

Amateur Radio

Volume 78 Numbers 1&2
January/February 2010

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the desert**



ISSN 0002-6859



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Our cover this month

Travelling in the outback without radio communications (and possibly a satellite phone) would be irresponsible. Our cover photo this month shows one reason why — it is easy to become bogged when tackling some routes. Read all about the group trip undertaken by the Blue Mountains ARC through the outback to reach Poeppel Corner in the Simpson Desert, starting on page 31.



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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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

If back issues are unavailable, 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

Peter Freeman VK3PF

A New Year begins

With our production schedule, this issue was put together commencing in early January.

Hopefully all will notice at least one significant change with this issue. Firstly, we have placed the WIA Centenary logo in the magazine, including the cover. We have changed our printer, together with the paper used and have increased the number of full colour pages by dropping the old spot-colour pages. All members of the Publications Committee are hoping that the result will be a lift in the appearance of the magazine.

There are some other changes occurring in the background with the administration associated with *Amateur Radio*. Most will not be of concern to those outside the Publications Committee.

However, it is important that all Clubs note the procedure for Club advertising: such advertising can be either an internal advertisement in the magazine or the insertion of a flyer into those magazines mailed out to WIA members and subscribers. Requests must be made through the Secretary of Publications Committee by the first day of the month prior to the publication cover date – i.e. at least one month in advance.

We are also updating some of the details in the Club Advertising policy. The revised policy should be available on the AR magazine pages of the WIA website by the time that this issue reaches readers.

Centenary celebrations

As all readers should know, 2010 marks the centenary of the formation of the first organised amateur radio body in Australia, a body which was the forebear of our WIA.

We will be giving coverage to the celebratory events throughout the year, together with a series of articles detailing a short history of the WIA – the world's oldest amateur radio organisation. In this issue, the first instalment outlines the very early years of amateur radio in Australia.

I am aware that much work is being undertaken by the WIA nationally, and I am sure that the situation will be similar with many clubs – it is probable that

Amateur Radio NSW will be very advanced with their plans. I am sure that the WIA will soon have further details available about the Annual General Meeting Weekend of Activities, to be held in Canberra over the weekend of Friday 28 to Sunday 30 May 2010. See this month's News and Comment for some details on the planned activities.

I am hoping to be able to attend the AGM Weekend of Activities, and look forward to catching up with many readers over the weekend.

Please do remember to ensure that someone in your club takes some good photographs and writes up an account of the activities undertaken by your club for submission to this magazine for publication.

Field Day season

Field Day season is upon us – in at least two meanings: Field Day contests and “hamfest” type events.

The Summer VHF/UHF Field Day is happening as I write this Editorial. Locally, conditions are flat and I am suffering lots of noise at home. But at least I am making some contacts. Coming up in March will be the John Moyle Memorial National Field Day – in the past, this event has provided a focus for many clubs to operate large portable stations and have lots of fun on the radios.

The other Field Days – the “hamfests” – are back in full swing.

Two very large events are coming up in February: Centre Victoria Radiofest and Wyong (Central Coast ARC), plus others.

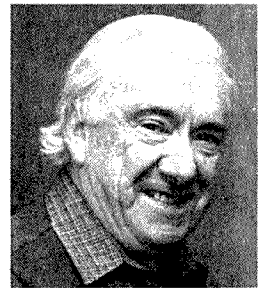
I plan to make the trip to Kyneton, but am unlikely to make Wyong – it is the day before teaching starts for 2010 and I have to deliver a lecture at 0900 Monday morning. Wyong is a little too far away to safely make it back in time for the first lecture.

These events are great places to catch up with many people, people who you may normally only catch on air. Of course, there is also the attraction of the new and pre-loved goodies that will be available for sale!

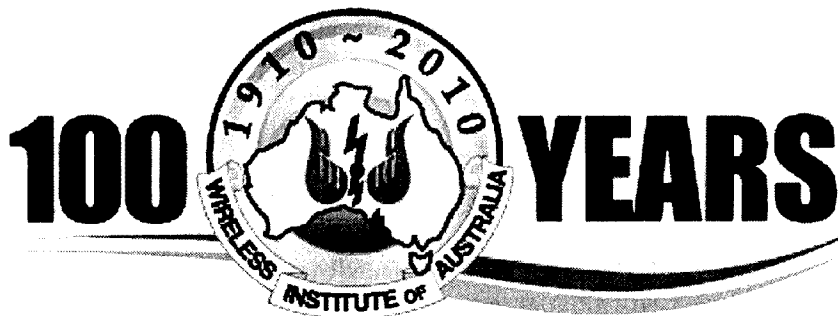
Cheers,

Peter VK3PF

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Michael Owen
VK3KI



A Very Special Year

This issue of Amateur Radio is the first issue for 2010, the WIA's Centenary Year.

This issue includes the first of a number of historical articles, and in particular a series of articles by Peter Wolfenden VK3RV.

I was reading Peter's article, and two things become very obvious. One is how new "wireless" was when the WIA was formed. The other is how much "wireless" technology has changed in that time, and how we use it.

While we are talking of the centenary of the formation of the WIA and the centenary of organised amateur radio in Australia we are really celebrating the history of radio.

Think of the extent of the changes in that time. Look at the wireless equipment and the frequencies used 100 years ago. Then look at what the radio equipment was after the Second World War. For older amateurs, it is a sobering thought. Look at what we did when we started and look at what we use today.

100 years ago everyone was an experimenter.

Today, only some radio amateurs can be described as "experimenters". While the emphasis on what radio amateurs do and the technology they use has changed, the basic concept and basic traditions of amateur radio have not changed.

So, this is a very special year. But there is one thing certain.

As we use "radio" more and more, very often without characterising something as "radio", we know that radio equipment and its usage will continue to change.

Perhaps as we celebrate the past it is a time to consider how change will affect amateur radio in the future. In our country we have already taken steps to make amateur radio more attractive to newcomers. The convergence of technologies, computers

and their software, the internet and radiocommunications is a fact of life. We cannot treat the Internet as a competitor to amateur radio. But it can be part of amateur radio.

And if we try and live in a world of amateur radio as we knew it when some of us were young, then amateur radio will die.

So, this is a special year. How is the WIA marking this year?

We are doing it in a number of ways.

As you will see from the cover of this month's *Amateur Radio*, we are using a special Centenary logo.

Throughout the year we will be publishing articles and photographs on various aspect of the history of radio and amateur radio.

We have already sent to most clubs some of our Centenary posters and Calling CQ posters.

Most are aware of the special callsign VK100WIA, and we have invited our affiliated clubs to use that callsign for three day slots between June and October. As I write this, only four slots remain!

And we will offer the WIA Centenary Award for those contacting VK100WIA as required by the rules for the award.

We have also asked each club to devise and conduct a special event celebrating the Centenary and promoting amateur radio in their community. I hope that during the year I will be able to attend

a number of such events across the country.

I suggest that you visit the WIA website and look at the Centenary pages, which set out information on the Centenary and Centenary activities, makes available for download the Centenary logo, has the rules of the WIA Centenary Award, and has the VK100WIA Centenary roster as well as the VK100WIA Online logbook and details of the Centenary merchandise.

Our principal activity for the year will be the activities associated with our Annual General Meeting followed by the Open Forum in Canberra from Friday 29 to Sunday 31 May.

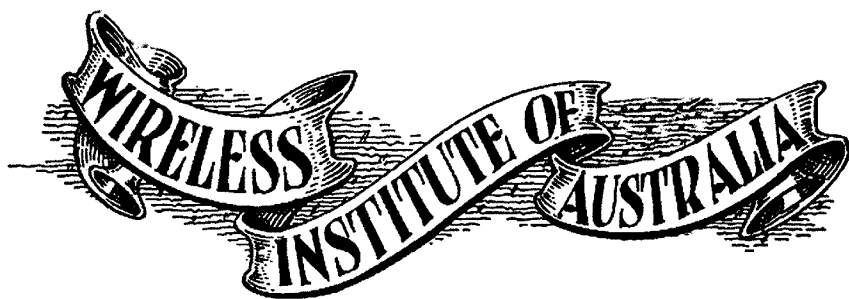
The News page of this month's *Amateur Radio* is largely devoted to the WIA's formal release, announcing the venue, the main activities and the arrangements for those wishing to participate.

The IARU Region 3 Directors will be holding their 2010 meeting in Canberra immediately before the AGM weekend, and so will participate in the Centenary activities and the Dinner.

IARU President Tim Ellam will participate, IARU Region 1 will also be represented, and NZART will be sending two representatives.

The WIA Board is hoping that as many amateurs as possible will participate in one or more of the special events to mark 2010, so it does truly become a very special year.

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WIA Centenary Celebration - Principal event

Final planning is well advanced for the interesting events and activities to occur in the national capital, Canberra from Friday 28 to Sunday 30 May, as part of the year-long WIA Centenary celebration.

The highlights will be a series of presentations on the early days of radio and on the Saturday evening, the Centenary Dinner to be attended by both overseas and local dignitaries is promising to be a truly memorable occasion.

The start of the program includes the Friday evening gathering at the Black Mountain Tower Restaurant for a meal – a booking is required (see below). This venue gives an excellent view of Canberra and surrounds.

The main venue for the three days is the Rydges Lakeside Canberra Hotel, on London Circuit, Canberra City. Accommodation there can be booked now by phoning the hotel and mentioning the 'WIA Centenary Convention' to receive a special rate of \$150 a night.

A wide range of other accommodation is also available in Canberra such as caravan parks, on site caravans and motel units.

The WIA Annual General Meeting and Forum will be held at Rydges Lakeside on the Saturday morning, and this will be followed by the "The WIA Centenary through word, picture, and artefacts" which is shaping up to be a real highlight.

During the day there will be a series of presentations on the early days of radio and amateur radio in Australia and how it has advanced to its present form. Also operating at Rydges Lakeside on the three days will be the special station VK100WIA in conjunction with the WIA Centenary Award.

Registration on-line

Those wishing to participate in the program of events will need to register. The registration will be on-line via the Centenary section of the WIA website. The Centenary Weekend registration page will be available early February.

A registration fee of \$75 per person will be charged for those attending the weekend activities (other than just the

AGM and Open Forum) and includes a morning tea, a lunch and an afternoon tea, plus a valuable registration pack.

To attend the Centenary Dinner at Rydges Lakeside, payment will need to be made at time of registration. For those wanting to be part of the get together dinner at the Black Mountain Tower Restaurant on Friday details and booking arrangements will be posted on Centenary Weekend registration page on the WIA website. A guest speaker will be part of the Friday evening activities. On Sunday there will have a chance to visit some of the many interesting sights of Canberra before the BBQ where there will be a public display of amateur radio.

More details about the Centenary program in Canberra 28-30 May will appear in the March edition of Amateur Radio magazine, the WIA website news and on the weekly WIA national news broadcast VK1WI.

VK5ALE Lower Eyre Peninsula ARC clubrooms destroyed

Michael Carey VK5ZEA reported sad news from Port Lincoln on 24 December 2009. The day before a bush fire threatened the outskirts of Port Lincoln during a Catastrophic Fire danger day (FDI 100+).

Strong, hot north winds made fighting the fire impossible and a wind change made things a lot worse. 12 homes were lost, countless sheds and rural properties were destroyed including the Lower Eyre Peninsula ARC Clubrooms.

Thankfully, no lives were lost.



Part of the wreckage at Port Lincoln.

A walk through video is at <http://www.wia.org.au/newsevents/news/2009/20091224-1/index.php>

Radio Operator Recognition Day for February 2010

February 7, 2010 is the first anniversary of the disastrous fires in Victoria where 13 major fires burnt 352,686 hectares. 173 lives were lost, over 2000 homes destroyed, countless stock killed, kilometres of fences, sheds and wildlife lost.

The fires continued to burn in the area until March, when fire fighting efforts along with cooler weather and rain allowed the fires to be brought under control.

The Yarra Valley Amateur Radio Group members were impacted significantly by the fires. Members' homes were lost, the club room grounds were burnt and the club lost its communications trailer. Fortunately the club rooms were saved by a neighbour.

Amateur Radio played a significant role in providing communications operators to emergency organisations post the fires, providing 1000s of hours of operating along with many other technical services. This is an opportunity for all amateurs to recognise the service given.

For the first anniversary of the 2009 February fires, the Yarra Valley Amateur Radio Group have applied for and received a special callsign in recognition of the services radio operators provided during and after the fires. This callsign is V13KIAH and will operate at Kinglake, one of the most significantly damaged areas, on February 7, 2010. Radio amateurs and friends are invited to visit the station on the day. 'Kiah' is an Australian Aboriginal word meaning

"beautiful place". The club will issue a special QSL card for contacts made on the day. The plan is to run to a schedule of frequencies over the day.

The Yarra Valley Amateur Radio Group would like to invite all amateurs to participate in this event, where propagation allows, by calling in over the day and evening or visiting the station during its operations, in particular amateurs from the bushfire affected areas.

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Bias and protection circuit for amplifier protection

Dale Hughes VK1DSH

During development of a 3 cm transverter an unfortunate incident occurred which caused the destruction of a microwave power amplifier module through failure of its negative gate bias voltage and subsequent over-current operation.

The following notes describe a circuit which provides the appropriate drain (positive) and gate bias (negative) voltages suitably interlocked and current limited to prevent inadvertent destruction of sensitive devices. The circuit also provides power to drive a 'Transco' 24 volt RF relay, a type which is commonly used in microwave equipment.

Circuit description

It is assumed that the circuit, as a whole, operates from a (nominally) 12 volt supply, for example, a battery.

Starting with the negative gate bias voltage; this is generated by a DC/DC converter which produces +/- 12 volt outputs. The negative output is regulated down to the required voltage; approximately -2.7 volts in this case. U3, a LM337 three-terminal regulator is used

as it provides a convenient way to adjust the output voltage and, more importantly, provides a low impedance source for the gate bias voltage. The negative bias is applied to the amplifier whenever the transverter is powered.

An interlock circuit using a LM311 comparator (U2) protects the amplifier in the event the gate bias is not available. The operation of this part of the circuit is described later.

The dual polarity output of the DC/DC converter provides a convenient source of 24 volts to power the microwave coaxial relay which is switched via a FET (Q4) and opto-coupler (U4). Only when the emitter of U4 is energised is power available to the T/R relay and this happens when the T/R_RLY line is pulled to ground via the external sequencer circuitry.

Voltage supplied to the microwave power amplifier is regulated down to 5 volts (or any other required level) by integrated circuit U1. This device is a SGS-Thomson regulator housed in a five pin TO-220 package which is bolted directly to the chassis. Like the more common three terminal regulators, the output voltage can be adjusted by selecting two resistors. In addition the maximum output current can be set by connecting a suitable current sense resistor (R7) between the output and current limit pins of the regulator. In the case of the prototype, two 1.5 ohm resistors connected in parallel were used, resulting in a maximum current limited output of just over 400 mA. The current limit is very effective and should protect the amplifier against failure caused by exceeding its maximum current rating.

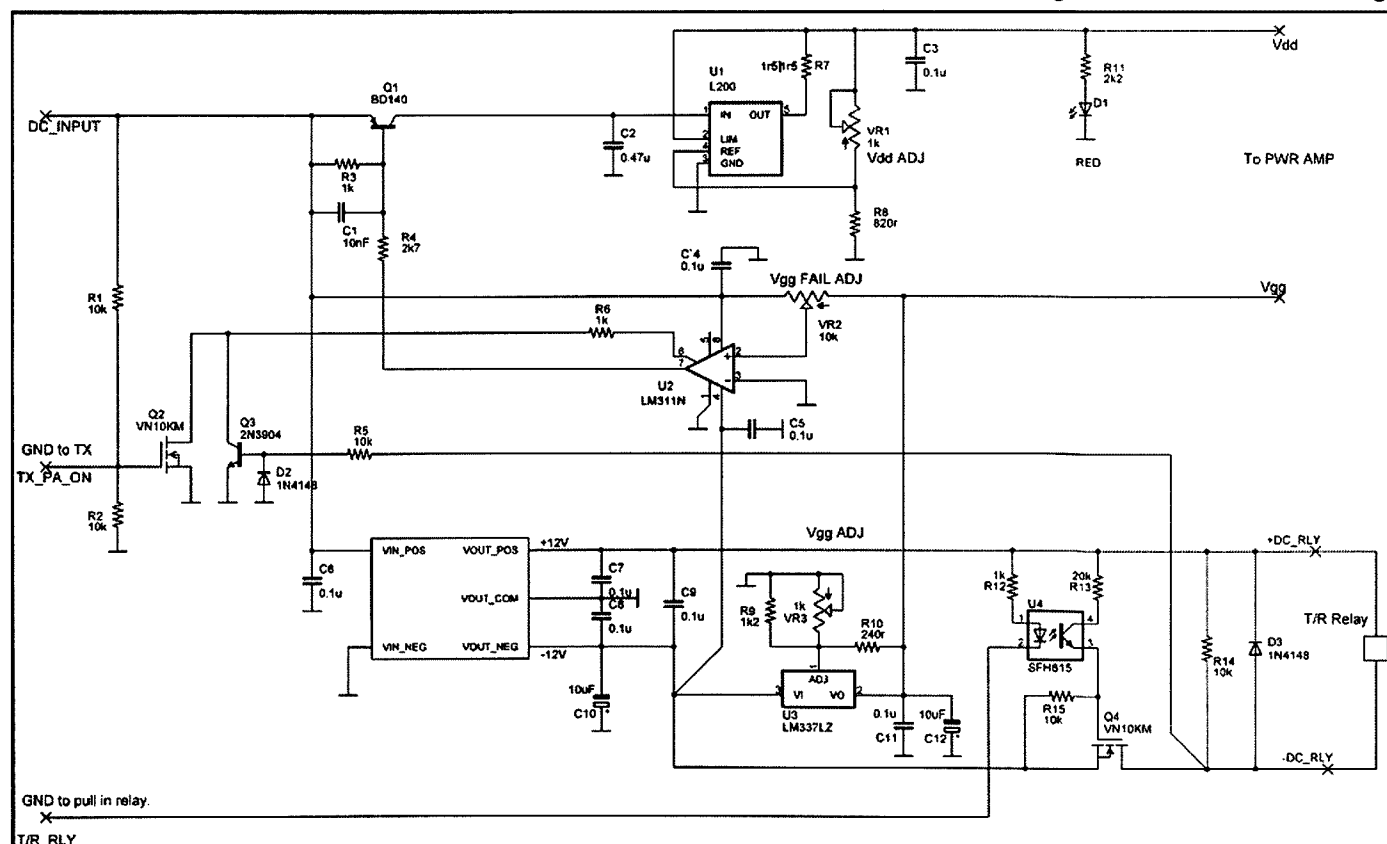


Figure 1: Schematic diagram of the protected power supply. In normal use the T/R_RLY input is asserted before the TX_PA_ON input. The timing is controlled by an external sequencer circuit.

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See reference 2 for more details of the L200 regulator.

Power to the regulator (U1), and ultimately the amplifier, is switched through a transistor which can only conduct when its base terminal is pulled down by the output of comparator U2. This will only happen when three conditions are met:

- The negative gate bias voltage must be present.
- The strobe pin (pin 6) of U2 is open circuit, which enables the comparator output. This can only occur in transmit mode.
- Power must be provided to the T/R relay so that the amplifier is switched through to the antenna (or other appropriate load).

The comparator inputs are arranged so that the negative bias voltage pulls the voltage on the positive input (pin 2) of the comparator below the negative input (pin 3); when this is true and the strobe input is not pulled to ground via either Q2 or Q3, the comparator output will go to approximately ground potential and switch on Q1, allowing power to flow to U1. The trip level of the comparator can be adjusted by potentiometer VR2. Failure of either the regulated or unregulated negative supply will cause the comparator to inhibit the drain voltage supply so that damage to the connected amplifier will be avoided.

Transistors Q2 and Q3 are in a 'wired OR' configuration. If either transistor is turned on, the comparator output is disabled via the strobe input. When transmit mode is selected, the T/R relay is energised and the correct negative gate bias voltage is available, transistors Q2 and Q3 are turned off, enabling the comparator strobe input and allowing power to be supplied to the power amplifier. When the transverter is in receive mode, transistors Q2 and Q3 are turned on which grounds the comparator strobe input, preventing power being supplied to the amplifier.

Condition 3 prevents power being applied if the T/R relay is not energised. Ideally this would be done through an additional set of relay contacts, but this was not available on the relay on hand, so the interlock is based on the voltage applied to the relay coil. When power is applied to the relay, the voltage at the base of Q3 goes from positive to negative, switching off Q3 and allowing

the comparator output to be active.

Correct timing of the switching sequence is handled by an external micro-controller which is used to control all aspects to the transverter. A 50 millisecond time interval between the two inputs to the power supply ensures that the relay has time to switch before power is applied to the amplifier. See reference 1 for details of the sequencer.

Components and construction

Except for the L200 regulator, most of the components are readily available. The L200 regulator is a comparatively uncommon, but surprisingly inexpensive part and it can be purchased from Farnell Electronics. The DC-DC converter needs to supply sufficient power to drive the relay and the device used in the prototype delivered +/- 12 volts at 250 mA.

The prototype unit was built on 'veroboard', with U1 and Q1 bolted to the chassis which acts as a heat sink. No particular difficulties should be expected as there are no high speed or high frequency issues to contend with. Most of the components can be substituted for whatever suitable components the constructor has on hand. The various bias voltages and current limit level can be adjusted to suit the requirements of the particular amplifier being used.

Voltage levels and the comparator trip point should be adjusted using a dummy load instead of the actual amplifier module. The current limit can be checked by measuring the output current when a short circuit is applied to the regulator output. Note that the L200 regulator has a maximum current rating of 2 amps when mounted on a suitable heat sink.

Conclusion

A circuit which provides adjustable and protected drain and gate bias supplies has been described. While the circuit is rather more complex than a standard supply, the protection provided against loss of gate bias or excessive current consumption will significantly reduce the possibility of damaging or destroying expensive and hard to get components.

References

1. Hughes, D.E. 'Transverter Controller'. *Amateur Radio*, January/February 2008, Volume 76, No 1 & 2.
2. 'A designer's guide to the L200 voltage regulator', SGS-Thompson Microelectronics application note.

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The Haverford seven metre fibreglass telescopic pole

Ernie Walls VK3FM

Recently I came across a range of fibreglass telescopic poles marketed by Haverford Pty. Ltd., a Sydney based company better known for its range of fishing and pet accessories rather than anything that was likely to be of interest to an amateur radio operator.

The poles ranged in length from three metres to ten metres, in both heavy duty and standard design, with a minimum diameter ranging from 2 mm right up to 54 mm.

They seemed to be of high quality, and reasonably priced, and I, at least, had never noted an Australian source for this type of item before.

OK, very interesting, but of what use might one actually be to me?

That thought crossed my mind a number of times; in the end, I decided to purchase one, essentially, to 'have a look at what it might offer' to an amateur – in mind was that it just might be a useful dipole end-mast, maybe even a centre mast for the same type of antenna.

At a delivered cost under \$40, I figured I had not a lot to lose!

The seven metre heavy duty pole was ordered, and arrived two days later, well wrapped for its journey through the Australian logistics delivery system. Measuring just over a metre in length, and about 55 mm diameter, the circular package arrived in perfect condition.

I opened the package and removed the bottom stopper. Beware – the critter is very slippery – slippery poles sections, each about a metre in length, slid out of the largest pole, and went everywhere. Not a problem; shortly I had recovered my equilibrium, and began to assemble it. This took very little time, or effort, and soon I had an interlocking pole of some seven metres length.

It looked fragile, but was in fact remarkably stable and flexible. I was determined to at least 'get the thing in the air', at one end of a homemade dipole. It did need guying, which was achieved with light nylon twine, and this had the effect of keeping the pole straight and, it seemed, relatively stable.

And one end of my 40/80 metre

inverted vee was seven metres off the ground.

Wonderful.

I intended to give it an 'in situ' test before I operated portable from VK2, given that it did seem, to me at least, that the pole might very well do this job for me a whole lot easier than the 25 mm piece of water pipe currently used – with less weight, more flexibility, and the option of a variable height if thought beneficial.

I did, and it was.

Is it the discovery of ham radio's latest 'big thing' – no, but as a lightweight, portable, flexible use mast, it turned out to be of significant benefit to my portable antenna set up, and well worth the expense. And for amateurs wanting to build a quad antenna, or one of the variety of 'umbrella' type antennas, or, I imagine, any one of a number of amateur projects requiring a fully portable, extendable mast, one or several of these poles could be just what you need.

At the very least, have a look at what is on offer.

If you Google 'Haverford' you should find it easily enough.

Haverfords also sell, for around eight or so dollars, a 'beach spike which looks like a very handy way of mounting your pole in softer soil. It is shown in the inset picture below.

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Editor's note

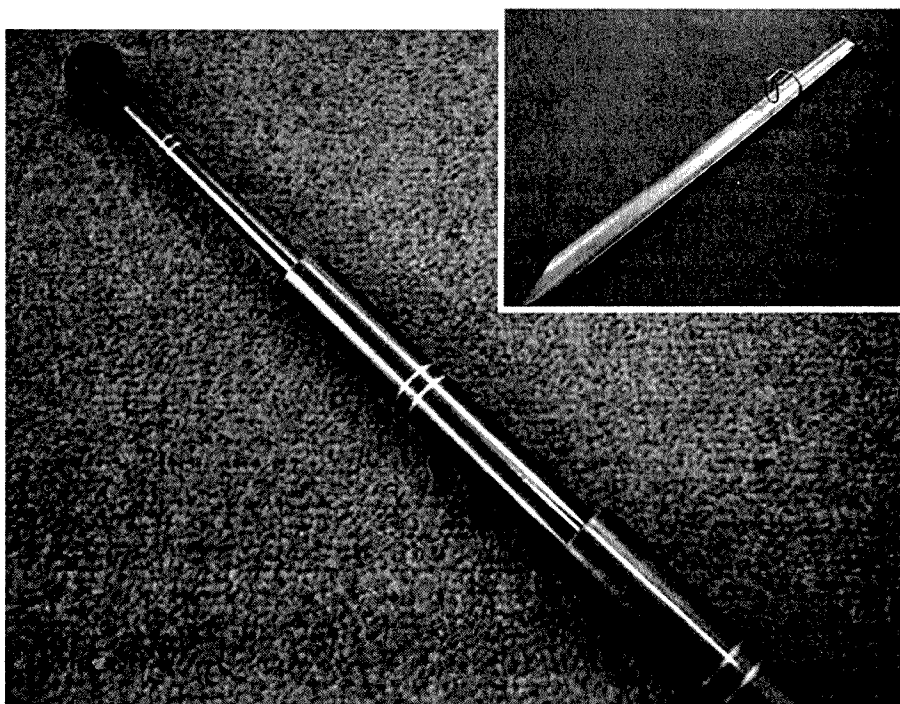
These poles are truly ubiquitous, ending up in places not envisaged by the originators...

On page 33 of this issue is a photograph of two of the squid poles mounted on a DXing vehicle about 750 km from the nearest salt water jetty.

Desert 4WDers use them to fly a flag, called a sand flag, about 3 metres above the bull bar so that vehicles can be seen a lot earlier when cresting rises, a little like the flags on electric scooters.

They are frequently used to carry mock Tibetan prayer flags as an advertising medium.

An excellent reference on using squid poles for antennas can be found on the VK7JJ web pages <http://perite.com/vk7jj/squidpoles.htm>



Using RG58 coaxial crimp connectors with RG6 cable

Garth Jenkinson VK3BBK

RG6 (75 Ω) coaxial cable is readily and cheaply available as it is commonly used for domestic cable and satellite TV.

RG6 TYPICALLY HAS 12 to 15 dB per 30 metres less loss than RG58A or RG58C (50 Ω) cable. For some applications using RG6 in place of RG58 can provide great benefit. Consequential 50 Ω -75 Ω mismatch and SWR degradation may be far less important than the greatly reduced cable loss.

Crimp-type coaxial connectors for RG58 cables are readily obtainable for BNC, N, PL259, TNC and others. Unfortunately for larger cable sizes such as RG6 it is becoming difficult to find crimp connectors as they are no longer being stocked by popular parts suppliers. However RG58 crimp connectors can be satisfactorily used on RG6 and some other cables using the following procedure.

1. Remove the outer sheath of the RG6 cable for a total length equal to that required by the connector *plus the length of the metal crimping sleeve*.

2. Remove any burrs from the crimping sleeve and slide it onto the RG6 cable over all its braid and aluminium foil until the sleeve touches the remaining outer sheath.

3. Slide a length of heat-shrink tubing over and beyond the crimping sleeve. It must be large enough to slide back over the sleeve once crimped, and long enough to cover the finally-re-exposed screen and sleeve.

4. Unplait the screening wires and fold them closely over the crimping sleeve.

5. Cut the aluminium screening foil down to the crimping sleeve with fine scissors (sharp knives tend to tear the foil) to form three or four lengthwise strips. Fold these strips over the braid and sleeve. Note that some RG6 cables have an insulating layer on the inside of the foil. If yours has, you must fold the foil lengthwise such that the insulating layer is on the inside. The metallic side must contact both the plug body and sleeve before crimping (See Photo 1).

6. Remove the inner conductor insulation down to within about 1 mm from the crimping sleeve.

7. Recover a piece of inner conductor

insulation from an RG58 offcut and trim it to the same length as would be required if assembling the connector onto RG58 cable. Gently twist it onto the RG6 solid inner conductor until it meets the remaining RG6 insulation.

8. Remove any burr from the body of the connector.

9. After soldering the centre pin onto the RG6 centre conductor, use fine sidecutters to very carefully remove melted oversize edges of the inner

insulation so that the pin and insulation will slide smoothly into the connector. Then complete the connector assembly exactly as for RG58. See Photo 2 for a view of the cable and a BNC connector ready for final assembly and crimping.

10. After crimping the sleeve onto the connector, use a section of the removed RG6 outer jacket to re-cover the exposed screen, then slide the heatshrink tubing over it and the crimped sleeve, and shrink it.



Photo 1: RG6 cable which has insulation on the inner surface of the foil, with the foil twisted to ensure electrical connection.

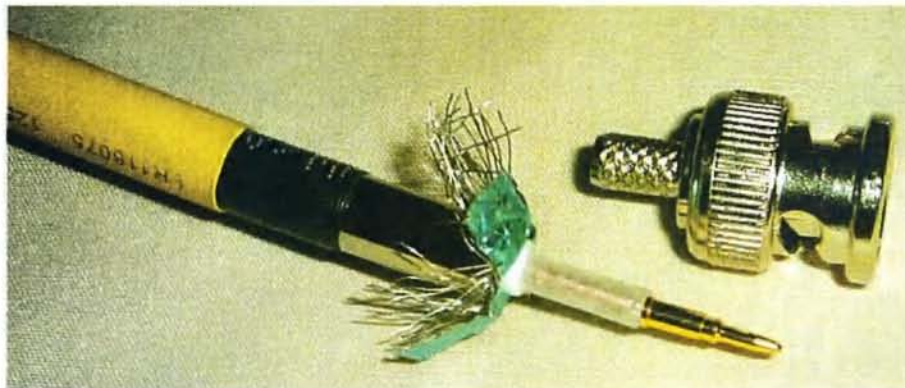


Photo 2: A view of a BNC for RG58 and RG6 cable, shortly prior to final assembly and crimping.

Part 2 of 3

A complete 8 MHz IF System for USB, LSB and CW for a HF Transceiver

Peter Wathen VK3EPW

This is the second of three articles by the author describing the workings and construction of a complete HF transceiver IF system. As he notes in the article, it is the part of a HF transceiver that he is currently using himself, covering the 80 metre, 40 metre, 30 metre and 20 metre amateur bands for both SSB and CW operation. The article is presented in three parts:

- 1 The BFO or carrier oscillator module. (December 2009 AR).
- 2 The crystal filter module (mounted on the IF board). (This issue).
- 3 The complete IF module, RF to speaker, microphone to SSB, or CW send to RF carrier generation.

Crystal filter module

This is part two of the IF system. It describes the construction of the crystal filter module. I have attached two circuits for the crystal filter module; refer to Figures 1 and 2.

The first circuit is a filter that is in use at the time of writing, which is a seven pole crystal filter. The second circuit is an eight pole crystal filter that I am constructing as I write this article; it makes it much easier to describe the construction and adjustment of the circuit.

The eight pole filter will become the replacement for the seven pole filter; it is an upgrade as it should have a sharper response curve which should mean better attenuation of the unwanted side band as well as better attenuation of close unwanted signals. Refer Figures 3 and 4.

Both filters use 8.000 MHz crystals available from RS Components. I used RS 472-0253 in the seven pole filter, which I see are now discontinued, and replaced with RS 547-6216. I will be using these in the eight pole filter.

How did I arrive at the design?

I looked through some older ARRL Handbooks that I own. The most attractive SSB filter shown was a type called a 'ladder filter'.

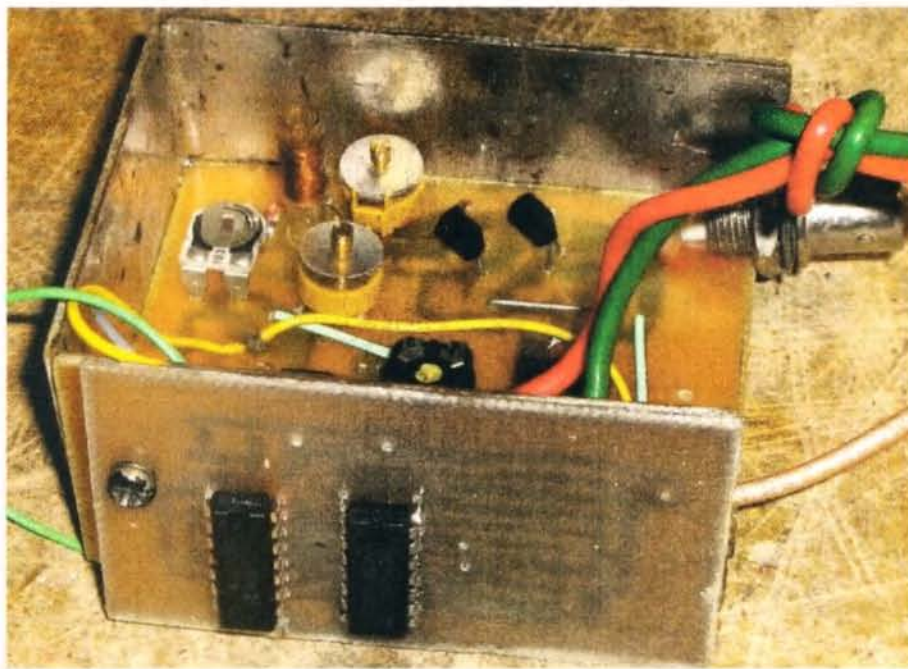


Photo 1 (Top right): The test oscillator, top side.

Photo 2 (lower right): The test oscillator, bottom side.

While the information about the filters in the Handbooks was very thin, it looked attractive as it used a quantity of the same crystals to make the filter, making it possible to use some of the common 'off the shelf', cheaper crystals. The Handbooks gave examples of ladder filters made by other amateurs, which used very different capacitance values.

No real design information was presented in the Handbooks other than the mention of impedance being variable depending on the crystals and bandwidth being inversely proportional to capacitance values used in the filter.

Test equipment first

Not being an engineer and having no design information, other than basic parameters, I needed to devise a way to test and evaluate filter performance. The best way I know of to do that is to use a sweep oscillator to sweep across the filter frequency while being synchronised to an oscilloscope X axis input. The display on the oscilloscope will be frequency across the X (horizontal) axis and amplitude through the Y (vertical) axis.

The sweep oscillator is an adjustment aid; it shows the result of your adjustments

in slow but real time. When the filter has been adjusted correctly with the sweep oscillator you can do an accurate plot using an accurate frequency source (signal generator) and a spectrum analyser or oscilloscope. The reason for the accurate plot of the filter is simply to determine what frequencies are needed for the USB, LSB and CW beat frequency oscillators.

I have attached a circuit of the sweep generator I used, refer Figures 5 and 6. It was put together on two PCBs, the RF section, saw tooth amplifier and regulator being on one PC board put together in a PCB box type construction and the digital saw tooth generator PCB screwed to the side of the PCB box. I used both through-hole and surface mount components, with most components coming from my junk box.

This was going to be a one-time only circuit which I wanted to spend as little money on as possible. A couple of photos of the sweep oscillator are included, refer Photos 1 and 2.

A brief description of the sweep oscillator circuit

First, the RF oscillator. I used a BC547

in a Colpitts configuration. The feedback capacitors are formed by stacking two 220 pF SMT capacitors on top of each other to make the 440 pF shown on the circuit.

Surface mount resistors and capacitors make it very easy to save space by soldering one component down to the board then soldering another of the same size on top. I have used up to three high but after that it is time to spread them out.

The inductor was made with 0.25 mm enamelled copper wire, 29 turns wound on the glass from a 5AG fuse. It is about a 5 mm outside diameter, long glass fuse. The metal end caps of the fuse are removed by heating with a soldering iron and removing them with pliers. The glass section is then used as the former for the inductor. The turns are held in place with epoxy resin. I also used epoxy to glue the glass former to the circuit board. Refer Photo 1 for a view of the inductor.

Two trimmer capacitors were used, one to provide a main tune and one to provide a fine tune. The oscillator sweep function was provided by a high voltage zener diode, 15 to 33 V 400 mW; you can

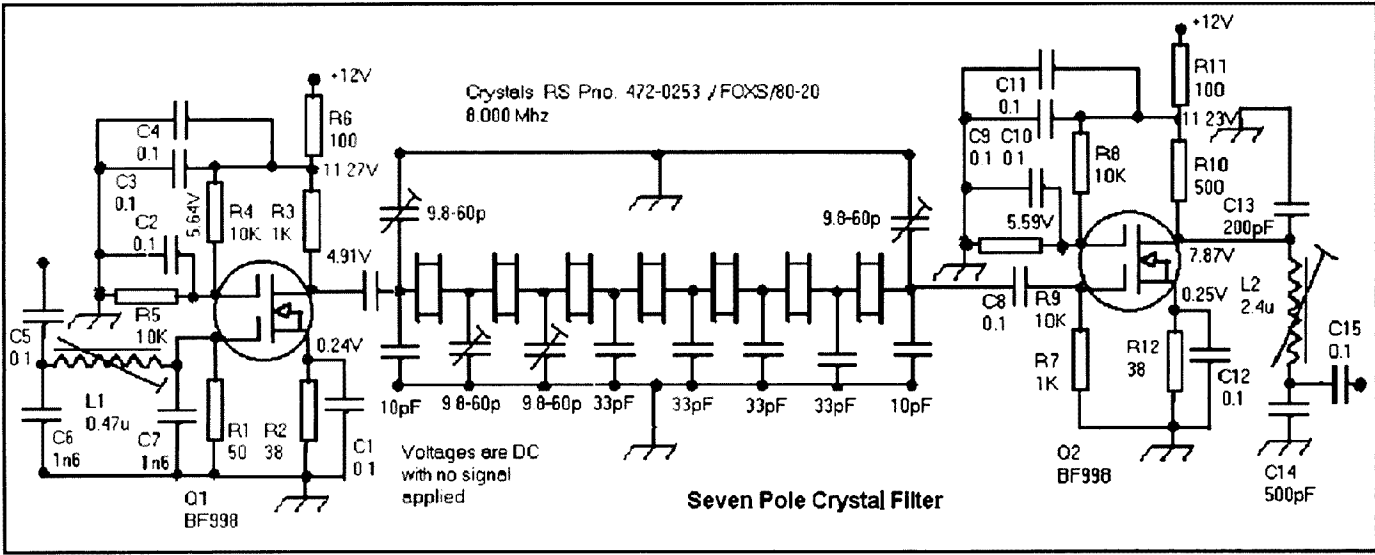


Figure 1: Seven Pole Crystal Filter

Note: Filter was adjusted first with a simple sweep test oscillator around 20 kHz sweep width and sweep rate around 1 Hz. Oscilloscope used as a display with sweep oscillator driving X axis and filter output driving Y axis. After initial adjustment, I used a PLL generator to draw a step by step graph in 100 Hz steps using a spectrum Analyser to dB output levels.

Test Oscillator output	200 mV PP	Test Oscillator output impedance = 50 ohm
Drain Q1	1.4 V PP	
Crystal side C8	1.3 V PP	Output of filter module loaded with 50 ohm
Drain Q2	1.1 V PP	
Output	700 mV PP	AC measurements made with test oscillator set to filter minimum attenuation frequency
Gain in dB	10.88 dB	Input and output impedance of filter module is 50 ohms.

also use one watt zener diodes; the higher the voltage the lower the capacitance change and the lower the power rating the lower the capacitance. I use them in place of varicaps.

The output of the transistor oscillator is taken from the collector 100 Ohm resistor through a 0.02 uF capacitor and is buffered by an MPF102 JFET amplifier, the output taken from its source, roughly 50 ohms out.

The saw tooth wave form used to drive the RF sweep and the oscilloscope X axis input is generated from a separate circuit board using two CMOS ICs. A 74HC00 is used as an RC oscillator with the fourth gate used as a buffer; the output of the oscillator is then fed to a binary counter IC, CMOS, MC14020/4020B. The top eight bits of the 4020 counter are fed to a simple resistive network digital to analog converter.

