the new LF band), some transmitter power may be cautiously applied. It is strongly suggested that an RF ammeter of appropriate sensitivity be connected in the antenna lead as an aid to final tuning and matching - "its amps up the stick that does the trick".

Always cut carrier before making adjustments, and keep fingers well away from the coil and antenna lead. A fluorescent tube or neon lamp should be permanently installed near the 'hot' end of the coil, whose glow will warn people to keep clear.

References and Further Reading

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*James Clerk Maxwell stated in 1865 that any change in the electric flux in any region is equivalent to an electric current in that region, and he called this a displacement current, to distinguish it from a conventional conduction current. This displacement current produces a magnetic field exactly as if it had been produced by a conduction current (Reference: Electrical Technology; E Hughes, 4th edition, p 171. See also: The Man Who Changed Everything - The Life of James Clerk Maxwell; B Mahon, published by Wiley, pp 106, 125-6, 178).

Photos: Andrew Diamond

ar

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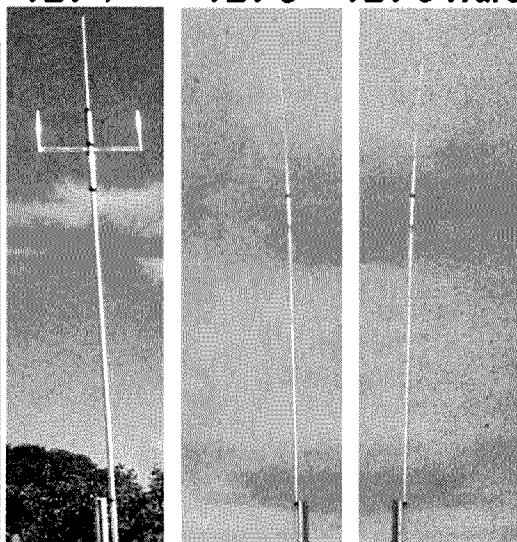
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New Tet-Emtron Vertical Range

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

Antenna Tuners

– How we Tested

John Morrissey VK3ZRX

In the March 2008 issue of AR, I described my impressions of the Palstar AT1KP antenna tuning unit (ATU), and how I found the tuner to be a useful addition to the ham shack.

However apart from a brief mention of a test where I proved the ATU could match a known 'nasty' load, I did not discuss the range of objective testing done on the tuner, or the equipment used to do the testing. Yet another aspect was – how could I be confident that my test equipment itself was not telling me fibs?

In this article I will discuss the tests done on this tuner (and on others), the test setups and equipment used, and how I verified the test equipment itself.

The objective testing covered three main areas. These were:

- the ability of the tuner to match a variety of known (complex) loads
- the ability of the tuner to match a particularly 'nasty' load
- the efficiency of the tuner when matching the 'nasty' load.

Loads, impedance transformation, and all that

Creating the known loads was a bit of a challenge. It is pretty simple to make up a few known resistive loads, covering up to (say) a few hundred ohms and hence with known VSWR when fed from a 50 ohm source. However antennas are not noted for being cooperative by offering a pure resistance to the feed line! Hence, I also needed some known

reactive loads, and in turn this meant I would need a different set of component values for each band I wished to test (assuming, of course, that I wished to use a similar value of reactance on each band). By this stage, the requirement for a reasonable range of test loads, across a representative range of frequencies, was looking impracticable simply due to the number of loads required.

However, there is another way, by using impedance transformation. It is well known that a quarter wave section of transmission line can be used to match one impedance to another, as shown in Figure 1. The formula used to calculate the impedance of the required matching section is in every ARRL Handbook and will not be repeated here.

By rearranging this formula a little, we can calculate the impedance transformation by a quarter wave section of 50 ohm line:

$$Z_{IN} = \frac{Z_0^2}{Z_L}$$

or alternatively

$$\frac{Z_{IN}}{Z_0} = \frac{Z_0}{Z_L}$$

where:

Z₀ is the line impedance (50 ohms)

Z_L is the load impedance

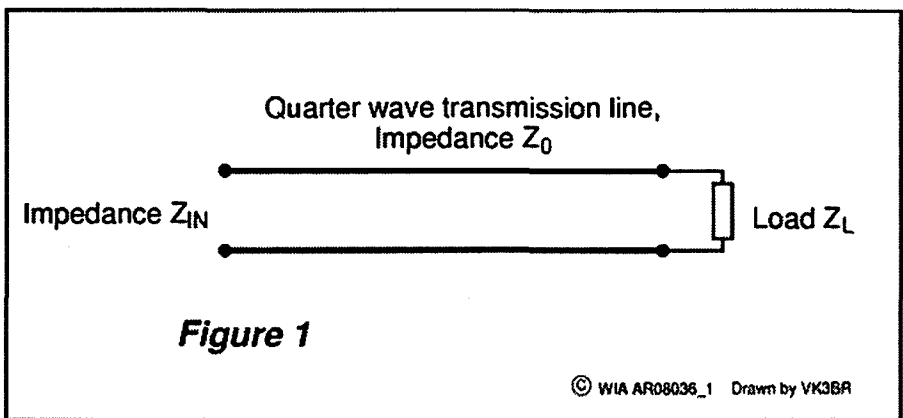


Figure 1: A quarter wave transmission line.

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23 cm 36 ele slot fed yagi all brass	\$249
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40–80 metre vertical NEW	\$330
10/11 beams comp opt 5 ele	\$399
10/11 5/8 vert 4 rad 1/4 wave	\$224
Tri band HB 35 C 10/15/20 m	\$844
3 ele 20 m beam, 4.8 m boom	\$514
3 ele 20 m medium duty boom	\$409
Log periodic 7 ele 13-30, 6, 5 m boom	\$813
NEW 160 m Vertical SUBURBAN	\$355
M B Vert auto switch 10/80 m	\$345
40 m linear loaded 2 ele 6.4 boom	\$574
5 ele 20 mtr beam 40 foot boom	\$995
6 m 8 ele 12 dBd gain	\$408
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Z_{IN} is the impedance at the input to the quarter wave section.

The second version tells us something very useful: *the ratio of the load impedance to the line impedance at one end of the quarter wave line, is the same as the ratio of the line impedance to the transformed impedance at the other. That is, the VSWR is the same at one end as at the other, but the impedance is different.*

To take a specific example: suppose the load is 200 ohms, giving us a VSWR of 4:1 (equals $200 \div 50$). Through a quarter wave 50 ohm line, this will transform to an impedance of 12.5 ohms – still with a VSWR of 4:1 (equals $50 \div 12.5$). Hence, using a quarter wave section, we can easily transform a test impedance to another value with the same VSWR, therefore doubling the range of load impedances we can test. Can we extend this to other values again? Yes, we can.

Of course, other line lengths will transform the impedance at one end of the line to a different value at the other. In general this will be complex (that is, both resistive and reactive) – transformation from one resistive load to another with a quarter wave line is a special case of the more general impedance transformation with an arbitrary length line. However computation of the transformed impedance for anything other than a multiple of a quarter wave

line section involves use of some heavy-duty maths or use of a Smith chart, which is a useful graphical tool to solve various transmission line problems.

For those who want to go the mathematical route, the “Transmission Line Equation” is included in the ARRL Antenna Handbook; however using it requires manipulation of complex numbers and is best done using a computer. Microsoft Excel (with the Analysis Toolpak add-in enabled) is suitable, if a little clumsy. Use of a Smith chart is also explained in the ARRL Antenna Handbook.

Incidentally, complex impedance transformation, using transmission lines of specific length and impedance to obtain the transformation required, is often used in commercial VHF and UHF power amplifiers, especially in older generation solid-state rigs.

So, where have we got to? We have found that given a known load (say 200 ohms) with a known SWR (4:1 in this case) we can transform this to a range of other impedances of the same VSWR using various lengths of transmission line. The transformed impedances can include purely resistive and also complex (combination of resistive and reactive) loads.

In practice, I have known resistive loads of 200, 300 and 400 ohms, allowing testing up to a VSWR of 8:1. I also have

a selection of known transmission lines which I can use to transform these to other impedances. The next question is, how do I know the length, and hence the impedance transformation, of these lines?

Line length measurement

An obvious way to cut a cable to length is to calculate the required length from wavelength and the cable velocity factor, measure, and chop.

However this is not very accurate; although the cable impedance is usually held to within a reasonably close tolerance of 50 ohms (or whatever the nominal cable impedance may be), the velocity factor (that is, the ratio of the propagation velocity in the cable compared to free space) can vary quite significantly. Instead, we need to be able to cut the cable to a given electrical length, so that the velocity factor does not need to be known.

The easiest way to cut a length of transmission line to an accurate electrical length is to use an antenna analyser. I use a slightly different method; however it is based on the same principles, so it is worth having a look at how an antenna analyser works and how it can be used to cut cables to a given length.

The block diagram of a typical antenna analyser is shown in Figure 2. Not much to it, really. What we have is a signal source of some sort (for example, an oscillator) which supplies a RF signal to a circuit I have called the coupler. The coupler in turn feeds the test terminals of the analyser, where you connect the antenna or whatever load you wish to analyse.

The coupler also has some other outputs, which depend in detail on the design of the coupler. These are used to sense things such as the RF input level to the coupler, maybe the VSWR, and other data. These signals pass to the detectors (which may be part of the coupler assembly) and then the outputs of the detectors pass to the processor where some maths is applied to calculate the information displayed on the screen of the analyser.

For an excellent description of how an antenna analyser works in more detail, I refer you to the articles by Jim Tregellas VK5JST.

It will be evident that the coupler is a

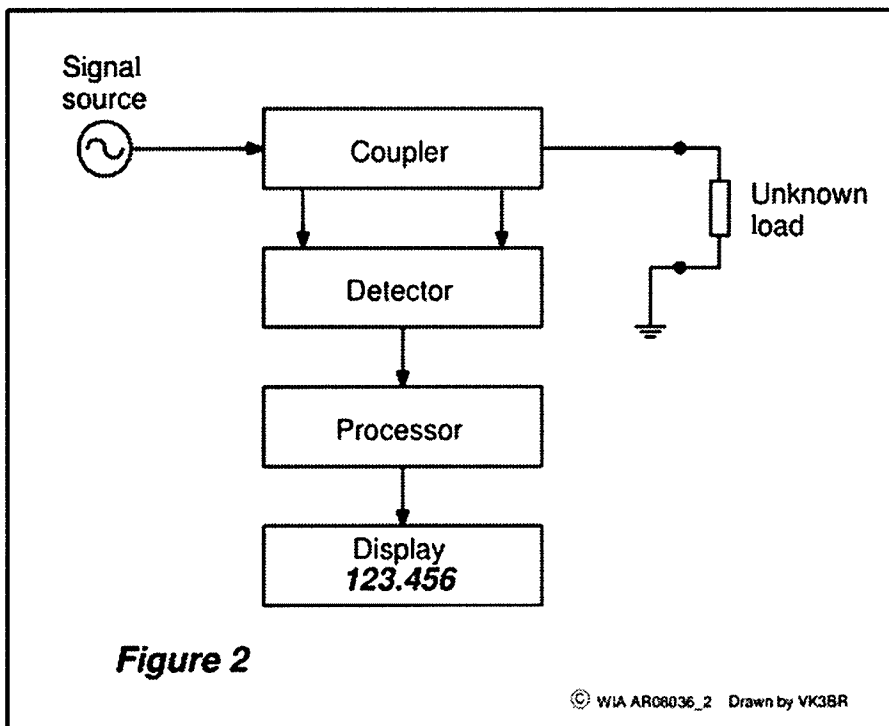


Figure 2

© WIA AR68036_2 Drawn by VK3BR

Figure 2: The block diagram of a typical antenna analyser.

key component of the analyser, and the performance of the whole analyser is pretty much dependant on the coupler. Various designs can be used, such as variants of a Wheatstone bridge like a directional bridge or return loss bridge, or a directional coupler. More information on these various forms of coupler is available from a variety of sources.

To use the analyser to cut a cable to a quarter wavelength is simple. With the test terminal open circuit, note the analyser reading (resistance and reactance) at the frequency of interest – the reactance should be zero. Attach the cable to the analyser and trim the length until you again have the same reactance reading.

The principle used here is that a true quarter wave stub, open circuit at the far end, presents a low impedance at the near end with zero reactance. (Theoretically, the impedance is zero, however cable losses result in a small value). This is probably the most accurate way to cut a stub; using a dip meter can introduce some inaccuracy due to the inductance of the coupling loop.

In my case, I do not have an antenna analyser, but I do have its big brother, a Hewlett Packard 8405A Vector Voltmeter (Photo 1). As a matter of interest, the 8405A dates back over 40 years, and is the grandfather of the various HP vector network analysers (VNAs), with the first being the 8410A in 1968. The

VNAs launched an RF engineering revolution in the 1970s which really took off when the VNA was combined with substantial computing power in the 8510A, removing much of the drudgery of RF measurements and opening up a whole new vista for RF designers and developers. The revolution continues to this day. However, we digress.

The 8405A enables RF level measurements on two channels, and most importantly can measure the phase angle difference between the two channels – hence its name of Vector Voltmeter. From the level and phase angle measurements using various couplers to the circuit under test, many circuit and transmission line parameters can be calculated. The means to do this is outside the scope of this article; the commercially available antenna analysers usually adopt a simplified method of measurement and calculation.

For a signal source, I use a Wavetek 3001 signal generator, and I use various forms of coupler depending on the application. For this measurement I used a calibrated homebrew HF directional coupler, shown in Photo 2. Calibrated?! How????

It turns out that a coupler can be fully error corrected with three correction terms, which (unfortunately) are complex numbers. The means of determining and applying the corrections is again outside the scope of this article; it suffices that full error correction is possible, and the

same technique can also be used for antenna analysers provided the sign (positive or negative) of the reactance reading can be determined.

All that is required is to take a measurement with an open circuit termination, a short circuit termination, and a known good (very low SWR) 50 ohm termination, and then crunch the maths. Incidentally, unless the error vectors (which require both magnitude and phase) are known, this error correction is not possible. This requirement rules out, for example, using error correction for a typical VSWR meter, which only provides scalar readings – measurement of magnitude without the vital phase measurement. Oh, well.

With the vector voltmeter and with the error-corrected directional coupler, I can be confident that the measurements I make on transmission lines are, in fact, reasonably accurate.

The nasty load.....

One possible use of an ATU is to tune a short whip. This might be needed for a field day, for example. So, could the test ATU tune a short whip without arcing over or other distress, at a reasonable power level (say 100 watts)?

First, I needed a reproducible model of a whip. I decided that a 2.7 m (9 ft) whip would be a good example to use. But what is the base impedance of a 2.7 m whip on, say, the 80 metre band (3.6

MHz)?

Searching the ARRL Antenna Handbook, chapter 16 turned up a couple of different ways to calculate the base impedance of a short vertical monopole, which is of course what the whip is. Fortunately the different methods gave close to the same answer; about 0.4 ohms in series with about 22 pF. (Now you know why a short whip is so hard to match



Photo 1: The HP 8405A vector voltmeter.

on 80 metres, and why its efficiency is so low.....)

However the base impedance is not the whole story. In series with the base impedance are the various losses; mainly ground loss and leakage loss, plus the resistive loss of the antenna itself.

For our purposes I ignored leakage and resistive losses, and assumed a value of about 1.8 ohms for ground losses – probably very optimistic, but bringing the total load impedance to 2.2 ohms – a convenient value given I had a number of 2.2 ohm power film resistors which I could connect in series parallel to give this value with low parasitic inductance and capacitance.

The reactance was a bit more tricky. This capacitor must withstand substantial RF current (about seven amps to give 100 watts into two ohms) and also a high RF voltage. No capacitor I had could withstand these conditions, so how to make one?

The answer was to make a capacitor out of a piece of Teflon insulated coax I had in the junk box. Measured on my RLC bridge, it had a value of 21.0 pF –

pretty good for our purposes.

Connected in series with the 2.2 ohm load, this made up my model of a short whip, so I could test the ATU under reproducible conditions. To measure the power delivered to the load, I could measure the RF voltage developed across the known resistive load of 2.2 ohms, which was connected at the ‘earthy’ end of the circuit. So – now we had our ‘nasty’ load. Next challenge – power measurement.

Power (although not for the people)

RF power measurement. Easy. Hook up your favourite power/SWR meter and take a reading. Right? Not really.

In fact accurate RF power measurement is quite difficult. Many cheaper RF wattmeters have no accuracy specification at all, with the better ones rated at 10%. Even the Bird type 43, widely accepted as in the ‘Rolls Royce’ category, is only rated to measure RF power within 5%. So what is so hard?

Consider some of the pitfalls:

- meters which measure RF voltage. Fine so long as the transmission line impedance at that point happens to be an accurate 50 ohms, non reactive. Anything else, and the meter could read almost anything.
- meters based on directional couplers. What is the performance of the coupler? Its coupling factor? Its directivity?
- meters based on power absorption. How good a match is the load, that is, how much of the incident power is simply reflected? If it is a thermal meter, how much power is absorbed in parts of the meter where it is not measured?
- meters using attenuators. What is the performance and accuracy of the attenuator?
- what is the linearity of the detector? If a diode, has the ‘turn-on’ voltage been allowed for?
- even given all the above, how well has the meter itself been calibrated? And against what?

• and so on.

For a more detailed discussion of the complexities and pitfalls involved, refer to the excellent Hewlett Packard application notes on the topic, which are easily found on the Net.

For getting an idea of the efficiency of the antenna tuners, I used a combination of techniques. For convenience, I used a simple directional-coupler based Revex power meter to measure the input power to the tuner.

This has previously been checked against my calibrated directional coupler and a HP 432A

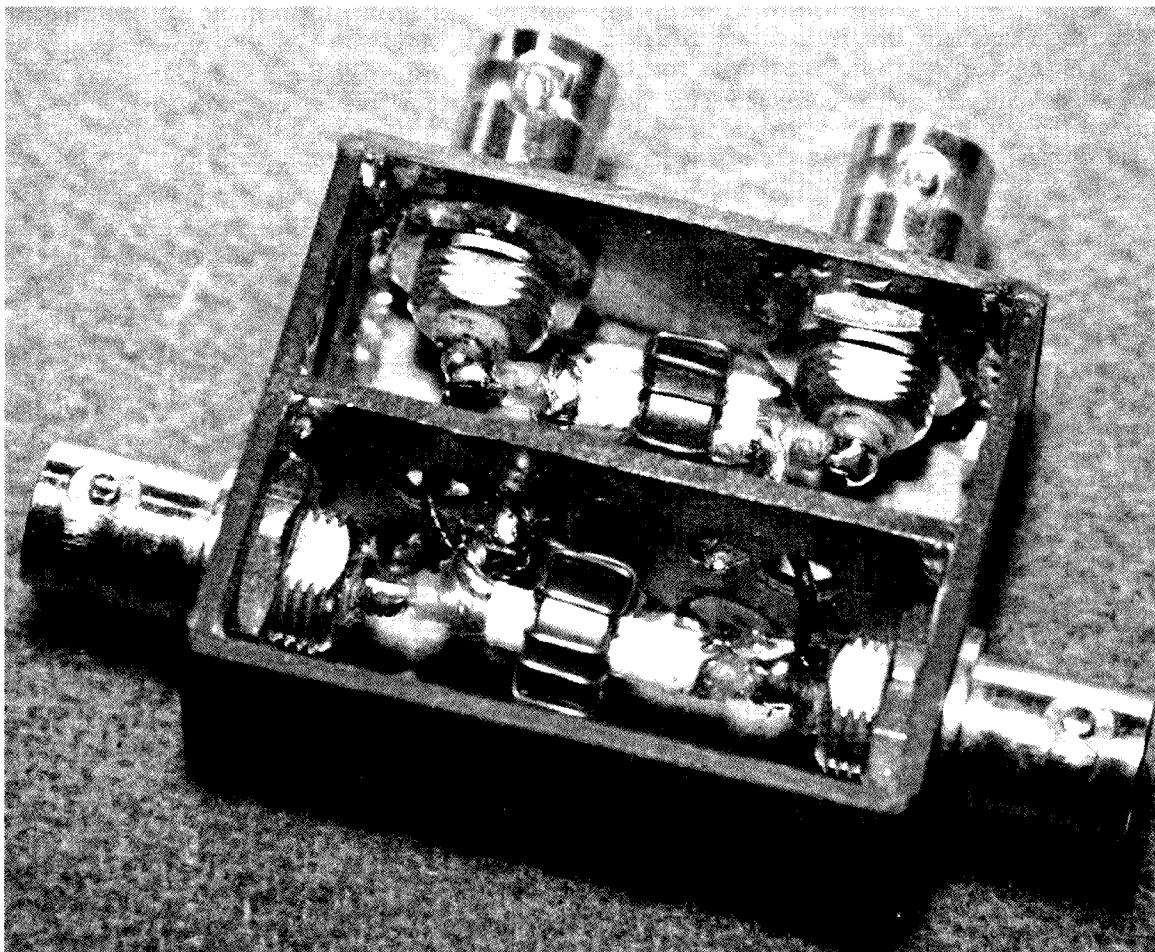


Photo 2: A calibrated homebrew HF directional coupler.

power meter, and provided adequate resolution for the task. In turn, the 432A had been checked against a Siemens thermal microwave power meter which (unlike the HP meters) can be calibrated at DC. Finally, my DC meter is checked against a much more accurate HP DVM which is NATA certified, so I have reasonable confidence that the power measurement calibrations are as close as I can make them.

For measuring the output power from the ATU, a normal RF power meter could not be used as the impedance is not 50 ohms. Instead I used a HP 410C voltmeter, which has a unique AC probe with rated performance up to several hundred MHz.

Again the calibration of this meter is traceable, and together with the known resistance of the load, constituted a good basis for power measurements using the RF voltage developed across the load. Some of the instruments involved in all of this are shown in Photo 3.

Finally, I did not try to do an absolute measure of the efficiency of the tuner. This would involve trying to find a

small difference (the losses) between two large values (the input and output powers), and is particularly prone to error. Instead, I measured the power output from a known reasonable ATU, and compared this (for the same input power) with the power output from the ATU under test. As noted in the article, the test ATU had significantly lower losses – sufficient to demonstrate it had acceptable efficiency.

Conclusion

In this article we have really covered quite a lot of ground, although not in great detail. Consider what we have looked at:

- transformation of impedances, using firstly a quarter wave line;
- how a 50 ohm quarter wave line can be used to transform a load with a known VSWR, to another impedance with the same VSWR;
- how this also applies to an arbitrary length line;
- error correction for things like directional couplers;

- methods to accurately cut a transmission line to a particular electrical length;
- a quick look at the feedpoint impedance of a short vertical whip;
- how RF power measurement is full of traps for the unwary if any sort of accuracy is required;

and finally

- we also looked at some issues of calibration.

And all because we wanted to investigate the performance of an antenna tuner!

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Tregellas, Jim (VK5JST): An experimental HF aerial analyser, AR May 2005 p5

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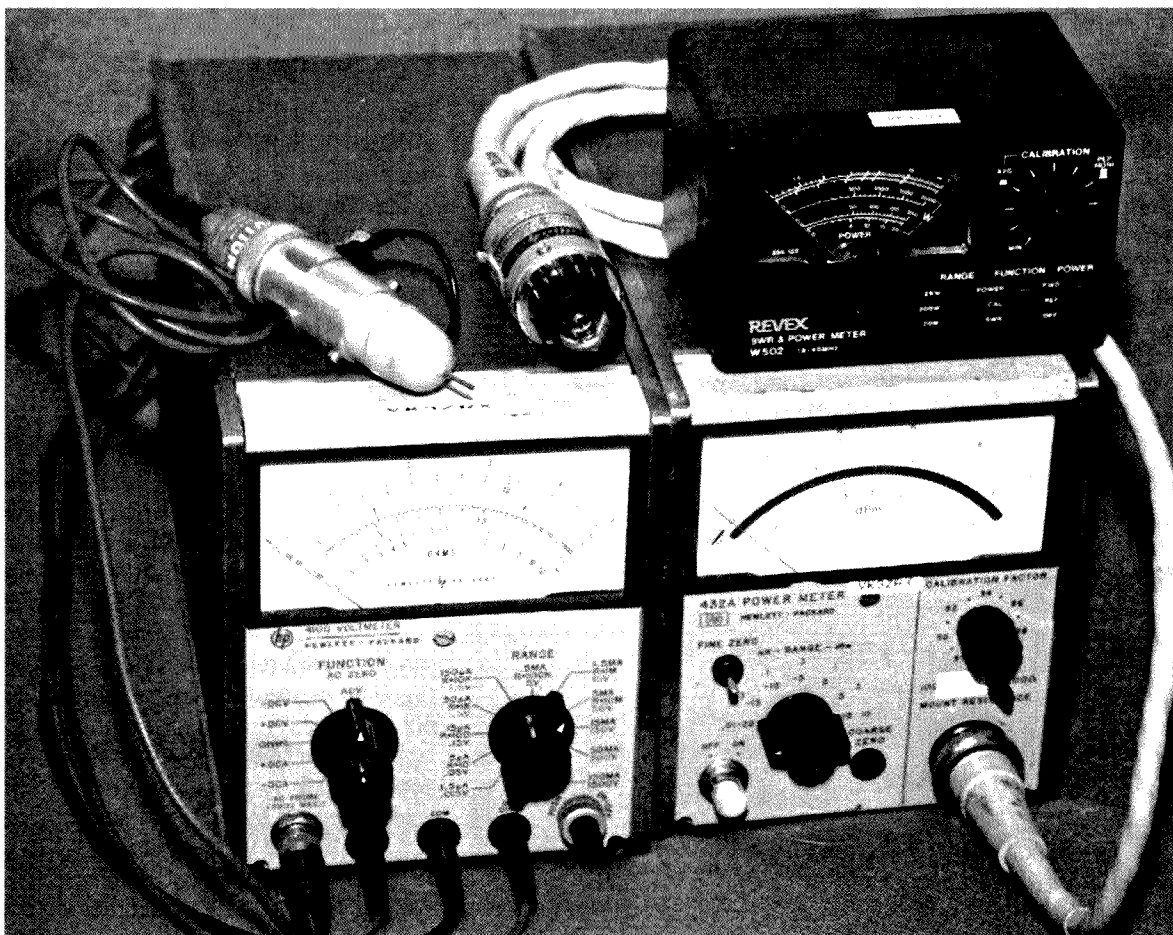


Photo 3: The collection of 'other' instruments used in the preparation of the article.

A DC-DC converter

Dale Hughes VK1DSH

The need for this device came about due to battery problems during various field day campaigns; the radios worked much better when the supply voltage was higher than 13 V. During the course of an event, the battery voltage decreased and radio performance deteriorated. It became apparent that a stable supply voltage is critical for optimum operation of the radio equipment. It seemed that using a higher supply voltage and a suitable regulator would solve the problem and this design is the outcome of that idea.

The converter operates over an input voltage range of 20 to 30 V and delivers a stable 13.2 V output at a current of up to 20 A. The design uses a combination of switching and linear techniques to provide low RF noise operation with acceptable efficiency. The design is flexible and can be tailored to suit a range of output current capacities; and potentially, output voltages. The measured efficiency at 11 A load current is approximately 70 %. Photo 1 shows the completed converter.

The design is based upon a circuit idea shown in the data sheets of the Linear Technology LT1084CP-12 regulator (Reference 1) which is a fixed 12 V output regulator. (Note: a variable output voltage version also exists – the LT1084CP) The design described in this article uses an enhancement-mode FET for the switching pre-regulator, rather than a bipolar transistor as shown in the Linear Technology application note.

Circuit description

Battery voltage is applied to the unit via RF filtering, reverse polarity and

overload protection components C1, D1 and F1. So that reasonable conversion efficiency might be achieved, the input supply is passed through a switching pre-regulator. Transistor Q1 is switched on or off depending on the voltage across the low dropout regulators (U3 through U5). The on-off switching occurs at a frequency of several kilohertz, depending on load current and supply voltage. When Q1 is switched on, the current flows into the reservoir capacitor C5 via L1 and the stored energy feeds the linear regulators. Minimal power is lost in the pre-regulator as Q1 operates as a switch and it dissipates very little power. The main loss in this part of the circuit appears to be resistive losses in L1 due to the high peak currents.

The voltage across the linear regulators is sensed by an opto-coupler (U2). When the voltage exceeds approximately 2 V, the opto-coupler output transistor turns on, which then turns Q1 off by removing the gate-source bias. The rapid on-off switching results in a relatively constant voltage across the linear regulators, just above their dropout voltage, so

that power dissipation in them is kept to a minimum. Note that the selected regulators have a dropout voltage of less than 2 V and the combined voltage drop of the opto-coupler emitter and diode D4 is approximately the same as the regulator dropout voltage. As Q1 is an enhancement-mode device, a suitable bias supply is required to turn the device on. This is supplied by a small DC-DC converter, the output of which is divided down to generate the required gate voltage. During start-up, power to the DC-DC converter is supplied by a 7812 voltage regulator and as soon as the 13.2 V output is available, power to the DC-DC converter is provided by the main regulated output via diode D7. Regulator U1 then dissipates very little power as it is not supplying any output current. Resistor R10 isolates regulator U1 from the input supply and acts as a current limit in case of fault conditions.

The LT1084CP-12 linear regulators are paralleled, and balanced current sharing is ensured by using a low value resistor in the output of each regulator. In the prototype, I used a short length of resistance wire, similar to that available at local suppliers such as Dick Smith Electronics. The wire was cut to the length that yielded a resistance of 0.01 ohm and three of these were used as R7, R8 and R9 by soldering the wire across a section of tag-strip. The input wires to the three regulators were also cut to equal lengths, so that the resistance in the supply path was the same for each regulator. If only a single regulator is used these precautions are not required.

As the output of the regulators is actually 12 V, the converter output was increased by raising the reference pin above zero volts by using a 1.2 V reference diode (VR2), so that the output voltage became 13.2 V. Higher output voltages may be achieved by inserting

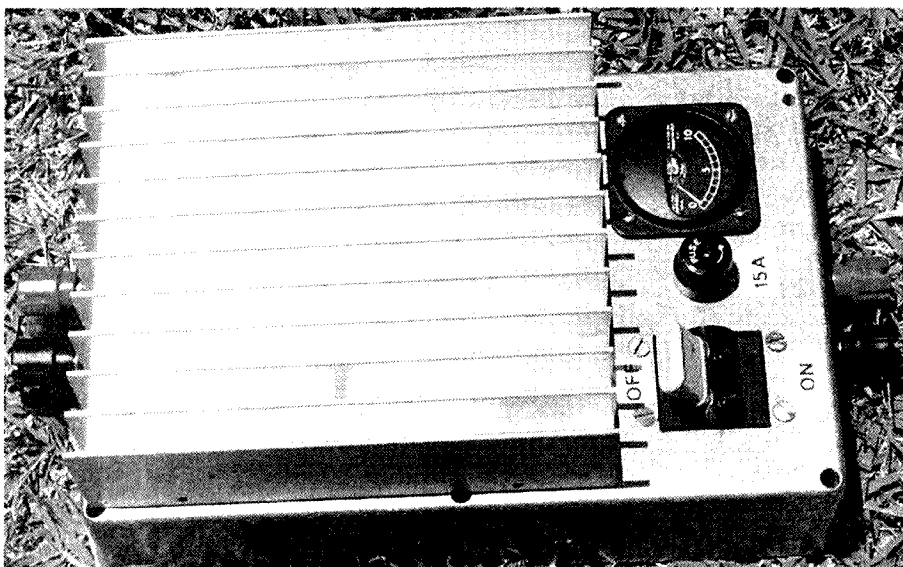


Photo 1: Completed converter

forward-biased diodes in series with the reference line, which will increase the output voltage in (approximately) 0.6 V steps (or the variable output version of the regulator could be used).

The LT1084CP-12 regulators used in this design include internal current limit resistors and protective diodes. No external protection diodes are required, unlike with other more common three-terminal regulators. Reference 1 gives more details on the use of these regulators.

Capacitors C6 and C7 ensure the regulators are stable and that RF does not get into the circuitry via the output. A 15 V Zener on the output provides some protection against transients. For minimum RF noise generation, capacitors C3 and C4 should be mounted as close as possible to Q1.

A convenient option for using the regulator in the field is a suppressed zero voltmeter. The circuit is a bridge which allows the meter to display voltages in the range of 20 to 30 V. One side of the meter is connected to a stable voltage provided by VR1, which is a 5.0 V reference device.

The other side of the meter takes an attenuated voltage sample from the input supply. The zero and span of the circuit can be adjusted so that the meter displays the desired range of voltages between 20 and 30 V. When the input voltage is less than 20 V, diode D2 will conduct and clamp the voltage across the meter to protect its movement from excessive negative excursion.

Conversion Efficiency

The conversion efficiency of the circuit was measured at a load current of 11 A over a range of input voltages. The output voltage did not deviate from 13.16 V over the range of input voltages and the maximum voltage drop from zero to maximum load was only 50 mV. Table 1, which shows the results of this test, also includes for comparison the maximum efficiency obtainable by using a linear regulator alone.

Components and construction

Many of the components can be changed to suit what the constructor has available. The switching FET (Q1) in this prototype unit is a BUZ12 device which is officially obsolete; however any device with

similar specifications would be suitable. The specifications for the BUZ12 are shown in Table 2. A suitable replacement would appear to be an IRF1405N device from Jaycar (catalogue number ZT-2468), although it has not been tried in this circuit.

Inductor L1 was made from four 27 mm diameter toroids stacked end on, then taped together to make a long toroid (visible at the top of Photo 2). Then 35 turns of 0.91 mm wire was wound in the conventional toroidal manner, i.e. through the central hole and over the outside of the core stack, to make an inductance of approximately 700 microhenries.

The toroids were recovered from unserviceable computer power supplies and have a yellow painted body with a single white face. A similar part appears to be available from Jaycar (catalogue number LF-1276) except that the wires wound on the core would have to be removed before it could be used in this application.

The capacitors at the input side of the circuitry should have a voltage rating of at least 40 V so that they can cope with transient high voltages that may appear on the input supply. Capacitors on the output side should have a rating of at least 16 V. Diodes D3 and D7 are TO-220 packages with two Schottky diodes in each package. They are available from Jaycar (catalogue number

ZR-1039). Polarity protection diode D1 is also available from Jaycar (catalogue number ZR-1024).

The DC-DC converter used in the prototype generated an output of 18 V and was recovered from junked equipment; but similar new devices are available from Farnell, Jaycar, etc. The main requirement is that its output supply is galvanically isolated from the input as the output has to be connected between the gate and source electrodes of Q1, which is sitting at approximately 15 V above earth. Different DC-DC

Input		Efficiency (%)	
Volts	Amps	Switched	Linear
20	10.3	70.1	65.7
21	10.1	68.0	62.6
22	9.7	67.6	59.7
23	9.4	66.8	57.1
24	9.1	66.1	54.8
25	8.8	65.6	52.6
26	8.5	65.3	50.5
27	8.2	65.2	48.7
28	8.0	64.4	46.9

Table 1: Test data Output = 13.6 V Load = 11 A

Maximum Device Ratings	
Drain – Source voltage	50 V
Continuous drain current	42 A
Pulsed drain current	168 A
Power dissipation	125 W

Table 2: Q1 - BUZ12 specifications

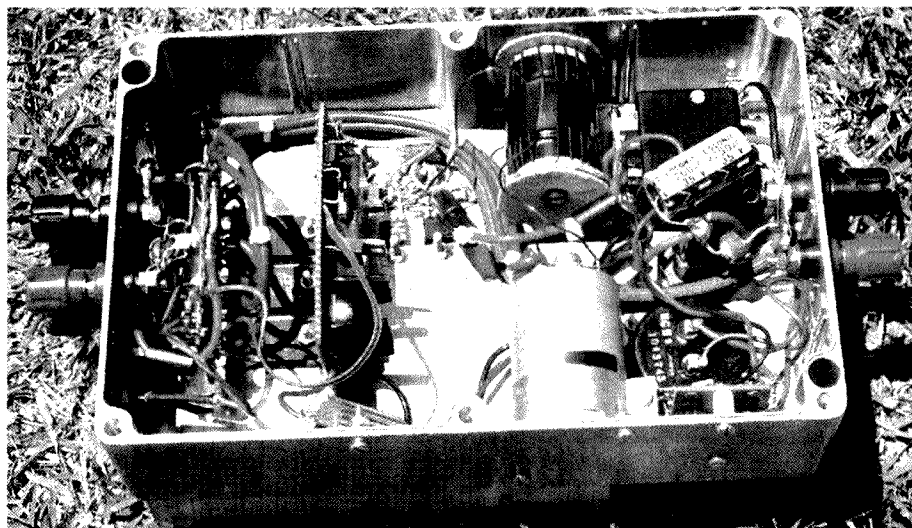


Photo 2: Internal view of converter

converters or FETs may require resistors R11 and R13 to be altered to suit the bias requirements of the switching transistor. The DC-DC converter does not need to supply much power so a small 1 W device will be more than adequate.

The LT1084CP-12 low dropout regulators are available from Farnell (catalog number 245938); however they are expensive if purchased from that supplier. The Australian agent for Linear Technology components is Soanar Pty Ltd, (Ph: 02 9432-7803); or the regulators can be purchased directly from Linear Technology using their on-line purchasing site at <http://www.linear.com/>

Alternatively, the variable version of the regulator (LT1084CP) could be used in place of the fixed regulators, so that a converter with variable output voltage could be built. WES Components <http://www.wescomponents.com/> can supply the LT1084CT device, which is the TO-220 version of the variable regulator.

Note that the number of regulators can be changed to meet the current capability required by the user. None of the other components are critical or difficult to

obtain and various substitutions should cause no difficulty.

The prototype unit was constructed in a die-cast box and a surplus heat-sink was screwed to the bottom of the box. Photos 1 and 2 show the general construction of the unit. The larger components were screwed directly to the inside of the box and the smaller components were mounted on Vero-board for convenience. The heavy lines shown on the schematic diagram (Figure 1) indicate that heavy-gauge connecting wire should be used and appropriate allowances for voltage drop and contact resistance should be made when the unit is constructed.

A number of ferrite beads (marked F.B. on the schematic) were used to further reduce any radio frequency emissions from the regulator circuitry. If suitable beads are not available, a few turns around a suitable toroidal core should suffice.

In use

The converter works very well, with no detectable RF emissions from HF through to UHF. Its ability to provide a stable, relatively high current while the input voltage varies is very useful

in a wide variety of applications. There are no critical construction issues and the design can be modified to suit available parts and requirements. With the components shown, the circuit will provide a continuous output current of 15 A with a peak current capability in excess of 20 A.

With the addition of an appropriate transformer and rectifier, the circuit could form the basis of a useful mains-powered high-current power supply. An alternative use for the unit could be as the source of power for 12 V equipment in vehicles with 24 V electrical systems.

Acknowledgement

Thanks to Bill Maxwell VK7MX for his helpful suggestions during the writing of this article.

References

1. Linear Technology LT1083/LT1084/LT1085 low dropout positive fixed regulator datasheets. See <http://www.linear.com/> for more details.

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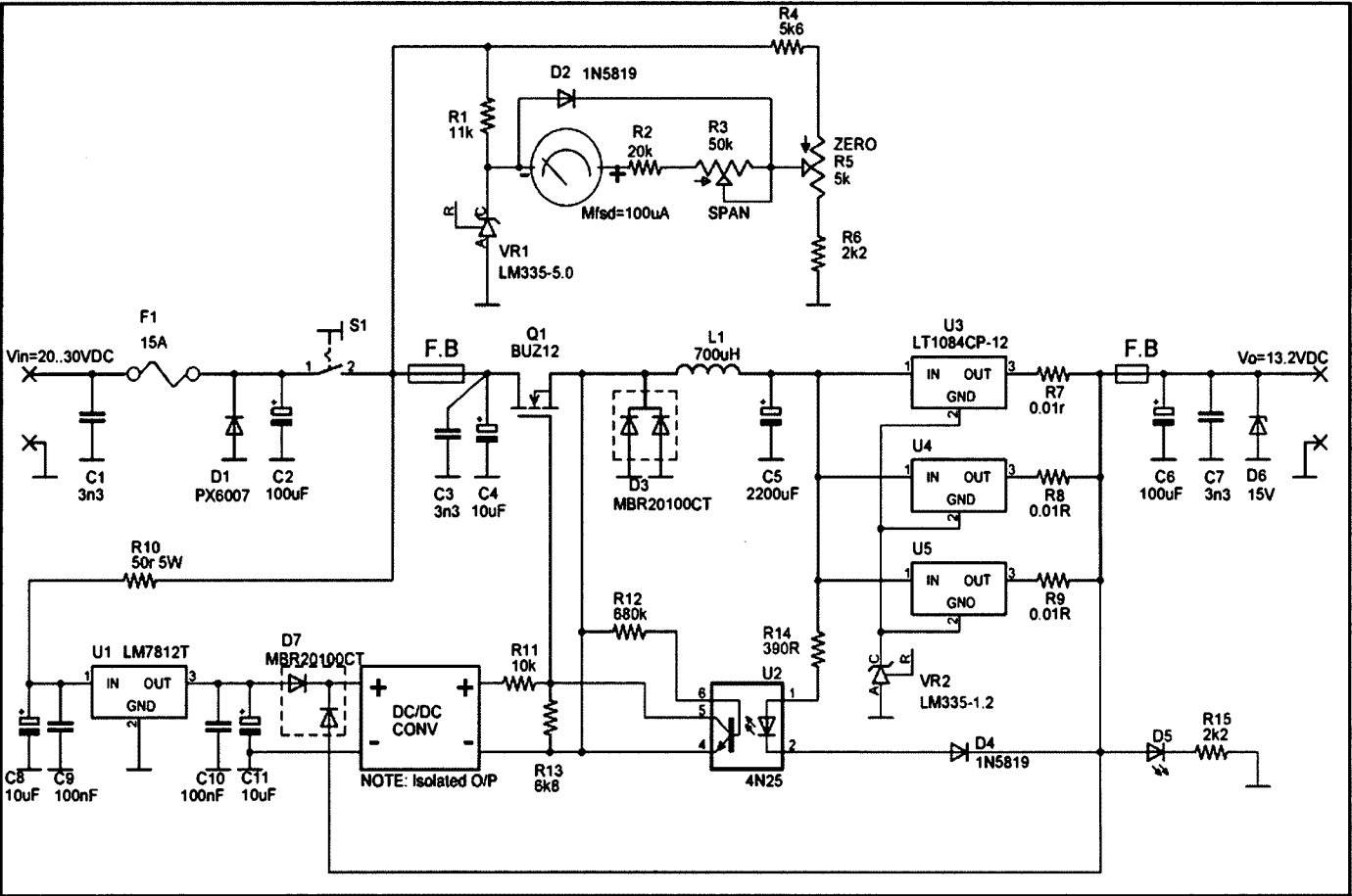


Figure 1: Converter circuit diagram

Wheelchairs are not barriers

Ian Gray VK2IGS Nominated Assessor

At the request of Fred Swainston, I took on the role of a Nominated Assessor, with all that entails. It was quite a surprise when my first task was not that of a remote assessment or of an assessor but it was to conduct a special assessment of a lass confined to a wheelchair by quadriplegia.

Our Club, Summerland Amateur Radio Club (SARC), was approached by Catherine Ryan earlier this year. Cathy has been a quadriplegic since birth. She had developed an interest in radio communications when assisting at the Ballina Communications and Rescue Centre at Light House Beach. Whilst there, the surf club captain happened to mention amateur radio to Cathy and she followed this suggestion through. Thus, earlier this year, Cathy came along to our club house and made herself known. The club members were intrigued by Cathy's ability to drive her car to the clubrooms, set up her wheelchair and wheel herself in to meet the members.

In discussion with Cathy, it was confirmed that she had been assisting at Ballina Communications and Rescue, and was, at some time, a member of Toastmasters where she met one of our club members, Duncan Raymont VK2DLR. Recently she has worked as a part time receptionist at a local law firm and would like work in radio communications.

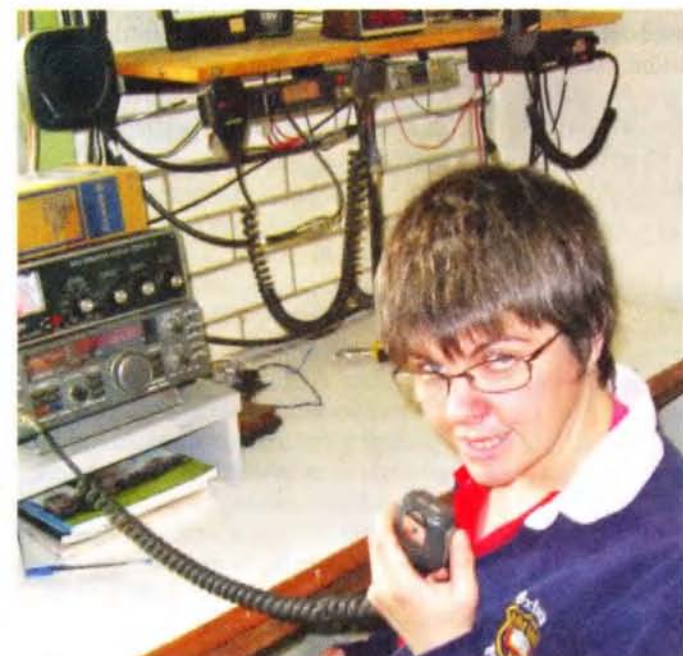


Photo 1: Cathy VK2FCRW operating the Summerland ARC Kenwood TS-680S



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Cathy presented me with a medical certificate relating to her physical difficulties and this was forwarded to the WIA with a request for permission to conduct a special assessment. This permission was forthcoming. Luckily, I had, sometime last year, been the other end of a telephone remote special assessment conducted by Ron Bertrand VK2DQ, for one of our local club members. This was when I was an Assessor, and not a Nominated Assessor. Nevertheless, I contacted Ron and he passed on some valuable tips as to how I could approach Cathy's assessment. I then asked Duncan Raymont VK2DLR, one of our club Assessors, if he would assist in the assessment, to which he readily agreed.

SARC conducts weekend training courses for the Foundation licence every two months, on the even numbered months, with the theory and practical assessment training on the Saturday and the exam and practical assessment on the Sunday. Accordingly, Cathy attended one of our courses. As Cathy's case was going to be a departure from the norm, I decided to set aside an evening for the theory and practical assessments.

On the evening set aside, Cathy passed both her theory and practical assessments to the satisfaction of myself and Duncan. The paperwork was filled in except that Cathy did not, at that stage, apply for an operator's licence. This was done a few weeks later. Cathy applied for and gained the callsign VK2FCRW. Jokingly, she refers to the 'CRW' as 'Catherine Ryan Wheelie'.

In follow up discussions with Cathy, she has said that becoming an amateur will help her overcome some shyness and some minor speech difficulties. She also felt very



Photo 2: Cathy VK2FCRW and Ian VK2IGS

nervous when making her first contact. My comment was, "Didn't we all!"

Cathy has set herself some impressive goals. Among them, she would like to gain useful employment in radio communications and she also lists buying her first dual band VHF/UHF transceiver, buying an HF set, passing her Standard licence and becoming a learning facilitator. I have no doubt that over a period of time Cathy will tackle these goals with the same determination that won her a Foundation licence.

Cathy has gained the friendship of all club members, who are impressed by her determination to overcome her physical challenges, but what gives me a

big buzz is to hear Cathy VK2FCRW on air chatting away to other club members using her two metre HT over one of the club repeaters.

I wrote this article because I consider that amateur radio is not just for the physically able but holds a great interest for people who have a physical challenge in their lives. As amateurs we should be encouraging this segment of society to enrich their lives via amateur radio.

As a final point, Cathy informed me the other day that she has a couple of visually challenged friends who are interested in getting their Foundation licence.

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Learn CW online

Stephan Forka VK5RZ

I found a very interesting report called Learn CW Online.

A website to learn and practice Morse telegraphy has been launched: Learn Morse Code Online: <http://lcwo.net/>

There are already hundreds of training programs, MP3/CD courses and practice aids available, but LCWO follows a radically different concept. While sticking to well-proven methods for learning and practice, all you need for

using LCWO is a web browser! This gives the user the liberty to practice CW wherever an internet connection is available, always retaining the personal settings, scores and statistics.

Currently the site, which is available in seven languages (Czech, English, French, German, Italian, Portuguese, Spanish) offers a complete Koch method Morse course, code group practice, callsign and plain text training modes

and also allows the conversion of random text to Morse MP3s.

A high score list is available to compare results with other users; personal statistics help to track training progress.

LCWO.net is a non-commercial project. Creating a free account only takes a few seconds, and you can start practicing CW right away!

The site is courtesy of Fabian Kurz DJ1YFK.

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Modified wood-working drills for sheet aluminium

Drew Diamond VK3XU

Adapting these standard wood-working bits to cut sheet aluminium not only saves you the cost of special, rarely used tools but strangely enough makes the bits work better at their original task.

The usual tool for making clean round holes in aluminium sheet is the hammer or bolt-operated socket punch (References 1 and 2). Sets of punches may be purchased from at least one overseas supplier, but their cost may not be justifiable for the constructor who only needs to make the occasional round hole in aluminium.

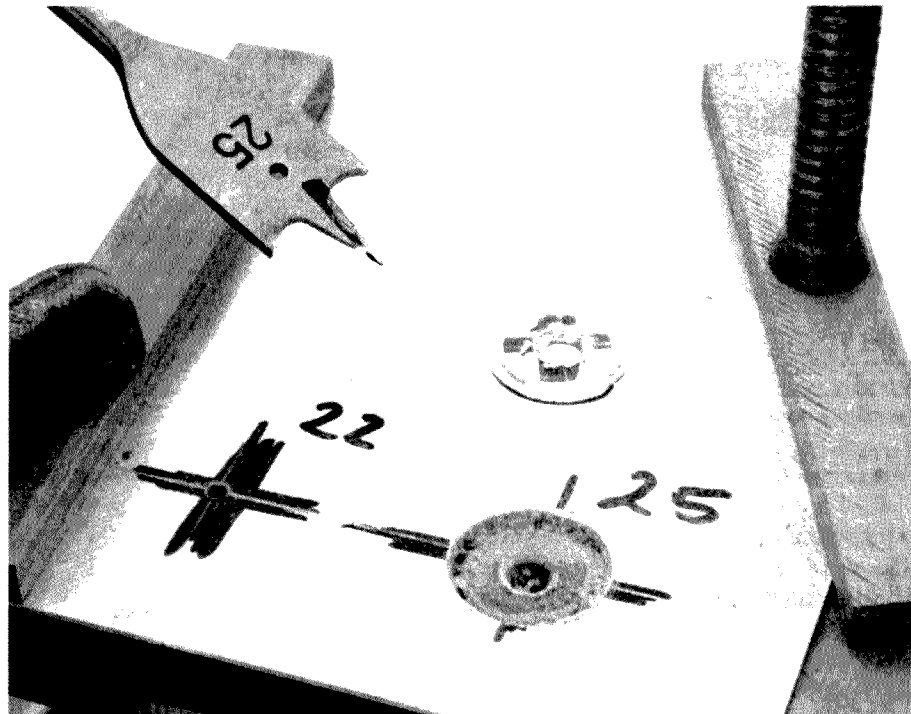
Fair results are obtainable with ordinary flat style 'Irwin'™ wood-drills, generic versions of which may be bought quite cheaply from tool suppliers in a range of imperial and metric sizes. For this purpose, these drills require the modification described below, and actually work rather better in wood or plastic afterwards.

Using an angle-grinder, carefully 'nibble' metal from between each of the outside cutting edges and the pilot point. To maintain balance, alternately remove only a small amount from each side until you have formed two new outer cutting edges, as can be seen in the Photo.

Ideally, the drill should be used in a bench-drill, with the job firmly clamped to the drill table, and backed with scrap wood. However, with care and practice, quite good holes may be produced with an ordinary (preferably variable-speed) electric hand-drill. Again, the job must be firmly G-clamped upon a sturdy work surface. Use a scrap of chip-board (or similar) as a backing to prevent damage to the bench.

Always wear safety specs when drilling. Make it such a habit that you feel naked without them.

First, with a twist drill, make a small pilot hole (about 3 mm) in the exact spot required, then follow through with the modified wood-drill. The resulting hole may be a tad larger than the nominal drill size so, drill a slightly smaller hole initially if the required diameter is



A hole made with the modified wood drill (and the waste).

Photo: Andrew Diamond

critical. Do not 'force' the pace - apply just a firm downward pressure. It should require about 5 or 10 seconds to break through the other side of 1.6 mm sheet. A hole thus made, and the waste, is pictured in the Photo.

Finally, clean up burrs and rough edges with (say) a second-cut file, and bring

the hole to the exact required size with a half-round file.

References and Further Reading

1. "Making Holes in Sheet-metal"; *Amateur Radio*, April 2001.

2. *Radio Communication Handbook*; RSGB, Ch. 26 in any recent edition.

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QSL

THE WIA IS THE CUSTODIAN OF SOME
800,000 QSL CARDS
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If you are assisting in the disposal of the shack of an SK, or are moving, or have too many of your own, do not throw out the QSLs as they are of great historical value.

Ring the WIA on (03) 9729 0400 and we will make arrangements to have the cards placed in our repository at our new premises. It is the aim of the WIA to have a revolving display from this, one of the world's biggest, collections of QSLs, superbly assembled by Ken Matchett VK3TL - SK.

ARRL invites nominations for 2008 International Humanitarian Award

Nominations are open for the 2008 ARRL International Humanitarian Award <http://www.arrl.org/FandES/field/awards/humanitarian.html>. The award is conferred upon an amateur or amateurs who demonstrate devotion to human welfare, peace and international understanding through Amateur Radio. The League established the annual prize to recognize Amateur Radio operators who have used ham radio to provide extraordinary service to others in times of crisis or disaster.

A committee appointed by the League's President recommends the award recipient(s) to the ARRL Board, which makes the final decision. The committee is now accepting nominations from Amateur Radio, governmental or other organizations that have benefited from extraordinary service rendered by

an Amateur Radio operator or group.

Amateur Radio is one of the few telecommunication services that allow people throughout the world from all walks of life to meet and talk with each other, thereby spreading goodwill across political boundaries. The ARRL International Humanitarian Award recognizes Amateur Radio's unique role in international communication and the assistance amateurs regularly provide to people in need.

Nominations should include a summary of the nominee's actions that qualify the individual (or individuals) for this award, plus verifying statements from at least two people having first-hand knowledge of the events warranting the nomination. These statements may be from an official of a group (for example, the American Red Cross, The Salvation Army, a local

or state emergency management official) that benefited from the nominee's particular Amateur Radio contribution. Nominations should include the names and addresses of all references.

All nominations and supporting materials for the 2008 ARRL International Humanitarian Award must be submitted in writing in English to ARRL International Humanitarian Award, 225 Main St, Newington, CT 06111 USA. Nomination submissions are due by December 31, 2008. In the event that no nominations are received, the committee itself may determine a recipient or decide to make no award.

The winner of the ARRL International Humanitarian Award receives an engraved plaque and a profile in QST and other ARRL venues.

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continued from page 4

WIA News

basis) with a 5 watt e.i.r.p. power limit, and so to harmonise arrangements for similar services between Australia and New Zealand, the WIA proposes that Australian Advanced amateurs be allowed to operate on the segment 135.7 – 137.8 kHz with a maximum radiated power of 5 watts e.i.r.p., rather than the 1 watt e.i.r.p. limit proposed.