The resistor network is called a 2R network. I like the 2R network when using surface mount resistors because it uses lots of the same value. The 2R value I used was 10 k which meant that the R value could be made by stacking two SMT 10 k resistors on top of each other (5 k); it is almost like cheating.

The output of the resistor network is

then filtered with a 0.1 uF capacitor to ground and fed to the op amp inverting input through a 56 k resistor. The op amp has a 50 k trimpot (VR3) attached to the non inverting input. The trimpot is used to adjust the output saw tooth wave form to be centered across the output voltage range of the op amp. The wave form should not be clipped top or bottom – this is very important.

The output of the op amp is fed to two trimpots, one going to the zener/varicap in the RF oscillator circuit. It becomes the sweep width (frequency) adjustment; and the other trimpot wiper is connected through a cable to the oscilloscope X axis input; this trimpot is then used as a sweep width control for the oscilloscope.

As you can see from Photos 1 and 2, the sweep oscillator was changed in design quite a few times on the one PCB. It was built as a low cost one time only piece of test equipment with components from the junk box. Note: It is a very slow saw tooth ramp and needs to be DC coupled to the oscilloscope. Make sure your oscilloscope has its X channel set to DC. If it is correct the sweep will look continual. As soon as it finishes to the right, it should be starting again on the left, if it is not doing that either the wave

form is clipped or it is not DC coupled.

Note: The LF353 op amp was just one I had lying around and almost any general purpose op amp will do here, TL082/TL072.....

Note: If you are keen you can add more resistors to the 2R network and attach the other successive outputs, up to 11 bits, as it will give a much finer sweep.

The crystal filter module circuit description

At last, the filter circuit description.

When I first experimented with the ladder crystal filter design I quickly found out that the books were correct in saying that the input and output capacitances of the filter network were critical and that they needed to be fed from a resistive load; that is why I have designed the crystal filter as a module with a MOSFET amplifier at both inputs and outputs; they isolate the crystal filter network and feed it with a resistive termination at both input and output and also provide a little gain at the same time.

The input to the IF system needed to be 50 Ohms, that enabled it to be connected to other modules in the transceiver through a coax cable and also enabled it to match the impedance of the diode

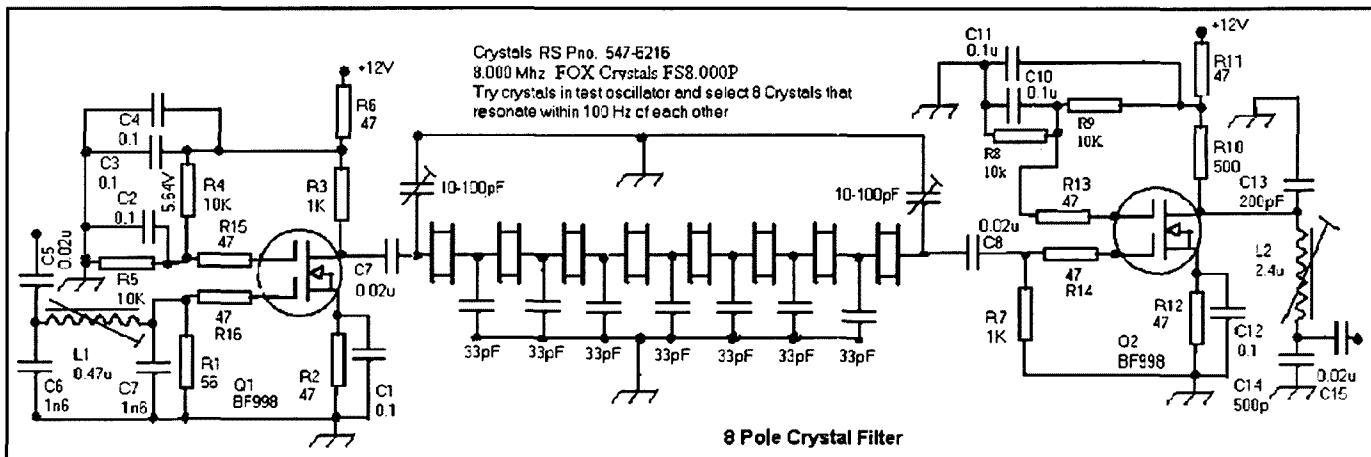


Figure 2: 8 Pole crystal filter circuit

Note: Filter was adjusted first with a simple sweep test oscillator around 20 kHz sweep width and sweep rate around 1 Hz. Oscilloscope used as a display with sweep oscillator driving X axis and filter output driving Y axis.

Test Oscillator output	110 mV	Test Oscillator output impedance = 50 ohms
Output	1.1 V PP	Output of filter module loaded with 50 ohms
Gain in dB	20 dB	Input and output impedance of filter module is 50 ohms.
AC measurements made with test oscillator set to filter minimum attenuation frequency		
All capacitors 0805 or 1206 surface mount		
All resistors 0805 or 1206 surface mount		
L1, L2 are Toko inductors (292CNS-T1044Z) available through Eaton Electronics in bulk quantities.		

ring mixer I used in the front end of the transceiver. The input to the filter module is first fed to an 8 MHz Pi network, 50 Ohms in and out. The output of the Pi network is terminated with a 56 Ohm resistor which also serves as the G1 resistor for the MOSFET input amplifier. Gate 1 of the MOSFET is inherently very high impedance so terminating it with a 56 Ohm resistor effectively sets the G1 impedance to 56 Ohms.

Designing the circuit this way has a few benefits. First the impedance can be set by the resistor on G1. Secondly by using

56 Ohms it allows for stronger signal handling by G1 as lower impedance means lower voltages and thirdly it lowers the gain of the stage; this is a good thing as the amplifier is meant to be a low noise, high signal handling impedance converter (50 Ohm input to 1 kOhm output for the ladder filter network). G2 is fed with a DC voltage and is used to control the gain (bias) of the amplifier. The output of the MOSFET amplifier is taken from the drain, it has a 1 kOhm resistor to provide a load; it makes a resistive 1 kOhm load to the input of the crystal filter network.

1 kOhm resistor is used to set the impedance and, again, also provide a nice resistive load for the crystal filter network.

The MOSFET output amplifier has a 500 Ohm (two 1 kOhm resistors in parallel) resistor in the drain circuit as a load, the drain output being fed via a coupling capacitor to a Pi network which is used as an impedance converter, 500 Ohms at the drain side and 50 Ohms at the output. The crystal filter network is a ladder network as shown in the ARRL Handbook; it has the crystals in series with each other and a capacitor to ground at each junction. The values that I arrived at for the particular crystals used was 33 pF. The terminating capacitors are variable 10-100 pF and are used to adjust the shape of the filter; they are critical (I used trimmer capacitors from Jaycar).

The output of the crystal filter network is terminated with a 1 kOhm resistor and fed to G1 of the MOSFET output amplifier; again, as the input impedance of the MOSFET G1 is very high, the

Note: Not all crystals are the same and not just any crystal will work in this circuit. To select crystals for the filter, I set up an oscillator. I used the sweep oscillator with the input coupling capacitor, 33 pF, lifted and the crystals tacked between the open end of the

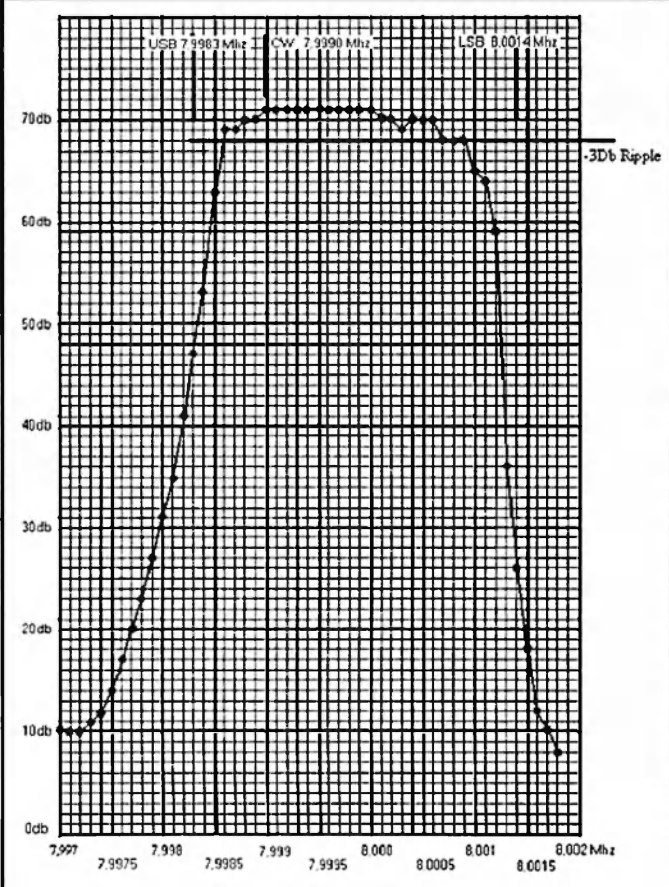


Figure 3: 8 pole filter plot
3 dB bandwidth 2300 Hz

Oscillator frequencies for: CW 7.9990: MHz
USB 7.9983 MHz LSB 8.0014 MHz

This manual plot of an 8 pole crystal filter using 8 MHz crystals from RS Components PN. 547-6216. Manufacturer's Part No. FS8.000P Fox Crystals

I used the Sweep Oscillator with its 33 pF coupling capacitor lifted to test the frequency of each crystal, sticking masking tape (cut small) with the frequency written on to each crystal.

The closest 8 crystals were selected for the filter. I placed them in ascending order from the input side.

Frequencies were all within 100 Hz in the crystals I selected. 7999536, 7999540, 7999544, 7999555, 7999560, 7999573, 7999575, 7999579 (all Hz) were the frequencies of the crystals used in this filter.

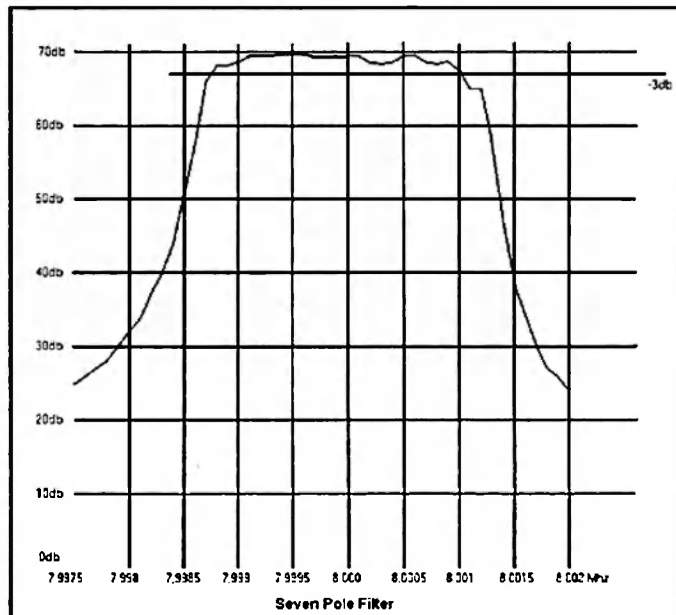


Figure 4: 7 pole filter plot.
3 dB bandwidth 2300 Hz

Oscillator frequencies for: CW 7.9990 MHz; USB 7.9983 MHz; LSB 8.0014 MHz

This manual plot of a seven pole crystal filter using 8.0000 MHz crystals from RS Components PN. 472-0253. FOXS/080-20.

Sold in packs of five. 2 packs were bought, then each crystal was placed one by one into a Colpitts transistor oscillator with 33 pF across the crystal and 33 pF feed to the base of the transistor.

Feedback caps were 440 pF.

The closest seven crystals were then selected for the filter.

coupling cap and ground. Give each crystal five minutes to settle then note its frequency, label each crystal and sort them out. The crystals I used all were within 100 Hz of each other and I placed them in the circuit in ascending order. I have no idea if that has anything good going for it, it is simply what I did.

Adjustment of the filter

The first thing to do is to get the sweep Generator operating at 8 MHz, set the fine tune trimmer capacitor to 50% and adjust the sweep frequency width trimpot to full, that is, full saw tooth voltage on the zener diode or varicap, which ever you used.

Note: Use a spectrum analyser or an accurate radio to tune the oscillator as it will be sweeping and a frequency meter will be useless.

Connect a coax cable from the output of the sweep oscillator (RF) to the input of the filter module. Connect the output of the filter module to the Y input of your oscilloscope; at this point leave the oscilloscope in normal mode. If the output is near 8 MHz you should be able to see an 8 MHz RF trace pulsing in amplitude; either way adjust the main tuning trimmer capacitor very, very slowly until you see the RF envelope come up in amplitude. Adjust your vertical sensitivity (oscilloscope) to get a

decent size trace on the oscilloscope and then adjust the input Pi network inductor (filter module) for a peak in amplitude. Next adjust the output Pi network (filter module) for a peak in amplitude.

Connect the saw tooth output from the trimpot on the sweep oscillator module to the X axis input of your oscilloscope, and set the oscilloscope up for external sweep, DC Coupling. You should now have a very slow sweep across the face of the oscilloscope. Adjust the X axis trimpot of the sweep generator to get a full sweep; you will probably have to adjust your horizontal sweep position to centre the sweep. If you adjusted the RF output of the sweep oscillator correctly you should now have an RF envelope on the screen. Adjust the fine tune trimmer capacitor (sweep oscillator) to centre the envelope. Adjust the two trimmer capacitors in the filter module to get the maximum RF output first then adjust for the cleanest envelope shape, that is, the lowest size ripple.

That is the adjustment done. Take away the sweep oscillator, and now use an accurate RF signal generator and a spectrum analyser (or receiver if you have one with an accurate S meter, remember this is only a relative measurement to get the shape of the filter. I used 100 Hz step sizes from my

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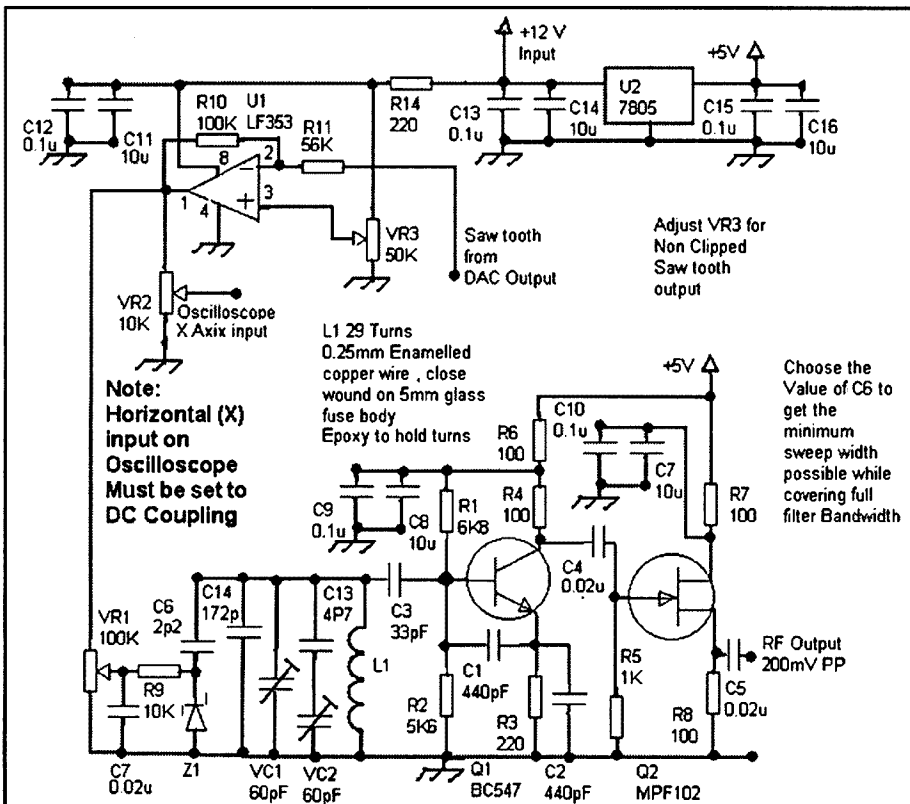


Figure 5: Test sweep oscillator circuit.

signal generator to manually do the plot on some graph paper. Hopefully after all is said and done you have a filter shape like mine and can use the same BFO frequencies. If you look at the plots of the seven and the eight pole filters, refer again to Figures 3 and 4, you will see clearly that the eight-pole will be a great upgrade for the transceiver.

After this I disconnected and did the manual plot. This is the eight pole filter. Luckily the camera took a long exposure, that is why it looks like several traces; in real life I needed to turn out the lights and turn the intensity up to see the trace as it is very slow, less than one Hz, and I have a standard CRO.

Construction notes for the crystal filter module

The crystal filter module should follow the same construction practices for all RF circuits. The input should be at one end of the circuit board and the output should be at the other end; it is very important that the crystals be laid out this way to avoid RF leakage between input and output.

I made a few mistakes in the layout shown. I forgot the input coupling capacitor, very important. I cut the track between the Pi network input side and the input pad, and then soldered in a surface mount capacitor across the gap. The layout was made for SMT HC49 crystals which I found out later were

through-hole types; easily fixed, just drill holes.

I also managed to do the layout with one of the MOSFETs mirrored. The MOSFET package is very handy for this mistake. Place the MOSFET package upside down in the correct spot on the PCB (I use the point of the scribe to push down on the black package) then with the point of a pair of tweezers or a small instrument screw driver, gently push down the pins that are now pointing up in the air.

When all four are pointed down, put some solder on the tip of your iron and while still holding the package down with the scribe, tack solder one pin. You can now remove the scribe and solder the remaining pins in place correctly and then re-solder the tack solder joint. The same technique as above works well for soldering most surface mount components to a PCB.

Surface mount resistors and capacitors are 0805 and/or 1206 sizes and are available through RS Components and Farnell Components. Crystals are available from RS Components. I was lucky; I bought two packs of five and managed to find eight of them within 100 Hz of each other. Two crystals were well outside that range, so it might be wise to buy three packs. The BF998 MOSFETs are available from RS Components.

Trimmer capacitors were from Jaycar. Milo is available from the supermarket! Buy the non-ribbed tins, or if you have friends that drink it, get the tins from them. Blank PCB is available from Jaycar or Dick Smith. I find the 300 mm x 300 mm the most economical.

I made the layout using some freeware available on the internet, 'Eagle Soft Lite'. It is limited and a little tricky to master the software (I found) but it allows you to print out the layout in actual size and to mirror the print.

I used a PCB marking pen to make the layout on the PCB. As the connections were mostly for surface mount components, I used a metal scribe to mark the circuit board where these surface mount components were to be located. Press the point in gently to make a dot (the printed layout was taped to the PCB copper side), this made it a lot easier to do the drawing with the 'Dalo' pen.

Even after I had scrubbed the PCB with dry, non soaped steel wool, ready to use the 'Dalo' pen the scribe points were still clear. When the circuit board was finished the sides were filed straight and then I cut tin from a 'Milo' tin to make the enclosure, which you may note from viewing Photo 1.

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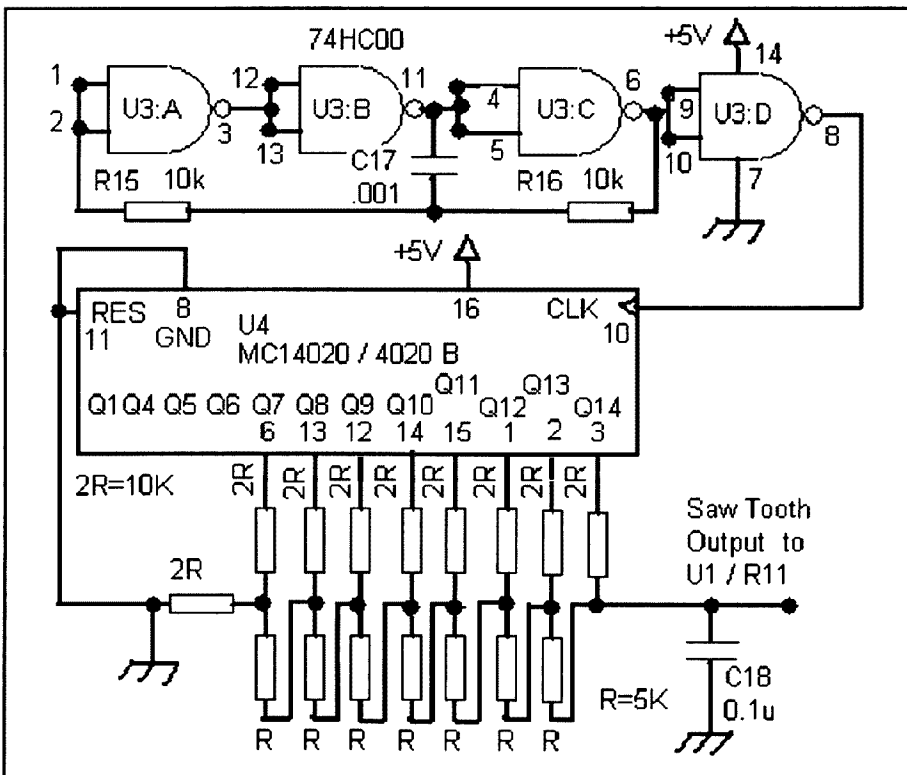


Figure 6: Circuit: saw tooth generator

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- ✓ More details on 7 February VK1WIA broadcast or www.radiofest.amateurradio.com.au

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Weak Signal

David Smith VK3HZ

The summer season started off slowly but has picked up in recent days producing some excellent conditions. There has been so much activity I will just summarise the highlights.

On November 20th at 1600 Z, Nick ZL1IU reported hearing his old friend the VK2RSY 2 m beacon. Two hours later, he worked Steve VK2ZT near Newcastle on 2 m with a 5x5 report. Other contacts were also made. Conditions were improving and at 1949 Z, he worked Ross VK2DVZ on 70 cm with 5x5 reports. VK4 stations were getting into the action with John VK4JMC working Nick at 2045 Z at 5x2. At 0349, after several attempts, Ross and Nick worked on 23 cm at 5x1 – the first VK-ZL 23 cm contact for the season. The opening continued strongly into next day with VK2DVZ and VK2AMS working Steve ZL1TPH on 23 cm. Many more VK2 and VK4 to ZL contacts were made before the band closed during the day on November 22nd.

On the morning of November 23rd, the band opened across the Bight from VK5 to VK6. Brian VK5BC was getting strong signals from Wally VK6WG with a 5x9+ report on 2 m and 5x9 on 70 cm. At 2217 Z, they succeeded on 23 cm with 5x1 reports over a distance of 1910 km.

The first 2 m E's contact occurred on at 0250 Z on November 29th between John VK4FNQ and Brian VK5BC. Over the next hour, a number of VK4 to VK5 contacts were made. Alan VK3XPD also worked John VK4FNQ to put another "angle" on the E's path.

Early on December 22nd, Brian VK5BC reported VK6 2 m beacons from Esperance, Albany and Bunbury were pounding into Adelaide but no VK6 stations could be raised. VK3 signals were also very strong. At 2248, Alan VK3XPD worked Wayne VK6JR in Yallingup on 2 m at 5x1 over 2745 km. Beacons were heard for some time.

On the evening of December 28th, another strong opening appeared across the Bight. At 1206 Z, Rob VK6LD in Denmark worked Nick VK3VFO on 2 m at 5x1 over 2620 km. Following

this, Rob worked David VK3AUU and Mike VK3KH, both on 2 m.

December 30th brought a repeat of conditions of the previous year with a tropo opening from ZL1 into central VK3. This had previously been considered near impossible with the Victorian Alps blocking the VK3 end of the path. However, this year has shown that last year was not a fluke!

At 0230 Z, ZL1IU reported hearing the VK3RGI 2 m beacon in Gippsland at 5x5. At 0420 Z, he worked VK3UCQ (2435 km) followed at 0745 Z by Norm VK3DUT (2338 km) up to 5x5. At 0902 Z, it was VK3ALZ (2454 km) on 2 m and later on 70 cm, at 0941 Z VK3EK (2350 km), and at 1100 Z VK3AUU (2505 km), VK3EBQ (2454 km) and VK3AKK (2650 km) – the longest distance contact.

David VK3AUU, a veteran of 55 years operating on the VHF/UHF bands was very pleased to work his first ZL on 2 m. VK3VFO operating portable in Gippsland worked Nick on 2 m using just 500 mW. The following morning, Nick worked Rex VK7MO on 2 m SSB at 5x9 and then on 70 cm CW at 4x1 over 2431 km.

After being quiet (for E's) for most of the month, the last few days of December saw the 2 m band jumping with E's openings. A large E cloud formed in central NSW and there were contacts criss-crossing the area from FNQ to VK3, VK5 to VK4 and VK2 and many other combinations. The map of Spots, (below right) on the VK Logger taken at 0230 Z on December 31st gives an indication of what was happening and where the cloud seemed to be located.

On the afternoon of December 31st, David VK4ZDP near Innisfail in FNQ worked

many stations in southern VK3 over distances of greater than 2250 km.

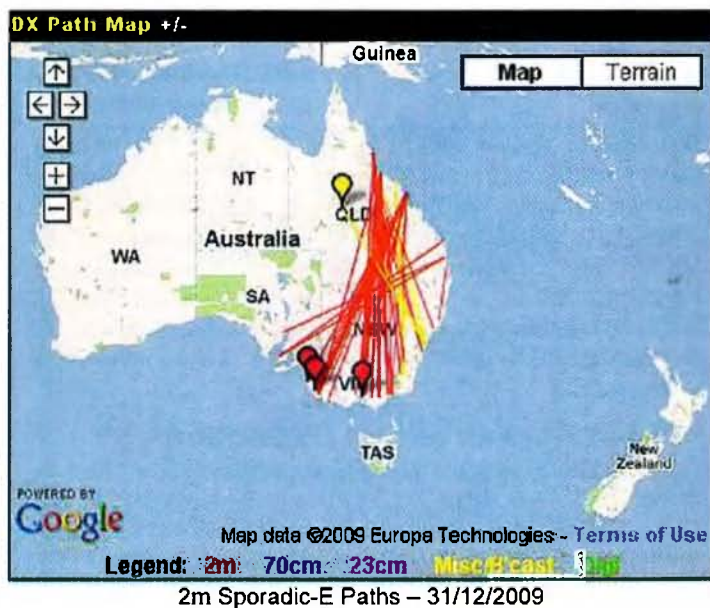
On the morning of January 5th, a high-pressure cell had settled over Bass Strait producing good conditions between VK7 and VK5. Norm VK7AC worked many stations in Adelaide on 2 m and 70 cm. At 2152 Z, he worked Brian VK5BC/P at Corny Point on 70 cm (5x8) and 23 cm (4x2) over 1127 km.

At 0135 on the 5th, Nick ZL1IU worked Phil VK5AKK (3182 km) at 5x3 and Jeff VK5GF (3179 km) at 5x5 in an E's opening – either double-hop or possibly tropo-enhanced as he later worked into VK3 via strong tropo enhancement.

The tropo enhancement across to ZL continued the following day. At 2046 Z, Ross VK2DVZ worked Stephen ZL1TPH on 23 cm at 5x2 over 1902 km.

January 8th, once again saw good tropo conditions, this time from the ZL4 to VK2. ZL4TAE/P had set up portable on the mountains in the middle of South Island and was getting signal reports up to 5x9 from stations along the VK2 coast. He even managed to work inland to Mark VK2EMA at Tottenham over a path of 2293 km. Mark was very pleased to work his first ZL since 1985.

January 9th saw a good tropo opening across the Bight from VK3 and VK7 to VK6. At 0325 Z, Norm VK7AC worked Wally VK6WG on 2 m at 5x1 over a distance of 2633 km. At 0520 Z, Phil VK5AKK worked Wally on 23



different. I have just seemed to take a bit more interest in it this year.

The ducting is usually quite extreme in the summer months here in the North West. I think it is one of the "hot spots" for tropo around Australia. But since there are only 2 active hams here in my area - including me - and none active along the coast within 500 miles of me, neither north nor south, it usually goes unnoticed. Sometimes the ducting gets so extreme that we have to shut our local repeater off when the Indonesians hammer our repeater "input" with singing and music.

Some highlights so far:

27-10-09 - From Wickham, W.A. (OG89nh) I was able to key up 11 different unknown repeaters presumed to be in Indonesia. Notable repeaters with S9 signals that evening were, repeaters on 147.860 (-), 146-660 (-) and 146780 (-). I also had a QSO with "Wan" through the 146.780 repeater. Unfortunately, Wan did not really speak any English and I do not speak any Indonesian but I was able to extract his location as Jakarta.

28-10-09 - I was able to key up the Exmouth repeater VK6REX on 146.800 (-) with only a moderate signal strength of S5. This repeater is about 350 km down the coast from my location.

30-10-09 - Four repeaters presumed to be in Indonesia were again keyed up on this evening with 147.860 (-) and 146.660 (-) having S9 signal strengths. It is interesting to note that I worked Michael VK6BHY in Karratha approximately 25 km away from my location through the 146.660 (-) repeater presumed to have a location somewhere in Indonesia. That is a long haul to talk to someone only 25 km away - probably well over a 1000 km!

16-11-09 - Again multiple stations heard from what I assume to be Indonesia. This time there seem to be numerous stations on simplex too. Signal strengths did not appear to be as strong as previous, but there appeared to be more stations heard.

Also on this evening, the Exmouth repeater was S9. I called and called CQ but no answer.

Thanks Steve, and it sounds like there could be some interesting possibilities for long-distance contacts if only there were some weak-signal enthusiasts at the other end.

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

Digital DX Modes

Rex Moncur VK7MO

FSK441

Welcome to Wayne VK5APN who made his first FSK441 meteor scatter contact with Waldis VK1WJ on 10 January 2010 on 2 metres. Wayne is just north of Adelaide and runs 100 watts to a 10 element Yagi. He says that thanks go to Peter VK5ZPG for mentoring him and getting him across FSK441 techniques and in particular the Australian FSK441 format. While he is a shift worker he says his appetite has been whetted and that he will be on during the FSK441 activity sessions as much as can.

VK9NA Norfolk Island DXpedition

At the time this report was prepared, the DXpedition by Michael VK3KH, Alan VK3XPB and Kevin VK4UH was still underway. Initial attempts at 2 metres FSK441 from their accommodation produced QSOs with John VK4JMC (1525 km) Adrian VK4OX (1504 km) and Steve VK2ZT (1587



VK9NA Team (L-R: Alan VK3XPB, Michael VK3KH and Kevin VK4UH)

VK9NA Norfolk Island DXpedition

The VK9NA effort is currently underway, and Mike VK3KH has sent a note on their achievements to date:

We have had a total of 229 contacts including:

- 6 m: 203 contacts including A35, E51, 3D2, VK1,2,3,4,5,6,7 and ZL1,2,3,4
- 2 m: 21 contacts including SSB with VK4 and ZL1, plus M/S with VK2 and 4
- 70 cm: 3 contacts all CW with ZL1
- 23 cm: 2 contacts both SSB with ZL1TPH
- 13 cm: No contacts but CW heard both ways with ZL1TPH

The last few days have been very hard work as the promise of tropo has not yet eventuated.

As I write this, the propagation has finally opened up for them back to VK. In the last two days, they have managed SSB contacts with VK2DVZ, VK2MAX, VK2AMS, VK2ZT, VK2KOL, VK2IDM, VK2IJM, VK2BCC, VK2HN and VK4JMC. The longest distance SSB contact has been to Rex VK7MO over a path of 2403.3 km.

km). However, results towards Sydney and further south were disappointing. A move to a better location on Mt Pitt produced a significant improvement in pings but now the pings were reported as distorted and undecodable. The longest distance undecodable pings reported were from Rhett VK3VHF at 2127 km. After investigation it was found that the FT817 being used at Mt Pitt was set to narrow bandwidth digital modes which took out some of the transmitted tones in FSK441 which requires a bandwidth from 600 Hz to 2400 Hz to cover the four FSK441 tones of 881, 1323, 1764 and 2205 Hz as well as the sidebands from these tones. On adjusting the FT817 for the wider bandwidth, the Mt Pitt operation produced much better results with QSOs being completed with Colin VK2KOL (1712 km), Starr ZL3CU (1660 km), Chris ZL2DX (1519 km), Ross VK2DVZ (1512 km) and Mike VK2FLR (1677 km). The longest distance completed contact was with Mark VK2EMA at 1999 km. Peter VK3PF copied two pings at 2236 km and the VK9NA team copied one single ping from Rex VK7MO at 2403 km on a day when there was good tropo providing an extension in that direction.

By 10th of January, a large high had moved into the Tasman and JT65a came to the fore with tropo ducting contacts on two metres: Mark VK2AMS (1516 km), John VK4JMC (1525 km), Steve VK2ZT (1587 km), Matt VK2DAG (1645 km), Colin VK2KOL (1707 km) and Rex VK7MO at 2403 km. Steve VK2ZT (1587 km) then completed on 70 cm on JT65c for the first VK9N to VK mainland 70 cm contact.

Leonids 2009

NASA had forecast a sub storm at 1943 on 17 November - a time when the Leonids would be above the horizon in VK-ZL. This would be 0843 local on the morning of 18 November and a number of 2 metre operators were keen to take advantage of the opportunity for SSB contacts and others for longer distance FSK441 contacts

John VK4JMC was up early and after some two hours completed his first meteor scatter QSO with Bob ZL3TY using FSK441 over a distance of 2362 km. Waldis VK1WJ also completed with Bob on FSK441 over 2076 km.

As it turned out the Leonids peaked about an hour and a half early as shown on the chart (shown below) which was produced by Rex VK7MO who monitored the video carrier of Newcastle TV on 138.275 MHz using Spectrum Lab to measure signal to

noise ratio at 0.2 second intervals. There was a second minor peak around the predicted time.

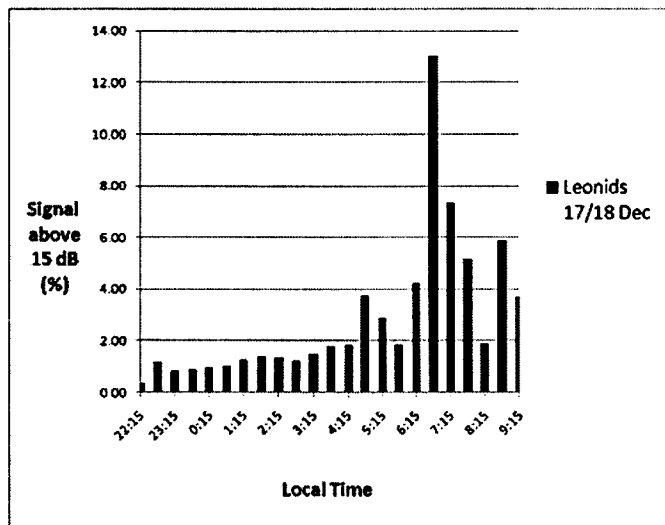
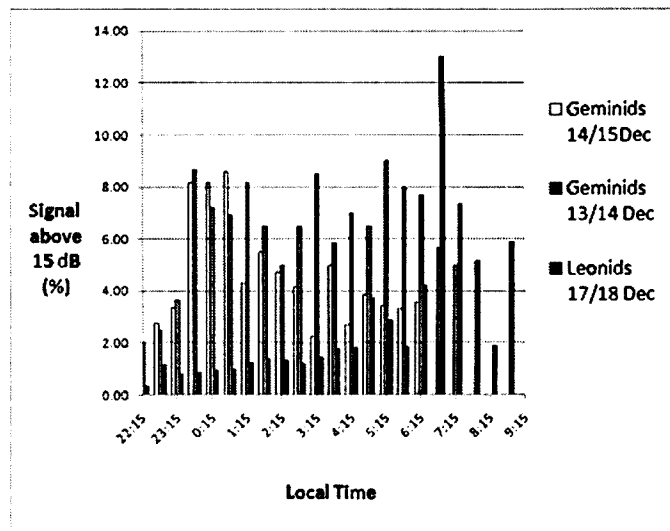
The best burn monitored during this period was just after 7:00 am local and was more than 15 dB above the noise for just over 2 minutes.

Around the time of the predicted peak time, 2 metre SSB operators were rewarded with some good contacts as follows:


VK4DD VK3II	1410 km
VK3AXH VK4NWH	1404 km
VK3II VK4NWH	1392 km
VK4DD VK4BEG	1340 km
VK2XQ VK4NWH	1291 km
VK4DD VK3DUT	1253 km
VK2QO VK5BC	1102 m
VK4DD VK4FNQ	1050 km

Geminids 13 to 15 December

During the Geminids from 13 to 15 December, Rex VK7MO, again monitored Newcastle Channel 5A TV and compared the results with those found earlier with the Leonids in the graph below. Data was not gathered after 7:30 am on the 13/14th or after 6:15 am on the 14/15th due to standing skeds. It is interesting to see that while the Leonids produced a much stronger peak, the Geminids were much more consistent over a full evening.



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



100 YEARS

Plan Ahead

WIA Centenary AGM

Canberra 28-30 May 2010

Details soon on the WIA website.

Be There. Be part of history.

The Magic Band – 6 m DX

Brian Claland VK5BC

November and December turned out to be very exciting on 6 m. The local summer E's seemed to be down on the last couple of years but this was well and truly compensated for by some exciting overseas contacts. Countries worked from VK and ZL included North and South Cook Islands, Willis Island, Tonga, Fiji, New Caledonia Singapore, West Malaysia, Japan, Philippines and highlighted by a great contact by Scott VK4CZ into Peru.

On the morning of the 13th December Scott VK4CZ worked Jack OA4TT in Peru over a distance of approx. 13108 km and Scott reports:

I was outside building a retaining wall; covered in dirt and concrete dust I walked past the shack to see my 6 year old daughter had left the laptop running. So before turning it off I quickly checked VK LOGGER (as you do, even when spreading dirt and dust everywhere) and Jack had just logged in. He mentioned that he was calling CQ on 110... so, with my expectations set at zero turned my Yagi to 125 degrees.

But all of a sudden I heard '4TT' come from nothing to RST419. I was in complete shock... for a moment I thought it was a ZL responding, but then Jack called again. This time a very clear 'CQ CQ de OA4TT' at RST519. I responded; Jack answered immediately. A couple of attempts to get call signs correct and we were complete. Jack's signal rose from nothing and stayed at RST519 during the contact with a very definite slow rolling QSB. By the time we finished (albeit 30 - 40 seconds later) the signal was declining and for about the next 5 - 10 minutes Jack remained at about RST419, then nothing. In hindsight we should have called on SSB for two modes, but I was still buzzing on an absolute adrenaline high.

Well done Scott. The same morning, a little after when Scott had worked Jack, Jack was also heard/worked by Neil ZL3ADC and Duncan ZL3JT. Then on the 27th December Bob ZL1RS worked Jack OA4TT 10949 km on CW and SSB (5/5).

There has been much discussion about what propagation mode allowed these contacts to be completed as there had been very little solar activity...Is it SSSP (Short-path Summer Solstice Propagation), multipath E's or a combination of E's and high level ionization? Certainly interesting

no matter what and since these contacts took place South American FM stations have been heard in ZL and VK.

Another significant event occurred in the early hours of 6th December when Gary VK4ABW worked Mick W1JJ on CW via EME and broke the existing 6 m CW EME world record. Distance for the contact was 15,653 km, breaking the old 1993 record by almost 3,000 km. Congratulations go to Gary who has erected an enormous array (13 element 3 wavelength Yagi with full elevation control). He also has obtained a special ACMA permit to run high power.

Meanwhile from Raratonga in the south Cook Islands Victor E51CG has had a major impact on the VK/ZL summer season. Victor has been heard and worked by stations in all VK states except VK6 on many days during November and December. First contacts occurred into VK2 and 3 on the 20th November and continued regularly into the eastern states and VK5 through November/December. Victor was heard by John VK6JJ on the 18th December but unfortunately a contact was not completed on the 18th December worked VK8MS and VK8RR in Darwin over a distance of approx 7400 km.

Warwick E51WL, on Tongareva (Penrhyn) in the North Cook Islands has been worked from VK/ZL and reports:

After a quiet period of 6 years and with the solar cycle coming up again, I decided to get back on the air. Spurred along by Bob ZL1RS, with whom I have been friends for many years, I was prompted to have a go at EME on 6 metres. I recently moved QTH by about 100 metres and set up shop in a shipping container used for storage. My 15 metre mast was erected and a rotatable short 5 element Nagara Yagi was fastened.

In November, I listened successfully for Lance W7GJ on the moon and tried but unsuccessfully, to work him using JT65A with my IC706MkIIG. We tried on a number of occasions but I did not make it. Just not enough ERP. November 10th saw Bob ZL1RS on the island of Raratonga. We worked on 6 metres using JT65C, JT6M and FSK441 by direct path and by MS. At times, the direct signal was knocked out by big burns of MS.

On 14 Nov, ZLTV Video was received from most of the high power sites at 0519 UTC On 15th Nov., I worked 5W0 with a good solid signal at 58.

On 17th worked Bob and Victor E51CG on Raratonga with very big signals, and we exchanged SSTV pictures using various SSTV modes. Over the next few days, A35A and 5W0KY were worked

21st Nov met up with an old contact from years gone by, Kerry ZL2TPY popped up one morning with a solid 59 and that day, worked ZL2 and 3 stations plus a few VK2s and one VK7 which was a pretty good distance from North Cook.

On 22nd, VK4 seemed to be the flavour and I worked a few of them plus a ZL3 and a ZL4.

23rd at 0100 thru 0300, I worked 17 VK from areas 2, 3, 4 and 5.

It then went quiet for 7 days but I did find a Television transmitter broadcasting from American Samoa on 55 MHz which quite often pinged with MS and often came in by Es very strong. We watched pictures off it one afternoon. The quiet spell broke, I worked ZL3NW one afternoon on 30th Nov, followed by a couple of VK2s.

On 4th Dec, worked Paul A35A a couple of times, once off the back and once off the front of his beam! Another 10 days of quiet and again, worked Rod but much later in the day than usual. Also worked ZL1RS on CW that evening.

18th Dec, some very fluttery SSB at 0630 UTC, then worked a VK4 and a VK7.

20th Dec, Finally heard a beacon, the FK8SIX just came out of the noise about 2130. That day, I worked ZL1RS and he was 20 over 9.

21 Dec, a couple of ZL3s and then out of the noise came an old friend, Ron ZL1AMO.

Worked a VK2 and VK3 crossmode and SSB when I finally found the microphone!

23 Dec, I worked a dozen VK4s between 03—0400 UTC with good signal reports.

25th Dec, I heard the ZL3SIX beacon and on 26th the FK8SIX beacon again.

To top it all off, before Christmas, our supply boat arrived with component parts for a YU7EF Yagi which Bob ZL1RS built up, tested with 2 EME QSOs from New Zealand then shipped to me broken down. I put it up where the 5 element Nagara was, at 15 metres height. The tower is about the same distance from the lagoon to the East. Great for ground gain.

On 02 January 2010, I listened for Lance W7GJ off the moon, and at 0640, I received the confirmation that I made my First EME QSO from North Cook on

6 metres. Consequently, that was DXCC # 100 for Lance.

On the drawing board, a bit more power for 6 metres with a home brewed amp using recycled (and a few new) parts.

Thanks for the report Warwick; you have certainly helped to make it an interesting summer in VK/ZL.

Not to be left out of the action Paul A35A (ex A35RK) in Tonga has also been regularly heard and worked from VK/ZL but propagation to Paul has not been as consistent as last season. A particularly good opening was on the 21st December to VK2, 3, 4 and 5 reaching S7 in VK5 and on the same day Paul also worked ZLs, both sides able to be copied in VK3 and 5. Paul also managed to work into VK6 again this season on the 19th and 23rd December, working John VK6JJ, a distance of approx. 7000 km.

Good openings from VK to Singapore occurred during December. On the 13th December Andrew 9V1TT (ex VK8AH) in Singapore worked Gary VK5ZK, Norm VK3DUT, David VK3AUU, Norm VK7AC, Frank VK3OP, Tony VK3CAT and Steve VK3SIX. Then on the 14th December Gary VK4ABW worked Selva 9V1UV and on the 18th December Selva worked several stations in VK3, 4, 5 and VK8GB. Andrew 9V1TT again worked Norm VK7AC on the 1st January.

Willem DU7/PA0HIP in Lapu-Lapu City, Philippines, has been regularly looking for VK contacts and was rewarded with several contacts. On the 10th December Willem worked Norm VK7AC, 13th December Peter VK6KXW and then on the 15th December worked several VK3, 5 and 7 stations. Further contacts followed on the 17th December with several contacts into VK3 and 5 and again on the 18th

with signals up to S9 into VK5 and 3. On the 22nd December John VK6JJ worked Willem.

On the 20th December the first of two good openings to West Malaysia with Masa 9M2IDJ working VK6IQ (SSB), VK6ADI (SSB), VK6ZWZ (SSB), VK5ZK (SSB), VK3OT (SSB and CW), VK5PJ (SSB), VK6IA (SSB and CW), VK6YS (SSB), VK6RO (CW), VK6JJ (CW and SSB), VK6KXW (SSB), VK6SIX (SSB), VK6ZIZ (SSB). The second opening occurred on the 23rd December with Masa again working several VK3, 5 and 6 stations but this time Rizal 9W2RZL also worked several VK stations and reported the following SSB contacts; VK3OT, RST 55, 07.38 UTC; VK8MS, RST 55, 07.39 UTC; VK5ZK, RST 55, 07.45 UTC; VK5BC, RST 57, 07.46 UTC; VK5MH, RST 55, 07.49 UTC; VK5ACY, RST 55, 07.50 UTC; VK3ADE, RST 55, 07.52 UTC; VK8RR, RST 57, 07.55 UTC; VK5ZBK, RST 56, 07.58 UTC; VK5NZ, RST 55, 07.59 UTC; VK3LY, RST 55, 08.04 UTC; VK5CC/P, RST 55, 08.05 UTC; VK5ZPS, RST 55, 08.07 UTC; VK6KXW, RST 55, 08.11 UTC.

The FK8 beacon from Noumea has again been regularly heard in all states but again very little activity from FK8 this season. The only reported contacts being on:

4th December - Mike VK2ZQ and Philip VK2HN with FK1TK

29th December - Gerry VK2APG with FK1TK

4th January - Ron VK4DD with FK1TK

On the 25th November there was an opening to Japan with several JA stations being worked by northern VK4s. The opening extended south to VK3 and 5, with JA beacons being heard and Brian VK5BC

and Steve VK3SIX working JE6AZU.

Dave VK9WBM has been active from Willis Island and was first worked by Adam VK4CP on the 15th December which was followed a little later with further contacts into VK2, 3 and 4. Dave's first ZL contact was with Peter ZL4LV on the 18th December and, between his work commitments, Dave has regularly worked into the eastern states. On the 7th January Dave was very strong into VK5 and managed several contacts into VK6. Well done Dave and thanks to the northern VK4s who assisted in getting Dave active from Willis Island.

Meanwhile the local VK/ZL summer E's continued on most days but probably not as intense or as regular as the past couple of seasons, perhaps a good indication of this being far fewer opening extending to 2 m. The 4th December was a good day with the band open from ZL to VK5 all day and extending to VK6 late in the afternoon. Brad VK2QO reports good VK6 contacts during December including on the 13th Graham VK6RO 519, 16th Jack VK6KDX 52, VK6IQ 41, Laurie VK6GL 52, Phil VK6ZKO 52, John VK6JJ 53, Peter VK6KXW 55, 17th Alan VK6ZWZ 55, Laurie VK6GL 53, John VK6JJ 55, Jack VK6KDX 53, Graham VK6RO 53, Igor VK6ZFG 53, Noel VK6BJ 57, and 22nd Ken VK6AKT 55. John VK4FNQ also reports good VK6 contacts on the 18th December reporting contacts with VK6s JR, BJ, GL and ZSB. The 17th December was an exceptional day with the band open from most states to all states and ZL and including a good short skip opening from VK3 to VK5.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com

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HAMFEST

sale

Sunday 28th February 2010

10am to 2pm

Healesville Memorial Hall

Maroondah Highway Healesville

For booking of tables and further information:

Gavin VK3GH on 5968 8482

Laurie VK3LD on 0414 759 812

or email tables@yarravalley.ar.org.au

www.yarravalley.ar.org.au

A very Happy New Year to all and hope everyone had a safe and wonderful Christmas. Jean Fisher VK3VIP, the VK3 representative for ALARA, tells us they have been busy with the holiday season but took some time off to celebrate Christmas with a lunch at Egusto at Southbank.



(From left to right) ALARA members Pam VK4PTO, Catherine VK4VCH and Sue VK4ST at the Hamfest in Broadbeach, Queensland.

Pam VK4PTO, the VK4 State Representative, took the ALARA information table

to the Gold Coast Amateur Radio Society Hamfest at Broadbeach. This not only attracted YLs who were interested in finding out more about ALARA, but also was a place for the YLs to gather.

Closer home, in Adelaide, the ALARA members of the Adelaide Hills Amateur Radio Society got together for the Christmas luncheon with Joy VK5YJ and her daughter Joyanne.

After the festive season, it is a good time to get those contesting hats, or should I say, keys, on with the summer VHF-UHF Field Day for CW and Phone scheduled for January 16-17 of 2010. This is one of the popular contests that will kick off the New Year.

Silent Keys make 2009 end a sad one for VK5

(Christine Taylor VK5CTY reports)

Anne VK5FANN became a silent key in early December. She had been fighting cancer for quite a time and had gained our admiration in so doing. Anne has only been a member of ALARA for a couple of years, since she passed her exams but she had attended a number of our monthly luncheons. She was also part of the Scout Radio Activities Group along with her OM Mike VK5AMK.

Anne was born in South Africa and lived there until she was in her early teens. She and her brother had some difficulties adapting to Australian life but they became true blue in time. Anne was a nurse by profession and a keen crafts woman.

After she knew she had cancer she was determined to learn how to do bobbin lace and very proudly showed off her bookmark at one of our luncheons. Some of us who had started to learn bobbin lace and fallen by the wayside were suitably ashamed of ourselves.

At her funeral service, Jean VK5TSX and Jeanne VK5JQ represented ALARA and an ALARA scarf was placed on her casket.

Birgitta SM0FIB became a silent key in September. She will be remembered by some of the YLs in ALARA and WARO from when she attended the YL International in 2000 in Hamilton.

It was the only international Birgitta attended but she had been known within the amateur community for some years. In Hamilton she accepted sponsorship with me (Christine VK5CTY) and with Lynn ZL1PQ.

With both of us she kept up a regular correspondence (by email and by snail mail) and we exchanged calendars at Christmas.

She was active and well known in the Scandinavian amateur fraternity. A few years ago Birgitta suffered a series of strokes that reduced her mobility but not her spirit. She will be missed.

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ALARA YLs meet at the Adelaide Hills Amateur Radio Society



ALARA YLs from Victoria meet for lunch at Egusto on Southbank, Melbourne: (L to R back row) Maree VK3FSAT, Jean VK3VIP, Margaret VK3FMAB, Pat VK3OZ, Michele VK3FEAT, Jenny VK5ANW/3 Elaine VK3EQY. (L to R front row) Pam VK3NK, Marg Loft, Michi VK3FMGE, Susan VK3LOV.

An arena of wonder – QSP

Peter Wolfenden VK3RV



Foreword

Over several issues of *AR* this year, we will be presenting an account of the history of the Wireless Institute of Australia (WIA).

It is not meant to be a complete synopsis of the life of the WIA, rather it is a bringing together of aspects of our past.

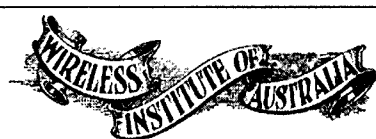
In preparing this document, placing information into chronological order was pre-eminent so that a reasoned perspective could be obtained as to how situations relating to amateur radio arose and actions occurred. Much effort has been put into confirming dates and referencing detail so that in the future, others may be able to further flesh out the subject and build on this work.

There were many, many more people who were deeply involved with the development of organised amateur radio in this country. Their non-inclusion in this history in no-way detracts from their contribution.

A comment for the new-comer: The term “Wireless” grew from the era of the original “wired” telegraphy system. As soon as it was possible to exchange messages without using the inter-connecting telegraph wires, “WIRELESS” was born – initially as “Wireless Telegraphy”.

History makes us who we are today.

History guides us to not repeat mistakes!



1. Background

The Wireless Institute of Australia grew from autonomous State groups. The name: “*Wireless Institute of Australia*”, was not the original name used in all Australian States; however, they all finally morphed into the national organisation we know today.

Within the groups of experimenters in most States were members who sensed the commercial possibilities of the “new science” and naturally, differences arose with conflicting interests. Some members felt that their local society should become the backbone of a fledgling professional organisation. Others were interested in wireless solely as private experimenters - a hobby or part-time interest.

In New South Wales, and to a lesser extent in other States, some members who were professionally employed - they were paid for their expertise and labour - were responsible for focusing the organisation towards one catering to the needs of a new industry in a field which was struggling to establish itself.

The Institution of Radio Engineers (the forerunner of the IREE) grew from the Wireless Institute during this period. It was registered in August 1924 at a time of momentous change in the infant broadcasting service (and allied pursuits), and in 1932, following a period of inconvenience and indeed confusion for many amateur experimenters, the “professional members” took over the Wireless Institute of Australia (NSW). There were a number of high-powered people involved with this move, and even today some still say that it was a very difficult and awkward situation for a time, leaving a divided fellowship in its wake (1, 2, 3).

Much of the instability was due to the admission of voting “non-transmitting experimenters” to Institute membership and issues surrounding “non-electricians” dealing with 240 V AC mains power. This culminated in the licensed transmitting experimenters losing control of their own organisation!

An insight to the problem can be gleaned from the October 1931 *WIA Bulletin of West Australia*, which reported: “*Since the Council [WA] decided to restrict as far*

as possible the admittance of associates to those actively interested in amateur radio, and to repress the pure broadcast listener, those offering themselves for admittance to the Institute have disclosed a keener interest in the A.O.C.P.” (AOC.P: Amateur Operator’s Certificate of Proficiency, gained by formal examination).

Perhaps this was one good solution to part of the problem! (4)

Thankfully the turmoil in NSW finally resolved itself to the relief of all concerned, allowing the organisation of wireless experimenters to re-form nationally as the Wireless Institute of Australia and the Institution of Radio Engineers became Australia’s professional radio organisation. It should be added that of course, some individuals were active members of both organisations (1, 2, 3).

2. The earliest Days

Wired Telegraphy was global by the time Marconi demonstrated his wireless system in 1895. Indeed all Australian colonies, including Tasmania, had been cable-linked by 1880.

But it was not until Federation in 1901 that the individual Post and Telegraph Departments of the six colonies were united under the Federal Postmaster General’s Department (5). Before 1905, the radio spectrum in Australia was effectively under the control of the Royal Navy (British), as it was responsible for the defence of Australia (6).

A number of “wireless” demonstrations were given to interested parties in most Australian States during 1897/1900. Professor Threfall at Sydney University repeated Hertz’s demonstrations as early as 1888 and Professor William Bragg gave the first recorded public demonstration of “*Telegraphy without wires*” at the University of Adelaide during September 1897 (2, 7, 8). Professor Bragg had a very competent technician helping him with the practical aspects of his lectures, A.L. Rogers of the University’s workshops, who noted down that he made “*Marconi apparatus*” for Bragg during August 1897. Rogers was associated with all of Bragg’s work and remained with the University until his death in 1939 (2).

Following his success using Wireless Telegraphy to communicate between

Henley Beach and the Adelaide Observatory, about 8 km, Bragg advertised a series of three *Extension Lectures on Wireless Telegraphy* in the *Adelaide Advertiser* of 13th September 1899.

The courses were well attended and covered "a brief account of the Theory of the Electric Wave and the work of Maxwell, Hertz, Lodge, Preece, Marconi and others." *Adelaide Advertiser*, September 13th 1899.

The lecture series concluded with some practical demonstrations including a transmission from the Observatory on West Terrace and one within the lecture room. It appears that wireless telegraphy experimentation was quite advanced in South Australia at this time (2, 9).

The Federation of Australian States in 1901 brought about a new Secretary of the Post Office who "looked with disfavour on everything that was not

revenue producing and for the time being wireless was doomed" (10). Presumably, the existing wired telegraphic system was successfully producing revenue, doing its job technically and most importantly, was fully under government control. However, seven years later it was revealed that a deficit of £3 million (today's value \$350 million) had been racked up by the new organisation since Federation! (5)

Unfortunately, stalling on the part of authority with wireless telegraphy appears to have been a repeating theme throughout the history of its development in Australia and this coupled with a deal of hostility toward experimenters, slowed progress significantly. Initial grappling with

Presumably the existing wired telegraphic system was successfully producing revenue,seven years later it was revealed that a deficit of £3 million (today's value \$350 million) had been racked up...

the new science would certainly have been difficult for the regulators, and even more trying for them once the entrepreneurial element came on the scene!

In the early stages, doubt also existed as to the commercial usefulness of the medium, largely due to the maximum reliable signalling speed of only about 10 words per minute. This could not compete with the high speeds attainable with "machine telegraphy" used in the cabled or wired systems (2).

Back to 1901

Surprisingly, the Federation celebrations during that year gave wireless telegraphy an unexpected boost! H.W. Jenvey, Chief Postal Electrical Engineer for Victoria, had been experimenting privately from 1899. He adopted the call

sign "RB" reflecting the location of his station at Red Bluff. At his own suggestion and with "governmental blessing", on 6th May 1901 "RB" officially communicated with the escort ship HMS St. George, which was in Victorian waters accompanying the Duke of York, the future King. This was the first ship-to-shore wireless communication in the Antipodes and to the amazement of the Royal Navy's officer, Jenvey was using "home made" equipment! Arguably the communication acted as a two

pronged catalyst for "wireless": first, it raised interest in the worth of the new communications medium - the newspapers featured Jenvey's work, and second, it contributed to the debate about establishing a coastal wireless telegraphy network (10, 11, 12, 14).

On leaving Port Philip Bay, HMS St. George and Jenvey remained in communication for some 55 km when the exchange of messages abruptly stopped. Later it was learnt that the kite aerials on the St. George had been swept away in a storm it was encountering 15 km off Cape Schanck, en route to Sydney (10).

Although Walter Jenvey was employed by the Post Office, almost all of his wireless work was conducted after hours and was not considered to be part of his



Walter Jenvey
(Listener In, 19 June 1926)

THE UNIVERSITY OF ADELAIDE.

EXTENSION LECTURES.

"Wireless Telegraphy."

A

COURSE OF THREE LECTURES

BY

PROFESSOR BRAGG.

These Lectures will consist of a brief account of the Theory of the Electric Wave, and of the work of Maxwell, Hertz, Lodge, Preece, Marconi, and others. They will be illustrated by experiments.

DATES OF LECTURES—14th, 20th, and 27th September, at 8 p.m.

Fee for Course, 3/.

Professor IVES' 10th LECTURE will be given on MONDAY NEXT, at 7.15.

350, 3/6 CHAS. R. HODGE, Registrar.

employment - it was of an amateur or experimental nature (13, 16).

In Hobart during July 1901, W. Hallam (later XZH) and "Pop" Medhurst XFM (before official call signs, later XZD) with others, also contacted HMS St. George when it was in Tasmanian waters (7).

In Australia, there were other private experimenters at that time; some sought official approval for their work; others did not. There were neither official call signs nor regulations with which to contend; only the odd disgruntled Navy ship which may have been interfered with by an over-zealous experimenter!

We must also remember that transmitting and receiving equipment was technically extremely simple by today's standards and that initially, tuning was largely, if not entirely, dictated by the length of the aerial (antenna)! Marconi's 1898 "jigger", or oscillation transformer, a form of tuning device fitted between the aerial and coherer detector, helped to some extent with reception, if you had one installed! The same principles were also applied to some transmitters. However, all stations were embryonic in design and left much to be desired! (15)

3. Australia begins to recognise the potential of Wireless Telegraphy

The original Australian Wireless Telegraphy Act (1905) vested power in the Post Master General, and the Chief Electrical Engineer for the Post Office was charged with administering it. There was an exemption: "Ships of War - This act shall not apply to ships belonging to the King's Navy."

The Act also made provision for land based Experimental Stations, a classification which enabled the establishment of private (amateur) stations. Unauthorised persons caught using wireless could be fined £500 (\$6100 today!) with or without five years hard labour and forfeiture of their equipment! (17, 23)

The Marconi Company was keen to establish itself in Australia and in June 1906 it obtained the first "land station" licence under the 1905 Act, for stations in Devonport in Tasmania and Queenscliff in Victoria. These were used during July to demonstrate the Marconi equipment;

however the government declined to purchase the stations at the end of the demonstration trials, perhaps still unsure of the potential of wireless! (2)

(See Photo Marconi Company brochure over page)

Although the Royal Australian Navy wanted to establish a coastal wireless network, the Navy itself was still in an embryonic state in 1906. Australia was reliant on the Imperial Navy until October 1913 (6).

This was the first ship-to-shore wireless communication in the Antipodes and to the amazement of the Royal Navy's officer, Jenvey was using "home made" equipment!

There also appears to have been some hesitancy on the part of the Government to commit funds. But in October 1909, tenders were called for the construction of stations in Sydney and Perth. Australasian Wireless Co. offered and supplied Telefunken (German) 25 kW equipment at about a quarter of the price tendered by the Marconi Co. which subsequently initiated a rather complex string of events including legal actions. Indeed the whole wireless field was beset by patent squabbles for many years! (2, 23, 25)

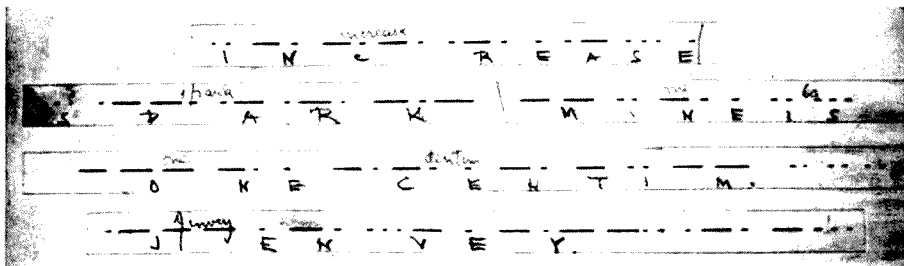
The Australasian Wireless Company was a "cloak" or "front" for German interests in Australia, the promoter being Staerker & Fischer of Sydney which persuaded a number of influential local businessmen to become involved in

establishing a wireless company for the purpose of positioning themselves in the potential Australian market.

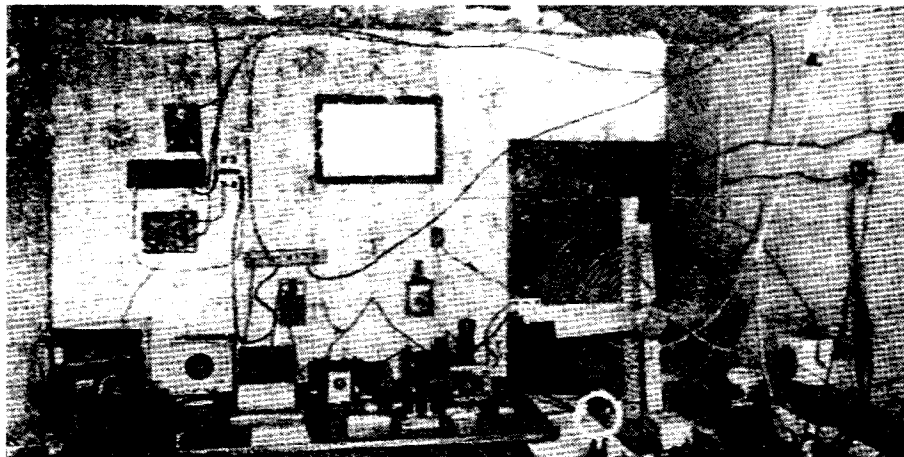
The Company was registered in December 1909 and for the next 20 years or so there appears to have been much exploitation of the Commonwealth by a series of doubtful actions by some wireless companies. The booklet *The Story of the Commonwealth Wireless Service*, published in 1936, is very



"Pop" Medhurst 7AH in 1927. (REAST and VK7RO)



A Jenvey initiated message



Jenvey's "wireless" shack. Point Ormond Victoria. (Listener In, June 1926)

revealing in this regard. Surprisingly, many big companies, including household names, had dubious involvement, one way or another, right up to the final bedding down of the broadcasting service in the late 1920s (23).

Another insight to the cut-throat environment during the early days of wireless involving one of the biggest companies is revealed in Ryder and Fink's book *Engineers and Electrons*:

"The Marconi position had been attained by manipulation of patent ownership and exploitation of the Lodge tuning patent, an inescapable component of station design. The practice was to sue for infringement, and after the case was won by Marconi, to follow with a bid for the depreciated assets of the defeated defendant, patents as well as stations" (25).

Members of Parliament also found themselves caught up in the antics of those

who thought that they were the "owners" of the spectrum and the technology, not only here in Australia but also in England where a number of senior politicians *were* caught out with financial interests in the American Marconi Company (26).

In hindsight, the true amateur experimenter may have been amongst the select few who, over those years, were not attempting to take advantage of their knowledge for obtaining ill gotten gains from the public purse and who could rightly hold their head high. Further, it could be argued that the altruistic attitude of amateurs has survived right up to today in the many ways they provide public service, whether it be in education, emergencies, technical services for the mushrooming community radio service, etc, etc. But we must return to the chronology of this history.

By the end of 1910, besides a few

Government experimental stations and the odd specialised station for communicating with shipping such as the Australasian Wireless Company's station in Sydney or Father Shaw's station attached to his wireless factory at Randwick, (the organisation which finally supplied the Australian designed Balsillie coastal radio stations after the first two Telefunken installations), there were only about 10 **authorised experimental** stations in Australia. But interest *was* growing (18).

One of those ten licences issued was to Charles P. Bartholomew of Mosman NSW. He later operated under the call sign of XBM and became a director of AWA. Victor Nightingall of Melbourne, later XKK, was also listed; however, it also appears that not all of the licences were current. The *Melbourne Herald* of March 14th 1910 details licences issued since the implementation of the 1905 Wireless Telegraphy Act (7,11,18,19).

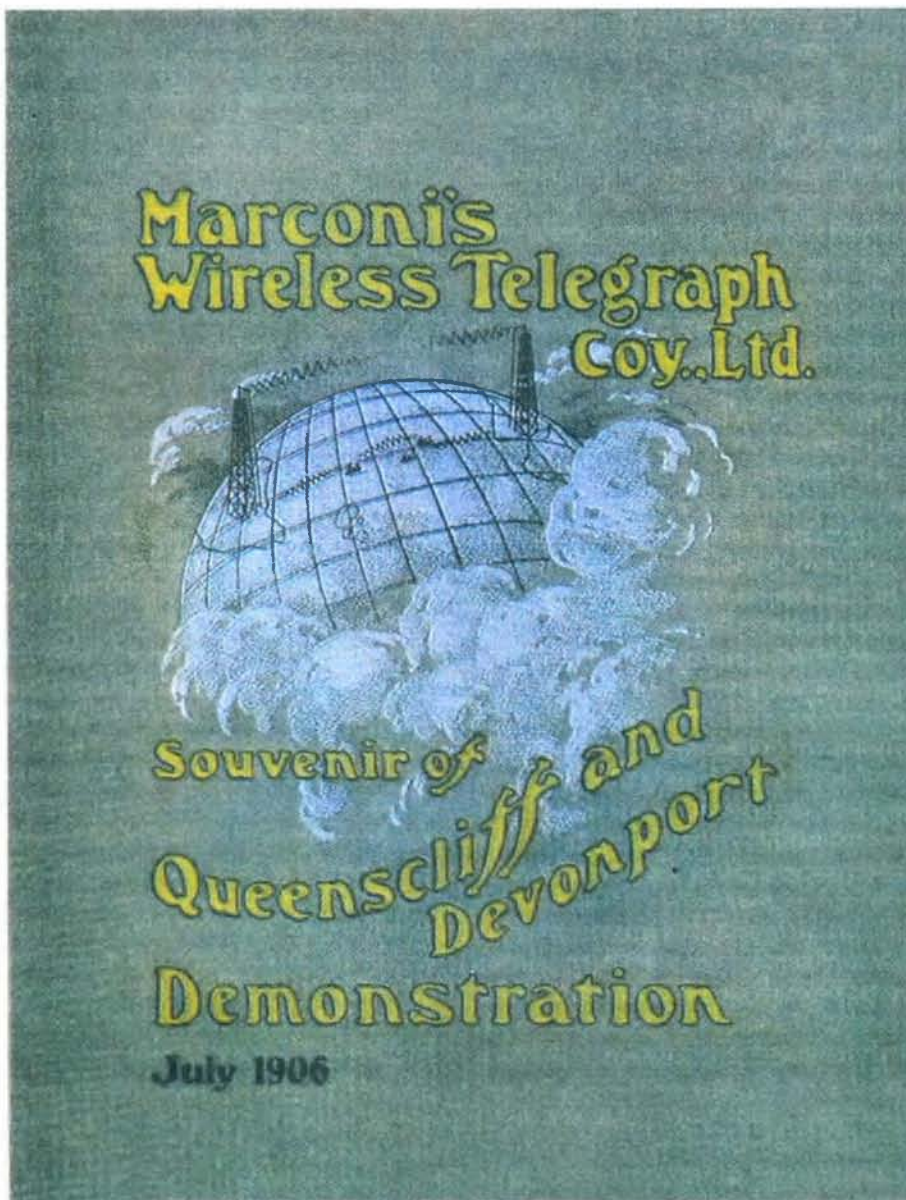
Another of the earliest licensed experimenters was JHA Pike of Arncliffe, NSW. His name was included in the first listing of experimental licences issued under the 1905 Act. Later he operated as XDY. The *Evening News* of March 23rd 1910 reported him communicating with the flag ship *HMS Powerful* off the east coast of New Zealand, a distance of about 1600 miles (2500 km)!

Henry Sutton of Melbourne also held one of those first official licences. A friend of Tesla, he spent a lot of time experimenting with "crystal" detectors. Sutton constructed a "*new, reliable and accurate wireless system*", which he claimed required only one-sixth of the power of the Marconi system, possibly due to the sensitivity of the receiver.

He demonstrated this system to the Defence Department at the Victoria Barracks in July 1908. Newspaper reports suggested that the Government had intentions of installing the "*new invention*" at several selected locations in the Commonwealth; perhaps at the first group of coastal stations for which tenders were about to be called (20, 21).

At this time, the only professionals involved in this new field were mainly electrical engineers and physicists who found themselves working with wireless for Government Departments – the Military, Navy or PMG, all tightly controlled. A few were employed by the fledging equipment manufacturers. Almost everyone fitted into the "experimenters" category.

There were no formal professional



courses in Australia for Radio Engineers until the 1930s. Prior to this, professional radio training was largely learnt on the job, or through training sessions conducted by equipment manufacturers or their representative such as the **Marconi School of Wireless**.

Stotts Technical Correspondence College also advertised Wireless Courses for Amateurs and Engineer-Operators in *The Australasian Wireless Review* during 1923 (11, 1, 22).

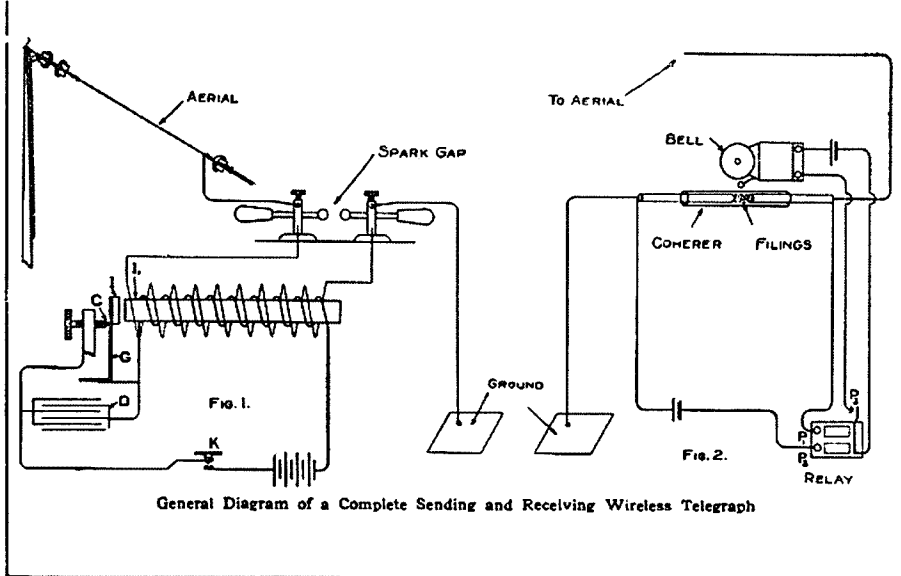
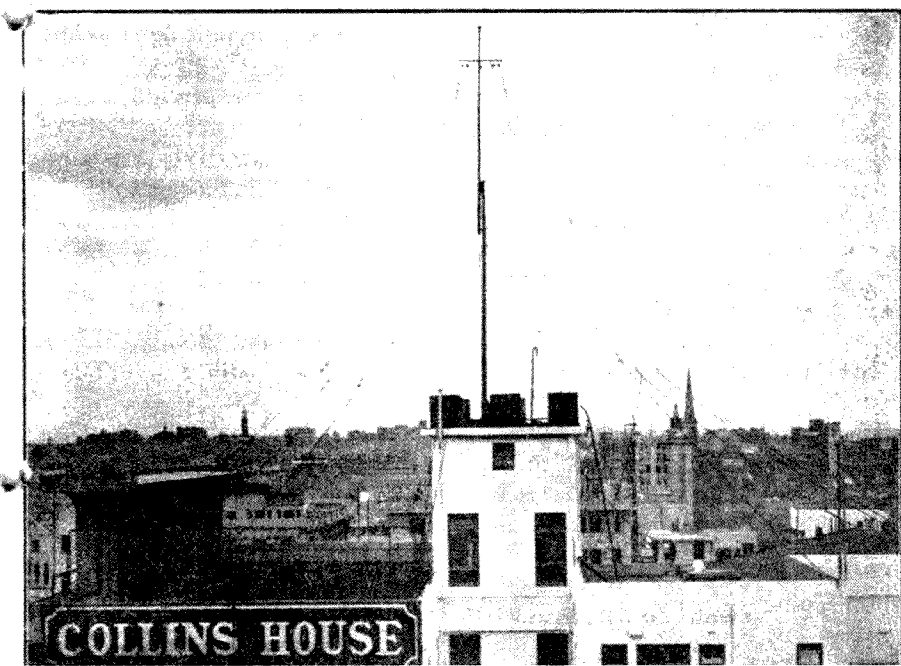
Of interest is a station installed in Collins House Melbourne during 1915 by members of the Royal Australian Naval Brigade. (below) This was used

for monitoring the German fleet in the Pacific Ocean and later training operators for the Mercantile Marine supporting servicemen in Europe during the Great War (24). Collins House also became the Headquarters for the Controller of Wireless.

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(1) Tyler, HM, **The beginning of IREE – How it all came about**, *Amateur Radio*, WIA, January 1985.
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 (3) Byrne, MW, **Background to IREE**, *Monitor*, IREE, March 1978, p 3.

An Aerial With An History



An early circuit diagram

(4) Editorial, *WIA Bulletin - WA*, Wireless Institute of Australia, Perth, October 1931.
 (5) Murray, J, **Calling the world, 100 years of Alcatel in Australia**, ISBN 1 875 359 22 2, 1999, p 13.
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 (10) **Where is Queenscliff?**, *The Listener In*, Melbourne, June 19th 1926, p 14.
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 (13) Jenvey, B, OA3AY/VK2ZO, **RAOTC Address**, Voice recording, *WIA Sound Archive*, Melbourne, 1978.
 (14) **Wireless Telegraphy – Mr. Jenvey's Experiments**, *Advertiser Newspaper*, Adelaide, January 23rd 1902, p 7.
 (15) **Radio Communication, History and Development**, Science Museum Handbook, London, 1934, p 20.
 (16) **Wireless Telegraphy- Experiments in Melbourne**, *Argus Newspaper*, Melbourne, April 3rd 1901.
 (17) **The Year Book of Wireless Telegraphy and Telephony**, Marconi Press Agency Ltd., 1913, p118.
 (18) **Wireless Experiments – Licences**, *Herald Newspaper*, Melbourne, March 14th 1910.
 (19) Nightingall, V, XKK, File, *WIA Archive*, Melbourne.
 (20) **Australian Wireless, Important New Invention**, *Argus Newspaper*, Melbourne, July 28th 1908, p 4.
 (21) **Wireless Telegraphy, The New Development**, *Argus Newspaper*, Melbourne, July 30th 1908, p 5.
 (22) **Stotts Advertisement**, *Australasian Wireless Review Magazine*, Sydney, May 1923, p 6.
 (23) Amos, DJ, **The Story of the Commonwealth Wireless Service**, Adelaide, EJ McAlister & Co., 1936.
 (24) **An Aerial with History**, *Popular Radio Weekly Magazine*, Melbourne, May 27th 1925, p5 & p14.
 (25) Ryder, J D; Fink, D G, **Engineers and Electrons**, ISBN 0 87942 172 X, IEEE, New York, 1984, p 59.
 (26) **Marconi Debate, House of Commons Crowded**, *Argus Newspaper*, Melbourne, June 20th 1913, p 4.

Refurbishing aluminium antennas

Geoff Emery VK4ZPP and Ross Pittard VK3CE

vk3ce@amateurradio.com.au

This month I hand the reins over to Geoff Emery VK4ZPP (vk4zpp@wia.org.au) who sent me an interesting article on antenna restoration. Thanks Geoff for your efforts and please everyone keep the articles and feedback coming in.

Whether passed on by another amateur, recovered from the recycling shop, grabbed as a bargain at a swap meet or just needing to do maintenance, the average amateur often has to bring 'worse for wear' sky hooks up to scratch.

Two very detrimental factors to aluminium are the results of electrolysis, either caused by poor choice of fittings or the chemistry of the air, containing salt near the coast or industrial/automotive particulates, which when mixed with the normal moisture content, eats away at the shiny aluminium. If allowed to progress, the mechanical integrity of the structure is impaired beyond simple repair.

The first procedure is to inspect the antenna. Look for the dreaded white oxide powder around fittings and joints. This indicates the areas that need particular attention.

Next is to remove the fitting hardware which may be seized beyond

recovery. This is particularly the case where steel plated with cadmium or zinc/galvanised fittings have been used. Before struggling with spanners and screwdrivers, I spray the area with a lanoline based penetrant which seems more effective than older preparations such as *WD40* and *CRC-556*.

If the items release, you have had a win. If not, then you have to find a method of removal. Sometimes, heating the area with a blow torch may cause sufficient expansion for the frozen joint to be loosened. Clamps may be cut free using a cutting wheel on a high speed grinding tool. Before cutting into the underlying aluminium, try levering with a small bladed screwdriver. Hopefully you will be able to break the

metal along the cut without bruising or deformation of the aluminium.

Even an old fashioned hacksaw with a fine toothed blade might be suitable in making the cut.

Metal threads which are immovable because of corrosion can be a great frustration, made more difficult if they pass through plastic insulators, as trying to grind the heads off will melt the plastic.

One method I have found helpful is to drill through the head of the metal thread with a sharp drill slightly smaller in diameter than the shank. The hole only needs to be slightly deeper than the depth of the head. Then use a drill slightly smaller than the diameter of the head to remove the head. This method generates less heat from friction than most other methods and is particularly easy to use on posidrive type fittings as the pilot hole is automatically centred.

Having disassembled the antenna, it is necessary to further inspect its condition and repair and/or treat areas that are damaged.

a lanoline based penetrant which seems more effective than older preparations such as *WD40* and *CRC-556*.

Areas of oxidation need to be removed by abrasion. This can generally be done using a kitchen plastic

scouring pad, if it is superficial. The advantage of using the plastic pad is that it does not impregnate the surfaces with metal particles of dissimilar metal which will only cause further electrolysis later on.

If the pitting is deep, it may be necessary to remove the damaged area and insert a suitable sleeve just to restore mechanical strength. Pitted areas can sometimes be cleaned and an internal sleeve of PVC or similar used but remember to ensure balance if the element or boom section is undamaged on the opposite end.

Remember that crystallisation occurs in aluminium subjected to constant vibration, a lesson learned from the aircraft industry but obvious in

aluminium antennas mounted in windy sites.

If the metal has to be cut, it must be joined to be electrically continuous and particularly at VHF and UHF, the outside diameter maintained to keep the tuning characteristics within specification.

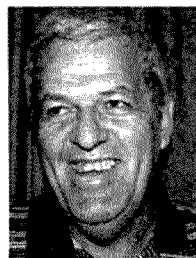
For this reason, internal sleeving is usually preferable with use of aluminium pop rivets which have aluminium mandrels. Some bargain rivets use steel mandrels and in the right conditions you will have a loose fastening, a non-conductive joint and a noisy antenna.

Once the various components have been cleaned and mended they are ready for re-assembly. I replace the hardware with stainless steel and use nylon insert nuts which remain tight without deforming the tubing.

Worm drive stainless steel hose clamps are used but not the ones with plain steel worm drives. Boom clamps using U-bolts are expensive items and I usually relent and wire brush the threads to remove any rust, lightly spray them with aluminium based paint and replace the washers and nuts with bright steel ones which are then also painted. If possible, after assembly, a further coat of paint is applied to keep the moisture from these components.

Remember that UV light causes many wire sheaths to degrade and so any pigtailed, whether sheathed or not, benefit from having heat shrink tubing applied. I believe that the electrical transmission industry has found lanoline a versatile anti-galling product as well as a jointing compound for copper to aluminium. Theoretically lanoline is non-conductive but applied thinly, it appears to work well both at AC and RF for these purposes.

If you do not have the expensive jointing compound available from your electrical trade supplier, I have



VK3CE

Silent key

Clem Maloof VK2AMA – SK

Clem Maloof VK2AMA passed away on 9 November 2009 at 77 years of age.