The WIA noted that the draft Spectrum Plan retains the existing primary allocation to broadcasting and the existing secondary allocation to the amateur within the band 7100 - 7200 kHz, despite the decisions of WRC 03 that amateur be primary and broadcasting cease in the band after 29 March 2009. However, Australia is a party to a footnote allowing fixed and mobile primary in that segment.

The WIA has proposed that amateur be co-primary with Fixed and Mobile, and a footnote be inserted into the Australian Plan acknowledging that the band is designated to be used principally for the purposes of defence and national security and that the amateur service shall not cause harmful interference to, nor claim protection against interference

from, fixed or mobile service stations operating within Australia.

Once the changes to the Spectrum Plan are made, amendment of the amateur LCD is required before Advanced licensees will be able to use the new LF band.

SET on 8 November

International Amateur Radio Union member societies and emergency groups will take part in a joint on-air communications exercise in November. The Global Simulated Emergency Test on or near the emergency Centre-of-Activity frequencies on the 80, 40, 20, 17 and 15 metre bands runs 0400 to 0800 UTC on Saturday, 8 November.

IARU WAC Award

WIA Awards Manger Allan Meredith VK2CA has announced that the IARU Worked All Continents (WAC) award can now be applied for by WIA members through the WIA Awards program. The card checking and certification is carried out by the WIA Awards Manager and the certificates are issued by the WIA under agreement with the ARRL Awards Branch. This means that cards no longer need to be submitted overseas for this

award - a first for the WIA.

"This is an excellent introductory award for DXer's" said Allan. "Only six contacts are required (one in each continent). There is also available a 5 Band WAC and various other endorsements that can be gained for the more serious DXer."

More details can be found on the WIA website.

Perth D-STAR repeater launched

Some 56 amateurs participated in the launch of the Perth D-STAR repeater at the Darling Ranges RSL Hall in Kalamunda on Saturday 18 October 2008. Host was the Perth D-STAR club, the Western Australian Repeater Group. The repeater was given to the WIA by Icom Australia, which was represented by its Managing Director Takashi Aoki VK3NON and Peter Willmott VK3TQ.

Also participating in the launch was WIA President Michael Owen VK3KI and D-STAR Coordinator Richard Hoskin VK3JFK.

The WARG was responsible for all the ancillary equipment and the many people who contributed to the success of the project.

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Some Tips for the New DXer

The DX pileup — how it works and how to work it

Frank C. Getz N3FG

Judging from what I hear on the bands, there are a lot of upgraded hams who have gotten into chasing long distance contacts (DX) and are learning the intricacies as they go along. Since I haven't seen a good article on this subject in QST for some time, I thought that some basic pointers may be of help. I work mostly CW and my comments are from that perspective, but most of what I have to say can be applied to any mode. The goal is to make the DX contact without making enemies of your fellow hams. Working DX is a sport with rules and procedures like any other sport and if they are followed, your enjoyment and chances for success will be maximized.

Basically, you want the DX station to hear you, but you don't want to keep others from hearing the DX station. Following these DXing Tips will help maximize your chances of being heard without causing interference (QRM) to others. If everyone in a pileup is playing by the rules, while the DX station is in QSO with his selected target, the frequency (or frequencies, if operating split) should get very quiet and you will only hear the DX station or his target station. As soon as the DX station signs, everyone again resumes calling. As long as no one is calling on the DX station's frequency, everyone can tell when the DX station has selected his next target and the calling will stop until the DX station signs again. During this lull in the calling is the time to select the frequency for your next attempt.

Frank Getz N3FG

Frank was first licensed in 1961 as K3PDW. He prefers to operate CW and occasionally RTTY and PSK31. He loves to work DX, but uses a casual approach to adding countries to his list. He is a Director of the Mobile Sixers Amateur Radio Club, former advisor and VE for the Delaware

Technical and Community College radio club and a member of the ARRL. He has degrees in Electrical Engineering and Computer Science and has written several engineering books and Amateur Radio related magazine

articles. Frank can be reached at 685 Farnum Rd, Media, PA 19063 fcgetz@juno.com

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DXing Tips

- 1 Listen! Don't jump into the fray before you understand the dynamics of the DX operation. What is the DXer's call? Is he/she operating split — transmitting on one frequency, but listening for calls up or down the band? Are other hams in your area getting through?
- 2 In a large pileup, it is never a good idea to call the DX station on his frequency and never, ever tune up on the DX station's frequency. If he sends his call followed by "up," he is listening up the band and not on his transmit frequency; if he says "down" then he is listening down the band. If you call on the DX station's transmit frequency, no one else can hear him and he won't hear you.
- 3 Never transmit while the DX station is in contact (QSO) with another station. He can't hear you when he is transmitting and he doesn't want to hear you when the station he is listening for is replying.
- 4 Never transmit just because someone else is calling the DX station unless you are sure he is listening for a call.
- 5 Never let a computer select your transmitter's frequency and time of transmission. This is a sure recipe for causing QRM.
- 6 Keep your calls short. Once or twice is usually sufficient.
- 7 If you must tune up on the air, find a clear spot a little way up or down the band and be sure to identify. When you move back to the desired frequency, you won't normally have to retune.
- 8 A technique that often works is to set your transmit frequency to that of the station currently in QSO with the DX station and after you are sure the QSO is over, send your call. Hopefully the DX station hasn't had time to tune away and will hear you call. The only drawback is that others will often be doing the same thing. Sometimes you will need to set your frequency slightly higher or lower than that of the last station worked for you to have a chance of being heard.
- 9 Sometimes when you have been trying for a while and it seems that you will never get through, it is more productive to take a break and do something else, returning when the pile-up has thinned out a little. I have had this work more than once.
- 10 If you work CW, work at getting your code speed up to the point where you can reliably recognize your call. Don't depend on a computer to copy your call on a noisy band. Your best CW filter and decoder is still the one between your ears.
- 11 Do you really need the contact? If not, why not let people that do have first crack at the DX?

WICEN heads south for the Oceania

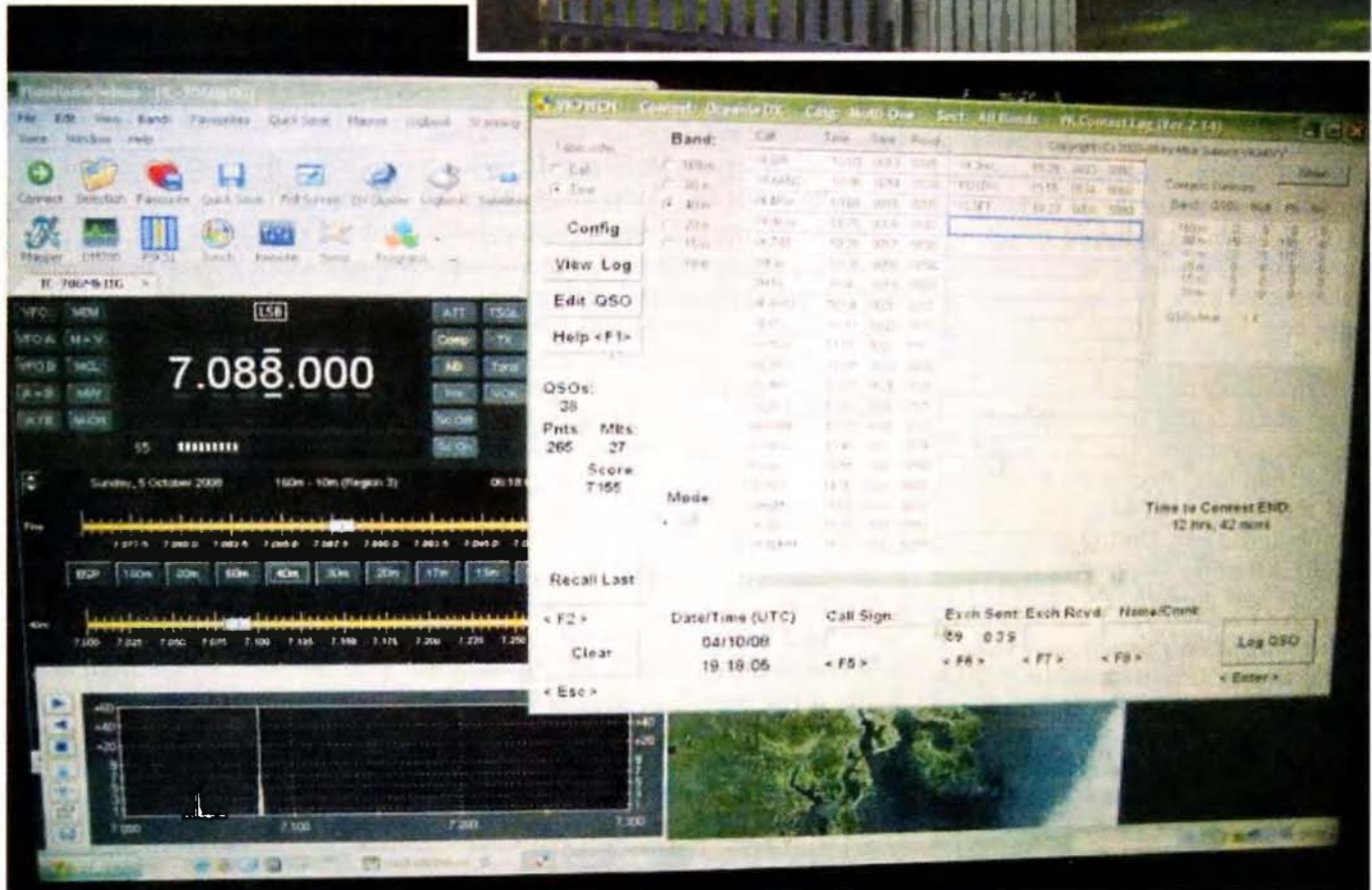
Roger Nichols VK7ARN

WICEN Tasmania (South) headed about as far south as you can get on the bitumen for the 2008 Oceania DX contest. A shore side holiday house in Southport (43°25'S 146°58'E) provided a comfortable base for VK7s AD Andrew, ARN Roger, FCDW Chris with harmonic young Chris, JGD Garry and NXX Stu.

The station was an Icom IC-706MkIIIG with IC-AH4 tuner feeding a 12 metre vertical constructed with 60, 50, 32 and 20 mm aluminium tubing. Assorted ground radials with sundry attachments to ground stakes and locally available star pickets, in place on the high water mark, provided a ground.

At right: A view of the antenna, and the general location.

Below: The popular VK Contest Log program screen.



Working with SMDs

Grant McDuling VK4JAZ

Contacts were spasmodic but interesting, providing a comfortable but far from boring contest. Contacts included IL, JA, K, N, OH, PD, RK, RS, VA, VE, VKs 1, 2, 3, 4, 5, 6 and 7, YB, YL, ZL 1, 2, 3, 4 and ZMs. Chris VK7FCDW disappeared about 18:00 local but resurfaced about 02:00 to man the late shift and keep those in the closest bedroom awake with his QSOs – but who could complain!

An early finish, about two hours short of the full contest duration, when new contacts fell to one per forty five minutes, saw a pack up, clean up and head up North. All tired but happy after an enjoyable weekend.

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The base loading antenna tuner.



Stu VK7NXX and Andrew VK7AD.

Being an avid homebrewer and kit constructor, I guess it was inevitable that sooner or later I would have to face up to the fact that I would have to master working with SMDs (surface mount devices).

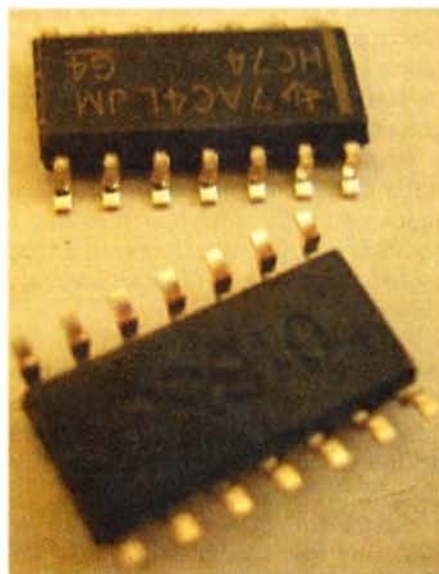
Until now, the thought of winding intricate toroidal transformers filled me with dread, but SMDs! That was a whole new kettle of fish.

As amateur radio goes more high tech (so what is wrong with that?), more and more kits are being offered that make use of SMDs – some more extensively than others. So what was I to do if I wanted to continue melting solder and having fun in this hobby? No question about it, I would have to put my fears aside and take the plunge.

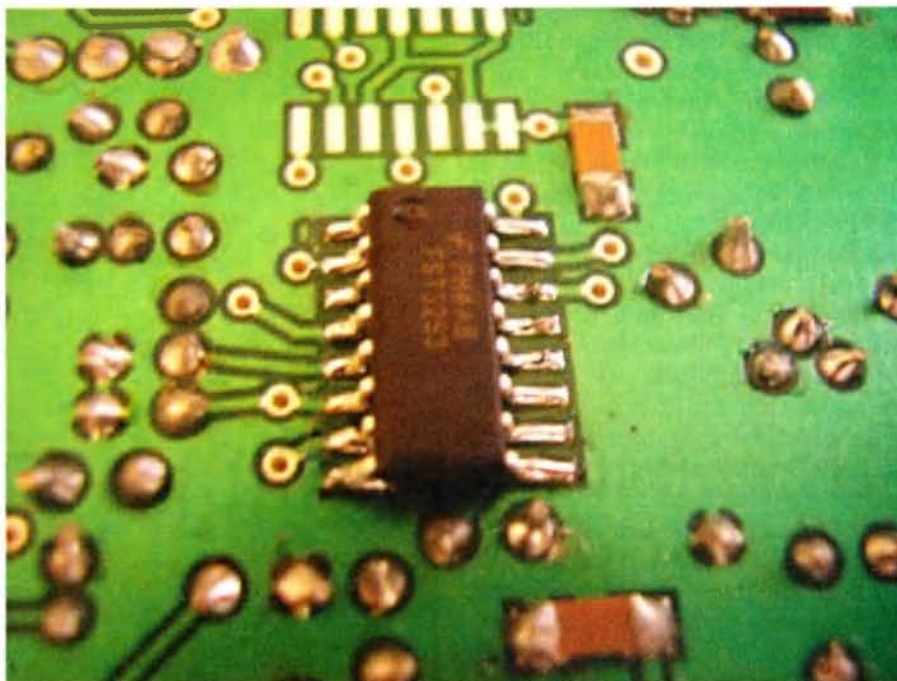
I must say at this point that I had been keeping a gentle eye on some of my favourite ham radio web sites and noticed that most of the really exciting offerings, like software defined radio kits, relied heavily on the latest in electronic technology and came loaded with surface mount devices. The good thing about this is that we now had one component to install

instead of many, so from a soldering and construction point-of-view, this drastically reduced the chances of mistakes and the resultant frustration that seems to accompany so many well-intentioned projects.

So I decided to dive in and give it a go. What I discovered was that



These devices have tiny feet and need to be handled with care.



An SMD FST3253 soldered on the PCB. Note the 0.1 uF SMD 1206 caps.

SMDs are not as problematical as I had initially thought. In fact, with a little patience, I am now convinced they are the way to go.

The first thing I discovered was that all the SMDs in my kit came in an anti-static container. For very good reasons – static can kill many of the devices.

Therefore, good electrostatic discharge (ESD) precautions are required when handling these devices. This means a grounded wristband as well as a grounded conductive working surface mat should be used. They are available locally at the usual electronic supply outlets but they are rather pricey so I relied on discharging myself whenever I worked with these components.

What I did to achieve this was to run a cable from the earth bar in my shack up to my work bench so that I could discharge myself as well as the tools I was using at regular intervals simply by touching it.

I also made sure I had taken off my rubber sandals as walking on the carpet in the shack had the potential to generate static electricity. I minimised my movements when sitting in my chair at the work bench.

Next I bought a Goot 10 – 13 W soldering iron specially designed for SMD work. It has a beautifully thin tip that makes fine soldering jobs easy; all you need is a steady hand. I also made sure I had a magnifying glass handy to check my handiwork, as solder bridges can appear so easily. I also bought a tube of 1 mm 60/40 resin core solder.

Keeping the PCB steady is just as important as keeping your hand (and the iron) steady, so I made use of the metalwork vice from my workshop. A small, bright spot light was used to inspect the job, both before and after soldering. The final piece of equipment that made my life a lot easier was a pair of tweezers.

So, how did I go about mounting the incredibly small SMDs?

The first thing I did, after identifying the component to be installed and its position on the PCB was to lightly tin the mounting tracks on the board. Then, after touching my grounding wire (my hand as well as the tweezers) I picked up the SMD integrated circuit and made

sure it was oriented correctly relative to its mounting position.

Then, with pressure from the tweezers to keep it in position, I gently touched a corner pin with the iron to melt the solder and tack it into position. I then gently touched each pin in turn to melt the solder under it. A few seconds later

and presto, job done. Simple, neat and quick.

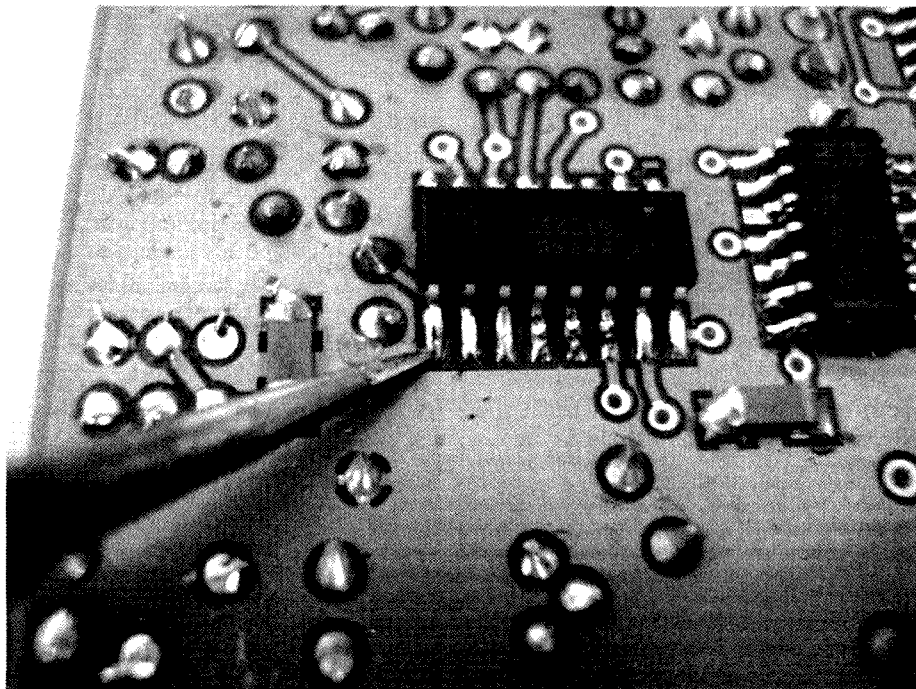
I am now a fan of SMDs and wonder if I can ever go back to the days of through-hole technology and all the bother of populating PCBs with hundreds of components.

How times change!

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Essential tools: from left, magnifying glass, small spotlight, tweezers, soldering iron.



The SMD soldering process underway.

Hills Amateur Radio Group VK6AHR –

‘The First Ten Years’

Keith Bainbridge VK6XH from information compiled by Norman Campbell VK6UV

On Friday 28th January 1983, thirty people met at the Kalamunda Hotel, in the downstairs function room, at the invitation of John VK6HQ and Des VK6SU. As a result of that meeting, the Hills Amateur Radio Group (HARG) was formed.

After several months of meeting at the Kalamunda Hotel, we were invited to move our meeting place to the Kalamunda Senior High School, and this was duly done, and meetings were subsequently held there.

Later, (in 1989) Richard VK6BMW, one of the members of the group, had contact at the time with the Lesmurdie Guides and Brownies, and he was able to negotiate a tenancy for the group at the Guide Hall, at the junction of Sanderson and Brady Roads, at a peppercorn rent, paying only for services used.

We moved into these premises and were given a space as our own at the end of the hall. However we needed security, both for equipment and operating space, and so the call went out. This was responded to by Norman VK6UV who was able to provide (from sources not known) panels, doors, door frames, benches, venetian blinds, and fluorescent lights. Fred VK6UR was renovating his home, so the group headquarters became the proud possessor of fitted carpets.

But to some detail.....and back to 1987.

On 30 January 1987 VK6HQ established the first edition of the ‘Beacon’, the HARG Newsletter.

On 3 February 1987 the HARG stood before a Justice of the Peace for the swearing of the deeds of incorporation, with the following attending:

VK6NV, VK6CF, VK6HQ, VK6NSU, VK6UV, VK6IK and VK6CU (guest onlooker).

During February 1987, 30 Founder memberships were established.

At this time, a refreshment facility was organised comprising tea/coffee, and the cost was 20 c per cup, to be

paid into an Honour Box. In spite of inflation, six years later - still 20 c per cup, and sometimes with a bonus of biscuits or cake!

On 25 March 1987, a live demonstration of AMTOR was given to the group by Peter Hackett VK6PK.

Eric Hawkins VK6YQ, a founder member, and one of our stalwarts, passed away on Sunday 29 March 1987 after a short period of illness.

New member subscriptions were set at \$5 per annum plus \$5 Beacon postage, on 30 March 1987.

The April 1987 Meeting, held on the 29th, had a talk by Jenny and her OM Trevor VK6YJ, our white stick members, together with faithful ‘Jess’, showing technology for the sight handicapped, with demonstrations of a Perkins Braille, talking scales, MOWAT sensor, Braille-writer, talking calculator, talking clock and more.

John VK6HQ and Norman VK6UV ran a very well attended ‘Radioactive Fun Rally’, with ten carloads of enthusiastic amateurs, their families and friends, enjoying the challenge of car rallying and amateur and CB radio combined.

Results were:

First: Phil VK6ZPP

Second: Phil VK6ZKO

Third: Gary VK6XQ

Cy VK6IK gave a talk on antennas on 29 July 1987 which was well received, and this was preceded by the following Committee being elected unopposed:

President John Hawkins VK6HQ

Vice Pres. Chuck Farkas VK6CF

Secretary David Brown WCE571

Treas. Sue van den Avoort VK6NSU

Committee Norman Campbell VK6UV

Neville Newham VK6VU

QSL Sub Bureau Milan Udall VK6ZH

On 10 August 1987, the Club calling frequency of 145.600 MHz simplex was adopted, later to change to 146.450 to accommodate novices on 2 metres.

The October 1987 edition of the Beacon had the following ‘Diary

Notes’:

October Meeting Gordon VK6AGX
‘Valves in Linear Application’.
November 1 Tic Hill Picnic.
November 3 VK6HS – ‘Your Health Today - the Pritikin Way’.
Video.
November
December 8 WIA Christmas Party.
December 12 Dine-out at Williners Restaurant.
January 1988 Annual Junk Sale.

On 8 December 1987, the HARG received an award from the Wireless Institute of Australia for ‘Outstanding Service to Amateur Radio’.

During the 1987 Kalamunda Festival, a display was held in Stirk Park and was considered to be a success from the amateur radio point of view. The station displayed by Neville VK6VU was definitely the highlight.

The working fund at this time was \$61.48.

28 October 1987 saw Gordon VK6AGX displaying a natural ability at the blackboard with an interesting talk on valves in linear applications.

Two stations were fired up for the 1987 JOTA with Roleystone Guides and Brownies entering JOTA for the first time; the HF Station was operated by Maurice VK6ATP and VHF by Trevor VK6YJ. The stations came ‘on air’ about 0130 UTC.

HF antennae worked well, this being a long wire strung between two trees conveniently placed for 20 metres. For 2 m, a pole with a roll-up antenna was set but this did not give the right results, so Hartley VK6ZHB went home and brought back a ground plane and a linear capable of 80 watts.

A few contacts were then made through channel 8, and one into Gosford, north of Sydney, via the satellite link on channel 4. The day was held together by Laurie VK6ZLD, Christine VK6ZXD, Hartley VK6ZHB and Maurice VK6ATP.

VI88WA - the Bicentenary callsign, was activated by HARG members during the month of February 1988; members involved were VK6CF, VK6HE, VK6HQ, VK6IK, VK6XC, VK6ZH and VK6AEA.

Events during March 1988 were a practical night on the first, at 7.30 pm and a Picnic/Foxhunt at Carmyah, starting at 1130 am on March 6.

It was during April 1988 that the Committee of the HARG decided to write to the Kalamunda Shire Council along the lines of '.....whilst the Group's premises at Kalamunda Senior High School had proved eminently suitable for lectures and general meetings, it was felt an additional venue where a permanent radio station could be both secured and operated and where members and their families could meet socially was desirable. Additionally, such a radio station could be of service to the community in emergencies...does the Shire know of the existence or future availability of, suitable accommodation within the Shire confines?'

As a result there seemed to be the opportunity of the group leasing our own Club premises for approximately \$500 per annum!

At the August 1988 meeting, Cy VK6IK gave an interesting lecture on Linear Amplifiers.

The 1988 Kalamunda Festival attracted a lot of interest from the passing crowd (particularly the blackboard showing with whom we were in contact). Some of the operators of the day were Norman VK6UV, Merv VK6APM, Keith VK6BRK, John VK6HQ and Richard VK6BMW.

Some items of interest during the early part of 1989 were a talk by Greg on Seismology, on 22 February, and a visit to the Perth Radar Station at Kalamunda on 25 February.

29 March 1989 saw Glen Ogg delivering a stimulating lecture on interference, with emphasis on what is the operator's responsibility, and what is the Department's responsibility.

At 26 April 1989 the Treasurer advised funds of \$192.28.

Planning started in July 1989 for the Kalamunda October Festival to be held on 28 October and it was at this time that we moved to our new Clubrooms at the Paxhill Guide Hall, in Sanderson Road, Lesmurdie, thanks to the efforts of Richard VK6BMW.

On 31 May, Will VK6UU gave a talk on the problems of the Repeater Group and the linking of 70 cm, particularly with the novices and the legal use of a 2 metre repeater linked to a 70 centimetre repeater.

June 1989. Sam Wright G3CYT joined the Group.

August 1989 saw Membership dues double to \$10 per annum, with an additional \$5 for Beacon postage, and at 30 August the Treasurer reported a balance of \$358.72.

An extremely interesting talk was given on 27 September 1989 by Brian Goodchild of the Cartographic Names Committee.

The weekend of 21-22 October saw the Group hosting JOTA with many Scouts, Cubs, Guides and Brownies passing through the Station. Unfortunately there was a very large solar flare on Thursday prior to the JOTA week-end which practically wiped out all HF communications; this was however beyond the control of the Group.

The week-end was not completely wasted however, as many youngsters managed to 'talk' to others on the radio, even if we did use 20 metres to East Fremantle and Riverton. Use was also made of the Aussat link to VK/ZL enabling a number of the young folk to 'DX' on 2 m. Thanks were due to the usual 'core' HARG members who made it all possible - Merv VK6APM, Fred VK6UR, Norman VK6UV and Richard VK6BMW. Thanks were also due to David VK6PDA and Phil VK6ZKO for liaising with the Scouts and Guides, David, who also stayed overnight to babysit the equipment, John VK6RI and Trevor VK6TS who operated on Sunday morning, and Sue VK6NSU and Adrian VK6CU for dropping in and out over the weekend to assist where needed.

28 October saw an excellent turnout of members for the Kalamunda Festival, those helping with their presence and enthusiasm or equipment loan were - Merv VK6APM, Fred VK6UR, Milan VK6ZH, Phil VK6ZKO, Richard VK6BMW, Trevor VK6YJ, Sue VK6NSU, Adrian VK6CU, Trevor Wright, Sam VK6YN, Gordon VK6YBT, Les VK6EB, Poppy VK6YF, Chuck VK6CF, Cy VK6IK, Phil VK6ZPP, Alyn VK6KWN and John VK6ZKZ.

9 December saw the 'end of year' Christmas windup and barbecue - 'BYO

Meat' - the Club supplied salad and rolls.

During the early part of 1990, the new club premises continued to improve with security being increased for the safe storage of equipment; Cy VK6IK provided two regulated power supplies, Phil VK6SO produced a single channel VHF transceiver to which Fred VK6UR immediately fitted crystals for 146.450 MHz, the Club frequency, and also produced a co-ax switch to accommodate our many antennas. Also at this time Gordon VK6YBT loaned the club his Swan 350 complete with power supply.

12 Teleprinters appeared in the clubrooms courtesy of VK6SO!

The 1990 Annual General Meeting was held on 25 July 1990 and after much to-ing and fro-ing a new committee was elected.

JOTA 1990 came and went with the club establishing the usual station for the Guides, Scouts, Cubs and Brownies, many thanks were owed to Merv VK6APM, Fred VK6UR, Richard VK6BMW and Phil VK6ZKO.

27 October 1990 brought the Kalamunda Festival and a station was set up in Stirk Park for the day.

1991 came upon the Club all too quickly, and activities taking place were the 1991 John Moyle Contest on 16 March at Mt Gungin, and a radio orientated fun car rally (or radioactive rally!) on 7 April, and later in the year, Camp Quality, where a HF station was set up for a week.

Equipment continued to be acquired with the appearance of a HF Rig, a photocopier, a Grid Dip Oscillator and a Noise Bridge, together with numerous other pieces of club owned property.

Events such as those listed, including static displays at the local libraries, continued over the following year, culminating with the holding of 'Ten Year' celebrations at the Kalamunda Hotel, where the club had had its inception some ten years previously. The room upstairs was taken over by members and their wives/girl friends and a very friendly dinner was held, the end of the evening being marked by the presentation to Trevor, VK6YJ, our white stick operator, who received the inaugural plaque for 'Amateur of the Year'.

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DX Chasers Club - Faure Island DXpedition, 2008

Keith Bainbridge VK6XH

The members of the West Australian DX Chasers Club (DXCC) are an adventurous lot and all are also members of the Northern Corridor Radio Group. The DXCC have organized several IOTA DXpeditions over the years – including Woody Island off the coast near Esperance, the Abrolhos Islands off Geraldton, Direction and Thevenard Islands out from Onslow and earlier this year, to a little known wildlife preserve known as Faure Island (IOTA OC-206) in Shark Bay about 900 km north of Perth.

The island measures about 10 km by 6 km and lies about 20 km offshore. For the last 60 years, it was used as a sheep and goat station but now is owned and managed by the Australian Wildlife Conservancy – an independent, non-profit organization based in Perth.

Due to its isolation and recent enforced freedom from introduced predators, the island is now used as a safe and disease-free home and breeding ground for such endangered native species as Western Barred Bandicoot, Shark Bay Mouse, Banded Hare Wallaby and Burrowing Bettong or Boodie. An active trapping, monitoring and translocation program is managed by a very few dedicated AWC scientists, officers and volunteers.

Faure Island had never been activated for amateur radio before and this proved an irresistible challenge to the DXCC. Arrangements were made over many months and approval to land a team of nine 'volunteers' became a reality for a six day period between 26 March and 1 April 2008.

Planning for the trip was extensive and included four vehicles towing two 5.5 m vessels and a 3 m dinghy. In the past we have hired charter boats, but

this time, we decided to ship all our gear and supplies to the island in members' boats – a sobering undertaking. Three stations were put together and a W8JK beam constructed. Other antennas included a three element tribander and a Carolina Windom. A couple of linears, a generator and a heap of fuel were also required.

The convoy left the NCRG clubrooms at Whiteman Park early on Tuesday 25 March and arrived in Monkey Mia in time for a few ales late in the afternoon. Next morning, a few trips back and forth got all of us and our gear onto the island. We were greeted by a billion flies

Faure Island had never been activated for amateur radio before and this proved an irresistible challenge to the DXCC.

– constant daytime companions for the duration of our stay. We had both portable masts and beams up in record time and were on the air as VK6FAU by dinner time. Then the real fun and QSOs started...

Our AWC hosts were fine people and as we were all signed up as volunteers to earn our keep, we jumped in and assisted with many tasks such as cleaning out the old shearing shed to make room for trapping equipment and a workshop and conducting 'transects' to gather research data on local reptile numbers for a graduate student's thesis.

These involve several people lining up ten metres apart and striding off across the low scrub (some of it gets a little nasty!) in straight lines taking note of how many reptile holes and tracks you can see for 100 m. Then you simply walk sideways for 5 m and backtrack to your starting line. In this way, many hectares of all the different habitat types can be investigated in a few days. We provided

labour for many of these!

We also got involved in some reptile and mammal trapping. A host of measurements are taken from each animal to aid research studies. This data is then used to plan for future translocations of island-bred stock back into suitable areas on the mainland. Thus, viable populations of currently endangered species will be built up over time so our children will have a chance to appreciate some of their island continent's original species diversity.

The weather started off quite warm and tropical but we were in for a change. A degenerating cyclone passed to the west of the island early on Friday whipping up some gale-force winds and dumping 100 mm of rain on us in 24 hours.

Our AWC host Joanne said that some rain was obviously needed and would be appreciated, but this was ridiculous! The moored boats needed to be bailed out in the afternoon and the island developed its own inland sea. Worse was to come, as next morning the bailing party discovered that one of our boats was missing. It had broken its mooring rope during the night and was probably washed up on the beach south of Monkey Mia – not a pleasant thought for any of us, but especially bad for the boat's owner.

next morning the bailing party discovered that one of our boats was missing

A search and salvage operation was cranked up by telephone using trusted AWC contractors on the mainland whilst another boat was hired to get us all back to Australia on Tuesday morning.

In true amateur spirit, none of the above tribulations detracted from the camaraderie or indeed the QSO tally on several bands which continued to climb daily. Over the weekend, the CQWW WPX SSB Contest was entered



Approaching cyclone.



During the cyclone (Original inserted)



The partial erection.

to try to contact as many operators and entities as we could manage given the propagation vagaries at the end of Cycle 23.

At times the QSO rate was extraordinary and even some members who are more likely to be seen playing with antennas or skulking in the background were seen shouting into a microphone – with a cold one by the laptop keyboard and a manic grin on their face. Everybody loves a pile-up!

After six days and nights of great fun, volunteer work and basically ham heaven, we had to pack it all up and head back to civilization – 20 km away over the waves. This was completed without incident thanks to a lot of hard work by all and the skill of our intrepid boat captains, so by late afternoon on April Fool's Day, nine weary but happy amateurs repaired to the Monkey Mia Resort bar for a few well-deserved coldies and some more of that wood-fired pizza.

The lost boat was found where expected but was very much the worse for wear thanks to a rocky beach and the continual pounding of the waves over three days. With some local help, we managed to get it back onto its trailer so all of our gear could be taken home.

The WA DX Chasers Club sincerely thanks the Australian Wildlife Conservancy – especially Joanne and her dad Russell - for allowing us onto their island and for looking after us so well. It was a great experience and many of us would like to go back one day – but perhaps we will charter a boat next time! We made many contacts despite



Just some of the ten billion reasons for not being there.

the marginal conditions, so make sure you inundate our QSL manager (Neil VK6NE) with cards. Unfortunately for health reasons, Neil could not go with us on this one – he was not impressed!

The 2008 DXCC Faure Island DXpeditioners were: John VK6NU, Alek VK6APK, Richard VK6HRC, Richard VK6TT, Wayne VK6EH, Trevor VK6HTW, Dave VK6YEL, Gerald VK6XI, Darby VK6FONC and John VK6JX. With us in spirit were past revellers Neil VK6NE and Joe VK6BFI.

Best 73 and happy IOTA hunting!

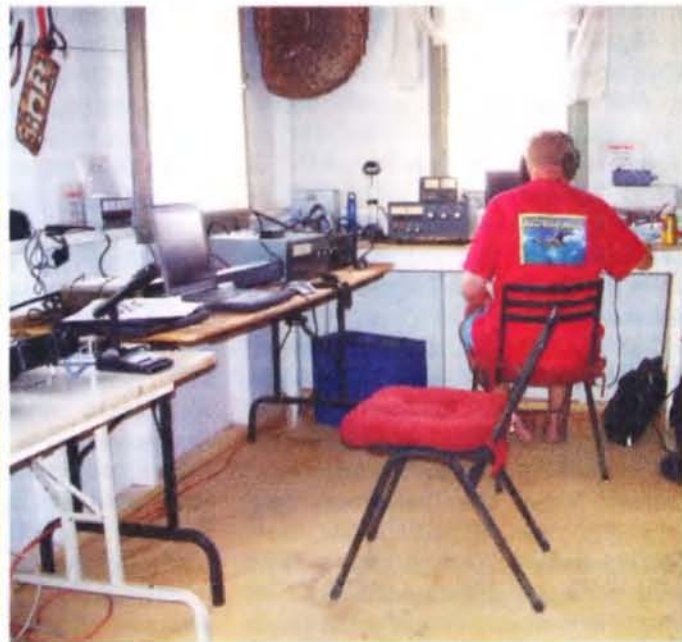
ar



The crew.



The camp.



The shack.



Poor Darby's boat.



The reason for being there.

VK2

Tim Mills VK2ZTM

arnews@tpg.com.au
ARNSW

After a two year delay, with set-backs and rejections at the local council, the 'shed' for the VK2WI Dural site has been approved. It came to a head in September when an application lodged with the Land and Environment Court allowed the construction. The shed design had been developed in 2006 and a deposit paid, pending approval. In October 2008, the shed was ordered with work to start soon on the slab. There should be something to observe by year's end.

The Education section of ARNSW has been asked by the Central Coast ARC to provide the full range of Amateur assessments at the 2009 Field Day at Wyong. Education Officer Terry VK2UX told a recent committee meeting of the request. They had a successful trial run at the Field Day this year. There will be more details closer to the event in these notes and VK2WI News.

The final Trash and Treasure event for the year will be at the VK2WI site on Sunday the 30th November. Start is 10.30 am but as attendees keep getting earlier the BBQ operators are considering a breakfast shift. The afternoon is a show and tell by the ARNSW Home Brew and Experimenters Group followed by a lecture or demonstration. Membership of ARNSW and, automatically, the Home Brew Group is in two or five year blocks at \$10 per annum. Membership forms can be down loaded from the ARNSW web site: www.arnews.org.au

Clubs

The **Hornsby and District ARC** provided the amateur radio content at a "Reminiscence" display highlighting early Australian communications and wireless by the Ray Park Heritage Group Inc. in Carlingford on Friday the 10th October. It was at a Scout hall, near the site of the former Pennant Hills AWA/OTC communication site. A series of talks were presented: Introduction – Pennant Hills Wireless Station; Morse code and construction of overland

telegraph -Adelaide to Darwin and world's first wireless message, from Wales to Wahroonga. There were displays mounted by the Telstra Museum, the Morsecodians, early spark equipment constructed by Peter VK2AQJ and the VK2WAH Marconi event station coordinated by Jo VK2KAA. The event continued on Saturday with the theme "Back to Pioneer Days and Farm Life".

Monday the 22nd September was the 90th anniversary of the first direct wireless message from UK to Australia. In 1918 the Marconi Wireless Station at Carnarvon, Wales, transmitted two messages which were received by Mr. E.T. Fisk, the managing director of the newly formed Amalgamated Wireless [Australasia] Ltd at his residence "Lucania" in Wahroonga. A small celebration, an annual event, was held at the Wahroonga monument site. It was unveiled on the 14th December 1935. A story of the recent celebrations was posted on the WIA news site in September. Information about the annual event can be obtained from Jo Harris VK2KAA who is a Vice President of the Ku-ring-gai Historical Society Inc who look after the monument. Jo is also the Historian of the NSW Division. vk2kaa@optusnet.com.au

On the 11th of this month the **Illawarra ARS** have their annual auction in Wollongong.

The **Mid South Coast ARC** should be having their final quarterly meeting on the second Saturday of this month.

WICEN NSW has been busy with exercises during the past few weeks. There have been the annual events of the search with Police and Wilderness Rescue groups to look for the missing aircraft VH-MDX and the Hawkesbury Canoe Classic at the beginning of this month. Contact point for WICEN NSW is by mail to P. O. Box 126, Gosford 2250. email to operations@nsw.wicen.org.au, telephone 0408-397-217 or visit www.nsw.wicen.org.au

VK2AWX Hunter Region Monday evening news bulletins take a break from early December until early February.

It is a month closer to the **Mid North Coast Expo** on the 18 January 2009. Then there is the first **T&T** at VK2WI on Sunday 25th January. Then comes the **Central Coast Field Day** at Wyong Racecourse on Sunday the 8th February: Held earlier this year to take advantage of a slot in the normal use of the venue.

VK2WI

In late September additional text was added to the VK2WI Morse training transmission on 3699 kHz. It had been sending some 2700 words at the various speeds provided by the processor. There are now 3786 words which takes about 8 hours to cycle.

This month it is hoped that the evening 40 metre [7146] transmission will be in the clear from an adjacent broadcaster located across the 'pond'. Usually when there are changes with daylight saving, the short wave broadcasters also do a schedule and frequency adjustment.

For those who prefer live Morse training, look for VK2BWI on Tuesday and Thursday on 3550 kHz at 2000 hours local. This service on behalf of ARNSW is provided by Alan VK2ADB and Ross VK2ER. They can also do with a hand. Contact them if you would like to join them in providing a session. They also look for callbacks after the session.

News for VK2WI

News is best sent by email to arnews@tpg.com.au by Friday afternoon. The text of the weekly bulletin is posted on the ARNSW web site www.arnews.org.au early in the week following the Sunday bulletin. Other contact points for ARNSW is VK2WI, at broadcast time 02 9651 1489. The office on 02 9651 1490 or country member freecall 1 800 817 644. All numbers end up in message systems when nobody is in attendance. FAX 02 9651 1661 or mail to P. O. Box 6044 Dural Delivery Centre NSW 2158.

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VK3

Geelong Amateur Radio Club -The GARC

Tony Collis VK3JGC

Six new licences in the club

The GARC's Foundation licence course has resulted in six new calls being issued to members, of which three were in one family; that of Lou VK3ALB, his wife Jenny VK3FJEN, daughter Ingrid VK3FGRL and son Michael VK3FMIC. The additional calls were Ruben VK3FRJS, Gavan VK3FGAV and Dale VK3FBUD. There was also an upgrade for Nick, now VK3NJP.

VK3RGL upgrade

Regular users of the GARC repeater station on 147 MHz will have noticed that the station now has a significantly increased geographic coverage; as Ken VK3NW has upgraded the hardware which increased the output power from 17 watts to 75 watts.

FUNY Business

GARC member Vanessa VK3FUNY, wife of Garry VK3FWGR, provides the club with its news letter as well as stocking up the fridge with drinks, providing finger snacks from time to time and making sure that the premises

are clean and tidy.

Hi Tech Imaging Systems

Lou VK3ALB introduced a colleague to provide a patient's perspective of what happens in an x-ray department along with a discussion of diagnostic techniques. The PowerPoint presentation showed the remarkable advances in imaging software that have taken place over the last few years. Typically scans that previously would take one cm slices and take around 40 minutes for a body scan can now go down to 0.5 mm slices with enhanced resolution and at the same time radically reduce the time the patient has to spend in the machine to around 10 minutes. It was of interest to note that the Geelong area has a greater number of imaging centres than does Melbourne.

Three Presentations in October

Light Beam Communications: Lecture, Demonstration and PowerPoint slide show by David VK3QM.

Aviation at Avalon: A PowerPoint

slide show by Andre Van Zyl VK3AVZ.

The Whys and Wherefores of lightning protection for antennas, towers and shacks: by Donald, VK3IT.

Visit www.vk3atl.org for more information about the club and its activities.

EMDRC

Down a level, up a level

If you think the heading has something to do with the share market, you are slightly off the mark. We are referring to other more exciting happenings at the Eastern and Mountain District Radio Club. The club will shortly be relocating downstairs at their existing clubrooms, which means that we will actually gain quite a bit of room. In turn, it means that if someone wanted to swing a cat (or a Kenwood TS-520), the said object, when swung, would not hit the walls of the shack. Not that anyone would want to do so.

Besides this exciting piece of news, the members were busy at the lighthouse weekend (activating lighthouses and gobbling finger food). Our recent guest speaker Tony VK3TZ told us of his rather daring DXpedition to Vanuatu. Tall tales of even taller dipoles and verticals that defied belief and a video of a visit to a live volcano kept the audience happy.

In October, members of the EMDRC plan to visit the Yarra Valley Amateur Radio Club. The highlight of the evening will be a presentation on owl tracking by EMDRC member Jim VK3AMN. This will be followed by the Whitehorse Festival, in which EMDRC members plan to assist with communications. A full report on this and other EMDRC adventures will follow when we meet again.

Joe Chakravarti VK3FJBC
Secretary EMDRC

Out on a limb

On Saturday 13th September, the EMDRC hosted an event called "Out on a Limb". The event was to discuss and demonstrate ways to get wire antennas off the ground. The aim of the exercise was to get more people on the air and do so in a safe manner.

Ross VK3HBS, John VK3JRB, Kevin VK3AKT, Harry (Club President) and Andrew VK3KIS attended the event. Harry did not stay too long and one other

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Vanessa VK3FUNY helping to maintain the GARC infrastructure

club member arrived, whose name and call sign escapes me.

When we arrived at the clubrooms, a quick scout of the area showed that two of the club wire antennas needed attention. This turned it from a demonstration into a real life event. The 40-metre and the 80-metre dipoles had come down at some point earlier. They had been temporarily put back up but were not orientated correctly and were lying over the telephone line.

Ross VK3HBS managed to find the anchoring ropes and lower the wires. It was noted that the 80-metre dipole did not have an insulator on the end. As we did not have one handy, the antenna was installed without one. This will need attention in due course.

With the wires down and inspected for damage, it was time to get a line over the trees. The wind was blowing quite a gale,

which made for interesting attempts. To improve the chance of getting the line over the tree, a suitable length was laid out on the ground so it would reduce the friction. It took several attempts to get these lines over the correct branches because of the wind. In the end we achieved the two lines over the trees.

The next step was to get the high visibility line over without snagging. The tricks and traps of such move were quickly worked out and all was done without incident.

Once again Ross demonstrated his Cub Scout knot tying skills, attaching the ropes to the wire antennas. It took a few eyes on the ground to estimate the movement of the trees in the wind and how much slack was needed in the antenna wires.

Once the ropes were secured a discussion ensued of which rope is better

for each step. Some ropes are difficult to tie but slide over the branches with ease. Others are too heavy to be used to launch the initial line. There are those that are light enough to get over the trees but are not UV stable or strong enough to hold the weight of an antenna.

Of course, with any installation the cost and length of planned installation need to be taken into account. If you are in the bush and need a quick and nasty job, there is no need to take wind into account, whilst at home this is a concern.

If there is enough interest we can plan another event like it. As with any club event it is the support of the membership that decides whether to have another. Thank you to all the participants who make it possible.

Andrew Kayton VK3KIS ar

Geelong Radio and Electronics Society (GRES)

It is at the start of the 3rd quarter that our annual general meeting is held each year. The main office bearers elected were: President John Silver VK3LJS, Vice President Keith Vriens VK3AFI, Secretary Keith Stickland VK3XKS, Treasurer John Collins VK3TKH.

We have a small group who like to operate portable out in the field. This group led by Albert VK3EFO and Neil VK3XNH set up a station for the International Lighthouse and Lightship weekend.

As in other years, the station was at Split Point lighthouse at Aireys Inlet on the picturesque Great Ocean Road. Operation was from a caravan at the base of the lighthouse and used a G5RV antenna suspended from the top of the lighthouse. The day was overcast and very cold, however many contacts were made, particularly on 40 m, and there was a lot of interest shown in the station by members of the public.

Most of our members are also active WICEN members. Neil VK3XNH gave an interesting demonstration of a simple tracking program that has been developed for WICEN use. Operators at check points input details of competitors in an event as they pass a check point. Information is then passed on to all other check points including a master control. The mode used is packet radio, and as the software is DOS based, it will run

on older computers using either DOS or older Windows operating systems. The club has recently acquired a number of older laptop computers. It is envisaged that these will be used in future WICEN exercises.

We have had two presentations that were designed to assist our less experienced members who wanted to construct equipment but who lacked experience with test equipment. The first was by Pip VK3YME on the subject of oscilloscopes. Pip explained in detail what each control on the front panel was for, and how to adjust the control.

Another presentation was by Rod VK3AYQ on the practical uses of a dip meter. This not only included the measurement of the resonant frequency of parallel tuned circuits, but also measurement of capacitance, inductance, velocity factor of coaxial cable, length of coaxial quarter and half wave stubs, resonant frequency of antennas and crystals.

Another interesting project undertaken by members was the construction of tone boards to generate CTCSS tones. This project was designed and developed by Pip VK3YME. As many of our repeaters require tone access, operation through them is not possible using older FM transceivers. The circuit uses a PIC microcontroller to generate the tones.

This project proved to be most popular

and will be followed up at a later date by a smaller version using SMD components so that it can be incorporated into a microphone enclosure.

Our mid week group continues to meet each Wednesday morning. They have just completed the construction of new shelving in our store room.

Visitors to Geelong are invited to attend our regular Thursday evening meetings held at 8 pm local time each week at 237A High St. Belmont. Or, if in Geelong of a weekend, call in and see our museum at the Old Geelong Gaol. The Gaol is situated in Myers St, not far from the CBD and is open each Saturday and Sunday. **ar**

Rod Green VK3AYQ

Silent Key

Dick Hammant VK3NDC - SK.

On Wednesday 17 September, Richard (Dick) Hammant VK3NDC, aged 78, lost his battle with bowel cancer. Dick was diagnosed in April this year. Dick was a member of the EMDRC and was a regular on the Sunday morning nets.

His regular interactions with net controller Carl VK3EMF on the virtues of tomatoes and other gardening matters was a source of great amusement to net participants. Dick will be fondly remembered as an enthusiastic amateur. He leaves behind a loving family.

News from

VK6

Keith Bainbridge VK6XH

News is a bit thin on the ground this month, despite requests to local clubs and groups.

The big news is the launch of D-STAR in WA. It all happened on 18th October at the RSL Hall in Kalamunda. It was attended by the WIA President Michael Owen, representatives of Icom Australia and Icom Japan, as well as the local organisers responsible for making the project a success. As I write this the event has not as yet happened, so look elsewhere in the magazine for a full report of the launch. This launch also presented the opportunity for the Advisory Committee to meet with the WIA President and to keep up to date with national matters.

JOTA/JOTI will have come and gone on the same weekend, hopefully with great success. More on this event next month.

The NCRG contest team set off with reduced numbers for Muresk Agricultural College on the weekend of the 4/5th October for the Oceania DX Contest and a great time was had by all. A similar setup to that pictured in last months column was erected and although band conditions were not exactly fantastic, many contacts on all the lower bands were achieved. Hopefully enough to bring the Multi-Single 1st prize back to WA once again.

Sunday 28th September was a momentous occasion when the NCRG premises in Whiteman Park were honoured by the presence of a trio of radio amateurs with enough years behind them to equal most records!

Wally VK6WG, Percy VK6DD and Ron VK6RG graced the club with their attendance. Between the three of them are almost 150 years of licensed amateur radio activities. The group included Doug VK6TDC who brought them along, Neil VK6NE the former WIA President and yours truly. Gerald VK6XI and Wayne VK6EH, the NCRG President, make up the group. So many years of AR experience and the youngest is 55. Where are the youth!

I would really appreciate feedback and input from the various groups around

the state if you all want this column to continue. I am sure lots of interesting things are happening in the Repeater group, the VHF Group and others so please let me know and I will pass it on to others around the State.

The NCRG has been lucky enough to win one of the grants from the WIA to start the ball rolling on the VK6-ZS Beacon project. The idea is simple, set up a 2 metre beacon, point some antennas to South Africa and Reunion Island and hope for the best.

Not quite that easy, I am afraid. The beacon will transmit using one of the WSJT modes and will be linked either to the club's 70 cm repeater or to an Internet link to alert possible listeners to the beacons reception in ZS or places west. Then it will be a mad scramble out to Whiteman Park to try for a possible active contact with the 'other side'.

I have said previously that this is an extremely difficult path to get a signal across but the Hepburn Charts do show many times during the year when propagation is possible. If you do not try it will never happen, and we can be very trying!

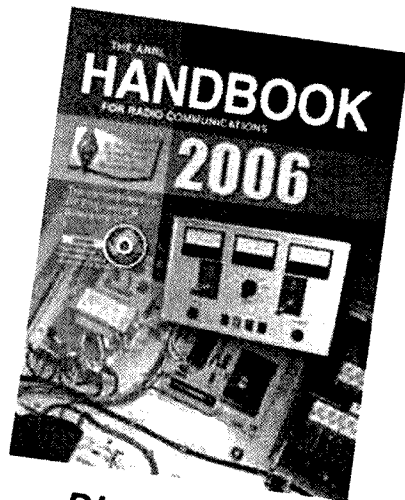
So the grant will help set up the initial antenna array, phasing harnesses, transmitter and so on then as more of the right people get involved, the PC control and a dedicated beacon transmitter and separate receiver will be installed. This will be based on designs in use by the GB3VHF beacon in the UK and hopefully with the added assistance of the WA VHF Groups sub-group who are actively developing some very interesting beacon projects. More on the VK6RIO (Indian Ocean) project as it unfolds.

That is it for this month, I am afraid, so a last call for input or this column will become the NCRG report and not the VK6 report. And I know there are those out there who do not want to see that happen!

73 and hopefully the Sun will find a spot for you this month.

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VK5

Adelaide Hills Amateur Radio Society

The September meeting of AHARS was a talk by Sasi VK5SN on his involvement with the Sea Rescue Squadron. Sasi is Radio Officer and Radio Instructor (MROCP and SA-GRN) for the Squadron. Sasi presented an excellent insight into the operations of the Squadron.

After supper and before the business proceedings, John Dawes VK5BJE, in his role as WICEN secretary, presented several club members with thank you certificates for their involvement in Rally SA. Members were encouraged to help out with the Classic Adelaide Car Rally to be held over four days in November.

Saturday September 27th saw about 25 members of the club make a visit to the West Beach Sea Rescue Squadron site. Boats in use were the envy of all. The service is run by a dedicated group of volunteers. A bonus for the day was the arrival overhead of the Qantas A380 Airbus as we concluded the visit.

The Club annual Buy and Sell will be held on Sunday November 9th at the Goodwood Community centre, Rosa St, Goodwood. This is an event for all VK5 amateurs and other interested people. Entry to buyers is at 9.30 am. Excellent door prizes will have been donated. Several commercial vendors will be in attendance, along with the usual flea market, food by the ALARA ladies and a BBQ by NERC. Icom will launch the Adelaide D-STAR repeater, which has been an ongoing project of the Amateur Radio Experimenters Group, with financial support from some local clubs.

AHARS will be hosting a Foundation licence training weekend on December 13th and 14th. The venue is the Aviation Museum, Lipson St, Port Adelaide. Sasi Nayar VK5SN is the contact, his phone number is 0417 858 547.

The end of year lunch will be held at the Mt Osmond Golf Club on December 7th. Interested members please contact



Rescue 01. L-R: Alan VK5AR, XYL Helen, Ron VK5RV, John VK5EMI (Club President), Peter VK5APR, Denis VK5FHMH.



Inside the mobile communications van. L-R: (Back of) John VK5TD, John VK5KJJ, Mark VK5AVQ

one of the committee.

Christine Taylor, the usual contributor, has been in Tasmania for

the ALARA meet and then to South Africa for another ALARA meet.

73 David VK5KC.

ar

VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

ATV Record Holders

A significant meeting happened quietly at the ALARA meet back in September. Winston VK7EM met with Peter VK3RV, who was with Jenny VK5ANW. Peter and Winston set the National 70 cm ATV record of 413 km. Peter was VK3ZPA at the time and this was set on 13 December 1972 and it still stands. It was great to hear Peter and Winston talk about the construction of the ATV equipment which was all homebrewed. Congratulations on this long standing achievement.

Remembrance Day Congratulations

Congratulations to Laurence VK7ZE for winning the HF Single Operator Phone section with 1002 points and Martin VK7GN for winning the HF Single Operator Open section with 835 points and congratulations to all VK7 amateurs who participated.

VK7 Hamfest

The Central Highlands Amateur Radio

Club of Tasmania (CHARCT) sponsors the major VK7 Ham Fest every two years and it is only a month away. It starts at 10 am on Saturday 6th of December at the community centre at Miena alongside the Great Lake in central Tassie. See you there.

Northern Tasmania Amateur Radio Club

NTARC's September meeting drew a record attendance for an 'antenna technical' evening. Al VK7AN covered the G5RV, Daniel VK7DA covered a great phased dipole UHF array for ATV activities, and Norm VK7AC covered a PC logging program.

Rumour has it that VK7FLI, Flinders Island will be activated for IOTA under the capable direction of Peter VK7KPB, Al VK7AN and Barry VK7BE shortly, so stay tuned.

Anyone interested in examinations for Foundation, Standard or Advanced in the North then please get in touch with Al VK7AN 0417 354 410 for more information.

Radio and Electronics Association of Southern Tasmania

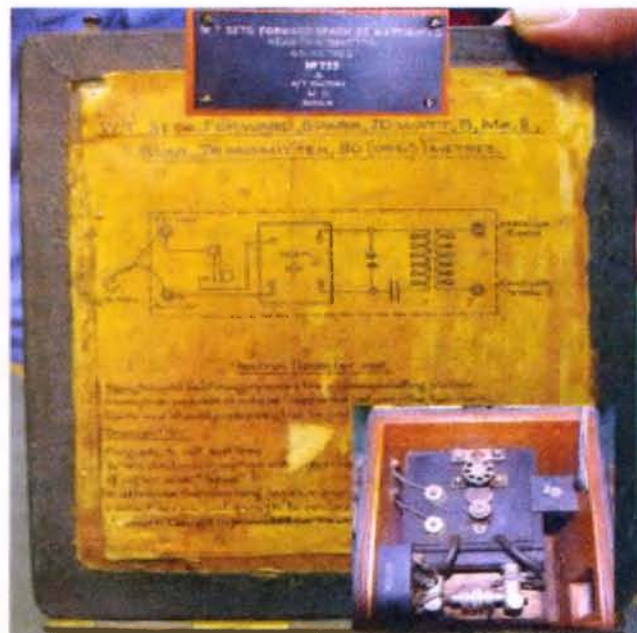
REAST's October presentation was a talk from Dave VK7DM on his 20 year journey building a modular linear amplifier system for 160 m through to 70 cm. Dave started with the common power supply unit and standard chassis and then went through some of the theory of linear amplifiers and then described the 160 m amplifier using paralleled 6146 tubes and ending with the 70 cm amplifier using a ceramic 2C39 "lighthouse" tube. Thanks to Dave for a fascinating talk on some excellent homebrewing.

The REAST ATV Experimenters Nights happen each Wednesday night and saw a great interview with Dave VK4AO who is the vice-president of the Gold Coast Amateur Radio Club. Each ATV night can be anything from live presentations, interviews, historic radio related films, segments of interest, training and many other topics that take our fancy.

Continued at foot of next page



Winston VK7EM and Peter VK3RV



WWI Field Spark Transmitter – Historical Equipment of VK7AG (SK) from VK7ZAL's Collection at a recent ATV night.



Christopher Comollattie VK4VKR

Hello from VK4, the sunshine state, good one day, greater the next. I am Chris VK4VKR from Glendale, which is located 20 km north of Rockhampton and I have taken on the role of VK4 editor. I strive to supply readable, reliable and responsible news from VK4, so here goes.

Central Highlands AGM Results

The Central Highlands Amateur Radio Club AGM Weekend for 2008 has been and gone with everyone attending proclaiming the weekend to be an outstanding success!

Held during the weekend of September 20th and 21st, hams and their support crews from far and wide made a beeline for Camp Fairbairn near Emerald to meet up with old acquaintances, make new ones and support the small yet mighty Central Highlands Amateur Radio Club in its once a year fund raising event.

Most who attended arrived by Saturday afternoon in near perfect weather

conditions and claimed their bunk and eating place for the night. They met up with the very keen ones who had arrived on Friday evening and claimed the best of the spots! As the sun went down, the chin-wagging and rag-chewing increased in rate and were only silenced a bit during the fantastic CHARC BBQ with the CHARC Ladies Team wielding mean tongs and spatulas to turn out gourmet food at a fast rate. The OG on the hotplate went okay, too, and did not spoil the high quality meat products supplied by Springsure Butchers. Those who had room were also able to partake in palate pleasing desserts.

The Annual General Meeting was a relaxed affair but plenty of work got done quickly. Mark VK4KMR chaired the meeting and firstly called for a minute's silence in respect for those hams in the region who had passed away during the year. Respect was given to Wally Douglas VK4AIV from Marian, Gus Angus VK4NRA from Calen and Don Blanch VK4ZFB from Biloela.

Mark then gave a report on CHARC

activities during 2008, informing about the improvements and expansions made to the Central Highlands repeater and APRS network. Highlights included linking to Rockhampton and Sarina repeaters, along with the Midge Point APRS Digipeater being established and working well.

Some club members were also singled out for special mention, with Steve VK4SMW, Roy VK4YRO and Mick VK4HOG being congratulated for providing technical support beyond the call, and Gordon Loveday VK4KAL and Dorothy Loveday being elected Life Members of CHARC for the years of secretarial and treasury duties they have performed for the club.

Mark also thanked all those members who did not actually live in the Central Highlands for their ongoing support and participation in keeping a mighty little club alive. Mark then declared all positions on committee vacant. Another lifer, Geoff VK4GI, was called upon

continued next page

VK7 *continued from page 35*

A big thank you to Robert Milne VK7ZAL for a very generous donation of his immaculately constructed ATV gear for 70 cm, 23 cm and 13 cm. ATV nights happen from around 7:30 pm and signals go out on 444.25 MHz, UHF just below SBS in Hobart.

North West Tasmania Amateur Radio Interest Group

NWTARIG met on Saturday September 20 and Dave VK4AO and Yvonne VK4FLUV from the Gold Coast ARC were welcome guests. Please note that the SSTV facility on the 2 m Mt. Duncan Repeater VK7RMD has been

moved to the local simplex frequency of 147.425 MHz and shares the channel with the EchoLink VK7AX-L Node 100478 known as "ATV, SSTV & Chat Conference". Thanks to Winston VK7EM and Vernon VK7VF for their recent treks up Mt Duncan to replace a faulty repeater.

The Radio Experimenters and Social Group met on Saturday October 4 with some new faces in Mike VK7KMH, Dick VK7FORF and David VK7ZDJ who brought along photos of the commissioning of the Mt Duncan repeater site a long time ago! The group decided to hold a radio net each Tuesday night at 8 pm using the 2 metre repeater VK7RNW at Lonah. All are welcome to join in.

SILENT KEY

Ed Terrazzi VK7JET – SK

I regret to advise of the death of Ed Terrazzi VK7JET.

Ed was born in the USA and served in the US Navy during the Vietnam War. After his discharge, he settled in Tasmania and became interested in CB radio around 1980.

Ed suffered from multiple sclerosis and fifteen years ago would arrive at the amateur radio class at the Domain in his wheelchair. He obtained his Novice licence, having the call VK7NET, and later VK7JET, from locations in Glenorchy, Franklin and Compton Downs.

Ed was a life member of the ARRL, but in recent years his disability limited his use of radio.

Vale Ed. Submitted by Ric VK7RO

ar

to conduct the election of the 2009 Committee, with the results being:

President

Steve Wood VK4SMW

Treasurer/Secretary

Gordon Loveday VK4AGZ
and Dorothy Loveday

Vice President

Mark Robinson VK4KMR

Committee Members

Ron Moore VK4YRO
Harry Cox VK4LE
Rob Waegele VK4TWR

Publicity Officer

Helen Wood

Technical Officer

Steve Wood VK4SMW

The Raffles were then drawn by President Steve with the results:

GME TX630 Handheld

Roy Moore VK4YRO

Probe Multimeter

Chris Comollattie VK4VKR

A thing worth more than \$7.50 in a brown paper parcel

Dave Wilson VK4UN

Steve thanked Mary VK4PZ and Helen Wood for being the ticket ladies and also thanked Samuel Robinson and Michelle Waegele for the good scrunching job they did to the tickets. The Monster Auction then proceeded with Bill VK4XZ enticing the crowd to pay up for some real monster pieces of equipment whilst Gavin VK4ZZ acted as auction scribe and Samuel Robinson, Michelle Waegele and a few others in the crowd acted as bid spotters. A note to anyone else thinking of organising a monster auction - the artefacts of food made by the Ladies Group fetched as much as the monster equipment did, with big jars of Anzac Bikkies (which seemed to be a favourite of Clive VK4ACC), Oatmeal cookies, lucky dips and slabs of home-made fruit cake.

With the show finished and many of the group having travelled long distances during the day, personal power cells were rapidly dwindling, so the throng made it a night and went off to count stars, sheep or integrated circuits.

Sunday was wake-up time to the lovely aromas of the Recovery Breakfast! The Dynamic Duo - Gavin VK4ZZ and Clive VK4ACC suitably supervised by the CHARC Ladies and master cook Frank VK4CAU - whipped up oodles of

mouth-watering edibles which ensured quick business and clean plates. Tidying, sweeping, packing and farewells soon followed and the group wended their individual ways either homeward or onward to other spots to visit. Forty four people recorded their names on the attendance list: if you were not there, you missed out on a fantastic weekend!

Townsville Amateur Radio Club

TARC goes to the Theatre Restaurant

Saturday 1st November saw the annual visit by members and friends of TARC to the Townsville Choral and Orchestral Society's famous Theatre Restaurant. Hopefully we will have a report in the next issue.

Whispers On The Ether:

TARCadians on the High Seas.

These HAMS are currently at sea and sending position data by WinLink which eventually ends up in the APRS.

VK4HBV David onboard *Sahula* northbound - last report 03 Sept. 2008 1509 UTC, 0829S 11952E. In port Labuahn Bajo, Flores, Komodo Island, Indonesia.

VK4FUU Ashley and Brenda onboard *Ashymakaihken* - last report 22 September 2008 2012 UTC, 22.22.97S 166.54.90E 50 km SE Noumea. Anchored at Prony Bay, with good walking trails.

Get well soon Trevor VK4ZFC.

Get well soon greetings go out to Trevor VK4ZFC, former president of TREC and currently a day visitor at the Douglas Hilton for the next few weeks. You will hear Trevor pop up occasionally on the Townsville VHF Repeater. Do not be shy and say "g'day" to Trevor.

WICEN

WICEN Queensland holds a net every Sunday on 7075 kHz from 0830 (2230 UTC). The net calls in regular stations and then invites new stations to call in. Mix it with other WICEN ops and call in on the net!!

Rockhampton & District ARC

The RADAR annual dinner will be on Friday 28th November from 6.30 pm at Rockhampton Rugby League Club.

Many thanks to those who emailed me with stories and pictures I am very sorry that no pictures were added this

time around, sorry about that, but do not despair. Next time more details and pictures will be added. Keep up the good work. So thanking you for reading and till next time, Cheers! Also do not forget that I NEED YOUR STORIES AND PICS, please forward to: vk4vkr@wia.org.au or qtc@wia.org.au

Tablelands Radio and Electronics Inc

A new presidential year finds John VK4TL in the presidential seat once again, Dale VK4DMC as secretary, and Ron VK4EMF as treasurer.

To say hello to the Tablelands Radio and Electronics Club, tune to 3588 at 7.00 pm local time and do not forget the VHF/UHF Spring Field Day November 15/16th. Sunday 23rd November sees a Foxhunt followed by sausage sizzle.

P29 DXpedition operator vacancy

The P29 DXpedition activating P2 IOTAs and on 160 has an opening for an operator. Hugh K6HFA is graciously leaving his \$3000 (AUD) in the boat charter fund.

Would you like to replace Hugh? For \$2067 (AUD) plus your air fare, you can. If you are interested, be quick and contact Derek G3KHZ at G3KHZ@derekcox.plus.com or Skip W5GAI at W5GAI@arrl.net. Chance of a lifetime!

BARC

In Bundy ... the past meets the present.... and it is tuning up nicely.

There is news from Bundaberg Amateur Radio Club regarding their recent AGM and election of office-bearers. It seems that one John (Rusty) McGrath VK4JM has been elected President for the 2008/09 year, bringing full-circle the history of that club.

It was Rusty along with 11 others who, in September 1961, met to form the Bundaberg Club. The group had petitioned the WIA Queensland and received permission to form, and subscriptions were set at one Pound per year.

This past AGM saw another important milestone in amateur radio in the region. Two Foundation calls became committee members: Margaret VK4FHAM took on the Treasurer's role and Kev VK4FKEV will serve on the committee in a maintenance role.

This represents a well rounded outlook

for the group, with the history and solid past of the club well represented but new fresh members in radio being prepared to step up and take responsibility in different areas of club administration. It certainly augers well for the next 47 years for Bundy as Rusty outlined his vision for the new year and in particular the formation of Working Parties.

With leaders in each area utilizing the skills of ordinary members and having them step up and assist, the future looks bright for the Bundaberg amateurs.

The new committee is:

President:

John (Rusty) McGrath
VK4JM

Vice President:

Ross Orpin VK4JRO

Treasurer:

Margaret Beimers
VK4FHAM

Secretary:

Gail Lidden-Sandford
VK4ION

Committee:

Bob Wright VK4UD
(outgoing President)
Joscelyn McGrath VK4JJ
(a founding member and a
past president)
Anske Beimers VK4FCAB
(outgoing Treasurer) and
Kevin Sullivan VK4FKEV

More information on the BARC can be found at www.barc.asn.au

Brisbane Area WICEN and the Tom Quilty 2008

Brisbane Area WICEN Group Inc. has for many years been involved with communication for horse endurance rides. At a recent ride at Imbil, Barbara and Colleen from the Nanango Heritage Endurance Riders Association (NHRA) asked me to handle communications for the upcoming "Tom Quilty Gold Cup". This is Australia's most prestigious horse endurance ride, held at Nanango in Queensland's South Burnett region on Saturday 20th September 2008. Communications were required for rider tracking as well as for handling calls for assistance from the riders and reporting on track conditions and water supplies.

This event was at very short notice and an answer was required ASAP. David VK4DCG answered YES! This also meant that he was the organizer! A call for volunteers was encouragingly

successful, things were looking good.

NHERA negotiations on the route and access continued and late July saw check points confirmed. The ride would have six legs, with 17 check points. Now the serious work could start.

The ride was in the East Nanango and Din Din State Forests, tough country but "Radio Mobile" confirmed that a two metre repeater on Treeby's Hill (luckily also a check point) provided good coverage into the forests and to the Nanango base. A field trip in mid August confirmed this. By now, the volunteer list had grown to 19: just enough to cover the 17 check points and the Ride Base.

David's wife Shirley VK4HSG and David VK4DCG with Al VK4AL set up camp at Nanango on Wednesday 17th, verified all the checkpoint locations and communications on Thursday 18th and set up the Ride Base on Friday 19th. Volunteers started arriving on Friday afternoon in time for a pre-ride briefing on Friday night. As the ride start was at 0400 on Saturday 20th, an early night was the rule. 0300 saw all volunteers in place with communications checked. The first hurdle was overcome, no one got lost. Volunteers, given the sketchy route instructions, I applaud your navigation skills (and use of the GPS).

The ride start at the Nanango Ride Base was something that had to be seen to be appreciated! 210 horses and riders,

fresh and eager, crowding through the start, all at once. An announcement to all stations that riders were on the way warned the first check point to be ready. At 0445, 210 riders descended on the first check point, manned by Bruce VK4EHT, Gary VK4CUZ and Shirley VK4HSG. Top work, all riders checked and numbers relayed to base.

From here, the field started to stretch out, not quite so frantic at the following checkpoints, and on to the "Away Base" manned by Simon VK4TSC and Bill VK4NBP. The ride snaked through the East Nanango State Forest, back to Ride Base at the Nanango show grounds.

All went well until about 2100 when a violent electrical/hail storm shut down all communications. To the field operators, a magnificent effort continuing to man check points and record the rider numbers of those competitors still on the track, some riding on while the storm was raging.

The storm passed at about 2145, communications were re-established and all information was relayed to Base. With the storm delay, the organizers extended the nominal 0400 Sunday finish, the last check point closed at 0500, the last rider coming home at 0515.

The final tally was: 27 hours of continuous operation for the Base and for most field operators, an endurance event not only participants but for radio

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operators as well. Extreme weather conditions did not stop the checkpoint operators. All riders were successfully tracked and all messages for assistance were handled promptly. No equipment failures were encountered. Extreme satisfaction from the event organizers on the operators' abilities and the quality of communications provided.

This effort is a tribute to the field operators, their WICEN training proving once again that amateur radio can deliver the goods.

Many thanks to the "Quilty Mob", being: Shirley VK4HSG, Simon VK4TSC, Matthew VK4MAT, Bill VK4NBP, Gary C VK4CUZ, Brian VK4XS, Tom VK4TY and Syris, Gary B VK4ZGB and Tricia, Al VK4AL, Bruce VK4EHT, Ross VK4WRC, Miles VK4FUST, Robert VK4HBW and John VK4IE. Also Tim and Denis, not yet licensed but working on it, aren't you? Lastly, Zac the wonder dog. Without his conversations during the early hours, none of this could have happened!

David Gulley VK4DCG

(Brisbane Area WICEN secretary, now retired from organizing "Quilties").

The Brisbane Area WICEN web site at www.qdg.org.au has photos, and for more on the Tom Quilty Gold Cup, visit www.tomquilty2008nanango.com/ and <http://nanangoenduranceriders.com/> **ar**

Silent Key

Lawrence Blagbrough VK4ZGL – SK

Lawrence Blagbrough, a life member of the WIA, passed on in hospital at Toowoomba on 20 June 2008, aged 88.

Lawrence commenced his career with the Royal Navy at a site evaluating new equipment. He then moved from the UK to RNHQ in Sydney and then to a new RN depot in Brisbane. Married to a local girl, after retirement he held various posts in Brisbane including one at the University of Queensland.

Lawrence took most interest in WIA administration and computers rather than operating and gave the Institute worthwhile help.

In Toowoomba, Lawrence took part in various local activities, as librarian, educator and others, including Toast Master.

Submitted by Peter VK4PJ. **ar**

Spotlight on SWLing

Robin L. Harwood VK7RH

Well, the major seasonal changeover happened on October 26th at 0100. You have probably already noticed a sharp decline in the number of international broadcasters on shortwave.

Radio Netherlands has dropped English language broadcasts to North America on HF and probably to Oceania as well, although Dutch language programming continues. Radio Taiwan International from Taipei has also discontinued targeting North America and Europe and has not been broadcasting to Australasia for a while.

This means that the Family Radio senders in Florida will now be broadcasting other programs. Family Radio used to be relayed from Taiwan but have now been using the worldwide VT senders. The Taiwan senders are ageing and no longer have the punch needed, especially to combat the ever increasing "Firedrake" jamming. The latter has always concentrated on disrupting programming from there ever since the Kuomintang fled to Formosa, also known as Taiwan, in 1949.

The VOA has continued axing programming over shortwave despite the Georgian crisis with ramifications for Ukraine and the Baltic states. Domestic relays over FM in the CIS have been terminated following Russian pressure.

I wonder if the new US administration will reverse this or perhaps even institute further cutbacks. One candidate has vowed to cut back wasteful expenditure and the anti-Castro clandestine Radio Marti may fall into that category.

China is clearly dominating shortwave whether it is broadcasting or jamming other stations targeting the world's most populous nation. The "Firedrake" is so easily heard with its heavy modulation spreading over adjacent channels and with up to 10 channels on, for example, the 25 or 31 meter band, can severely disrupt the allocations.

I have also noted that smaller broadcasters, long buried under the international powerhouses, are increasingly becoming audible, particularly outlets from South America, including Brazil. For some reason, signals from Brazil have been extremely rare here and I have only worked one Brazilian amateur station in my life. Yes,

I have heard Brazilian stations from the Globaltuners website but that is not the same as hearing them direct.

The Radio St. Helena transmission will go ahead on November 15th between 2000 and 2345. They will be on 11092.5 and a test transmission early in October was observed in India, Japan, Europe and North America, although weakly in the latter. Nothing was heard here and as they are targeting only Japan, Europe and North America, I do not expect to hear any direct signals but will "cheat" via the web.

Well that is all for this month. You can email vk7rh@wia.org.au with any news or comments.

De VK7RH.

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Christine Taylor VK5CTY

The ALARAMEET in Ulverstone

The 80 or so people who attended the ALARAMEET had a great time. Everything was well organised including some last minute changes in accommodating the weather, which was not quite as kind as it could have been.

A number of us arrived a day or two before the beginning of the Meet. Some arrived on the Saturday morning. Everyone who needed to be met was met, and two metres was a help to guide in a few who got slightly lost.

The caravanners were all located near each other and not far from the cabins we had booked, so everyone soon knew where everyone else was. It was not difficult to have 15 or 20 people crowded into one of the cabins "meeting" each other. Two motels were also booked through Susan and the ones in these soon knew who was in which room so all round we had the opportunity to meet new and old friends.

Several of the ZL YLs were delighted to have an eyeball contact with their sponsors for the first time. Cheryl N0WBV and her OM John KT0F were

on their first visit to Australia so they were interested in everything. Cheryl had been President of YLRL and had hosted one of their MEETS not long ago. She was amazed at the number of people who attend our MEETS. In the US they rarely have so many attendees. I suspect it is the Australian habit of travelling across our wide brown land in our caravans that makes it so "normal" to include an ALARAMEET in our plans. I am sure our moderate weather has something to do with it, too.

The Saturday morning was occupied with registration and chit-chat. After



ALARA members present at ALARAMEET 2008

Back row: Pam VK3NK, Jenny VK5ANW, Jean VK3VIP, Yvonne VK4FLUV, Susan VK7LUV, Catherine VK4VCH, Dot VK2DB, Pat VK3OZ, Mary Rodgers.

3rd row: Jeanne VK5JQ, Bev VK6DE, Susan VK3FXXX, Rosanne VK7NAW, Muriel May, Val VK4VR, Pam VK4PTO, Margaret VK3FMAB, Margaret Loft, Cathy ZLADK, Sharron ZL3AE

2nd row: Mary VK5AMD, Myrna VK5YW, Maree VK3FSAT, Nancy Karas VK7BYL, Cheryl N0WBV, Ann VK4ANN, Daralyn, Shortland, Tina VK5TMC

Front row: Christine VK5CTY, Shirley VK7HSC, Joline ZL1UJB, Lynette ZL1LL Marilyn VK3DMS, Jenny VK5FJAY, Alison ZL1TXQ, Leslie VK5HLS, Meg VK5YG,

morning tea, all the group photos were taken. We like to have a record of the groups that have sponsors with other YLs so the photos can take a while.

The official opening started with a special video welcome by Joy VK7YL. Quite by chance Joy had got in touch with Justin VK7TW, just a week or so earlier, offering REAST some early QSL cards etc.

Joy has been an amateur since the 1930s and gave Justin a 45 minute interview, of which he showed us five minutes of Joy welcoming us to the ALARAMEET. As Justin was leaving Joy, she confessed that that day was her 93rd birthday!! WOW, she is certainly 93 years young. I believe the whole of the interview with Joy will have been 'aired' in one of the Sunday morning broadcasts by the time you read this. It was an exciting bonus for everyone to start he official ALARAMEET like that. Thank you Joy and we all wish you well.

After lunch we were taken to the "Axeman's Hall of Fame" to see pictures

and memorabilia of the many axemen from Tasmania who have competed at the Shows around the country. Those of us who enjoy watching the axeman competitions recognised some of the names and faces. There was also a most interesting collection of wooden craft objects on display or for purchase.

Saturday evening saw the formal dinner at the Bass and Flinders Motel; a good time was again had by all.

The next morning we were taken to the Trowenna Wildlife Park where we had an opportunity to hold or stroke a koala (from Victoria), a wombat and a Tassie Devil.

After a very substantial meal at the Sheffield RSL, we had time to view and photograph the marvellous murals painted on the walls of many of the buildings. What a great idea!

Proceedings concluded with the drawing of the Special Effort prize, when Hans VK5YX was delighted to win the Icom handheld. Then the ALARA flag was folded and presented

to Pam VK4PTO, the next convener of an ALARAMEET. This will be held on the Gold Coast in 2011.

On the Monday, for those able to stay a little longer, there was a bus tour to a platypus and echidna house where we could get up close and personal to these strange animals. Lunch was at Cataract Gorge with time for the most intrepid to do a half hour walk up the cataract. The day concluded with a visit to the Queen Victoria Museum and Art Gallery, where there was something for everyone.

For the next couple of weeks there were voices on two metres and SMS messages flying around as the many travellers exchanged news as they visited many of Tasmania's tourist destinations. No doubt there were also stories on the Traveller's Net through which you have been able to follow people.

When there is an ALARAMEET anywhere you can be sure some of us will stay on afterwards to take the opportunity to see new places.

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28th ALARA CONTEST 30/31 August, 2008

A very disappointing year, even though the bands were reasonable. I suspect that the impending ALARAMEET (which was held just two weeks later) meant that many were already on the road, or in the middle of preparations for travel. As usual there were those heard on air with good numbers who failed to send in a log. Most of the logs arrived by email which made my job easy, as I also went to Tasmania for ALARAMEET.

Congratulations to Lesley VK5HLS who made such a wonderful score and to Rosanne VK7NAW, not far behind. I think there was some friendly rivalry there. It probably came down to whoever had the least sleep, hi! I believe that Lesley's OM Hans VK5YX was housemaid for the weekend. Congratulations also to Leonie VK2FHRK who is our top Foundation licensee for 2008. Another Foundation licensee, Ann VK6FAVB, though not an ALARA member, ably represented VK6. Gerald VK2HGB has taken out the top OM for the 3rd year in a row.

Mention must also be made of Sharron ZL3AE who not only had a great score but also worked a creditable CW score of 52. Well done Sharron! Our top score in VK3 goes to Muriel, who worked the contest under the supervision of her OM Niel VK3KNM. Muriel does not have

Results

Lesley VK5HLS	1033	Top overall, Top phone, Top VK5 ALARA member
Rosanne VK7NAW	31	Top VK7 ALARA member
Catherine VK4VCH	60	Top VK4 ALARA member
Muriel VK3KNM/2 nd op.	14	Top VK3 ALARA member
Gerald VK2HGB	33	Top VK OM
Sharron ZL3AE	26	Top DX YL, Top DX CW, Top ZL ALARA member
Leonie VK2FHRK	91	Top VK2 ALARA m'ber, Top Foundation Licencee
Pat VK3OZ	21	Top VK YL CW (CW score 94)
Chris VK2LCD	03	
Alan VK8AV	88	
Gwen VK3DYL	79	
Marisa VK3FMAR	71	
Marilyn VK3DMS	63	(Check log)
Christine VK5CTY	54	
Jenny VK5ANW/3	29	
Peter VK4FABC	08	
Celia ZL1ALK	03	
Kingsley VK5FKDT	9	
Ann VK6FAVB	0	Top VK non-member
Mavis VK3KS	0	(worked CW only)
Michael VK1XYZ	9	
Richard VK2KRM	9	
Dot VK2DB	1	
Graeme VK2MGM	0	

SUMMARY:

15 ALARA members (inc. 2 DX members); 1 non-member YL; 8 OMs.

her licence as she has health problems, but is willing to take part.

So now we must look forward to 2009 and another contest. Thanks to those OMs who supported the girls – we hope

you will all be there again next year. So mark the last full weekend of August – 29/30 – for the 29th ALARA Contest. See you there!

33 Marilyn VK3DMS

ar

VHF/UHF An Expanding World

David Smith VK3HZ

vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

We have had our first VK-ZL opening on 2 metres – very early in the season.

On the evening of September 26th at around 0845 Z, Bob ZL3TY at Greymouth on the west coast of the south island reported hearing the Newcastle Channel 5A sound carrier on 143.776 MHz. Steve VK2ZT at Medowie just north of Newcastle began monitoring 144.1 and reported hearing weak CW, although he was suffering from a strong birdie on the frequency. At 0908 Z, they finally made an SSB contact with 5x1 reports each way over a path of 2012 km. Signals rose to S3 before they faded out.

Well done, and hopefully that is an indicator of a good season to come.

2 Metre Scramble

With the success of the VK3 144.150 net each Wednesday night, there has been wide support for the re-introduction of a regular 2 metre Scramble to promote further activity on the VHF bands. Mike VK3KH (ex-VK3AAK) has formulated a simple set of rules summarised below:

WHEN:

Last Sunday night of each month at 8.30 pm AEST (1030 UTC – 0930 UTC during Daylight Saving)

DURATION:

15 minutes only, with call back from 8.45 till 9.00 pm on 144.150 MHz

GENERAL RULES:

1. Work each station only once. Exchange will be RS report plus 4-digit Maidenhead locator.
2. Each month there will be a bonus station worth 2 points.
3. Operation will be between 144.110 and 144.200 on USB.
4. Power output is maximum 100 watts PEP

SCORING:

1. Each grid square worked will act as a multiplier.
2. Scoring will be: (number of QSO) x (number of grid squares worked)

3. The bonus station will count as two QSO.

BONUS STATION:

The winner each month will be the bonus station, and the callback controller, for the following month's scramble. They are excluded from winning in the month they are bonus station.

The first event is scheduled for Sunday 26th October.

Refer to the VK Logger Forums area for any late changes to the rules.

Aircraft Enhancement

Barry VK3BJM in Kyneton has been refining his Aircraft Enhancement techniques with the help of his ADS-B receiver. He reports on some recent activities:

This Monday morning (2042 Z, 5/10/08) when I fired up the ADS-B receiver the first aircraft that caught my eye was a QANTAS bird, flight QF565. Turns out this is a Sydney to Perth flight, of which there are six flights daily (with QANTAS, at least). I cannot recall having seen one on this track before, however, along which the aircraft was shown as having a bearing of 263 degrees (True) from over Canberra to the Bordertown waypoint, where it converges with the Melbourne-Adelaide track before heading out over the Coorong and the ocean. This track is designated J142 on ERC H3 (air traffic chart, High #3).

Helpfully (!) this morning there was very little by the way of troposcatter signal from the VK3RRU 2 m beacon at Mildura, and the VK5VF 2 m beacon on Mt Lafty was inaudible.

At 2044 Z the aircraft was 93.7 nautical miles (173.5 km) from my QTH, and a heading of 313 degrees (True), at which point I lost visibility of it (about 25 km east of Warracknabeal, VIC). I listened to VK5VF for the next 10 minutes, and noted at 2047 Z a very faint fluttery signal start to appear. This was very brief, but at 2051 Z the beacon came up out of the noise at 419 for about a minute, during which time there was no QSB. The aircraft was cruising at 40,025 feet at the time it was visible to my ADS-B receiver.

I was still in the shack, after the usual "AE Alley" on 144.200, at 2230 Z when

I noticed the second Sydney-Perth flight for the morning (QF575) appear on the screen near Culcairn, NSW. It was also cruising at 40,025 feet. I prepared to take notes...

VK3RRU is at 388 km and 328 degrees from my QTH; VK5VF is at 571 km and 294 degrees. I listened, firstly for VK3RRU then VK5VF, over the next 25 minutes, and my observations are as follows:

2246:50 Z: QF575 due north of VK3BJM

2248:48 Z: QF575 @ 350° - VK3RRU 319 (troposcatter level)

2250:50 Z: QF575 @ 340° - VK3RRU 319

2251:45 Z: QF575 @ 335° - VK3RRU rest period (no key-down tail).

2252:20 Z: QF575 @ 333° - VK3RRU 319 with fast flutter.

2253:00 Z: QF575 @ 330° - VK3RRU rest period.

2253:30 Z: QF575 @ 328° - VK3RRU 539

2254:10 Z: QF575 @ 325° - VK3RRU 419

2254:50 Z: QF575 @ 324° - VK3RRU 319 with fast flutter.

2255:20 Z: QF575 @ 321° - VK3RRU 319 with fast flutter.

2256:10 Z: QF575 @ 320° - Temporarily lost radar visibility of aircraft. Shifted array, and receiver, from VK3RRU to VK5VF.

2256:35 Z: QF575 @ 316° - Aircraft reappeared.

2257:40 Z: QF575 @ 314° - Temporarily lost radar visibility of aircraft.

2258:35 Z: QF575 @ 310° - Aircraft reappeared. Still nil signal audible from VK5VF.

2300:35 Z: QF575 @ 304° - Still nil signal audible from VK5VF.

2302:00 Z: QF575 @ 304° - Temporarily lost radar visibility of aircraft (location 36.208 S, 142.547 E - again, close to Warracknabeal). Still nil signal audible from VK5VF.

2304:40 Z: QF575 @ 296° - Aircraft reappeared briefly - marginal signal with position update before data froze.

2305:00 Z: QF575 @ 296° - VK5VF

419 with fast flutter.

2305:25 Z: QF575 @ 296° - Lost radar visibility of aircraft. VK5VF 419 without flutter.

2307:00 Z VK5VF faded into the noise floor.

Perhaps one day I will have improved my ADS-B receive capability so that I can follow these aircraft past the convergence of their track and the VK5VF beam heading. My view to the WNW and W suffers from "Lumps", like Patten's Hill at Drummond... However, it was interesting to see just how much inline the aircraft was before enhancement was observed on the signal from VK3RRU. If that beacon had a key-down tail of some sort, that could be viewed better, of course; but the beacon has power supply limitations, I believe, so there is nothing that can be done at present.

Addendum: In the shack just after 2000 Z Tuesday morning, and QF565 has just appeared on the screen, over Kyeamba Gap (halfway between Holbrook and

Tarcutta, NSW). It took 30 minutes, flying at about 405 knots, to cross the VK3RRU heading; this time it enhanced the signal to 559 (background level 519 this morning) at 2035 Z. The aircraft is at about 150 km from my QTH when it crosses the beam heading - very close to halfway to VK3RRU. The aircraft was at 38,000 ft this morning.

The aircraft then enhanced the VK5VF beacon between 2044 Z and 2047 Z from inaudible to 419 - steady and without flutter for at least 60 seconds between 2045 Z and 2046 Z. The aircraft is at 250 km from my QTH when it crosses the VK5VF beam heading - it is 320 km from the Mt Lafty site.

I recall Gordon VK3EJ (ex-VK2ZAB) a few years ago asking via the VHF Reflector why AE is not used between Adelaide and Melbourne (M-A), the way it is between Melbourne and Canberra/Sydney (M-S). I would suggest that the main reason is that the M-A flight paths are not situated as favourably as the M-S paths... Combine that with the majority

of Adelaide stations being located west of the Lofty Ranges, and fewer flights to utilise, and it is a no-go. However, this particular track should be able to support AE between Melbourne and stations in the clear in Greater Adelaide - VK5AKK, probably, and VK5NY. The track crosses the beam heading between my old QTH in Box Hill South and VK5AKK close to the mid-point of the signal path.

The things to bear in mind are the brevity of the "openings" - exchanges will have to be quick; the number of daily flights (only 6), and that the aircraft really needs to be on your beam heading to the distant station. Plane Plotter would be a great help for those who do not have a ADS-B receiver or range to display the enhancement area. Low local noise floors would be of some assistance! Station ERP greater than VK5VF should ensure better RS reports than those I have recorded from VK5VF

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

Digital DX Modes

Rex Moncur VK7MO

This month's report comes from Ian VK3AXH, who gives us some insights into the development of his station and EME operations using WSJT as follows:

Some years ago I was involved with experiments using Hellschreiber, receiving signals via meteor scatter from Rex VK7MO on 6 metres. With the advent of a new digital mode JT44 by Joe Taylor K1JT, these experiments continued on 2 metres. The WSJT digital modes by K1JT are used by EME stations with small antenna arrays and moderate power to take part in weak signal operation via the moon.

My first EME contact took place on 21st of August 2004 using JT44 with W5UN. I used a single 13-el Yagi and AM17 amplifier. Dave W5UN uses 32 Yagis, so you can guess who was doing all the work. After some research into what I could do to improve my station, I visited Des VK3CY and had a look at this 4-Yagi system and results obtained.

It took another 10 months before I was finally up and running with my 4x18 element Yagis on 10 m booms designed

by the late DJ9BV and optimised by VE7BQH with all elements insulated. The array is mounted on a Nally Tower and is not fully extended for obvious reasons.

On the receive side, my IC-910 is coupled via a preamp using a ATF54143 designed by PA3BIY. At present it is mounted in the shack, but will hopefully end up on the mast. It is mounted in a weatherproof box with switching, so it is just a matter of relocation. Azimuth and Elevation make use of a CDE Tailtwister rotator and two foot screwjack which gives elevation up to 55 degrees. Manual control is used to track the moon. Elevation readout makes use of the innards from a digital spirit level to give one degree accuracy. I have programmed the steps into

the control unit for the screwjack which means if 15 degrees is needed, 15 is pressed on the remote control and the antenna elevates to that elevation position.

An EME logger by N0UK is used to liaise with other EME operators or to see who is calling CQ. Using the WSJT software, if a signal is seen in the waterfall, it is then possible to reply and see if contact can be made. EME can be frustrating particularly when you can



The VX3AXH QSL card featuring his four stacked 18 element Yagis

clearly see signals yet when you call them there is no response. Some reasons for this include Faraday Rotation and Spatial Polarisation Offset. In addition, if you have any hiccups with your sequencer, there is a fair chance you will get RF into your preamp and destroy the active device ... I have lost several due to an intermittent PTT line.

There are several stations using single Yagis with moderate power - a couple of

hundred watts - on the band and I have been lucky to work a number of them.

The digital mode used for 2 metres is JT65B. This program can also be used for weak signal terrestrial contacts and is in regular use by enthusiasts within VK. Good results are obtained using this mode when there is no chance of having a QSO on either SSB or CW. The site to download the software is at:

<http://www.physics.princeton.edu/>

pulsar/K1JT/

To date I have had 677 QSOs, 223 grids and 45 DXCC. If you are contemplating trying this exciting activity and I can be of any assistance, please get in touch by email at igm@vic.chariot.net.au

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 without any reports of significant openings, only the odd report of a beacon being heard briefly.

David VK3AUU is certainly preparing for the next sunspot cycle in a big way. He has recently constructed and erected a 16-element Yagi based on the DL6WU design on a 26.3 m boom. Pictured below is the Yagi:

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.

There may be other beacons either planned or not operating at present and I will advise of any updates. If your equipment has the capabilities, you should program the above frequencies into memories and regularly scan 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 Wagga sound on 51.740.

The international call frequency is 50.110 MHz and the Australian calling frequency 50.200 MHz with most SSB operation taking place between 50.110 MHz and 50.200 MHz. For more information check the Australian amateur Callbook.

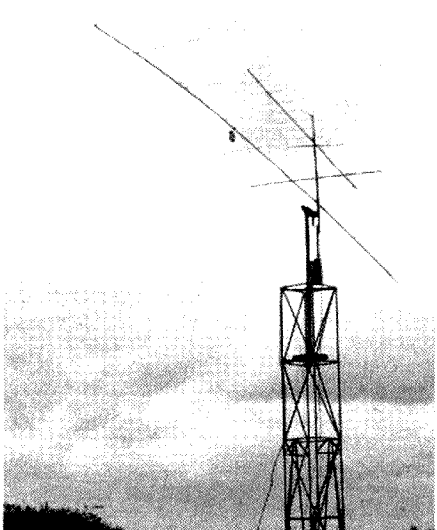
Also do not forget that Standard licensees can only operate in the 52 – 54 MHz portion of the band. There are

several Standard licensees who operate in this portion of the band and can be found calling on 52.1 MHz.

Hopefully 6 m will start coming to life during November and lead into another good sporadic E season.

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

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The VK3AUU 16-element Yagi for 6 m

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	OG89ij	CW
50.306	VK6RBU	Bunbury	OF76wr	CW
50.310	VK8VF	Darwin	PH57kn	CW
50.315	VK5RBV	Barossa Vail.	PF95mk	CW
50.345	VK4ABP	Longreach	QG26dn	CW
52.438	VK3FGN	Mildura	QF15ct	CW
52.450	VK5VF	Adelaide	PF95	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

Getting started on the FM birds

Regular readers of AR may recall that in early 2006 I published a feature article entitled "Working AO-51 on a budget". This month I will be revisiting this subject by presenting an updated and slightly shortened version of this article. I feel that it is time to update the information as AO-51's operating procedures have changed, and I also wanted to include details on working SO-50.

Below you will find some basic information which is intended to get those who have never worked via an amateur satellite up and communicating on the FM birds (AO-51 & SO-50) with minimal equipment and little expense.

I acknowledge that the FM satellites only make up a part of the amateur satellite service. However they are the easiest to use and currently the most popular birds. Once you have had a taste

of working the FM birds you may decide to broaden your horizons by stepping up to the slightly more complex SSB/linear satellites and the digital modes.

The easiest way to get started is by working the birds portable. You will need to get out of the shack, and into an open area. In most cases, the FM satellites you will be listening to or working will be more than 750 km away, so you will need a clear view to the sky without anything blocking the signal. At times, even light foliage can block the satellite's weak transmissions. It is interesting to note that AO-51 and SO-50 transmit with an approximate power output of from 0.5 to 2 watts.

What kind of antenna do you need?

The bottom line is that any VHF

antenna will work for transmission up to the satellite. You can be successful using the rubber ducky which came with your handheld transceiver (HT). However it's a little trickier on the receive side, but again, with some patience and perseverance you can be successful using the simplest of dual band vertical antennas.

A whip antenna, such as a mobile 2 m/70 cm dual band collinear attached to the HT with a short coax lead, works a little better than a rubber ducky. Naturally, the whip will work more effectively if ground plane radials are used. While using a ground plane is great, keep in mind that you will need to be holding the antenna system in one hand while operating your HT in the other. So don't make your ground plane too large or heavy!

As far as the transmit power goes, you

AMSAT-Australia

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About AMSAT-Australia

AMSAT-Australia is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites.

Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-Australia is the primary point of contact for those interested in becoming involved in amateur radio satellite operations.

If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-Australia monthly nets

Australian National Satellite net
The net takes place on the 2nd Tuesday of

each month at 8.30 pm eastern time, that is 9.30 Z or 10.30 Z depending on daylight saving.

The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news.

The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater on 146.850 MHz
VK2RIS Saddleback repeater on 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3JED Preston, Melbourne on 144.296 MHz SSB simplex
VK3JED Preston, Melbourne on 439.175 MHz FM simplex with a 91.5 Hz CTCSS tone.
VK3RTL Laverton, Melbourne, 438.600 MHz FM, - 5 MHz offset

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email.

AMSAT-Australia HF net

Members and interested parties are also reminded of our HF net which is held on the 2nd Sunday of each month. See www.amsat-vk.org for details.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Should you wish to join AMSAT-Australia, details are available on the web site. Membership is free and you will be made very welcome.

will do just fine on as little as 2 watts. In fact, it's best not to use a lot of power – you do not want to stomp on other users you may not be able to hear. Five or 10 watts is heaps, and you certainly do not want to use 20 or 25 watts while holding an antenna in your hand.

If you are really keen, you can start your FM satellite experiments by using a three element Yagi to direct your signal towards the satellite. However, if you are going to have problems, 95% of the time it is going to be on the receive side.

It goes without saying that a handheld dual band antenna or antenna system is a must for working LEO (Low Earth Orbiting) satellites successfully. If you are just getting started in working LEO satellites, I would suggest a 2 m/70 cm dual band mobile collinear antenna with four to eight short radials.

If you are really keen, then you might purchase an "Arrow" handheld satellite antenna. This is a combined 3 element 2 m and a 7 element 70 cm Yagi mounted at 90 degrees with respect to each other. Unfortunately, the Arrow manufacturer does not have a distributor here and will not ship to Australia! So if you want one, you will have to buy one from a dealer in the US that offers international shipping. If you are handy, you may also consider home-brewing an Arrow look-alike or an alternative directional antenna such as the very effective "IOIO" design – see the AMSAT-VK Group files section for details.

Antenna position

While the AO-51 satellite continuously transmits a weak carrier signal, SO-50 does not. I would suggest that you start by trying just to listen to other operators working on AO-51. You will need to move your antenna around to find the best position for your particular location. If you are using an omnidirectional antenna such as a rubber ducky or whip, you will find that it will work best if you direct the tip of the antenna toward the ground at a 45 degree angle. This sounds a bit strange, but it works by maximizing signal strength by utilizing the ground as a reflector. This applies equally to both receive and transmit modes, and you will find that hard surfaces work best. The 45 degree angle also helps a little to match the satellite's antenna polarization.

If you are using a directional antenna, you will want to aim it directly at the satellite. Rotating your Yagi on its Z

axis from time-to-time can also be helpful. Do not forget that satellites are stabilized in space by rotating on their Z axis, changing their antenna polarization continuously.

AO-51 and SO-50 frequencies

By now you will have realised that AO-51 and SO-50 use two different amateur bands for reception and transmission. The downlink or receive frequencies for AO-51/SO-50 are 435.300 and 436.795 MHz respectively. The uplink or transmit frequencies are 145.920 and 145.850 MHz. Given this crossband configuration, ideally you should be using a full duplex HT. This will enable you to hear yourself coming back from the satellite. While it is desirable to have a full duplex rig, it is not essential.

If you like, you could use two radios to achieve full duplex operations, though handling two rigs and an antenna might be a bit tricky – it is possible and I have operated portable with two HTs, an "IOIO" antenna and a pair of headphones. With full duplex capabilities, you will know at once that you are getting into the bird, and it will make working SO50 much more straight forward. For the remainder of this column, I am going to assume that you are going to be using a single dual band radio.

Setting up the HT

Before telling you the easiest way to set up your radio to work AO-51 and SO-50, I want to briefly mention the Doppler effect. Being a licensed amateur radio operator, you probably already know about the Doppler effect. To refresh your memory, Doppler makes a transmitted radio signal seem to change frequency as a transmitter moves toward and away from the receiving station, that is, when it is moving at high speed.

Recall that this effect is relative, meaning that it applies to both stations, even if only one station is moving. If both the stations are in motion, this complicates the situation even further!

This effect increases with the frequency of the RF being radiated. In our case, the UHF downlink signals from AO-51 and SO-50 will be effected by Doppler, far more than the VHF uplink transmission. In fact, the VHF signal is not Doppler shifted by all that much, so we will not have to worry about altering the uplink

frequency at all.

As far as the UHF downlink is concerned, you will see about a 10 kHz shift above and below the stated transmit frequency, as the satellite traverses the sky from horizon to horizon.

The easiest way to deal with the Doppler shift on a HT or fixed step transceiver is to alter the frequency in 5 kHz steps, by manually lowering your receive VFO frequency as the bird moves toward your station. When the bird is at its closest to you or directly above you, your VFO should be set to the published transmit frequency. You then continue to lower the frequency as the bird continues along its ground-track away from your location.

To make life simpler, I would suggest that you pre-program five or six memory locations in your HT for each bird as the table at the head of the next page.

Before you begin, it is a good idea to disable your HT squelch control. The signals you will hear will often be too weak to break the squelch, unless you are using a very good antenna system. Do not forget to set up the PL Tones when needed and to enable the custom split frequency feature on your rig.

Also, you should know that AO-51's FM repeater is always functioning/turned on according to its operating schedule, while SO-50 is not. In order to operate via SO-50, you or another operator must activate the satellite's repeater function remotely. More on this in a moment.

Once again, I would suggest that you should start with listening to and then working AO-51 as it is used way more than SO-50 in Australia.

When AO-51 appears over the horizon, as determined by your prediction software (see below), you should monitor the satellite on channel 51, and only progress to channel 52 once you lose the carrier or intelligence on the voice signal. As the carrier or voice starts breaking up once more, change to channel 53 - being the actual published transmit frequency of the satellite. It is at this point that AO-51 is at its closest, and hence the signal will be at its strongest.

Finally, continue to channels 54 and 55 when required. This channel changing/frequency lowering will become second nature with experience.

As mentioned, it is necessary to switch on SO-50 before the repeater can be used. When first getting started with

hams around the country and at other times you may only have the chance to exchange callsigns. That is just the way it is with the LEO birds.

When are the FM birds available?

AO-51 and SO-50 operate 24 hours a day. The satellites criss-cross the entire globe in a polar trajectory, taking about 90 minutes to complete a single orbit. In order to operate on any bird, you will need a piece of software to predict each pass of the satellite. You will also need an internet connection to update the satellites telemetry data (KEPS) every week or so.

When working portable you should review the ground-track of each pass before heading outside to get a rough idea of where to expect the satellite to be located in the sky throughout a pass. This will be essential if you are going to be operating via SO-50 using a directional antenna and a half duplex radio.

On my PC I use two programs called Orbitron and SatPC32. Orbitron is a great free program with all the bells and whistles. You can download it from <http://www.stoff.pl>. I mainly use SatPC32 for controlling my base station radio when working the SSB satellites, though it can be used standalone if you prefer this program over Orbitron. SatPC32 is available for download as a fully functional demo from the AMSAT-NA website – www.amsat.org

Many other programs are available for Windows, Mac, Linux, Palm and Pocket PC. I will leave it to you to find alternatives to the ones mentioned.

Finally, you will need to check the operating schedule of AO-51 before attempting to listen to or work the bird. While AO-51 operates in the VHF/UHF crossband repeater configuration most of the time, other modes are frequently in use. See the AO-51 monthly schedule website for details – <http://www.amsat.org/amsat-new/echo/ControlTeam.php> SO-50, on the other hand does not change modes, being permanently setup as a V/U FM voice repeater.

So, why not give it a try?
Catch you on the birds!

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Memory Location	Memory Label	RX Frequency in MHz	TX Frequency in MHz	PL Tone Frequency
51	AO51-1	435.310	145.920	N/A.
52	AO51-2	435.305	145.920	N/A
53	AO51-3	435.300	145.920	N/A
54	AO51-4	435.295	145.920	N/A.
55	AO51-5	435.290	145.920	N/A.
56	SO50-ON	436.805	145.850	74.4
57	SO50-1	436.805	145.850	67.0
58	SO50-2	436.800	145.850	67.0
59	SO50-3	436.795	145.850	67.0
60	SO50-4	436.790	145.850	67.0
61	SO50-5	736.785	145.850	67.0

SO-50, you can probably just wait for another operator to turn the satellite on.

As you can see from the HT Memory table, SO-50 requires the enabling of PL tones to work. Assuming that you have set up the memories in your radio as per the table, in order to activate the repeater, you will need to transmit a quiet carrier overlaid by a 74.4 Hz tone for a few seconds, by selecting memory channel 56 and holding in your PTT button.

You can then operate via SO-50 in the same manner as AO-51, starting at memory location 57.

Working the bird

Working the FM birds is very similar to working your local repeater, except that its coverage may encompass almost the entire country, and possibly many others such as NZ, PNG, many of the Pacific island nations, and some countries in South East Asia if you are lucky and depending on your location.

Unlike your local repeater, AO-51 and SO-50 QSOs are not equal. There are huge variations in the capabilities of the stations using the satellites. It is so easy to disrupt other users, by dropping carriers on their frequencies or by calling CQ, when you cannot actually hear the bird. Before making a transmission, listen first, and be very, very sure that no other operator is speaking on the satellite.

This is so important when getting started and I have to admit that it is very tempting to transmit when you are not

sure whether you can hear the satellite or not. So, if you can only take one thing away from reading this column, it is this...

“If you cannot hear the bird, do not transmit!”

AO-51 in particular is a busy bird and is in use during most passes, so you should not have any difficulty in finding a QSO to listen to or to join. I would only attempt to use SO-50 after you are comfortable with working AO-51.

It is also very important to leave silent gaps between each transmission. When you are having a conversation on a bird, be sure to leave a gap of about 3 seconds before replying to another operator. Because any given pass may only allow communications for five minutes or so, depending on your setup, other operators can be unintentionally left out by people who are too quick on the PTT and are subsequently never heard!

You should also limit the number of times you call CQ and leave long gaps between calls. On many occasions a new operator has unintentionally disrupted an entire pass by continuously calling CQ over the top of other QSOs because they have not been able to hear the satellite.

The only thing that remains to be said about on-air satellite operations is to be courteous.

The birds are there for all to use and you should make room for others to participate on every satellite pass. Sometimes you will have the freedom to have short conversations with other

Contests

Contest Calendar November – December 2008

November	8/9	Japan International DX Contest	SSB
	8/9	Worked All Europe DX Contest	RTTY
	15/16	Spring VHF/UHF Field Day	CW/SSB/FM
	15/16	JT Ham Radio 50 Contest	CW / SSB
	22/23	ARRL International EME Contest	All
	29/30	CQWW DX Contest	CW
	29/30	CQWW SWL Challenge	CW
December	5/7	ARRL 160 m Contest	CW
	06	RTTY Melee	RTTY
	13/14	ARRL 10 Metres Contest	CW/SSB
	20	OK DX RTTY Contest	RTTY
	26 to 15 Jan 2009	Ross Hull Memorial VHF Contest (VHF/UHF)	CW/SSB/FM

Welcome to this month's Contest Column!

Phil Smeaton VK4BAA

CQWW RTTY – CQ Scandinavia!

An opportunity missed this year. I wanted to try a single band effort on 40 m to test a new antenna, and managed to pack the car and drive to the contest QTH – but left the laptop behind!

With no other means of participating in the RTTY contest (I have yet to master the art of decoding Baudot by ear), I had to settle for the Scandinavian contest instead. The antenna is a full size quarter wave vertical and is intended as a 'DX' antenna. Hence, nearby stations were but a warble in the noise whilst signals from further afield were clearly audible.

I had recently resurrected my trusty old FL-2100 amplifier and I wanted to see how it fared on-air. A few QSOs around VK resulted, in addition to working a handful of northern hemisphere stations too as part of the Scandinavian contest. Well, it seems like the antenna is doing a good job at least.

The EU stations were all workable after a call or two and the band got a little crowded at 4 pm local time with EU stations. The RTTY stations were in full swing and the spread of stations up the

band to 7070 kHz put a few noses out of joint – but it is only once or twice a year that the RTTY boys spread their wings to this extent, so live and let live I say.

CQWW RTTY occurs the last weekend in September and it is an excellent chance to test out antennas, radios, amps and other station changes made over the winter. It is also an excellent way to learn, or brush up on, SO2R or other logging program features since you do not have to concentrate as much on copying the exchanges and calls. You can pay attention to the computer and the mechanics of your operating rather than worrying about making mistakes.

I tend to look at RTTY contesting a lot like CW contesting, but quieter. While it is useful to listen to the received signal to make timing exchanges go smoother, you do not have to listen to most of the QRM and other noise, you are just listening for the other guy to stop transmitting so you can start.

Also, with modern loggers and more contesters realising that RTTY is gaining popularity, the pace of RTTY contesting is picking up. It was not long ago that a typical exchange was repeated several times, extra 'hello' and 'thanks' was

added which tended to slow down the exchange but to little detrimental effect. Most operators have worked out that rates well over 100/hr are very possible if you cut out the chat and use exchanges like in CW contests with just a few simple modifications.