He was a devoted medical doctor and anaesthetic specialist, had eight children and many grandchildren.

From 1950 to the present Clem was very active in amateur radio. He passed his licence exam first time and at an early age. He was a true academic, a hands-on home brewer. He bought war surplus gear from Prices Radio in Angel Place, Sydney when in his teens and modified it in the beginning. Most of his equipment was home brew.

He was always interested in electronics, always supported the WIA with an eager passion and always listened to the Sunday morning broadcasts. He had his two metre repeater gear always on and monitoring. He won many field day awards with his mobile equipment. He also had articles published in *Amateur Radio* magazine. His 33 metre windmill tower at Bexley has been a landmark for many years with its still functional three element beam and rotator.

He was great friends with Mr. Corbin and Pierce Healy. He visited amateurs around the world, including New Guinea, USA, the Middle East and the British Isles.

Amateur radio was always on his mind. He followed the establishment of Dural with Dr. Morvan Dan with great enthusiasm, and also Atchison Street.

Clem is survived by his wife Rabina, children and grandchildren.

Submitted by his brother Peter Maloof VK2KPM.

ar



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CENTRAL COAST AMATEUR RADIO CLUB INC

CENTENARY FIELD DAY

Sunday 28th February 2010

WYONG RACECOURSE

Admission Fees Adult \$10. Free admission for under 17

Gates Open 6:30 am The Bistro will open at 8:00 am for early arrivals.

ATTRACTIONS

TRADERS

Most major suppliers selling amateur radio and electronic equipment.

EXHIBITORS

Representing amateur radio groups, clubs and emergency organisations*

FLEA MARKET

Boot sales,
Wheel and deal from 6.30 am.

OTHER

Embroiderers' Guild NSW, WIRES and Central Coast Potters Society displays.

RAFFLES

SEMINARS

FREE TEA & COFFEE

Listen for VK2WFD on HF — QSL certificates awarded.
Listen to VHF local repeater for directions and information.

DINNER

The Centenary Dinner will be held at
Wyong Bowling Club on Saturday 27 February 2010
commencing at 6.00 pm, in association with ARNSW

Two course hot buffet for \$25.00, drinks at bar prices.

Dinner bookings essential. Contact Brian Kelly of ARNSW -
phone 0418 659 043 to book.

Further Field Day information and regular updates on

www.ccarc.org.au

e-mail: ccarc@ccarc.org.au

*The Trader / Exhibitor area will be closed to the public until 9:00 am.

News from VK5 South Coast Amateur Radio Club

Stef Daniels VK5HSX

News on SCARC Awards

After the club having received several inquiries regarding what is happening with the Southern Vales Award, the Committee began an evaluation and determination of what current awards are issued by the club to its members, as well as the amateur community.

The club determined that several awards would be available for the club members only, with the Southern Vales Award open to the broader amateur radio community in 2010.

The main reason for the changes to our awards was to provide a format of recognition for efforts by members and operators on behalf of the club. Several awards which were already operational, however, they were not issued due to criteria and knowledge of the requirements. We have also included a number of new awards to help encourage operation and advancement for members to perhaps strive to achieve.

Southern Vales Award

Issued to non-members who contact the VK5ARC Club station and a certain number of members within a minimum period. The Award will be made upon receipt of completed Application including details of the required fulfilled contacts made in a 12 month Period.

Full details can be found at the club website: <http://www.scarc.org.au/>
Email: secretary@scarc.org.au ar

Secretaries please note

**Improve your club's
image**

If you send a high resolution image of your club logo to the Secretary, Publications Committee, Ernie VK3FM, we will endeavour to print it with your notes and event advertisements.

Send to

hamads@wia.org.au

Poeppel Corner 2009

Daniel Clift VK2DC

Where is Poeppel Corner, and who would like to go there? The question was asked at a general meeting of the Blue Mountains Amateur Radio Club last year. With an enthusiastic response from some 24 members, the stage was set! PC09 was the brainchild of Gunter VK2JAP, and took around 12 months to organize.

When the idea of doing an off road excursion to Poeppel Corner was initially put to the members of the Blue Mountains Amateur Radio Club last year, it generated considerable interest.

Initially some 24 members indicated they would like to come along and be part of the fun. It was intended to be simply a run to Poeppel Corner, so it was an opportunity to take in the other two corners as well: Haddon Corner, and Cameron Corner, and playing radio all the way.

Natural attrition finally brought the numbers down to just eleven members who were to eventually participate.

The trek started at 0700 on Saturday 29 August 2009 after members had participated in an early breakfast, along with the obligatory heart starter, at McDonalds. With a champagne farewell from Joe VK2VAT, the DXpedition got under way. The day was overcast and light rain was encountered along the Bells Line of Road to Lithgow. Caution had to be exercised as the road was quite slippery. We encountered two accidents, but all parties involved were quite okay.

Inter-vehicle communication was pre determined to be on 434.100 MHz and proved to be successful throughout the entire excursion, with a backup of 145.500 MHz. We were also active during the trip on 20, 40 and 80 metres, with both mobile and portable operation. All vehicles had HF antennas, and they worked quite well, with each vehicle taking turns to operate VK2HZ/mobile. VK2HZ is the call sign of the Blue Mountains Amateur Radio Club Inc.

The first day was uneventful, and took us through Bathurst, Blayney, Cowra, Grenfell and West Wyalong. We logged into the Traveller's Net on 20 metres to give us some security.

West Wyalong was the first stop for lunch on day one, and for all parties to catch up, as some had taken a slightly different route, and while we waited, I took the opportunity to visit the grave of both my mother and my grandfather.

We also met up with Marty, another bike rider from Dubbo, who was joining us for the experience, thus swelling our group to twelve. Marty is a candidate for a Foundation Licence in the near future. We then moved on from West Wyalong to Rankin Springs, then to Hillston, Rotea and to Willandra National Park, which was our first camp.

Willandra is a very large cattle property and also part of the Willandra National Park, situated some 160 km north of Hay in western NSW, and about 20 km from the western NSW town of Willandra. Willandra National Park is about 20,000 hectares in size and was once part of the 'Big Willandra Station,' which used to run sheep.

It now has excellent accommodation facilities, but we decided to rough it! After setting up camp, a dipole antenna on 80 metres was quickly erected to keep in touch with home and, of course, to

operate from a portable site.

It was great to hear so many stations that had heard about PC09 and wanted to be part of the action. Kevin VK2FTTP had made a 'squid pole' vertical for 40 metres which worked a treat. This antenna was mounted on a Pajero, owned by Richard VK2LET.

Next day saw an early start to our next planned campsite, which was some 900 km away at Arkaroola. The intended route would have taken us from Willandra to Mossgeil, then Ivanhoe, Sayers Lake, Menindee, then Broken Hill and on to Arkaroola.

All this was not to be, when misfortune struck Peter VK2US, some 20 km from Menindee; his vehicle managed to destroy a front wheel bearing along with associated stub axle. This meant a flat top tow from south of Menindee to Broken Hill for repairs.

Gunter VK2JAP rode into Menindee



Photo 1: At the corner.

Back Row: Werner VK2FWMS, Gunter VK2JAP, Marty, John VK2QN, Daniel VK2DC, Richard VK2LET.

Front Row: Chuck VK2SS, Kevin VK2FTTP and Ross VK2VVV.

Missing are Erik VK2MAN, Peter VK2US, and Tony VK2KAY.

to a service station in a bid to get some assistance. They kindly put him in touch with a towing service at Broken Hill. It was to be some time before we had any news, so Ross VK2VVV put on an impromptu barbeque of sausages while we waited on the side of the road.

One golden rule when travelling in the country: never pass a vehicle if it has stopped on the side of the road. We had every passing vehicle stop or at least slow down to ensure we were OK.

This left three vehicles and the two bikes to continue, while we waited to hear the verdict regarding Peter's vehicle. We stayed at Broken Hill that night, which put us behind by a day. After stocking up on supplies the next morning, we took an

off the main road route via Yunta, and up through countryside that would take your breath away.

Passing some properties with beautiful names like 'Koonamore', 'Nillinghoo', 'Frome Downs' and many more, before finally arriving in Arkaroola, about 500 km from Broken Hill, where we stayed for two nights. Arkaroola is situated in the beautiful Flinders Ranges of South Australia.

The two days spent at Arkaroola, gave us time to relax, do some washing and explore the surroundings. Monday night, rather than cooking, we enjoyed a meal at the restaurant in the small community of Arkaroola. Our second night, being Tuesday, we were able to run the Blue

Mountains Amateur Radio Club's 80 metre net. The controller was Daniel VK2DC.

From Arkaroola, we moved on to Leigh Creek, then Lyndhurst, Marree and started the Birdsville Track to Birdsville: Marree, to Mulka, past Ooroowilanie ruins, on to Mungeranie. We suffered a windscreen hit after Marree, but fortunately it was on the passenger's side, and was quickly taped over with Gaffer tape to keep out any dust and moisture.

While we had not planned to stay at Mungeranie before we hit Birdsville, we had no choice due to the lateness in the day. It turned out to be a very delightful stopover indeed.

An OCF dipole was erected across a lagoon and contacts were quickly made on both 40 and 80 metres.

On to Birdsville

From Mungeranie we moved on to Warburton Crossing and then to Birdsville. It was at Birdsville we were advised that Peter VK2US, Erik VK2MAN and Tony VK2KAY would not be rejoining the group as they had decided to return home. The vehicle had not been repaired as they had to fly parts up from Melbourne, and they had not as yet arrived.

The Birdsville Track is one of the more famous outback roads in Australia. The 520 km track runs from Marree, a small town in the north of South Australia, north across both the Strzelecki Desert and Sturt's Stony Desert, ending in Birdsville in south-western Queensland.

On the way into Birdsville we came across dozens of small camps set up in the bush, in paddocks and virtually anywhere that could be found! Now while it was planned to go to the Birdsville races, just to say we had been.

So did some 6,000 other people and it was not even race day!!

So, it was fill up with some 'motion lotion', have a snack, get some goodies and get out as it was getting crowded.

That night we camped at Ayres Creek, which is a small tributary of the Diamantina River. We were lucky to find this spot as it was on a bypass to Ayres Creek, because the normal crossing had washed away.

Flooding of the Diamantina is a reasonably common occurrence with major flooding isolating the towns and properties. Flooding can last several months in some areas and road transport is often disrupted for considerable

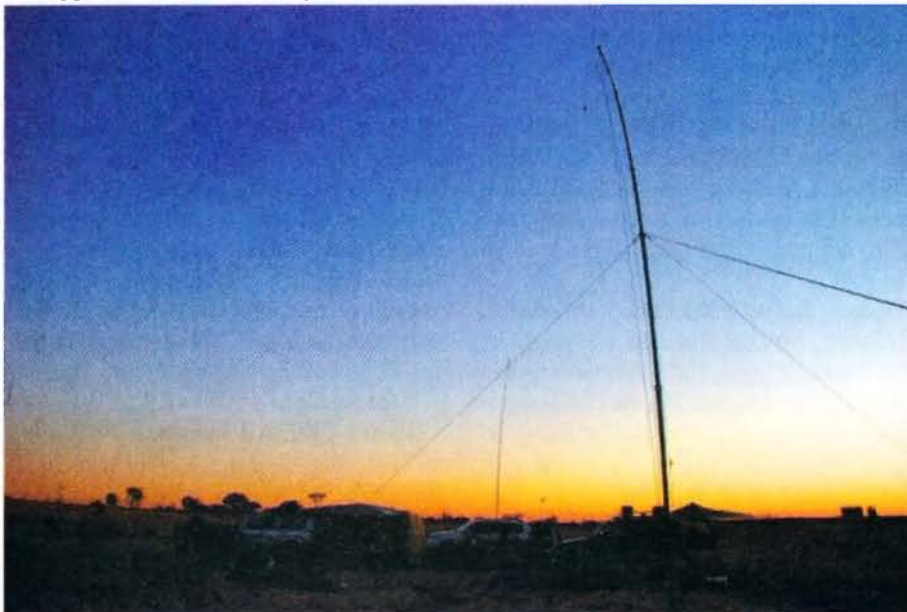


Photo 2. Antennas at the corner.

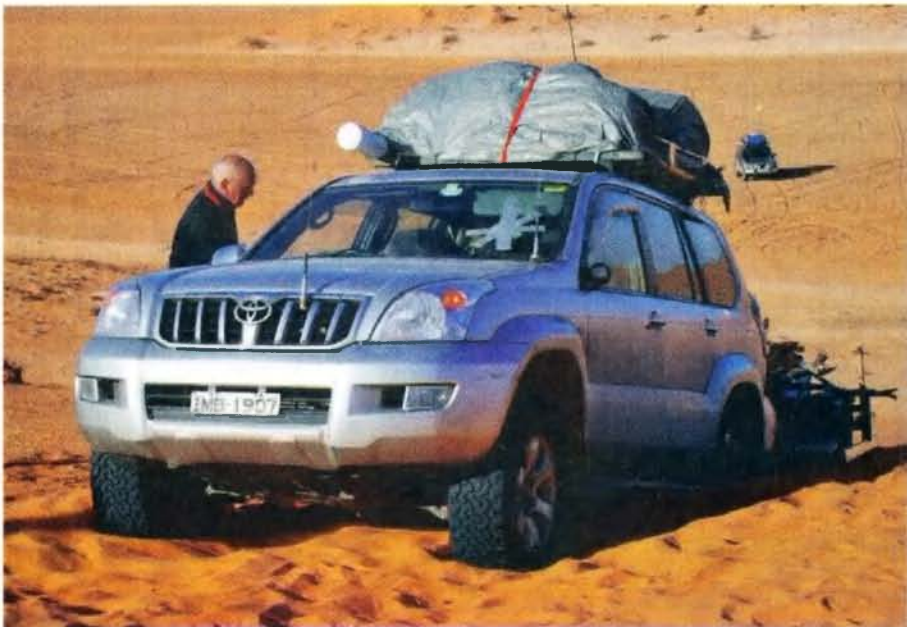


Photo 3: Bogged on the last dune before the corner.

periods of time. Next morning we continued west towards Poeppel Corner. We later had word that the Birdsville races had attracted in excess of 20,000 people!

The fun begins

Big Red is the first and highest of well over 1000 sand dunes, which run north - south in the Simpson Desert for hundreds of kilometres. Big Red, about 35 km west of Birdsville and at only 36.5 metres above sea level, is recognised as a challenge for every 4WD enthusiast. We did not tackle Big Red, as there was a smaller one we could traverse easier with a trailer on some 3 km away.

Firstly we had to deflate all the tyres to about 18 psi (old language here!), high range four wheel drive first gear and just go, tackling each sand dune as we found them. Fortunately with both Gunter and Marty on the bikes, they were able to scout ahead and advise the severity of each one.

It was nothing to have a very steep dune (a gradient of one in three and sand to over two feet thick was not uncommon) and to have a sharp turn at the top! That was a real challenge, as you could not see what was in front until you came over the edge! As I was driving Gunter's Toyota Prado, and towing a trailer it became doubly challenging.

We also used UHF CB channel 10 to advise on-comers of our presence. Only one minor hiccup here, with some miscommunication, but both vehicles were able to take evasive action. Only two sand dunes stopped our vehicle, but with encouragement from the other members of the group, we all made it safely.

I did manage to rip the number plate from the trailer, which was handed in to Birdsville Police Station and we picked it up on the return journey. We had played the Good Samaritan to some bikers with fuel at Ayres Creek and told them about the number plate, so we can only assume they handed it in.

At the Corner

Bordering Queensland, Northern Territory and South Australia, Poeppel Corner is a very stark, lonely, but beautiful place. Being a country boy, it had a special affinity for me. *Truly God's Country.*

Settling in for a two night stay had always been planned, as we had achieved our goal of getting to Poeppel Corner. Only two corners to go: Haddon, and Cameron Corner.

At each camp we erected antennas for HF, mainly on 40 and 80 metres and Gunter's Delta Loop on 20 metres, and quite often we had a dog pile trying to get in contact. On the second day at the corner, as the bands were very quiet, we took the time to relax, explore and take lots of photographs, while the two bikes were given new tyres and a service.

Two of the strongest signals heard on 40 metres consistently were from Steve VK2BGL, and Markus VK2SK. With the aid of Markus, we were able to contact Bob VK0BP on Davis Base in the Antarctic on 20 metres. Bob is a Club member.

The signal was not strong with a report of 3 x 1 both ways, but the contact gave us the final call area we needed to have contacted all states and territories of Australia on the PC09 DXpedition.

On the return journey we decided to count the sand dunes from Poeppel Corner. I think we lost count at around 220. It was much easier this time as we had some idea of what to expect.

Approaching 'Big Red' sand dune from the western side it became quite clear what the weekend entertainment was for the Birdsville locals! Come and watch the city slickers in their nice shiny new four wheel drives and see how they fare. All the gear, but absolutely

no idea! It was pure chaos! Both bikes were successful in getting over Big Red. We again took the alternate route 'Little Red', which is smaller than 'Big Red', but easier on the vehicles.

On the return, after restocking at Birdsville, we journeyed to Haddon Corner. Haddon Corner borders Queensland and the Northern Territory. It was during this trek that Kevin VK2FTTP and Richard VK2LET happened upon an accident near the small township of Betoota, that had resulted in a roll over, this some 180 km from Birdsville.

They were able to assist in communications with Kevin VK4KKD who contacted the appropriate authorities, giving them the required latitude and longitude to enable the authorities to locate them.

Again, that is another story (*see the article by Richard VK2LET in the November 2009 issue of AR - Ed.*). It did

...the contact gave us the final call area we needed to have contacted all states and territories of Australia



Photo 4: Operating as net control on the BMARC 80 metre net.

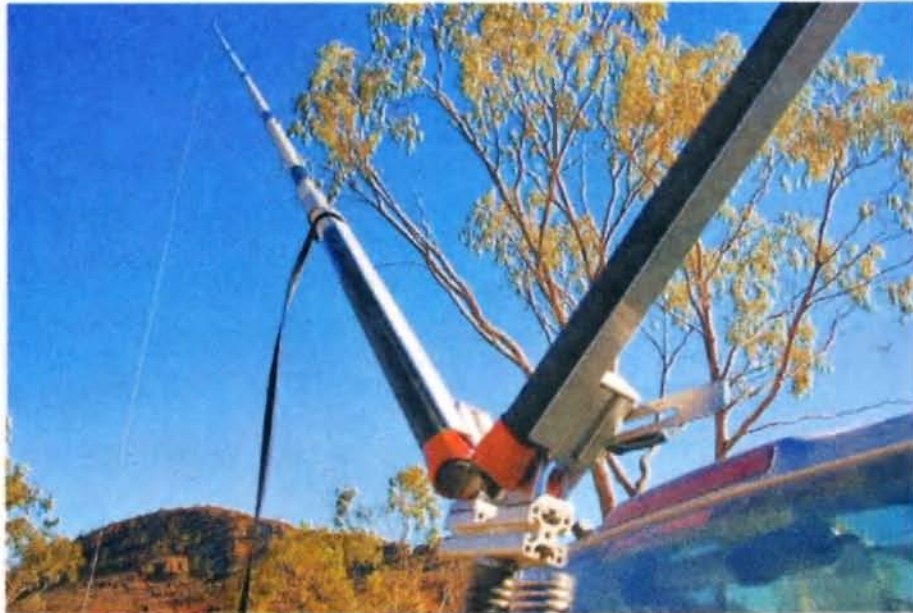


Photo 5: A 20 metre loop erected at one of our stops.

however show the benefits of amateur radio, particularly in the outback. *'The world's only failsafe method of communication!'*

We had a light lunch and the obligatory photo at Haddon Corner, and it was on toward Innamincka.

On the way to Innamincka, the second window on Gunter's Prado was taken out by a rock. It was quite a shock to hear what sounded like a mini explosion and to discover one of the side windows 'missing' from the Prado. A quick tape up with Gaffer tape and cardboard got us underway in fairly quick time.

I might add that we managed to put a hole in the windscreen just before we arrived at Marree. Oh, and did I mention the flat tyre? From this point, we were given the nickname of 'Team Demolition'!

Innamincka was a very pretty spot as well, and, while it would have been nice

to stay, we had to push on. Cameron Corner was the next stop, and again two days were planned.

At Cameron Corner, we made plans to 'fire up' the Dingo Fence on 40 metres. After some difficulties, this was done successfully. This is a story for Ross.

After Cameron Corner, it was on to White Cliffs, a small opal mining town in western NSW. We journeyed via Tibooburra and Milparinka. White Cliffs boasts an underground motel and all modern facilities.

Milparinka is a historic gold mining town, which has some 8,000 visitors each year!

From there the intention was to overnight at Lake Cargellico, but these plans were changed and Dubbo was the next camp. Actually, we camped in Marty's backyard, all five acres of it! After a sumptuous BBQ and some cleansing ale, we settled into what was

promising to be a cold night. It had reached minus three degrees the previous night. But we were tired and sleep came quickly.

Just taking in the ever changing colours of the Simpson Desert would simply take your breath away. On the return trip from White Cliffs, it was noted that the countryside colours of the red dust and the green vegetation coupled with the vivid purple of 'Patterson's Curse' were simply awesome.

Next day was to be the last day of our trip and a light breakfast was enjoyed at Wellington Caves, and then on to Mt Panorama in Bathurst where Markus, Peter, Erik and Tony all came along, with Peter VK2PJZ, Terry VK2UX and Joe VK2JP to welcome us back. Markus VK2SK was kind enough to put on a BBQ lunch for us.

Overall, we had a lot of contacts on air, and we had a lot of fun. Difficulties in some promised aspects of the trip were unfortunately encountered, but nevertheless the trip was one that I thoroughly enjoyed.

Plans are in the pipeline to do Surveyor General's corner, which borders Western Australia, South Australia and the Northern Territory. However, that trip is some time off.

I would like to thank my travelling companions who helped make the PC09 DXpedition an enjoyable one, and my role as 'attitude adjuster' was not required. In putting this article together, if I have missed some incidents, or forgotten something, it was unintentional.

To Werner VK2FWMS, thank you for the photos. Images from this DXpedition can be viewed on the BMARC website at www.bmarc.org and follow the prompts.

Participants were: Gunter VK2JAP, Daniel VK2DC, Ross VK2VVV, Chuck VK2SS, John VK2QN, Richard VK2LET, Werner VK2FWMS, Kevin VK2FTTP, Erik VK2MAN, Peter VK2US, Tony VK2KAY and Marty.

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Photos by
Werner Schamberger
VK2FWMS



Photo 6: Using the sun at White Cliffs.

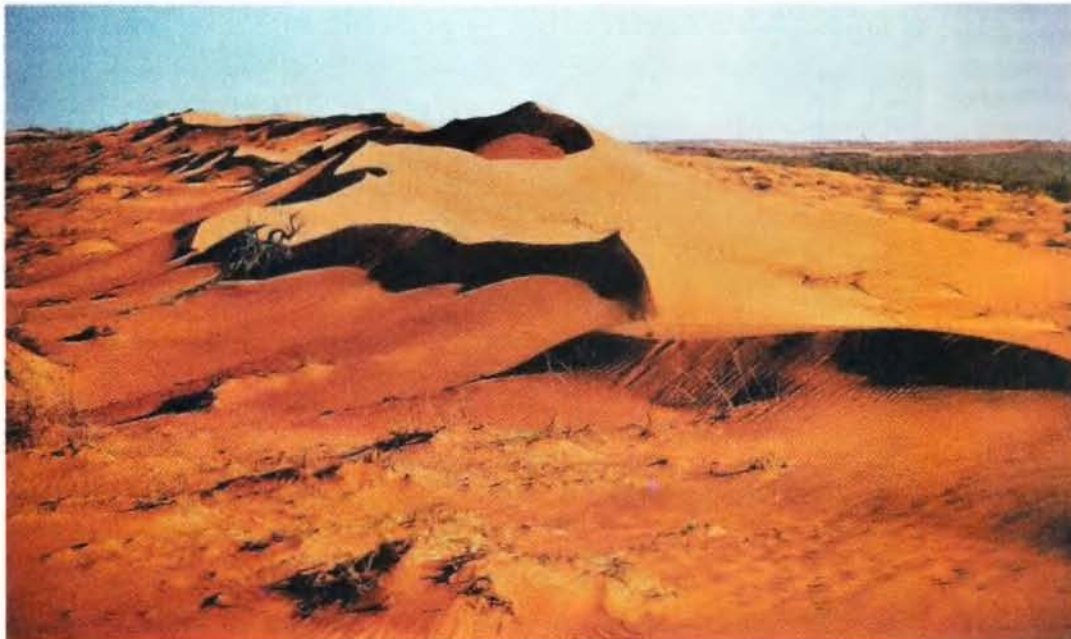


Photo 7: Dunes in the Simpson Desert.



2010

Welcome to 2010, another year has passed us by, only for another one to begin. I am just wondering what this year may have in store.

Toowoomba and Downs Wireless Group

From when they first heard of the WIA Centenary in May 2009, members of the 'Toowoomba and Downs Wireless Group' affiliated with WIA have been planning with the 'Milne Bay Military Museum' in Toowoomba, to provide a PowerPoint display of transceivers from early times through to the present. Ray Crawford VK4HDX has been very helpful with early information. It would help us if other near by amateurs prepared to loan early transceivers they have to the secure Museum site from February through to May 2010, would contact Matthew Weatherley VK4TMW (07) 4698 7775 Email: matthewcarole@austarnet.com.au

WICEN

WICEN Queensland holds a net every Sunday on 7075 kHz from 8:30 am (2230 UTC) Drop in and join the net with one of the either net controllers VK4ZMM or VK4QY

Bunya Mountains & District AmCom Inc

The Maclagan Ham and Wine Ham fest towards the west happened on the 30th January. We wonder how Ricky VK4NRL, Neil VK4NF and others enjoyed their weekend end or was it a case or two, too many wines??

Regional HF Nets

Monday Mackay Club VK4WIM
3597 kHz from 0930 Z

Tuesday RADAR VK4WIR
3613 kHz from 0930 Z

Wednesday Gold Coast VK4WIG
3605 kHz from 0930 Z

Thursday Henry Fulford Memorial
VK4WAT 3588 kHz from 0930 Z

Thursday Sunshine Coast VK4WIS
3660 kHz from 0930 Z

Thursday Hervey Bay VK4CHB
3615 kHz from 0730 Z

Friday Central Highlands Club
VK4WCH 3618 kHz from 1000 Z

Friday Lockyer Valley Club VK4WIL
3570 kHz from 0930 Z

Saturday Darling Downs VK4WID
3587 kHz from 0930 Z

Sunday WICEN QLD VK4IQ
7075 kHz from 2230 Z

Sunday North Queensland VK4WIT
3605.4 kHz from 0930 Z

Sunday Dalby and Districts
3585 kHz from 1000 Z

Do you have a VK4 HF net happening with your club that you would like to advise us about, If so let us know qtc@wia.org.au

Cheers, Chris VK4VKR
From The Sunshine State

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News from VK3

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

We've been busy

A new year can be a time for making resolutions, but it is also a time for reflecting on the year just passed. Normally reported in these notes are the events that have occurred during the preceding months.

However there is much more to a club than just weekly meetings. Within our group we have members who give generously of their time. Our Wednesday group meets every week to work on the maintenance of our club rooms. In addition to this work they also raise money for the club by collecting and selling scrap metal.

Due to the efforts of this industrious group not only are the yearly club subscriptions kept to a minimum, but we have been able to buy new equipment for use by the members.

In the past 12 months we have purchased a HF transceiver complete with power supply and automatic

antenna tuning unit. This replaced our Kenwood transceiver that unfortunately suffered from a lightning strike and was unable to be repaired. A new 2 m/70 cm FM transceiver was also obtained. All this equipment is being installed in a custom built operating console.

The antennas for this equipment have also undergone maintenance work, and a new mast and antenna for a WICEN repeater has been installed.

Another acquisition was a video projector which has enabled guest speakers to show PowerPoint presentations. This has also helped to replace the overhead projector and the blackboard.

Adding to our purchases, we have bought a new barbeque which means that social functions previously held in member's homes can now easily be held in our own club rooms.

The sorting of the valves in our valve

bank is now complete and the boxes of valves are now all stored in one area. These valves are not only available to club members but can also be purchased for a moderate cost by anyone restoring old valve equipment.

Not all improvements to club facilities have been carried out by the Wednesday group. Some members have taken time out from normal weekly meetings to work on special projects. One of these projects was the installation and commissioning of a server for our computer network. We have also overhauled our club website.

Visitors to Geelong are most welcome to attend our club meetings. These are held every Thursday evening at 8 pm local time at 237A High St Belmont. Or visit our museum which is located in the Old Geelong Gaol in Myers St Geelong.

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Happy New Decade

The Year 2010 has begun, promising improving HF propagation, giving us a year-long centenary celebration plus the return of the Centre Victoria RadioFest Sunday 14 February at the Kyneton Racecourse.

Details of the event can be found in an advertisement in this edition of Amateur Radio magazine and on the website radiofest.amateurradio.com.au

The major commercial traders were quick with their bookings. By early January ten clubs and groups, including Australia's newest - the Macedon Ranges ARC - had accepted Amateur Radio Victoria's invitation to be in the Club Corner Precinct. More tables are available for those who want to take up an excellent promotional opportunity for their club or special interest group.

The VK Microwave Group, just returned from its two-week VK9NA DXpedition on Norfolk Island, will be there to give a presentation as part of the mini-lecture program - not one to be missed. In fact it will be one of four lectures on the day.

The event is proud to be a 'WIA Supported Centenary Activity' and volunteers from both Amateur Radio Victoria and the Central Goldfields Amateur Radio Club look forward to seeing you on the day.

Special broadcast 7 February

While some of us give up part of our summer holidays for amateur radio administration activities and feel already adequately committed, then comes along an offer that cannot be refused - an invitation to produce the WIA national news broadcast.

Amateur Radio Victoria has been asked to put together the broadcast of Sunday 7 February with the aim of providing some late publicity for the Centre Victoria RadioFest.

It will also include a reference to the Black Saturday bushfire disaster first anniversary, take a fresh look at intruder watching or the International Amateur Radio Union Monitoring Service (IARUMS) which is its official name, preparing for emergencies, reminders about WMBD, IMW and

ILLW, plus lots more.

A feature will be an item on the Australian who put man on the moon, Ross Adey VK5AJ K6UI (SK). An article is being prepared for Amateur Radio magazine by Murray Lewis VK3EZM who is keen to obtain a suitable photo of this pioneer of medical research and electronics. He was known to have visited radio amateur friends in Melbourne. If you can assist with a photograph please email either Murray Lewis VK3EZM lokey.editor@yahoo.com or myself Jim Linton VK3PC vk3pc@wia.org.au

Foundation class

Our Education Team led by Barry Robinson VK3JBR has announced that the next weekend training and assessment session for the Foundation Licence will be 19 and 20 March. For inquiries or to enrol contact Barry on 0419 808 323 or arv@amateurradio.com.au **ar**

News from VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The members at the November meeting of AHARS were treated to a very interesting lecture by Justin VK7TW.

Justin described the experiments he and Rex VK7MO, along with a number of other amateurs, have been conducting using beams of light to transmit signals from hilltop to hilltop.

They began testing the available higher power LEDs, including different colours, but found that red was the most efficient. With red LEDs for the transmitters, they initially passed messages across Hobart but, wanting to extend the distance, they did some experiments with lenses to focus the light and proved once again that the simplest can often be the best.

A Fresnel lens about 200 mm across focussed the light better than any glass lens. A Fresnel lens this size can often be seen in the back of a van or caravan.

You can buy a Fresnel lens (to assist you to read the fine print on a contract?) from a variety of sources. It is a sheet of clear plastic on which are indented fine grooves, in a circular pattern, simulating a solid lens, but much thinner and lighter.

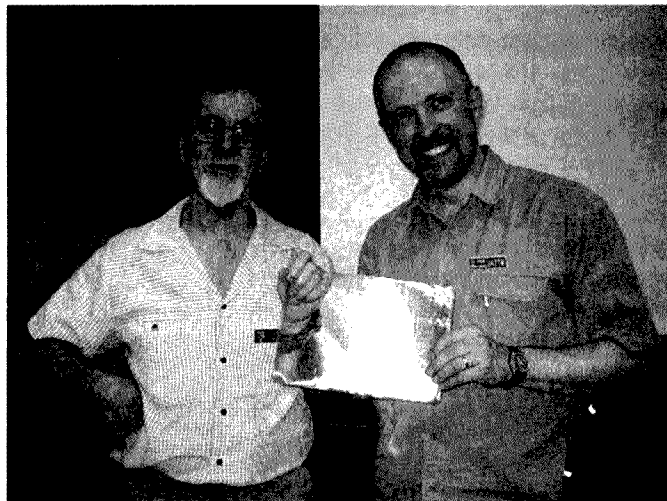
The size of the lens made construction very simple and allowed them to make quite a large array as they sought ever longer distances. Cars were used for getting to remote spots and the equipment was light enough to be carried by hand if necessary.

They have had a few visits by police following up reports from the locals about these weird red lights in the sky, but once the police knew what they were

doing, they had no problems.

Up until October 27, the best distance Rex, Justin and their team had achieved was from one high point to another across the 'top' of Tasmania, but on that date, Rex, Joe VK7JG and Paul VK7KPG

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President John VK5EMI and Justin VK7TW holding a fresnel lens. Note the magnification of John's watchband.

Well another year has arrived and I do hope that propagation will dramatically improve. It has taken longer than normal for the current cycle to really kick in.

Add to that many international broadcasters have left shortwave which has certainly eased frequency congestion on HF.

Sadly deliberate jamming is still with us from the usual culprits. North Korea certainly is the one of the most noticeable here as they transmit in a mode which is a cross between DRM and the STANAG modem, favoured by NATO forces.

It sounds awful and is also very wide and the DPRK mostly targets transmissions from South Korea, Japan plus various clandestine outfits. The recent Sydney-Hobart yacht race found HF communications on 6516 difficult to impossible at night from a South Korean clandestine station on 6518 and the much louder jammer co-channel.

The same clandestine outfit is also on 6003, 6348 and 6600 and the jammer is present as well. Both seem to be operating 24/7. The South Koreans also jam clandestine stations from North Korea but use a pulse technique. You can often hear them on 4470, 4120 and 3480.

China also jams international broadcasters yet is more sophisticated by stating they are broadcasting legitimately with relays of their domestic service or CRI. Previously they used to continuously broadcast ethnic music and were dubbed "Firedrake".

Although the latter is still about, it is mostly confined now to jam the "Sound of Hope" (SOH) a clandestine station of the Falun Gong movement. This station really moves about the spectrum and mainly operates outside the normal broadcasting allocations.

SOH itself is rarely heard but Firedrake certainly is obvious. The only time I have

heard SOH is because Firedrake seems to have a silent period at the top of the hour. SOH recently switched to morning broadcasts in this cat and mouse struggle with Firedrake.

Channels worth monitoring are 8300, 9000, 11300, 11350 and 13970. SOH has been heard encroaching into 20 metres occasionally. They are probably using converted ham gear and reportedly operating from Taiwan, again illegally.

The other major source of deliberate interference is OTHR. Although not as strident as the infamous Woodpecker in the 70s and 80s, OTHR is still around. China has a large set-up on Hainan Island and its transmissions are extremely wide as hams in the CW segment of 40 metres can attest. The other OTHR is much higher in frequency and reports say is operated by NATO from Cyprus. This is much narrower and has differing pulse widths and rates.

Then I noted a report from Germany claiming they had tracked down an OTHR on Bruny Island! If there was one there we in VK7 would certainly have heard it by now if it was present! A ZL claimed it was a top secret operation.

What a load of nonsense! I am aware of an ionospheric experimental station which has been there for some time but has never caused any QRM.

But hang on, there was this following report on the IARU Region 1 website:

The Tiger Radar in Region 3 leaves the 10 MHz Band!

Tuesday, 29 December 2009 15:32

After complaints of VK4DU (Glenn) and DJ9KR (Uli) to the La Trobe University in Australia, the Tiger Radar in Bruny ... will change the frequency data bases. In the future no Ham-Band will be interfered by this Ionospheric Radar System. Great action dear Glenn and Uli. Not moaning but acting is the right way to save our bands. Happy

New Year to all intruder busters from DK2OM, Wolf, Coordinator IARUMS Region 1!

It just goes to prove that I do not know everything! Further details on the radar system can be found on the La Trobe University web site.

The Belgians closed down their shortwave operation on the 31st of December 2009 from Wavre. The Flemish side closed down several years ago and the French (Walloons) continued until then on 9970.

The two language groups in Belgium operated separate broadcasting organisations although using the same senders. The linguistic differences have torn this tiny nation apart. This is another country to leave shortwave.

Good news however is that Radio Prague in the Czech Republic has obtained funding to continue on HF as has its neighbour, Radio Slovakia International. Both share senders and were formerly one nation, Czechoslovakia.

I note that Christian Voice which has been operating from the former Radio Australia site on the Cox Peninsula will not be renewing its lease of the site when it becomes vacant this year and will probably leave HF. I believe that they also are closing the site they bought from Deutsche Telekom only recently.

I could not believe my ears listening to "Family Radio" the other day. The program was "Open Forum" and the host said he had calculated that the World will end on the 21st of May 2011! Take it with a grain of salt for sure because the same individual has made similar prophecies in the past and dates passed without incident. Will the World end then? I do not know but for certain he will have no credibility if the date comes around and nothing happens.

Well that is all for now. Until next time, the very best in monitoring.

73 de VK7RH.

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News from VK5 continued.

completed a one-way contact across Bass Strait, from Mt Liptrap in Victoria to Mt Horrible in Tassie, a distance of 288 km (See AR December 2009).

Justin had a very good PowerPoint presentation and gave everyone food for thought. There were a few reminiscences about light beam transmission using

sealed beam headlights, back in the 1970s from some of the members, too.

The year has ended with a Christmas Lunch at Mount Lofty House attended by 50 members and their partners where a pleasant time and a lovely view were enjoyed.

January will see us at our annual picnic under the trees at the Lions Club in Bridgewater.

The AGM will start the Club Year off on February 18. Persons interested in standing for the committee should contact Club Secretary, David Clegg, VK5KC for a nomination form.

The committee wishes all members and all amateurs the Season's Greetings.

"DX before Dishes".

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Tales from the South Pacific - Lord Howe Island Dxpedition VK9LA

A personal account of 10 days on a small island with 15 other amateur radio enthusiasts. 23 March to 3 April 2009

Chris Chapman VK3QB

With apologies to James A Michener

Introduction

Late in 2008 I received an email from a friend pointing me to a website which was looking for operators to travel to Lord Howe Island in 2009 for a DXpedition.

Ever since I can remember I have wanted to go on a DXpedition. The travel, adventure, new experiences and new friends all coupled in with the fascination of the hobby of kings, amateur radio (late nights, antenna erections, pileups and rare DX)! This opportunity was perfect as it lined up with my personal circumstances re timing, availability and being reasonably close to home it did not require a long-haul flight.

Perhaps most importantly, the DXpedition organising group, the Oceania DX Group (ODXG) was keen to have 'first timers' join some of the more experienced operators for this trip.

So the DXpedition began to take form under the guidance of the ODXG and DXpedition leader, Bill VK4FW. A diverse team was assembled comprising 16 operators (along with four partners) from three continents and five countries.

We also had great diversity in the skills and experience of the team members, with some being die-hard DXpeditioners, and some, like myself, being a DXpedition first-timer. We had computer experts, antenna experts and folk with extensive operational experience on our three modes of operation, SSB, CW and RTTY. The call-sign VK9LA was already

allocated to ODXG and preliminary agreements were in place for two suitable sites on the island.

It is fair to say that all 16 operators shared a common set of desires:

- Have fun;
- Work lots of DX – play lots of radio;
- Make new friends and
- Experience an exotic location.

VK9LA promised to offer just that, and more.

This story is a brief account of this DXpedition from the eyes and ears of a first timer. The team was made up of the following operators: Tony IZ3ESV, San K5YY, Bob N2OO, Lance N2OZ, Stan SQ8X, Peter SQ9DIE, Victoria SV2KBS, Tex VK1TX, Luke VK3HJ, John VK4IO, Catherine VK4VCH, Chris VK5CP, Jay W5SL, John VK5PO, Bill VK4FW and Chris VK3QB.

Lord Howe Island

Lord Howe Island (LHI) is located in the South Pacific, approximately 700 km east of mainland Australia, and is widely regarded as the most beautiful island in the western south Pacific region. It is the closest island getaway from Sydney and is less than two hours flying time from Sydney and Brisbane.

It is one of just four island groups to be inscribed on the World Heritage List for the global significance of its natural beauty and heritage. There are approximately 350 permanent residents and no more than 400 tourists on the island at any one time. These limitations are largely set down by the World Heritage Listing guidelines.

Flights to the island have strict baggage limitations which are governed by the aircraft used to service the island, the de Havilland Canada Dash-8, seating about 32 passengers and allowing only 14 kg of checked baggage per passenger. The runway is likely the limiting factor, as it is only 1,005 metres in length, located on the flattest section of the island which is probably only 1,100 metres wide! The airport was constructed by Australian

Army surveyors in 1975 - prior to that the island was serviced by flying boats.