It does not take lots of extra hardware to get into RTTY contesting. If you are using a logger like N1MM and have hooked up your sound card as a voice keyer you are likely just one cable away from RTTY operating. If you already have the computer playing audio to the radio, all you need is to get the radio audio to the computer. With many radios, that can just be a single off the shelf cable from the line-out on the back of the radio to the sound card line-in. This lets you use the radio in SSB and send/receive AFSK.

This approach also presents you with some interesting technical operating capabilities. With a single sound card it is possible to do SO2R and be decoding two bands at once and not lose a beat decoding the second radio while transmitting on the first. With two sound cards, or two computers with one card each, you can decode both VFOs on two

radios at once, so you can both CQ and S&P on two bands at once!

As most RTTY contests have no 160 m operation, which might be interesting if you have antenna changes there to test, at least you do not have to worry about the end of summer noise quite as much. This also means for M/S or M/2 entries you can spend more time on the productive 80 m and 40 m night time bands.

So keep in mind that the CQWW series of contests actually starts in September and not October. Just hook up those sound cards and get on the air.

Waitakere Sprints 2008 Results - VKs

SSB Only	
VK5NJ	64
VK4FW	59
VK2LCD	55
VK3HJ	49
VK4ZD	49
VK2RD	43
VK4VCH	43
VK4ATH	36
VK3ZPF	22
VK2FAJM	16
VK4FJ1	4
VK3BTV	13
VK3KTM	3
CW Only	
VK3OZ	20
VK3QB	18
VK3JS	7
VK6AF	5
SSB & CW	
VK4SN	142
VK8AV	60

Bless him Father, for he has Sinned

With the SSB section of the Oceania DX Contest still ringing in my ears, here is the story from my entry into the foray at VK4KW.

The station currently consists of antenna hardware for only two bands – 40 m and 80 m. The 40 m system was fabricated some weeks ago, but on the morning of the contest, the 80 m system

was yet to be built.

The usual bunch of culprits could not attend site to help with the assembly etc, but one hardy soul confirmed that he could come and do the business. It is just as well really, as he is the antenna building brains! So, with tomorrow's arrangements made and confirmed, peace descended on the VK4BAA household on Friday evening with a glass of something splendid rapidly disappearing.

Saturday arrived - but the hardy soul did not! He was due early on the Saturday morning but he was a no-show! I already had 40 m erected and ready to go, so I knew that at least one band could be tested in the contest.

So, just in case of a late arrival instead of a complete no-show, I set-to in the paddock to clear the area around the planned location for the 80 m antenna. Some larger bits of log/tree/stone had been cleared previously, but there was more wood in the way and a huge amount of foliage to clear. The farmer next door often takes a break to watch what the crazy Pom is up to – and he was not disappointed.

As my slasher was in the shop for repair, I used my sit-on mower to clear the area around the support structure. All the farmer could see was some plump bloke astride a mechanical dust maker three sizes too small for the rider, hurtling round and round in a paddock under the hot midday sun and creating ever decreasing circles in the undergrowth. Every revolution, I could see the farmer leaning on his ute, howling with laughter.

Two hours (and a huge amount of dust) later, the general area was clear enough to accommodate the radials for a 1/4 wave vertical on 80 m. Like many other mad dogs, I had been out in the midday sun for far too long and needed to re-hydrate.

I made my way back to the house to find two missed calls on the mobile phone - the hardy soul seems to be trying to make contact! A quick return phone call later, the additional pair of hands arrived after having been stuck in traffic due to an air show at Amberley having got in the way. After the usual greetings and banter, we got to work with putting the station on to 80 m.

We assembled the 80 m antenna fairly quickly as it had been pre-prepared into a range of cut pieces of aluminium

poles. We soon got the ropes tied on and erected it. It looked huge standing at the bottom of the pole, looking up: nineteen metres of splendour reaching into the sky. It certainly looked impressive – the antenna guru had done a good job! We then laid the seemingly never-ending box full of radials out on the ground. The time was now just after 4 pm and the contest was due to start at 6 pm local time. After a quick test for resonance and bandwidth with the MFJ, all seemed to be good to go.

Next job was to get the feeder system installed - a further one hour job consisting of clambering across paddocks, up and down trees, avoiding startled kangaroos and highly aggressive ants, as well as generally tripping-over stuff as we were both getting physically tired by now. On the way back to the house, I turned and looked at the new antenna. It now looked small in size!

Back at the shack, I assembled the radio, laptop, table, chair, headphones and temporary power (the shack is separate to the house and is not completed as yet). The PC then spat the dummy and N1MM refused to talk to the rig. Changing bands was now very much a manual affair and possibly fraught with potential for error - especially at two or three in the morning. Luckily, we got away with it.

I got onto 40 m only a couple of minutes late for the start of the contest and soon put a few QSOs into the log. I later found that the first QSO, 001, was 'eaten' by N1MM - heaven knows what happened to it, but I later managed to get the data back into the log. The logger also, at times, refused to return to RX after a transmission. As the CAT linkage was dead, I un-plugged all other rig/PC connection and strangely this cured the problem - it did not seem to be RF related. Analysis over, the damn thing works!

40 m seemed to go OK, but 80 m started burbling a little bit so a quick QSY and listen around on 80 m for a while. With hindsight, maybe we should have stayed on 40 m a little bit longer, but you live and learn! A few other VKs were already there on 80 m, some CQing and getting no replies and others working a handful of NA stations. A quick "CQ" and a few more into the log, then back to 40 m.

What is this? The 'helping hand' wants to have a go? Not a problem says I - just use a different call sign such as VK4BAA

and..... no! Stop! You worked him using VK4KW! Bugger! Now we are Multi Single and not Single Op!!! Oh well, time to have a chat with Mr Boag.....

Conditions on the bands were not wonderful in general in VK4 but it was good to see how the antenna systems were performing. They seemed to get a few mults into the log so they can't be too far off the mark. There are a number of improvements required and these have been noted for next year! Some antenna hardware for at least 20 m and 15 m would be good too; as the vast majority of Sunday was spent working very little indeed on 40 m, as 80 m was obviously closed. A trip to 20 m would have helped the score hugely I reckon - and 15 m sometimes opens to JA for a while also, as it did in 2007. Things might be a little bit different for 2009!

So, what about the 'sinning' mentioned within the title? Well, apparently, all contesters are doing it all wrong. This is according to one individual that insisted on venting his spleen on the Sunday morning of the contest during my CQing on 40 m.

"What's your name and where are you?" he asked. I responded initially, thinking that the voice had come from the station I had just worked. "That's better" he said. "That's a bit weird" I thought to myself, and carried on CQing for the next contact. A VK2 answered and we dutifully exchanged our information

in a prompt and efficient manner. Then it came again: "What's your name and where are you?" I ignored him this time and carried-on the business of contesting. He persisted: "It's common courtesy to say your name and QTH - you contesters do not know the meaning of a QSO. A radio amateur is courteous at all times" he hissed, no doubt missing the uninvited irony embedded in the situation he had just created.

So, I asked; "What's your call?" No reply. I asked a second time. Again, no reply. "You're transmitting illegally if you do not identify yourself" says I.

Still no reply. "Good" I thought - "He has given up and QSYd". But, it was not to be. He continued with his solitary diatribe a few minutes later, extolling the virtues of QSO information almost to the level of exchanging birth certificate details and DNA. However, my antenna is biased towards DX and not really intended for VK QSOs in general, so when the band opened to EU his signal soon got swamped by a wall of noise from foreign lands.

This was in addition to the filtering that I had brought into action - unbeknown to him. His squeals and squawks went unheeded and he apparently soon tired of solitaire contesting and shuffled away to play 'Contest Police' with someone else. I heard him later on, chastising another contest participant in a similar manner. The recipient laughed at the

unwanted interruption and carried-on with enjoying his hobby - much to the annoyance of the interloper.

Amateur Radio is a broad church with something for everyone and I welcome all comers. However, when there is deliberate jamming and illegal unidentified transmissions it is a sad day for us all as it does not portray us in a good light.

But it would seem that VK is not alone in breeding 'Contest Police'. Did anybody else receive such a warning before CQ WW, or is it just Yuri VE3DZ? Yuri received an anonymous email stating: "Please be aware that I will be monitoring you 48 hours on the bands from W1 area with an SDR Time machine. You better not have two signals on the air at the same time, or do other dirty tricks. Be sure you will be caught and evidence will follow to CQWW CC." Someone sure has got a good sense of humour!

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton.

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2008 RD Contest

Peter Harding VK4OD

The contest is over and all the logs are in. Having checked them all, I am able to present the winners with their Certificates.

I received a total of 300 logs compared to 312 last year, with the overall points totalling 36,144 compared to last year's total of 45,926. Last year we received 19 logs from Foundation calls, this year it dropped to 16. No logs received from ZL this year, and only one log for the receiving only section.

I believe that we can attribute the slight drop due to the Lighthouse Event and the RD falling on the same weekend, unfortunately from time to time this is going to occur. Thankfully this year, 54% of the logs were created electronically,

the remainder were either hand written or on pre-designed forms that I made available. This made my task a lot easier and enabled a quick finalisation of results.

Once again, quite a few of this year's entrants were from club stations running multiple operators, multi modes and multi bands. It is no surprise that VK6 once again will get their name engraved on the RD Trophy as the winning state for 2008.

Well done to all those who took the time and effort to enter the contest and also posted or emailed in their logs. This year I did not have to return any late logs. Should there be any dispute, please email your question to me Peter Harding (vk4od@wia.org.au) and I will do my best to answer your query. Within your email activate the flag for when the

message was read by me.

Until next year.

Peter Harding VK4OD
RD Contest manager.

Results

On completion of a reconciliation of all 2008 RD logs, here are the results shown on facing page. We received a total of 310 logs; most were emailed, the remainder Australia Post.

Breakdown:

310 logs from within VK.

1 log from SWL.

0 logs from ZL.

0 logs from P29.

Leading state was VK6 (again).

2008 RD Contest

Top Individual stations by Section.

Place	Callsign	Points	Division
1st	VK7ZE	1002	HF Single Op Phone
1st	VK2GR	340	HF Single Op CW
1st	VK7GN	835	HF Single Op Open
1st	VK6ABM	75	HF Single RX Only
1st	VK2WIA	1376	HF Multi Op Phone
1st	VK4IZ/2	162	HF Multi Op CW
1st	VK2AWA	1527	HF Multi Op Open
1st	VK6USB	518	VHF Single Op Phone
1st	VK3GDM	50	VHF Single Op CW
1st	VK6BDO	491	VHF Single Op Open
1st	VK6ANC	242	VHF Multi Op Phone
1st	VK6RRG	137	VHF Multi Op Open

HF Multi Op CW

Callsign	Pts claimed
VK4IZ/2	162
VK4EV	22

HF Multi Op Open

Callsign	Pts claimed
VK2AWA	1527
VK6ANC	562
VK2BV	202
VK2BOR	182
VK4IZ/2	176
VK5ZSN	138
VK2TS	122

HF Multi Op Phone

Callsign	Pts claimed
VK2WIA	1376
VK8DA	217
VK5SR	200
VK2AHV	80
VK7ZGK	38
VK6CNL	32
VK4WIT	23
VK6COM	6

HF Single Op CW

Callsign	Pts claimed
VK2GR	340
VK5ATU	224
VK3QB	210
VK2AWD	160
VK5SW	150
VK3YB	144
VK6AFW	120
VK2AVQ	62
VK6GW	42
VK3KS	40
VK4XJ	34
VK2RJ	30
VK3TX	24
VK5HO	18

HF Single Op Open

Callsign	Pts claimed
VK7GN	835
VK7GZ	421
VK1WX	215
VK7KC	183
VK4AAT	178
VK2ENG	173
VK2BAM	160
VK3DET	124
VK4ADC	118
VK3HAU	106
VK3BMK	78
VK7TW	77

VK3FNBL	73
VK2GWK	72
VK1DA	56
VK5ZFW	50
VK2YW	48
VK5ATQ	48
VK1XYZ	41
VK6SO	33
VK4AQD	32
VK4YNG	30
VK5KDK	22
VK5OQ	22
VK5HCF	19
VK4DB	13
VK4FK	12
VK7NGC	10
VK6ZPM	8

HF Single Op Phone

Callsign	Pts claimed
VK7ZE	1002
VK2XN	829
VK4ZD	742
VK4VCH	522
VK5SN	445
VK3HJ	428
VK4VDX	406
VK1PAR	394
VK3LDR	385
VK1YBQ	304
VK3FSTU	280
VK4FABC	248
VK2LCD	241
VK2FEDS	227
VK7YBY	211
VK7IF	194
VK3KTO	187
VK6HAM	183
VK7WPX	180
VK3AHY	168
VK3BKO	161
VK3YXC	157
VK6AAL	156
VK3KAL	150
VK4BAY	149
VK6CG	149
VK6JEE	147
VK5YX	140
VK4TRX	139
VK3FIGG	137
VK4JRO	134
VK2RD	130
VK5WO	129
VK5ZDB	125
VK7VH	125
VK2ZCM	121
VK5KOB	120
VK5RV	114
VK7BEN	112

VK3KCD	111
VK6FDX	103
VK6ZAK	102
VK6ZMS	93
VK5KBJ	92
VK3AMW	90
VK2AFY	86
VK4FLR	86
VK6ADI	82
VK6CSW	81
VK7RM	80
VK3ADW	73
VK2XDL	72
VK5DJ	71
VK6ZYX	71
VK2ASU	70
VK3BPN	70
VK6ZAR	70
VK4FFAO	68
VK5NI	68
VK2HBG	63
VK6AB	61
VK7CAV	60
VK3JK	57
VK5FKDT	57
VK3HEN	56
VK5KMK	56
VK2JA	55
VK3KYF	55
VK4FNQ	53
VK5ZIG	53
VK4AWL	51
VK3DSB	50
VK5FD	50
VK5TW	50
VK6USB	50
VK6JP	48
VK2ZEN	47
VK7HDM	47
VK3GWW	44
VK2JH	40
VK3YJ	39
VK4GLC	39
VK4ATH	38
VK1EY	37
VK6KMS	36
VK7CK	36
VK6XC	35
VK7MX	35
VK2ALV	32
VK4FPJP	31
VK2BJK	30
VK6AR	29
VK6GDO	27
VK4TE	25
VK3AKT/4	23
VK6SN	23
VK6FBVB	22
VK5OF	21

VK3KFE	20
VK4ICY	20
VK5RK	20
VK6ATU	20
VK7NML	20
VK5EMI	19
VK7RR	19
VK7FLAK	18
VK3KTM	17
VK6GL	16
VK4BIF	15
VK6FGRB	15
VK6GHZ	15
VK7KK	15
VK6DSP	14
VK7EM	14
VK3BCZ	13
VK3ERS	11
VK1ZCM	10
VK5AEY	10
VK5ZQ	10
VK6FAVB	10
VK4FNQA	9
VK6DAT	5
VK6HWF	4
VK2XT	3
VK6ARG	2
VK6BMW	2
VK6TVI	2

HF Single RX Only

Callsign	Pts claimed
VK6ABM	75

VHF Multi Op Open

Callsign	Pts claimed
VK6RRG	137
VK6SAA	137
VK6SCS	137
VK6VF	137
VK6FIVE	136
VK6WH	136
VK5ZSN	56

VHF Multi Op Phone

Callsign	Pts claimed
VK6ANC	242
VK6ARG	133
VK6COM	74
VK4WIT	1

VHF Single CW

Callsign	Pts claimed
VK3GDM	50
VK6ARO	4
VK6CRO	4
VK6RO	4
VK6SIX	4

VHF Single Open

Callsign	Pts claimed
VK6BDO	491
VK7ZBX	324
VK6WIE	269
VK6JB	229
VK4ADC	184
VK4ZBV	175
VK7TW	131
VK1DA	32
VK5KDK	29
VK5SE	29
VK1WX	27
VK4AAT	24
VK1RG	22
VK1BP	21
VK1HS	21
VK5FRCE	21
VK7RG/1	21
VK6ZPM	19
VK6PMY	17

VHF Single Phone

Callsign	Pts claimed
VK6USB	518
VK6TWO	469

VK6ZAR	433
VK6PIG	420
VK6FDX	414
VK7HDM	341
VK6CSW	318
VK6KHZ	285
VKAAML	229
VK6VCG	207
VK6JP	203
VK7RR	190
VK6YOY	181
VK6FJA	174
VK6KAD	168
VK6SH	164
VK6WIA	162
VK6MM	160
VK6GHZ	154
VK6TVI	150
VK6ZLZ	145
VK6AAL	143
VK6OTN	142
VK7XOR	127
VK7ZGK	127
VK6BMW	125
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DX - News & views

John Bazley VK4OQ

P.O. Box 7665, Toowoomba Mail Centre, QLD 4352. E-Mail --- john.bazley@bigpond.com

The days of planning a DXpedition on a 'shoestring' appear to have disappeared if one studies the inventories of equipment being shipped these days to activate a wanted entity. The other side of the coin is that there is a better chance of having a contact with numerous operators and bands being activated continuously over several days. Skill is still needed at both ends of a contact, particularly an understanding of propagation and at the DXpedition side, pile-up control. Two forthcoming events are below.

From VK9WDX – Willis Island.

"All our preparations are entering the final stages. 1.4 tons of equipment is on its way and due to arrive in Australia on the "MS Ute Oltmann" shortly. This is a big multi-operator DXpedition."

JA8BMK's Pacific trip, which is expected to begin in October. Toshi JA8BMK will depart Sapporo, Japan on September 30th heading for Fiji (3D2) and then on to Western Kiribati, planning to arrive there on October 2nd.

Ships depart to Central Kiribati (T31) every 30 to 45 days, so, while waiting, Toshi will be QRV from T30 "for an unknown period". Toshi has already shipped a Yaesu VLA-1000, TL-933, three generators, Yagi antenna, vertical antenna, tent and Toyota Van to T30.

He will hand carry extra equipment including an IC-7000, FT-897D, and HL-1.2KFX (Tokyo High Power). Look for him to be QRV on SSB, CW, RTTY, PSK31 and SSTV. He will concentrate on the European and USA openings for the low bands, as well as 12, 17 and 30 meters. He may try to activate C21 and T33. Due to the shipping schedules to Central Kiribati, Toshi may end up on the island for two to three months. Donations to assist in this long DXpedition will be appreciated. QSL via JA8UWT.

Yuri VE3DZ will be in Suriname between November 25th and December 1st. He will be operating as PZ5TT, including in the CQ WW CW DX Contest. Outside of the contest he will be on CW, SSB and RTTY on all bands. QSL via VE3DZ.

3X5A The VooDoo Contest Group will enter the CQ World-Wide CW contest on

November 29th to the 30th from Conakry, Guinea, as 3X5A, multi-multi category.

This will be the group's 15th straight year in multi-multi from West Africa and their 20th straight year participating in CQWWCW. In the 2007 contest 3X5A won this category, first place world, their 6th outright win. This is their second visit to 3X5A, with their usual eight or nine British and American operators, seven one-kW stations and a dozen antennas.

They will also be active as 3X5A (no personal call-signs) before the contest, including WARC bands and maybe some RTTY. QSL manager: G3SXW, direct (qrz.com) or e-mail to g3sxw@btinternet.com for a bureau reply, or paper QSL via bureau; also LoTW. No QSLing rules: just normal practice. More information at: <http://voodoocontestgroup.com/>

Italian operators Silvano I2YSB, Vinicio IK2CIO, Angelo IK2CKR, Marcello IK2DIA and Stefano IK2HKT will be operating from Sierra Leone between January 25th and February 13th 2009 from Sherbro Island (AF-056). The team will use 9L1X. However each of the team members has their own individual calls (9L1M, 9L1X, 9L1A, 9L1K and 9L1E). Plans are to have three complete stations with amplifiers.

Suggested frequencies:

CW: 1823, 3505, 7005, 10105, 14025, 18080, 21025, 24895 and 28025

SSB: 1840, 3795, 7050, 14260, 18130, 21295, 24925 and 28450

RTTY: 14082.

The 9L1X Website can be found at <http://tinyurl.com/6zd7h7> QSL 9L1X via I2YSB.

Roland F8EN will be back to Libreville, Gabon from mid-Dec. 2008 to mid-Jan 2009. He will operate as TR50R (until 31st Dec 2008) and TR8CR (from 1st Jan.2009). QSL both via F6AJA.

Philippe F4EGS (TT8PK) is working two months in Dushanbe, Tajikistan (EY). He already has his licence. Plans are to begin October 1st. Watch for him in his spare time on 7 through 28 MHz. Philippe will be running 100 watts into an R7 vertical. Activity is expected on SSB, RTTY, PSK and CW.

He has more travel plans for 2009. They include Abidjan, Ivory Coast as TU/

F4EGS in January/February; Mauritius and Rodrigues as 3B8/F4EGS and 3B9/F4EGS in March; back to Chad as TT8PK in May-July; and from Djerba Island (AF-083), Tunisia possibly as 3V8SM. QSL per operator's instructions.

Charles "Frosty" Frost K5LBU is working on a 2009 DXpedition to Lesotho (7P). He is seeking operators for the team between July 29th and August 12th. Email to frosty1@pdq.net

Paul A35RK will be active as KH8/KK6H from American Samoa from December 5th to 9th. He will be QRV in his spare time on CW and SSB on "whatever band is open". Paul will look for openings to Europe. Working the Americas should be fairly easy in his daylight hours. QSL via W7TSQ or LoTW.

Andrew Munson VK4HAM announced plans for a 2009 DXpedition to Effate Island (NA-035), Vanuatu. He will be operating as YJ0AAC from March 25th to April 1st, 2009, including the CQWW WPX SSB Contest. Andrew will be QRV on 3.5 to 28 MHz. QSL via VK4HAM.

Vincent F4BKV is in Hong Kong until September 2009 and will be QRV as VR2/F4BKV from Hong Kong Island (AS-006). From a 22nd floor in Wan Chai district he is using an FT-857D with 100 watts and random wires. Mostly PSK31 with some SSB.

Nadir ST2NH is again QRV on the Amateur Radio satellites. Email him for a sked at st2nh@yahoo.com. His web page is: <http://www.sudanham.bizland.com/st2nh%20folder/st2nhhome.htm>

Vasily UA0QMN has been in Vila Catoca, Angola, since September 24, QRV as D2QMN. He is only active on 20 CW and SSB with an IC-7000 and delta loop six metres off the ground. Weekdays from 1700 Z, weekends 1000 to 2300 Z.

Bud Trench AA3B goes to Antigua's V26K Nov. 26th to Dec 1st for the CQWW CW. Bud will be single op all band low power. QSL via AA3B.

N8SHZ will be in Mexico operating Oct. 16th to Nov. 22nd with wires on top of a hotel, using an FT-100D and tuner. He will be active on 80, 40 and 17, "holiday style," a couple of hours a day.

LZ9W, the Bulgaria Contest Team, will

Continued at foot of facing page

Silent Keys

Basil Adrian Thornton VK2EQY

Born 4th March 1911 and passed on 11th August 2008, Basil died at the age of 97. He served in the RAAF during WW2 and was discharged with the rank of Warrant Officer. He spent most of his Air Force time in Sunderland Flying Boats shepherding Liberty ships across the Atlantic bound for England and Murmansk.

Basil used coded Morse code on an Aldis Lamp to send the position of German U-boats to Allied warships. Often his aircraft returned to its Irish base, almost out of fuel, and many emergency landings were made on closer Scottish lochs.

It was Basil's knowledge and use of "Morse" which, afterwards in his married life, led him to become an amateur. He

lived for many years with his wife Helen in Ermington. He was a service and maintenance engineer working at the Australian Gaslight Company at its Mortlake works. This also helped him to develop a multi-antenna system at his home. He enjoyed using HF, speaking to amateurs in other parts of the world.

There are four highlights in Basil's radio life. He helped save a Canadian logger's life when he realized the man had collapsed at the microphone in the forest cabin. He called for help, assistance was forthcoming and the man survived. Basil used to enjoy entertaining children by lighting a fluorescent light tube held at the end of his 80 m dipole when he transmitted. There were squeals of delight!

Basil had a love of young people. He

had contact with Scout troops all over Sydney and the Blue Mountains on JOTA weekends. He spent much time telling boys about radio and encouraged them to become interested in the hobby. He also really enjoyed being driven to "the Vets" once a month at the WIA Parramatta. Here he would talk with friends, look at the old radios, enjoy reading books from the library and having lunch with fellow amateurs.

In his later life Basil lived in Lourdes Retirement Village with his portable 2 m vertical antenna on his balcony and speak on 2 m repeaters to friends from his lounge room. This he enjoyed immensely, but he missed his HF contacts. Basil died in Lourdes Hospital. He will be greatly missed by his friends.

Basil is survived by his wife, Helen, and three sons.

Submitted by John Stacy VK2JJS.

Howard Vincent Booth VK2AMD, G2AS

May 2008 saw the end of an epic journey through life as a radio amateur. Born in Sheffield England, 6th of March 1908, sadly Howard had only a short time to enjoy his century. He recently broke his hip in a fall at his home. Following an apparently successful hip replacement, he passed away on Sunday 25th of May

Howard had a lifelong interest in amateur radio. He sat and passed his Morse code exam (20 wpm) on 26th January 1923 at just 14 years old. He obtained his first licence some 3 years later with the callsign G2AS. This he held until his last day. As G2AS in the UK, he helped form the Sheffield Amateur Radio Club in the early 1920s.

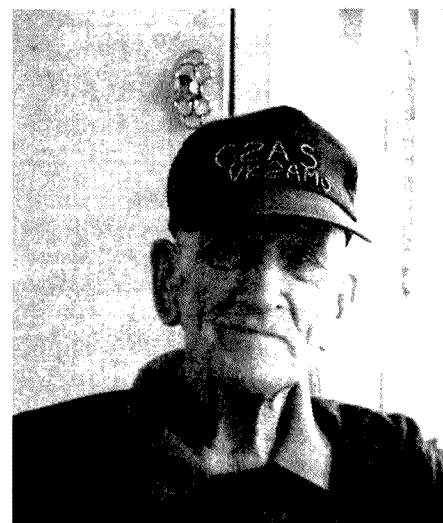
Howard and his family emigrated to Wollongong NSW in May 1948. Not being one to wait for "Somebody else", Howard immediately became involved in local amateur radio. By June 1948 the "Wollongong Amateur Radio Club" was formed with Howard as founding President. Within a month test transmissions commenced with a transmitter built by Howard, costing 'about ten bob' for parts.

In September 1948 Howard received his Australian licence with the callsign VK2AMD. Always one to help and encourage, many Wollongong locals, who are now 'old timers' hold fond memories of Howard as their mentor and amateur radio 'Father figure'.

Howard continued his enthusiastic support of the hobby even if he did slow down a little as the years progressed. He was well known on 2 metres in the days before FM repeaters, also a keen 20 metre operator. This band he used to maintain ongoing contact with G4SVU and the late G3EQF of Mansfield Notts. Many Sheffield and South Yorkshire operators would join in.

Aside from amateur radio Howard had been very much involved in the sport of weightlifting since his teens and won championships back in England. Advancing years did not change him, he conducted weightlifting classes until well into his eighties and regularly exercised with weights when 90.

On the family scene, Howard had lived alone for the past 19 years since the



death of his wife Billie. He is survived by a sister in England and two sons in Australia, with grand and great grand children.

Though we all may be saddened by his passing, his friends all over Australia and the UK, can say that they knew AN OUTSTANDING AMATEUR!
Vale Howard VK2AMD G2AS

ar

DX continued from page 52

be on for the CQWW CW, multi- multi. QSL via LZ1PM. <http://www.lz9w.com/index.php>

Special thanks to the authors of The Daily DX (W3UR), 425 DX News (I1JQJ) and QRZ.DX for information in this months DX News & Views.

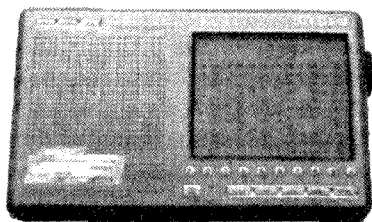
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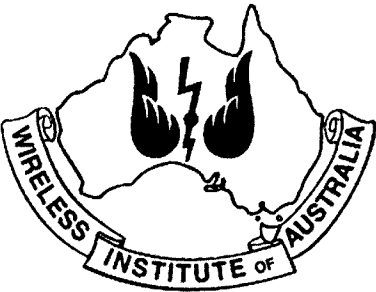
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Trevor Wardrope **VK8TJW**
Wayne Cockburn **VK8ZAA**

Broadcast details

- VK1 VK1WIA:** Sunday 0900 local on the Mt Ginini repeaters 146.950 and 438.050 MHz. The UHF repeater requires 123 Hz access tone and is linked to the Goulburn repeater.
- VK2 VK2WI:** Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.6000, 147.000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning.
Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA:** Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria **VK3BWI** B/cast Network: 3.615, 7.158, 10.130, 147.250 **VK3RMM** Mt Macedon, 146.700 **VK3RML** Mt Dandenong, 147.225 **VK3RWG** Mt Baw Baw, 438.075 **VK3RMU** Mt St Leonard.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. Also in 'Realaudio' format from the VK6WIA website.
- VK7 VK7WI:** 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.

Waverley ARS at Australia's oldest lighthouse

Laurie Gordon VK2GZ



Operating situation at Macquarie Lighthouse. The flagpole holds up two dipole antennas.

Waverley Amateur Radio Society activated the historic Macquarie Lighthouse for the sixth year in succession during the international Lighthouse/ Lightship weekend. Macquarie is the oldest lighthouse in Australia, the site having been used to signal the entrance to Sydney Harbour continuously since 1791 - three years after the arrival of the First Fleet.

The lighthouse is situated on the cliff tops of Vaucluse and is a few kilometres from the WARS clubrooms at Rose Bay. The club's operation included erecting a lashed-timber flagpole to serve as an anchor point for 40 m, 30 m and 20 m dipoles.

There is generally a roll-up of about 20 club members during the day, not to mention numerous visitors. The lighthouse is a popular tourist attraction and favourite backdrop for wedding photographers!

In 2009 as part of the club's 90th Anniversary activities, members are planning to activate the three lighthouses in Sydney's eastern Suburbs - Macquarie, Hornby Light at South Head and Endeavour Light on Botany Bay. A special QSL card is being designed to mark the event.



Above: WARS members operating 20 and 40 metres overlooking the Pacific at Vaucluse. VK2VEC is on the FT857.



Right: VK2TUI transmitting on the IC-706MKIIG with VK2CEC.

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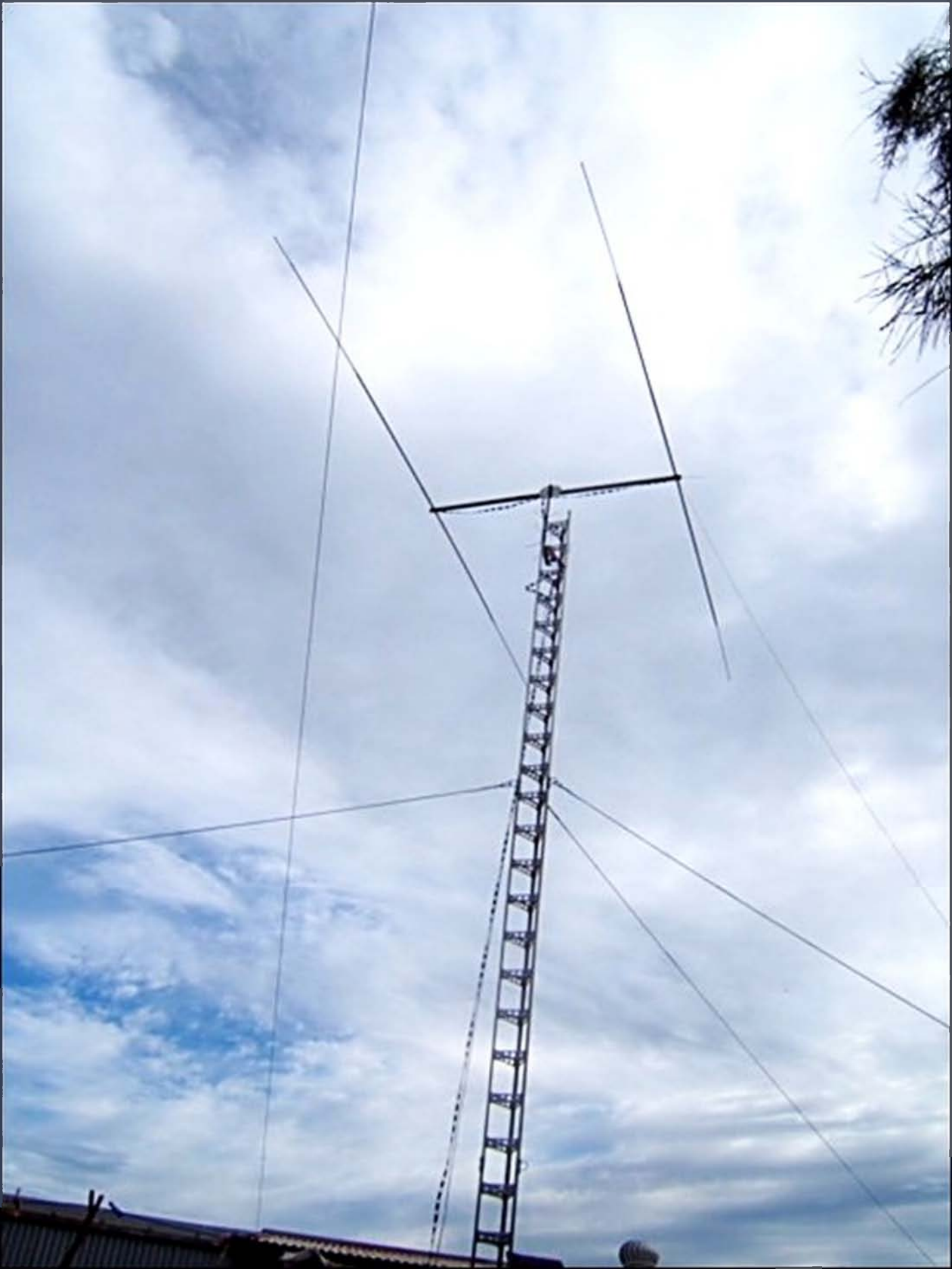
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Amateur Radio

Volume 76 Number 12
December 2008

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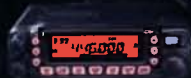
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Amateur Radio

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Our Cover this month

A view of the VK3BJM portable station located on the Mt Arden ridge in the Flinders Ranges. Barry had his antennas pointing toward Adelaide. See the story commencing on page 23. Photo by Barry Miller VK3BJM.

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 \$6.00 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

Seasons Greetings

With Christmas and New Year almost upon us, another year has been and gone.

Another busy year. For me, the highlights have been the trip to Broken Hill for the WIA AGM in May and the terrific gathering of approximately 100 amateurs interested in VHF, UHF and microwave activities at the GippsTech Conference in July. In addition, there were the monthly meetings of the local radio club, several assessment events and a little on-air activity, apart from ensuring that we published eleven issues of *AR*. Most of the projects on my "to do" list have not really progressed very far, but I need to take some annual leave from work, so perhaps some might be completed soon.

We continue to have a slow but steady stream of contributions from authors which keep our technical editors busy. However, our list is reducing in size, so please consider putting your fingers to the keyboard to write up your latest project. Of course, do not forget to take some photographs so that we can see your handiwork. Anyone can contribute – if you are uncertain, read the guideline documents that are available on the *AR* section of the WIA website.

I extend my thanks to all who have made contributions over the past year – our magazine cannot be produced unless contributions are offered. Most articles do finally make it to press, so do not think that you cannot see your name in the magazine! See also my request below!

A column for Foundation licensees?

I have received a letter from one reader requesting a column aimed at assisting Foundation licensees to increase their knowledge. The topic was discussed at the last PubCom meeting and everyone agreed that it was a good idea, except for one problem – who would collate such a column, even if it was only say every second month. Is there a volunteer out there?

Perhaps a better approach would be for individuals to write up an individual simple project that can be completed by someone without extensive knowledge.

We had one example earlier this year with the Slim Jim vertical for 146 MHz contributed by Duncan VK2DLR in the May issue. We also have an article coming soon (perhaps in the January/February issue) on how to construct an off-centre fed dipole for HF. I am sure that clubs around the country are each doing something occasionally for the new amateurs – all we need is for someone at each club to prepare an article when such an activity happens.

Hamads

As many readers are aware, PubCom spent some time and energy earlier this year on attempting to determine the delivery time delays around the country. We were interested in the length of delay between dispatch from Melbourne to delivery to a member's mail box. Part of the question is the fact that *AR* will appear on the news stand prior to the mail box. We are still examining how (if) we can address that particular issue! Essentially, the magazine distributor has an extremely efficient distribution system, whilst there appear to be variable delays in the Australia Post system.

One question received in the last month was the question of variable delivery affecting the availability of items advertised in Hamads. A member in one state receives their magazine, reads Hamads first. Finding an item of interest, they call the advertiser, only to find that the item sold two days ago to someone living in another state. With any periodical publication, this issue will always exist, as we cannot guarantee delivery at all addresses on the same date.

Another factor is that many amateurs now submit an item to Hamads and also post the item on an internet site, such as the VK Classified section on the vkham.com website. Items are often sold very quickly via this particular site. Of course, some will sell via eBay.

So, one possible solution would be to post Hamads onto the WIA website on the day that *AR* leaves the mailing house. If we put such an arrangement in place, everyone would theoretically be able to access Hamads at the same time. But what about those that do not have ready

continued on page 7

Promoting Amateur Radio

Last month I wrote about the changes we had seen in the three years after the introduction of the entry level licence as part of the new three level amateur licence structure in Australia.

I noted that there had been a decline in the number of Foundation candidates and I concluded that the initial demand for an entry level licence had been met and that our task was now to promote amateur radio.

I concluded by saying:

I believe that our task must now change. We must now start promoting amateur radio, getting the message to people who really don't know very much about it, particularly younger people.

We must now look to the sailing groups, the travelling groups, the scouts, the schools and just the general population.

I also said;

I ask you to consider how we can best promote amateur radio in your environment, and how the WIA can help you do that.

I visited Perth on the weekend of 18/19 October 2008 for the launch of D-STAR, and met with the Western Australian Advisory Committee (or, at least most of it, as one member was away).

Since then, Director Robert Broomhead met with the South Australian Advisory Committee during the D-STAR launch in Adelaide on 9 November 2008.

On the same day, I attended the meeting of Queensland Clubs in Brisbane, attended by some of the Queensland Advisory Committee and the representatives of many clubs from as far north as Rockhampton. Also present were Vice President Ewan McLeod and Director Ron Bertrand.

At all of these meetings, the issue of whether there was a need to promote amateur radio and the means to do so were discussed

I posed the questions I sought to be discussed this way: Was it agreed that we needed to promote amateur radio, particularly to younger people? How can we best do that? What should be the role of the clubs? What should be the role of the WIA?

Quite apart from the meetings, several people have communicated directly with me, setting out their suggestions in response to either the "Comment" in *AR* or one of the discussions I have referred to.

From all of this some common points have emerged, and so, in this "Comment" I do not attribute any suggestions or opinions to any particular person, rather I attempt to synthesise a summary of the opinions and suggestions offered.

Interestingly, many addressed the issue of attracting more WIA members first before the issue of attracting new amateurs. The background to that is that WIA membership is about 29.5% of all amateur licences in Australia, with surprisingly little difference in percentage of membership in the different states and territories. Of course, the figures I quote are indicative only, as the count of licences includes repeater, beacon and club licences as well as people with multiple callsigns.

What is clear is that there is a call for a serious membership drive, a membership "revolution"! The need to better identify what members get for their membership, the need to get better support from the clubs were particularly stressed. Cost was seen as a problem, though many accepted that with more members at least the need to increase cost could be removed. A target of 2,000 new members in a year was suggested.

Following up members who failed to renew was seen as something that the Advisory Committees could do, either directly or through clubs.

Yes, promoting amateur radio was seen as a need, most seeing younger people as an important aspect of this and with a number of significant points being made.

Yes, the clubs had a real role, both in obtaining publicity to promote amateur radio and providing the human contact to attract and train and assess. But there is a caveat. Some clubs are specialist, in objectives, areas of interest or membership. Do not expect those clubs to do what many larger and more general clubs can and will do. And, be careful that when a potential candidate

is referred to a local club or individual, they are referred to the right club or individual.

In some parts of Australia, the need to better reach out in remote areas was seen as necessary. In some cases, it was almost a chicken and egg problem, there were interest groups, such as Scouts who would welcome amateur training, but there were no amateurs to do the training. Perhaps we defined clubs for affiliation as requiring too many members.

The provision of footage for local TV stations was mentioned, many saw that the role of the WIA should be to provide background briefings for reporters and talking points for people in regional areas to use with their local papers and radio stations.

The value of promoting to special interest groups, or indeed groups such as schools and Scouts was generally accepted.

Some saw the WIA website as a place where Advisory Committees and clubs could exchange ideas. Others saw a need for downloadable promotional material.

A valid point was made that the information about amateur radio that may interest a person who already was an amateur may not be the information that would attract a person who was not an amateur. And, if we were attempting to address young people, please make sure that we used subject matter and language that would be interesting and meaningful to them!

From all of this comes the simple fact there is no simple answer. And, there are significant differences in different parts of Australia.

We shall be in contact with our Advisory Committees further about all of this.

To all of you, who have contributed to this discussion, thank you.

Both in terms of promoting WIA membership, and in promoting amateur radio, there was at least agreement on one point. What each of us does personally, by word of mouth, by talking to our friends, is the most effective promotion of all.

NSW pursues site rentals for repeaters on Crown Land

The Director General (DG) of the NSW Department of Lands has written to the WIA upholding the Department's decision to impose a \$367 fee (CPI indexed and subject to 5 yearly review) for each amateur radio facility located on NSW Crown Land.

The WIA wrote to the DG in August arguing for special consideration for communications facilities maintained by small amateur radio clubs, and highlighting the strategic community resource that amateur radio communications facilities provide during emergencies.

In the Department's reply, the DG advises that the site rental fees are prescribed under NSW State legislation, and cannot be reduced below the minimum rent provisions.

This is bad news for small amateur radio clubs which maintain repeaters on NSW Crown Land, and also for those larger clubs with several sites. The likely outcome is the closure of some rural amateur radio repeaters, or at least their relocation to less favourable sites.

However, larger, well-resourced clubs may welcome entering into an agreement which guarantees secure tenure for their repeater sites located on Crown Land.

NSW amateur radio clubs adversely affected by this new fee should consider their position carefully. Failure to enter into a rental agreement when asked to do so by the Department may result in eviction from a Crown Land site.

2008 Qld Clubs Lunch

On Sunday 9 November 2008, WIA President Michael Owen VK3KI, Vice President Ewan McLeod VK4ERM and WIA Director Ron Bertrand VK2DQ attended the Queensland Club Presidents Lunch at the Geebung-Zillmere RSL Club, organised by the WIA Queensland Advisory Committee.

Over 40 representatives of clubs across Queensland and as far north as Rockhampton participated in a lively discussion of the future of amateur radio and the role of the WIA, led by Michael. See this month's "Comment".

D-STAR Launched in Adelaide

WIA Director Robert Broomhead VK3KRB represented the WIA at the successful launch of D-STAR in Adelaide on 9 November 2008.

The repeater was given to the WIA by Icom Australia, which was represented by Peter Willmott VK3TQ. Also participating in the launch was WIA D-STAR Coordinator Richard Hoskin VK3JFK.

The D-STAR Club is the Amateur Radio Experimenters Group. The AREG provided the ancillary equipment and the many people who contributed to the success of the project.

Robert also spent time with the South Australian Advisory Committee.

Anderson's Creek Primary School Successful ISS Contact

On the evening of the 10 November 2008, students of Anderson's Creek Primary School in Warrandyte, Victoria, spoke to Mike Fincke on the International Space Station via amateur radio. Amateur Radio on the International Space Station (ARISS) arranged the contact through telebridge station VK5ZAI in Kingston SA.

During the 10 minute contact 20 questions were asked. One youngster asked "Have you been hit by a meteor and what happens if you are? .." Mike replied "There are two types, big ones and small ones, if there is a big one coming we move the space station out of the way and if it is a small one, we have armour shielding that protects us".

Mike also told the youngsters that there are currently three people onboard the ISS: two Americans and one Russian and that they all get along very well.

Each student received a framed certificate from WIA President Michael Owen VK3KI. in recognition of their part in the contact. Certificates of appreciation were also presented to teacher Andrea Leeder and Principal Des McKenzie who enabled the evening to be such a success.

ARISS is an international educational outreach, with US participation by ARRL, AMSAT and NASA.

WIA in New Office

The WIA National Office was closed on Friday 14 November 2008 as final packing took place for the move from Caulfield to the new office in Bayswater on Saturday 15 November.

The new WIA office is able to answer any calls and respond to emails.

The new office is at:

Unit 20, 11-13 Havelock Road
Bayswater, Vic 3153

PO Box 2042 Bayswater, Vic 3153
03 9729 0400.

The email addresses is unchanged.

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.

Accordingly four directors retire at the conclusion of the next Annual General Meeting which will be held at a time and place to be announced but not later than 31 May 2009, namely Michael John Owen, Ewan Ross McLeod, Peter Richard Young and Robert Mark Broomhead. Each is eligible for re-election and Michel John Owen, Ewan Ross McLeod, Peter Richard Young and Robert Mark Broomhead have offered themselves for re-election to the four 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 January 30, 2009:

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 made by hand when the WIA national office is open at: Unit 20, 11-13 Havelock Road, Bayswater Vic 3153.

Or by mail to :

PO Box 2042, Bayswater VIC 3153

Nominations received by facsimile or by electronic means cannot be accepted.

David A Wardlaw VK3ADW
Returning Officer

An active loop-stick receiving antenna for 1.5 ~ 2 MHz

Drew Diamond VK3XU

It is unfortunate that many of us are limited in our receiving ability by an unacceptably high local noise level. Every neighbourhood, unless it is one without an electricity supply, seems to be immersed in a haze of spurious signals and harmonics from a multitude of switch-mode power supplies, plasma TVs and other appliances, along with broadband noise from high-voltage power lines. Our lowest band, 1.8 MHz, is (usually) the most affected.

Luckily, this band also allows the use of either a frame-style loop, or ferrite-rod/loop-stick receiving antenna as a simple, yet effective noise reduction device. The loop-stick has a null through the axis of the rod, so in most instances it is possible to aim the null at the worst local noise sources, leaving wanted signal(s) substantially unaffected. Sky-wave, particularly DX signals,

often have no discernible 'direction' on a loop-stick, whereas local and ground-wave signals do, and thus we gain a worthwhile improvement in signal to noise ratio.

Offered here is a simple, effective, active receiving loop-stick antenna that can extract signals between about 1.5 and 2 MHz. Current drain from the 6 V battery of 4 AA cells is about 6 mA.

Circuit

See Figure 1. The 42 μH loop-stick coil is resonated with a variable capacitor, adjustable from (about) 20 to 300 pF. The coil has a Q of 165, so rejection of (possibly problematic) broadcast-band energy is also provided - a helpful feature on 1.8 MHz.

The amount of signal power available

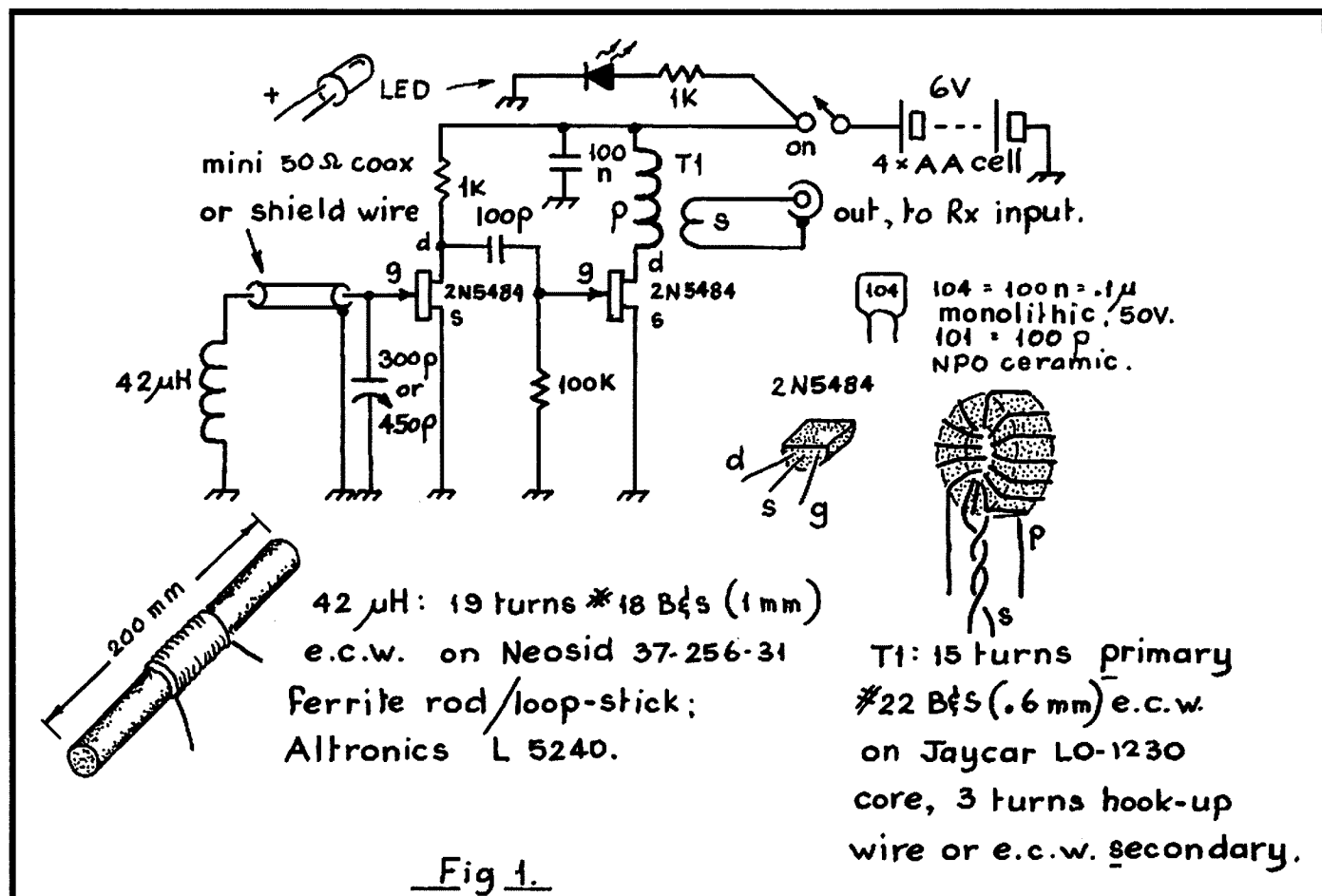


Figure 1: Schematic of the loop-stick antenna

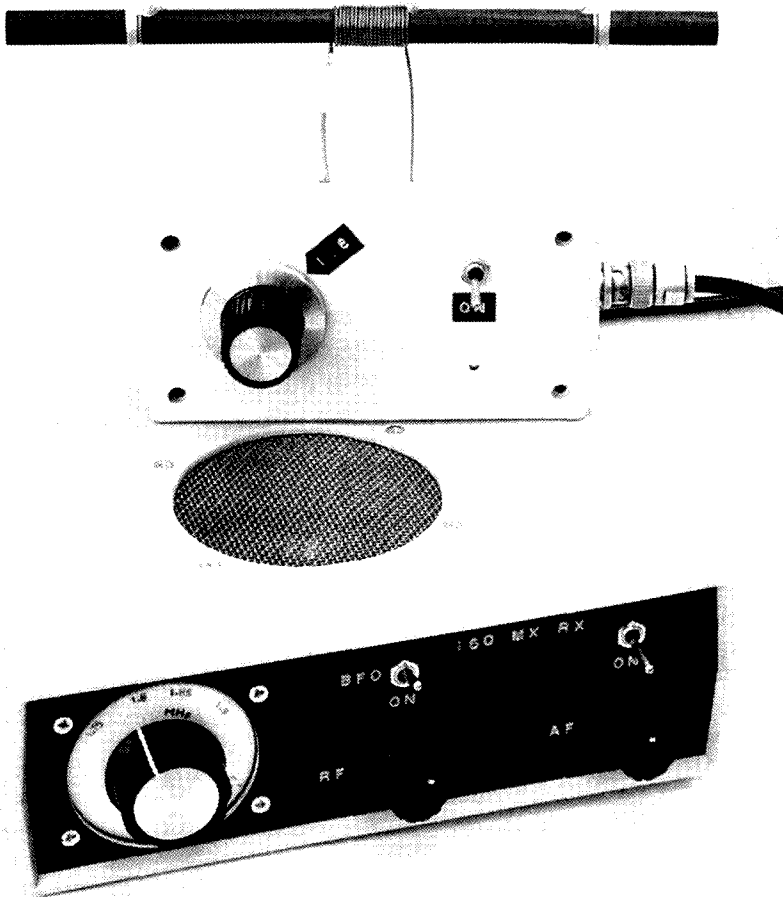


Photo 1: The loop-stick antenna

from a loop-stick is ordinarily quite small (References 1 ~ 6), so amplification is therefore required. A conventional 2N5484 FET common source amplifier, followed by a second FET, provides sufficient gain to raise signals to a

usable level. Broadband transformer T1 converts the drain impedance of the second FET to (about) 50 ohms for a coax connection between the active antenna and a receiver.

It is important that the drain of the

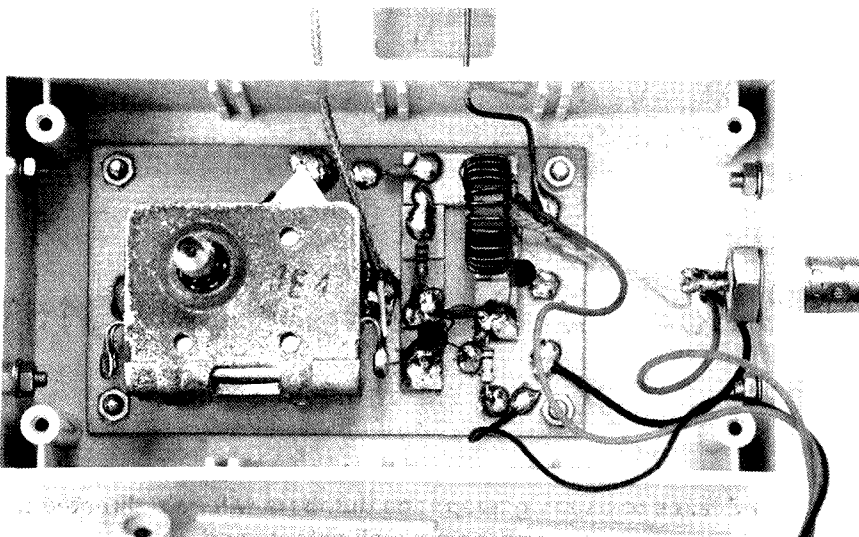


Photo 2: Internal view of the loop-stick antenna

second FET is not able to 'see' the gate of the first stage; otherwise the amplifier may become unstable. Therefore, the connection between the top of the coil and peaking capacitor must be made with mini coax, or shielded (microphone), cable.

Construction

The prototype model, pictured in Photo 1, is housed in a plastic 'jiffy' box measuring 130 x 67 x 40 mm. The variable capacitor and amplifier components are accommodated upon a 'paddyboard' circuit board (Reference 7) measuring 85 x 50 mm, although any preferred construction style, even 'ugly', should serve; provided that component leads are reasonably short, and the general layout shown in Photo 2 is followed.

The pads may be fixed, copper side up, upon the circuit board with just a dab of super glue. Or, consider using hot-melt glue by applying a sliver of solid glue upon the underside (fibre) of the pad, apply your soldering iron tip to the glue and melt it evenly, then quickly place the pad on to the board in the spot required. A 'handle', such as a 1 W resistor, may first be temporarily soldered to the pad as an aid to this procedure.

To achieve best 'Q', the loop-stick should be spaced from metal objects by more than about 50 mm. Perspex or acrylic sheet, 3 mm thick, is an ideal material for mounting the rod above the box, as illustrated in Photo 1.

For the antenna coil, close-wind 19 turns of #18 B&S/1.0 mm ecw initially upon the shank of a 9.5 mm twist drill, under tension. During assembly, the ferrite rod is passed through a 9.7 mm hole in one Perspex upright, through the pre-wound coil, and then through the second upright.

The two ends of the coil enter the box via separate holes drilled in its top, as shown in Photo 1. A blob of hot-melt or epoxy glue may be applied to the join between the rod and the Perspex in two places and upon one end of the coil.

For easy access, the four AA cells of the 6 V battery supply may be accommodated in a 4-cell holder (eg Jaycar P/N PH 9204), which is attached with hot-melt glue to the rear of the jiffy box. The on-off switch and pilot light are mounted on the front cover of the box, and are not visible in Photo 2.

Operation

Inspect your soldering for quality and accuracy. Confirm that the FETs and the four AA cells are correctly installed. Connect the antenna output to the receiver input with a suitable length of 50 ohm coax cable (some transceivers provide a handy separate receiver input for such applications).

Switch on, and tune your receiver to 1.8 MHz. Adjust the loop variable capacitor for an increase in noise. Find a signal, re-peaking the capacitor as necessary.

The set-up should sound sensitive, indicating that the amplifier is probably working correctly. You should be able to substantially reduce any man-made noise (particularly those annoying wobbly harmonics from power supplies) by rotating the antenna for lowest noise/best signal.

In use, the loop-stick should be distanced by at least a metre or so from mains-operated equipment and other wiring, particularly feed-lines from different antennas, otherwise the sharpness of the null may be spoiled.

Parts

All of the ordinary electronic components are available from our usual suppliers, including Altronics, Electronic World, Jaycar, Rockby and Semtronics.

The variable capacitor may be any miniature 1-gang or 2-gang broadcast type with a total capacity of 300 or 450 pF. The capacitor for the prototype (visible in Photo 2) is a commonly available 95 + 205 pF MSP from an early transistor radio.

My plastic 'jiffy' box is a Jaycar HB 6023 (confirm that your variable capacitor and other circuitry will fit).

The preferred Neosid ferrite rod is available from Altronics, P/N L 5240. Or a rod salvaged from a defunct transistor radio may well suit, if available.

Some 3 mm acrylic (Perspex) sheet may be obtainable from the off-cuts/scrap-bin at your local plastic sign makers, free for the asking.

Should there be real difficulty in finding an item or two, please do write (or phone on 03 9722 1620). I'm not in the parts business, but usually have spares on hand, or can suggest a source.

References and Further Reading

1. "The loop aerial revived"; R Schemel, *Wireless World*, July 1975.
2. *Foundations of Wireless and Electronics*; M. Scroggie, p 291.
3. "External Ferrite Aerial Units for Short, Medium and Long-Wave Radios"; R Q Marris G2BZQ, *Elektor Electronics*, May 1993 (Richard Q Marris has written many articles about loop antennas).
4. "A Giant LF Loopstick"; R Q Marris G2BZQ, *QEX*, Mar/Apr 2000.
5. *Radio Communication Handbook*; RSGB, LF chapter (10) in recent editions.
6. "Loop Antenna and Amplifier"; B Justic and R Tester, *Silicon Chip*, Oct 2007.
7. "Paddyboard" Circuit Construction - Revised"; *Amateur Radio*, May 2005.

Photos by Karlen Dockrey

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Editorial comment

continued from page 2

access to the internet – they are now at a disadvantage. In addition, if we place the Hamads on the web, why bother publishing them at all?

As you can see, there is no simple solution to these questions!

Year's end

As has become our usual practice, the next issue of *AR* will be a combined January/February issue, hopefully out late in January. The sunspot numbers appear to be slowly rising, so enjoy the improved HF propagation. For those interested in VHF, UHF and

microwaves, read the new rules for the Ross Hull Memorial Contest and note the new dates, in the Contest column of this issue. Also remember the Summer VHF/UHF Field Day.

Merry Christmas and a happy New Year to all.

73, Peter VK3KAI

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A 10 and 100 MHz crystal frequency reference/transfer standard

Drew Diamond VK3XU.

We have seen the price and availability of UHF frequency counters improve markedly in recent years. It is now possible to buy a 2 GHz counter for a little over \$100 from several suppliers, and such instruments are now practically standard equipment in the radio/electronics workshop.

These devices typically provide a least significant digit (LSD) count of 1 Hz up to 10+ MHz, 10 Hz from 10 to 100+ MHz, and 100 Hz to 2+ GHz, offering a high degree of resolution. Accuracy, however, depends upon just how close to exactness is the counter's reference oscillator frequency (usually determined by an oven-controlled quartz crystal, or crystals).

Although a counter may have a self-check function, it tells us nothing about the accuracy, because it looks at its own reference - we need an independent external reference to test for accuracy.

Contemporary counters may have a HF range, a pre-scaled by 10 range (typically to cover 10 - 100 MHz), and a UHF range. The HF and UHF ranges may each use a separate crystal reference.

When best measuring accuracy is required, it is wise to check the

counter's reference against some known frequency standard. Being regular users of the HF spectrum, our most readily accessible free-to-air broadcast standard is probably WWV in Boulder, Colorado, and WWVH in Hawaii. These stations provide sufficiently accurate signals for most amateur purposes (sky-wave propagation over a long path causes subtle phase variations) on 2.5, 5, 10, 15, 20 and 25 MHz. Presently, the 5 and 10 MHz signals are the most reliable here.

If your counter has a 10 or 5 MHz output, it is usually possible to couple this into an HF receiver and observe that the counter's reference is at 'zero-beat' with WWV. However, it may be that your counter has a reference that is not related to 5 or 10 MHz, making direct comparison difficult. Moreover, the crystal for the UHF range may be different (from the HF crystal), and/or not ported outside the instrument.

To get around this problem, consider using a separate 10 MHz crystal reference as a 'transfer standard', to permit direct comparison between the counter, and the broadcast standard.

Offered here is a simple 10 and 100 MHz crystal-controlled signal source, allowing checks to be made on the accuracy of the high and low ranges of a typical counter. About 0 dBm (1 mW) in 50 ohms, roughly sinusoidal, but rich in useful harmonics is available at 10 MHz, and about +13 dBm (20 mW) in 50 ohms at 100 MHz (again, lots of harmonics). So the device also serves as a handy signal source for checking the frequency accuracy of receivers and spectrum analysers.

Circuit

An ordinary 10 MHz crystal is excited by one gate of a 74HC04 hex inverter chip (Figure 1), where the oscillation frequency is set to exactly 10 MHz by adjustment of the 25 pF air capacitor. The oscillator is buffered by a second inverter, whose output is applied to the remaining two sets of two inverters, thus providing a 180-degree phased shifted (push-pull) drive to the quintupler (x5 frequency multiplier). The tank between the collectors of the two 2N2222s is tuned to 50 MHz.

The 50 MHz signal from the quintupler is link-coupled and applied in push-pull to the bases of a pair of 2N3053s, with their collectors in parallel, thus operating as a frequency doubler (Reference 1, p5.15). The collector tank, tuned to 100 MHz, also provides matching between collectors and a nominal 50 ohm load.

A 10 MHz signal is picked off from the inverter and applied to an un-tuned two-stage amplifier to provide about 0 dBm (1 mW) into a nominal 50 ohm load.

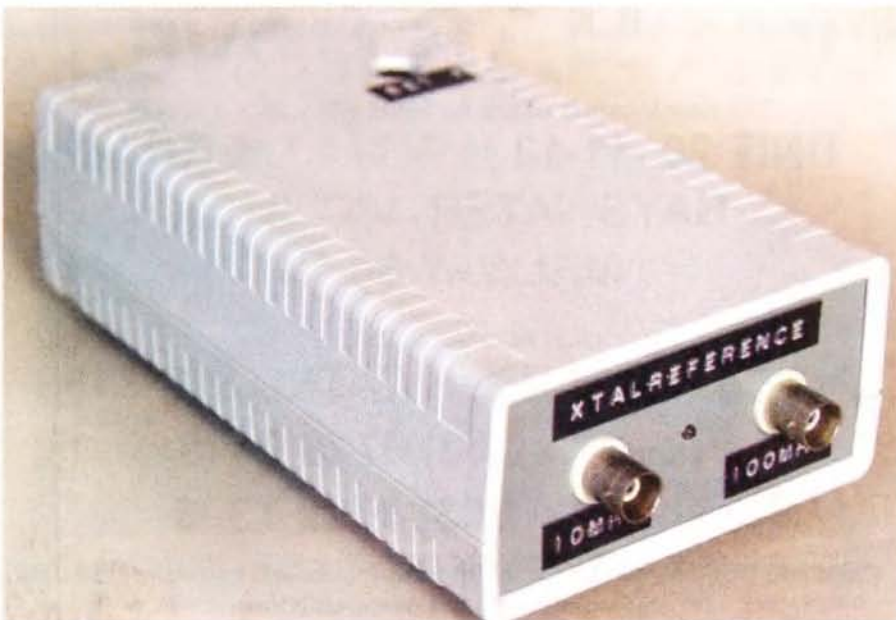


Photo 1: The 10 and 100 MHz crystal frequency reference standard in its case.

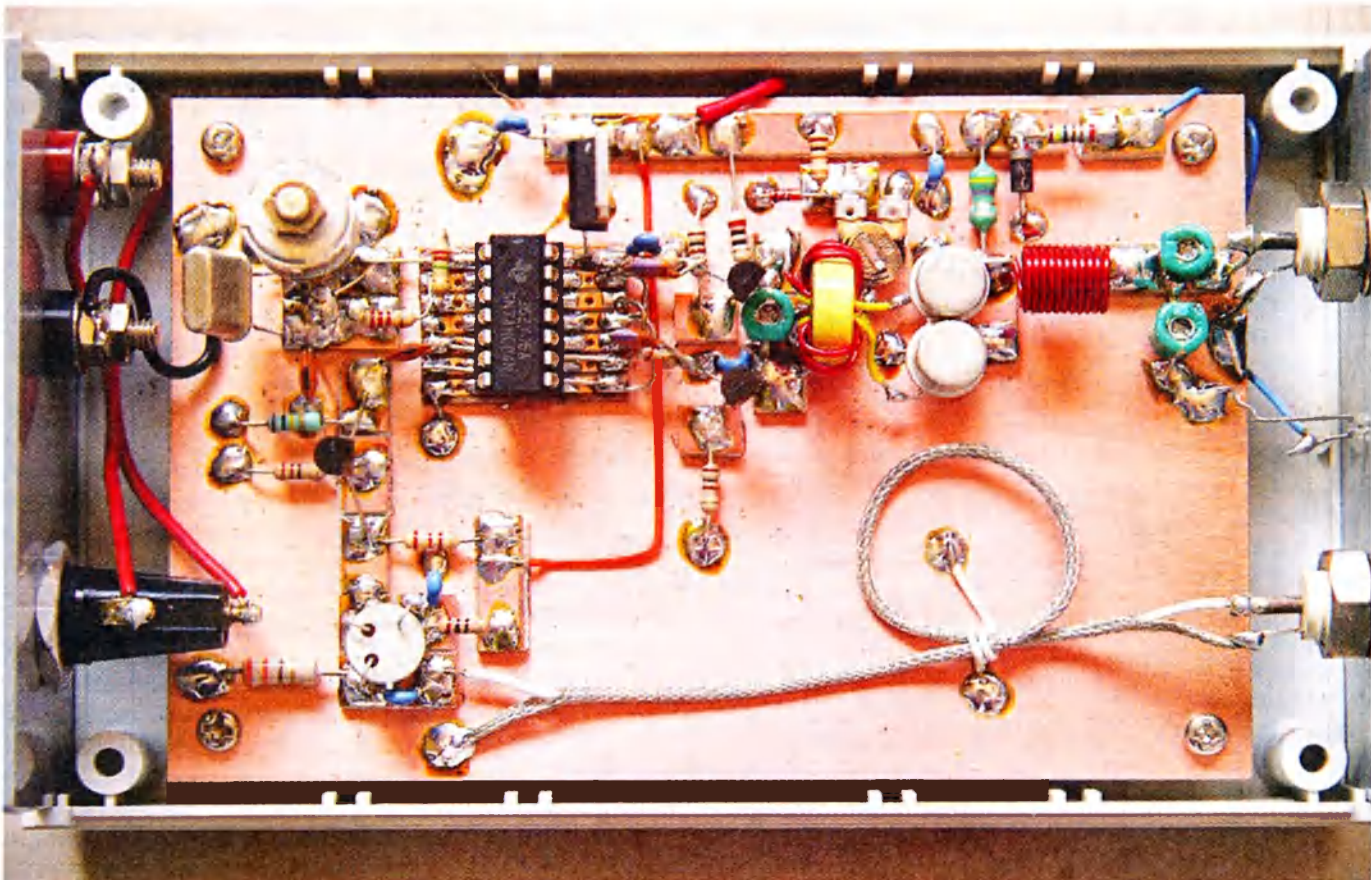


Photo 2: The 'paddyboard' and components layout of the frequency standard.

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Frequency range IF	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz
Output power	typ. 2.5 W max. 5 W, adjustable (0.5 ... 5 W)	typ. 1 W max. 5 W, adjustable (0.5 ... 5 W)	typ. 400 mW max. 5 W, adjustable (0.5 ... 5 W)	typ. 250 mW max. 5 W, adjustable (0.5 ... 5 W)	typ. 200 mW max. 5 W, adjustable (0.5 ... 5 W)
RF input power					
10 MHz reference freq. input	typ. 2 ... 10 mW	typ. 2 ... 10 mW	typ. 2 ... 10 mW	typ. 2 ... 10 mW	typ. 2 ... 10 mW
Noise figure @ 18 °C	max. 0.8 dB	max. 0.8 dB	typ. 0.9 dB	typ. 1 dB	typ. 1.2 dB
Receive gain	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable
Supply voltage	+12 ... 14 V	+12 ... 14 V	+12 ... 14 V	+12 ... 14 V	+12 ... 14 V

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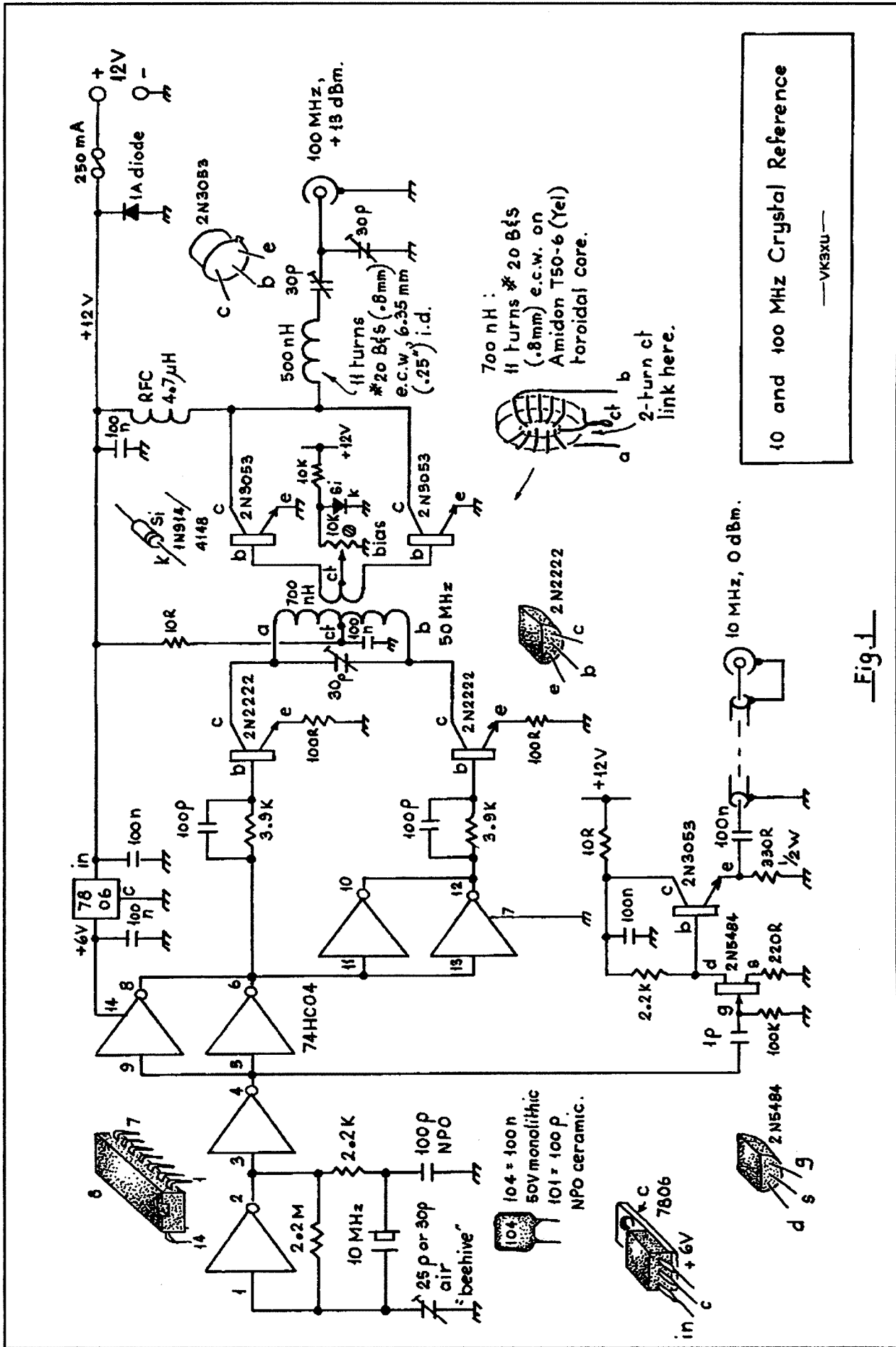


Figure 1: Schematic diagram of the 10 and 100 MHz crystal frequency reference standard.

Fig. 1

Construction

The prototype model is housed in a plastic instrument box measuring 47 x 95 x 158 HWD (see Parts below). All components are accommodated upon a 'paddyboard' (Reference 2) circuit board measuring 125 x 80 mm. A suggested layout is illustrated in Figure 2 and Photo 2. The 74HC04 chip may be fitted in an IC socket which, in turn, is soldered to a 7-strip x 24 mm rectangle of Vero board.

Remember first to cut a shallow slot (junior hack-saw) along its length to separate the pins each side of the 'substrate'. Do not poke the socket pins right through (or better still, carefully sit them on top, so as not to short to the board foil). It is then super-glued (sparingly - absolutely no glue on items that must take solder) upon the circuit board as shown.

Or, consider the hot-melt glue method. Place a small sliver (in solid form) upon the underside (fibre) of your pad or substrate, then melt it evenly with the tip of a soldering iron. When the glue is liquid, quickly stick the pad on to the main board in the exact spot required.

All connections, particularly those around the 50 and 100 MHz stages, must be as short as reasonably practicable, otherwise instability problems will occur. The 700 nH 50 MHz coil is 11 turns of

0.8 mm enamel coated wire (ecw) space-wound upon an Amidon T50-6 yellow core. At the sixth turn, form a little pig-tail in the wire to form the centre tap (ct). The secondary is a two-turn link (one turn each side of ct), made with telephone wire. Their ends connect directly (no pads) to the bases of the doubler 2N3053s. Note that the slider of the 10 kilohm trim-pot is not by-passed.

The 500 nH 100 MHz tank coil is 11 turns of 0.8 mm ecw, 6.35 mm (0.25") internal diameter. An ordinary drill shank may be used as a temporary former upon which 11 turns are close-wound. Leave tails of about 6 mm for connection to the pads.

Operation

Visually inspect your soldering for quality, accuracy, and correct chip and diode orientation. Look particularly for solder bridges between Vero tracks - clean up with solder wick as necessary.

The device may be operated from a nominal 12 V dc metered and regulated supply. A maximum current of about 100 mA is required. Apply power. If a CRO is available with a x10 probe, observe a 6 V peak-peak square-wave at pins 6 and 12 of the 74HC04, indicating that the oscillator and inverters are working.

Set all of the trim capacitors, and the

10 k bias trim potentiometer, to about half travel. Should you have a spectrum analyzer, connect the 100 MHz output to the analyzer's input and look for the signal.

Carefully peak the quintupler, then the doubler trim capacitors, for maximum output. Optimise the doubler bias by adjusting the trim pot for best output level consistent with minimum current demand from the dc supply - about 100 mA should be found to be about right.

Or, perhaps you have a VHF CRO. Connect the 100 MHz output to the CRO's input using a suitable length of 50 ohm cable. Remember to include a 50 ohm thru-termination right at the input connector. Carefully peak the trimmers as described above.

If only a DMM/VTVM and RF probe (such as outlined in References 3 and 4) is available, the above adjustments may be done with care. When tuned/peaked, you should measure about 1.1 V RF across a 50 ohm load at the 100 MHz output connector.

Check that you have a roughly sinusoidal signal of about 0.7 V peak-peak, or about 0.25 V RF with voltage probe (0 dBm/1 mW) across 50 ohms at the 10 MHz connector. To put the crystal spot-on frequency, tune the

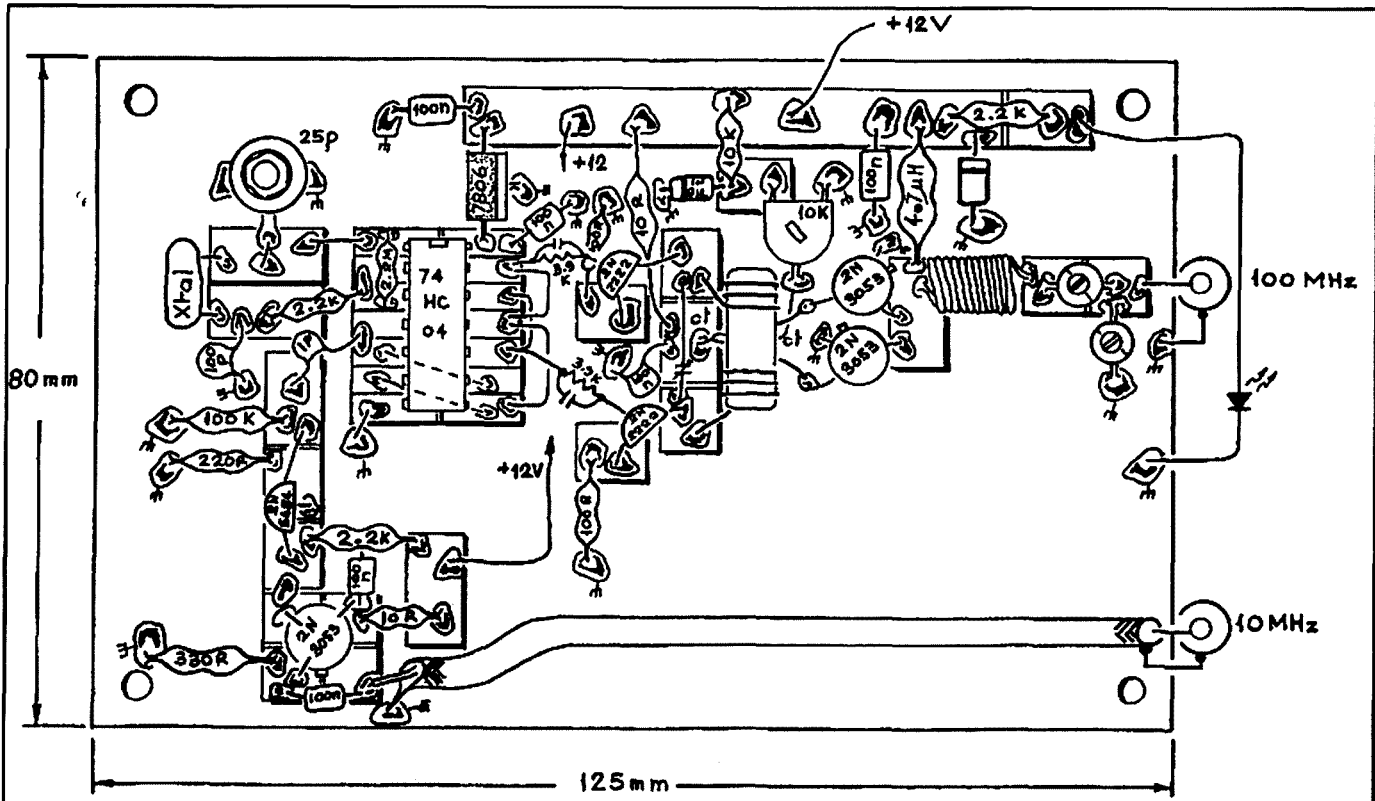


Figure 2: 'Paddyboard' and component layout for the frequency reference standard.

station receiver to 10 MHz at a time when WWV(H) is audible.

The cover must be in place (to exclude draughts). Warm-up the crystal for at least half an hour. The reference's signal can usually be effectively radiated into the local area by simply plugging a clip-lead into the 10 MHz output connector. Carefully adjust the 25 pF beehive trim capacitor so that the crystal is at 'zero-beat' with WWV(H), where it should remain indefinitely.

For excellent long and short-term frequency stability, consider operating the crystal continuously in an oven. A simple, effective scheme, based on a circuit of Ian Pogson (Reference 5) was outlined in Reference 6.

Parts

Most of the parts are available from our usual electronics component suppliers, including Altronics, Jaycar, Electronic World, Rockby and Semtronics. The 25 pF trim caps are available from Electronic World (03 9723 3860).

The case for the prototype model is a Jaycar HB 5922.

Amidon cores may be purchased from any of the suppliers listed regularly in the Hamads of Amateur Radio magazine.

References and Further Reading

1. Experimental Methods in RF Design; W Hayward et al; ARRL.
2. "'Paddyboard' Circuit Construction - Revised"; Amateur Radio, May 2005.
3. "An RF Voltage Probe (with notes on power measurement)"; Amateur Radio, August 2000.
4. "In Circuit RF Measurement"; Tuck Choy, Electronics World, July 2003.
5. "A Simple Temperature Controlled Crystal Oven"; I Pogson, Electronics Australia, April 1987.
6. "A Temperature Controlled Crystal Frequency Calibrator"; Amateur Radio, December 2002.

Photos: Andrew Diamond

FDMDV — Frequency Division Multiplex Digital Voice

Gerry Wild VK6GW

How many amateurs are aware of a new system of voice transmission capable of giving noise free reception and high quality speech on the HF bands?

Such a system is known as FDMDV (Frequency Division Multiplex Digital Voice).

This is a digital voice mode that works within a 1.2 kHz bandwidth, which is less than half the bandwidth of the normal 2.5 kHz SSB signal. The concept is based on an idea from Peter Martinez G3PLX who, along with Francesco (Cesco) Lanza HB9TLK, optimized the general code for FDMDV.

FDMDV is based on 15 carriers using the 1400 Mixed-Excitation Linear Predictive (MELP) codec and utilises higher power in each carrier combined with an occupied 1.125 kHz bandwidth. FDMDV is relatively new and is not derived from DRM (Digital Radio Mondiale) technology.

Technical specifications

- 50 baud 14 QPSK (Quadrature Phase Shift Keying) voice data.
- 1 centre BPSK (Binary Phase Shift Keying) carrier with 2x power for auto tuning and frame indication.
- 1.125 kHz spectrum bandwidth with 75 Hz carrier spacing.
- 1450 bps data rate.
- 1400 bps MELP codec.
- Adjustable squelch.
- TXALC boost average power while reducing the peak power.

- No FEC (Forward Error Correction).
- 4800 Sample Rate/16-20 bit/AC97 sound card compatible.

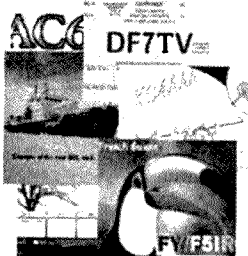
A PC with Windows XP, 1 GHz CPU and 512 k of RAM, and two soundcards, is recommended.

The sound quality of FDMDV is amazingly good considering the large amount of coding required to compress voice frequencies into such a narrow bandwidth. Sometimes, depending on propagation and received signal strength, voice quality may sound odd but nonetheless is very understandable. The characteristic raw (un-decoded) FDMDV signal sounds like buzzing.

FDMDV source files are available and published by Kirk Harding K6KAR at <http://groups.google.com/group/fdmdv>

Here you can find the two files necessary to enable FDMDV (FDMDV6Jan.2008.zip) and (melp_1400.dll). Also at this location is a document written by Mel Whitten K0PFX which not only provides a more in-depth description and explanation of FDMDV but also provides information on how to set up and use this wonderful new digital voice mode.

If you are in need of further information or assistance you can contact Kirk K6KAR at kirk.harding@cox.net or the author at vk6gw@bigpond.com



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Pic-A-Star – Homebrew HF Transceiver (SDR)

Kevin Crockett VK3CKC

This article is not all there is to know, or all you might want to know, about Pic-A-Star. It serves to alert you to the possibility of building your next all-HF transceiver and is relatively skeletal as far as information is concerned. To provide more would only be repeating part of the vast amount of information available via the Internet. After all, you will require a computer and Internet access if you decide to build one.

In 2003, as an offshoot of PIC experimentation and programming (see AQRP reference at end of article for lessons), I developed an interest in Software Defined Radio (SDR). SDR is where a radio is basically a collection of hardware items such as digital ICs, controls and frequency generating components – and a computer that is either external or embedded in the design. The processing of signals or what the circuit or module does, and the way it does it, depends on a purpose-written software program and what the computer does with it. The program can change whether the module is a signal generator, a receiver or even a transmitter. A good analogy perhaps would be the now commonplace personal computer or PC. The computer maintains the

same hardware collection but can be a word processor one minute and a weather station, games console or rig controller the next. It is the software, in conjunction with the user, that decides what it is at any given time.

My interest in SDR led me to Direct Digital Synthesis or DDS. This is where digital ICs are grouped together to form a module that, when the appropriate software is provided, generates frequencies that can be used in test gear or as the required local oscillators for transmitters, receivers or anything else for that matter. If you like, consider them to be the modern counterpart of the phase-locked loop.

An Internet search led to the downloading of considerable reference material to plough through and the task of putting any of the information to

practical use started to appear more than a little daunting and overwhelming. I even posted a query in the member's area of the WIA website at the time to find out if anyone was doing any development in Australia and did not receive one reply - ever.

Such pursuits into the world of DDS were put on hold until I completed an Advanced Diploma of Electronics Engineering course (no, this was not a requirement for DDS, it was another interest) at the Bendigo Regional Institute of TAFE. This led to even more 'downtime' as I ended up going into business at the end of the course. As time was now at a premium, I was thinking that I would probably have to buy an essentially digital transceiver if I was going to enjoy this latest technology to any degree. As I could



Photo1: The Group of builders photographed at the 2008 Centre Victoria RadioFest.

not afford a Ten-Tec Orion, I might have to build an Elecraft K2 some day or forever chase the elusive butterfly of DDS and SDR experimentation – or give it away altogether.

The inaugural Centre Victoria RadioFest held at Kyneton in April 2007 included a mini-lecture presented by Paul Engler VK3XDE. As this was an SDR subject and PIC-related, I decided that this was one lecture I could not miss and a break from duties on the day would just have to be arranged. Paul's Pic-A-Star lecture demonstrated how it is possible to build an all-HF band transceiver that at least rivals today's commercial offerings - at a much lower price and you have the added bonus of the satisfaction of having built it yourself. The subject was just what I had been looking for and I enthusiastically looked up the Internet when I arrived back home and arranged a logon to the special Yahoo forum for constructors. A link is provided at the end of this article. I added my name to the official builder's list a couple of days later.

I arranged for Paul to present the

project to Midland Amateur Radio Club (www.marc.org.au) members who missed out on his very informative lecture at the RadioFest. This took place in June and was attended by more than 20 interested amateurs. Most of these were from around Bendigo, with a group from the Sunbury area. Quite a few expressed an interest in building this exciting transceiver and the Club

committee decided that a coordination point be established to help members and others in construction. Out of the presentation came something like 15 confirmed builders and the number of builders continues to grow around the world.

At the time I joined the official builder's in April 2007, the list showed that worldwide, 45 builders



Photo 2: Partly completed Pic-A-Star from Glenn Percy VK3PE.

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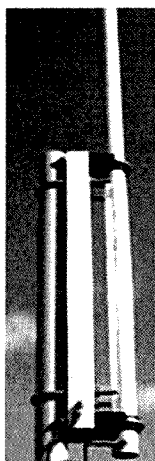
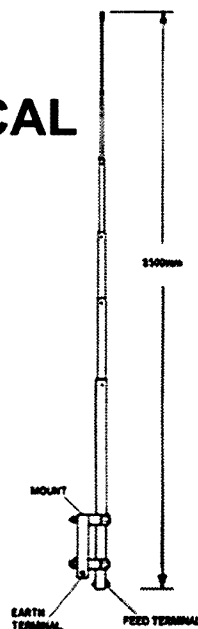
It can be mounted at ground level or elevated to any height above ground or a roof. Many options can be utilized for feeding this antenna. Popular uses are:-

- With an auto tuner (SGC-237 or Icom AH-4 style).
- Using a 4:1 Balun at the feed point and a tuner at the radio.
- Using 450 Ohm ribbon and a 4:1 Balun in an 'L' shape.

The antenna is all predrilled and by following the instructions, you will find that the antenna is simple to assemble.

Specifications

ELEMENT HEIGHT	8500 mm
CONSTRUCTION	6000 Series Drawn Aluminium Tubing
HARDWARE	Stainless Steel
POWER RATING	1 kW PEP



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(two Australian) had completed their transceivers with another 96 (six Australian) who had commenced building. I happened to be the 6th Australian on the list. The January 2008 list shows a total of 51 (two Australian) completed with 207 (36 Australian) who have started building. Of the 36 Australians who have commenced building, 30 are Victorians. Why have the other states not caught on? Maybe this article will change that.

So, what is all the interest about?

Creation of Pic-A-Star

Peter Rhodes G3XJP is the brains behind the project. He published an article in the RSGB journal RadCom from September 2000 to January 2001 covering what he called an Intelligent ATU. This ATU was PIC-controlled, and was placed at the far end of the coax and was controlled by a single switch via the coax itself. He dubbed it PicATUne. This is also a Midland Amateur Radio Club project with around eight local and about 15 known VK constructors in all at the time of writing.

Peter later described Pic 'N' Mix - a complete digital frequency injection system. This was a frequency generation module based on DDS and provided local oscillator injection for potentially updating an older transceiver or for signal generator purposes. This was to become the frequency source for his next big project - Pic-A-Star.

Pic-A-Star was first published as an article by the RSGB in RadCom from Aug 2002 to March 2004. There is also a devoted chapter in the 2006 RSGB Handbook. STAR II, as the current development is known, is in daily use all around the world and is now completing formal development. Peter's project development is scheduled to end on 1 September 2008. After devoting some ten years of his life, Peter would like to get some free time back. This will not necessarily be the end of development and it is hoped that someone else will take over and ensure that it remains a project without an end. Support for official builders will continue.

It would be remiss of me not to acknowledge the large number of contributors to the development of this project. It is a collaborative effort where many builders and skilled amateurs have contributed and continue to contribute their expertise. Details can be located on the forum if you wish to explore this further.

What is Pic-A-Star?

Pic-A-Star has evolved a lot since it was first published. As previously stated, it was defined as a project without an end. Peter's view from the constructor's angle was a source of ideas for improving an existing transceiver - not least, replacing the back-end with a powerful Digital Signal Processing (DSP) capability. It

was also to provide an opportunity for builders to acquire some building skills that they may not already have - self education. Now, is that not part of the purpose of amateur radio?

The general barrier to home construction in this modern, digital age has been said to be adequate design information, parts availability, surface mount components and inherent difficulties in making circuit boards and even mounting the close-spaced-pin components. It can be done a lot easier than you think and there is only one way to find out how. The downloadable documents are essential reading.

Although quite complex in places, emphasis is on home construction and it is explicitly designed to be upgraded over the web. Software is supplied only to official, registered constructors. A simple and inexpensive technique for making precision circuit boards including the mounting of digital chips with 0.5 mm spacing is provided.

A Direct Digital Synthesis control module provides all the required frequency generation for the transceiver as well as frequency readout. Other software modules control status indication, bandswitching, filter setting and so on, even simulated stereo audio. Although the transceiver is cutting edge technology, it is relatively easy for amateurs to homebrew and its performance rivals and even exceeds the current commercial offerings in many areas. Performance upgrades/enhancements are accomplished via software downloads - similar to the Ten-Tec Orion and Elecraft K2 for example.

Its design and software is open source but is subject to free registration with the Yahoo Forum and is not available for commercial gain. Facilities include: SSB and CW detection and generation, a bank of high-performance Rx filters, impulse noise blanking, non-coherent noise reduction, auto-notch heterodyne removal, variable AGC time constant, synthetic stereo audio reproduction, adjustable RF clipping on transmit, very fast VOX and QSK operation and the flexibility to change.

Front panel controls consist only of a rotary encoder and a keypad. The keypad selects operating parameters and the encoder 'dials in' the amount of

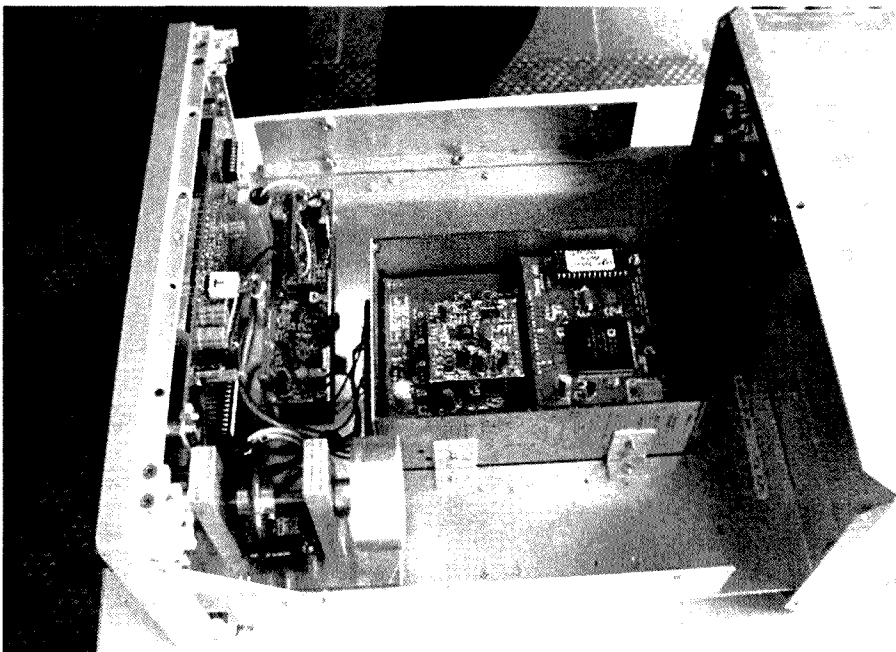


Photo 3: Inside Glen Percy's part completed Pic-A-Star.

change or setting. The encoder is also used to change the frequency setting as expected.

Unlike most other designs that are being undertaken in the field of SDR, this one does not require connection to a computer during operation. A computer is required in the initial commissioning as it were and for the software upgrades but once that is completed, it stands alone.

The project itself covers almost everything except the output PA and the very front end. You can save costs by using a second-hand PA or front-end stages or design or build your own if you want to. Suitable, recommended designs are available from <http://www.radio-kits.co.uk/>

Although some surface-mount components are used, there is nothing really difficult about mounting the components or making the circuit boards for home construction. In the words of Peter Rhodes G3XJP 'For me, this is Amateur Radio - not the passive process of swapping money for a radio, nor the passive process of sucking up free software. Rather the active process

of getting involved collaboratively in designing and making one. And only then, the pride and pleasure of using it - which you can't buy for any money.'

It is to be noted that Australian Foundation licence holders are not permitted to use such a transceiver under the terms of their licence but there is no reason why they could not build a receiver-only version and a couple of local amateurs are doing just that. You actually end up with a fully functioning receiver before adding the transmitting capability when/if you obtain the licence to use it.

Construction

There is no kit available for this transceiver. You need to source everything yourself. However, the most common way of doing this is to create a buying group where there can be purchase savings through bulk purchases.

As expected, some of the parts are not available from your corner electronics parts store and you will need to cast your net further afield. The internet is a great tool for this but consider postage

and freight. Many parts are traded between builders themselves and there is always plenty of advice from other builders.

There is plenty of scope for individuality in building but if you deviate too far from the main stream you will increase your risk of problems and decrease your chances of getting Forum support.

How to get involved

A regular VK Pic-A-Star HF net was started on 6 January 2007 on 3.655 MHz at 8 pm (local EST) and is conducted every Monday evening on this frequency unless there is some reason to change it. The net is open to all interested parties.

In order to become more familiar with the project's design and to see if you are really interested in building one, download the single, 45 page PDF file of the development articles that appeared in the Radio Society of Great Britain (RSGB) amateur radio magazine, RadCom, and read it three times.

Do not worry if you do not completely

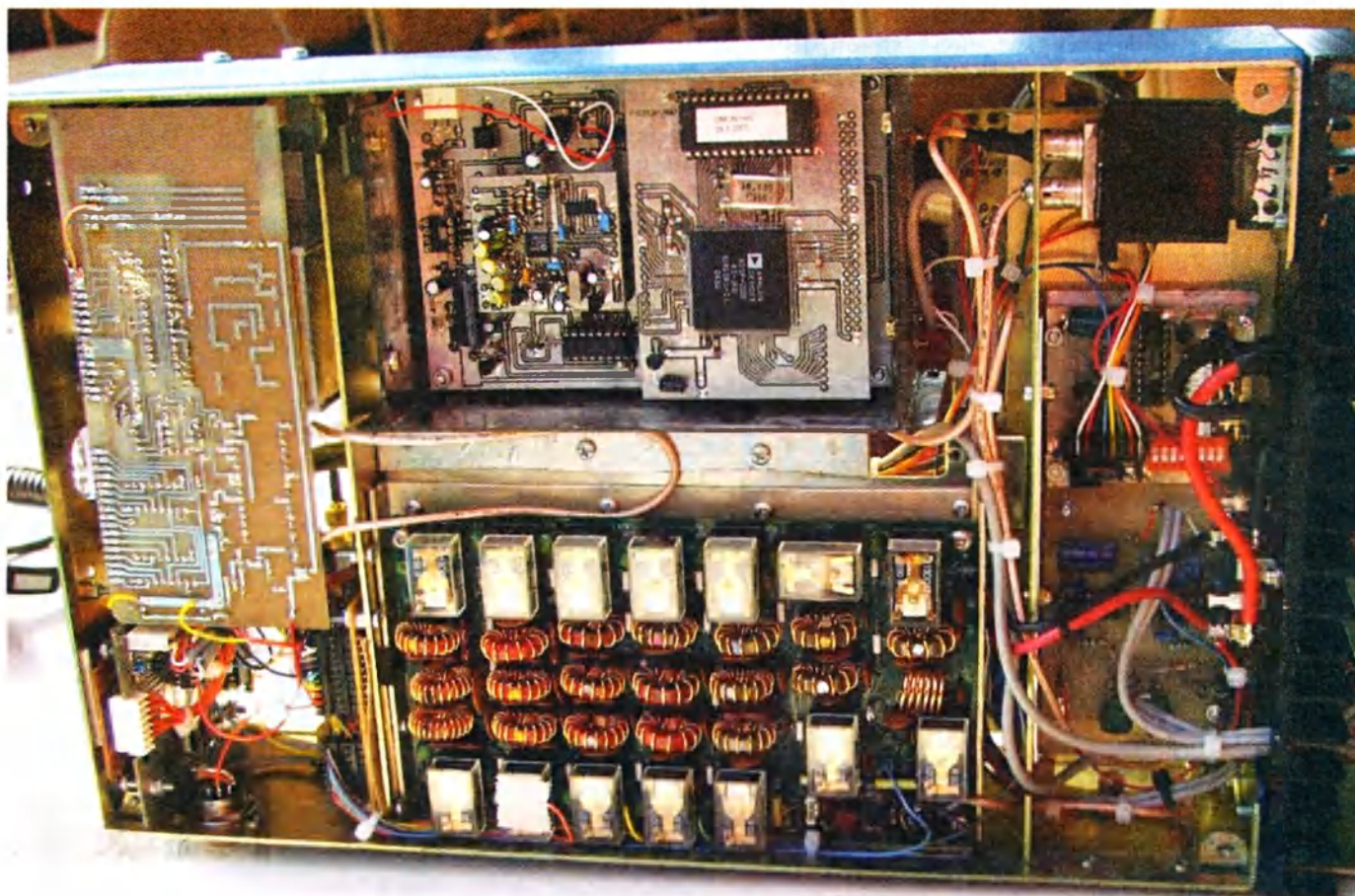


Photo 4: Paul Engler VK3XDE built this working Pic-A-Star.

SGC SG-500 Power Cube HF Amplifier

An HF linear amplifier ideal for high power operation in portable, mobile and base station situations. It can deliver up to 500 W CW or PEP with as little as 35 W drive. Fully automatic bandswitching and RF detect PTT. It uses one of the most advanced self protection systems on the market to provide maximum stability and reliability. FCC Certified. Visit our web site for further details or call for a brochure.



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- No PC required at the rig to operate remote!
- Delivers live receive AND transmit operation from anywhere in the world from wideband Internet access!
- A simple GUI written for the OMNI-VII downloadable free or latest GUI source code can be downloaded to DIY
- Three built-in filters at 20 kHz, 6 kHz, and 2.5 kHz. Optional Collins mechanical filters at 500 Hz and 300 Hz.
- Filters are auto or manual.
- 37 built-in DSP filters.
- Transmit 6 - 160 meters, 100 watts. Receive from 500 kHz - 30 MHz continuous plus 48 to 54 MHz.
- SSB, CW, AM, FM, Digital modes.
- 17 selectable transmit bandwidths.
- RX EQ and TX EQ in 6 db/octave filters selectable in 1-dB steps.
- DSP Noise Reduction, auto or manual notch.
- QSK CW has adjustable rise and decay times, hard or soft key options.



TTS is the local home of Palstar
Superbly engineered and robustly built in the USA

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.



AT1KP Tuner



Differential capacitor tuning, 2 stators, 1 rotor. 2 controls to precision tune, ceramic body roller inductor and high power balun. Peak and Peak Hold dual cross-needle metering.

- 1200 watts pep
- 160 m to 20 m (1200+/-j1200), 10 m to 15 m (1000+/-j1000)
- Output to both balanced and unbalanced lines
- 20 ohms to 1200 ohms Impedance matching range
- 6 position mode switch for multiple antennas
- Backlit Crossneedle metering (wall transformer supplied)
- Meter power range 0-300 watts / 0-3000 watts
- 270 mm w x 115 mm h x 280 mm deep.

Mean Well PB 360P-12 battery charger

From one of the world's leading switching power supply manufacturers comes this charger, one of more than 2000 various pieces of Mean Well equipment that facilitate power world-wide to the medical, communications, military and automation sectors. In the TTS philosophy of reliable quality for less, we offer this state of the art battery charger. 14.4 V 24.3 A, 3 stage charging, simple switch between 90-132VAC and 180-264VAC, remote on/off, fan cooled, many protections.



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vertical

The antenna
collapses down
to 6 x 1.8 m
sections of 6000
grade aluminum
tube.

It is protected
with a durable
powder coat
finish in a
pleasing grey/
green color.

The natural
resonance is
in the 40 meter
amateur band.
It can be easily
tuned to other
bands using
optional coupling
units or an auto
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understand it all at any time. Help is available via the Forum. The one-file development articles are available from <http://www.tracey.org/wjt/temp/picstar-all.pdf> DO NOT build from these original PDFs. They are for background development and parts/design interest only. Regular updated build information is available from the official web site at any time and the current status is posted on the Forum each Friday.

Having decided that you still want to build one, and only when you have decided you want to build one, you should then create your own log-on to the Yahoo forum - <http://uk.groups.yahoo.com/group/picstar/> When you are finally ready to start, ask to be put on the official builder's list. This will enable you to access all the current development and building information that you will need for the project.

This includes the PIC 'N MIX DDS articles that are not included in the PDF mentioned above. You will also

be able to post specific queries if you need particular help during your construction. Try and resist the urge to download all the files that you see. If you cannot resist the urge, try and keep some order in what you download so that you can easily tell what is current and what is not. There will be changes during the build cycle. The latest status is posted weekly on the forum.

If you find, or are offered, any discarded HF SSB CB radios or HF amateur transceivers, grab them - regardless of condition. They are a source of PA stages, roofing filters, relays, front ends and so on, and will come in handy later on for the sections that are not provided as an integral part of the Pic-A-Star project. Get your junk box stocked.

Local Progress

How far have the local builders managed to get? Not very, although there has been quite a bit of work behind the scenes. Sourcing components for your

own build is one thing but the workload for a group seems to multiply exponentially.

There have also been diversions into a



Photo 5: Paul Engler VK3XDE during the MARC presentation.

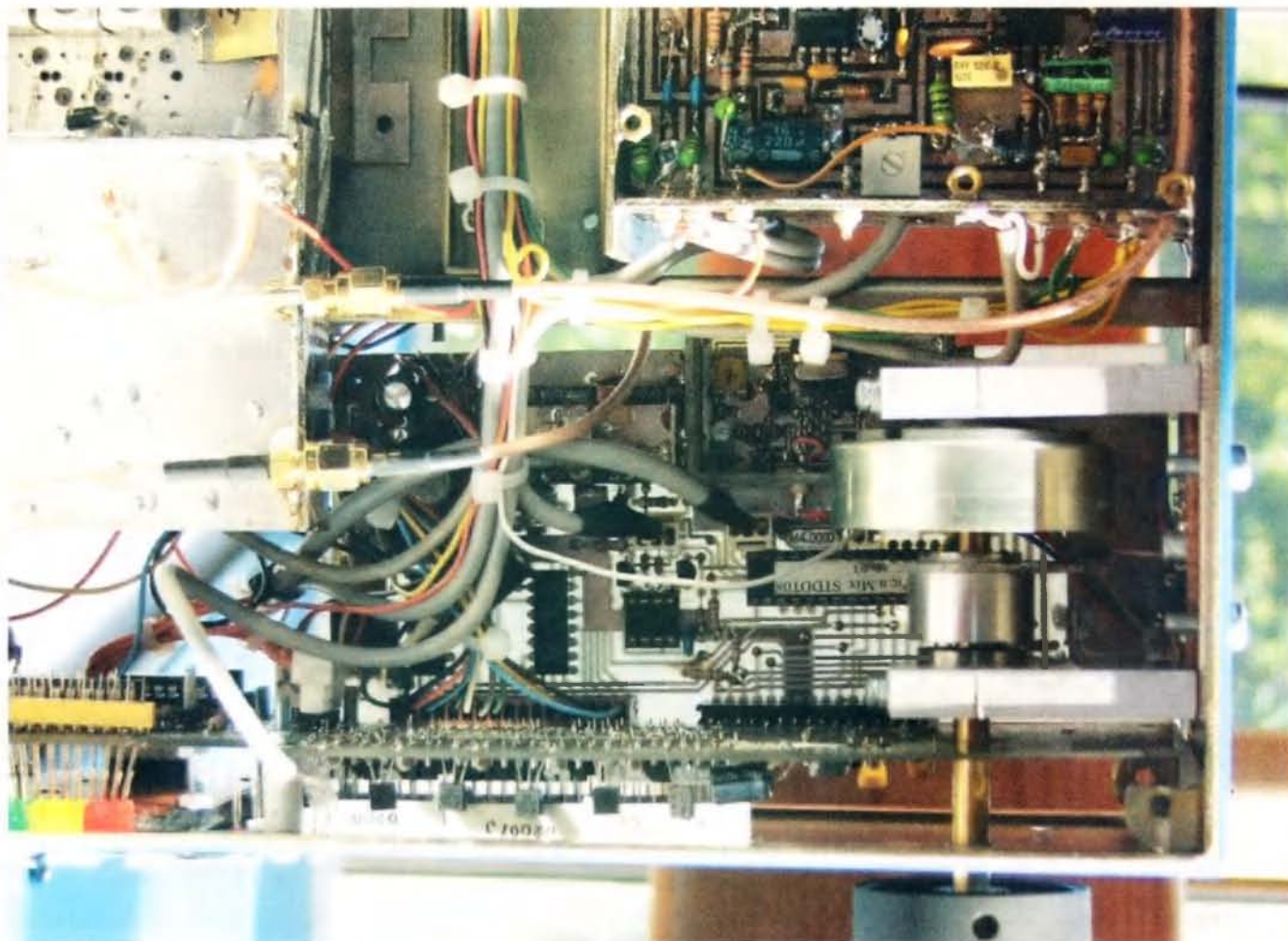


Photo 6: A bottom view of Paul Engler's VK3XDE Pic-A-Star.

couple of offshoot Club projects like the Phil Rice LC Meter Mark 2 (around ten of these), the Pic-A-Star associated continuity checker (around six of these) and PicATune (about twelve local builders and a couple of others). Further details are available from the Midland Amateur Radio Club web site. All of these projects resulted in multi-linked/cross-referenced spreadsheets to identify the best buy price from various suppliers.

The Sunbury group have said that they are well under way.

These endeavours have taken many, many hours of a very limited resource - time. I have taken the opportunity of a couple of other group buys to obtain some Pic-A-Star parts such as the commercial VK3PE-arranged circuit boards, rotary encoders and some special DSP chips. Once the PicATune project is well underway, part ordering and construction will start in earnest for Pic-A-Star.

So, there you have it. If you want to get involved in some

fascinating homebrew, here is your opportunity. The references below will point you in the right direction and, once you start searching, you will find plenty more.