Those with some experience of DXpeditions will quickly realise that these weight limitations would have made any serious DXpedition with 16 operators a virtual impossibility. Hence the ODXG arranged for most of the equipment to be shipped to the island one month before the event.

All power (240 V AC 50 Hz) is provided by diesel generators on the island, and for the most part this was stable and reliable.

The VK9LA operation - the arrival and setup

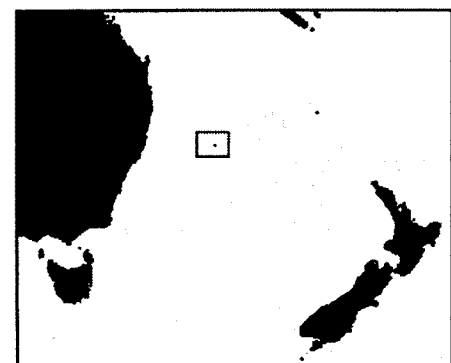
The DXpedition was to officially begin on 23 March 2009, but Bill VK4FW was able to fly onto LHI a couple of days earlier. This gave me the chance to work Bill from my home QTH once he had established a basic station set-up, and I was very pleased to be the first in the log with VK9LA – both on SSB and CW on 30 metres.

Over the course of the next two days the remaining 15 operators and some partners arrived on the island. The flight from Sydney was smooth and chatter was predominantly focused on radio matters – as almost half the passengers were the LHI DXpedition crew. I suspect that our constant banter, laughter and impending excitement provided the rest of the passengers with a curious but entertaining air-travel experience.

Abnormal people, that is 99.9% of the population, simply do not understand or appreciate the wonders of amateur radio and DXpeditions!

On arrival on the island we were met by Bill VK4FW who immediately put us to work getting the towers up and beams erected at the Blue Lagoon Lodge.

The team was spread between two resorts. The Beachcomber Lodge was located at the top of a small hill and operated the CW stations. This became known as the 'CW Camp'. About one km away from the CW Camp, down by the beach, was the Blue Lagoon or 'SSB



Location of Lord Howe Island

Camp', and this is where we ran the SSB and RTTY stations.

The CW Camp had elevated verticals for 30 and 40 metres each with 42 radials, a dipole for 80 metres, an inverted 'L' for 160 metres and an R5 vertical, as well as a three element tri-bander on 20, 15 and 10 metres. This camp was, for the most part, fully setup and operational within the first 24 hours.

The SSB Camp required more time and effort than originally planned. First was the three element 20 metre beam. This took longer than expected due to space constraints, so the remaining antennas were left until next day. The SSB Camp worked 20 metres SSB hard the first night. The next day was spent running 20 metres SSB whilst a number of operators

worked hard to get the remaining antennas up and operational. Refer to the summary for a full description of the antenna complement.

The VK9LA team had more or less 'taken over' these two tourist facilities so were able to get some latitude and cooperation from the respective owners. The owner of the Beachcomber is a licensed radio operator, VK9FLHI, and was extremely helpful, providing his utility vehicle and enabling us to ferry equipment between the two camps.

Of particular interest was John VK4IO and his 'arborist's tool' – really a super duper sling shot. This device is something to see in action. Within 20 minutes we had the 80 metre dipole up at about 25 metres with one end into a

fantastic Norfolk Island Pine and the other into a Silky Oak. Shortly thereafter the 40 metre dipole was up about 18 metres. John then headed up to the CW Camp with Bill and got the 80 and 160 metre antennae up nice and high.

Operation

ODXG and the more experienced operators made the decision that this would be a very informal DXpedition, and an opportunity for the less experienced of us to build our skills and confidence. We had no formal operating schedules although some rough patterns developed as the team 'found their footings' and preferred bands, modes and shifts began to take form.

Tuesday night I pulled the graveyard shift – my first time on the pointy end of



The VK9LA team. Back: San K5YY, Chris VK3QB, Luke VK3HJ, Chris VK5CP, Lance N2OZ, Bob N2OO, Bill VK4FW, Jay W5SL, John VK5PO. Front: Catherine VK4VCH, Stan SQ8X, John VK4IO, Tony IZ3ESV, Tex VK1TX, Peter SQ9DIE and Victoria SV2KBS. Photo by the partner of one of the team members (not recorded).



Lord Howe Island (photo courtesy Go Australia)



John VK3IO launches the 80 metre dipole skyhook. Photo by Chris VK3QB.

a pileup. What a baptism of fire, forty metres CW. I took over from a very experienced operator in Bob N200 who had been working at 30 wpm plus and I dropped to about 20 wpm. The first hour I got maybe 20 QSOs. It was a complete zoo.

I managed to keep the pileup quite tight and as my ear tuned in the rate increased – the next five hours was a buzz. I finished up at 4 am, extremely satisfied but rather exhausted. How does one describe this experience to the uninitiated? It was six hours of constant CW ‘noise’, it sounded like a cacophony of Morse code music but the problem being it was almost impossible to discern individual signals.

The challenging and fun bit was taking control of the pileup – and Bob N200 and Bill VK4FW had explained this to me in the briefing sessions. I had also read W9KNI Bob Locher’s book ‘The Complete DXer’ prior to the trip which was most instructive and entertaining – a recommended read.

However, I did not appreciate just what this all meant until I experienced it first hand. My first hour was spent listening and learning how to break the pileup into manageable chunks – it sounded more like RTTY or PSK31 than CW! Coping strategies included:

- going split up 2 or 3 kHz, or more – sometimes up/down +/-8 kHz
- picking the strongest signals first

- picking signals at the top/bottom end of the pileup
- calling for certain regions/call areas/prefixes only
- QSYing to the other side of my calling frequency – there was always at least one guy waiting for this approach and the pileup quickly followed.

By the second hour I had some confidence and had a reasonable control of the pileup – and was very happy to increase the QSO rate from about 20 QSOs in the first hour to about 50 to 60 in the 2nd and 3rd hours. For the uninitiated this is not a fast QSO rate for a DXpedition operator – the more experienced operators were rocketing along at a much faster rate. However, as with most endeavours in life, practice makes perfect, and I found the experience to be fantastic and a load of fun.

The next day I managed to get some intermittent internet access and I could not help but check the DX-cluster to see the usual barrage of helpful comments and advice.... here are just a few that appeared about the time I took over operation:

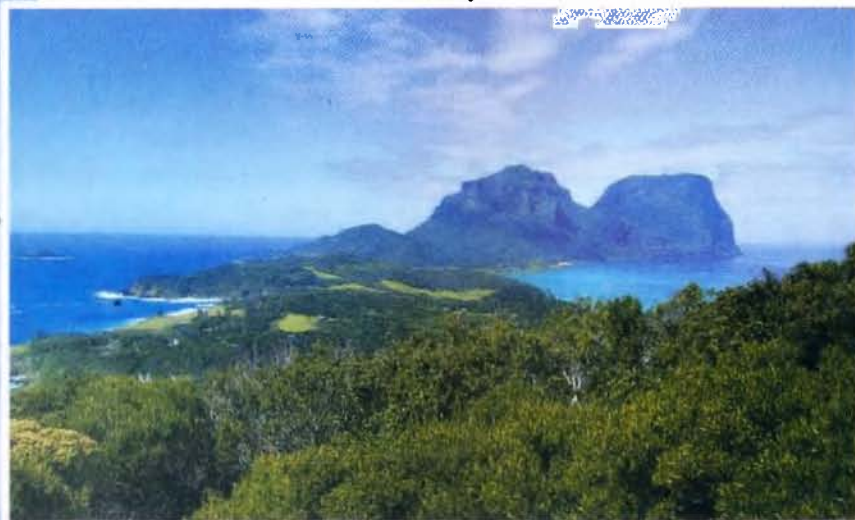
- Joke!! QRSSSSSSSSSSSS. No QSO.
- Fake. Change in operator style.
- **FINALLY REAL SIGNAL REPORTS!!**

There is a lesson to be learned here for those posting spots on the cluster; and also an interesting observation of how a change of operator can be interpreted by those ‘chasing the DX’. I found it most insightful!

By Wednesday morning (25 March)



VK3HJ adjusts the WARC tri-bander's rotator. Photo: Stan SQ8X



Chris VK3QB and Chris VK5CP made the hike to the southern tip of the island. This picture is taken to the northern end of the island and puts the size of the island into perspective. Mt. Gower is the furthest mountain in this picture and rises 875 metres ASL. Photo by Chris VK3QB

we had all antennas up with full coverage from 160 metres and all seven stations working at full capacity. Conditions were woeful from late Wednesday afternoon. I did graveyard shift and managed to work only 37 QSOs in 4 hours. It was very hard work and frustrating; I imagine for both ends of the pileups – or lack thereof.

Most of the other stations did not do much better. These conditions persisted for most of the night and into the next day, and did not start to improve until late Thursday. Dull conditions put a real dent in our ability to get the QSO rate up and put the pressure on for the rest of the trip.

It is worth noting at this point that this DXpedition was arguably held at the absolute sunspot minima, with only 0.7 sunspots, that is, not even one, being observed for the entire month of March. This would largely have accounted for the lack of propagation and activity on the higher bands.

It should also be noted that LHI is 12,000 kilometres from North America, 9,500 kilometres from Japan and 16,500 kilometres from central Europe, all requiring multiple multi-hop propagation on short path, further exacerbating the impact of these poor conditions on our QSO rates into NA, JA and EU on the higher bands.

It would be entirely remiss of me not to make mention of John VK5PO who almost single-handedly ran the RTTY station and handed out VK9LA to over 2,000 stations. A number of operators who had never worked RTTY before took the opportunity to look over John's shoulder and watch the signals 'magically appear' on the computer screen. Here was a perfect example of an operator fuelled on caffeine and RTTY adrenaline!

On the Friday (27 March) Chris VK5CP and I hiked up to Malabar, a hill about 210 metres above sea level on the southern point of the island. We both took the opportunity to work VK9LA as VK3QB/9 and VK5CP/9 respectively on 146.225 FM from the top of Malabar. Most of the remaining team members made the walk over the course of the weekend – well worthwhile with a great view from the southern tip of the island up to the north. The adventurous EU guys took a guided tour up the 875 metre Mt Gower, regarded as one of the world's best day walks.

Some of the team entered into the CQ WPX SSB Contest as a Multi Two All

Band Category. Despite poor conditions we managed a score of 1,884,168 points. This put the VK9LA team in 39th place, or 2nd place for VK, with congratulations to VK4KW, which I think the team can be very proud of considering the bulk of our effort and energy was being placed on the DX side of things rather than the contest.

After the first few days we had all settled into a casual routine, and it was very nice not to be pressured, knowing that there would always be someone willing to take over the station when fatigue and/or frustration became overwhelming. Equally so, there was always some-one willing to hand the controls over to a fresh operator.

On the Monday evening (30 March) I wandered up to the CW Camp about 11 pm and took over from Jay W5SL on 80 metres. Stateside was coming in consistently and after two hours propagation started to drop out and I moved onto the JAs. This will come as no surprise to many, but it is not possible to clear a pileup with JA. However, the JAs are very well mannered and the QSO rate was relatively high for a newcomer. I was very pleased to be averaging about 50-60 QSOs per hour. Propagation moved across HL, UA0 and very slowly into northern EU. I worked quite a few OM and OH but no southern EU was heard. Again, I finished up about 4 am and headed back to the SSB Camp after checking in with fellow operators Tony IZ3ESV on 40 metres CW, and Stan SQ8X on 30 metres CW.

About this time LHI was getting hit by the tail end of a cyclone that had been battering northern Australia and we all shared concerns for the Mellish Reef team, George AA7JV

and Tamas HA7RY, who were en-route at that stage to operate VK9GWM. The Mellish Reef team were almost 1,600 kilometres due north of our position which would have made a noticeable difference to both their weather and also propagation paths into JA, EU and NA. Thankfully they made it safely and we heard them on many occasions towards the end of our trip. The winds did cause some concern for our 'tower and antenna man' John VK4IO who made regular outdoor ventures to double/triple check the guys and general condition of the towers and antennas.

Bill VK4FW and I had a fun and challenging late evening/early morning working 160 metres into North America (stateside) and Canada. It was hard work



John VK5PO working RTTY. Photo by Chris VK3QB. Photo by one of the team members (not recorded).



Chris VK3QB working the CW pileups on 40 metres.

but we had two sets of headphones and 'shared the joy' of pulling the signals out of the mud. It was particularly interesting to note that our own individual 'internal DSPs', that is, our brains, would be tuning in on different signals in the receiver's bandpass; probably also a result of a difference in hearing bandwidth - tone deafness I think is the common parlance! At one stage I swore I had copied a K6 station and Bill was chastising me for not logging the WA7 station - strangely, we were both correct.

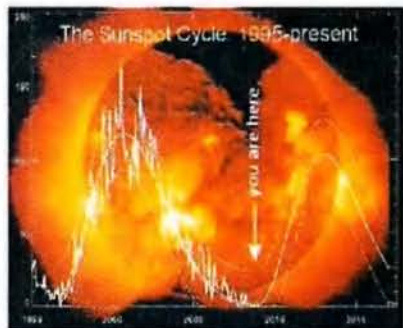
Comments on the Sunspot Cycle

April 1, 2009: The sunspot cycle is behaving a little like the stock market. Just when you think it has hit bottom, it goes even lower.

2008 was a bear. There were no sunspots observed on 266 of the year's 366 days (73%). To find a year with more blank suns, you have to go all the way back to 1913, which had 311 spotless days:

Prompted by these numbers, some observers suggested that the solar cycle had hit bottom in 2008.

But - maybe not! Sunspot counts for 2009 have dropped even lower. As of March 31st, there were no sunspots on 78 of the year's 90 days (87%). It adds up to one inescapable conclusion: 'We are experiencing a very deep solar minimum,' says solar physicist Dean Pesnell of the Goddard Space Flight Center. 'This is the quietest sun we have seen in almost a century,' agrees sunspot expert David Hathaway of the Marshall Space Flight Center.



The sunspot cycle from 1995 to the present. The jagged curve traces actual sunspot counts. Smooth curves are fits to the data and one forecaster's predictions of future activity. Credit: David Hathaway, NASA/MSFC.

The 160 metre DX bug has definitely bitten.

As we entered the final couple of days of the DXpedition everyone was well into a routine and enjoying themselves. The weather was unfortunately still windy and overcast. I was operating on irregular intervals and with varied sleep patterns, waking up at all hours buzzing from the pileups the previous night. Various sessions were spent doing some 17 metre SSB work with very good, although sporadic, openings into W, VE and PY, but we had to contend with very heavy QSB and QRM from the CW station up the hill.

As we neared the end of the DXpedition I became more aware of the need for sleep if I was to operate the graveyard shifts. So, in good amateur tradition, I dragged Chris VK5CP to the local bar for a beer or two on more than one occasion - a surefire recipe to get some more sleep.

On the last evening the whole team took some time out and went out for dinner. A good meal of locally caught fish was enjoyed by all. It also presented an ideal opportunity for a debriefing of the operation to date with all team members agreeing the experience had been thoroughly rewarding and enjoyable.

The 'take-down and pack up'

Due to the general concern about the weather a team decision was made to commence the 'take-down' one day earlier than originally planned, and this began on Wednesday 1 April. It was

still windy and overcast, but very mild, around 24°C.

Given the windy conditions and requirement to have all the gear fully packed and sealed by nightfall on Thursday it was necessary to play on the safe side and get the towers and beams packed away. The bulk of the morning and early afternoon was spent taking down the towers and beams.

The afternoon was spent in the SSB shack listening to the operators work some 15 metres and later in the day 40 metres - as usual EU stations started coming in around 5 pm local time.

At 8 pm I wandered to the CW Camp where we ran the VK/ZL night and worked a bunch of locals on SSB and CW. It was great to hear so many familiar call-signs and receive greetings from many VKs who knew various team members.

Then I listened with Bill on the 160 metres gray line to stateside. We worked 12 stations or so with varying signals and a few JAs and VEs thrown in for good measure. The antenna did quite a good job considering it was a ¼ wave inverted 'L' at 20 metres with 12 radials and it proved itself to be a good performer. I spent a lot of time listening on 160 metres on this trip with the more experienced operators and am looking forward to getting a similar antenna up at my home location.

The final day prior to departure (Thursday 2 April) was spent mostly dismantling the remaining antennas and equipment and getting it packed securely



Packing up. Two pallets and two crates as well as the towers. Pictured, from left to right, are VK4IO, VK3HJ and VK4FW. Photo by Chris VK3QB.

onto the pallets for return shipping to Brisbane.

The final day, Friday 3 April was spent packing our personal luggage and relaxing prior to the flight back to Sydney. From memory I think that the flight was full and about 70% of the passengers were the VK9LA team; a good representation of a fine DXpedition.

Summary

Many people do not realize just how much planning, effort and cost goes into putting on a DXpedition. Our DXpedition leader Bill VK4FW spent countless days planning the event, contacting people, organising freight, sponsors, coordinating and generally making sure that the event was able to proceed. John VK4IO provided extensive assistance performing a three day dry-run of the antenna complement with Bill some weeks prior to the event. Once the antennas (and towers) were configured, tuned and tested they were fastidiously packed and prepared ready with the rest of the equipment for shipping to LHI.

Without individual airfares (for the non-VK operators) taken into account, I would estimate this DXpedition cost in the order of \$50,000, with additional significant cost not being accounted for as much of the equipment was provided either by the operators, ODXG or our sponsors. Below are some details to give an insight into just what goes into a DXpedition of this size.

Arguably, this DXpedition occurred at the sunspot minima with virtually no sunspots for the 30 days preceding the DXpedition and the SFI not exceeding 68. This is reflected in the lack of QSOs on the higher bands.

QSO Statistics

Table 1 – Summary of QSOs

Band	Total QSOs	CW	SSB	RTTY
160	627	627	0	0
80	3,347	1,496	1,851	0
40	9,111	6,001	3,110	0
30	4,458	3,857	1	601
20	6,714	3,084	1,194	1,194
17	3,579	2,377	1,202	0
15	2,158	1,235	660	263
12	161	160	1	
10	5	5	0	0
6	0	0	0	
Total	30,160	18,842	9,261	2,057

- Shortest DX: 100 metres to Des VK9FLHI, the owner of the Blue Lagoon Lodge
- Rarest DX: TL0Z on 40 metres
- Total DX Entities worked: 149
- Total entities on CW: 119
- Total entities on SSB: 125
- Total entities on RTTY: 60

Station Statistics

- Two pallets, four towers and a crate totalling about 2,400 kg of equipment sent via ship
- 10 laptops
- Six Icom IC-7000 radios – with thanks to Icom America
- One Elecraft K3
- One TS-480HX
- Two ACOM amplifiers
- Two 811 amplifiers
- Two IC-2KL amplifiers
- Heil headsets for all operators.

SSB Camp Antennas

- 3 element beam on 20 metres
- 4 element beam on 15 metres
- 3 element beam on the WARC bands
- 40 metre dipole
- 80 metre dipole

CW Camp Antennas

- 3 element tri-bander
- elevated vertical on 30 metres with 42 radials
- elevated vertical on 40 metres with 42 radials
- R5 vertical
- 160 metre ¼ wave ‘L’
- 80 metre dipole
- 6 metre vertical

Epilogue....

I particularly want to thank the more experienced operators who mentored and advised me on how to handle the CW pileups – it was an invaluable learning experience – so thanks for all the support and encouragement to San K5YY, Bob N2OO and Bill VK4FW with an extra big thanks to ODXG and Bill, our DXpedition leader who made this trip possible. And it goes without saying that I extend my thanks to the rest of the team members who all helped make VK9LA a fantastic experience.

This will not be my last DXpedition, but like so many experiences in life, the first is something special and will always be remembered. In fact, since this trip I have combined a holiday with a mini-DXpedition to Vanuatu as YJ0QB.

Thanks are also extended to our many sponsors, DX Associations and individual amateurs who supported this DXpedition. The larger sponsors are listed below, but every single organisation and individual who donated their time, money or equipment is gratefully acknowledged.

- Icom America
- INDEXA
- NCDXF
- GDXF
- Heil Sound
- ACOM
- TET-Emtron

If you have ever wondered about a DXpedition and get the opportunity to join one, jump at it. Chances are you will have a truly memorable experience and become a far better radio operator, not to mention all the fun and enjoyment of spending time with like-minded people in a rare and exotic location. And the pile-ups can only be described as challenging, rewarding, satisfying and a bucket load of fun.

News from VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au

Regional Web Site: reast.asn.au

Congratulations

The release of the RD contest results for 2009, reveals a total of 35 logs submitted from VK7 with the following split: 22 logs - HF Single Operator Phone, 10 logs - VHF Single Operator Phone section, one log - HF Single Operator Open section, one log - HF Multi Operator Phone section and one log in the HF CW section.

Special congratulations go to Laurie VK7ZE for first place in the HF Single Operator Phone section with 847 points and Martin VK7GN for first place in the HF Single Operator Open section with 843 points.

VK7 Repeater News

Joe VK7JG has been busy again and has replaced the 70 cm repeater, VK7RAL (439.900 MHz -5 MHz offset and CTCSS tone of 141.3 Hz) on Companion Hill.

Joe also lets us know that the East Coast repeater VK7REC at Snow Hill is off the air indefinitely due to an upper tower collapse. This collapse was due to many factors and it is unknown when (or if) this will be fixed. As of the December 16, 2009, VK7RAD in Hobart now requires a CTCSS tone of 141.3 Hz to access this repeater.

This is due to increasing level of interference being experienced on this repeater. Repeater Map for VK7: <http://reast.asn.au/repeaters.php>

Northern Tasmania Amateur Radio Club

Another great Myrtle Park Christmas BBQ happened for 2009. Some notable NW attendees were: Max VK7KY and Shirley VK7HSC, as well as Winston VK7EM & XYL Elizabeth and Brian VK7KBE. The Slippery Trout award (first trout of the night) was won this year by Peter VK7KPC.

NTARC has been approached to possibly establish and operate an amateur radio station in the Tramways Museum on Invermay Road in Launceston. If interested in this venture please contact a committee member to discuss.

Cradle Coast Amateur Radio Club (CCARC)

CCARC held its Inaugural Christmas Dinner/Social evening on Saturday December 5, 2009 at the Bass and Flinders Convention Centre in Ulverstone. The CCARC Secretary reported that they had a great roll-up and wonderful food and it turned out a top evening.

CCARC would also like to thank WICEN Tasmania (South) for inviting CCARC to assist with the Tasmanian Equine Endurance Riders State Championships at Sassafras on November 26, 2009. CCARC website: <http://www.my-x15.net/ccarc/>

North West Tasmanian Amateur Television Group

Congratulation to new Foundation Licence holders: Ursula Roos VK7FROO, Graham Anderson VK7FGAA, and Andrew Kirkpatrick VK7FAJK, who recently passed their assessments.

The club Christmas dinner was well attended and the club's success was celebrated. The Annual General Meeting will be held on February 13, 2010 at the QTH of Ivan VK7XK at Gawler.

There are new broadcasts on Monday nights and new nets on a Wednesday nights on the NWATVG repeaters. Check out the website for more details: <http://www2.vk7ax.id.au/atvgroup/>

WICEN Tasmania (South)

WICEN Tasmania (South) teamed up with CCARC to provide communications for the 2009 Tasmanian Equine Endurance Championship held at Sassafras. Torrential rain, thunder, lightning and mossies added to the atmosphere!

Apart from these challenges, all went well and the job was completed successfully. WICEN (South) thanks CCARC who did a wonderful job. The next WICEN event is the Targa Wrest Point tarmac rally on January 30-31, 2010. WICEN Tasmania (South) website: <http://tas.wicen.org.au/>

Radio and Electronics Association of Southern Tasmania

Congratulation to the following new Foundation Licensees: Geoffrey Gibbon, Peter McHugh, David Bennett, Alex Whiteside, George Parramore, David Blair and Stuart Marshall. Paul Hanson VK7FPAH also passed his Standard licence assessment. At the time of writing this column, callsigns had not been issued.

The new ATV studio has been completed and our first broadcast from the new facility occurred on January 6th. Thanks especially to Anders VK7FAJM, Paul VK7FPAH and Warren VK7FEET and the many others who helped to get the studio back into operation. Stay tuned for more on this exciting development. REAST website: <http://reast.asn.au/>

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2009 - lots of satellites

During 2009 there were several launches carrying satellites with transmitters on amateur bands. Only two (SO-67 and HO-68) carry an amateur transponder, the majority of the others are university projects. There were successes as well as failures.

Those successfully launched and still operating are KKS-1, PRISM, STARS, ANUSAT, CASTOR, SumbandilaSat (SO-67), UGATUSAT (RS-38), Swisscube, ITUpSAT and XW-1 (HO-68). Those that were launched successfully and operated for a while were PharmaSat, CP6, and

POLLUX. I've had no reports of BEESAT being heard over VK/ZL. SOHLA-1, AGGIESat and UWE-2 are only turned on over their respective command stations.

As for the OSCAR satellites, LUSAT (LO-19) went silent during October just three months short of its 20th anniversary.

JAS-2 (FO-29) suffered from long eclipse periods since August but is expected to recover early in 2010. UOSAT-2 (UO-11) has briefly sprung into life late in 2009 after not being heard for 18 months. CUTE-1.7+APD (CO-56) re-entered during October.

Six-monthly review of operational OSCARs.

Here is an updated review of the operational OSCARs and other satellites using amateur satellite service bands. All satellites listed here have been heard during November-December 2009 by myself except PCSAT (NO-44).

Satellites added or revised since last review in July: UO-11, CASTOR, SO-67, Swisscube, ITUpSAT-1 and HO-68.

Failed satellites since last review: AO-16, LO-19, PharmaSat, CP6.

The names of the satellites are given as OSCAR number, full name and (NASA catalogue number). Modes are represented by frequency bands: H=10 m, V=2 m, U=70 cm, L=23 cm, S=13 cm in order of uplink/downlink.

Linear transponders use CW and SSB. With the exception of AO-7's V/H transponder, all linear transponders are 'inverting' types and use LSB for the uplink and USB on the downlink. For AO-7 mode V/H use USB for both links. Most of the activity is in the middle of the passband.

Foundation licensees are permitted to transmit SSB/CW and FM voice to any of the satellites in the 10 m, 2 m and 70 cm bands as well as receive all the satellites. Foundation licensees are not permitted to use 23 cm uplinks (e.g. AO-51 and CO-67) or AO-51's 13 cm downlink (e.g. mode V/S). See the AMSAT column in September 2009 AR for more details.

Telemetry decoding programs for several satellites are available from Mike Rupprecht's website at <http://www.dk3wn.info/software.shtml>

AO-7 AMSAT OSCAR 7 (7530)

Launched: 15/11/1974
Status: Operational only when it is in sunlight. It may be in any mode. During non-eclipse periods it will alternate between modes V/H and U/V every 24 hours. Beacons are not always on. AO-7 will remain in full sunlight until June 2010.
Mode: V/H (old mode 'A'), linear, non-inverting.
Uplink: 145.850-145.950 MHz, Downlink: 29.400-29.500 MHz
Beacon: 29.502 MHz CW. Occasionally the 435.106 MHz CW or RTTY beacon may be on.
Mode: U/V (old mode 'B'), linear, inverting.
Uplink: 432.125-432.175 MHz, Downlink: 145.975-145.925 MHz
Beacon: 145.972 MHz CW at 10 or 20 wpm, intermittent operation.
 Check the online log for current status at <http://www.planetemily.com/ao7/main.php>

UO-11 UOSAT-2 (14781)

Launched: 1/3/1984
Status: Intermittent. UO-11's 145.826 MHz beacon came back to life late 2009 after being silent for 18 months and will only work when in full sunlight. You may hear its distinctive signal while monitoring the frequency for other satellites such as ISS, NO-44 and CASTOR.
Beacon: 145.826 MHz FM 1k2 AFSK
<http://www.g3cww.co.uk/oscar11.htm>

IO-26 ITAMSAT (22826)

Launched: 26/09/1993
Status: Semi-operational. IO-26 is in Master Boot Loader (MBL) mode. It transmits continuous BPSK carrier with the occasional telemetry packet.
Mode: -/U 1k2 BPSK
Beacon: 435.790 MHz (Note: this has shifted from the original published frequency)
<http://www.amsat.dk/oz7sat/tlm/view.php?sat=io26>

FO-29 FUJI-OSCAR 29 JAS-2 (24278)

Launched: 17/8/1996
Status: Semi-operational as linear transponder. Most activity is around 435.850 MHz. The BBS and digipeater operation have not been used since 2003. FO-29 has been going through long eclipse

periods since August and the battery under voltage detector has turned off the transmitter. It is expected to be usable again early in 2010.

Mode: V/U linear, inverting.
Uplink: 145.900-146.000 MHz, Downlink 435.900-435.800 MHz
Beacon: 435.795 MHz CW telemetry.
<http://www.ne.jp/asahi/hamradio/fo29pel/index.htm>

GO-32 GURWIN TECHSAT-1B (25397)

Launched: 10/7/1998
Status: Intermittent. Since 30/3/2009's on-board computer crash, GO-32 has been sending intermittent telemetry. The downlink may be changed to 435.325 MHz.
Mode: V/U for APRS, 9k6 FSK
Uplink: 145.930 MHz, Downlink: 435.225 MHz
Mode: V/U for PacSat BBS, 9k6 FSK
Uplinks: 145.850 MHz, 145.890 MHz, 145.930 MHz, Downlink: 435.225 MHz
Mode L/U for PacSat BBS 9k6 FSK
Uplinks: 1269.700 MHz, 1269.800 MHz, 1269.900 MHz, Downlink: 435.225 MHz
BBS callsign: 4XTECH-12
Beacon callsign: 4XTECH-11
<http://www.amsat.org/amsat-new/satellites/satInfo.php?satID=14&retURL=/satellites/status.php>

NO-44 PCSAT (26931)

Launched: 30/9/2001
Status: Operational only in full sunlight. One solar panel and the batteries are not functioning.
Mode: V/V 1k2 AFSK packet digipeater
Uplink: 145.827 MHz, Downlink 145.827 MHz
<http://pcsat.aprs.org>

SO-50 SAUDISAT-1C (27607)

Launched: 20/12/2002
Status: Operational. SO-50 has a sensitive receiver and a transmit power of only 250 mW.
Mode: V/U FM voice with 67 Hz CTCSS tone
Uplink: 145.850 MHz Downlink 436.795 MHz (but may switch to 436.800 MHz).
 To switch the transmitter on you need to send a few seconds of 74.4 Hz CTCSS tone. 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 a 67 Hz CTCSS tone to access the transponder.
- 3) Sending the 74.4 Hz tone again within the 10 minute window will reset the timer. Users have reported difficulties.

AO-51 AMSAT-OSCAR-51 ECHO (28375)

Launched: 29/6/2004

Status: Operational

Mode: AO-51 is a versatile satellite that can be configured to operate in many modes, often two at a time. It can use FM and SSB voice, 9k6 and 38k4 FSK packet as a BBS or digipeater. It has 3 transmitters (two on 70 cm and one on 13 cm), four 2 m receivers and a wideband receiver that has been used on 10 m and 23 cm.

The control team issues a monthly bulletin on modes and frequencies AO-51 will be using.

Default voice mode: V/U FM voice

Uplink: 145.920 MHz, Downlink 435.300 MHz (no PL tone required)

Default digital mode: L/U 9k6 FSK

Uplink: 1268.700 MHz, Downlink: 435.150 MHz

Beacon: 435.150 MHz 9k6 FSK

<http://www.amsat.org/amsat-new/echo/CTNews.php>

VO-52 HAMSAT (28650)

Launched: 5/5/2005

Status: Operational. VO-52 has two linear transponders that use nearly the same passbands. The Indian transponder is normally in use. Most activity is around 145.900 MHz.

Mode: U/V linear inverting.

Indian transponder:

Uplink: 435.220-435.280 MHz, Downlink 145.930-145.870 MHz

Beacon: 145.936 MHz continuous carrier

Dutch transponder:

Uplink: 435.225-435.275 MHz, Downlink 145.925-145.875 MHz

Beacon: 145.860 MHz CW 12 WPM preset message

<http://www.amsat.in/hamsat.htm>

Note: FM operation on VO-52 is permitted for QRP/handheld. In India, SSB gear is not very common and the operations team have suggested that FM operators can use this bird. If you are planning to work FM, please use another part of the passband e.g. 145.920 MHz. It would be best to arrange a sked in advance, as VO-52 is rarely used in FM mode over VK/ZL. Excessive uplink power will cause the beacon to FM.

The following are mainly Cubesats. Reception reports are often well received and can result in a QSL card for your efforts. See websites for details.

CO-55 CUTE-1 (27844)

Launched: 30/6/2003

Status: Operational. From the first Cubesat launch CO-55 continues to send CW telemetry.

Mode: -/U CW telemetry

Beacon: 436.8375 MHz

http://lss.mes.titech.ac.jp/ssp/cubesat/index_e.html

CO-57 Xi-IV (27848)

Launched: 30/6/2003

Status: Operational. From the first Cubesat launch, CO-57 continues to send CW telemetry. It also has an on-board camera. Pictures of the Earth can be found on the website below.

Mode: -/U CW telemetry

Beacon: 436.8475 MHz

<http://www.space.t.u-tokyo.ac.jp/gsen/index.aspx>

CO-58 XI-V (28895)

Launched: 27/10/2005

Status: Operational. CO-58 has an on-board camera. Pictures of the Earth can be found on the website below.

Mode: -/U CW telemetry

Beacon: 437.465 MHz

<http://www.space.t.u-tokyo.ac.jp/gsen/index.aspx>

DO-64 DELFI-C3 (32789)

Launched: 28/4/2008

Status: Semi-operational. The linear transponder has failed. The control team switched DO-64 back to science mode on 29/11/2009. Often by the time it has reached VK/ZL the transmitter has stopped, so it will be heard here occasionally. If they change it to basic mode then the telemetry will be heard over VK/ZL on most passes. The telemetry can be demodulated and decoded using software from the Delfi website.

Mode: -/V 1k2 BPSK telemetry

Beacon: 145.870 MHz (primary) or 145.930 MHz (secondary)

<http://www.delfic3.nl/index.php>

CO-65 CUTE-1.7+APDII (32785)

Launched: 28/4/2008

Status: Operational. The CW beacon is on. The mode L/U APRS digipeater has been activated during weekends using 9k6 GMSK modulation. Reports from Japanese operators have proven the digipeater works. Unproto via JQ1YTC.

Mode: -/U 437.275 MHz CW telemetry.

Mode: L/U 9k6 GMSK

Uplink 1267.603 MHz, Downlink 437.475 MHz

http://lss.mes.titech.ac.jp/ssp/cute1.7/index_e.html

CO-66 SEEDS II (32791)

Launched: 28/4/2008

Status: Operational. CO-66 is a Cubesat that transmits CW telemetry, packet telemetry and a pre-recorded message of voice and SSTV. Sometimes all three can be heard during a pass over VK/ZL as it changes modes. At 450 mW output, CO-66 has the strongest signal of the Cubesats.

Mode: -/U CW telemetry, 1k2 AFSK packet and FM Digitaler/SSTV

Beacon: 437.385 MHz

http://cubesat.aero.cst.nihon-u.ac.jp/english/main_e.html

SO-67 SumbandilaSat (35870)

Launched: 17/9/2009

Status: Operational but transponder times are set by command stations. SO-67 will not be available for every pass. Its high powered transmitter (5 watts) is easily heard. There is a 3 second tail after each transmission, so pause before transmitting to the satellite. Keep your overs brief as there is also a cut-out timer. For best results set your radio to narrow FM or turn down the mic gain if your transmitter allows.

Mode: V/U FM voice

Uplink: 145.875 MHz with 233.6Hz CTCSS, Downlink 435.345 MHz

Beacon: 435.345 MHz FM recorded message <http://sumbandilamission.blogspot.com>

HO-68 XW-1 CAMSAT (36122)

Launched: 15/12/2009

Status: Operational but may still be under commission. The CW beacon is on continuously and the transponders have been activated for some passes.

Mode: V/U FM voice

Uplink: 145.825 MHz 67.0Hz CTCSS, downlink 435.675 MHz

Mode: V/U linear (inverting)

Uplink: 145.925 - 145.975 MHz, Downlink: 435.765 - 435.715 MHz

Mode: V/U PacSat BBS

Uplink: 145.825 MHz 1k2 AFSK packet, Downlink: 435.675 MHz 1k2 AFSK packet

Beacon: 435.790 MHz CW

<http://www.camsat.cn>

RS-series satellites

RS-15 RADIO ROSTO (23439)

Launched: 26/12/1994

Status: intermittent. The beacon only comes on when satellite is in sunlight, and is not on every pass.

Mode: -/H on/off carrier of 2-3 seconds

Beacon: 29.352 MHz

RS-22 MOZHAYETS-4 (27939)

Launched: 27/9/2003

Status: Semi-operational. RS-22 sends CW telemetry in a format similar to previous RS-series satellites. During late 2009 RS-22 became intermittent and was silent during some passes.

Mode: -/U CW telemetry

Beacon: 435.352 MHz

http://www.dk3wn.info/sat/afu/sat_rs22.shtml

RS-30 YUBILEINY (32953)

Launched: 23/5/2008

Status: Operational. Only the CW beacon has been heard over VK/ZL. Other transmission types are heard when it is in range of the control stations in Russia. It has been heard by AO-51 users when they share the same footprint.

Mode: -/U CW telemetry

Beacon: 435.315 MHz (primary), 435.215 MHz (secondary)

http://www.dk3wn.info/sat/afu/sat_rs30.shtml

RS-38 UGATUSAT (35869)

Launched: 17/9/2009

Status: Operational. UGATUSAT identifies itself as RS-38. Built by the Ufa State Aviation Technical University in Russia, UGATUSAT is a 35 kg satellite that has an imaging system with a resolution of 50 m. I incorrectly reported this satellite as Tatiana-2 (RS-28) in the November column.

Mode: -/U CW telemetry

Beacon: 435.490 MHz

Other satellites using amateur frequencies.

ISS (25544)

Launched: 20/11/1998
Status: Operational. The International Space Station has an amateur radio station that operates in many modes. Ultimately it depends on the manned crew's activities. Voice, digital, and SSTV modes are used. Sometimes experimental modes are tried; one example was a 23 cm FM repeater uplink on 1269.650 MHz.
Mode: U/V crossband FM repeater.
Uplink: 437.800 MHz FM, Downlink 145.800 MHz
Mode: V/V Digital / APRS 1k2 AFSK FM
Uplink: 145.825 MHz, Downlink: 145.825 MHz
Mode: V/V FM Voice, SSTV
Uplink: (Region 1) 145.200 MHz, (Region 2/3) 144.490 MHz, Downlink: 145.800 MHz
<http://www.issfanclub.com/>
<http://www.rac.ca/ariss/>

COMPASS-1 (32787)

Launched: 28/4/2008
Status: Operational. Compass-1 has a chirpy CW telemetry beacon that is normally sent every 3 minutes. If battery voltage is low it will send every 8 minutes. COMPASS-1 can be commanded by any amateur to send telemetry on demand using DTMF codes, though the satellite may not give a response each time. Every command will give a confirmation beep on 437.275 MHz.
****35## - request a test beacon CW**
****36## - request a test packet 1k2 AFSK FM (UI-Frame)**
****60## - request a housekeeping frame in 1k2 AFSK FM (KISS frame)**
Mode: V/U DTMF command, 1k2 AFSK
Command: 145.980 MHz, Downlink

437.405 MHz
Beacon: 437.250 MHz CW telemetry
<http://www.cubesat.de>

STARS (33498)

Launched: 23/1/2009
Status: Operational. STARS is two satellites tethered together. Both 'Mother' and 'Daughter' have CW and 1k2 AFSK packet telemetry on 70 cm. The CW beacon of 'Mother' is on continuously, but 'Daughter' is weaker and intermittent.
Mode: -/U FM 1k2 AFSK
Mother 437.485 MHz, Daughter 437.465 MHz
Mode: -/U CW
Beacon: Mother 437.305 MHz, Daughter: 437.273 MHz
<http://stars1.eng.kagawa-u.ac.jp/english/index.html>

PRISM (33493)

Launched: 23/1/2009
Status: Operational. Following from the success of CO-57 and CO-58, the University of Tokyo built PRISM to carry a larger camera with a telephoto lens. The packet downlink may be only available over the command stations in Japan, though the CW beacon is on world-wide. PRISM also has an uplink channel but frequency and modulation details have not been published yet.
Mode: -/U 1k2 AFSK or 9k6 GMSK
Downlink: 437.425 MHz
Mode: -/U CW
Beacon: 437.250 MHz
<http://www.space.t.u-tokyo.ac.jp/prism/main-e.html>

KKS-1 (33499)

Launched: 23/1/2009
Status: Operational. KKS-1 transmits a series of messages on its CW beacon. Its mission is to demonstrate a laser ignition thruster and reaction wheels.
Mode: -/U CW message.