References

Complete 20-part Original Development Article - <http://www.tracey.org/wjt/temp/picastar-all.pdf>

Pic-A-Star Forum - <http://uk.groups.yahoo.com/group/picastar/>

Midland Amateur Radio Club - <http://www.marc.org.au/>

Steve Drury G6ALU - <http://www.radio-kits.co.uk/>

American QRP PIC Programming - <http://www.amqrp.org/elmer160/lessons/>

Some build pictures

Stephen Wilson G3VMW - <http://www.g3vmw.demon.co.uk/>

Glenn Percy VK3PE - <http://www.carnut.info/star-parts/pcbs/starbuilders.htm>

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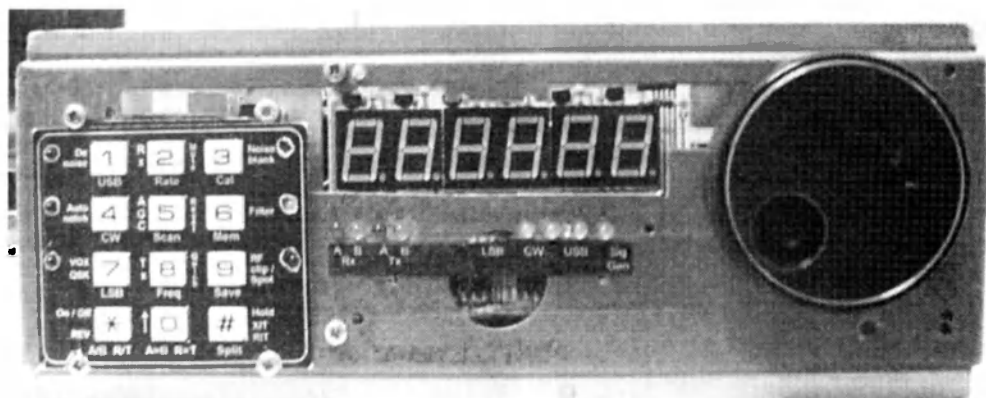


Photo 7: A close-up view of Paul Engler's VK3XDE encoder construction.

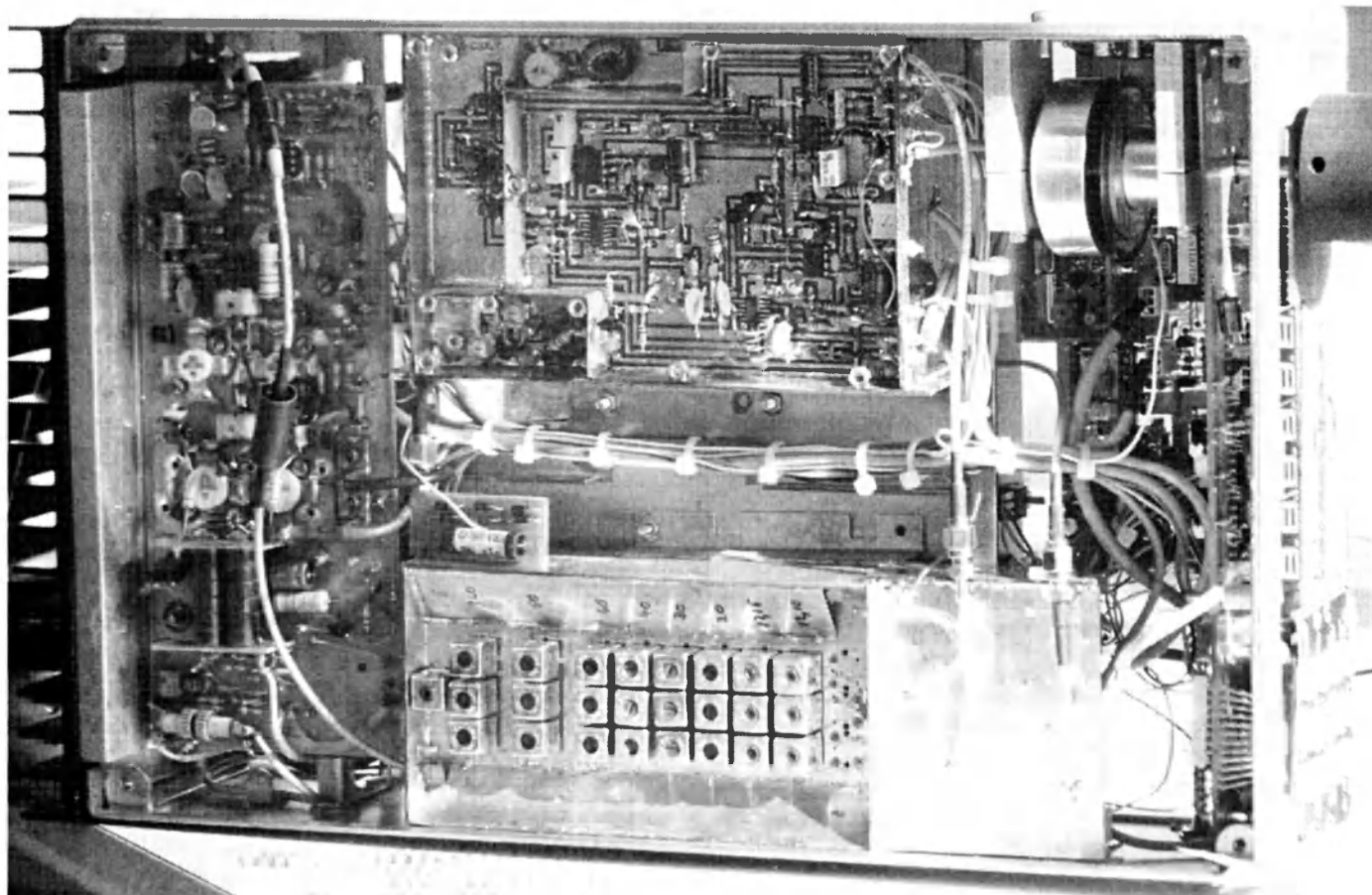


Photo 8: A top view of Paul Engler's VK3XDE working Pic-A-Star.

Gridsquare Standings at 17 October 2008

144 MHz Terrestrial

VK2FLR	Mike	113
VK3NX	Charlie	106
VK2KU	Guy	102
VK3KAI	Peter	87
VK3HZ	David	80
VK2ZAB	Gordon	78 SSB
VK2DVZ	Ross	72 SSB
VK5AKK	Phil	72 SSB
VK3CY	Des	71
VK3PY	Chas	71 SSB
VK2KU	Guy	69 SSB
VK2ZT	Steve	64 SSB
VK7MO	Rex	63
VK2TK	John	62
VK3QM	David	61 SSB
VK3BJM	Barry	60 SSB
VK2EI	Neil	59
VK3BDL	Mike	54 SSB
VK3KAI	Peter	54 SSB
VK3ZLS	Les	51 SSB
VK3WRE	Ralph	50 SSB
VK5BC	Brian	48 SSB
VK2KU	Guy	47 Digi
VK3CAT	Tony	46
VK3VG	Trevor	46 SSB
VK4CDI	Phil	45
VK7MO	Rex	45 SSB
VK3II	Jim	43
VK4KZR	Rod	43
VK7MO	Rex	43 Digi
VK3II	Jim	42 SSB
VK5BC/p	Brian	42 SSB
VK4CDI	Phil	41 SSB
VK2AMS	Mark	36 SSB
VK3KAI	Peter	36 Digi
VK2TK	John	35 SSB
VK2KOL	Colin	34 SSB
VK3EJ	Gordon	33 SSB
VK3ZUX	Denis	33 SSB
VK6HK	Don	33
VK3DMW	Ken	32
VK4TJ	John	32 SSB
VK2TG	Bob	30 SSB
VK3VHF	Rhett	29 SSB
VK2EAH	Andy	27
VK2TK	John	27 Digi
VK1WJ	Waldis	26
ZL3TY	Bob	24
VK3TLW	Mark	23 SSB
VK4EME	Allan	23
VK1WJ	Waldis	22 Digi
VK3BG	Ed	22 SSB
VK3ECH	Rob	20 SSB
VK4CDI	Phil	20 Digi
VK6KZ	Wally	20
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK3II	Jim	18 Digi
VK3UDX	Geoff	17 SSB
VK2EAH	Andy	16 SSB
VK6KZ/p	Wally	16
VK3VHF	Rhett	12 Digi
VK4EME	Allan	12 Digi
VK2EAH	Andy	11 Digi
VK2EI	Neil	11 Digi
VK2KOL	Colin	9 Digi
VK2ZT	Steve	8 Digi
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 SSB

VK1WJ	Waldis	5 CW
VK4AIG	Denis	5 SSB
VK4JAZ	Grant	3 FM
VK3QM	David	1 Digi

144 MHz EME

ZL3TY	Bob	287
VK2KU	Guy	278
VK2KU	Guy	266 Digi
VK3AXH	Ian	233 Digi
VK7MO	Rex	155 Digi
VK4CDI	Phil	147 Digi
VK2FLR	Mike	120
VK3CY	Des	70 CW
VK2AWD	David	65 Digi
VK2KU	Guy	39 CW
VK2ZT	Steve	29 Digi
VK3VHF	Rhett	20 Digi
VK3HZ	David	19
VK3II	Jim	10 Digi
VK3NX	Charlie	5
VK4EME	Allan	5 Digi
VK3AXH	Ian	3 CW
VK2DVZ	Ross	2 CW
VK3AXH	Ian	1 SSB

432 MHz Terrestrial

VK2ZAB	Gordon	57 SSB
VK3NX	Charlie	50
VK3PY	Chas	50 SSB
VK3QM	David	48 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3BJM	Barry	38 SSB
VK3HZ	David	37
VK5AKK	Phil	35 SSB
VK2KU	Guy	34 SSB
VK2DVZ	Ross	32 SSB
VK3CY	Des	32
VK3BDL	Mike	30 SSB
VK3KAI	Peter	30
VK3KAI	Peter	29 SSB
VK3WRE	Ralph	28 SSB
VK5BC	Brian	25 SSB
VK3VG	Trevor	20 SSB
VK7MO	Rex	20
VK2ZT	Steve	19 SSB
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2TK	John	17 SSB
VK3CAT	Tony	16
VK5BC/p	Brian	16 SSB
VK3BG	Ed	15 SSB
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK4KZR	Rod	14
VK4CDI	Phil	13
VK4CDI	Phil	13 SSB
VK6KZ	Wally	13
VK2AMS	Mark	12 SSB
VK2KOL	Colin	12 SSB
VK2EI	Neil	10 SSB
VK2TG	Bob	10 SSB
VK3AL	Alan	10 SSB
VK3ECH	Rob	10 SSB
VK3VHF	Rhett	9 SSB
VK4TJ	John	8 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK2FLR	Mike	6

VK4EME	Allan	6 SSB
VK6DXI	Mirek	6
VK2KU	Guy	5 Digi
VK1WJ	Waldis	4 SSB
VK2EAH	Andy	4 SSB
VK3DMW	Ken	4
VK3KAI	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK4CDI	Phil	4 Digi
VK3VHF	Rhett	3 Digi
VK4AIG	Denis	3 SSB
VK4JAZ	Grant	3 FM
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz EME

VK4KAZ	Allan	14 CW
VK4CDI	Phil	11 Digi
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK3NX	Charlie	5
VK3HZ	David	4
VK2ZT	Steve	1 Digi
VK3AXH	Ian	1 Digi
VK3VHF	Rhett	1 Digi
VK5BC	Brian	1

1296 MHz Terrestrial

VK3PY	Chas	39 SSB
VK3QM	David	39 SSB
VK3NX	Charlie	37
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2KU	Guy	25
VK2KU	Guy	22 SSB
VK3KAI	Peter	20
VK5AKK	Phil	20 SSB
VK2DVZ	Ross	19 SSB
VK3KAI	Peter	19 SSB
VK3KWA	John	19
VK3BJM	Barry	18 SSB
VK3WRE	Ralph	17 SSB
VK3BDL	Mike	16 SSB
VK3HZ	David	16
VK3VG	Trevor	12 SSB
VK3BG	Ed	11 SSB
VK7MO	Rex	11 SSB
VK2TK	John	10 SSB
VK3UDX	Geoff	10 SSB
VK4KZR	Rod	10
VK2ZT	Steve	8 SSB
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK3ECH	Rob	6 SSB
VK3VHF	Rhett	5 SSB
VK3ZUX	Denis	5 SSB
VK4TJ	John	5 SSB
VK5BC	Brian	5 SSB
VK6KZ/p	Wally	5
VK4CDI	Phil	4
VK6KZ	Wally	4
VK2KU	Guy	3 Digi
VK4CDI	Phil	3 SSB
VK4EME	Allan	3 SSB
VK5BC/p	Brian	3 SSB
VK6DXI	Mirek	3
VK7MO	Rex	3 Digi
VK2FLR	Mike	2
VK3CY	Des	2
VK3DMW	Ken	2

VK3KAI	Peter	2 Digi	VK3QM	David	9 SSB	VK3DMW	Ken	2
VK3QM	David	2 Digi	VK3WRE	Ralph	7 SSB	VK3ZUX	Denis	2 SSB
VK4AIG	Denis	2 SSB	VK3KAI	Peter	6 SSB	VK7MO	Rex	2
VK2AMS	Mark	1 SSB	VK6KZ	Wally	4	VK3BG	Ed	1 SSB
VK4CDI	Phil	1 Digi				VK4KZR	Rod	1
1296 MHz	EME		3.4 GHz	EME		10 GHz	EME	
VK7MO	Rex	27	VK3NX	Charlie	11	VK3NX	Charlie	13
VK7MO	Rex	24 Digi	5.7 GHz	Terrestrial		24 GHz		
2.4 GHz	Terrestrial		VK3NX	Charlie	12	VK6BHT	Neil	3 SSB
VK3NX	Charlie	15	VK3WRE	Ralph	9 SSB	VK2EI	Neil	2 SSB
VK3PY	Chas	15 SSB	VK3QM	David	8 SSB	VK3NX	Charlie	2
VK3QM	David	15 SSB	VK3KAI	Peter	7 SSB	VK6KZ	Wally	2
VK3WRE	Ralph	10 SSB	VK6KZ	Wally	4	474 THz		
VK3KAI	Peter	7 SSB	VK3BJM	Barry	2 SSB	VK3HZ	David	2
VK3HZ	David	5	VK3KAI	Peter	2 Digi	VK7MO	Rex	2
VK6KZ	Wally	4	VK6BHT	Neil	2 SSB	VK7MO	Rex	2 Digi
VK3BJM	Barry	3 SSB	VK3ZUX	Denis	1 SSB	VK7TW	Justin	2
VK3KAI	Peter	2 Digi	5.7 GHz	EME		VK7HAH	Ben	1 Digi
VK3VHF	Rhett	2 SSB	VK3NX	Charlie	11	VK7TW	Justin	1 Digi
VK4KZR	Rod	2	10 GHz	Terrestrial				
VK2DVZ	Ross	1 SSB	VK3NX	Charlie	11			
VK3BG	Ed	1 SSB	VK3QM	David	11 SSB			
VK3TLW	Mark	1 SSB	VK3KAI	Peter	9 SSB			
VK3ZUX	Denis	1 SSB	VK3PY	Chas	9 SSB			
2.4 GHz	EME		VK3WRE	Ralph	9 SSB			
VK3NX	Charlie	27	VK6BHT	Neil	9 SSB			
VK7MO	Rex	9	VK3HZ	David	7			
VK7MO	Rex	7 Digi	VK6KZ	Wally	5			
3.4 GHz	Terrestrial		VK3TLW	Mark	3 SSB			
VK3NX	Charlie	11	VK2EI	Neil	2 SSB			
			VK3BJM	Barry	2 SSB			

Additions, updates and requests for the guidelines to Guy VK2KU.

The guidelines (and the latest League Table) are also available on the VK VHF DX Site at www.vhfdx.radiocorner.net - click on Gridsquares.

Next update of this table will close on or about 13 February 2009. Stations who do not confirm their status for more than 12 months may be dropped from the table.

ar

Silent keys

William James Cross VK2WJC

Born in Charlestown, Newcastle on 2nd August, 1933. Billdied on 6th July, 2008 at St Vincent's Hospital Lismore after a short illness. He married Nancy on 27th December, 1958. They have four sons, Vincent, Anthony, Philip and Michael.

He started work at Palings as a piano tuner and repairer and attended Newcastle Technical College at night to obtain his Leaving Certificate. He then trained at Newcastle Teacher's College as a Manual Arts teacher. He taught at Ballina High, Alstonville Central, Richmond River and Kadina High Schools. At Richmond River, he completed an Arts Degree (Mathematics) by correspondence from the University of New England. He became Mathematics Master at Richmond River in 1971, - a position he also held at Kadina from 1978 until he became Deputy Principal in 1986. He accepted a position at Trinity Catholic College in 1990, teaching Mathematics and Manual Arts until his retirement in 1997.

Always being interested in amateur radio, he passed the AOLCP, obtaining the call sign VK2YCQ and joined the WIA on 22nd February 1974. On 23rd December 1974, he passed the AOCF gaining the call sign VK2BCW. He changed to VK2WJC on 24th January 1989 and kept this until his death.

Bill took a prominent part in Summerland Amateur Radio Club activities, especially the Club surveillance work for the Clarence Valley Canoe Club from 1975 to 1980 at Nymboida where his son, Vincent, was an accomplished canoeist. He also took part in many Field Days in his later years, particularly the International Lighthouse/Lightship Weekend. Whilst at Kadina High School, he organized accommodation for Club Meetings

and access to the school's Metalwork Shop at night, enabling club members to carry out their projects. He helped set up the Club's first two repeaters, was Club's librarian and was always ready to assist members, either young or old, with any problem.

Penned by Ted Smith and the Cross family, submitted by Michael Cross.

Roy Scott VK5PG

Roy Scott VK5PG was born in 1922, and died on Monday 18 August 2008, in Adelaide. He married Mary in 1947, celebrating their 60th wedding anniversary last year. He leaves Mary, and two sons, Greg and Phil.

Ex Australian Signals, joining in 1942, Roy served in northern Australia, Borneo, PNG and, once on a US warship. We had many an amusing conversation about army life in the signals, and our travels.

A printer, Roy had many hobbies, among them astronomy, he made his own large telescope; photography, both 35 mm and digital, and steam trains, developing a wonderful track layout. He loved building model sailing ships, was a very good piano player, and actually mastered computers at 82.

His greatest hobby was amateur radio, and his love was CW, which was fortunate, as he said his rather hoarse voice was no good for SSB. Roy would have been one of the top CW operators; he pushed me to receiving 35 wpm on one occasion, and his CW sending was perfect.

Whereas we his friends made the odd mistake, he seldom did, and when he did he would get very cross with himself. Good CW was an obsession with him. He taught me a lot about how to send fast CW.

He was a very good friend, and I will miss him.

Submitted by Michael Elliott VK5ELL.



Base
(power) mike
with channels
up/down
\$145.-

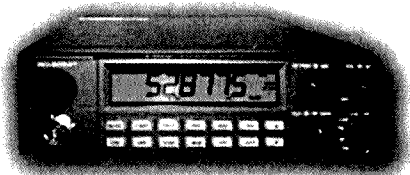
Syncon
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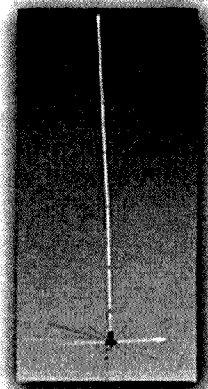


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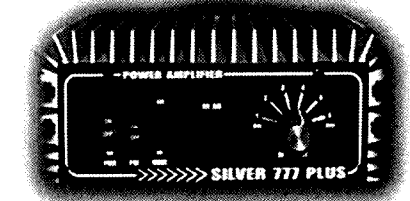
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Spinifex and contrails

Barry Miller VK3BJM

After a substantial (four year) absence from VHF/UHF DXpeditions, a dose of Long Service Leave during October/November gave me time to cart myself, and my gear, back out and about.

The trip I had in mind had two aims: (1) to visit Peter VK5ZPG at his QTH in Quorn SA and assist him in any way with getting his 12 metre (40 foot) tower upright; and (2) activate a couple of inactive Maidenhead squares along the way.

Peter lives just outside Quorn, at the southern end of the Flinders Ranges. The Flinders Ranges are a favourite destination of mine, and this trip would be either my 12th or 13th visit – I am beginning to lose track!

On a previous trip back in June 2001, I had activated PF99 from near Moolooloo Station (close to Blinman in the Central Flinders Ranges), and another trip in April 2004 took me to Waukaringa to activate PF97. This last trip was specifically to test Aircraft Enhancement Propagation (AEP) possibilities back into VK3 in general and the Melbourne area in particular, and was documented in an article in AR in November 2002.

Peter and I live under an International Flight Route (IFR) used by aircraft bound from Melbourne for Singapore and Indonesia. (The IFR is known as Q168.) We have been interested in making an AEP contact, using this IFR, on 144 MHz for a year or two now, but due to both our stations being in a state of upgrade this has not as yet been completed. The path distance is just on 800 km, which is certainly feasible using AEP.

The Station:

My portable station for this trip consisted of the following:

For 144 MHz and 432 MHz, an Icom IC-706IIG coupled with a 160 watt 144 MHz PA and a 100 watt 432 MHz PA.

On 1296 MHz I use a VK5EME transverter (with a Yaesu FT-290R as the IF rig) backed onto a VK3PY-designed 60 watt PA (see AR October 2008).

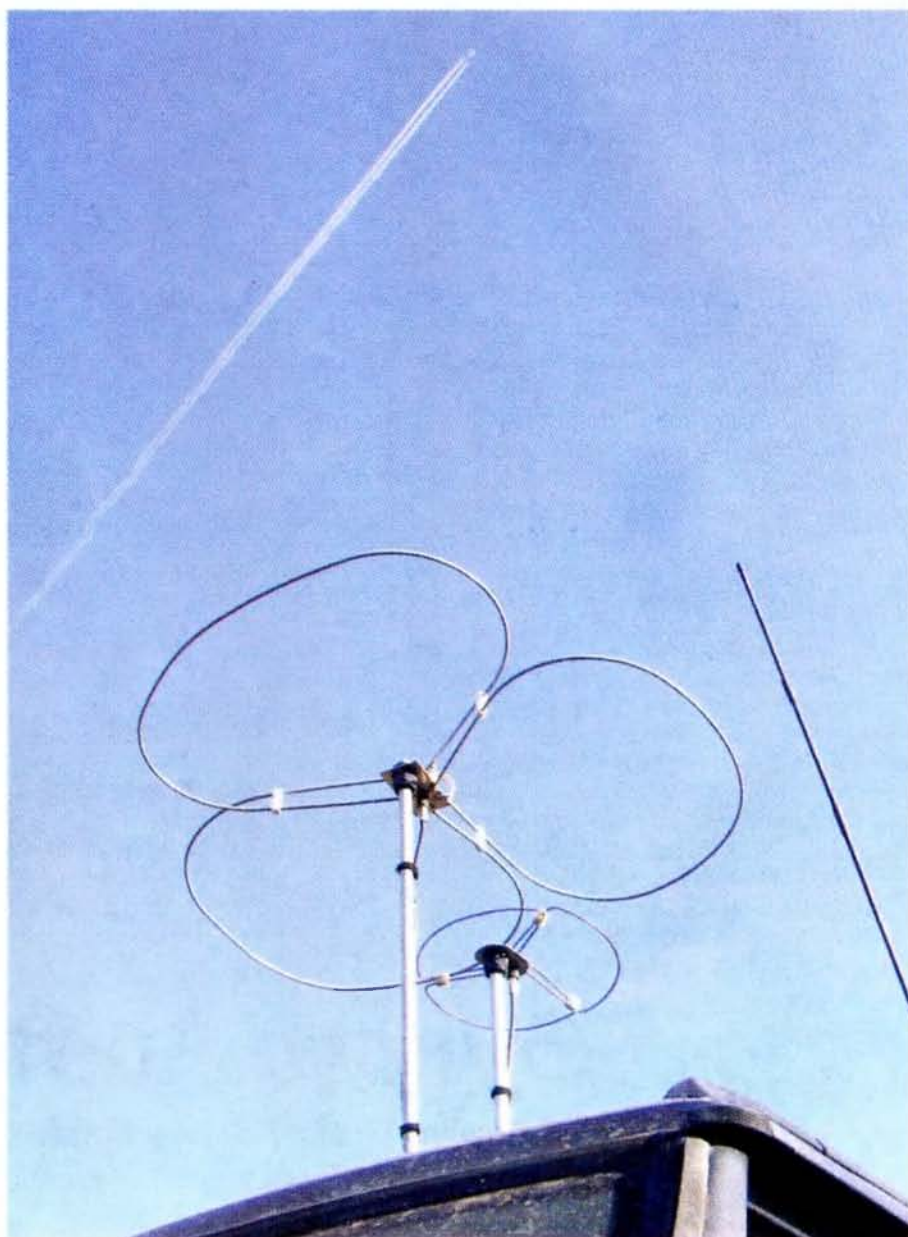
I packed a 10-element DL6WU Yagi for 144 MHz, a 28-element for 432 MHz and a 900 mm 'Grid-Pack' dish for 1296 MHz. I also used 'Big Wheels' for 144 MHz and 432 MHz whilst mobile.

The Trip:

I left a bit after midday on Monday 13th October, and paused overnight just outside Underbool (50 km west of Ouyen). I had a couple of contacts with VK3XPD on 2 m as I was mobile, the

last being near Charlton. Set-up was a bit late, due to an inability to find a really suitable site – it is very flat out there! – and wanting to have something for dinner.

From the locator QF04wv I had twenty-one contacts on 144 MHz (with



Singapore Airlines Boeing 747-400, headed from Melbourne to Singapore, over Mt Arden.

some repeats) spread amongst VK3KH, VK3XPD, VK3HZ, VK3II, VK3JTM, VK5AKK, VK5GF, VK5BC, VK3NX, VK3QM, VK5PJ, VK5ZK, VK3WN, VK5LA, VK3AXH and VK3VG; seven contacts on 432 MHz (with VK5AKK, VK5ZK, VK5GF, VK3AXH, VK3HZ, VK3XPD and VK3VG), and three contacts on 1296 MHz (with VK3VG and VK3HZ), between 0950 Z and 2213 Z.

23 cm was frustrating, with conditions only peaking enough in the last 30 minutes before I broke camp to provide

the three successful contacts.

From Underbool I travelled west to Pinnaroo, then north through Loxton, Waikerie, Morgan, Burra, Spalding and Gulnare before picking up the North Road, which took me through Melrose and Wilmington to Quorn where I arrived just after 6 pm CDT.

En route I had mobile contacts with VK5BC and VK5LA (and possibly others – log-keeping at this point was via the old grey matter...) on 2 m, and a reassuring contact on 70 cm with Brian VK5BC whilst mobile near Cadell.

Reassuring because I was concerned that I may have DESTROYED my 70 cm PA at Underbool through having inserted it into the coax feed system BACK-TO-FRONT... The contacts I made were with the amp off (therefore in bypass) with 20 watt from the IC-706MkIIIG. How, after 10 years of playing at portable ops, I managed to do such a stupendously stupid thing; well, I dunno.

The lateness of the hour and pressure to be on air, probably contributed to a mistake I hope never visits me again.

Peter VK5ZPG kindly put me up for a couple of nights. As promised, I gave Peter a hand with some of the preparatory work required for erecting his new tower. This occupied most of Wednesday.

At some point, Peter asked if I was interested in trying Mount Arden as an operating site. I was game, and he made a number of phone calls to various people in order to obtain permission. Having gained this, we set off for the summit on Thursday afternoon.

Mount Arden is about 22 km NNW of Quorn, on Argadells Station. It is 844 m ASL, and the view from the top was stunning. Unfortunately a paging system on 148.265 MHz was causing regular desensitisation to my receiver, so I ended up about a kilometre north along the ridge, hidden and protected from the RF poison by a knoll but with a clear view to Adelaide, Melbourne, Sydney and way out west.

A flat area, clear of spinifex and with room for the Land Rover and my swag, was next to the track. Brilliant!

Between 0720 Z and 2249 Z on the 16th, from PF87xu thirteen contacts on 144 MHz (VK5ZPG, VK5AKK, VK5BC, VK5GF, VK5ACY, VK5LA, VK5PJ, VK5DK, VK3ATS, VK5ZK and VK5FD), nine contacts on 432 MHz (VK5BC, VK5AKK, VK5ACY, VK5PJ, VK5DK and VK5ZPG) and three contacts (VK5BC, VK5AKK and VK5PJ) on 1296 MHz were made. Almost all were via tropo; Colin VK5DK was worked via AE on 2 m and 70 cm. A little of Ian VK3AXH was also heard on Friday morning, but not enough for a contact.

Perhaps most remarkable was hearing David VK3HZ several times – not short grabs, but several consecutive transmissions at a comfortable RS of



Operating site near Underbool, Victoria (QF04wv), with the antennas pointed to Adelaide.

41 – via AE. David was monitoring a virtual radar display, and could see aircraft flying between Adelaide and Sydney at 37,000 feet; as they entered the path between Mount Arden and Balwyn, up came the signal! The frustration was not being able to make myself heard!! David was running the legal limit on SSB, but I only had 160 watts into a 10-element Yagi and I could not beat the local Melbourne noise floor.

Somehow I need another 4 dB! I have a 14-element Yagi available for

next time – I need a bigger PA, one that will fit in as much as possible with the existing system – this includes power supply, and vehicle storage space considerations. Having said that – I firmly believe contacts on 2 m over that 900 km path are possible. The last enhancement lasted long enough for me to retrieve my video camera from the ‘boot’ and capture video/audio of some of Dave’s transmissions – including the chatting that took place after Dave abandoned his calling to me.

At 1000 am CDT on Friday 17th, I packed up (reluctantly) and made my way (slowly) down the track and back to Quorn to catch up with Peter, before setting off via Hawker to Stokes Hill Lookout, about 15 km NE of Wilpena Pound. Stokes Hill is 750 m ASL, and the locator is PF98im. I was set-up by 0400 Z.

The outlook from Stokes Hill was not as favourable as Mount Arden, with ranges to the south

and southeast raising the horizon somewhat. Tropo conditions had fallen away, too. In the next sixteen hours, eleven contacts on 144 MHz (VK5ZPG, VK5LA, VK5AKK, VK5ZK, VK5GF, VK5PJ, VK5ACY, VK5BC and VK3ATS) and seven contacts (VK5ZPG, VK5PJ, VK5BC and VK3ATS) on 432 MHz were made. 1296 MHz was a dead band – no signals made it through in either direction.

Steve VK2ZT recorded what might be my CW beacon on Saturday morning during the period when it was directed to Sydney/Newcastle; he has sent the audio file to me, but I have not as yet checked it to see if it is my signal.

I packed up and after a final check-in with VK5ZPG I started the drive back home. I stayed overnight in Murray Bridge, before completing the trip home on Sunday morning. On the way I had numerous mobile 2 m contacts, with VK5PJ, VK5ZK, VK3AXH, VK3WN, VK3KAY, VK3JTM, VK3II, VK3KH, VK3FIQ and VK3HZ.

The Wash-up:

Overall, a very enjoyable and successful expedition! The experience at Mount Arden, coupled with the regularity and predictability of the air traffic between Adelaide and Sydney, demands a revisit to the site with a larger (louder?) station. Perhaps in autumn next year – summer might be a bit hellish up there.

Interestingly the mobile phone network was accessible at all three locations, which meant I was able to post messages to the VK Logger via the GPRS portal: nice work, Adam! Thanks to everyone who took the time to look/listen for me. And I am keen to QSL with anyone who succeeded in a contact with me from any of these three Maidenhead squares, and cares to do so.

Special thanks go to Peter Whellum VK5ZPG for his hospitality and his suggestion of trying out Mount Arden. I would also like to thank Malcolm and Judy Juett at Argadells Station for giving me access to Mount Arden at such short notice; and the other local amateurs, responsible for the Mount Arden 2 m FM repeater, who helped in directing us to Malcolm and Judith.

All photographs by the author.



Looking south from the Mt Arden ridge - antenna pointed to Adelaide. See front cover.



Moon is up! The night view from Mt Arden.

ar

DX – News & Views

John Bazley VK4OQ

Email: john.bazley@bigpond.com

Seasons Greetings to all DXers and hopefully we can look forward to an increase in conditions and openings again on 10m for worldwide DX!

It is good to receive news of planned DXpeditions for 2009, particularly from Bill VK4FW for a VK-based operation.

So now to the DX news.

Members of Oceania Amateur Radio DX Group Inc will be spending 10 days on Lord Howe Island for the 2009 CQ WPX (SSB) Contest in March next year, reports Bill, VK4FW who is still looking for a few additional operators. The expected dates for the DXpedition are March 24th to April 3rd 2009. Bill has provided the following interesting background information to this operation:

Way back in 1992 when Len Holbrok (VK8DK) and myself went to Lord Howe Island as VK9LD, I first met Tony Blasl (the original holder of VK9LA). When Tony after many years on the island decided to retire and move to Hervey Bay in Qld, Oceania Amateur Radio DX group Inc. applied for the call. We did this as a small token of our appreciation for the work that Tony had done in keeping Lord Howe Island off the DXCC wanted list. In 2004 we mounted a DXpedition there which only netted some 17,000 QSOs with conditions best described as poor. On the published 2007 DXCC wanted list VK9L has climbed to #80 and this year I expect that figure to be somewhere around #65 to #68 so again we will embark for the beautiful island with a very experienced team of operators. As the 2009 CQ WPX SSB contest coincides with our visit, we will operate CW on all bands prior to the contest as well as RTTY on 15, 17, 20 & 30. SSB will take place only on 12 & 17 prior to the contest. In the contest we hope to have four stations working simultaneously. After the contest we will work all modes on all bands to mop up. Operators that have committed to go at the time of writing are: VK3QB, VU3RSB, SQ8X, VK5CP,

..hopefully we can look forward to an increase in conditions and openings again on 10m for worldwide DX.

K5YY, SV2KBS, SQ9DIE, VK5PO and VK4FW. All updates for this operation can be found on the www.odxg.org system. We intend to freight some 1.5 tonnes of equipment to the Island by boat and this expense is high. We would appreciate any donations to support this operation, which can be made online at www.odxg.org 'CU' in the pile-ups de Bill Horner VK4FW.

Frank I2DMI plans his 2008 Christmas holiday from December 20th to January 5th in Bhutan and Nepal. He and his wife plan to sightsee in the mornings and early afternoons, then he will operate during the rest of the day - plus getting some sleep of course. He thinks his operating periods will likely be in the ranges of 0100-0300 Z and 1200-1900 Z. He already has his A52RY callsign for Bhutan, where he will be on from Thimphu, the capital city, on HF and RTTY only on the WARC bands. Bhutan will be December 21st –31st. He will have an Icom IC-746PROII and Dentron MLA-2500 amplifier.

For the second stop, Nepal, for I2DMI, 9N1AA is working on getting the licence for him before he arrives, though the licensing ministry may require his physical presence to actually pick it up. All documentation and a notarised copy of his Italian licence have been sent ahead. His callsign may be 9N7DMI or 9N7RY; he will not know for sure until he gets there. He will be in Bhaktapur at the ham-friendly Planet Hotel, with a seven-metre-tall vertical on HF, including the WARC bands, set up on a terrace, running 50 watts. He will have a Wi-Fi internet connection so he will be able to spot himself to get the pileups started. Look for him from Nepal December 31st-January 5th. He is willing to receive info or suggestions at a new mailbox he has set up leading up to the trip: a52ry@yahoo.com.

The target frequencies for A5 and 9N will be 28082, 21082, 14082, 7040, 3582 and 10142, 18102 and 24922, listening up two or spread 2-10 depending on the pileup.

Frank will put the QSOs on LoTW and will e-QLS the second week of January.

Bureau cards will go out the third week of March. You can QSL direct to I2DMI, P.O. Box 55 - 22063 CANTU, Italy. Include a self addressed envelope and sufficient return postage. You will get your card via the bureau otherwise. No on-line log.

Now to the recent Willis Island DXpedition.

An extract from 'News Bulletin #13' issued 30/10/2008

The "VK9DWX-Willis Island 2008 DXpedition" is now history!

We closed the log with more than 95,000 QSOs (that is our first merger of all logs except the VK9DWX/mm QSOs during the voyage). A great adventure full of unforgettable moments and we are very happy in being able to serve so many hams around the world with a new one.

After 10 days of operation the sailing boat "Rum Runner" brought us new supplies (food and fuel) as well as the exchange of our 'rookie' operators. Josh had to leave and Rhy came to replace him. Another DXpedition visitor Gerd DK2JW came as well as Dale VK4DMC, our valuable and important support 'Agent' in Australia. They were very happy to have solid ground under their feet again, because the voyage was somewhat rough and certainly not a pleasure.

Operation on this DXpedition was a real challenge to everyone:

Fresh to strong winds every day, some days so powerful that the tents were nearly blown away or at least badly damaged. High tide climbed the beaches often higher than expected and swept over the feed points of the arrays, (perfect ground conductivity at least!!) damaging the radial system completely. Turtles were another problem – some are really heavy (75 kg!) and snagged the coax and other cable from time to time, but fortunately caused no major trouble. Hundreds (or was it thousands?) of different birds, screaming (and smelling!) all day and night. Small crabs, flies and moths were perennial companions in our tents, but luckily did not bite. Day after day the sun shone down and the temperature soared to

35 to 40 degrees Celsius in the tents. Unfortunately we could not open tents due to the wind and the brightness of the sunlight: We simply would not have seen anything on the laptop-screens. Fans were only of little help and not a real relief. In spite of these unfavourable conditions, the equipment worked to our satisfaction. No major faults to mention. Internet access was limited to several hours a day, which made it impossible to update the log more frequently.

So - sad to say - we had to finish the CQWW SSB Contest on Sunday morning.

We took down all the 4-squares, verticals, and Vertical-Dipole-Arrays (VDAs) which served us so well throughout our DXpedition and made many contacts possible.

Once we were all back on the ship with our gear, the MV Floreat hoisted the anchors and headed east back to Cairns. We waved a last Good Bye to the island each of us with his own personal memories, leaving thousands of boobies, frigate birds, hermit crabs and green turtles in their ancestral environment.

After Norfolk Island in 2007 as VK9DNX, we are very happy to have participated in a new adventure with VK9DWX 2008. We enjoyed it very much and hope that we could meet at least part of your expectations. May be not every one could make it into our log. We are sorry for that and hope that there will be another chance for you soon.

We thank you very much for your cooperation and your understanding during times of heavy pile-ups and difficult traffic, especially on the low bands.

Thanks also to the many ham radio operators and other sponsors (like amateur radio clubs, societies and foundations) from all over the world who helped us with small and bigger financial contributions. Bringing this all together makes a DXpedition like ours not only feasible but also rather successful.

Good Bye Willis!

Thank you for this once in a lifetime adventure.

The VK9DWX Operation Team DJ5IW, DJ7EO, DJ9RR, DL1MGB, DL3DXX, DL5LYM, DL8OH, DL8WPX, SP5XVY, W4WJF, ZS6DXB.

We were very happy to receive so many donations being sent from all over the world to support our DXpedition. Most of them are online in our sponsor list. If anyone misses his donation please

contact us via our contact form.

Our Online QSL Request System (OQRS) is now available. Please support us. Help to minimize our workload and use this OQRS. Choose between a direct QSL card or a bureau QSL card.

The advantages for you are:

- No need to send your QSL card (directly or via bureau).
- Do not lose money with direct post, just transfer your donation online.
- Get your QSL card earlier than through the old fashioned way.

The advantage for us:

- Much less work!

We will not offer any spectacular QSL card! We will offer a fast QSL service! Remember VK9DNX? Exactly one month after we returned home from the DXpedition we got our QSL cards from the printer. And only a few weeks later the first direct QSL cards were on the way to their recipients. And exactly this QSL service we want to offer again.

So please help us and try to request your QSL card online and help to make a good service better. Thank you!"

Les Nouvelles DX reminds us that Roland F8EN will again be operating from Libreville, Gabon between December 15th and January 26th. He will use TR50R at first until the end of the year and then switch over to TR8CR on January 1st. QSL both via F6AJA.

D2QMN, Angola, started up September 25th by Vasily Kandrashin UA0QMN. Vasily is 46 years old and has been in Angola since 2004. QSL via RZ3EC. His QTH is Vila Catoca in the Lunda Sul province, 40 km north of Saurimo, the capital province. He has an Icom IC-7000, 100 watts, to a delta loop for 20, 7 m high, a 2-element quad for 20, 15, 12 and 10 m, and a ground-plane for 40 is planned. He operates SSB, CW, RTTY and BPSK.

In the next issue I should be able to quote extracts from the "most wanted" list, which is compiled annually.

Happy DXing.

Special thanks to the authors of *The Daily DX (W3UR)*, *425 DX News (11JQJ)* and *QRZ.DX* for information in this months *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

Over to you

Faure Island

I would like to inform the AR Magazine and its readers that Mal VK6ISL and his son Dr. Rhyon Johnson were the first to apply amateur radio to Faure Island, receiving the official IOTA reference OC 206 12 May 1995.

I quote from your November 2008 magazine...

"Faure Island had never been activated for amateur radio before and this proved an irresistible challenge to the DXCC."

I am afraid this is incorrect.

Please refer to AR Magazine July 1995 Volume 63, number 7: VK6ISL "Faure Island"

Faure Island was one of 17 islands I had officially referenced in the IOTA Program from 1989-1999.

Malcolm K. Johnson. VK6LC

John Sparkes VK6JX responds:

The DXCC had a fantastic time (apart from the flies!) setting up and operating from the Island and it was great to once again get this location on the world stage via amateur radio.

I wrote the article which (mostly) appeared in AR, so any issues with it should have been addressed to me. The wording of the offending sentence should obviously have been:

"Faure Island had never been activated for amateur radio by the DXCC before and this proved an irresistible challenge to the DXCC."

Mr AR Editor, please inform the readership of the missing three words above from this sentence in my article.

Now, with regard to your comment that Faure Island is only 2 km from the coast, a quick check on Google Maps shows that the closest points on the island to the WA coast are approx. 6 km north of the Nanga peninsular and 9 km east of a small headland on the coast, 10 km south of Monkey Mia respectively. Of course, our DXpedition left from the public launching ramp at Monkey Mia which made the distance to our landing point on the southern end of the island (in small private boats, mind you!) approx. 22 km across shallow, choppy seas.

I hope you enjoyed the rest of my article! Mni gd dx es vy 73,

John VK6JX ar

Pirates on the two metre band

Terry Stewart VK4AAT

Recently I heard, on 147.015, in the Logan area to Brisbane's south, a FM broadcast consisting of music, a video or a video game console.

The carrier remained on when not transmitting program so finding the source would be easy. With a hurriedly constructed two metre, three element Yagi, I set off to find the transmitter.

Needless to say, after taking five or six bearings, I was standing outside the offender's house. The location turned out to be 1.6 km from my home, and the source had a good S9 plus signal, so you can see these devices appear to have a very high output.

It should be pointed out here that if you encounter a similar intruder, under no circumstances should you approach the people you believe are responsible. Simply take a note of the address and ring the ACMA.

After ringing ACMA in Canberra, I received a call from their field officer

– in Perth would you believe. He took details, along with the offender's address, and assured me that he would contact the Brisbane office. It was not long before Graham Stephenson rang from their Brisbane office, and a few days later another call came from Graham to let me know that the address was correct, he had sighted the device and advised the owner that although this unit has been incorrectly C Tick approved, it is in fact not permitted to be used because it radiates on the two metre amateur band frequency of 147.015 MHz.

Apparently under the law ACMA has first to present the offender with an official letter, and on receipt of this letter the device has to be turned off. Failure to comply is a \$400 fine. Several days passed and the device was still on air. Another phone call to Graham and shortly after the device was turned off.

It would appear that the unit sells

for around \$60 and the thought of having to pay \$400 convinced the offender to turn it off. It is worth noting that the importers of this device in Sydney have been fined \$1500; however their distributors are still selling these devices. In Brisbane it is estimated there are around 60 units either on the shelf or in the process of being sold. The device is known as 'OMNI WEP-910D Wireless Headphone plus Microphone'. This unit was also being sold on eBay, from a location at Petrie.

I have it on good authority there could be as many as 160 of these units out there, so tune around 147.015 and, if you find one in the Brisbane area, contact Graham on 3247 7170. Outside of south east Queensland, contact ACMA on 02 6219 5555.

I would like to thank ACMA, and in particular Graham Stephenson for their prompt action in keeping our bands free of intruders.

ar

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And a few words about the Quansheng

This is what Jason Reilly VK7ZJA had to say Quansheng in AR in November '07
".. solid and rugged ...comfortable to hold...the audio qualities are superb! This is one of the nicest sounding handheld radios ...

For \$100 (yes, Australian Dollars)...this radio represents absolutely phenomenal value.

.....The Quanshengs come highly recommended by me; I am sure you will be tickled by just how well these radios work for the money!"

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Northern Rivers district 2008 JOTA/JOTI at Murwillumbah

Reg Robinson VK2FARR

Well, it all happened again! Yes, groups from Ballina, Goonellabah, Mullumbimby, Byron Bay,

Brunswick Heads, Chinderah and Murwillumbah turned up to a little property at Waldrop Road, and set their up bases, complete with radios and computers.

There were 125 Scouts, Cubs and Guides, and lots of leaders with lots of tents, and we all enjoyed great weather for the whole period. An added attraction was a giant water slide nearby, which was a challenge from the top of the hill, but this

challenge was achieved by lots in the group. There were some very tired Scouts and leaders by the end of the weekend.

With the equipment set up, there were lots of contacts made around the world, the operators being kept busy with contacts into Canada, England, Germany, Fiji, Malta and lots more. In addition, we also had EchoLink going as well, and that was good with the scouts.

Our location was good and we had a steady flow of scouts from the Gold Coast ARS JOTA site (VI4JOTA and VK4WIG) and from Lismore, from the Summerland ARC JOTA site (VK2SAC and VK2SRC), so radio operators Bruce VK2VA, Steve VK2POO and Reg VK2FARR were kept busy.

So, until next year keep scouting and amateur radioing.

ar



Reg VK2FARR, Kendall VK2FISH, Annette VK2FUSE, Bruce VK2VA and Aaron VK2FUNN enjoy the radio activities.



Reg VK2FARR and Bruce VK2VA at the controls at Murwillumbah.

Over to you

Speedy response to AR Index query

This is just a brief note that I hope you will be able to publish to recognise the terrific behind the scenes work that the WIA team does. One Saturday night in late October I sent an email to AR magazine armag@wia.org.au enquiring:

"I am trying to track down an article in a past (long past) edition of AR. I think it was in AR in '75, '76, '77 or '78. Can you advise where I can read a consolidated index or annual indexes for past ARs?"

I had a response from Ernie VK3FM within 90 minutes asking if I minded waiting for a bit and on Sunday morning,

less than 12 hours after my original request, he had the required index to me. In sending me the index he said:

"Mike, it is marvellous what some people can come up with at very short notice."

I replied:

"More than marvellous, simply astounding. I just said to my wife, 'You have to love the helpfulness of the ham community'."

I found the clue I was looking for in the index and scrolling through the list of articles brought back many memories of my first years as an amateur operator.

Many thanks to Ernie and the rest of the WIA team for the marvellous work they do.

Mike VK100 (ex VK1KCK)

Editor's Note: On behalf of the PubCom team, I thank Mike for his comments. Readers may be interested to note that there is an Index of AR available on-line at:

http://hamradio.bur.st/arindex/arindex_list.php

This Index was developed by Dale Cavies VK5DC, with data from the WIA and Mike Krochmal VK3KRO. It currently covers 1945 through to the end of 1997. PubCom has been discussing the issue and is keen to extend the data collection through to the latest annual Index and to then make the information more widely available.

More news on the project will be released as soon as we have made progress.

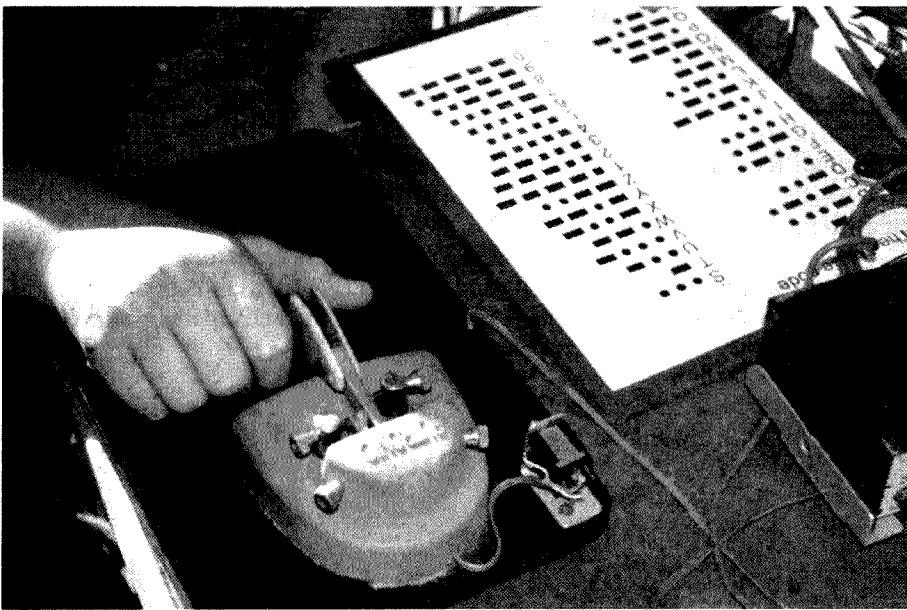
Peter VK3KAI

ar



Redcliffe and Districts Radio Club, and nearly 200 Scouts, enjoy JOTA

Cec Kenny VK4CF



A 'learner keyer' perhaps

For the last few years Redcliffe and Districts Radio Club has been supporting JOTA, and what started as a couple of Scouts in the first year has risen to where it was almost 200 this year.

The club based its activities at the Murrumbong Scout campsite near Petrie, just north of Brisbane, for the JOTA weekend. The camp is over 150 hectares of natural bushland with 16 sites scattered throughout the grounds. Last year Redcliffe offered an amateur radio scholarship for two Scouts that visited the campsite. One of the successful applicants was Lauren VK4FLMC.

Lauren's father, Gary VK4FGAZ, is the caretaker of the Murrumbong campsite. Gary and his XYL Anita not only publicised the event within the

continued next page

Summerland ARC



The Summerland ARC was in attendance at the Lismore Show on 18 October, and combined this activity with the JOTA/JOTI event.

At the Lismore Show, Lismore and Casino Scouts went to air. Many Scouts, Cubs and Guides made radio contacts, both local and DX.

Not as many stations were on as we had hoped, but there were enough to keep busy.

There was some competition from show spruiking loudspeakers, and so on, but HF, 2 m, 70 cm and IRLP all were used successfully.

Thanks to all who helped make it a good outing, but particularly Ian Gray VK2IGS and Duncan Raymont VK2DLR, who were instrumental in organising the event.

Information courtesy of the Summerland ARC Newsletter

ar



The Summerland ARC operating area, and some interested Jota participants.



The Summerland ARC set-up at the Lismore Show.

Scouting movement within south-east Queensland but also co-ordinated the visit of 300 Scouts who booked the campsite. A number of Scout groups were turned away as the site was fully booked.

This year's activities were divided into four areas: HF radio stations on 40 and 20 metres, a two metre radio on Echolink, an electronic kit building area and a CW station where the children sent their names in Morse code.

Kits built by the Scouts included crystal radio sets, flashing LED boards and an electronic fog horn. Eight club members provided their solder stations as well as coaching and experience for the kit building exercise. It was a delight to see the expressions on the Scout's faces when they hooked their crystal radio to the long wire and heard their first SW signal or connected their battery and heard the horn or lights flashing.

One Scout was seen with his crystal radio set walking around looking for metal objects to load up the antenna.

Scouts and Cubs experienced CW by sending their names in Morse on Morse keys that were at least 100 years old. Club members who volunteer at the Queensland Telecommunications Museum were able to bring along Morse keys dating back to 1860 and show about ten different period pieces that were instrumental in the telegraph office.

The Chief Commissioner of Scouts Queensland, Maurice Law, visited the campsite on Saturday afternoon and spent about two hours watching and participating with the Scouts, Cubs and Guides and was very impressed at what the club had done to spark the interest and activity of all the visiting groups.

Another of the club's special guests was the Vice President of the WIA, Ewan McLeod VK4ERM. Ewan took a range of photos of the activities, some of which may be published with this article. He spoke to Redcliffe members about the WIA and the club enjoyed his stay especially for the campfire roast dinner on Saturday night, prepared by Peter VK4EA and Glenn VK4FZ, and a great band of willing helpers which has become an integral part of every Murrenbong camp.

Forty five club members, about 40% of total membership, were involved with some aspect of the JOTA weekend and it

is a credit to all of them that the weekend was such a great success.

Our HF set up was all 12 volt this year, with a 20 metre monoband Yagi antenna at 15 metres off the deck on top of John VK4YJV's crane, and an 80 metre dipole some 20 metres into the tops of the gum trees. After dinner, club members hit the airwaves and recorded contacts all over Europe. It was a great opportunity for some of our younger members to experience a pile up and really get some great DX.

The club's JOTA aim is to ensure all members of the Scouting community make contact with other Scouts and the Scouts are exposed to as much as possible of the many aspects of our

hobby and each year we look for extra facets of the hobby that we can include to fulfil this aim.

One memorable comment by one Scout was 'this is so much better than JOTI (the internet version of JOTA), I want to stay here all day'.

As Andy VK4KY, who helped supply the kits and set up all the HF gear said 'if we don't fly our flag as amateurs and show the community that we are here, then who will?'

Murrenbong camp is almost fully booked for next year's JOTA. What a wonderful way to spend a great weekend!

ar



Participants enjoying the evening roast. Camp oven cooked potatoes, yes please.



Gary VK4FGAZ and Lauren VK4FLMC.



The Tranmere Sea Scouts – Jamboree of the Air 2008

Andrew Bolton VK5HIL

The Tranmere Sea Scouts (VK5TSS) hosted a Jamboree of the Air/Jamboree of the Internet Station on Saturday 18 October. The event was attended by 71 members of the Tranmere and other eastern Adelaide suburbs Scout groups. Although HF conditions were sporadic, a good number of exchanges occurred on the lower

HF bands. Operation of the Tranmere Sea Scouts two metre equipment was supervised by two Scout F call licence holders who were kept busy during the event. Internet based communications were popular due to greater reliability. The event was a success due to the efforts of members of several VK5 clubs.



HF triband antenna over a three element Yagi. Portable mast and antennae loaned by Paul, VK5PH.



Patrick calls CQ.



Trevor VK5ATQ gives directions to the antenna installation crew.

At 1100 hours on Saturday 18 October, the Tranmere Sea Scouts Jamboree of the Air/Jamboree of the Internet station, VK5TSS, went live.

Proceedings departed slightly from the event in 2007 with members from other eastern Adelaide suburbs Scout groups invited to participate in the 51st JOTA/12th JOTI at the Tranmere venue.

The 71 attendees were also given the opportunity to partake in activities leading to the award of the Communications Proficiency Badge. Activities included the construction and use of a LED torch to sign in Morse, use of semaphore, fox hunting, writing a secret message, play a game of battleships using UHF CB radio, setup and demonstrate the function of a VHF portable station and, naturally, to exchange messages with fellow JOTA participants elsewhere.

Charlie VK5KDK made a significant contribution in organising the event.

There were two Scout Foundation Licence holders present and both were able to assist participants with the correct operation of the VK5TSS two metre equipment.

Internet augmented communication with EchoLink was provided via a 2.4 GHz link to an external site. This proved quite popular due to its greater reliability.

Two HF stations were set up under a marquee at the rear of the hall. One transceiver was also capable of six metre operation, so a temporary mast was erected to support a HF tribander over a three element six metre Yagi.

Wire dipoles were also used for HF. Nearby gum trees provided more than adequate support for these antennae and also gave welcome shade during the event.

Voice communications were difficult, but not impossible on the lower HF bands: 80, 40 and 20 metres.

Unfortunately, propagation conditions varied from workable through to impossible within one or a few minutes after initial contact was made. Nevertheless, with perseverance, a good handful of contacts was made with JOTA stations in VK3 and VK4. The six metre band was uneventful this year.