Beacon: 437.385 MHz
<http://www.kouku-k.ac.jp/~kks-1/kks-gs-top-e.htm>

CASTOR (35694)

Status: Operational. CASTOR is a being used to study the Earth's upper atmosphere. It transmits a weak 1k2 AFSK packet signal. CASTOR's twin brother POLLUX was launched at the same time but the batteries failed on 12/9/2009. CASTOR and POLLUX are used to reflect lasers to determine their exact position and measure the drag induced by the density of the Earth's upper atmosphere.
Mode: -/U 1k2 AFSK
Beacon: 145.825 MHz
<https://goby.nrl.navy.mil/ANDE/Castor.html>

SWISSCUBE (35932)

Status: Operational. Transmits CW telemetry with frames every 30 seconds. The tone quality of the transmitter is poor. Decoding software is available at their website.
Mode: -/U CW
Beacon: 437.505 MHz
<http://swisscube.epfl.ch>
ITUpSAT (35935)
Status: Operational. This Turkish Cubesat transmits a frame of CW every three minutes giving its name and callsign.
Mode: -/U CW
Beacon: 437.325 MHz

Final pass

The end of 2009 has been a fruitful time. SO-67 is providing excellent signals and should be a popular satellite for the next few years. China's first amateur satellite HO-68 has just been launched and is under going commissioning. No doubt HO-68 will also prove to be popular during 2010. **ar**



AMSAT-VK

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Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK 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

In South Australia

VK5TRM, Loxton on 147.125 MHz

VK5RSC, Mt Terrible on 439.825 MHz

IRLP node 6278, Echolink node 399996

In Tasmania

VK7AX, Ulverstone on 147.425 MHz

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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.

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 give hams national communications and handheld access into New Zealand at various times both day and night.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

DX - NEWS & VIEWS.

John Bazley VK4OQ

E-Mail: john.bazley@bigpond.com

A Happy New Year and let us hope that the rise in the Sunspot activity is here to stay for a few years, for it certainly has improved conditions particularly on 21 and 24 MHz.

I will believe that it has happened when we can hear 28 MHz full of DX signals!

There is still a lack of understanding of propagation by some DXpeditions on the difference between W1 and W6 or Eastern Europe and Western Europe and VK6 and VK4 band openings.

Most BIG DXpeditions do have "Pilot Stations" who pass along information of missed band openings. Also there is an increasing use of the "Club Log Search designed by G7VJR" that gives data on all the bands being used by the DXpedition and times that stations from your part of the world have contacted the DXpedition.

This is an excellent "two way tool" that enables both you and the DXpeditioners to be aware of difficult openings.

So to DX News.

There is no more information on the DXpedition to **Cocos Island (TI9)** originally planned, for February this year.

The **Chagos Island operation** by VQ9JC has been accepted for DXCC credit after being rejected as a shipboard operation. DXCC corresponded with the operator and determined it was and-based thereby satisfying the conditions of DXCC Rule 8.

JD1BNN and JF3MYU will be on **Ogasawara** from March 28th to March 31st and joined by three US operators, KG8CO allocated JD1BNJ, AC8W – JD1BNK and K8AQM – JD1BNM. The American operators will be there for two weeks. JF3MYU will focus on 30, 17 and

12 metres. For the Japanese operators QSLs via the bureau or direct. For the American operators please QSL via K8AQM.

Nick G3RWF will again be active as 5X1NH from **Fort Portal, Uganda**, approximately from January 21st to March 21st, QSL via G3RWF.

Fernando EA4BB has been active as Z21BB from **Harare, Zimbabwe** recently will be there for a couple of years. "For the time being I have only dipoles and delta loops for 10, 15 and 20". Mostly on CW he hopes to do more SSB when he has improved his antennas. QSL via W3HMK.

Vasil D2QMN is active from **Angola** until August. He operates on 20 metres through to 10 metres after 1700 Z during the week and at the weekends on 40, 30, 17 & 12 metres after 0600 Z. He is active on SSB/RTTY/PSK and requests for skeds are welcomed. d2qmn@yandex.ru QSL via RZ3EC.

Nick G4FAL plans to operate as VP2MCC from **Gingerbread Hill in St. Peters, Montserrat** during March. Exact dates are not known, but will include the British Commonwealth Contest, on March 13th and 14th. All QSOs with VP2MCC will be uploaded to LOTW. QSL via G4FAL.

J68JA from **Marigot Bay, St. Lucia**, will be operator John W5JON March 2nd to March 11th. John plans to be on 160-6m including 60 m and will be single operator in the ARRL DX SSB contest. John will have an IC-7000, KL-400 amplifier, 350 watts, Alpha-Delta DX-LB and DX-EE dipoles, and a 6 m 3-element Yagi. XYL

Cathy W5HAM "will be busy pool side." QSL to John's home call.

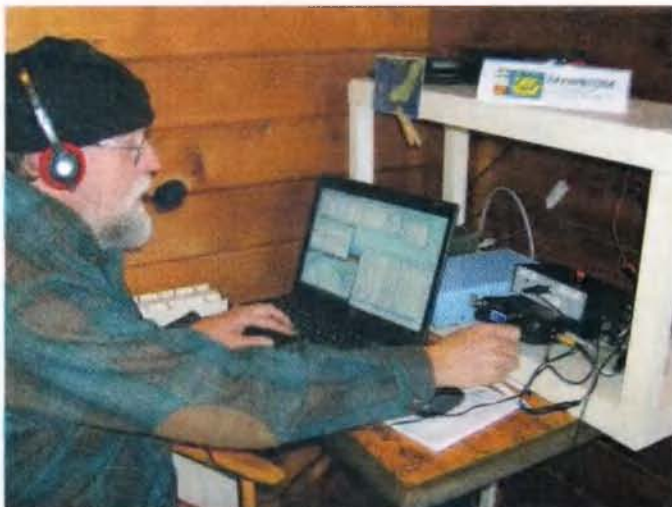
DL7JAN will be active as V88/DL7JAN from **Bandar Seri Begawan**, the capital city of **Brunei (OC-088)**, from 22nd February to 3rd March. He plans to operate CW, SSB and RTTY on 160 to 10 metres. QSL via home call, direct or bureau.

A1 McDonald ZL1UFB is back on **Pitcairn Island** since September and plans to be QRV as VP6AL again until March. QSLs sent to: A1 McDonald, C/O P.D.C. Hahei, RD1, Whitianga, New Zealand, with a SAE and US\$2. All direct requests will be answered upon his return to ZL next year. Bureau cards will not be answered!

Serge F6AUS will be active as FG/F6AUS and TO4D (in contest) from **La Desirade, Guadeloupe (NA-102)** until March. QSL to his home call.

The S21RC, S21S and S21D Bangladesh operation to AS-127, **St. Martin's Island** in the **Chittagong Region Group**, is set for February 21-25. The three ops have asked the government for S21DX as their callsign. St. Martin's is the only coral island belonging to Bangladesh. There is a lighthouse near where they will be camping and operating. There should be little QRN because there is no electricity or motor vehicles on the island. They expect to be running two stations, run by a 1 kW generator and a pair of 115 amp-hour batteries. QSL via EB7DX. Sponsors and funding are still being sought. Their web page is <http://iota.s2dx.org/>

Continued at foot of facing page



Tom W8TOM operating from St Pierre and Miquelon Islands.



Eric KV1J operating from St Pierre and Miquelon Islands.

New Year Greetings. Welcome to the year of celebrations.

The famous **Central Coast ARC Field Day** will be held at the the Wyong Race Course. Sunday February 28. During the day assessments will be conducted by **ARNSW**. Bookings are required through Brian VK2WBK on 0400 445 829.

On Saturday night – the 27th – there will be a centenary dinner hosted by the **CCARC** and **ARNSW**. Bookings are required, call Brian VK2WBK on 0400 445 829. Some of the displays at the field day include ARNSW, the Home Brew group, the T&T department and NSW WICEN. More details in the VK2WI news.

The morning VK2WI broadcast on the 28th will become a previous Saturday (27th) evening transmission at 7.30 pm. The **VK2BWI** Morse practice sessions on Thursdays, 2000 hours on 3550 kHz, conducted by Ross VK2ER at Orange resume early in February.

NSW WICEN will hold their AGM at the VK2WI site on Sunday February 7th at 1400 hours. Contact WICEN on 0408 397 217, operations@nsw.wicen.org.au or www.nsw.wicen.org.au They need starters

for the committee.

Many clubs, resume meetings in February. **HADARC's** first informal meeting is on Tuesday the 9th and the monthly meeting on the 23rd - both at the Mt. Colah Community Centre. **Waverley ARS** will be conducting training and exams on the weekend of 13th and 14th February. **Mid South Coast ARC**, will likely have their first quarterly meeting on Saturday the 13th.

The **Hunter Radio Group** will resume the Monday news on the 8th at 7.30 pm and have the first meeting for the year on Friday the 12th. **Summerland ARC** has an AGM scheduled for Sunday the 14th. Then a car boot sale on March 28th. They are seeking a site for the Evans Head repeater **VK2REH**, and are looking north west to Mt. Moonimba.

An early note for the diary – the **Oxley Region ARC** mid winter field day will be held over the June long weekend.

Down in the snow country the **Jindabyne ARG** have established VK's highest system at over 2000 metres. This repeater in on

438.450 MHz with 20 watts into a 5/8-wave antenna. It is expected to be followed about now with 2 metres on 146.875 MHz. The systems are at a ski patrol hut, reports Geoff VK2QM. Thanks have to go to the Perisher Blue Pty Ltd, the Ski Patrol and the Jindabyne group for their assistance.

Fishers Ghost ARC provided the amateur radio facilities to the Australian Jamboree.

By this month most clubs will have resumed their meetings their publicity officers are requested to make use of **VK2WI News** to inform your members and potential visitors of meetings. Email to news@arnsw.org.au with those details.

Amateur Radio New South Wales is moving into a celebration period as part of the 100 years of organised amateur radio in this country.

According to the records, a meeting of experimenters in the smoking room of the Hotel Australia in Sydney on the afternoon of the 11th March 1910 got the ball rolling.

Continued on Page 55

Willis Island has a new amateur radio operator: David VK9WBM is working at the Bureau of Meteorology station for the next six months. His station will include an IC-718 and Alinco DX-70. Activity is expected on HF as well as 6 metres. As David is there on a work assignment, he will only be active in his spare time and there will be no pre-arranged schedules. QSL via VK4DMC.

Mike VP2MPR, W1USN, will operate mainly SSB and PSK31 from **Montserrat** (NA-103) from February 28th to March 13th and Bob AA1M will operate mostly CW as VP2MPL from March 6th to March 11th. QSL via their home calls.

Bill N7OU and Bob W7YAQ are heading to **Tokelau (ZK3)** from February 17th to March 10th, which includes a multi-single effort in the ARRL DX CW Contest. "Tokelau is only accessible by boat and the exact dates may change a little", says Bill. The two will be in **Apia, Samoa** before sailing to ZK3 from February 10th to 16th and again afterwards from March 11th to 15th. 5W activity is expected during those two time frames. This will be a mostly CW effort with a little RTTY and SSB thrown in. They will be running 100 watts into verticals on 1.8 through 28 MHz. Callsigns are yet to be announced. QSL cards will go via their home calls.

February 9th to 25th are the dates for a low band DXpedition to **French Polynesia**. Team members include Phil FO8RZ (F5PHW), Jacques F6BEE, Nigel G3TXF and Gilles VE2TZT. Look for activity on all bands from 1.8 MHz through to 28 MHz, with a focus on 1.8 MHz and 3.5 MHz. They will also participate in the CQ World Wide WPX RTTY Contest and the ARRL CW DX Contest. Plans are to have two complete stations QRV simultaneously. They will be using a 160 metres inverted L in the ocean or on the beach, a pair of quarter wave verticals on 80 metres, verticals on 40, 30,

17 and 12 metres as well as a 5-band Spiderbeam. The team will also be using a Beverage or K9AY receiving antenna. No word yet on the callsign(s) but QSLs will go via G3TXF. The French Polynesia team has a web page, thanks to Laurent F1JKJ at www.fo2010.org

Good luck in the pile-ups until next month.

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/trial.htm



Peter who recently operated from Dubal as A6/DL3YM.

Amateur Radio Annual Index 2009

Prepared by Don Jackson VK3OBB

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Matching network software	Ron Sanders VK2WB	Mar	20				

News from VK6

Keith Bainbridge VK6RK

By now all the turkey will be gone, and we can all get down to chasing some contacts on the radio. Welcome to a New Year on the air, may it be DX full for us all. Conditions on HF have been improving and there is some life on the bands.

From Bob VK6POP comes news from the Scouts.

The Scout Communications team held a successful fire sale at the Peter Hughes Scout Communications Centre at the end of October. We moved a lot of pre-loved equipment and components. The event proved to be a great social event for VK6 amateurs, with many people catching up with each other. Many thanks to all supporters, sellers and buyers who came and made the day a success.

During the JOTA weekend, the team ran a Foundation Amateur Radio Licence Course at the Waylen Bay Sea Scouts. Eight Scouts passed the assessment, making a total of eleven Scouts and a leader in that Group to hold an AR licence. The WA Scout Communications Team has put about 30 new young hams on air over the last 12 months, with more interest shown for 2010.

We are the happy recipients of a Lottery West grant, which will enable us to purchase a "tradie" trailer, which we will use to house our portable two metre repeater VK6RSH and also to carry equipment to events. 73 Bob VK6POP.

I was in Geraldton and, about 25 km south of the city, my wife asked me to stop and take some pictures. I was surprised to see a sign fixed to the fence with the legend 'VK6RGN 147.0 MHZ'. I have included the picture as I would dearly love to know the story behind this!

Now from the Peel Amateur Radio Group (PARG) and JOTA/JOTI 2009.

On 17 November there were a few early birds ready when the hall was opened at 10 am. The setting up of the radio equipment was relatively easy, as the club erected the antennas. JOTI took a little more to achieve, but achieve we did. Thirteen club members participated.

We had a HB9 receiving station contact us on EchoLink, a thrill indeed. We have received a QSL card from them (Switzerland). Our Treasurer Paul VK6LL enjoyed sending a return card. The Sunday was hot, perfect for communicating. The pack up was smooth. We have been thanked by the scouts and asked to run the event in 2010.

All who operated JOTA/JOTI had a great time this year.

For those of you wanting to get your licence or upgrade I have had a plea from Jo Dory to give Ham College a plug.

If you live in Western Australia, there is a place to go to get your Foundation, Standard and/or Advanced licences. The friendly team of licensed amateurs include lecturers Neil VK6BDO and Doug VK6DB.

The Foundation course is on a weekend, the exam held the following weekend. The Standard licence classes start in February, on a Tuesday night from 7 pm. The Advanced starts at the end of June, also on a Tuesday night.

The Foundation courses and examination dates are:

Jan 23/24, Jan 30 - School holidays.

March 20/21, March 27.

May 22/23, May 29.

July 24/25, July 31.

September 18/19, September 25. Exam during school holidays and long weekend.

November 20/21, November 27.

The Standard course runs from 9 February to 29 June.

The Advanced course runs from 20 July to 7 December.

As usual the end dates are flexible. Contact: Huskn@wn.com.au or Jo_dory@live.com.au phone 95314207. From the Hills (HARG) Group next.

The Hills Amateur Radio Group is holding a swap meet on Saturday February 27, 2010 at their club rooms on the corner of Sanderson and Brady Roads, Lesmurdie. Clean out those excess items in the shack or find a great bargain. Doors open at 1 pm for sellers and 2 pm for buyers. There will also be a sausage sizzle and raffle. \$5 for sellers, buyers \$2.

Bob VK6KW reports on VHF Group.

Members of the WA VHF Group will construct SoftRock v9 SDR receivers to use as a platform for beacon monitors. The standard imported kits are combined with locally sourced hardware kits to produce a top class instrument. The assembly provides practice (and challenges) in surface mount techniques and help is available from experienced members. Our January meeting (4th Monday at 1200 Z) is planned as a 'troubleshooting and calibration workshop' for the constructors.

The Group has had to relocate temporarily. The current venue is 'Millers Bakehouse Museum' Baal St, Palmyra. The February venue TBA, will possibly be a Beacon Workshop.

Negotiations are in progress for re-siting the Dampier and Busselton beacons, and for a site in Carnarvon. No replacement site has been found in Augusta.

Meeting notices and minutes are sent by email or snail mail to our membership list, so if you are missing out send your subs and details to treasurer Fritz VK6UZ. 73 Bob VK6KW, Pres. WA VHF Group Inc.

The NCRG Update.

The club was very fortunate to have two well travelled German DXpeditioners over the CQ WW CW contest. Club member Bernd VK6AA reports.

Originally planned by Kevin VK6LW and myself as a low-profile two man multi-single effort, this changed after Dietmar DL3DXX and Tom DL5LYM joined us. We decided to give M/2 a go as NCRG's club station VK6ANC was designed for M/2 and this was the first time that a serious CQ WW M/2 effort had been made from 'Ham Heaven'. We went through a steep learning curve!! All of it is now used as a basis for getting VK6ANC ready for next year's contest season. We all had a blast despite (almost) rock-bottom conditions.

Low points:

Equipment failures. The K2, linear amplifier, rotator of 15 metre beam, automatic antenna switching.

160 m antenna, a quarter wave vertical, was a write off. Ten QSOs in ten hours. We could hear well but could not be heard.

Lack of sunspots, particularly not good when combined with long distances to major population centres.

High points:

Looks like the old Oceania record for M/2, which was set during the sun spot maximum is now history, something we would not



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VK2 News continues

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They formed an 'Institute' which was known as "The Wireless Institute of New South Wales" according to a listing of Wireless Calls, 1st October 1912.

At that time experimenters had three letter calls as did ships and land stations. The experimenters began with 'X'. There were 33 members of the 'WI of NSW'. In 1922 they had become registered as a NSW company on the 26th of May in the name of Wireless Institute of Australia New South Wales Division.

There were periods when that Company was known by other names, as in the late 1920s, when there was friction between the professional and Amateur members resulting for a while in separate groups.

In the last decade with the changes to the WIA structure, there was the need to reduce confusion between the two bodies.

Both NSW and Victoria, being Companies, opted to retain their Company structure. Each adopted an alternate trading name of 'Amateur Radio' and their State. So after 100 years there is a line that can be traced back to March 1910 – like the axe with four new handles and three new heads – it is still the same axe.

Now operating as a state-wide radio club, the former Division, affiliated with the National body – Amateur Radio New

South Wales – looks forward to a year of celebration with all parties involved in the World's oldest national Amateur Radio Society.

On Saturday the 17th of April ARNSW will be conducting its AGM.

Agenda items and nominations will close 42 days before, on Saturday the 6th of March. Most members have opted to receive the paperwork by email. So everybody needs to ensure details are up to date. Send off an email to office@arnsw.org.au, a telephone call to the message bank on 02 9651 1490 or a letter to ARNSW, P.O. Box 6044, Dural Delivery Centre, NSW 2158. More details in the news bulletins.

The 'Bam' at the VK2WI site is nearing completion. There may soon be a formal opening. Much is planned but not confirmed for publication. We do know Station Engineer Mark VK2XOF constructed and installed a new beacon on 10 metres for VK2RSY: 20 watts CW on 28.262 MHz, a slight adjustment up from the old frequency to the correct assignment.

Also late last year, a new antenna was constructed for the VK2WI News transmissions on 40 metres. This one is more remote from the station building and has enabled the AM transmissions to be resumed on 7146 kHz. The former antenna, adjacent to the building is now for the SSB call back transceiver.

VK2WI conducted morning only news transmissions over the holiday period.

Reports from SWLs and those unable to call in can be left on the station phone's answering machine 02 9651 1489.

The historic tapes during the break were provided by the Kurrajong Radio Museum. Ian VK2ZIO will have these and other historic items on his display at the Wyong field day. Check out his stand.

You can also bring him military radio equipment to increase his museum. Even if some of it has been ratted, there may be parts left for the restoration of other items.

The next Trash & Treasure event at the Dural site will be on Sunday 28th March. At this time it is expected that the T&T portion within the 'Bam' will be in operation. No more lugging the goodies out of the old shed for display and purchase.

ARNSW undertakes the collection of Deceased Estates and surplus electronics, amateur radio equipment and similar. It all helps provide a service to those who still collect.

What we do not need is domestic electronics, computers, monitors, etc. Contact via the telephone numbers given earlier or an email to office@arnsw.org.au

Do not forget Australia's biggest amateur radio field day at Wyong, Sunday 28th February.

73, Tim VK2ZTM.

ar

VK6 News continues

have expected at all under the current circumstances. 40 metres was the star performer with the 40 metre only result exceeding the current Oceania 40 metre single band record. Using beverages for EU and NA, a first at VK6ANC. Great team effort although the four of us had never operated together before.

Kevin's German improved tremendously over the weekend. Thanks to the Northern Corridor Radio Group (NCRG www.ncrg.org.au) for the use of the VK6ANC station and facilities, as well as their fantastic support. 73 Bernd VK2IA/VK6AA."



The VK6AA CQWW CW contest team of Kevin VK6LW, Dietmar DL3DXX and Tom DL5LYM. On 'sleep duty' was Bernd VK6AA/VK2IA.

Another event for your calendar:

The Northern Corridor Radio Group Inc. honoured one of its longest serving members Neil Penfold VK6NE at the Group's Christmas Party on Saturday 19th December. A large sign bearing the new official title for the Group's premises was unveiled in the presence of more than 30 members and guests. The new title is Neil Penfold State Amateur Radio Centre.

This recognises Neil's incredible contribution to Amateur Radio in Australia and globally with more than 40 years service to the WIA - at both federal and state levels - and more than 20 years service to the NCRG. It is a small token of the high esteem in which he is held by his Club-mates and many others who know him both as a man and as a tireless worker for the exceptional hobby he loves.

The NCRG will be holding the official opening of the Neil Penfold State Amateur Radio Centre itself, better known as Ham Heaven, on Sunday March 14 at 10 am. All amateurs are invited to come along for a sausage sizzle (free) and a look around. There will be a car boot sale operating at the same time and if you want to set up a stall or whatever, please contact our secretary John VK6JX.

The club station will be operational and you can chase some DX while visiting. We are very proud of our State Centre in Whiteman Park and will welcome you for the day's events, and maybe even as a member? Check out the club site at www.ncrg.org.au for more details.

That is it for this month, VY 73, Keith VK6RK.

ar

Geelong Amateur Radio Club – The GARC Event reports

Tony Collis VK3JGC

UHF and Microwave

Operations by club members

A presentation was given by two, David VK3QM and Chas VK3PY, of the three members of LUMEG, The Lara UHF and Microwave Experimenters Group, who in recent years have been very successful in WIA competitions in the UHF multi operator category.

The bands that the LUMEG group operate on are 2.4 GHz through to 24 GHz. The Microwave dishes used provide up to 33 dB gain, and with a 3 W input gives an ERP of 6 kW!; but the trade off is a 1 to 2 degree beamwidth, so the concept of calling CQ in contests is somewhat impractical with most of the contestants making prior arrangements.

From 2 to 10 GHz it is possible to buy, from the USA and Europe, modules to design and construct equipment to output on those frequencies; but at 24 GHz LUMEG is left very much to its own devices with DIY involving a lot of plumbing.

Operating at microwave frequencies is somewhat inefficient as you are working in the main in class A, 25% efficiency at best, with special attention being paid to voltage stability, as the units are normally battery powered for field work, and of course frequency stability. Also the absence of effective test equipment at these frequencies is a major obstacle.

At high elevations subject to strong winds it is also necessary to guy the supports for the dishes to minimise any movement. Pre amplifiers for terrestrial communication are influenced by ground thermal noise, but EME communications do not get the same level of interference.

Charlie VK3NX, the third member of LUMEG team, holds several Australian National records for EME communication - visit www.vk3nx.com for more information.



David VK3QM



Chas VK3PY

Between a rock and a hard place

Gerhard VK3HQ has been a caver, also known as spelunker, for over 35 years, initially in his native Germany and then anywhere in Australia with a limestone deposit. Gerhard showed the specialist cavers maps and equipment and a lot of photographs of the numerous caves he has explored over the years.

Caving was pioneered by Édouard-Alfred Martel who first explored the Gouffre de Padirac in France in 1889. He developed his own techniques based on ropes and metallic ladders.

For safety, hard hats are worn, with caver's primary light source mounted on the helmet to keep the hands free. Halogen lamps are the standard and white LEDs are the new competing technology. Many cavers carry two or more sources of light - one primary and backups in case the first fails. Carbide lamp systems, an older illumination, inspired by miner's equipment, are still used by some cavers.

Specialized ropes are used for descending or ascending pitches ("Single Rope Technique") or for protection. Knots commonly used in caving are the figure-of-eight- (or figure-of-nine-) loop, bowline, alpine butterfly, and Italian hitch. Ropes are usually rigged using bolts, slings, and karabiners. Cavers may use a flexible metal ladder.

All foreign matter, including human waste, is removed from caves. If long trips are to be made into a cave, containers for the removal of liquid and solid waste are included on the trip inventory.

Cavers map the underground fissures in the limestone rock in both length, which can be many kilometres, and depth which can be down several kilometres. They also provide geologists with information about fossils found such as ammonites so they can get a clearer picture of how the land mass and oceans have moved over millions of years.

Gerhard once found a shark's tooth in central Germany but has, as yet, found no evidence of the Sabre Toothed Possum in Australia.



Caver Gerhard VK3HQ

Spring VHF/UHF Field Day

VK3ALB/P braved the elements and ventured to Mt Leura, near Camperdown, see the story and picture on page 64

The GARC had three groups participating in the field day. The team from LUMEG, like the remaining two, found poor band conditions, bad weather, and low turn out to be the worst for many years. Their point score for multi operator and multiband use, to be confirmed, was 4444; significantly lower than in previous years.

The VK3ATL team camping on the Bellarine heights, operating on 2 m and 70 cm, similarly experienced both bad weather and a poor turn out

GARC in the Park

The traditional GARC in the Park Christmas barbeque was held at the Rotunda, Eastern Beach in Geelong. The turn out was over 60 involving GARC members and their families and also a good representation from the GRES, our sister Radio Club in Geelong.



Barry VK3SY addressing the club

The event was organised by Jenni VK3FJEN, who also provided and presented some children's gifts. Barry VK3SY, gave an address and then presented President Dallas VK3DJ with a wooden plaque.

Dallas in turn presented to Vanessa VK3FUNY a GARC cap and T shirt in recognition of the work she puts in to the club as an "unsung hero". **ar**



Vanessa VK3FUNY being 'capped' for the club' by Dallas VK3DJ

Contest Calendar for February—March 2010

February	13-14	CQ World Wide RTTY WPX	RTTY
	13-14	Dutch PACC	CW/SSB
	20-21	ARRL International DX	CW
	20-21	Russian World Wide PSK	PSK
	27	NZART Jock White Memorial Field Day	CW/SSB
	27-28	European PSK Club World Wide	PSK
	27-28	UBA - Union of Belgian Amateur Radio	CW
	27-28	REF - Reseau des Emetteurs Francais	SSB
March	6-7	ARRL International DX	SSB
	13-14	RSGB Commonwealth	CW
	20-21	John Moyle Memorial Field Day	CW/Phone/Digital
	20-21	Russian DX	CW/SSB
	20-22	BARTG Spring RTTY	RTTY
	20-21 (tbc)	European EME Contest (event 1)	CW/SSB
	27-28	CQ World Wide WPX	SSB

Hi everyone and welcome to 2010.

The later stages of 2009 saw clear improvements in conditions and the DX slowly began to flow during many contests. This certainly raised spirits and gave hope for excellent propagation for 2010.

Mind you events such as the ARRL 10 m contest gave us all a humbling reality check and reminded us that the sun is only offering us a small slice of the DX pie.

A quick look at the contest calendar shows that February and March offers some fantastic events to delve into. You never quite know what to expect sometimes, even with the smaller contests.

In mid-December I had a quick look at a USA PSK contest which I only found out about at the last minute. It just happened to coincide with a long

path opening to North America. Over 2½ hours I had a ball with a mini pile-up working 63 Americans on 20 m PSK.

Just goes to show that you do not have to compete seriously in the contests, sometimes just showing up can result in a lot of fun.

CQ WPX RTTY Contest

For all those RTTY fans out there, the CQ WPX contest is for you.

We should see the band segments bursting at the seams with number 11's

all over your screen. It is on February 13-14 and runs for 48 hours from 0000 UTC Saturday to 2359 UTC Sunday. It is open to the world and the objective is to contact as many amateurs and licensed prefixes as possible during the contest period. The event is on the 3.5, 7, 14, 21, and 28 MHz bands. Scroll down to the CQWW WPX SSB contest later in this month's column to see an explanation of how the different prefixes work. Better still see the CQ WPX RTTY Contest

WIA Contest Website

To keep up to date with all of the major Australian contests, including rules and results, do not forget to have a look at the WIA contest website at

www.wia.org.au/members/contests/about/

website at www.cqwprrty.com/ for all the rules, past results, etc.

ARRL International DX Contests

Are you chasing the Worked All States award? Do you want to see how the propagation is faring to North America?

This is your chance as both the CW and SSB contests are coming up and the object for us in Australia is to work as many Canadian provinces and USA states (not KL7 or KH6) as possible.

The CW contest is on February 20-21 and the SSB version is on March 6-7. They run for 48 hours from 0000 UTC Saturday to 2400 UTC Sunday on all non-WARC HF bands. The exchange we give out is an RS(T) and power, this is a number indicating approximate transmitter output power.

You will receive an exchange from the VE/W station in the form of RS(T) and Canadian province/US state. If this is something you would like to be involved with, visit www.arrl.org/contests/rules/2010/intldx.html for a complete set of rules.

John Moyle Field Day Contest

The history, past results and current rules are available on the WIA contest website (see previous page).

Presented by Denis Johnstone (VK4AE/VK3ZUX)

Date: 20 - 21 March, 2010

Time

0100 UTC Saturday - 0059 UTC Sunday

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.
2. The contest takes place on the third full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 20-21 March 2010.
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, Digital 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, Digital or All modes;

c. HF, VHF/UHF or All Bands.

6. Home and SWL operator entries may only be in either the 24 hour or 6 hour, and only all modes, all bands.

Scoring

7. Portable HF stations shall score 2 points per QSO. CW only contacts to score 4 points per QSO for contacts with either home or portable stations. On VHF/UHF for portable stations Digital Modes score at the same rate as Phone and CW only scores at twice the rate of a Phone contact.
 8. Portable stations shall score the following on 6 m:
 - a. 0-49 km, 2 points per QSO;
 - b. 50-99 km, 5 points per QSO;
 - c. 100-149 km 10 points per QSO;
 - d. 150-299 km 20 points per QSO;
 - e. 300-499 km 30 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, 5 points per QSO;
 - c. 100 to 149 km, 10 points per QSO;
 - d. 150 to 300 km, 20 points per QSO.
 - e. 300 km and greater, 30 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. The Email address for this year's JMMFD contest should be setup a few days before the contest, and I would suggest to those that will be sending in your Logs electronically, to send

in a test email with the words "TEST JMMFD 2010", in the subject line and also set the "READ REQUEST RECEIPT" flag. Your call sign can then be added into the database for this year's contest. When actually submitting your log, if you do not receive an e-mail acknowledging receipt, then the log has not been received.

15. Paper logs may be posted to "John Moyle Contest Manager, 27 Laguna Ave, Kirwan 4817 QLD". Alternatively, logs may be e-mailed jmfd2010@wia.org.au, vk4ae@wia.org.au or to vk4ae@hotmail.com, or snail mailed via the WIA Contest Manager, JMMFD, P.O. Box 2042 Bayswater, VIC 3153.
16. 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 23 April 2010.

Certificates and Trophy

17. 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.
18. The Australian portable station, with the highest overall score will be awarded the President's Cup, a perpetual trophy held at the Executive Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

19. 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

20. 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.
21. All equipment comprising the portable station must be located within an 800 m diameter circle.
22. A single operator station is where one person performs all operating, logging, and spotting functions.
23. 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.
24. A multi-operator station is where more

than one person operates, checks for duplicates, keeps the log, performs spotting, etc.

25. A multi-operator station may use only one call sign during the contest.
26. Multi-operator stations may only use one transmitter on each band at any one time, regardless of the mode in use.
27. Multi-operator stations must use a separate log for each band.
28. 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.
29. A station operated by a club, group, or organisation will be considered to be multi-operator by default.
30. None of the portable field equipment may be erected on the site earlier than 28 hours before the beginning of the contest.
31. 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.
32. Phone includes SSB, AM and FM.
33. CW includes CW hand or computer generated. Fully automatic operation is not permitted. CW contacts will score 4 points for HF and double points for VHF & UHF contacts.
34. Digital modes such as PSK31, RTTY, and packet may be used in the contest, but if they are, they shall be classed as Digital. Other modes such as ATV may be used and will be classed as Digital for scoring. Digital contacts will score points at the same rate as Phone.
35. 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.
36. 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.
37. 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.

38. Stations must exchange ciphers comprising RS(T) plus a 3 digit number commencing at 001 and incrementing by one for each contact.
39. Portable stations shall add the letter "P" to their own cipher, e.g. 59001P.
40. 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.
41. 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.

Jock White Memorial Field Day

This annual contest is named to honour Jock White ZL2GX, NZART Contest and Awards Manager for over 40 years, for the service that he gave to NZART during that time.

Amateur radio operators in Australia would look to work the New Zealand contest participants in both CW and SSB on the 80 m and 40 m bands during the times of 0200-1100 UTC and 1700-2400 UTC on Saturday February 27.

I am sure our neighbours across the pond would appreciate any VKs joining in and giving an exchange to boost their points tally.

Particularly as we would like the ZLs to give us a shout during the John Moyle Memorial Field Day just a few weeks later. Full rules are available at www.nzart.org.nz/contests/rules.html

RSGB 73rd Commonwealth Contest 2010

The Commonwealth Contest promotes contacts between stations in the Commonwealth and Mandated Territories.

This is a great chance to work some DX with operation allowed on the 80 m, 40 m, 20 m, 15 m and 10 m bands in CW mode only from 1000-1000 UTC on March 13-14. The exchange is simply RST plus sequential serial number.

The full set of rules is at www.rsgbcc.org/hf/rules/2010/rberu.shtml and a vast amount of background information, statistics and photographs

related to the Commonwealth Contest may be found on G3PJT's www.beru.org.uk website.

The CQ World Wide WPX SSB

The CQ World Wide WPX SSB Contest is one of the biggest events of the year and the bands explode into action.

If the improved solar conditions from the 2009 CQWW DX SSB contest are any indication, then this year's WPX event should be spectacular. Now that I have put up a 15 m monoband Yagi, I simply cannot wait for this weekend to arrive.

CQWW WPX SSB is on March 27-28 and goes for 48 hours from 0000 UTC Saturday to 2359 UTC Sunday although single operators may only operate for 36 hours. The objective is to contact as many amateurs and prefixes as possible during the contest period on the 1.8, 3.5, 7, 14, 21 and 28 MHz bands. The exchange is an RS report plus a sequential serial number starting at 001.

The multipliers in this event are prefixes. Each prefix is counted only once regardless of the band or number of times the same prefix is worked. A prefix is the letter/numeral combination which forms the first part of the amateur call. Examples: N8, W8, WD8, HG1, HG19, KC2, OE2, OE25, etc. Any difference in the numbering, lettering, or order of same shall count as a separate prefix.

A station operating from a DXCC country different from that indicated by its call sign is required to sign portable. The portable prefix must be an authorized prefix of the country/call area of operation. In cases of portable operation, the portable designator will then become the prefix. Example: N8BJQ operating from Wake Island would sign N8BJQ/KH9 or N8BJQ/NH9. KH6XXX operating from Ohio must use an authorized prefix for the U.S. 8th district (/W8, /AD8, etc.).

Portable designators without numbers will be assigned a zero (Ø) after the second letter of the portable designator to form the prefix. Example: PA/N8BJQ would become PAØ. All calls without numbers will be assigned a zero (Ø) after the first two letters to form the prefix. Example: XEFTJW would count as XEØ. Maritime mobile, mobile, /A, /E, /J, /P, or interim licence class identifiers do not count as prefixes.

Visit www.cqwpw.com/ to view the full rules.

continued foot of next page

Spring VHF-UHF Field Day 2009: Results

Contest manager: John Martin VK3KM

When the date of the Spring Field Day was moved later in the month of November, it was expected that this change might provide better weather (and propagation). This was not to be the case.

Much fun was had and many excellent contacts made, but most entrants – especially in VK5 – reported dreadful weather, with strong winds and rain in areas which only a fortnight before had been suffering a record heat wave!

According to the rules, the winners of Sections A and C are barred from also entering Sections B and D. So, this time the total number of logs was 56. First place in Section A again went to Tim Dixon VK5ZT, with Gavin Brain VK3HY getting top score in Section B. In the multi-operator sections, the winners were VK5LZ, the Elizabeth Radio Club, and VK3BJA, the Gippsland Gate club. The winner of the home station section was Ross Keogh VK3MY.

Congratulations to all, and I hope you will all be back for the Summer Field Day on 16/17 January.

The rules for the January Field Day will be the same as for previous events, but there will be some minor changes for the Winter Field Day in late June. These changes will be publicised by early April.

Results table on facing page

See also page 64 for Contest
“picture of the month”

Notes to the results table on facing page

- | | | |
|--|---|---|
| (1) South Coast ARC: Barry Bates VK5KBJ | (6) Lou Blasco VK3ALB, Nik Presser VK3BA, Jenni Blasco VK3FJEN, Michael Blasco VK3FMIC | (12) Kirk Mercer VK2MER, Stuart Bayliss VK2LSB |
| (2) Elizabeth Amateur Radio Club: Iain Crawford VK5ZD, Andrew Hall VK5AKH | (7) Sunshine Coast ARC: Wayne Shaw VK4WS, John McPherson VK4JMC, Richard Philp VK4RY, Bill Booth VK4WB, Cec Tysoe VK4FMUZ, Leicester Hibbert VK4ALH | (13) Bill Day VK3LY, Jim Bywaters VK3OM, Brian Farmers VK3AQX |
| (3) Lara UHF – Microwave Exp Group: Charlie Kahwagi VK3NX, Chas Gnaccarini VK3PY, David Learmonth VK3QM | (8) Moorabbin & District Radio Club: Lee Moyle VK3GK, Ian Morris VK3FM, Gerard Werner VK3GER | (14) City of Brisbane Radio Society: R. Croucher VK4CRO, J. Morris VK4MJF, D. Bumpstead VK4DJB, K. Myers VK4GC |
| (4) Eastern and Mountain District Radio Club: Mike Subocz VK3AVV, Peter Forbes VK3QI, Max Chadwick, VK3WV, Jack Bramham VK3WWW | (9) Andy Sayers VK2AES, Dale Hughes VK1DSH | (15) Blue Mountains ARC: VK2ZIW, VK2AOR, VK2BOS, VK2FTTP, VK2FACW, VK2FTMA, VK2FMJB |
| (5) Tableland Radio and Electronics Club: John Roberts VK4TL, Dale McCarthy VK4DMC, Stuart Dunk VK4SDD, Trevor Gregory VK4ZFC | (10) Ted Gamett VK1BL, Greg Parkhurst VK1AI | (16) Gippsland Gate Radio and Electronics Club: Phil VK3YB, Geoff VK3ZGW, Chris VK3QB, Albert VK3BQO, Megan VK3HOP, Helmut VK3DHI, Max VK3TMK |
| | (11) Hornsby and District ARC: VK2DAY, VK2FMAM, VK2ANG, VK2BCD, VK2HRX, VK2TTP, VK2MTX | |

Continued from previous page

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European PSK Club Worldwide DX

For PSK fans, the EPC Worldwide DX Contest is something to dive into and it gives you an opportunity to use the seldom practised and very fast PSK125 mode rather than the more leisurely and popular PSK31.

This year's events will take place on February 27-28 from 1200-1200 UTC and maximum power is 100 W. Participants are recommended to use the following frequencies:

160 m:	1.838 – 1.843 MHz
80 m:	3.580 – 3.590 MHz
40 m:	7.040 – 7.050 MHz
20 m:	14.070 – 14.080 MHz
15 m:	21.070 – 21.080 MHz
10 m:	28.070 – 28.080 MHz

In this event, everybody can work everybody for QSO and multiplier credit. The exchange is simply an RST followed by a sequential serial number starting at 001. There are a variety of categories and awards to choose from so participants

VHF-UHF Field Day News

2010 Field Day Cumulative Certificate

Do you intend to participate in all three VHF-UHF Field Days in the coming year? Here is an extra incentive for you. Special certificates will be awarded in December 2010 to the entrants who have participated in all three 2010 Field Days. Awards will be based on the rank order of logs rather than on the raw scores.

Microwave Challenge – January 2011

The Summer Field Day for 2011 will cover all bands as usual. But it will also include a “Microwave Challenge”, with special certificates to be awarded to the highest scorers on microwave bands. So if you have been planning to add microwave gear to your station, now is the time to start preparing!