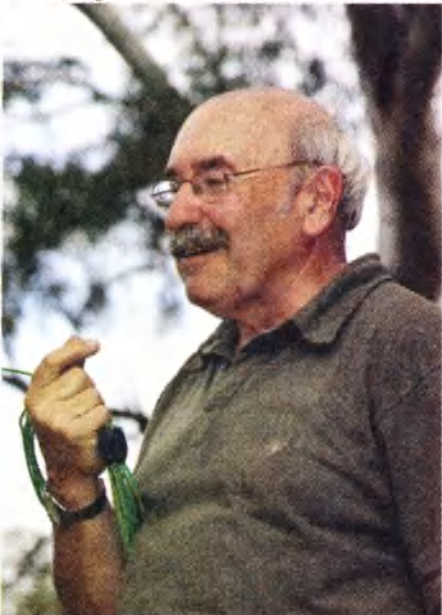
Members of several clubs including Scout Radio and the North East Radio Club were generous with their time and equipment loans to ensure this event was a success. All participants look forward to a great Jamboree in 2009.

Acknowledgements: Trevor VK5ATQ, Peter VK5PX and Charlie VK5KDK for their encouragement and feedback.



ar

Peter VK5PX and Les VK5KLD deploying a multiband HF dipole antenna.



Les VK5KLD provides assistance with the installation of an HF dipole antenna.



Gerard VK5ZQV gives Scout participant Matthias a brief rundown of current HF propagation conditions.



Matthias calls CQ.



Lana calls CQ.



Ipswich and District Radio Club – Jamboree of the Air 2008

Michael J. Charteris VK4QS

It has been a decade since the Ipswich & District Radio Club has held a 'Jamboree of the Air'. And might well it have stayed that way, if it were not for an email from Toby Gordon, Cub Leader, at the Taringa Milton Toowong Cub Pack.

Toby had been to the WIA website in search of an amateur radio club nearby that would be kind enough to undertake some 'radio activities' for the JOTA. By good chance, he selected our club and contacted myself as regards this request. Toby informed me that he would be bringing some thirteen Cubs, ranging in age from about seven to ten years of age. We arranged to have them visit the club on Saturday afternoon around 4 pm for some radio excitement.

Saturday afternoon arrived soon enough, and the plan of action kicked in. We divided up the Cubs into groups of four and five and duly sent one group down to the Nature Park that backs onto our clubhouse. We then sent another group for a walk up to the Ipswich Water Tower for some adventure. The top of the water tower can be accessed by steps to the roof, where a most beautiful view of the city of Ipswich can be admired by one and all.

The third group of Cubs experienced for the very first time the joys of amateur radio. Our activity began on the 40 metre band where we made contact with a group of scouts in New South Wales. From here we put the Cubs on the two metre band, where upon they spoke to the Scouts located at the Gold Coast Radio Club. The smiles on their faces and the giggles said it all. They were having fun communicating with other children their own age and older by way of our great hobby.

About twenty minutes later the other two groups arrived back from their adventures. We now swapped the activities of the groups and saw a new group of five launch onto the airwaves with much anticipation and vigour. Once all the groups had been to the nature park as well as the water tower, it was time for some refreshments with the issue of a packet of chips and a can of soft drink.

By now it was nearly 6 pm, and

we decided it was time for the sausage sizzle, and requested they all line up in an orderly fashion for the issue of hot sausages on bread. This was a huge hit, and many ventured for seconds and thirds to quell their appetite. And with the sun disappearing into the west ever so slowly, we decided it was time for all the little Cubs to head back to their cub den for further activities of that evening.

I would like to thank Cub Leader Toby Gordon and Alan and Gary for their efforts in transporting and supervising

the Cubs whilst at our clubhouse during this somewhat special JOTA event for the Ipswich & District Radio Club.

I also took the opportunity to expound the values for both Toby and Alan in undertaking the 'Foundation Licence' with a view to expanding their radio knowledge and thereby help the Cubs understand it all a lot more for future JOTAs. I would also like to especially thank the following

members of the Ipswich & District Radio Club for their wonderful assistance in making this momentous event the success it actually was: Darrin Last VK4FVRX, Anthony Costello VK4FAAT, and Gary Nielsen VK4KNE.

We are now planning to hold JOTA again next year, with some added adventure for the Cubs, having experienced the joy of participation in this most rewarding event for the year 2008.



Mike VK4QS serves the very popular sausage sizzle. It is not only the young who look very interested in the food!



The Cubs relaxing in the Ipswich & District Radio Club clubrooms.

VK6

Keith Bainbridge VK6XH

My plea for input was a fruitful one this month, as there has been a good supply of emailed news to this QTH. We will start with the D-STAR report from Anthony VK6AXB.

D-STAR Launched in VK6

After months of planning and much effort by the West Australian Repeater Group (WARG) D-STAR team, the Perth VK6RWN D-STAR repeater was officially launched on October 18th. A crowd of more than 50, including some who had travelled from country areas, packed into the Darling Range RSL hall to hear the D-STAR message from WARG, WIA and Icom Australia representatives.

After a welcome from VK6RWN site manager Danny VK6FZUK, WIA President Michael Owen VK3KI opened proceedings, noting that the launch was taking place almost exactly a year after the VK6 D-STAR committee first met to begin work. Michael outlined the key role of the WIA in the national D-STAR project, including selection of each D-STAR club on the basis of demonstrated 'substance, skills and enthusiasm'. The development of the D-STAR protocol by the JARL (Japan Amateur Radio League) and the work of Icom in making D-STAR a reality were also highlighted.

Michael introduced Icom Australia's Peter Willmott VK3TQ, describing him as first and foremost an 'enthusiastic amateur, most suited to bridging the gap between the amateur and commercial radio worlds'. After paying tribute to the work of VK6 D-STAR managers Heath VK6TWO and Danny VK6FZUK, Peter gave a snapshot of the history of D-STAR development, its benefits and features as a global system, the role of the WIA in facilitating the rollout of D-STAR in VK, and highlighted various aspects of the system, for example, the linking of all 70 cm DV ports to enable a nationwide conversation.

After a few words from Icom Australia President Takashi Aoki VK3NON, WIA D-STAR co-ordinator Richard Hoskin VK3JFK delivered a technical

presentation on D-STAR usage, radio configuration and the dos and don'ts of D-STAR operation. Following closing remarks from VK6 D-STAR manager Heath VK6TWO and WARG Technical Co-ordinator Anthony VK6AXB, the gathering enjoyed refreshments and a BBQ, cooked to perfection by Jon VK6NOW.

A donation by Icom of an IC-92 D-STAR handheld as a raffle prize was met with warm applause by those present. Thanks are due to Icom supplier Tower Communications for setting up on the day, and to Jim VK6JIM for arranging the venue at short notice, as WARG's usual meeting place was unavailable due to JOTA. Anthony also reported that pictures are available at this url: <http://members.iinet.net.au/~stretton/dstarlaunch.zip>

Anthony Benbow VK6AXB

Next we heard from Phil VK6SO reporting on the results of publicizing a proposed club formation in Busselton.

Capes Region Amateur Radio Meeting

A meeting was held on 18 October at the Senior Citizens venue in Busselton, to establish an amateur radio club. The meeting attracted five licensed amateur radio operators, two people interested in getting a Foundation licence and one visitor. The instigators were also contacted by three other local amateurs who were unable to attend the meeting, one being an elderly amateur operator, house bound due to illness, but who supported the concept of the club. The meeting was well prepared by local amateur radio operators, Phil Bussanich VK6SO and Shaun Palmer VK6FSAP setting up the venue, and providing amateur radio information handouts, study details, internet web access to the Ham College, a study centre set up in Perth to train and license would-be amateur radio operators.

The meeting decided to form an amateur radio club and it will be known as the 'Capes Amateur Radio Club'. The club will have its inaugural meeting on 26 November where office bearers

will be elected and the club formally launched.

The aims of the club will be to:

Foster and provide a platform for local amateur radio operators.

Attract new members to the hobby.

Become a focal point for the Capes Region for those interested in amateur radio.

Provide communication experienced operator assistance to various groups such as bush fire brigade, marine coastal watch services and Girl Guides and Scouts.

Provide and maintain amateur communications equipment within the region.

Have a plan for amateur emergency communication in the event of civil disaster.

We wish to acknowledge the following supporters:

The Wireless Institute of Australia.

The Ham College.

The Busselton Senior Citizens.

The Busselton - Dunsborough Mail community newspaper.

For further information contact Phil Bussanich on 08 9751 5560

I should also report the meeting attracted the attention of the local press and an article was duly published, although unfortunately the scan of the article was not good enough to be reprinted here.

Good luck to all.

Phil VK6SO

JOTA

JOTA seems to have been very successful this year with several groups reporting their activities, so here is one of them from the Peel group in Mandurah.

The Peel Amateur Radio Group joined the 1st Mandurah Scouts and Joeys for JOTA at the Baden Powell Hall this year. There were Scout and Joey troops also from Falcon, Pinjarra, Rockingham, Warnboro and Secret Harbour, so we were kept busy. The station only operated until 9 pm as other things had been planned by the scout troops for the weekend.

Many contacts were made on 2 metres

News from...

VK6 continued

both local and over on the east coast using the IRLP mode, the children were as usual nervous on the microphone to start with but soon got going. The conditions on HF were not good but we managed to make contacts into Queensland and Victoria.

The children had been studying for their codes and signals badge, a message was written in Morse and they had to decipher it. We had a Morse key and buzzer set up, they had to write their name in Morse then send it by using the key - there was a never ending queue to get on the key.

Thanks go to our club members Paul VK6LL, Rev VK6SA, Wayne VK6FBLU, Joanne SWL, Marty VK6FDX, Milan VK6KTV and Rex VK6SN, for a most worthwhile weekend.

Rex W. Hickling VK6SN

From the Deep South

The Southern Electronics group in Albany is having a new lease on life with a new committee comprising:

President: Wes Beck VK6WX
Vice President: Robert Seaman VK6JRC
Secretary/Treasurer: Bevan Lang VK6VX

And the website is <http://www.hamradio.org.au/site/>

I will be visiting on Wednesday 26 November, in my role as VK6 Advisory Committee Chairman, and I believe we will be meeting in a local hostelry for a few ales and a bite to eat, so I cannot wait!

NCRG and Lotteries West

Finally this month some news from the Northern Corridor Radio Group.

The NCRG applied for a Lotteries West grant to improve the club station and increase the range of the WIA news broadcasts, among other things. We waited with bated breath for some months while the processes were taking place and we were delighted to receive notification that our application had been approved!

We would like to thank Lotteries West for their generous funding and I would also like to thank the club team who put together the application.

As a result of this application, the club is able to purchase two fully loaded Elecraft K3 transceivers, two Monster Ozspid rotators, a Six Pack antenna control system and a full set of I.C.E. bandpass filters. With the proposed addition of three new 30 metre (100 ft) towers in the near future, look out Australia, there is one premier Contest and DX club on the horizon!

So this month things are really looking rosy on the VK6 scene, hopefully next month will be just as exciting.

I had better take this chance to wish all amateurs, SWLs and their families the compliments of the season as Xmas will be upon us soon and hopefully a chance for many of you to take a well earned break with your families and WORK some DX!

All the best for Xmas.

VK6XH
ar

Corrections

Faure Island DXpedition

Please note that the author of the article "DX Chasers Club - Faure Island DXpedition, 2008" was incorrectly recorded. The author was John Sparkes VK6JX. See also the *Over To You* item on page 27.

Also note that the cover photograph was taken by Jo Williams.

Wideband Return Loss Bridge by Paul McMahon VK3DIP

Amateur Radio, August 2008, page 11

Right: Corrected Figure 1a

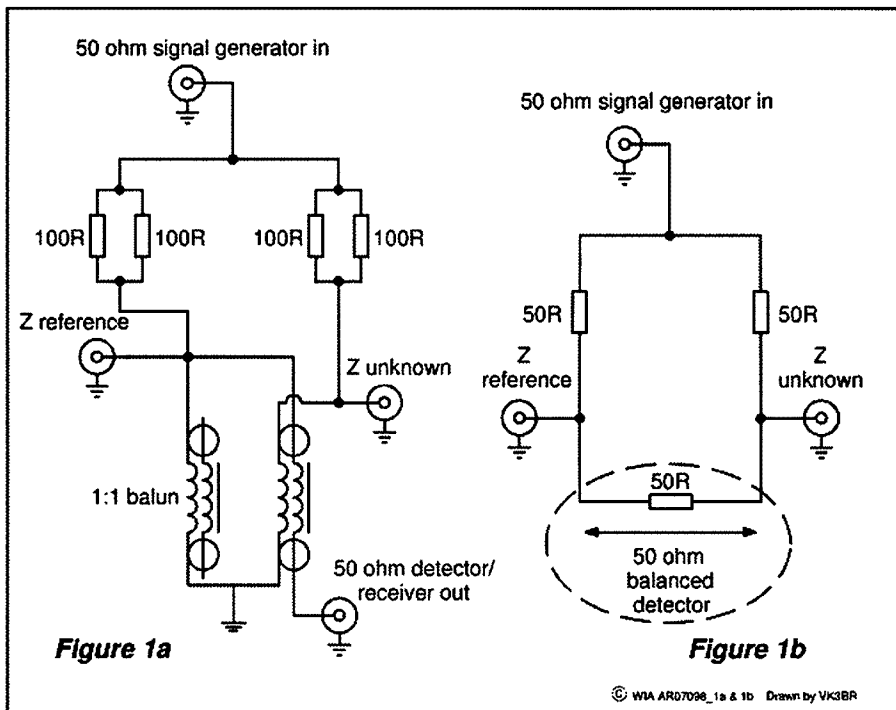


Figure 1a: Note that the 4 wires close to the "Z reference" connector should be connected!

© WIA AR07098_1a & 1b Drawn by VK3BR

VK2

Tim Mills VK2ZTM
c/- arnews@tpg.com.au

ARNSW

Season's Greetings from ARNSW to all. The operating year for ARNSW ends on 31st December, after which it is time to start adding up the figures and writing reports for the AGM, which will be held about mid April 2009. No dates were available when these notes were compiled but based on previous years, there will be the call for Council nominations and agenda items at about the end of February. The Council year is April to April. More details in the February issue of AR, in news bulletins and on our web site. This will be an important time for members of next year's NSW Council – for within that term of office, it will be the centenary of the formation of the WIA (March 2010), which resulted from a meeting held at the Hotel Australia in Sydney. The meeting had been called by concerned experimenters at the high cost of the licence fee in 1910. Those at the meeting decided to form an 'Institute' to collectively look after their interests with the authorities. The rest, they say, is history. Over the years WIA Divisions were formed in each call area. These days, while NSW Division trades as Amateur Radio New South Wales, (to reduce any confusion with the National WIA), the holding Company remains the Wireless

Institute of Australia, New South Wales Division. Like Victoria, these two former Divisions are independent registered companies.

It is pleasing to see many VK2s are upgrading and obtaining new call signs, either from examinations or conversion to a two-letter call. So that the ARNSW membership records remain accurate, would you mind sending a note to the Membership Secretary, advising of the changes. The postal address is P. O. Box 6044, Dural Delivery Centre, NSW 2158.

The "Shed" or Barn is progressing well at the Dural site. For those who know the VK2WI site, the "Shed" will be located to the western side of the VK2WI building and to the road side of the existing small shed. It will be on a concrete slab, having a footprint of 24 x 9 metres and within the shed there are two levels. On the front [east] side there is a veranda 24 x 3 metres to provide shelter at major events. The "shed" will be at a slight angle to the western wall of the original VK2WI building, with an open area of about 15 metres between the two buildings. The wider end of the opening is at the Quarry Road end. While the site for the shed is almost flat - it slopes down slightly from the western rear - some

earthworks have to be carried out. The roof presents a large catchment and a water tank is included. Reports on progress can be found on the ARNSW web site www.arnsw.com.au

The first Trash & Treasure event for 2009 is scheduled for the Dural site on the last Sunday in January – the long weekend. The T&T is in the morning with the Home Brew and

Experimenters Group in the afternoon. Yet to be confirmed, the monthly evening Home Brew gathering may be held on the first Tuesday of January.

Clubs

As the holiday season draws near, many clubs skip a January meeting, particularly those which occur early in a month. Some which come to mind are the Oxley Region at Port Macquarie, Hunter Radio Group in Newcastle and St. George in southern Sydney. So that members and visitors can be informed, would club publicity officers send in news items for VK2WI (arnews@tpg.com.au) for details of your holiday meetings. VK2WI maintains the morning bulletins during the holiday season. There is a break with the evening sessions as detailed below in the VK2WI report.

In case you have missed the announcement, the Mid North Coast ARG have their now annual field day at Coffs Harbour on Sunday the 18th January. This will also be about the final reminder via AR of the Central Coast Field Day at the Wyong Racecourse on Sunday the 8th February 2009.

The Mid South Coast ARC held their deferred AGM early November at Huskisson. After many years of meeting to the west of Milton, they spent this year meeting at different locations after the former venue was sold. Even their repeaters have to find new homes after the new owners required all RF removed from the area. This included a couple of community radio transmitters. The next meeting on the Mid South Coast ARC is scheduled for the second Saturday in February.

VK2WI

At the end of October, when the short wave broadcasters introduced their new seasonal schedules, our 40 metre frequency (7146 kHz) was back in the clear from an adjacent service. This condition hopefully remains until at least the end of March 2009, the next schedule period. Hopefully, the broadcasters currently in the 7100 to 7200 kHz

Radio Expo 2009 Coffs Harbour

Sunday 18th January 2009

Hosted by the Mid North Coast Amateur Radio Group

Over 20 exhibitors • Club displays • Emergency services displays • Amateur retailers all major brands • Portable radio tower equipment • Lucky door prizes every hour

Guessing comps - Trivia quiz
Home brew – Buy, swap and sell
Historical radio equipment

Yummy hot food and cold drinks Entry \$5.00 per person

St Johns Church Hall,
Mc Lean Street Coffs Harbour

8.30am till 3.00pm

More info on www.mncarg.org or phone

Phone 02 6655 2990

News from...

VK2 continued

spectrum will have moved further up in their 41 metre band, as required. There appeared to be an improvement in morning HF conditions during November, ground wave propagation returned to 40 metres, on occasions.

The Hunter Radio Group has concluded their Monday evening news (VK2AWX) net for the year. It resumes, as do their monthly meetings, in early February. As mentioned above, VK2WI has a summer news format, morning only, for December 28th and January 4th and 11th. During both this and other times please submit news for VK2WI via arnews@tpg.com.au

On the weekend of the Central Coast Field Day, VK2WI has a Saturday evening (7/2/09) news bulletin at 7.30 pm in addition to the Sunday sessions. The morning session depends upon a couple of the team opting not to go to Wyong. The first quarter roster for 2009 will be from the 18th January to 29th March. If you would like to be part of the team, contact roster officer John VK2JV via the news submission email address.

The 23 cm VK2RSY beacon continues to be heard beyond Sydney. There was a recent report from VK2JDS, who is near Bathurst. Thanks Dave. To date,

nothing has been reported from north of Sydney. The beacon project recently received a donation from a member with his renewal. This is being put towards the new antennas required for the 6, 2 and 70 beacons. Thank you. Equipment is being assembled for these bands. 6 metres, on 50.289 MHz currently uses a transceiver, which is to be replaced by a dedicated transmitter. 2 and 70 also require dedicated transmitters.

Season's Greetings and all the best for 2009.

73, Tim VK2ZTM.

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Ross Pittard VK3CE

Seasons Greetings

On behalf of the Amateur Radio Victoria Council – Jim Linton VK3PC, Barry Robinson VK3PV, 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.

A reminder that the office at 40g Victory Boulevard, Ashburton, will close at 1 pm on Tuesday 16 December and reopen Tuesday 3 February.

During the break, urgent matters will be given priority while office-bearers work on financial statements, stocktaking and the annual audit.

The Annual General Meeting will be held on Wednesday, 20 May 2009, at St Michael's Hall, corner Victory Boulevard and High Street, Ashburton, commencing at 8 pm.

Nominations for the 2009-2012 Council can be made on a form available from the Secretary. The deadline is 2.30 pm on Thursday 19 February, 2009. Notices of Motion, for the AGM close on the same day.

Keith Roget Memorial National Parks Award

Summer has arrived and it provides a great opportunity to dust off the portable

equipment and get out in the great outdoors.

Manager of the award, Chris Chapman VK3QB advises that since its re-launch in September we have already had a few parks activated.

The Keith Roget Memorial National Parks Award had its first two activations recently with both the Dandenong Ranges NP and Yarra Ranges NP being put on air.

Amateur Radio Victoria Event Coordinator, Terry Murphy VK3UP and Michele Grant VK3FEAT talked about activating parks while at the International Lighthouse and Lightship Weekend in August.

They chose two national parks on the eastern edge of Melbourne. First up was the Dandenong Ranges NP that plays an important role in protecting a population of lyrebirds and other fauna.

After some hours of operating it was then off to the Yarra Ranges NP that stretches from Healesville to Warburton and beyond to the north of Marysville. Easy to access points were chosen in both parks for the prop and go portable operation.

Excellent spring weather made the VK3WI Amateur Radio Victoria activation of these two parks a pleasant

experience, and gave a number of people their first parks for the award.

Chris VK3QB reminds us that the full details including the rules, park locations and award criteria can be found in the Awards section of the website.

The Award certificate is still in the design phase, but we expect it to be ready in draft by the time the first applications hit the desk – hopefully!

Recent correspondence has been received in relation to what counts as a national park – and Chris has provided some further clarity on the rulings in this matter.

In considering the award some careful thought was given as to whether to include Marine National Parks.

For a number of reasons, including wanting to honour the intent of the original award, that a number of Marine National Parks have high conservation issues and are inaccessible or mostly underwater, it was decided to stick with the 41 National Parks. Furthermore, administering a greater list of parks across various geographical and governmental boundaries would not warrant the effort.

Many of the parks are located well within easy reach of Melbourne – and those intending to visit the parks are

encouraged to publicise their planned activations – this may also provide the ideal opportunity to ‘team up’ with some younger members and provide transport to the location for a day/weekend of portable operation.

It is a great opportunity for clubs to integrate a National Park operation into club activities – maybe even generate some competition within the club ranks.

So please email Chris VK3QB natparks@amateurradio.com.au giving at least three to four weeks notice so he can publicise the planned operation dates, frequencies and other details – and make the effort well worth while.

24/7 volunteers

While the Amateur Radio Victoria office at 40g Victory Boulevard, Ashburton is only open Tuesday’s 10 am to 2 pm the work of the organisation continues beyond those hours.

The office is primarily to process mail, membership applications and renewals, some public inquiries, keep the QSL bureau up to date and assist with membership services.

A team of five rostered volunteers plus two involved directly with the QSL bureau do a very good job that helps the administrative side of our volunteer organisation function well.

The bulk of correspondence over the past decade has been via email which is handled by the Secretary, President, Education Team Leader and Event Coordinator. Their work is over seven days of the week with the aim of dealing with inquiries promptly.

The Internet Project Development Officer, Gary Furr VK3FX continues to play an important role through the website and e-news. There are other team members of course, so apologies for not mentioning everyone.

Some new volunteers are required for 2009, with a particular need being for a Foundation Licence class instructor for the monthly Saturday training sessions.

Membership inquiries

To join and support the state-wide organisation Amateur Radio Victoria costs \$30 for Full or Associate membership and \$25 Concession, for

two years. New members are most welcome and an application form can be found on our website or posted out on request.

Foundation classes

Training and assessment sessions for the Foundation Licence will be held on the weekend of 13 and 14 December.

For inquiries or to enrol contact Barry Robinson VK3PV on 0428 516 001 or foundation@amateurradio.com.au

This month Amateur Radio Victoria marks three years of licence classes since the restructuring of the licence system and has held 40 assessment sessions.



Operating portable in the Yarra Ranges National Park.

Yarra Valley Amateur Radio Group Inc.
C/o P.O. Box 346, Healesville, Vic, 3777

WHITE ELEPHANT
Sale

Sunday 15th February, 2009

10am to 2pm

Healesville Memorial Hall

Maroondah Highway, Healesville

For further information:

Steve VK3TSR

0418 103 487

News from...

Geelong Amateur Radio Club – The GARC

Tony Collis VK3JGC

New F Calls

Three new young F calls at the GARC reflect the quality of the training provided by the two Peter's VK3ZAV and VK3AJP in the latest round of assessment.



Michael VK3FMIC aged 11.



Ingrid VK3FGRL aged 15.



Ruben VK3FRJS aged 12.



Peter VK3ZAV, on the right, in discussion with retiree Arthur, during his visit to the GARC.

Michael and Ingrid are the children of Lou VK3ALB and Jenny VK3FJEN; Jenny also acquired her F call at the same time as her children.

Seniors Week at Geelong

As part of the 50 year anniversary celebration of Geelong, the GARC had a well received open door session at the club house focussed on those of the more mature years looking for a hobby that is both challenging and rewarding. The club house was manned by some six club members from 10 am to 4 pm and had 20 visitors, several of whom propose to join the club and attend training sessions.

Optical Communications

David VK3QM, whose exploits in the microwave arena are well documented, gave a presentation on the use of Optical Communications, in the form of a comprehensive, professional, PowerPoint presentation encompassing actual QSOs.

This was followed by a practical demonstration outside the club house, in the late evening, by transmitting voice modulated light, bouncing it off local power lines and trees to be received by a nearby optical receiver.

Some of the many issues covered by David, that experimenters in this field face are:

- The scintillation experienced on audio contacts due to thermal layers

interfering with the communication path as well as intermittent light sources, general light pollution and airborne dust. In atmospheric transmission, coherent light beams can be far less capable of carrying recoverable modulation than an equivalent beam from a non-coherent source. Atmospheric phase and amplitude noise mostly renders heterodyne detection via a local laser oscillator impossible.

- The narrow bandwidth is primarily limited to audio communications.
- Limited line of site path opportunities within Australia; although there is still the potential from Mt Baw Baw to Mt Cowley, of some 230 km, and to Mt Bunningyong of 207 km.

Some modulated light DX highlights from the VK3QM presentation:

David VK3QM's personal best distance covered to date was the 70 km stretch from the You Yangs to Melbourne.

On 19th February 2005 a 167 km contact was established from Mount Barrow to Mount Wellington in Tasmania. At the Mount Barrow end Joe VK7JG, Phil VK7JJ, Jason VK7ZJA, David VK6YA/7 and Chris Long were present; while at the Mount Wellington end Mike VK7MJ and Justin VK7TW manned the

VK3 continued



David VK3QM provided the lecture on optical communications.

mountaintop station. Communication was a simple audio amplitude modulation of a 1 watt Luxeon LED, in full duplex. This is probably an Australian distance record for optical communication, and it is currently a world record for two-way audio-modulated optical communication using non-coherent light sources. (This information is out of date. On October 3 2007, two groups of amateurs in Utah completed two-way communications over a path of 278.6 km (173.1 miles). Editor.)

By comparison, the currently accepted North American amateur record for two-way amateur laser audio communication using red light at 474 THz is only 92 km, between WA6EJO and K6MEP on 9 June 1991 - approximately half the distance achieved in Tasmania.

Ironically the current all-time record for "optical communications" was by heliograph, using Morse code and sun light; the 'signal' being received by the human eye with no electronics involved.

This record was established by the United States Army Signal Corps, from Uncompaghre Peak, Colorado, to Mount Ellen in Utah over a distance of 535 km in 1896!

Editor's note: There are groups actively experimenting with optical communications in the US and Europe, as well as locally (notably in VK7). Much information can be found on the Internet. Try <http://modulatedlight.org/> and join the Optical_DX group on Yahoo Groups: www.yahogroups.com

Eastern & Mountain District Radio Club

Joe Chakravarti VK3FJBC

Visit to Yarra Valley

On Tuesday 14th October members of the EMDRC travelled to Yarra Glen to visit the Yarra Valley Amateur Radio Club. Prior to the meeting members met at the Grand Hotel for dinner. 15 members were in attendance including John and Jean Fisher who spent the night at the hotel celebrating their 40th wedding anniversary. All the meals went down a treat without any complaint about service, quantity or quality. There was talk that this should become an annual event.

After dinner we drove around completely lost looking for the scout hall and counting the rabbits. The four passengers in my vehicle who were making comments that I could not find my way out of a paper bag, had to eat their words when I turned into the road leading to the hall.

Roger VK3BKR gave a short presentation on the extendable mast that the club is making and a demonstration of how to attach up to five antennas, and then secure the mast to a vehicle.

Jim VK3AMN followed with an excellent presentation on the foster care and eventual release to the wild of orphaned wombats. Following this he



The EMDRC shack at the Spring Festival-JOTA weekend.

gave a presentation on the radio tracking of owls.

After the presentations, the YVARC awarded their first Life Membership to Gavin Hobbs VK3TLN, and following a promise made some 19 years ago, passed on the club call VK3GH to Gavin.

David VK3DLR

Whitehorse Festival

Sunday 19th October saw 17 members of the EMDRC attend the Whitehorse Festival. The tent was set up next to the local Scout Group display and the Cubs & Scouts were invited to use the Club's equipment to make contact with other Scouts for JOTA.

Seven Scouts from the 1st 8th East Blackburn Troop, one from the

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40-80 metre vertical NEW	\$330
10/11 beams comp opt 5 ele	\$399
10/11 5/8 vert 4 rad 1/4 wave	\$224
Tri band HB 35 C 10/15/20 m	\$844
3 ele 20 m beam, 4.8 m boom	\$514
3 ele 20 m medium duty boom	\$409
Log periodic 7 ele 13-30, 6, 5 m boom	\$813
NEW 160 m Vertical SUBURBAN	\$355
M B Vert auto switch 10/80 m	\$345
40 m linear loaded 2 ele 6.4 boom	\$574
5 ele 20 mtr beam 40 foot boom	\$995
6 m 8 ele 12 dBd gain	\$408
Top loaded 160 m vert	\$474
10 ele high gain 2 m, 3.9 m boom	\$180
17 ele high gain 70 cm, 3 m boom	\$152
80 m top loaded vert	\$295
NEW 2 m/ 70 cm combined single feed line Yagi	\$294

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three sided construction. Auto brake winches

Free standing masts

9.5 metres

New Baluns

1-1 to 16-1 to 3 kW



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News from...

Nunawading Troop, two from the 1st Tally Ho and six from the Mont Albert Troup made contacts on the VHF and HF radios. Special mention must go to Amanda VK3FAMC who spoke to at least half the Scouts, her operating procedure and friendly voice left the Scouts feeling confident and soon had smiles on their faces, well done.

We have made contact with some of the leaders and believe that in the near future we will be getting together to run a Foundation Course and assist the leaders in presenting the study necessary for the Scouts to achieve a Communication Badge.

Seventeen members attended.

David VK3DLR



David VK3DLR with a young operator.



The smile says it all – a young operator enjoying making a contact.

EMDRC recognizes Ross VK3UB with a "Family Award"

The Eastern & Mountain District Radio Club of Melbourne recently presented Ross Gardner VK3UB with a Family Award in recognition of his contribution to amateur radio. All members of Ross's family are now licensed amateurs and it is one more example of the spirit of amateur radio and the success of the Foundation licence as a launching pad for young amateurs. Joining the ranks of our wonderful hobby is Carolyn VK3FILE, Christopher VK3FUSE, Hayley VK3FFUN and of course the one who started this revolution, Ross VK3UB.

With the success of EMDRC's courses, the number of people going through the process of getting a licence, as well as



Ross VK3UB accepts the family award from Vice President David VK3DLR while Club President Harry VK3KBS looks on.

young people being encouraged by their parents and club members to take up the hobby, the EMDRC is carving a name for itself as a family oriented club.

Congratulations once again to the Gardner family.

Joe VK3FJBC

Christine Taylor VK5CTY

ALARA

Christmas and New Year greetings to everyone

May all your Christmas wishes bring you good DX and good propagation. Surely we have reached the bottom of the sunspot cycle and are about to climb out of the hollow!

The committee of ALARA wishes all their members and fellow amateurs "All the Best for the Festive Season".

The YL International Meet in South Africa

I was lucky enough to be able to attend the 2008 International YL Meet and enjoyed every minute of it. This is only the second YL International I have attended but I was greeted with open arms. There must have been five or six couples in South Africa who had also been in New Zealand in 2000 and all of them welcomed me as if it had been last year or last week we had met instead of eight years ago.

If you ever have the opportunity to go to an International Meet, I recommend you do so. You will meet people who know each other and enjoy being together. Many of the YLs are active on the DX bands and so are well known around the world, but others, like myself, are rarely on HF, but it does not seem to matter. We are all friends.

The Meet in South Africa was unusually long (three weeks) because



ALARA members in South Africa: Back Row L-R: Janet ZS5JAN (honorary), Gwen VK3DYL (with stuffed friend), Christine VK5CTY, Sarla VU2SWS, Eine SM0UQW, Ingrid LA8FOA.

Front Row L-R: Nori 7K3EOP, Walli DJ6US, Chae HL1KDW, Inger OZ7AGR, Evelyn F5RBP, Unni LA6RHA, and Ton JR6XIX.

Missing are Truss VE3MRS and Vee ZS6ZEN (honorary).

it had been planned to allow us to see as much of the country and as many of the exotic animals as possible. Most International Meets are three or four days only, with the visitors joining together to make extended tours of the country, either before or after the actual Meet.

Our Meet started in Johannesburg where we stayed in a Zulu village, and had a couple of nights in a game reserve and visited the Hartebeeshoek Radio Astronomy Observatory

Then we moved to Durban where we

were right in the middle of the city with tours each day to such places as Suweto township and the Apartheid Museum, spent most of a day at the Ushaka Sea World, and, for some YLs "shop till they dropped" in the local malls!

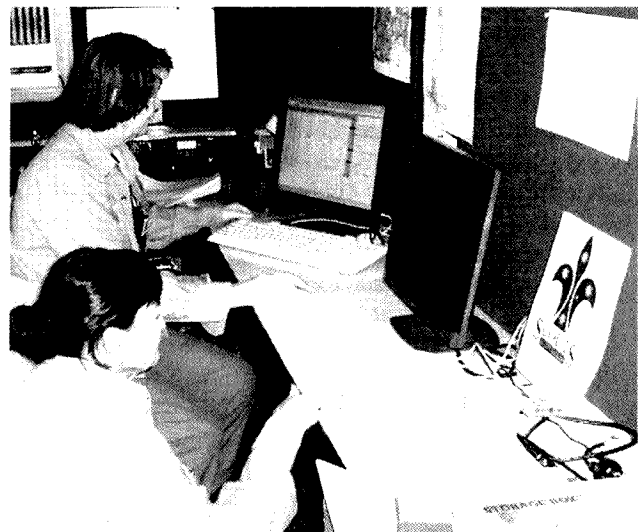
From Durban we flew to Cape Town where we watched the tablecloth rise and fall over Table Mountain, until the last morning of our stay, when the table cloth lifted and the winds dropped enough to allow us to take the cable car to the top. The cable car can only run when the



Kids in Radio (see next page)

Above: Some of the JOTA activity at Hallet Cove.

Right: Jeanne VK5JQ and Jenny VK5FJAY at the radios at Hallet Cove.



News from...

wind is less than 35 knots because the cable is only anchored top and bottom. Any wind and it is too dangerous! We were lucky.

That day we also went right to the southernmost tip of the Cape, to Cape Point Lighthouse and to the spot labelled Cape of Good Hope. Cape Town was a fitting end to our visit to South Africa as it allowed us to visit several wineries, the Hugenot Museum, to travel by catamaran to Robben Island where Nelson Mandela was held prisoner for 27 years, and to be shown over the Hermanus Magnetic Observatory all within a day's travel distance.

There were 35 YLs and 10 OMs in South Africa. Of the 35 YLs, there were only two VKs, Gwen VK3DYL and myself, Christine VK5CTY, but there were 13 members of ALARA, through sponsorship. The photograph shows most of these YLs – one was missing that particular day. Janet ZS5JAN, one of the two organisers is in the photo as an honorary member. Vee ZS6ZEN, the other one who planned the whole tour and who was also an honorary member for the duration, had to work that day in the office of the SARL.

I hope some VK amateurs were able to contact the Special Event station ZS08YL which operated during the first and last week of the YL International Meet.

Altogether I consider myself fortunate to have met this group of friendly international YLs and to have seen lions and giraffes and many other animals in their own habitats rather than in a zoo while enjoying a culture different to my own. The climate and the 'look of the country' of South Africa is very similar to that of the southern states of Australia. Many of the plants we saw in the wild or in gardens were familiar, too. I recommend it as a place to visit.

Meanwhile back at home we had JOTA, etc

This report was sent to me by Shirley, about her experience this year:

Kids in Radio

All was in readiness for the JOTA weekend at the local Seaford Meadows Scout Hall. A hot day was forecast, so cool drinks were a necessity and some

cool fresh fruit to see us through the day. There were stations set up for the Scouts/Cubs/Joeys to try their hand at various forms of radio contact where the participant had to liaise with an adult thereby getting a particular section on his/her card 'signed off'.

HF on 20 metres was popular and at one stage we had a Japanese station in contact with us. We also had a large map of the world with the various radio prefixes printed on it - lots of fun for the kids to find out where the different call signs came from. Then there was the CW section which was hilarious to watch (we could see them from upstairs) but the kids had lots of fun sitting in kiosks next to each other but not able to see the other group while sending the Morse code ("How do you spell such and such" was a frequent request). Another section was the EchoLink equivalent which was organised by one of the Venturers who kept an eye on the internet connections and advised of the workings. My section was in the IRLP area and I learned heaps from these connections. I have only ever worked IRLP on EchoLink on the computer, so this was a bit of a learning curve for me as well. I think the children are slowly learning that you do not use the microphone as an earpiece as well when it comes to amateur radio. One youngster who was very keen to work for his licence had me talking to his Mum to convince her that he could do it. Such enthusiasm - I hope it helps him forward. Shirley VK5JSH.

Jenny VK5FJAY sent me this report of JOTA at Hallett Cove Scout Centre. Jenny, in the long run, was not able to be there as she had a call in to work at the last minute, but we thought the report was worthwhile anyway. There were Cubs, Scouts and Joeys there on the day and they showed quite a bit of interest in amateur radio.

HF, VHF and UHF bands were all covered and some good contacts were made. For those not using the radios there was JOTI, (on the internet) operating in a second room so there was plenty to do.

This same group of Scouts participated in a foxhunt on radio a couple of weeks earlier which they thoroughly enjoyed, as well. The scouts in VK5 have quite

a range of radios on the frequencies they use for their activities so there are handhels available for such things as foxhunts. It is not strictly JOTA but it is radio, and, as we know every little helps to catch the interest of the young people.

The Scout Radio Group (SRAG) ran a Canoe Challenge for kids participating for their Duke of Edinburgh Award, recently. The activity was on the River Murray, at Roonka, the Scout campsite.

About 50 single or double canoeists participated with the communications van being manned by amateurs. Jeanne VK5JQ and her OM Keith VK5OQ with Jenny VK5FJAY, and her OM Kevin VK5AKZ, along with several other Scout amateurs were busy setting up on Saturday 25th and then operating all day on Sunday 26th October.

A 16 metre (50 ft) pump-up tower was used, sited on top of a hill with the communications running for the Scout radio caravan. Everything worked well so that all the paddlers completed the course and got back to shore in time for a BBQ lunch and presentation.

Keith and Jeanne towed the caravan home while Kevin and Jenny towed the mast and its equipment. It was quite a large operation but every one enjoyed themselves while demonstrating the usefulness of amateur radio once again.

Advance notice for an event in early January 2010

This message was sent from Norma VK2YL, the first President of ALARA, who is deeply involved in preparations to celebrate the Centenary of Guiding in 2010.

The VK3 Girl Guides are invited to participate in a special event station at Yarra Junction early in 2010. Please watch the GG Newsletters for more information.

There may be other groups to tell you about later.

If you want to see your experiences reported, please send me your story!!

Season's greetings, see you in the New Year.

ar



Hello and welcome to December from VK4, another busy (and warm) month, with a lot of articles for submission, so a big high wattage cheer to those who are sending articles in. Please do not despair if you do not see it in this month's issue of AR magazine as it will be submitted in the following months. I have only provision for a page or two so a little of SWR (Slicing Written Responses) has to occur.

And now around VK4

The Bundaberg Amateur Radio Club repeater has turned 30, so happy birthday to you BARC. The repeater shack on

Mount Goonaneman (near Biggenden QLD) was built and has been operated by BARC since 1978 with a massive feat of endurance between 1976 and 1978 as members trudged up the mountain carrying buckets of sand, bags of cement as well as wheel barrow loads of concrete blocks. With endless working bees and pouring a slab by man-powered mixer the repeater shack was taking shape. The official opening was performed by the local member, P.C. 'Clarry' Millar on 29th October 1978 and today the club still operates VK4RBU, 2 m repeater link on 146.800 and 70 cm repeater link on 438.775 from this site. Most

of the founding members are gone now, but with much pride and respect the club published a "Happy Birthday" webpage at www.barc.asn.au/oct78.html in honour of the men and women who made it all happen. Well done chaps an excellent repeater site to be enjoyed by the current locals and those who may pass through for the next 30 years plus.

Christopher Comollattie VK4VKR

Mackay Amateur Radio Association is now having their monthly meetings at the SES building at the Mackay Regional Council Depot at Ness Street, West Mackay. The meetings are held on the second Tuesday of the month at 7.30pm.

Gympie is growing. The Gympie Communications and Electronics Group Incorporated, has been formed with an enthusiastic group of members in an area that has not been able to support a viable group for some years. The Gympie group has been well supported



Above and below: 1976 Laying of the blocks for the Mt Goonaneman Repeater shack.

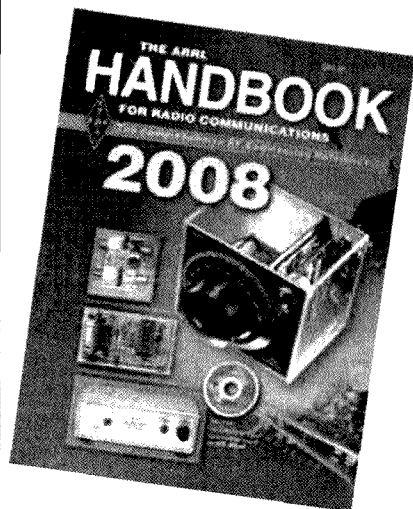


Carrying sand up to the repeater site.



Official Opening, October 1978. Shack painted, tower up, and partying.

Amateur Radio Bookshop



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News from...

by the Sunshine Coast Amateur Radio Club and the Maryborough Electronics and Radio Club. The weekly Gympie Net which was maintained by Len VK4JZ on behalf of SCARC for the past couple of years has been continued by GCEG Net Controller Dawn VK4FTBA with call-ins each Monday averaging 10 to 12 stations. After achieving incorporation, the presidents of the 3 neighbouring area radio clubs made a point of joining the net to offer congratulations. Many thanks to Harvey Bay, Sunshine Coast and Marybough for their gesture. On Sunday 12th October, some of the Gympie members arranged an informal BBQ. A group of volunteers manned the BBQ outside the local Melco Mitre 10 Hardware Store for their first public fund raising venture with about 1 kg of sausages being sizzled, sold and devoured by the hungry public. Barry VK4KKN the treasurer was last seen with a large bag of money from the BBQ bee lining for the local bank.

Currently GCEG is trialling a club newsletter in PDF format which is available upon request. The thinking caps are well and truly on the heads as members look to growing the group and developing projects and activities.

Contact details for GCEG can be found at www.wia.org.au under clubs or in the group's own web site www.gcegin.org.au

December in Townsville seems to be where the action is with TARC Management meeting Tuesday 2nd Dec from 7.30 pm SES HQ Westend.

NAVCOM Mini hamvention 1.00 pm to 6.00 pm Saturday 6th December (contact Navcom for further details).

TARC project night Tuesday 9th December from 7.30 pm SES HQ West End.

TARC Christmas Party - VK4TJS QTH Sunday 14th December from 2 pm.

TARC Social Meeting Tuesday 16th Dec from 7.30 pm SES HQ West End.

WICEN Queensland holds a net every Sunday on 7075 kHz from 8.30 am (2230

UTC). The net calls in regular stations and then invites new stations to call in. Mix it with other WICEN operators and call in on the net.

Regional VK4 HF Nets

Monday Evening	Mackay Club Net - VK4WIM Net Control	3597 kHz from 0930 Z
Tuesday Evening	RADAR Net - VK4WIR Net Control	3613 kHz from 0930 Z
Wednesday Evening	Gold Coast Net - VK4WIG Net Control	3605 kHz from 0930 Z
Thursday Evening	Henry Fulford Memorial Net - VK4WAT Net Control	3588 kHz from 0930 Z
Thursday Evening	Sunshine Coast Net - VK4WIS Net Control	3660 kHz from 0930 Z
Thursday Evening	Hervey Bay Net - VK4CHB Net Control	3615 kHz from 0730 Z
Friday Evening	Central Highlands Club Net - VK4WCH Net Control	3618 kHz from 1000 Z
Friday Evening	Lockyer Valley Club Net - VK4WIL Net Control	3570 kHz from 0930 Z
Saturday Evening	Darling Downs Net - VK4WID Net Control	3587 kHz from 0930 Z
Sunday Morning	WICEN QLD Net - VK4IQ Net Control	7075 kHz from 2230 Z
Sunday Evening	North Queensland Net - VK4WIT Net Control	3605.4 kHz from 0930 Z
Sunday Evening	Dalby and Districts Net - VK4??? Net Control	3585 kHz from 1000 Z

And many thanks to all those who donated their time and equipment to JOTA/JOTI weekend, contacts were made within Australia and Worldwide via HF and IRLP – a good weekend enjoyed by all. With too many contacted clubs and call signs to be posted, this is a thank you to all. May next year be bigger and better.

Until next time Cheers and 73

VK4VKR

VK5

Adelaide Hills Amateur Radio Society

David Clegg VK5KC

The October meeting was a presentation by Kim Hawtin VK5FNET and Karl Goetz VK5FOSS on Airstream. Airstream is a group of computer enthusiasts who have set up a Wireless data network across the Adelaide metropolitan area. Some outstanding distances have been achieved with off the shelf Wi-Fi equipment. There is no connection to the Internet, it is used for file exchange, gaming, VOIP and video communication.

November 9th saw the club move to

a new venue for our annual buy and sell day. There were 50 tables occupied by second hand and commercial sellers and club display tables. ALARA and the North East Radio Club provided food and drink for all. Icom launched their D-STAR repeater in Adelaide. A project successfully conducted by AREG.

Paul VK5FPAU won the HF mobile antenna donated by Bushcomm, Paul VK5PH won a 23 cm grid pack antenna donated by Radio Specialists, Yaesu Vertex presented Geoff VK3ACZ with

an FT7800 and David Clegg won an Icom R5 scanner donated by Icom.

The event was a great success and the hall has been booked again for 2009.

The club end of year dinner will be held at the Mt Osmond Golf Club on Sunday December 7th.

Seasons greetings from the committee and members of the Adelaide Hills Amateur Radio Society.

73 David VK5KC

South Australian RAOTC Annual Lunch

Ian Sutcliffe VK5IS

South Australian Radio Amateur Old Timers enjoyed their annual lunch at the Marion Hotel on 23 October last.

Thirty amateurs attended with the most senior being Darcy Hancock VK5RJ at 97 years, with Ray Deane VK5RK and Frank Holsten VK5LK both 91.

Darcy, who was one of the mainstays of the Northern Net, a gathering on 40 metres on Sundays in the good old days, spoke of a time at school when a teacher forbade the tinkering with a six volt accumulator in the fear of students being electrocuted.

Henry VK5CL brought along some of his collection of working WW2

radios which he spoke about with great enthusiasm.

With a somewhat younger group from the Adelaide Hills Radio Club also in attendance, Christine Taylor VK5CTY gave a very well received talk about her visit to Africa while passing around an album of photographs.



Pictured are Lloyd Butler VK5BR, a youngish 84, and Darcy VK5RJ enjoying a rag chew at the lunch.

VK7

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au

Regional Web Site: reast.asn.au

at 1930 local on 3.59 MHz and all are welcome to join in.

JOTA in VK7

There were at least eight JOTA stations operating around VK7 over the weekend of October 18-19. In the North on Scout Island, Launceston, thanks go to Tony VK7YBG, Ann VK7FYBG, Tabitha, Peter VK7KPC, Bill VK7MX, Neil VK7NT, Phil VK7JJ, Lynn VK7FLYN and crew. There was a station at Paton Park in the North West thanks to Bob VK7MGW and Lucas VK7FLSB.

WSPR World Record Set

On Friday 31 October, Bob VK7KRW in New Norfolk, Tasmania, had a two way contact with Richard, N2JR, in Virginia, USA, on the 80 m band over a distance of 16300 km running two watts. Later that evening Bob received an email from Pat F6IRF, who runs the WSPR net, confirming that they had set a new world distance record for a two way QRP contact on the 80 m band. WSPR stands for Weak Signal Propagation Reporter and is the brain child of Joe

Taylor K1JT who is also the developer of the weak signal application WSJT. For more information take a look at <http://wsprnet.org/> Congratulations to Bob and Richard.

DX from the South

Listen out for Bob VK2ABP who is now VK0BP and at Davis Base, Antarctica. Also listen for Tad VK2LNX/7 and Suzanne VK2FSNJ/7 who are QRV for another five months on Maatsuyker Island, IOTA OC-233. Roger VK7ARN holds regular nets on a Thursday night



Some of the Brighton Girl Guides operating at JOTA 2008
(Photo: VK7NML).



Garry VK7JGD showing a length of kinky coax to Chris VK7FCDW, Steve VK7FAME and Andrew VK7AD.

There was Ray VK7VKV, Scout son Ben VK7FGBS and Brian VK7BDW camping at Hamilton with the New Norfolk Scouts. There was Gavin VK7HGO operating VK7SAA up at The Lea Scout Camp hosting a number of groups. Thomas VK7NML was out with the Brighton Girl Guides. Scott VK7FREK and crew operating VK7GGA at Snug with the Channel Girl Guides and Danny VK7HDM with help from Mark, VK7FMAC, Graham, VK7ZGK and Noel out at the Glenorchy Scout Hall Camp-Out. From all reports it was a fun weekend and a wonderful demonstration of this great hobby of ours.

North West

The North West amateur radio social club activities are gaining in popularity. There are regular coffee mornings at The Blue Wren Tea Gardens on a Saturday morning and all are welcome, especially YLs and XYLs. The gardens are on the scenic coast road just west of Ulverstone. The 2 m social net is also proving popular on VK7RMD (146.625) at 2000 local time on a Tuesday night and again all are welcome.

Northern Tasmania Amateur Radio Club

By the time you read this the Christmas BBQ on December 10 at Myrtle Park will almost be underway. There will be keen competition for the informal 'Slippery Trout' award, so do not forget your rods. This illustrious award is

bestowed on the person who catches the first fish and there is even camping at the site. All are welcome.

WICEN South

The first of a range of practical sessions was held on 8 November at the QTH of Brian VK7BW with help from Gary VK7JGD and focused on the selection and fitting of coax connectors. The second on these workshops is on power connectors and emergency power supplies and will be at VK7ARN's QTH on Saturday 13 December and the third session is 24 January 2009 and will be run by Andrew VK7AD on soldering skills. These workshops have been fondly called WUDNTPARCEABUS ("wouldn't pass a bus") or "What You Don't Need To Pass the Amateur Radio Certificate Exam But You Should". Visitors are always welcome, subject to venue constraints and prior notification via an email to secretary@tas.wicen.org.au

Radio and Electronics Association of Southern Tasmania

The Saturday afternoon group has held a series of tours of the airport with a focus on aviation communications. These included a tour of the Rotorlift facility, the Bureau of Meteorology facility with an actual release of a weather balloon, the fire fighting and Marine Rescue sections and even a talk from an Air Traffic Controller. Thanks to Tony VK7FTCL

for organising these great tours. Thanks also to Ken VK7DY and Ian VK7ZIF for realigning the ATV satellite dish and LNB to receive NASATV. This great free-to-air transmission shows a range of video and audio feeds straight from the satellite and this feed can be switched through to air on ATV. Many SSTV pictures were received in VK7 from the ISS whilst Richard Garriott W5KWO was on board.



SSTV Image from the ISS by VK7TW in Hobart.

REAST on 12 November also toured the Heart 107.3 FM radio station with technician Chris Morrison and Brett Marley VK7FMMM and thanks to Chris and Brett for organising the tour. At the time of writing this column, six potential Foundation Licence holders were taking their assessments. Hopefully there will be good news and six new callsigns to report in the next AR edition. All in all a full month of AR activities in VK7!

October space station madness!

During the month of October and into early November, the amateur radio community were treated to a flurry of activity originating from the International Space Station (ISS) or Space Station Alpha. The ISS was active in a number of modes including direct voice contacts with Richard Garriott, SSTV images also being transmitted by Garriott, the activation of the FM cross-band repeater, and the ISS regular packet service.

As expected, the activity originating from the space station encouraged many operators to dust off their rigs and to direct their Yagis skyward. The activity was also a stimulus to many operators who have never attempted to work in the satellite mode prior to this easy-to-hear activity. It was great to hear some VK7s on the cross-band repeater, as there are no Tasmanian operators currently working satellites on a regular basis.

The appearance of these VK7 stations on the ISS repeater allowed a number of AMSAT-VK members to finally obtain their "Worked All States" award.

While there was a lot of frantic activity, the scheduled ISS amateur radio operations were completed very successfully, going off without a hitch. For many Australian operators, this bout of ISS activity was the first opportunity to work a manned spacecraft in about two years.

For most amateurs, the highlight of these activities was the near constant stream of SSTV pictures being sent to Earth on almost every pass of the space station. The SSTV frames were sent using "Robot 36" encoding. The content of these SSTV pictures included photos taken on board ISS of the crew and the spacecraft itself, shots of Richard, his family and friends, and also some lighthearted silly stuff as well.

Members of AMSAT-VK and other amateur operators captured over 30 different images during Mr Garriott's stay with the ISS. These pictures are available for viewing and downloading on the AMSAT-VK group and many other world wide web sites.

I was very pleased that many members of AMSAT-VK were able to log direct contacts with Mr Garriott. Many of these contacts were made using handheld rigs and vertical antennas, once again illustrating that you do not have to spend a small fortune in order to work satellites!

ARISS school contacts

Shortly after Richard Garriott's activities had concluded and after he had returned safely back to Earth, two Australian schools participated in the Amateur Radio on board the International Space Station (ARISS) schools contact program,

The first of these schools to make contact with the ISS was St. Thomas' Primary School in Brisbane, Qld. This school contact received national

television coverage on the Ten network and a news story was published in the Brisbane Times newspaper. Congratulations to Morry VK4HBK who originally joined AMSAT-VK in order to familiarise himself with satellite communications with a view to getting his daughter's school interested in amateur satellite operations and ISS after reading about the ARISS program in an astronomy magazine.

The school has been actively monitoring AO-51 when possible, tracking and receiving the WX birds (weather satellites), and now have an ARISS contact under their belts. We are looking forward to the school's continued interest in satellite communications.

A second Australian school also had a scheduled ARISS contact a few days later. Twenty students from Anderson's Creek Primary School, Vic., also had the opportunity to ask questions of Mike Fincke, the current commander of the International Space Station. This contact also received coverage in Victorian newspapers.

The Anderson's Creek contact was conducted via telebridge, which connected the school to the ISS via Tony Hutchison VKSZAI and his earth station located in Kingston, S.A.

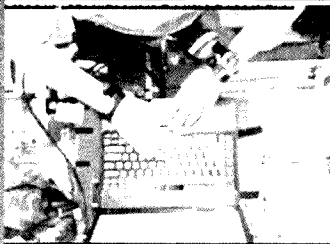
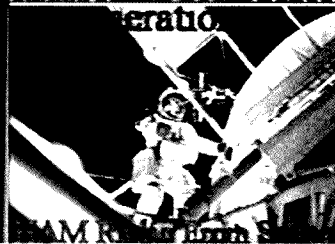
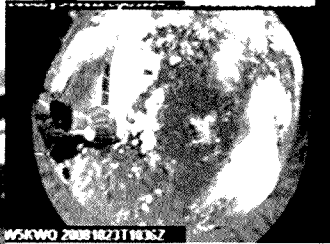
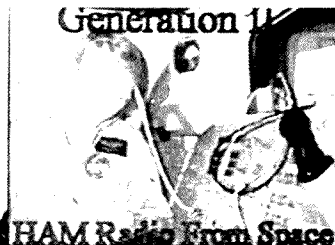
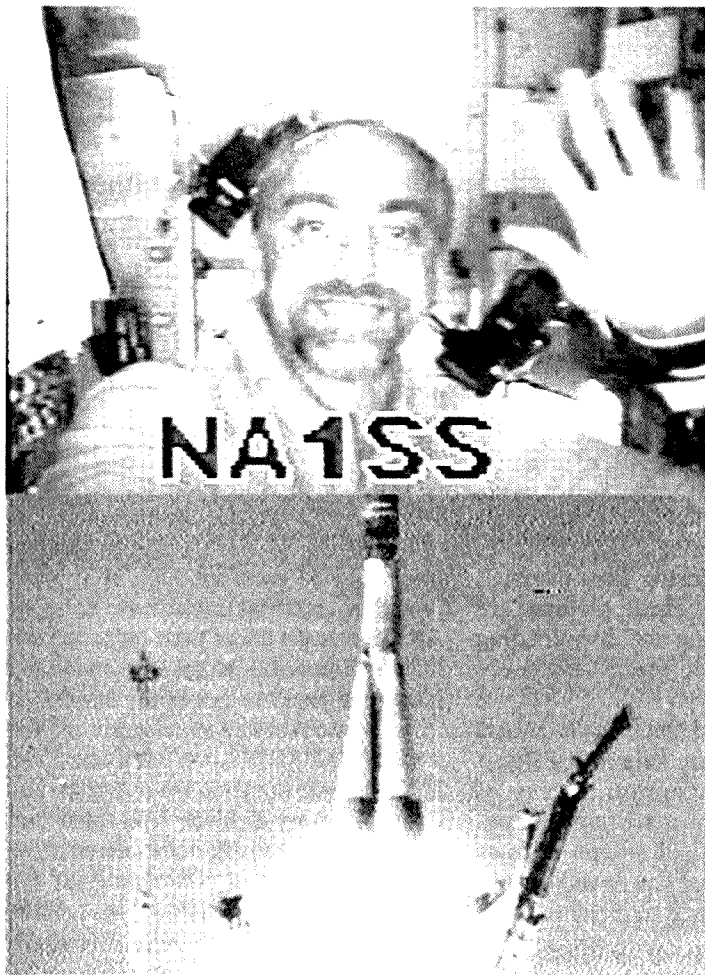
The ARISS program is a wonderful opportunity for schools to give their students hands-on experience with space based communications. It is also a great way to introduce young people to amateur radio.



Students from St. Thomas' Primary School in Brisbane, Qld. display their ARISS certificates.



A student from Andersons Creek Primary School in Victoria speaks to the space station.



If you are a teacher or know of a school who would like to get involved with working the ISS or amateur satellites in general, get in touch with me, and I can point you in the right direction. ARISS school contacts do take some time to organise – 18 months or so. ARISS activities are coordinated in Australia by Tony VK5ZAI.

Gamer in space

The latest round of ISS activity began with the long anticipated arrival of Richard Garriott at Space Station Alpha, who is believed to have paid \$US30 million for his training, transport and accommodation.

If you are interested, these trips to the space station are organised by a company called Space Adventures – <http://www.spaceadventures.com>

Within hours of entering the ISS, Richard W5KWQ could be heard calling CQ and began transmitting SSTV images to amateur radio operators back on Earth.

Richard Garriott was born on the 4th July 1961 in England and was raised in the state of Texas, USA. He is the son of Owen Garriott, who was also an astronaut who spent some time aboard the ill-fated Skylab space station, in addition to flying a mission on a NASA Space Shuttle.

Richard Garriott is the first second-generation American astronaut in

space. Coincidentally, Sergei Volkov, who was also on board the space station on Garriott's arrival was the first second-generation Russian cosmonaut in space.

Garriott is best known for his very successful career in the computer and video games industry, having created one of the world's most popular early computer game series called "Ultima". Mr Garriott first developed Ultima for the Apple II platform, and went on to release the programs for other systems including the IBM PC, Commodore, and Atari microcomputers.

Being pretty much a self taught programmer, Garriott's initial release of the first Ultima game was a very low key affair, being packaged in a simple clear plastic bag through a company called California Pacific Computers. The game quickly gained popularity and the second instalment was published by the well known Sierra On-line, who published titles such as 'Space Quest' and 'Leisure Suit Larry'.

AMSAT at 2009 Wyong Field Day
 Next year, AMSAT-VK will be running a stand/table at the annual Wyong amateur radio field day. Judy VK2TJU and I will attend the stall, with Geoff VK2ZAZ running a satellite contact demonstration. More details will appear on the AMSAT-VK group site in the next month or so. VK2TXT.

By the third instalment, the game series had become so popular that Garriott and his family started their own game company called Origin Systems. The company was sold to EA (Electronic Arts) in 1992, which retained the Origin branding.

Origin was to become a market leader with the release of Ultima-Online, the first truly highly successful MMORPG (Massively Multiplayer Online Role Playing Game). Richard Garriott left Origin/EA Games in 2000. After a year or so, once Garriott's contractual agreements had ended with EA, together with his brother and others, he formed his latest computer games company known as NC Interactive.

NC Interactive is the publisher of such titles as Lineage II, City of Heroes, City of Villains and Tabula Rasa, all of whose titles fall into the MMORPG game genre. Interestingly, shortly after Garriott's return from space, he resigned from NC to pursue "other interests".

To read more about Richard Garriott's trip to the ISS, and for access to photos, videos and sound bites, see <http://www.richardinspace.com>

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Bob Jordan VK7JR

It is with great sadness that I inform you of the passing of Bob Jordan VK7JR, the voice of King Island on Thursday 16 October 2008. He was 79 years of age.

Bob was one of six children and brother of Jack VK7IL and Laurie VK2ALV.

Bob has been blind for the last 25 years following a scallop boat accident that robbed him of his sight, although you would never know talking to him on the air.

Bob was a regular on HF and the call-backs after the broadcast.

He will be sadly missed on the air and our condolences go to Jack and his wife Elva and family.

Vale Bob.

submitted by Justin VK7TW

John F Ryan VK2FO

The Mid South Coast Amateur Radio Club Inc. (MSCARC) regretfully must advise that our member John F Ryan VK2FO, of Bawley Point, joined the ranks of Silent Keys on 7th August 2008.

John's real introduction to radio was

in 1953, when he became Apprentice of the Year for Victoria, at the RAAF Radio School. He went on to become a career officer in the RAAF.

John gained his first call, VK3ZBR, while living in Sale, Victoria, in 1957. The early 1960s saw him at the famous Point Cook, when he upgraded to a 'full' call. Moving to Canberra, he became the Deputy Director of the Busby Science Centre, and his call became VK1AK. During this time he carried out various projects for the Royal Australian Navy and was Director of the Lantac program. John negotiated the first weather satellite for Australia and was in charge of all of Australia's weather radar stations. These duties took him to Macquarie Island in 1967.

Upon retirement he moved to Bawley Point, on the south coast of NSW, where his call became VK2FO. John's other hobbies were fishing and sailing but he always maintained his interest in amateur radio, although failing health restricted his operation over the last few years.

Vale John Ryan, VK2FO.

Submitted by Stephen Arnold VK2SJA
Secretary MSCARC.

AMSAT-Australia

National Co-ordinator:
Paul Paradigm VK2TXT,
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About AMSAT-Australia

AMSAT-Australia is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-Australia is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-Australia monthly nets

Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 9.30 Z or 10.30 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater on 146.850 MHz
VK2RIS Saddleback repeater on 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3RTL Laverton, Melbourne, 438.600 MHz FM, - 5 MHz offset
Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED

conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email.

AMSAT-Australia HF net

Members and interested parties are also reminded of our HF net which is held on the 2nd Sunday of each month. See www.amsat-vk.org for details.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.

Should you wish to join AMSAT-Australia, details are available on the web site. Membership is free and you will be made very welcome.

Contests

Phil Smeaton VK4BAA

Contest Calendar December – February 2009

Month	Date	Contest Name	Mode
Dec	5/7	ARRL 160 m Contest	CW
	6	RTTY Melee	RTTY
	13/14	ARRL 10 Metre Contest	CW/SSB
	20	OK DX RTTY Contest	RTTY
	27/28	Stew Perry Top Band Distance Challenge	CW
Jan	1 to 31	Ross Hull Memorial VHF-UHF Contest	CW/SSB/FM
	3/4	ARRL RTTY Roundup	RTTY
	17/18	Summer VHF/UHF Field Day	CW/SSB/FM
	24/25	BARTG RTTY Sprint	RTTY
	24/25	REF Contest	CW
	24/25	UBA DX Contest	SSB
	24/25	CQWW 160 M CONTEST	CW
Feb	14/15	CQWW RTTY WPX	RTTY
	21/22	ARRL INTERNATIONAL DX CONTEST	CW
	21/22	REF Contest	SSB
	21/22	UBA DX Contest	CW
	21/22	CQWW 160 M CONTEST	SSB

Season's felicitations to one and all!

Welcome to a Yuletide Contest Column!

At the time of writing, the SSB leg of the CQWW group of contests has only just come to a close. So with call signs and zones still ringing in my ears from the recent onslaught, thoughts turn to how things went during the contest.

CQWW SSB 2008

For me at least, the contest was really a proving ground to see how the tweaked antenna system performed since the original system was installed just before the Oceania contests. I operated as a single operator single band entry on 80 m and Trent VK4TI took the controls on my ad-hoc 40 m station. Photo 1 shows Trent enjoying his own company during the contest – or he might be laughing at the 'rate' indicator on my PC. I am not sure what he thought he was doing with the pen he was holding – it remains a mystery.

The bands were in a strange mood that weekend, with reports from around VK after the contest ranging from "awful" to "bizarre".



Trent VK4TI during CQWW SSB. Photo: VK4BAA.

The contest was somewhat marred by equipment failures and much lost time on 80 m resulted. Trent thundered along on 40 m without a hiccup – until Trent needed to scamper home well before the end of the contest.

So, with my shack co-occupier having been called away, I continued on 80 m all alone in the shack. I got a little nervous

around 2 am, as I could smell burning. I do not smoke and I had not had a really hot curry, so I was a bit puzzled. There had been some burning-off of scrub going on during the day, but the smell was now getting stronger. I opened the door on the shack timidly with a trembling hand (even more than usual), expecting to see a wall of flame licking

the coax, and took a quick look outside round the side of the door. There was a dog standing there with a stick in its mouth – smoke pouring off either end of the stick and the asbestos-mouthed mutt seemingly oblivious to the heat. I had startled him (but not as much as he had startled me!) and away he ran. He did not leave a trail of fire behind him as he ran down the hill, but I thought that I might have to get a bucket of water to dampen down some hot spots from any dropped cinders! I also needed a visit to the toilet after a scare like that....

Back in the shack and I was trying to get a space on 80 m for a CQing session after a period of S&P. It was not long before the contest police were in evidence yet again, with a ZL apparently chastising me for calling CQ but not replying to responders. Despite having some facts explained to him (in the nicest possible way of course), he could not grasp the fact that some people have more than just one receive antenna and might not be listening in the direction of the responder. While he continued his diatribe, I worked the stateside station to which he referred, logged him, switched back to listening to EU and carried on having fun. The ZL chap soon got bored and QSY'd away to find someone else to harangue. Maybe he had just found a fly to pull the legs off, just to keep himself amused....

Propagation in Europe was a bit hit and miss from VK4 on 80 m, with either a strong opening enabling a reasonable 'run' or the EU stations just CQ'ed away to their hearts content but seemingly refused to answer calls from VK. It is very frustrating when this happens, but the noise level in EU is extremely high so it is somewhat understandable at times. The only way to get through to EU under these circumstances seems to be a large tower and a three element beam – not really a prospect for me in this lifetime. Working some mates in the UK was good on 80 m, as was being called by an English mate in Jamaica who had gone abroad for the contest to the 6Y1V super station.

As is the usual way in this contest, lots of DX was available to bolster your DXCC count if you wanted to. If you are fortunate to have a tower and beam, then you might be able to get them into your log at any time during the contest, but for smaller stations with less elaborate antenna systems, calling that juicy DX station towards the end of the contest is probably going to reap rewards as they will have been sitting at the rig for several hours, tuning to find the last few stations not yet in their log, so they will be a bit more patient to work the quieter signals.

Finding room on the bands was sometimes difficult and some folks (not VK) resorted to creeping into territory hitherto designated for modes other than SSB. They were soon detected by the self appointed contest police however and chastised remorselessly. The band plans are not a legislative requirement but are in place for the overall betterment of radio spectrum users. The more worrying aspect is the chosen format of chastisement, initially with DX clusters being utilised for public chastisement in the most vociferous and acidic manner and then a follow-up email using language that would make the lower lip tremble on the toughest of souls. Looking on the Net at the DX cluster records, a number of VK hams are guilty of this tirade and whilst their original stance may be considered by some to be admirable, the methodology leaves a lot to be desired, in my humble opinion and does not portray VK radio amateurs in the best of lights on the world stage.

VKCC members reported having a great time on the bands, with VK6ANC, VK1CC and VK4WIL club calls getting a good airing. No sign of Westlake Club callsign VK2ATZ however – maybe they were getting ready for the CW leg of the contest.

Other VKCC members reported fierce competition on the HF bands. There were even a few reasonable openings on 10 and 15 metres providing a good selection of DX too, so there are always sources of multipliers available if you are prepared (and able) to shift bands for a short while to mop them up. SO2R operators grab them while they CQ on another band of course.

With the contest over for me at least, at around 7 am (as 80 m died away gracefully), a small glass of something splendid rounded off a superb weekend. If you were not on the bands, then you missed an excellent weekend of fun.

IOTA Contest – Provisional Results for 2008

Congratulations to the following stations:

Callsign	Category	Provisional Score
VK4BUI	Fixed Station, Single Operator, Mixed Mode 24H, High Power	47277
KL7/ VK2IMM	DXPedition, Single Operator, CW, 12H, Low Power	45240
VK2CCC	Fixed Station, Single Operator, CW, 12H Low Power	29808
VK2GR	Fixed Station, Single Operator, CW, 12H, High Power	8400
VK7GN	Fixed Station, Single Operator, CW, 12H, High Power	1869

IOTA does not seem to be particularly popular from VK for some reason. I have not worked out exactly why as such – is it our geographical location that makes us shy away from this one?

CQWW RTTY VK Claimed Scores

Callsign	Category	Band	Score
VK2XF	Single Operator, Low Power	40 m	2968
VK3TDX	Single Operator, High Power	All	216000
VK5NPR	Single Operator, High Power	All	181796
VK6HZ	Single Operator, High Power	All	46216
VK7AD	Single Operator, Low Power	All	11718
VK7GN	Single Operator, High Power	All	76139

JIDX CW 2008 Results

Congratulations to the following stations:

Callsign	Band	Score
VK4TT	All	8694
VK2GR	15 m	700
VK8AV	40 m	504
VK1ANU	40 m	72

2008 Round-Up – much the same as 2007!

The last 12 months have been another interesting time for contesting. Aside from being my second anniversary as your humble scribe in November, 2008 has also been memorable as the beginning of some excellent growth in participation of VK stations in international contests.

Club contesting has increased generally, although one notable group appear to have gone a little bit quiet in recent times.

continued next page

Spotlight on SWLing

Robin Harwood VK7RH

2008 sees the decline of SW broadcasting

This year has seen the rapid decline of international broadcasting, particularly over shortwave. Program makers have gravitated to other platforms, such as the Internet or via relays over domestic FM outlets, because the shortwave audience has shrunk dramatically, especially in Europe, the Americas, Australasia and significantly in Asia.

Less than 5% of Africa has Internet access and the domestic broadcasting infrastructure there is poor, particularly in the central and eastern areas of this vast continent. A nasty civil war has been raging in the Congo ever since that former Belgian colony gained their independence and this conflict has spilled over into adjoining countries, such as the two tiny nations of Rwanda and Burundi plus Uganda. This ongoing war is ethnically based and millions of people have died.

Other African nations have also been plunged into long term conflict, such as in Sierra Leone, Liberia, Cote d'Ivoire and Nigeria. The eastern region of Africa has also seen a nation disintegrate into lawlessness and anarchy. This is Somalia and no effective central

government has been able to assert its authority, with several provinces or regions declaring independence. This has caused further fragmentation and division with the inevitable result of daily internal conflict. Some coastal regions of Somalia are surviving on high seas piracy. Any vessel going anywhere near the Horn of Africa is likely to be seized by heavily armed gunmen on small boats and held for ransom in multi-million dollars. This got to a head after a vessel carrying armed munitions including tanks and automatic weapons was seized by these pirates. The result was the international community reacted immediately by dispatching warships to the region and surrounded the pirates. Yes these pirates are reported to use HF gear, often ham gear, to communicate with their hideouts within Somalia.

This is why Africa will continue to rely on shortwave radio broadcasts for some time. Sadly the developed world no longer depends on HF for broadcasting because technology has given reliable platforms such as the Internet and the pod cast to deliver their programming

and information. Africa still lacks the infrastructure to catch up.

Therefore it is significant that America has elected Barack Obama to be the 44th President of the United States of America. He has family in Kenya and is acquainted with the problems within the region. The election will also mean there will be changes within the Public Diplomacy areas of the Administration, particularly within the International Broadcasting Bureau, which oversees the VOA and the clandestines such as Radio Liberty/Free Asia plus Radio Farda and Radio Sawa. All of them have been on shortwave, but under the Bush administration these were severely cutback with the exception of the clandestine operations. The Obama administration officially does not assume office until January 20th 2009 and any possible changes may not happen until after they have settled into office.

Well that is all for 2008. May I wish you the Season's Greetings and hope that 2009 will be more stable and peaceful than 2008 has been.

Robin L. Harwood VK7RH

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Contests

continued from previous page

Both domestic and international activity for club entries is still on the increase however and I am sure that the relevant contest managers will summarise better than I on VHF contesting, with VK calls during RD, Field Days, John Moyle and the like being well supported. F calls are no exception to this, with many taking part in contests during 2008 and some making plans to upgrade their licences to enable themselves to compete a little bit more. It would be good to see some domestic contests include an 'F' call section in the future, but time will tell.

The Oceania Contest and the Commonwealth Contest (aka BERU) continue to put VK on the world stage, allowing VK to be a focus of the world for a while. Steve Ireland is still looking to enter a VK Team for BERU and I hope to be trying to get a team placement

in 2010 by taking part in 2009 and gaining a reasonable score. I have some tough competition to dislodge someone from the team list, but we will see how it goes!

I said as much last year and it is still my humble opinion (and others are welcome to disagree!) that contesting in VK is coming along nicely: it is still vibrant and healthy; it continues to attract increasing domestic and international participation and continues to enhance the VK profile globally. The introduction of Skimmer might have a detrimental or positive effect – depending on your point of view – and Club / Team contesting continues to grow.

I hope that you have a wonderful Christmas and a very Happy New Year. Maybe start the New Year off with

participating in the Ross Hull Memorial VHF Contest and take it from there into 2009. May you multiply often and produce a huge log!

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 vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton

Contest rules:

Ross Hull Contest:

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Summer VHF-UHF Field Day:

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Weak Signal

David Smith - VK3HZ

Despite the approach of summer and (hopefully) good times for VHF/UHF propagation, not much has been happening on the bands to date. However, there has been at least one event of interest.

On the morning of 20th October, Leigh VK2KRR at The Rock was scanning the bands checking for conditions. Signals from VK5 were up significantly from normal levels, and at 1930 Z, he reported hearing the VK6REP 2 m beacon at Esperance at SI – a distance of 2312 km. Terry VK3ATS in Mildura was also hearing the beacon at S5 – a leisurely 1870 km. However, nothing was being heard in Melbourne so it seems the enhancement was not reaching that far south. Brian VK5BC reported hearing the beacon up to S7, but nothing from Albany, slightly further afield, on 2 m or 70 cm. Unfortunately, VK6 had not at that stage gone onto Daylight Saving time, so their local time was very early (2.30 am). At 2300 Z, with the beacon still just audible, Leigh rang Bill VK6AS in Esperance to see if he could come on air but unfortunately an issue with a coax relay prevented this. Bill did have the good news that his station would be fully operational on 2 m, 70 cm and 23 cm within a few weeks. So, while the beacon was heard for a period of nearly four hours, unfortunately no contacts were made.

47 GHz contact

Doug VK4OE reports on some exciting happenings at the upper extremes of our frequency bands.

On the morning of Sunday 2nd November, Rob VK4ZDX and I had what is probably the first QSO in VK4 on 47.0881 GHz USB. The distance was only a couple of hundred metres but, considering that it was a first out-of-the-shack test and that no antennas were used other than open WR22 waveguide, I am happy with the result. The only previous

experiments on 47 GHz that I know of in VK were by VK6ZAY some years ago in the Perth area. He still holds the VK distance record for this band (45.7 km), at least for the time being...

We used two transverters of different design that I have been working on for several years (off and on). The transverters use different LO and IF frequencies with the side benefit that there can never be confusion between receiving IF leak-through and true 47 GHz RF. Although the output stages use similar circuits, one transverter produces nearly 1 mW while the other can only currently manage 70 uW.

This result should be regarded as an initial successful test. Further optimisation will now take place, plus the construction of 'real' antennas, both of which will make the system work a whole lot better. Greater and greater distances will become possible! Apart from five years acquiring on the 'surplus' market many of the various key components, it is all my own construction - quite satisfying

I intend to be operational on 47 GHz for the Spring VHF/UHF Field Day. Now I am looking for other stations on the band...

Analogue TV shutdown

The government powers-that-be have announced that all analogue TV services will be definitely shut down between 2010 and 2013 (perhaps). While some of the TV frequency channels will probably be re-allocated to Digital TV services, the Low Band services will be put to other uses. Of interest to weak-signal enthusiasts, Channel 5A, which is a non-standard allocation just below our 2 m band, will probably also be reused for other services. The Mt Dundas Channel 5A transmitter in western Victoria is due to cease operations on June 30th 2010. For those living in the region of Channel 5A transmitters, the shutdown

will be a welcome relief, allowing weak signal operation on 2 m. However, those who are more distant will lose the ability to use these powerful transmitters as both beacons and frequency references. One thing we hope is that, if Channel 5A is allocated to other services, they are not going to produce substantial interference on the low end of the band as, for example, Pager services do at the high end.

2 metre scramble

Mike VK3KH reports that the revival of the 2 metre Scramble was a great success. The first event was held on the evening of Sunday 26th October. Action was fast and furious for the 15 minutes duration and 21 stations called in at the end to report a score.

Congratulations go to the inaugural winner, Jim VK3II, who scored 61 points.

The Scramble is held on the last Sunday of the month at 0930 UTC, with the next events on 28th December 2008 and 25th January 2009. The event lasts for 15 minutes with a call back for scoring on 144.150 immediately after.

All stations with 2 metre SSB capabilities are invited to take part, and stations are invited to post their intention to participate on the VK Logger in the 30 minutes prior to the Scramble commencing. This alerts stations to look out for others from distant grid squares, as the grid square count is used as a score multiplier.

Operating guidelines and updates are posted on the VK Logger Forum in the 144 MHz Band section. If anyone needs more information they can email Mike on mdc@cranboumemusic.com.au

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

continued next page

Digital DX Modes

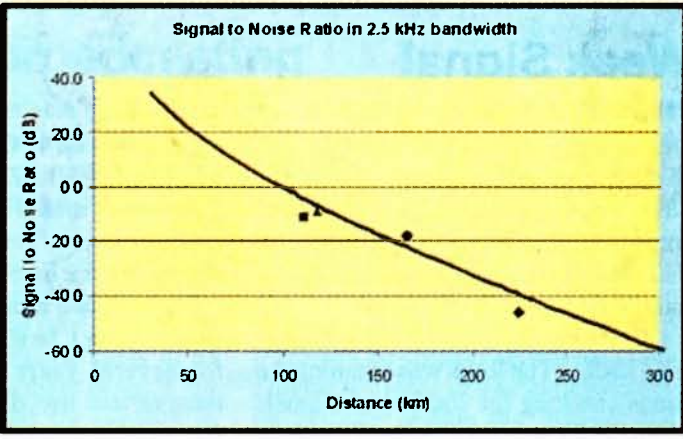
Rex Moncur – VK7MO

Recently, significant advances have been made with non-line-of-sight optical cloudbounce using WSJT, with the distance being increased to 165 km at signal levels of -18 dB on the WSJT scale. A tone has been measured at 18 dB signal to noise ratio in a 1 milliHertz bandwidth at a distance of 224 km. These advances are primarily the result of using a large area Avalanche Photo Diode (10 mm square). These diodes have gains of around 50 to overcome pre-amp noise and also pick up more light with their large areas.

Optical signal levels reduce in accordance with the inverse square law for a cloud larger than the beamwidth, and also due to what is called extinction loss due to scattering of light along the path. Extinction loss is estimated at 0.1 dB per km for red light in very clear air. As optical signals produce a current in the detector proportional to the number of photons, the received power increases as the square of the current and thus the amount of light. Thus the propagation losses increase as the 4th power of distance due to inverse square law and by a factor of about 0.2 dB per km due to extinction in very clear air. The following graph applies this relationship to some of the results to date with the 10 mm square APD receiver with a 375 x 375 mm Fresnel Lens and a 60 Luxeon Red LED transmitter using small torch type 20 mm plastic lenses.

- 111 km path from Kyneton Victoria, VK3HZ & VK3BJM, to Wedderburn Victoria, VK7MO and VK3CY.
- 118 km path from Tolmans Hill Tasmania, VK7TW, to VK7MO Coles Bay Tasmania.
- 165 km path from Kyneton Victoria, VK3HZ and VK3BJM, to Wycheproof Victoria VK7MO.
- 224 km path from Cape Portland North East Tasmania, VK7JG, to Stanley, North West Tasmania, VK7MO. In this case signal levels were too low for WSJT but a tone could be detected at 18 dB signal to noise ratio in 1 mHz bandwidth. The received signal to noise ratio has been adjusted to the equivalent level in a 2.5 kHz bandwidth.

It is seen that WSJT, which works to around -28 dB, should be useful to around 180 km with the present equipment, but this is not quite enough to span the 212 km across Bass Strait. However the program JASON is reputed to work down to -45 dB and should meet this requirement even though in its most sensitive mode it takes around 40 minutes to transmit two callsigns. On 29 October 2008, Joe VK7JG ventured up Mt Horror in north eastern Tasmania to attempt a JASON contact with Rex VK7MO at Stanley over a 209 km path. Almost as soon as Joe arrived at the top of Mt Horror, low clouds or fog rolled in and most of the transmitted light was scattered in the immediate area. No signals were detected at Stanley over a period of two hours using a 1 mHz bandwidth. While this attempt failed, more attempts will be made with JASON. Alvin VK7NDQ did take some great photos of the light being scattered by the fog, as shown in the photo of Joe VK7JG operating, which is included in this report.



(Graph details in text)



Optical Transmission from Kyneton Victoria with Barry VK3BJM and son Cameron. Photo by David VK3HZ.



Optical Transmission into fog at Mt Horror Tasmania - operator Joe VK7JG. Photo by Alvin de Quincey VK7NDQ.

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



The transmitter on the tower.



The transmitter on the clouds.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

October realised several good 'E' openings occurring in all states. The other interest during the month was the Willis Island DXpedition, which was operational on 6 m. Unfortunately they only completed one contact on 6 m with Gary VK4ABW on 17th October - well done Gary.

On 12th October Mark VK8MS in Darwin worked Kevin VK4BKP in Mackay and on 13th October the band was open for several hours from northern VK4 to VK5. Jeff VK5GF at Victor Harbour and Brian VK5BC worked several VK4s including BEG, ACB, BKP, ABW and FNQ whilst the VK4s also enjoyed good conditions to VK2 and 3. Kevin VK4BKP reports working VK2s ZQ & DJ, VK3s DUT, VG, & WN.

The morning of 18th October was interesting with long meteor burns being experienced. Several stations including Scott VK4CZ, David VK3AUU, Joe VK7JG, Gerry VK2APG, Steve VK3OT and Brian VK5BC were heard and completed some contacts via these long meteor burns. On the same morning, John VK3TCT at Mildura who had just erected a 5-element Yagi completed a tropo contact with Brian VK5BC over a distance of 300 km.

On 20th October, the band again opened from VK5 to northern VK4 raising hopes of a contact with VK9DWX but unfortunately only short bursts of

their CW beacon were heard. Again VK5BC worked VK4s BKP, SIX, MS and QB. The Alice Springs VK8RAS beacon was also up to S9 in VK5 and was also heard in VK4.

Dale VK4SIX reported working Mark VK8MS in Darwin on 26th October.

Twenty seventh October saw the band open from VK5 to VK6 as well as northern VK4. Peter VK6KXW worked David VK5AYD at Coober Pedy and VK5BC as well as hearing the Alice Springs beacon and Toowoomba TV. Alex VK5ALX at Whyalla worked Noel VK6BJ in Kalgoorlie and reported both the Perth and Bunbury beacons while Brian VK5BC worked John VK4FNQ Charters Towers and Russell VK4BEG in Malanda.

Another good day on the 28th, with the band opening throughout the day in VK1, 2, 3, 4 and 5. Rob VK1ZQR reported working Russell VK4BEG, John VK4FNQ & Kevin VK4BKP. Garry VK5ZK and VK5BC worked several VK4s and Bill VK5ACY reported working VK4BKP on a Moxon rectangle at 5 feet on a broom handle. Paul VK4MA near Hervey Bay was a big signal working into VK2, 3 and 5 and Richard VK5UK/4 on Fraser Island



The receiver on top of the car.

managed to work Brian VK5BC. Several VK3s and 2s also worked into VK4 and Joe VK8VTX in Darwin completed contacts with several northern VK4s.

The good conditions continued on Wednesday 29th October with conditions extending further south to include VK2 to VK5 and VK7 to VK4. Dave VK1DJA worked several VK5s and Norm VK7AC had good conditions into VK4. The Riverland stations Andy VK5LA, Larry VK5LY and Ivan VK5HS worked many VK2 and 4 stations. Alan VK4WR could be heard in VK5 working many VK2, 3 and 7 stations well into the evening.

It has been very pleasing to find so many stations active in all states early in the season. There were certainly many good days in October and let us hope it is the start of a bumper summer 'E' season.

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

ar

Ross Hull Memorial VHF-UHF Contest 2009

John Martin VK3KM, contest manager

The next Ross Hull Contest will run through the month of January 2009. Logs will be due by February 15.

Since its heyday in the 1980s and 1990s, there has been a decline in contest activity. This year there have been major changes to the rules, which will simplify the log-keeping requirements and will hopefully generate renewed interest in the contest.

The first change is to replace the distance based scoring system with scoring based on grid squares. Rather than having to estimate the distance worked for each contact, entrants merely need to keep a tally of the contacts made and the grid squares worked on each band. This brings the Ross Hull scoring into line with the system that has been used for some years for the VHF-UHF Field Days.

The VHF-UHF and microwave sections have been merged into a single "All Band" section. The separate Digital Modes section has been retained.

The band multipliers remain the same as those used for the VHF-UHF Field Days. Analysis of logs from past years shows that these multipliers provide a good balance between the lower and higher bands – microwave contacts score higher points, but this is balanced by the fact that there are more stations to work on the lower bands.

The Ross Hull Contest is a DX contest, so it is held at the time of year when there are most likely to be band openings. But midsummer is also a time when amateurs have to find a balance between work, family commitments and holidays. The length of the contest period should allow everyone to find enough free time to spend in the shack. But the largest part of the score for each band will come from working new locator squares, so it is not necessary to work the maximum number of stations every day.

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 January 1, 2009 to 2400 UTC January 31, 2009.

In Eastern Summer Time, that is 11 a.m. on January 1 to 11 a.m. on February 1.

Sections

A: All bands, non-digital modes.

B: All bands, digital modes.

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 both sections.

General Rules

One callsign and one operator per station. Stations may operate from any location. You may work stations within your locator square. You may claim one contact per station per band per UTC day, although a station may be worked more than once

per UTC day if the station location has changed to a different locator square.

Repeater, satellite and crossband contacts are not permitted. No contest activity is permitted below 50.150 MHz. Recognised DX calling frequencies should be avoided where possible for contest activity. Suggested procedure is to call on .150 on each band, and QSY up to make the contest exchange. All rulings of the contest manager will be accepted as final.

Contest Exchange

For Section A, Entrants must exchange RS (or RST) reports, a serial number, and the 4-digit Maidenhead locator they are operating from. Serial numbers need not be consecutive. The Maidenhead locator is optional if it has already been exchanged in a previous contact, for example a contact made on a different band on the same day. For propagation modes such as meteor scatter or short-lived sporadic E openings, it is sufficient to exchange callsigns plus two further digits that cannot be predicted by the other station.

For Section B, exchange callsigns plus two further digits that cannot be predicted by the other station.

Logs

Logs must contain the following for each contact:

- Date and UTC time.
- Frequency and callsign of station worked.
- Reports and serial numbers sent and received.
- Grid locator of your station and of the station worked.

Separate scoring columns for each band would be helpful.

Scoring

For each band, score 1 point per contact, plus 10 points for each four-digit locator square worked.

Multiply the total by the band multiplier as follows:

6 m	2 m	70 cm	23 cm	Higher bands
x 1	x 3	x 5	x 8	x 10

Then total the scores for all bands.

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.
- 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. In this example, the entrant has worked four grid squares and made 20 contacts on each band.

Band	Locators Worked (10 points each)	+ QSOs (1 point each)	x Multiplier	= Band Total
6 m	40	+ 20	x 1	= 60
2 m	40	+ 20	x 3	= 180
70 cm	40	+ 20	x 5	= 300
etc.				
Overall Total				= 540

A cover sheet and scoring table has been included in the postings on the WIA web site. Copies can also be obtained from the e-mail address given below.

Penalties

Minor errors may be corrected and the score adjusted. Repeated use of recognised DX calling frequencies (especially when the reports indicate strong signals) may lead to disqualification. 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 later RTF, DOC, XLS or MDB.

Logs must be received by **February 14, 2009**. Early logs would be appreciated.

Further Information on Maidenhead Locators

Each four-digit Maidenhead locator identifies an area which covers 1 degree of latitude and two degrees of longitude. Detailed explanation of the Maidenhead locator system can be found on the Ross Hull Contest page on the WIA web site. If you have your latitude and longitude but do not know which locator square you are in, a computer program is available for download on the same web page, or directly from the contest manager. This program will also calculate distance and bearings between two locations.

NAME OF CONTEST

Contest date:

Callsign:

Section entered:

Operator's name:

A All bands

B All bands, digital modes

Station location:

If entering more than one section, please make out a separate cover sheet for each section.

Postal address:

Declaration

The station was operated in accordance within the rules and spirit of the contest. I agree to accept the Contest Manager's decision as final.

Signature:

SCORING TABLE

Band	Locators Worked 10 points each	+	QSOs made 1 point each	=	Total	x	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 Bands		+		=		x	10	=	
FINAL TOTAL =									
Any comments or suggestions:									

Examples of cover sheet and scoring table Ross Hull Memorial VHF-UHF Contest

Over to you

Wideband Yagis

Since my article on Simple Wideband Yagis appeared in September AR, I have had a number of people contact me advising that it would be better to use the grey electrical conduit rather than the orange version I did. This is based on the fact that the orange version is intended for inside or underground use where there is little exposure to sunlight and as such it does not need to be very UV stable, and it will in fact become discoloured and brittle with continuous exposure to the sun. The grey version being intended for external use is supposedly much better in this regard. While I can not find any definitive

statement to this effect in the various manufacturers' literature/web sites, and certainly no hard data on exposure times etc. there are hints that this may be the case. In the case of the original prototypes which have now been up in the air for just over 12 months I can report that they are still performing very well though the orange colour has faded slightly. I have not had any reason to try to subject them to the sorts of stresses where brittleness would be evident, so fingers crossed this will not be an issue for some time.

The only problem I am aware of with using the grey conduit would be that it is slightly thinner walled making it a bit

harder to find a good size match for the inner dowel or broomstick.

It has also been pointed out that I did not mention how I attached the Yagi boom to the mast. While many variations are possible and mounting of the mast to the boom behind the reflector is the purist's way, I actually simply used a standard TV antenna U bolt with a couple of holes drilled through the boom at a convenient spot. In particular I found which two elements the balance point was between and then put the clamp in the middle between those two elements.

Paul VK3DIP

Summer VHF-UHF Field Day 2009

Contest manager: John Martin VK3KM

Dates

Saturday and Sunday 17 and 18 January 2009.
 Duration in all call areas other than VK6: 0100 UTC Saturday to 0100 UTC Sunday.
 Duration in VK6 only: 0300 UTC Saturday to 0300 UTC Sunday.

(Contest name) WIA VHF-UHF FIELD DAY

Date:

Section entered: **Station callsign:**

A Single operator 24 hours
Callsigns and names of all operators:
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:
Postal address for notification of results:

The station operated from the following grid locators:

Declaration:
*The station was operated in accordance with the rules with the rules and spirit of the contest.
 I/We agree to accept the Contest Manager's decision as final.*

Signed:

Please note that the UTC times differ from those of the Winter Field Day because daylight saving time will apply in most states.

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.

Entrants may enter more than one section.
Single operator stations: 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.

Two operators: 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.

Multi-operator stations: Stations with more than two operators must enter Section C or D. If the winners of Section C have also entered Section D, their log will be excluded from Section D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours – please include details in your cover sheet of which 8 hour period should be used for scoring purposes.

General Rules

One callsign per station. Operation may be from any location. 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. 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.

No contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for contest activity. Suggested procedure is to call on .150 on each band, and QSY up to make the contest exchange.

Contest Exchange

RS (or RST) reports, a serial number, and your four digit Maidenhead locator. The Maidenhead locator is optional if it has already been exchanged in a previous contact during the Field Day and neither station has moved since then.

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.

Example of cover sheet Summer VHF-UHF Field Day

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 =							

Example of Scoring table Summer VHF-UHF Field Day

If the station moves back into the previous locator square, the three hour limit still applies to stations worked from that square.

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.

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.

Cover Sheet

The cover sheet should contain the names and call signs 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 (see examples on previous page).

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 (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
etc.									
Overall Total									= 680

A blank cover sheet, with scoring table, is available on the Field Day page of the WIA web site.

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, 2 February 2009. Early logs would be appreciated.

ar

Silent key

Tribute to

Ehregott Von Stanke VK5KU

Born in 1920, Ehregott, or Erg as he was appropriately known, was a man of energy. As a young boy he was interested in radios and built his first crystal set during his school years. A large Cypress tree supported the antenna on which he keenly listened to radio stations both local and interstate.

Erg became interested in Morse code when he took his first job as a Telegraph boy. He found the required books and started to learn Morse code. He was called into the Army for military service and it was here that he further developed his code skills as a radio operator in a tank.

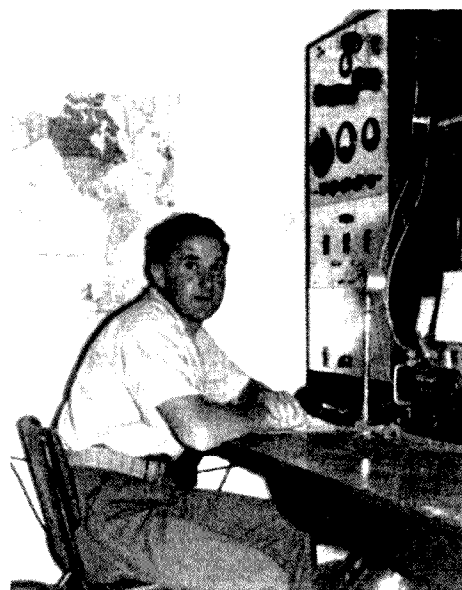
Erg received his Amateur Operators

Certificate of Proficiency on the 30 Nov 1948 and was issued with the call sign of VK5KU. He built his first radio, which was lost in a house fire, but his friends gathered new equipment for him to use. Erg was very active on the bands and contacted thousands of amateurs all over the world. He received a number of awards in VK/ZL VK5 CW category during the fifties. He also pursued and obtained IARU WAC and RSGB WBE awards.

Erg was a long-time WIA member having joined the VK5 Division in 1951.

Even on holidays, Erg would take his radio so that he could continue participating with his many amateur friends. If Erg was not anywhere to be seen, there was only one place he would be and that was upstairs in his shack operating his radio.

Upon his passing in June 2008, the WIA received a request from his family for permission to add the WIA logo to Erg's gravestone; such was his commitment



Erg at the operating desk.

to amateur radio and the WIA.

Erg is sadly missed by his extended family and his many amateur radio friends.

From information provided by Summa Tully (Erg's granddaughter)

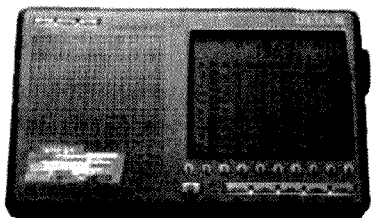
Geoff Atkinson VK3AFA



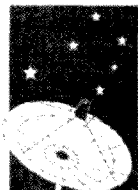
Erg's gravestone.

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has been started and can be found at

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We are looking for writers of articles suitable for this website.

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Please log into the site, register and start writing!

Tim Roberts VK4YEH QTHR.

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•HILLS two section winch up, heavy duty fold over galvanised tower, extends to 12 metres. HILLS base plate, top stay bearing, guy wires, turn buckles, duralium pipe 50 mm OD x 3 m complete with stainless steel hardware. Excellent condition. Price \$850.00. Tower currently stored in the Hunter Valley. Manfred Meyer VK2RV QTHR Phone 02 4938 1560 or mobile 0418 210 457. Email mgmeyer@ozemail.com.au

•CREATE rotator model RC5-A3 complete with indicator controller unit and mast clamp, instruction manual and schematic diagram. Rotation torque 16 kgm. Has had very little use, excellent condition. Price \$850. Manfred Meyer VK2RV QTHR Phone 02 4938 1560, mobile 0418 210 457. Email mgmeyer@ozemail.com.au

•I have some ICOM IC-F3S for sale: VHF Handhelds. Top quality Made in Japan. They cover 136 to 174 MHz. Alphanumeric display shows frequency in use. They are used but in good condition, and programmed with 32, 2 metre frequencies. I can get the programming changed for your favourite frequencies if they are not already in it. 30 repeater channels should cover every repeater in Australia. 5 watts. Radio to radio clone programming with a simple cable into the speaker socket. Computer programmable as commercial band radios are these days. They look like the CB IC-40s or the Amateur IC-T2 but the key pad is a little different to T2. They use the same batteries. These radios are ready to go and you do not have to risk eBay business. Serial numbers will be given later. \$25 a radio. If you would like them programmed for use on the commercial band, it will be \$30.00 a radio. Another \$15 with antenna. You can buy a battery pack to put in your own cells for about \$22 at most 2 way radio shops, or I will sell you a good second hand rechargeable pack at half price. I have disks for sale with free information on them. I am only charging for my time and work in making the disk \$10.00. I also have UHF handhelds that can be used on commercial frequencies and for UHF CB. These prices are negotiable. Victor VK2XVS. Ph.0435 096 995, email: victorstafford@hotmail.com QTHR

•Modulation meter: RACAL type 409, 3 MHz to 600 MHz, AM/FM \$60. Wave analyzer AIRMEC 248A, 5 MHz - 300 MHz, offers. NEC TR-2GD60 FM microwave 1.7 GHz FM tx/rx link rack complete with Operators and Workshop manuals.

Suitable for conversion or parts. Any reasonable offer accepted. Buyer to collect. Arthur VK2DKF QTHR 02 4739 8695, email arthur.forster@bigpond.com

WANTED NSW

•Instruction manual for EDDYSTONE 840C receiver. Will pay all cost for photocopying, postage etc. QTHR. Dennis 02 6628 0087 VK2RM

•Needed, one BANDO RADIO TECHNIC-5 Owners Manual in English. Will pay for costs. Richard VK2UAL PO Box 645 Willoughby NSW 2068 vk2ual@yahoo.com

•Information needed: SUNAIRASB-100 Aviation Radio, I have 2 of these beautiful old sets and I am very keen to use them on ham bands. I don't know much about these i.e. setting them up and making the harness to get it all working as one. I would be very grateful for any help from anyone who has worked with these great old units. Please contact me via vk2ual@yahoo.com or postal Richard VK2UAL PO Box 645 Willoughby NSW 2068

•EMTRON AT300 antenna tuner. Must be 100% OK. No 'cooked' balun. John Bennett VK2SIG QTHR, email: macben2@bigpond.com. Price and location please.

FOR SALE VIC

•YAESU FT-1807M mobile transceiver tx adjustable power to 50 watt. Used as base station only. Mint condition. Tx 400 - 470 MHz Rx 400 - 470 MHz. Still under warranty, approx 2 years left. Serial No 7F090015. \$200 only, buyer to pay freight from Melton Vic. Stan Kovczynski VK3BNJ 03 9743 6708

•ICOM IC-260A 2 m all mode transceiver digital readout VFO & RIT memories, meter, mic, book \$400. NALLY tower TH6 beam \$500. EMOTATOR model 1102MXX and control unit \$300. Siemens twin cavity tunes. 400 m/c to m/c. Beauty. \$100. VK3DS Ballarat QTHR 03 5332 3226

•Contents from the shack of the late Richard "Dick" Hammant VK3NDC : HF: YAESU: FT-101Z + matching speaker s/n 9D-030045. \$450.00 very good condition. YAESU: FT-101B (6146 conversion done by qualified tech.) \$400.00. YAESU: FT-707 s/n ? includes MD-1 desk mike \$400.00. 2 metre FM YAESU FT-212RH s/n 1N826108. \$150.00 Receivers: YAESU FRG-7 s/n 138K231260. \$125.00. YAESU FRG-700 s/n 100C-100096. \$250.00. REALISTIC scanner Pro2020 \$50.00. Power supplies: DICK SMITH DR-3800 3-15V, 25 amp heavy duty \$200.00. TRANSWEST 13.8V 4 amp. \$50.00. Antenna tuners: YAESU F-700 \$175.00. SWR meters: Power/swr/field strength meter Model 1711

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brand? \$125.00. **Artificial ground:** MJF-931 \$175.00. **Dip meter:** DICK SMITH TR Dip meter Q-1300 (same as LEADER brand.) \$40.00. **Tower:** Wind-up 2 piece 50 ft tilt steel tower. Plus assorted aerials \$700.00. Tower is down and on the ground. **Antique:** HALLICRAFTERS Receiver Model S72D S/N687965 550 kc - 30 MHz. has (8) new valves fitted. \$150 or best offer. All gear was working at time of Dick's passing. Contact Max VK3JIN 9762-7472, 0412-355-306. email: maxh10@optusnet.com.au

•VK5JST antenna analyser, built and working (see AR article May 2006). Price \$150.00. (Kit price \$135.00 + \$15.00 assembly). I can email a photo if required. Roderick Wall Email: vk3yc@wia.org.au or 0413 074 386.

WANTED VIC

•Kenwood or Yaesu linear power supply, in good working order. Mark VK3MJ, vk3mj@hotmail.com Ph 0438 241 513

FOR SALE QLD

•Vintage YAESU MUSEN HF Amateur Radio Twins. One of the earlier HF transmitter/receiver combinations manufactured. Originally belonged to my father Joseph. Transmitter: FL-50 Receiver FR-50 a matching pair. Designed & built in the mid 1960s in the Tokyo suburb of YAESU by Sako Hasegawa JA1MP founder of YAESU MUSEN Radio Company. A very rare offering! Both Japanese & English owners manuals (originals) and interconnecting cable supplied. Among the very first radios built for & imported into Australia by Bail Electronics Victoria for 240 VAC 50 Hz operation. Radios are in storage in Western Sydney. Internet photos supplied to genuine buyers. \$375 plus postage/freight for the pair. Andy VK4FBI vk4fbi@yahoo.com.au 0405 089 161

WANTED QLD

•ICOM desk top battery charger BC-119N. Damaged case OK, as really looking for the main PC board B5712C. Bob VK4BYX. Email vk4byx@iinet.net.au

FOR SALE SA

•HILLS tower 8 m section 250 mm triangular lattice construction, well galvanised with swivel base and winch, ideal for tiltover mast. \$145. John VK5ARL QTHR

•YAESU FT-DX400. ICOM IC-215 2M FM Trx. ICOM IC-202 SSB Trx. ICOM IC-501. ICOM IC-502 50 MHz SSB Trx. YAESU FT-221. ICOM IC-211. ICOM IC-21A with DV-21 PLL Digital VFO. YAESU FR-101. ASTOR PB1, Pulse and Bar Generator. HEATHKIT, TV Alignment Gen. MARCONI VHF TF1064B/7 Signal Generator. MARCONI, TF995B/5 AM/FM Signal Gen. RAPAR, Audio Gen. HITACHI V-222 20 MHz CRO. BWD540 CRO. TEKTRONIX 515A CRO.

TEKTRONIX 525, Model III, Waveform Gen. 2 x Military ICA Reception Sets, Model 5223 (circa 1965). ASTOR TSG-7 Sig Gen. KURAMSHI KEISOKUKI KENKYUSHO RF Dummy Load watt meter, Model RW-120D. KW Electronics KW-20. VISCOUNT Mixing Desk 1150B Programmer. GRUNDIG Senderwahl Receiver. Dino Beverakis 0413 307 869

WANTED SA

•A deceased YAESU FT-200 transceiver and power supply or similar aged radio for spare parts, including 9 MHz crystal SSB filter and carrier crystals. Contact Darryl VK5JDS 08 8445 1607 QTHR.

•MIDLAND 2 metre t/x radio, to have 6 pin mic. outlet. I am told that this radio has about 50 watt output. This unit to be in good working condition. Email: whyhbg@sa86net.com, or call telephone 08 8644 3016. Thanks VK5HGB

FOR SALE WA

•KENWOOD TS-120V HF transceiver s/n 912297 with matching PS-20 240v/13.8 V 4 amp power supply. 1980s vintage transceiver covering 80 m thru 10 m. WWW on 15 MHz. No WARC bands. 10 watts on CW, 30 watts PEP on SSB. In very good condition with manuals, circuit diagrams, cables and microphone in original packing cartons. \$250 ono. John VK6JAH. 08 9384 6325 jah12@bigpond.com

WANTED INTERNATIONAL

•I am a ham on a fixed income seeking 2 VHF radios. 1) an IC-970parts w 1.2 or the 1.2 module for it, used (never heard of new) and 2), IC-375 at a reasonable price. Anyone? My call is KE2BP and not too scared of international shipments, having ordered from Hong Kong before. My email is MEcker@peoplepc.com



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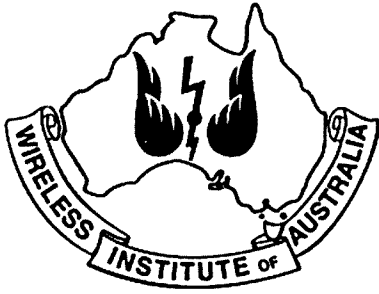
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<http://www.wia.org.au>

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Chairman of the regional committee is in bold

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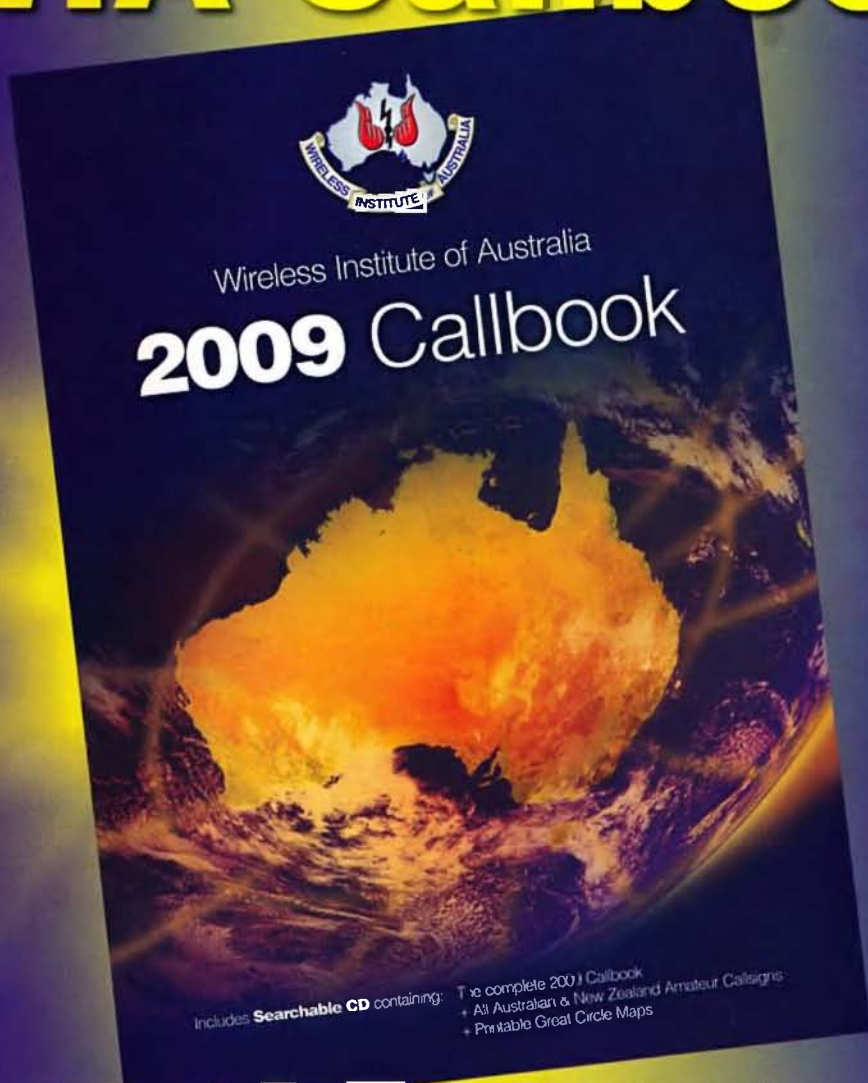
- VK1 VK1WIA: Sunday 0900 local on the Mt Ginini repeaters 146.950 and 438.050 MHz. The UHF repeater requires 123 Hz access tone and is linked to the Goulburn repeater.
- VK2 VK2WI: Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.6000, 147.000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning..
- Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
- VK3 VK1WIA: Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130, 147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
- 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 0900 local, on 1.865, 3.582, 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. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. Also in 'Realaudio' format from the VK6WIA website.
- VK7 VK7WI: 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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