Field Day web site

The VHF-UHF Field Day web page is <http://www.wia.org.au/members/contests/vhfuhf/>

This site includes the rules for the next Field Day, rules and results of all past VHF-UHF Field Days, cover sheets and scoring tables, and other information.

ar

Results table

Call	Name	Location	50 MHz	144 MHz	432 MHz	1296 MHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	TOTAL
Section A: Single Operator, 24 Hours											
VK5ZT	Tim Dixon	PF85, PF86, PF93, PF94, PF95, PF96, QF03, QF04	183	642	1035	1448	1740	-	1740	1630	8418
VK3JTM	Tim Morgan	QF12	66	324	535	624	520	-	-	350	2419
VK4CP	Adam Maurer	QF61, QF62, QF63	165	441	585	544	-	-	-	-	1735
VK3DAG	Steven Hamer	QF32	118	435	540	576	-	-	-	-	1669
VK5LA	Andy Williss	PF85, PF95, QF05	-	486	560	352	-	-	-	-	1398
VK5ARC	SCARC (1)	PF94	179	399	475	288	-	-	-	-	1341
VK1DA	Andrew Davis	QF44	35	246	235	264	340	210	-	-	1330
VK4OE	Doug Friend	QF59	48	321	225	168	-	210	-	210	1182
VK2AMS	Mark Swannack	QF68	50	282	175	240	-	-	-	-	747
VK4NME	Bryan Cunnington	QH22	52	93	155	-	-	-	-	-	300
VK4NE	Mick Marinkovic	QG62	20	78	105	-	-	-	-	-	203
Section B: Single Operator, 8 Hours											
VK3HY	Gavin Brain	QF32	95	348	545	424	-	-	-	-	1412
VK3YFL	Bryon Dunkley-Smith	QF22	68	276	450	560	-	-	-	-	1354
VK4ADC	Doug Hunter	QG61	137	258	340	392	-	-	-	-	1127
VK5LA	Andy Williss	PF85, PF95, QF05	-	321	450	352	-	-	-	-	1123
VK5OQ	Keith Gooley	PF95	76	222	290	296	-	-	-	-	884
VK3DAE	Dean Emmins	QF12	73	255	395	-	-	-	-	-	723
VK2JDH	David Hardy	QF57	-	210	295	176	-	-	-	-	681
VK4EV	Ron Everingham	QG63	58	135	225	-	-	-	-	-	418
VK2YJS	Julian Sortland	QF56	-	108	-	-	-	-	-	-	108
VK5KPR	P. Banks	PF87	56	-	-	-	-	-	-	-	56
Section C: Multi Operator, 24 Hours											
VK5LZ	Elizabeth ARC (2)	PF85, PF86, PF93, PF94, PF95, PF96, QF03, QF04	178	582	1000	1432	1740	0	1740	1740	8412
VK3UHF	LUMEG (3)	QF21	79	645	830	920	780	210	370	610	4444
VK3ER	EMDRC (4)	QF22	228	837	1080	1144	580	-	-	-	3869
VK4WAT	TREC (5)	QH22	536	591	790	776	-	-	-	420	3113
VK3ALB	(6)	QF11	-	459	630	832	-	-	270	390	2581
VK4WIS	SCARC (7)	QG63	214	633	725	456	-	-	-	-	2028
VK3APC	MDRC (8)	QF22	113	390	545	720	-	-	-	-	1768
VK2AES	(9)	QF45	38	492	415	240	250	-	-	240	1675
VK1BL	(10)	QF44	35	234	210	304	340	210	-	240	1573
VK2MA	HADARC (11)	QF56	123	459	450	424	-	-	-	-	1456
VK2MER	(12)	QF55	42	579	480	224	-	-	-	-	1325
VK3LY	(13)	QF03	79	300	415	456	-	-	-	-	1250
VK4WIE	CBRS (14)	QG62	78	219	135	-	-	-	-	-	432
VK2HZ	BMARC (15)	QF56	-	171	250	-	-	-	-	-	421
Section D: Multi Operator, 8 Hours											
VK3BJA	GGREC (16)	QF21	33	249	260	184	-	-	-	-	726
Section E: Home Station, 24 Hours											
VK3MY	Ross Keogh	QF22	43	390	590	696	420	-	-	-	2139
VK4ZDP	David Purkis	QH32	314	438	595	424	-	-	-	-	1771
VK3XPD	Alan Devlin	QF22	-	195	385	568	350	-	-	210	1708
VK3VFO	Nick Kraehe	QF31	52	399	370	296	-	-	-	-	1117
VK5MWH	Mark Hutchinson	PF94	48	264	400	264	-	-	-	-	976
VK4FNQ	John Goldfinch	QG39	151	192	240	280	-	-	-	-	863
VK3KIS	Andrew Kayton	QF22	68	201	245	336	-	-	-	-	850
VK5NE	Paul Roehrs	PF95	70	345	430	-	-	-	-	-	845
VK5LSB	Simon Brandenburg	PF94	43	261	375	-	-	-	-	-	679
VK5MEF	Matthias Fresacher	PF95	-	240	360	-	-	-	-	-	600
VK5LD	Dale Loffler	PF96	72	195	300	-	-	-	-	-	567
VK2EI	Neil Sandford	QF68	33	171	120	192	-	-	-	-	516
VK3FZ	Roger Stafford	QF22	44	138	205	-	-	-	-	-	387
VK3TOM	Tom Steadman	QF31	33	150	165	-	-	-	-	-	348
VK5FPAW	Paqul Schulz	PF95	-	159	165	-	-	-	-	-	324
VK1WJ	Waldis Jirgens	QF44	-	144	115	-	-	-	-	-	259
VK3HV	George Francis	QF31	33	105	115	-	-	-	-	-	253
VK2ZQX	John Watson	QF58	-	135	110	-	-	-	-	-	245
VK5FMPJ	Patrick Morgan	PF94	-	159	-	-	-	-	-	-	159
VK4ATH	Tom Hatton	QG62	148	-	-	-	-	-	-	-	148

FOR SALE – NSW

The Ic-U400 will work from 430 MHz to about 500 MHz. It can be easily changed if you wish. Output power is about 35 watts. It has 16 channels but it only takes about a minute to reprogram a channel frequency to whatever you like, with a plug in keypad. Offers over \$50.

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Essential parts to construct a tri-band cubical quad antenna including hub, fibreglass spreaders and sundry pieces, hard drawn copper wire and nylon cord. Instructions on how to assemble and erect on a mast/tower. \$200.00. Stan VK2AYL QTHR.

WANTED - NSW

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I am looking for a fuse holder to suit a Collins R391 RX. Also looking out for a AR8 RX. If anyone could help I would be very pleased.

Nick L20106, phone 02 9477 2134.

Information required for programming the Icom IC-H16T. Please note that this is the 'T' version and the H16 programming through the keypad does not program the T version.

Victor VK2XVS. Mobile 04 3509 6995 or email victorsnewemail@yahoo.com.au

A manual for a Racal thermionic store 4 reel to reel tape recorder. A manual for a Sony model TC 377 reel to reel tape recorder. A manual for a Sansui model AU555A amplifier.

Contact Nick L20106, phone 02 9477 2134.

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AR7 chassis, for parts, no gang, \$10.

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WANTED – QLD

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FOR SALE – SA

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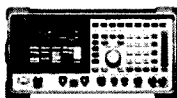
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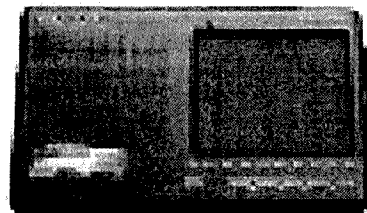
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Picture of the Month

For the inaugural Picture of the Month (PoM) we really couldn't go past this shot of GARC's portable, VK3ALB/P, in action during the 2009 VHF-UHF Spring Field Day. It just covered so many bases.

The shot touches on the contest itself; a club activity and the 'getting out there in great remote outdoors' that accompanies much portable contest activity.

And for those scoffers who say that it doesn't look very remote; spending a cold, wet and windy day camped on the top of a mountain near Camperdown in Victoria's Western District did seem a little remote from civilisation to those who were there.

A PoM will be selected each month looking for relevance as the key criterion. Good composition will help, as will having a large number of pixels.

VHF-UHF Spring Field Day

Very difficult conditions with heavy rain, strong winds and cold temperatures made for a very challenging weekend and forced many operators to stay home.

But VK3ALB/P braved the elements and ventured to Mt Leura, near Camperdown in QF11NS to participate in the Spring VHF/UHF Field Day.

VK3ALB/P was crewed by Lou VK3ALB, Nik VK3BA, Jenni VK3FJEN and Michael VK3FMIC. Bands in operation were 2 m, 70 cm, 23 cm, 6 cm and 3 cm. VK3ALB made



over 150 contacts during the 24 hour event including a very difficult but rewarding 2 m contact to Flinders Island with ex GARC member Gavin VK7VTX.

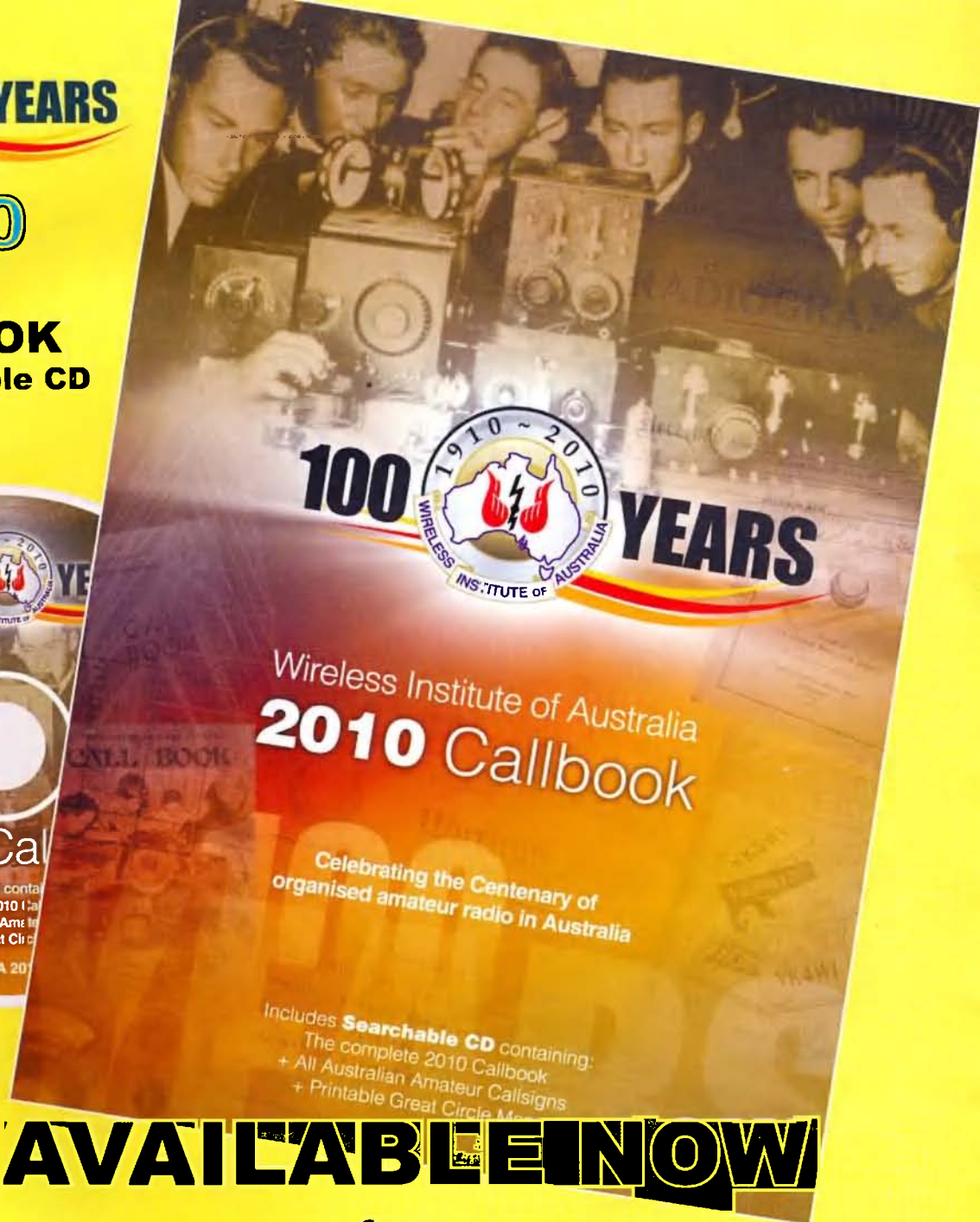
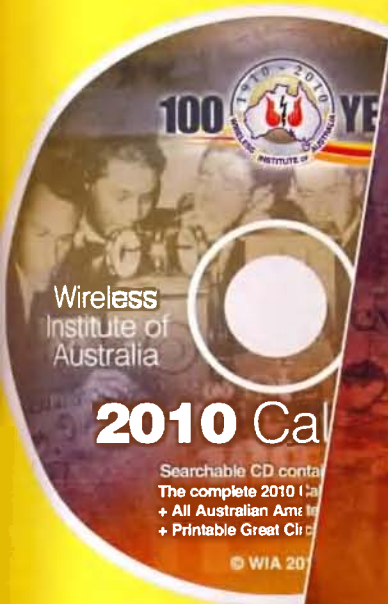
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Our cover this month

In line with the theme for this year, the cover this month celebrates the beginnings of the WIA a century ago. Design by Ivan Smith.



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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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

If back issues are unavailable, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

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

Amateur Radio Service

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

Wireless Institute of Australia

The world's oldest National Radio Society,
founded 1910.

Representing

The Australian Amateur Radio Service

Member of the

International Amateur Radio Union

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Editorial

Peter Freeman VK3PF

Not the best start to the year

We offer our apologies for the errors in the table of contents last month. My only excuse is that we were in a rush to meet our print deadline. We checked the contents page for spelling errors, but neglected to double check the links to the page numbers!

We missed that two or three paragraphs went missing in the VHF/UHF column. I extend our apologies to David VK3HZ and his contributors. On becoming aware of the omission, I added the missing material to the AR magazine page on the WIA website. I note that David has added the lost material in his column this month.

More tweaks to AR

You will have noticed the new paper inside the magazine's last issue. Through our publishing house Newsletters Unlimited (NU), we have changed both the printer used and the paper – to a heavier, whiter stock. We are still using the same technology as used to print newspapers.

We hope that everyone is happy with the quality of printing and paper with our new printer. Personally, I noted some variation in the black ink density, but such variation is common when printing using newsprint technology. We hope that the new paper has resulted in a cleaner appearance.

You will have noticed more changes this month! A new banner style has been adopted, whilst maintaining some links to our past. We have a very clean cover design featuring the new banner for this month, celebrating the founding 100 years ago of the WIA.

We welcome your comments on the new design features of our magazine – AR belongs to all of our readers. The Publications Committee simply does the background work to ensure that we continue to have a magazine. We also thank Ivan who designed the new masthead and internal layout, and John and his team at NU for their efforts to institute the new design. Please forward any comments (either brick

bats or bouquets) to the Secretary of Publications Committee, Ernie VK3FM at armag@wia.org.au

Photographs submitted to AR

One of the great needs of Amateur Radio magazine is excellent photographs to accompany articles. They give readers a stimulus to open, peruse and enjoy the magazine, especially if they appear on the cover.

But excellent photographs, ones that will **publish well**, are extremely difficult to take for the average photographer, the category within which most radio amateurs fall. The need for crystal clear images, lack of shadow, a sensible composition and file size (image resolution) are all issues with which the Publications Committee must wrestle on almost every article submitted. Most photos submitted are satisfactory, but we receive extraordinarily few excellent ones – and anything else but excellent photos can introduce problems in the publishing process.

We love excellent photographs with your articles, and, even better, our readers are letting us know how much they appreciate them. But, we need you, the authors of our many excellent contributions to STOP, think about the photo, and then to put as much effort into producing a quality (excellent!) shot as you obviously do in developing your article. PLEASE HELP US.

We will be updating the guidelines for authors, covering both the text (and style) submitted and photographs that accompany articles (or even individual photos that might be considered for publication). Keep an eye on the "Contributing material" section of the AR portion of the WIA website and a future issue of AR (hopefully in April) for more detail.

Cheers, Peter VK3PF

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WIA comment

Michael Owen VK3KI

Looking at the Annual Report

We circulate with this issue of Amateur Radio the Annual Report and Notice of Meeting for our Annual General Meeting and Open Forum to be held at Canberra on 29 May 2010.

Also enclosed are details of the activities associated with that weekend, celebrating 100 years since the meeting in Sydney that founded the WIA, and the registration form you can use, if you do not register on-line.

The weekend will be truly memorable, and I am expecting very many amateurs to join us so please register and book your hotel early.

Rather than talk about history, I would like to look at the Financial Statements and the Director's Report and think a little about the future.

In their Report for the previous year the Directors said:

The Directors are aware of the current global financial crisis and recognise that its effects in this country may impact on WIA's income from advertising, interest and membership. The Directors are unable to express any opinion in a more quantified way on the likely impact on the business of the Institute, but do recognise the possibility of an adverse impact.

Was that concern justified?

The surplus for the 2009 year was \$10,656 as against a surplus of \$66,443 for 2008, a significant reduction.

A reduction in surplus is not necessarily a bad thing. The purpose of the WIA is not to make a profit, but to use its funds for the benefit of amateur radio and its members. The accounts show that the funds are meeting the day to day operations and also being spent for the benefit of amateur radio and the members.

As the Report points out, a number of factors influenced the result.

Lower interest rates during the 2009 year certainly did impact on the WIA. In the 2009 year interest received was

\$32,539 as against \$42,651 in the 2008 year before, a drop of \$10,112.

We were also paying a higher rent for the full year, having moved to larger premises in Bayswater toward the end of the 2008 year. While the rent is greater, at last we have space to store things, such as the QSL Collection and the books for the Book Shop, now moved to Bayswater from Sydney. And, as everyone now works in a pleasant place, efficiency is improved.

During the year we lost some advertising revenue. One major advertiser was not able to support us during 2009 but has returned at the start of 2010.

The WIA's direct income from advertising will be greater in the 2010 year as the WIA is itself taking over the responsibility for advertising. All of the advertising revenue will come to the WIA, not just the 70% when someone else looks after advertising.

Happily the Directors were wrong a year ago about the most important thing, membership. At 31 December 2009 there were 4,541 members, an increase of 165 over the year before.

A small increase, but we have not broken the chain of steady but small increases each year in membership.

Quite apart from the effects of the global financial crisis, other factors also had their impact on the year.

One was the Deed between the WIA and the Commonwealth, by which the WIA continues to manage amateur examinations, but now also issues certificates of proficiency and manages callsigns.

The Deed requires the WIA to charge for the services it provides pursuant to the Deed on a cost recovery basis, and this meant that, with one exception, examination costs increased.

That meant that for almost the whole 2009 year, membership subscriptions and other income was not subsidising the WIA's Examination Service.

Fear was expressed by some WIA Assessors and clubs that the assessment cost increases would dramatically reduce the number of people seeking amateur qualification. As can be seen from the Director's Report, in 2009 1,303 assessments were conducted compared with 1,228 in 2008. So, that fear turned out not to be justified.

Currently, as required by the Deed, the WIA is reviewing the costs of the examinations, certificates of proficiency and callsign management, because if there is more than a 10% difference in the cost of the service as against what is charged for the service, the cost must be increased or reduced.

Another factor which affects the WIA's 'bottom line' is subscription rates. These were last set in May 2004 and have not been increased despite a rise in CPI of at least 16%.

Let me sum up what seems to me to emerge from the matters discussed.

I believe that the last year has been successful in financial terms. Yes, the surplus was less than the year before, but that is not necessarily a bad thing and is easily explainable. The fact that membership continues to increase is reassuring.

While we need to look at catching up with the cost of living increases, slightly higher interest rates and pulling back the advertising to the WIA will also help for the 2010 year.

While we can never afford to be complacent, I think we can look forward to this year, 100 years since the meeting in Sydney that resulted in the formation of the Wireless Institute of Australia, with some confidence.

It would be a mistake to try and measure the health of amateur radio in Australia by looking at the bottom line of the WIA's accounts. But I believe the health of the WIA may be a good indicator.

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Ron Bertrand Steps Down

Ron Bertrand VK2DQ, a WIA director since May 2008, had decided not to seek re-election and so his term would have expired at the end of the AGM in May. Ron has now indicated that, due to health reasons, he wished to retire earlier and the Board has accepted his resignation as a director of the WIA from 1 February 2010.

The Board expressed its regret and acknowledged the great contribution Ron has made to amateur radio and the WIA, particularly in the examination field.

Ron worked extensively on behalf of the WIA with ACMA in the formulation of the syllabi for the various levels of amateur qualification and as a Nominated Assessor, conducting many special assessments.

Result of Nominations for Director

The WIA Returning Officer, Chris Chapman VK3QB, has advised that only one new nomination for director of the WIA was received, namely Christopher Piatt VK5CP.

In accordance with the Election Regulations, he had declared Phil Wait VK2ASD, Bob Bristow VK6POP and Chris Piatt VK5CP elected unopposed as directors of the WIA.

Chris was first licensed as VK3NCP in 1983, and VK3KCP in 1994. He moved to South Australia in 1998, and is a member of the Adelaide Radio Experimenters Group. He is a WIA Assessor.

He is part of the management team of a mining industry employer organisation, and holds degrees in Law and Arts. He brings to the WIA significant experience in business, law and lobbying.

His directorship commences at the conclusion of the WIA's Annual General Meeting on Saturday 29 May 2010.

WIA Board appoints new Director

The WIA Board has, in accordance with the WIA's Constitution, appointed Philip Adams VK3JNI a director following the resignation of Robert Broomhead

VK3DN, previously announced. Phil's appointment by the Board is for the balance of Robert's term, which ends with the 2011 AGM.

Phil's background is technical, and he has recently completed various business qualifications. First licensed in 1985 Phil has been a WIA member since. He was appointed a WIA Assessor in 2005 and a WIA Nominated Assessor last year.

Since 1977 he has been a Scout leader, most recently as Training Officer with the Scout Radio and Electronics Service Unit (Victoria). He is a CFA Volunteer Firefighter with over 30 years experience, holding Wildfire and Low Structure Certifications.

As the WIA addresses the issues of emergency communications and seeks to attract younger amateurs, Phil brings a mix of valuable experiences, including firefighting and extensive experience of working with young people, .

Special event day V13KIAH

The Yarra Valley Amateur Radio Group held a special event station on 7 February 2010 to recognise the efforts of Amateur Radio operators and others during the February 2009 Victorian bushfires. Many radio amateurs were impacted by the fires and many others provided services in the form of emergency communications operators.

The station operated between 2 pm and 8 pm on February 7th 2010 as this period was when the fires were at their worst in the Kinglake Ranges, Murrindindi, Bunyip, Churchill, Bendigo and other areas across Victoria.

Kinglake was chosen for its significance during the fires and their aftermath. An added bonus was that the Frank Thompson Reserve in Kinglake is a great radio operating location.

The call sign suffix used, KIAH, is an aboriginal word for 'beautiful place'. This description certainly applies to Kinglake.

Nearly 400 contacts were made over the six hours. All States and Territories except VK0 and VK9 were worked.

A special QSL card will be provided for those who were contacted and who send a stamped addressed envelope to YVARG, PO Box 346, Healesville Vic. 3777.

New Macedon Ranges Amateur Radio Club

The Macedon Ranges Amateur Radio Club is 'full steam ahead' for its first meeting on 20 March. The club commenced formation in November last with a steering committee of local amateurs with a combined 100 years licensed experience.

The committee led by Graeme McDiarmid VK3NE and Peter Willmott VK3TQ, is ably assisted by Peter Wolfenden VK3RV, Richard Hoskin VK3JFK, Colin Smith VK3YWY and Ron Burman VK3ZJ.

The new club, VK3RA will hold a weekly net on the VK3RMM 2 m VHF analogue repeater on Wednesdays at 8 pm. The first net is on Wednesday 24 March. Net controller will be Peter VK3TQ and all interested participants from the Ranges and beyond are invited to participate. The net will move to VK3RMM 70 cm D-STAR repeater at 9:00 pm, where it is connected to the Australian 3B reflector.

New Macquarie University Amateur Radio Club

A new amateur radio club is forming at Macquarie University in Sydney. Students and staff are invited to join, to promote amateur radio activity at Macquarie University.

Enquiries from the local community are also welcome. Macquarie University is a centre of excellence in electronic, telecommunications and wireless engineering.

Contact Adam VK2JSI by email, VK2JSI@MUARC.ORG or call 0415371990. See also the Facebook page of the Macquarie University Amateur Radio Club, www.muarc.org

Part 2 Organised amateur radio takes shape

An Arena of Wonder – QSP

Peter Wolfenden VK3RV

The account of the early years of organised amateur radio in Australia continues with the next three sections. See the January/February issue of *Amateur Radio* for the first instalment.

4. Organised amateur radio takes shape

Although there are anecdotal reports that the Wireless Institute of Victoria was formed in 1909, to date no firm evidence can be found to support this proposition (1).

The Postal Electrical Society was formed in Melbourne in late 1908. H.W. Jenvey, of earlier wireless communication fame, was its first president. The object of the society was "the advancement of Postal Electrical Engineering in all its phases and for the instruction of members on relative matters of a technical nature".

With such a broad scope, the society would surely have considered "wireless telegraphy". This could help explain reports of an earlier Wireless Telegraphy Society being established in Melbourne (2, 6).

However, we do know that on 11th March 1910, the Institute of Wireless Telegraphy of Australia was established in Sydney and that "Telegraphy" was soon dropped from the name (3). The initial meeting was held at the Hotel Australia in Martin Place, the site of the current MLC Centre.

Placing this date into context, it was about 13 years before regular broadcasting started in this country and was over a year before The Marconigraph journal (which became *Wireless World* three years later), was published by Marconi's Wireless Telegraph Company. The Australian publication *The Wireless Weekly* did

not start until August 1922.

The Daily Telegraph of 12th March 1910 reporting on that inaugural meeting stated: "Every experimenter was at the beck and call of the Military, Naval and Postal authorities and was allowed no legal redress if departmental officers thought he was breaking the rules". Another major issue experimenters had with the authorities at that time was the cost of their licences. "Why should we have to pay three Guineas (\$6.30; or about \$360 in today's value) for the use of the air, so far as experimenters are concerned? The aerial navigation experimenters are charged nothing."

The chairman of the meeting, George Taylor, proposed: "the formation of an institution amongst the experimenters and enthusiasts in wireless for their mutual benefit." (4) During a radio interview in New Zealand during the 1960s, Wally Hannam (later XQ1, 2YH, VK2AXH), the Institute's first secretary, refers to the Wireless Institute of New South Wales and stated that the initial meeting came about as a result of public interest in his wireless display which was part of an aeronautical exhibition organised by George Taylor (5).

The Sydney Morning Herald of the 14 March also reported on the meeting. The chairman, Mr. George Taylor, "pointed out that investigations of wireless were today on the verge of an arena of wonder they were like explorers of a strange country, where every step was a discovery... there was a need of mutual co-operation between investigators to avoid making the same mistakes,..." He then went on to formally propose the formation of the institute. Refer Photo 1:

Mr Hannam "in seconding the motion, gave his experiences in endeavouring to secure fair play in his investigations [in wireless], and referred to the disadvantages private operators were at present labouring under." (6)

In a 1920s article about the early days of the Institute in Sydney, President Charles Maclurcan (2CM) refers to the "Wireless Institute of New South Wales as the first Technical Radio Association to be formed within the British Empire..." (7).

A similar organisation was formed in Melbourne. Initially referred to as the Wireless Telegraphy Society in newspaper reports, the name adopted at the inaugural meeting was the Amateur Wireless Society of Victoria (11).

Convened by well known city retailer P.H. McElroy of Homecrafts on November 30 1911, it had 50 enthusiasts present at the Esperanto Hall where it was decided "to form a Society so as to bring together all gentlemen who are interested in Wireless Telegraphy and by the exchange of views to encourage and assist experiment in this extremely interesting branch of science" (12) (Photo 2).

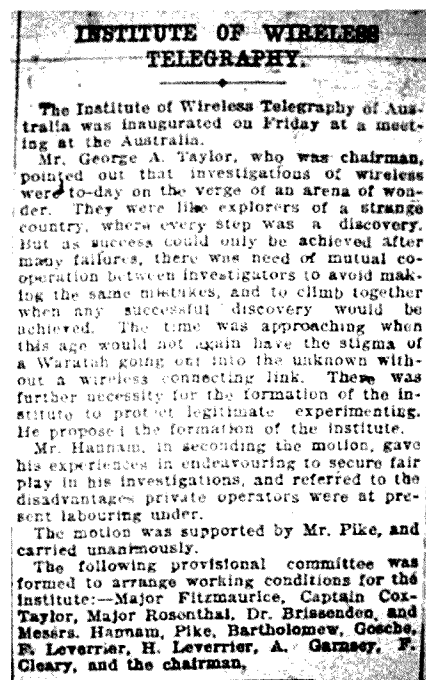


Photo 1: A report of the initial 'Institute of Wireless Telegraphy of Australia' meeting in the Sydney Morning Herald, 14 March, 1910.

On May 1st 1913, the society changed its name to the Wireless Institute of Victoria, also destined to become the Wireless Institute of Australia, Victorian Division. It is interesting to note that Malcolm Perry, secretary of the NSW WI was present at that meeting. (8, 9, 10, 11, 12).

Queensland followed in early 1912 when The Wireless Institute of Queensland was formed (13). On 29 February 1919, the inaugural meeting of the Queensland Division of the WIA was held at the Brisbane Chamber of Commerce (14) (Refer Photo 3).

The West Australian Radio Club was established in 1913, changing its name in June 1914 to West Australian

WIRELESS TELEGRAPHY SOCIETY.

Influenced by the desire of a number of young men who are keenly interested in wireless telegraphy to meet others like-minded, Mr. P. H. M'Elroy, of Swanston-street, convened a meeting, which was held in the Esperanto-hall, Elizabeth-street, last night. There were 50 enthusiasts present, who formed themselves into the Amateur Wireless Society of Victoria. Several of the young men stated that they had installed wireless stations on a small scale at their homes. Office-bearers were elected as follows:—President, Mr. M. A. Ryan; treasurer, Mr. P. H. M'Elroy; committee, Messrs. Davenport, Mitchell, Roberts, Cole, Bennie, and McLaughlin. The secretary is Mr. F. E. Moore, 39 Lisson-grove, Hawthorn.

Photo 2: A copy of the Melbourne Argus report on the 'Amateur Wireless Society of Victoria' meeting on 30 November, 1911.

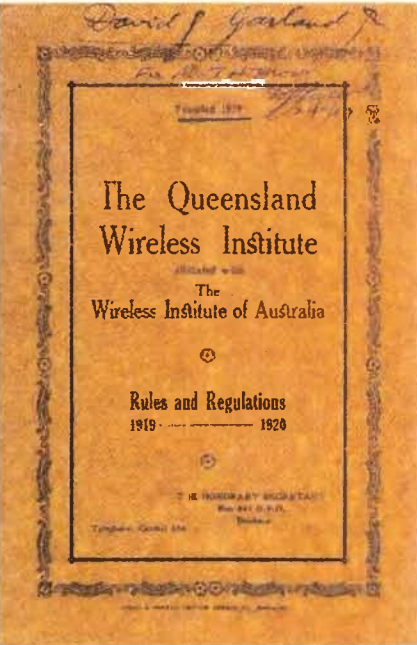


Photo 3: The cover of 'The Queensland Wireless Institute' Rules and Regulations 1919-1920.

Institute of Radio and Scientific Experimenters (15). On 3 November 1919, the name Wireless Institute of Australia, Western Australia Section was adopted (14).

Experimenters in South Australia formed a branch of the WIA in November 1919, initially adopting the rules of the NSW section of the Institute. It was known as the South Australian Section of the Wireless Institute of Australia. By December it had rescinded the previous constitution (based on NSW) and adopted its own draft constitution (15, 16, 17).

Although there was experimental activity in Hobart prior to 1901, the Tasmanian Division of the WIA was not formed until June 1923, in Hobart. The Launceston Wireless Club was granted affiliation in October 1923. The re-organised local Wireless Institute headquarters moved to Launceston in September 1925 (14, 15, 16).

There were possibly other smaller, autonomous groups in existence prior to some of those listed above; however this article attempts to trace the lineage of the WIA.

Clubs generally came later and there were many of them! Most were made up of young men and teenagers, and were built around the new interest of

broadcast listening. Those worthy of mention include: Waverley Amateur Radio Club (now Society), NSW (1919) (extant), Brighton and District Radio Club, Vic. (1923), Essendon Radio Club, Vic. (1923), Blackwood R.C. (later Adelaide Hills Amateur Radio Society (1924) (extant), Port Adelaide and Suburban Amateur Radio Club, S.A. (1924).* (Refer Photo 4).

At the December 1925 meeting of the Delegates Council (NSW WIA), eleven clubs were represented. They were Concord, Croydon, Illawarra, Leichhardt, Marrickville, Mosman, Newcastle, South Randwick, Strathfield, Wahroonga and Waverley. One of the topics discussed was the 'howling valve nuisance' and whether clubs should be involved with tracking down the offending broadcast receivers (20).

The earliest reference to possible radio clubs (other than the Wireless Institutes in Sydney and Melbourne) are at Wesley College, XJDY, and The Church of England Grammar School, XJAD, both located in Melbourne.

Further research needs to be done on these two "clubs". The 1914 Call book lists both, together with an operator/ sponsor name which of course could simply refer to a licensee who resided and operated from the school, perhaps using wireless as part of a science



Photo 4: Members of the 'Waverley Radio Club' shown 'Listening in'. Australasian Wireless Review, first edition, January 1923, WIA Archive (WIAA).

course. Another listed is Rev. Father O'Reilly of Bathurst, NSW, as XACI. In 1904, he conducted experiments in the Bathurst area at St. Stanislaus College (8, 15).

Although not a club as such, a group of students at The Stawell School of Mines (Vic) convinced a teacher who was a licensed experimenter before WWI, to teach them all about radio. This he did, including building receiving and transmitting equipment during the war - both base and portable! The School thought the Navy had granted permission for all of these activities. Sometime after the war it was learnt that this was not the case! (21) Refer Photo 5.

The Amateur Wireless Society of Victoria called for a crest design from members. On 19 November 1911, Mr Davenport's design was adopted. The Secretary was instructed to have a printer's block made incorporating the salient features of the design. Photo 6.

Photo 7 and 8 date two clubs to at least as far back as 1923.

*These are the earliest published dates found. Some clubs could have started a year or so earlier.

5. Interference becomes the challenge

From that very first meeting 'of like minded people' at the Hotel Australia, the forebears of the WIA attempted to abide by the *raison d'être*, that is, to represent all amateur experimenters to the authorities. Licence fees and 'fair play' were contentious matters discussed at that initial meeting (4, 5).

During 1913, major issues relating to interference experienced by official (Government) stations almost caused the annihilation of experimental stations both here in Australia and in New Zealand, where experimenters were closed down for some time. D. Garland (later to become a WIA councillor in Queensland), in a letter to the Wellington Dominion, newspaper of 11 September 1913 queried: '... There are many stations continually working in England, yet they are not 'jammed' by the amateur. Surely New Zealand ether with only four official stations disturbing it will not be overcrowded if amateurs are allowed to have use of it...' (22).



Photo 5: Ivan Hodder at Stawell School of Mines c.1919. WIAA.

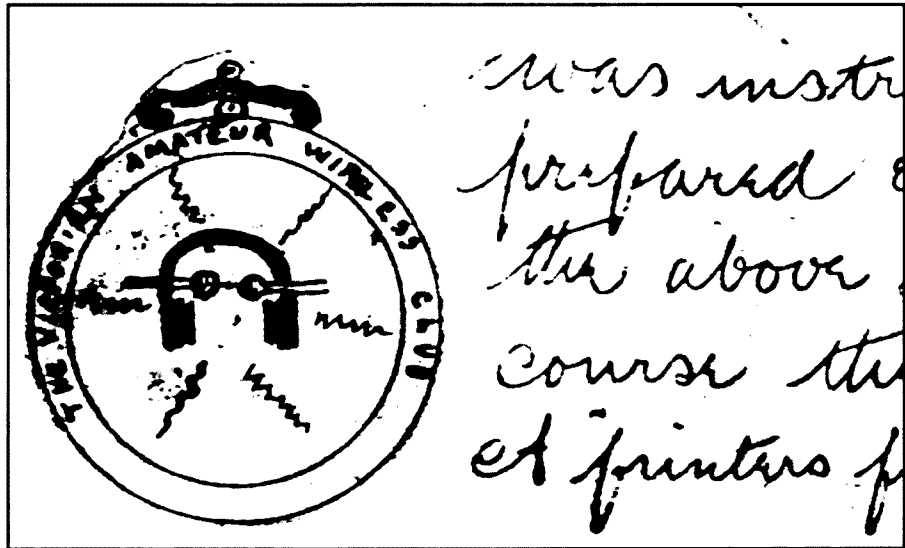


Photo 6: Sketch from AWV Minute Book 19th December 1911. WIAA.



Photo 7: 'The North Sydney Radio Club' in the middle of an argument when the photographer happened along. Australasian Wireless Review, January 1923, p 25. WIAA.



Photo 8: 'Murray Bridge Radio Club'. Francis Miller, the secretary was granted a transmitting licence (5BE) in June 1925 and was later involved with establishing 5MU, the local commercial radio station. Australasian Wireless Review, June 1923, p 14. (WIAA).

Back in Australia, the newspapers of the day carried similar letters to the editor echoing 'official' concern ... 'What is virtually the highway for public traffic is no place for private amusements...' (23, 24).

In August 1913, an annual licence fee was re-introduced at a Guinea or £1/1/- (\$2.10) in an apparent attempt to discourage the indiscriminate use of wireless telegraphy. The secretary of the central postal administration (Mr. Oxenham) stated: '... the system of issuing licences without cash payment was not satisfactory... Unless a person intended to go into the study of wireless telegraphy seriously, he was, after all, not worth encouraging.' (24). Refer Photo 9 and 10.

Walter King Witt, the Hon. Secretary of the Wireless Institute of Victoria, had a lengthy letter to the editor published in the Melbourne Argus of 16 August in which he concluded: '... In fact we have received notification from the Postmaster-General's Department that,

.....unless the situation [interference] has undergone a change within fourteen days from receipt of this circular, it will take steps to withdraw all licences.'

The council would like it known that it is willing to give any assistance in its power to experimenters in radio-telegraphy, whether they be members of the Institute or not.' (Refer Photo 11).

Thankfully closure, due to 'interference' did not eventuate and there is little doubt that the concerted efforts by Institute officers contributed greatly to the preservation of experimenter's privilege in this country.

At that time, the Commonwealth Wireless Director was located in Melbourne, and it is apparent that the Wireless Institute of Victoria was often the first point of contact with Australian experimenters for the authorities (25).

6. 'Wireless in Australia' - public list of stations.

This is the title of Australia's first published Call Book. In 1913, the Wireless Institute of Victoria, under its President, Vernon Cole, a bank manager interested in wireless, saw fit to record information about all known stations 'from official and other authentic sources'.

The 'official sources' now appear to be 'the very top' - the Commonwealth Wireless Director, John Balsillie! As a result of a deputation, he promised the Wireless Institute of Victoria, '... a copy of the call signals recognised by the government...' so that interference to official stations by experimenters could be minimised (25). Refer photo 12.

The resultant book, printed in April 1914, included Commercial Land Stations, Ship Stations and Australian Experimenter's call signs. There were listed some 401 Experimental stations, 33 Land stations and 14 Australian Navy ships together with a listing of 293 other ships from Australia and around the world. Most experimental stations were licensed to receive only. Refer Photo 13.

By comparison there were over 1300 known amateurs in the USA in 1913! (26)

Scattered amongst the names of the experimenters in that



Photo 9: A copy of the official receipt for the licence of Andrew Couper, 31 January, 1914.

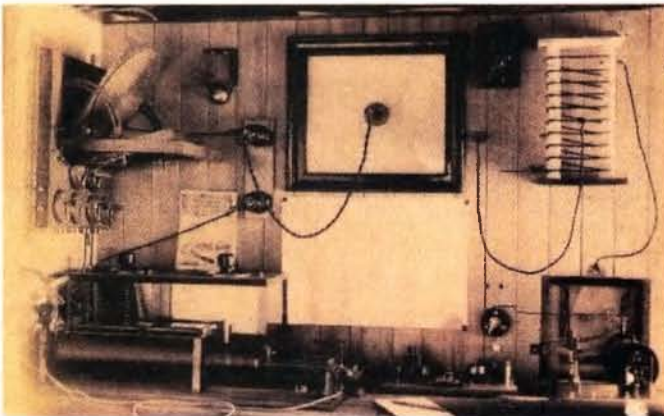


Photo 10: Andrew Couper's station XQM, at Mareeba Queensland, 1914. Couper File, WIAA.

first Australian Call Book were many destined to become well known leaders in communications and broadcast.

However, the vast majority were private wireless experimenters, later known as Amateur Radio Operators and all relied on the vital dialogue between their Institutes and the authority.

The 1914 Call book shows the Wireless Institute of New South Wales holding the Call sign XADK and the Wireless Institute of Victoria, XPJ (8, 12).

Due to the outbreak of WWI, the life of the Call Book was abruptly curtailed!

The "X" prefix was used in a number of countries to indicate "eXperimenter". For example, in Australia, the 1914 listing shows that XCA was issued to Ray Allsop of Randwick, who was later famous for Racophone broadcast receivers and sound motion picture projectors. But on the other side of the world, XCA was allocated to W.G. Cable of East Toronto, Canada. It was necessary to implement a more sophisticated call system once international communications became common place (8, 27).

References appear on next page

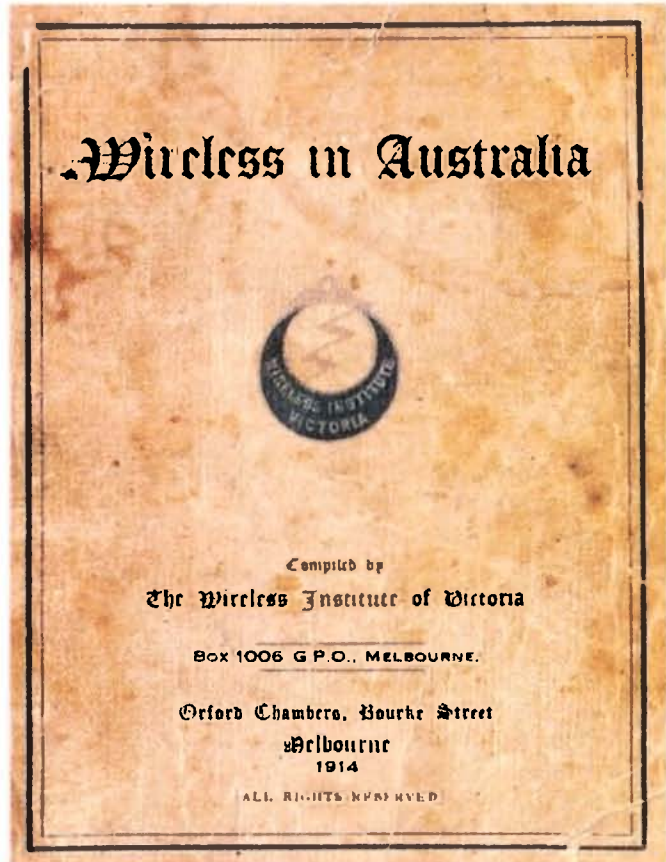


Photo 13: The cover of the 'Wireless in Australia' callbook, 1914.

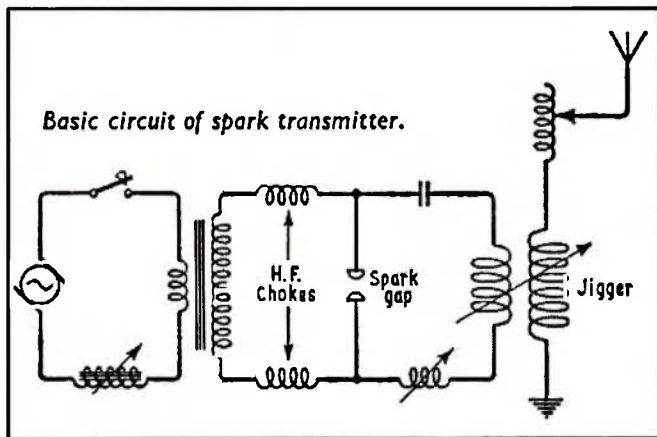


Photo 11: Typical spark transmitter. Note the Marconi 'jigger' in the aerial circuit. Wireless World, April 1961.

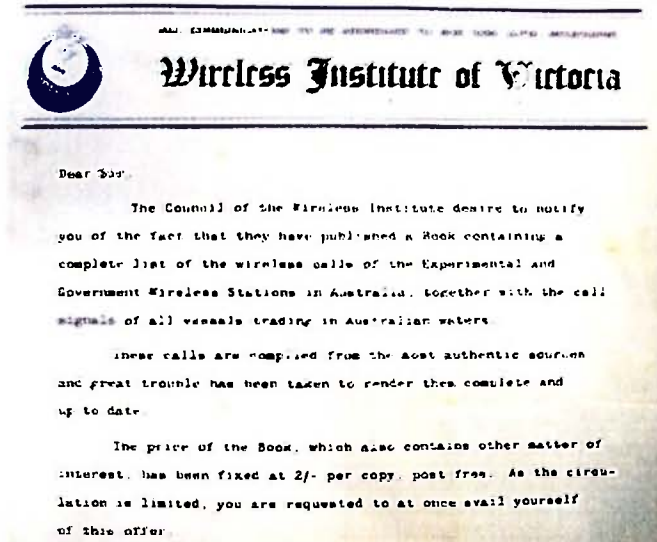


Photo 12: Advice from the 'Wireless Institute of Victoria' announcing the availability of a 'Call Book', 1913.

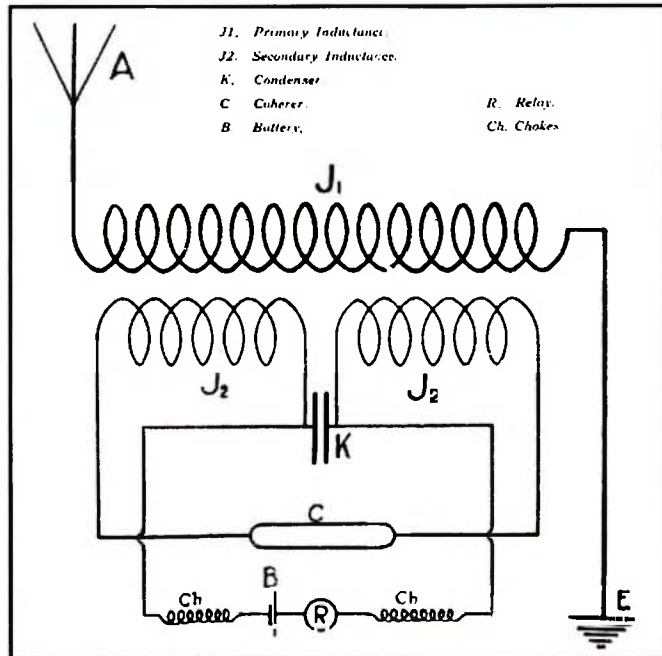


Photo 14: Early Coherer Receiver. Note the 'R' symbol representing a relay which in most cases operated the ink pen used to mark the dots and dashes on the paper-tape recording. It could also energise the coil of a 'sounder'. If headphones were employed instead, the recovered audio resembled blurring noises from the early spark transmissions. Wireless World, June 1915.

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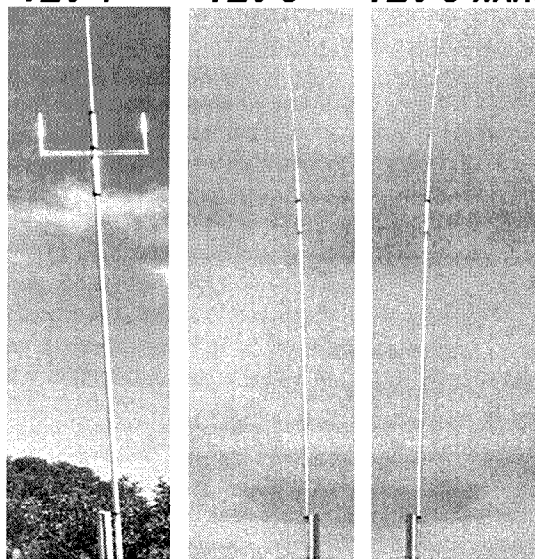
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New Tet-Emtron Vertical Range

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

A quality audio test oscillator

Jim Tregellis VK5JST/VK5TR

Introduction

Want a really good, cheap audio test oscillator? This unique design provides a wide frequency coverage, very low distortion, great envelope stability, uses readily available parts, and is fun to construct. And it will not break the budget...

How It Works

The oscillator design is based around the idea of an all pass filter, and Figure 1 illustrates the concept.

In this circuit, note that the emitter and collector resistances are identical and the transistor is assumed to be ideal (infinite current gain). Consequently, the input signal will appear at the emitter with the same amplitude and phase (emitter follower action), and at the collector with the same amplitude but 180 degrees out of phase.

Varying the position of the potentiometer wiper thus provides an output signal having the same amplitude as the input signal, but with a phase which, when measured relative to the input signal, can be varied from 0 to 180 degrees. This idea is illustrated diagrammatically in the vector diagram of Figure 1 which is constructed as follows.

Because $V_{in} + V_{coll}$ is always the hypotenuse and the voltage across the resistive and reactive components must always have a 90 degree phase relationship, from simple trigonometry the intersection of the resistive and reactive vectors must always lie on a semicircle of radius V_{in} , and hence V_{out} always equals V_{in} independent of phase.

The gain of this filter is thus always exactly one, and this is independent of the actual values of the potentiometer and capacitor used, provided the reactances of these components are much greater than the driving source impedances at the collector and emitter of the transistor.

This fact allows the use of cheap wide tolerance components for R and C, which can be used to set the frequency of operation in an oscillator.

If the main circuit is now studied, it can be seen that the oscillator consists of three stages. The circuitry surrounding IC1A, and IC1B, are operational amplifier realisations of the all pass filter just explained, with each filter providing around 90 degrees of phase shift (depending on component tolerances at the operating frequency), or 180 degrees in total.

The remaining 180 degrees of phase shift, to provide a total of 360 degrees, or positive feedback, is provided by IC2A which is a simple inverting amplifier.

For oscillation to reliably start, the gain around the oscillator loop must be greater than one (initial loop gain). However, for a constant amplitude of oscillation to finally occur, the gain around the oscillator loop must reduce to exactly one, and so some form of amplitude sensitive negative feedback must be provided.

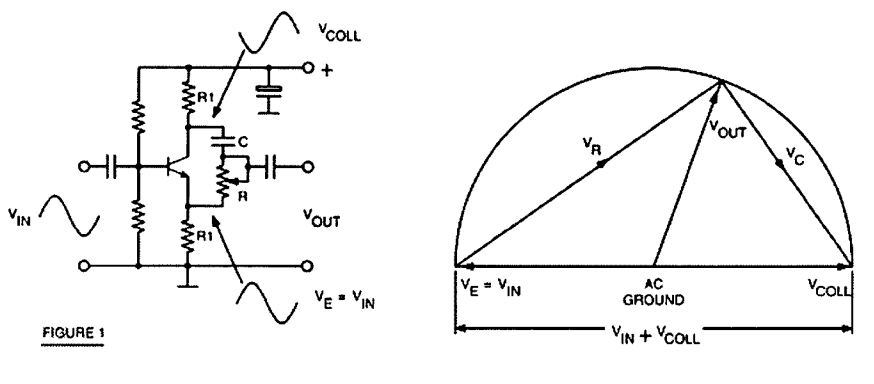
It is here that this circuit differs dramatically from normal audio oscillator circuits such as the Wein Bridge. Because the gain through the frequency determining filters is exactly one and there is no need to worry about component tolerances, the initial loop gain need only be set to very slightly above one to ensure good starting.

Note that the resistor between the inverting input and output of IC2A is 1K6, and during starting, when there is no light falling on the LDR, the initial loop gain is therefore 1.066 (1.6/1.5). The very small difference between initial and final loop gain (6.6%) also ensures excellent envelope stability, and unlike oscillators based on the Wein Bridge and similar networks, this oscillator exhibits almost no amplitude change as the frequency dial is spun rapidly.

During starting, there is also no violent overshoot with the following low frequency ringing of the oscillatory envelope, and the amplitude just smoothly climbs and settles to its final level without drama.

Amplitude stabilization is provided by the circuitry around IC2B. A full wave rectified sine wave is applied to a capacitor filter (100 uF in series with 100R) via two 1N4148 rectifier diodes, and the resulting DC is applied to a super bright white LED, which in turn illuminates the LDR. This lowers the LDR resistance and reduces the oscillator loop gain to one.

One half of the full wave rectified sine wave comes directly from the output



of IC2A, while the other half is supplied by the inverting amplifier IC2B. With the filtering components specified, the oscillator distortion typically lies between 0.005 and 0.01%.

The circuitry for rectification is fairly crude but works effectively, and precision rectifier structures are not used because they are more complex and not fast enough when fabricated with normal cheap op amps.

Because the initial loop gain is so small, it is possible to use non linear feedback to control the final amplitude of oscillation without introducing significant distortion. Omitting the filtering components and applying the raw rectified sine wave directly to the LED causes the oscillator distortion to rise to around 0.1%.

However, unlike almost any other high purity design, the frequency range can then be extended downwards as far as desired (thousandths of an Hz) by simply making the frequency determining components larger.

Some constructors may like to take advantage of this significant feature.

The oscillator circuit is followed by IC3A. This acts as a linear inverting amplifier with a gain of 2.5 when S2 is in position 2. When S2 is in position 1, IC3A acts as a Schmitt trigger stage due to the positive feedback introduced, and converts the incoming sine wave to a fast rise time square wave.

Unlike many other op amps, the TL072 has identical saturation characteristics at either end of its output swing, and so generates a square wave that is symmetrical about zero volts. The much larger square wave swing at the op amp output is reduced to the same amplitude as the sine wave by adding in an extra 10K resistor in series with the OUTPUT LEVEL pot.

The simultaneous provision of sine and square wave outputs has been deliberately avoided. The fast switching edges of a square wave typically introduce unwanted glitches into sine wave circuits due to stray

capacity coupling and induced noise on supply rails.

In a simple circuit like this, which uses a single sided printed circuit board, it's almost impossible to prevent degradation of the sine wave output, particularly at low output levels.

Output to drive a frequency counter is provided from the output of IC3 via a 10 kilohm series resistor. This limits the current that can flow from the op amp output through the input protection circuitry of a typical frequency counter, thus avoiding the possibility of output distortion.

No attempt has been made to provide a calibrated frequency scale on the instrument front panel, as frequency counters are now very cheap and feature on almost every workshop bench. However, if you wish to provide such a scale instead of using a counter, then use 1% capacitors in the two frequency determining networks.

The last part of the circuit is a unity

LOW DISTORTION AUDIO OSCILLATOR

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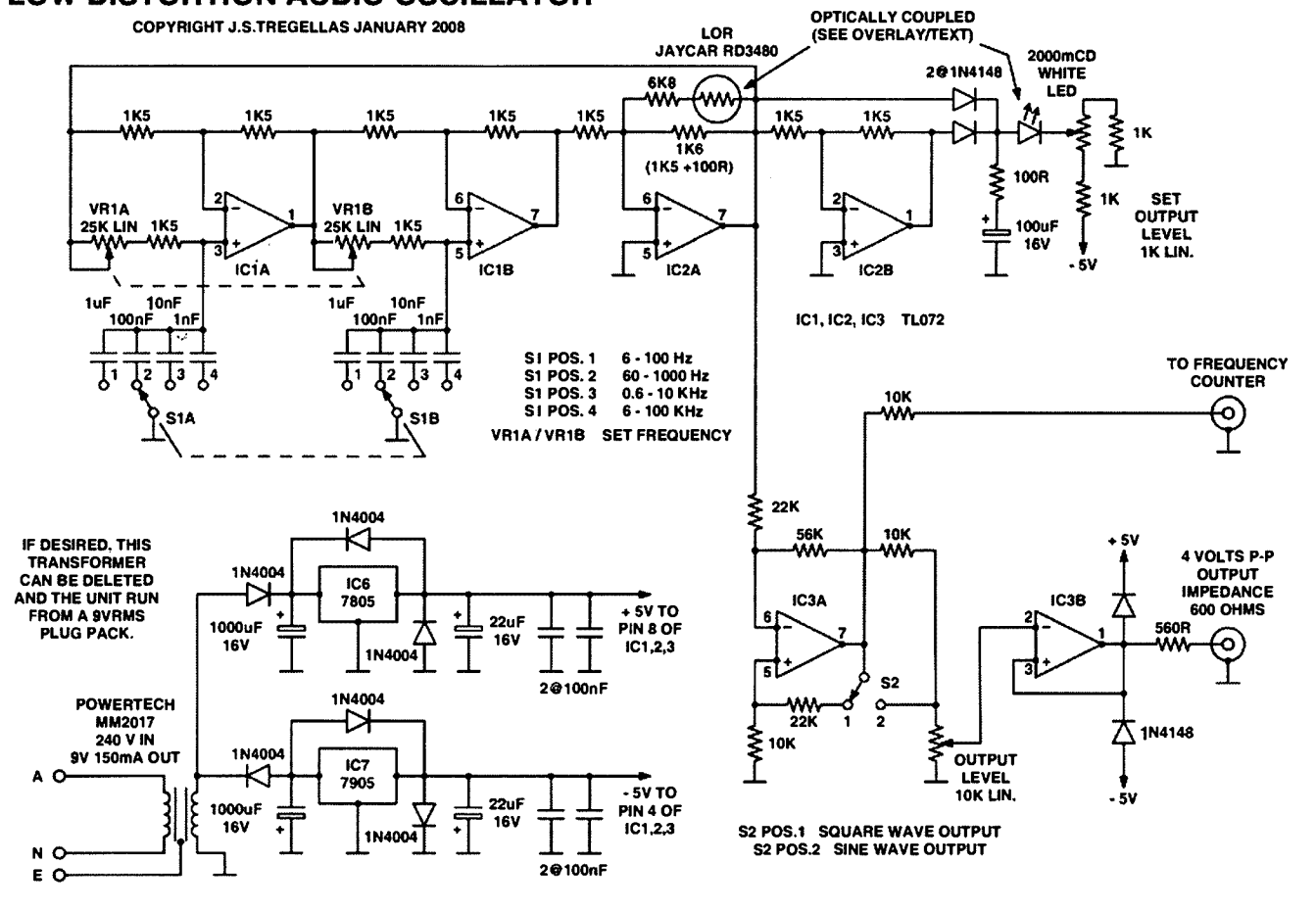


Figure 2: The circuit drawing.

gain amplifier IC3B, which provides an output impedance of 600 ohms. Two diodes prevent the output from being pulled above the positive, or below the negative supply rails by external circuitry, protecting it from most user errors.

Assembly

Prepare your box first, noting that the lid supplied is actually used as the rear panel. The front panel label artwork should be copied twice, to the size specified, so that it will exactly match the printed circuit board.

The first copy should be done on standard paper, and the second copy on heavy 150 gsm card of your preferred colour. If desired, this card can be laminated with clear plastic at your local stationer to form a very hard wearing front panel.

Exactly mark out the box rear for the pots and switches by pricking through the paper copy and then accurately drill pilot holes of 1.6 mm diameter or so (1/16 inch). Drill all holes to final size using a very light pressure and slow feed, and make sure the box is firmly clamped down. Large twist drills have an unhappy habit of picking up an unclamped plastic box, usually doing very significant damage to the box, but more importantly, to the constructor's hands. Next drill and countersink all screw holes in the case side, and drill and file the hole for the IEC power connector to size.

Using the sharp point of a hobby knife, cut out all holes for pots and switches in your front panel label. Completely cover the box rear with double sided adhesive tape and use your hobby knife to remove the tape that covers the mounting holes for switches and so on.

Find two pieces of circular scrap steel rod or wooden dowel to exactly fit two mounting holes which are chosen to be as far apart as possible and insert

193MM

INTEK ELECTRONICS LOW DISTORTION AUDIO OSCILLATOR

6 - 100 KHz
0.6 - 10 KHz
60 - 1000 Hz
6 - 100 Hz

FREQUENCY

FREQUENCY
COUNTER
OUTPUT

SQUARE SINE

OUTPUT
4 V P-P MAX
600 OHMS

OUTPUT
LEVEL

FRONT PANEL LABEL

Figure 3: The front panel layout drawing.

INTEK ELECTRONICS LOW DISTORTION AUDIO OSCILLATOR

6 - 100 KHz
0.6 - 10 KHz
60 - 1000 Hz
6 - 100 Hz

FREQUENCY

FREQUENCY
COUNTER
OUTPUT

SQUARE SINE

OUTPUT
4 V P-P MAX
600 OHMS

OUTPUT
LEVEL

Fig. 3a: Panel appearance with knobs indicated.

these into the selected holes. Now slide your front panel over the ends of these two guides, and carefully move it downwards until it just barely contacts the adhesive.

Complete your final positioning, and then firmly stick the label down. Trim around the label edges with your hobby knife to remove any unwanted tape.

Next make your PCBs from the artworks supplied. These can be made with the iron-on film supplied by Jaycar and others, or with the steam iron/clay paper method detailed on my homepage (<http://www.users.on.net/~endsodds>).

Mount all components, except for the ICs, working from lowest to highest profile. Use IC sockets. Form the LED/LDR assembly by placing the two into face to face contact, and covering the assembly with a short length of black heatshrink tubing.

Finally mount, but do not solder, the two potentiometers on to the PCB. Place the oscillator PCB

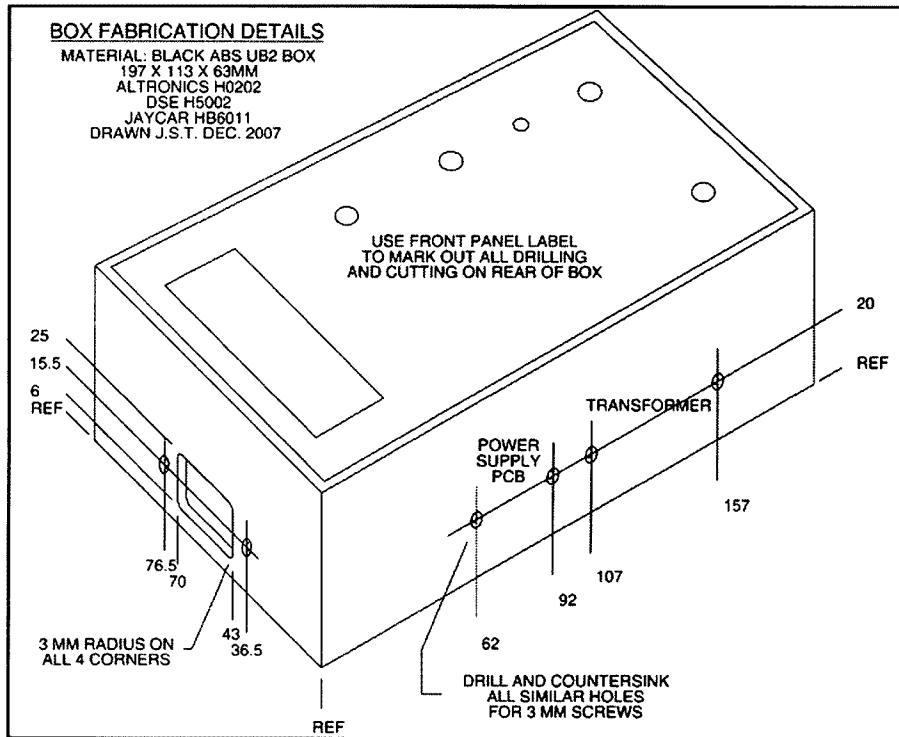


Figure 4: The box fabrication details.

into the case, and screw the two potentiometers into final position on the front panel, and then solder all potentiometer terminals. Doing it

this way aligns everything and avoids any gross mechanical stresses on the potentiometers.

Complete all wiring, as per the



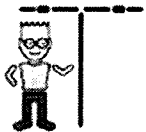
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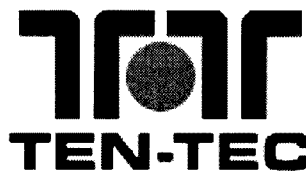
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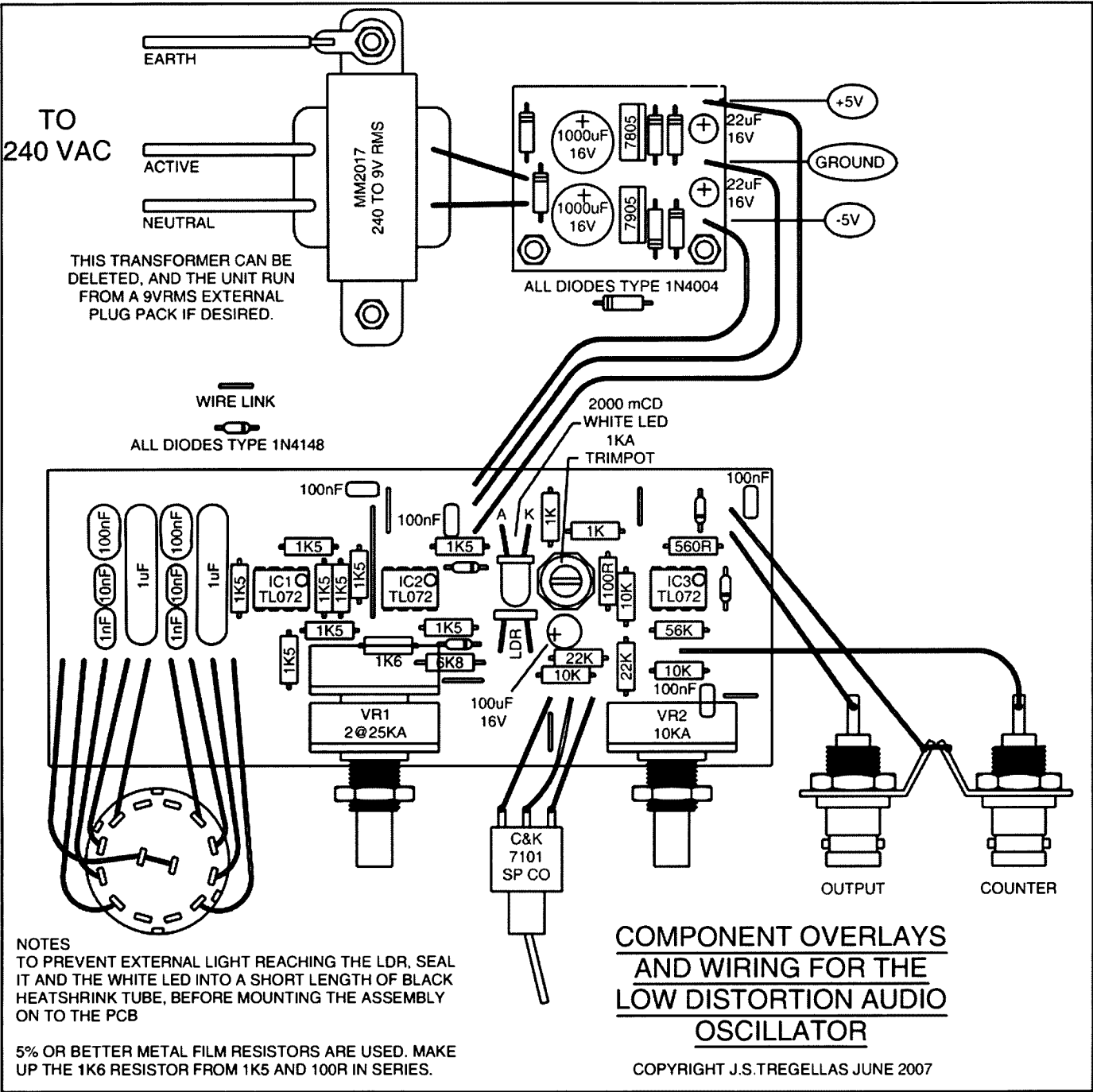


Figure 5: The component overlay and wiring details.

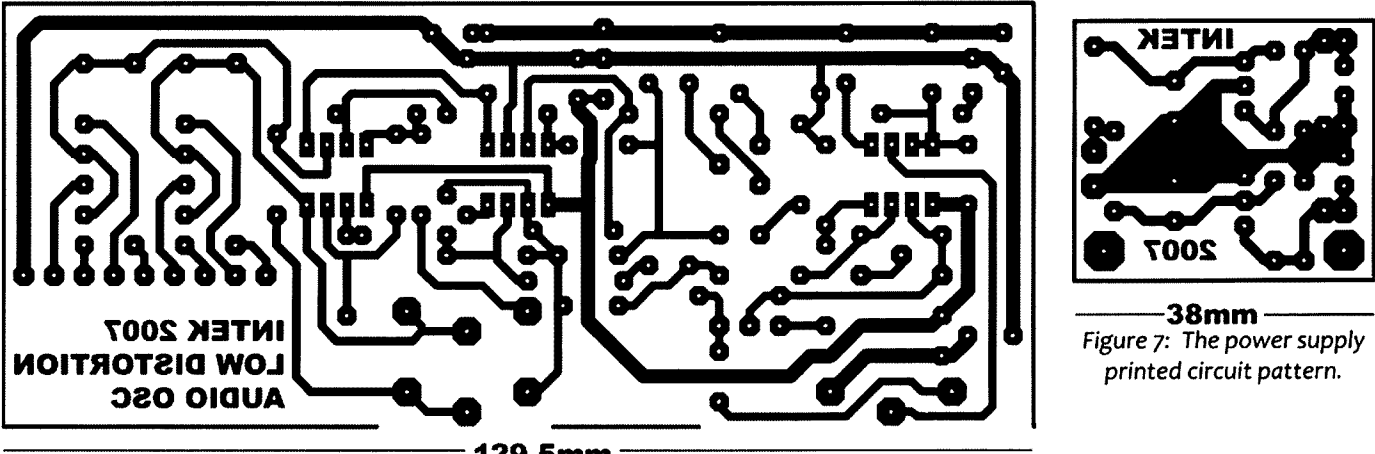


Figure 6: The mainboard printed circuit pattern.

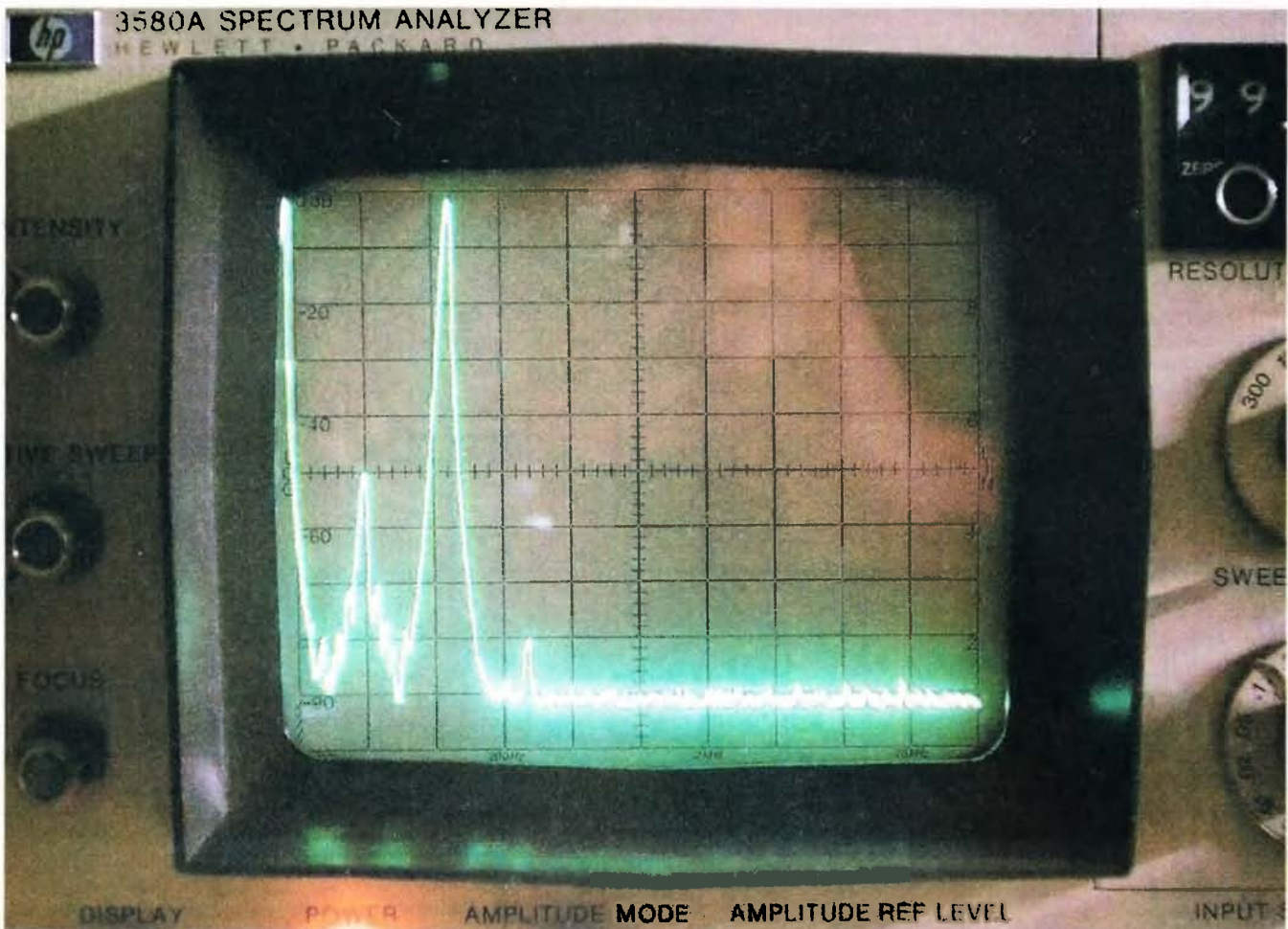


Photo 1: Spectrum analyser display of sine output at 600 Hz. Vertical axis – 10 dB/division. Horizontal axis 500 Hz/division. Zero marker on division 1.

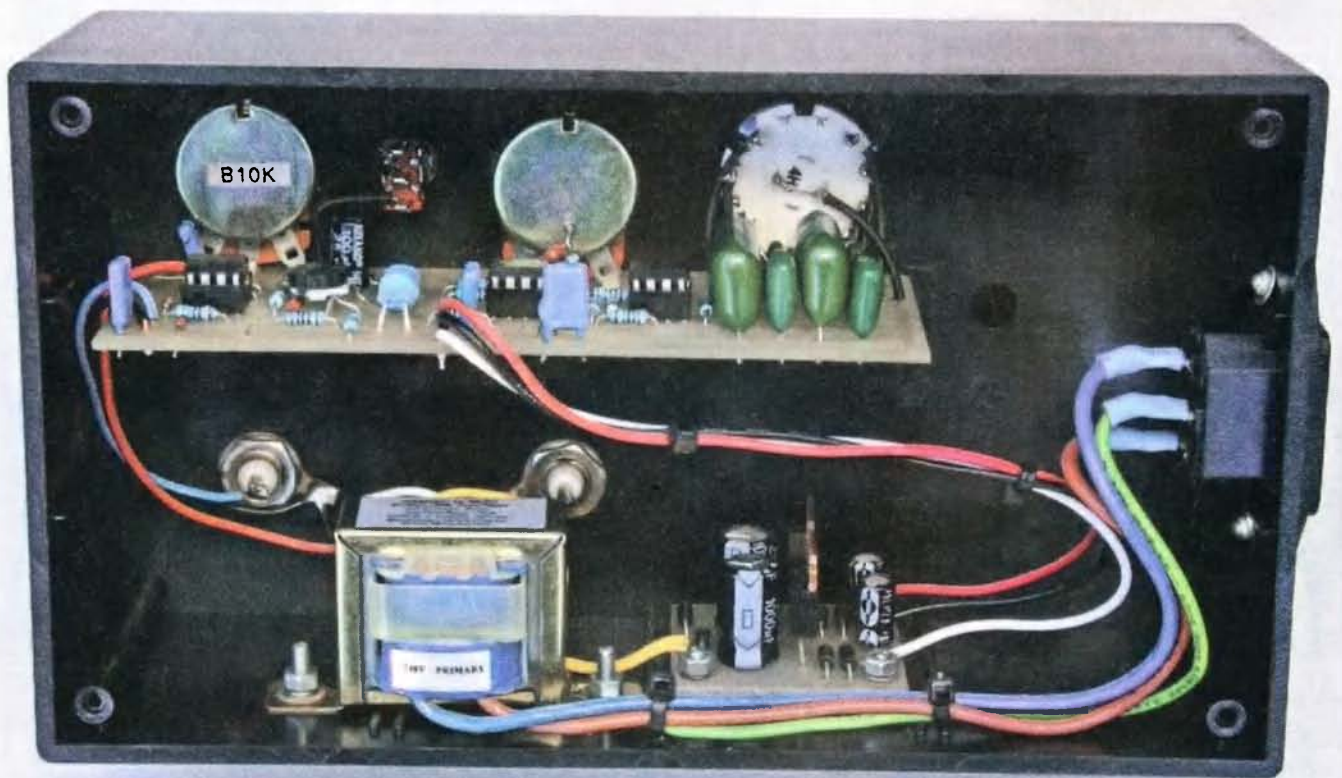


Photo3: Rear view of the instrument, showing the internals.



Photo 2: Front view of the completed instrument.

component overlay between the oscillator PCB, and the front panel switches and connectors.

Mount the power transformer, IEC mains connector, and power supply PCB and finish all wiring.

Testing

Double check the orientation of all diodes, electrolytics, and the five volt regulator ICs before applying power.

Connect voltmeters to monitor the positive and negative five volt rails and briefly switch on to check for correct operation of these supplies. If all is well, mount all ICs in their sockets, and monitor the oscillator output with an oscilloscope.

Set the output amplitude to maximum, select a sine wave output, and the 60 to 1000 Hz frequency range. Switch on, and if everything is OK, adjusting the trimpot on the oscillator PCB should produce a sine output.

Switch over to square wave and note the exact peak to peak value, which should be around four volts. Switch back to sine and adjust the trimpot so that the peak to peak value of the sine output exactly matches that of the square wave.

Check operation on all other frequency ranges, and that output to drive a frequency counter is present. This completes all initial testing.

If you have a very good noise and distortion meter, you can now check the oscillator sine wave distortion, but most meters will simply end up indicating their own internal distortion.

To fully test this oscillator, access to a really good audio spectrum analyzer is desirable and even then, you will discover that boundaries are being tested.

Acknowledgements

Thanks to Mark Spooner VK5AVQ for the loan of a very nice HP audio Spectrum Analyser.

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OTY

Ladder crystal filters

Dear Editor

I would like to bring to your notice the article published by DJ6EV and myself in Nov/Dec 2009 QEX. The associated software is now available on the Warrington Amateur Radio Club web-site (www.warc.org.uk then click on 'Projects').

As well as the software, several of my earlier ladder crystal filter articles which are relevant, are available. Besides my own articles, there are several other contributions from club

members, including additional information on the award-winning CDG2000 transceiver.

I wonder if you could spare space in your magazine to alert your readers to this web-site?

Yours sincerely,

Jack Hardcastle G3JIR

A \$2 doubling of output and input

More power from that handheld

Bill Isdale VK4IS

One thing on which most people could agree is that what they need is “more”.

Many amateur radio operators own a handheld transceiver, usually for two metres or perhaps a dual band unit that includes 70 cm as well. Repeater coverage is what our clubs can afford to make it, and is often impressively good; but sometimes it would be useful to radiate “more” power to reach that repeater.

The antenna that comes with a handheld transceiver is invariably of the “rubber duck” variety, probably helically wound to present a reasonable load to the transmitter and made to be as short and flexible as possible.

Whilst electrically presenting itself as a quarter-wavelength antenna, the actual capture area for receiving radio frequency energy will probably be a lot less, bearing in mind that a quarter wave-length on two metres is in the vicinity of 50 cm. The typical factory-supplied antenna is about 15 cm long, giving it a capture area of about one third that of an actual quarter-wave antenna.

On the VHF and UHF repeaters that we use, the signal is vertically polarized, so a transceiver with its antenna held vertically will at least be oriented to make the best of the signal.

But what is the antenna actually doing? It is under-sized and the only thing representing a ground-plane is the metal body of the radio, probably not over 10 cm long. The radio may be bravely putting out several watts, but the efficiency, or should that be inefficiency, of the antenna system drastically reduces the effective radiated power.

It will probably be in the order of one watt if it were being radiated from a regular dipole. Those who have experience with HF antennas will know what can be expected from a significantly-shortened vertical, with only a minimal set of ground plane wires at the base: not a lot!

A quarter-wave vertical antenna with a ground plane, if properly executed, is a highly efficient antenna with a low angle of radiation. But it does not seem to be a design that lends itself to use on a handheld! However, there is a way to greatly improve the effective output of the radio for almost no cost.

Replace the rubber duck with a telescopic metal antenna and set it to a quarter wave-length on the frequency of operation. That is one small step for an amateur; now comes a giant leap for ham-kind. A length of flexible insulated copper wire can be soldered to a clip that is the right size to grip the base of the antenna at a point below the insulator separating the radiating element from the connector.

Cut the wire so that the total length of clip and wire is a quarter-wave on the frequency of operation, creating in effect a vertically-polarized dipole. Insulated wire is used to maintain separation from things like the operator’s hand, which would interact more if in contact with a bare wire.

Photo 1 shows the radio ready for use. The clip-on attachment can be rolled up for easy carrying and added when needed. For about \$2, this will nearly double the output of, and input to, the radio which will allow better access to repeaters when otherwise on the fringes of coverage. It will also allow a reduction of transmitter power to extend battery life.

My experience is that this modification to the antenna system does not increase the received signal strength to a point where the radio becomes overloaded from pager transmitters just above 148 MHz.

A word of caution is in order for users of many of the modern small radios that have an SMA connector for the antenna.

The available extendable antennas seem to be limited to BNC type connectors. Photo 2 shows some manufacturers’ rubber duckie antennas,

some accessory antennas with SMA connectors and a selection of extendable antennas with BNC

However, there is a way to greatly improve the effective output of the radio for almost no cost.

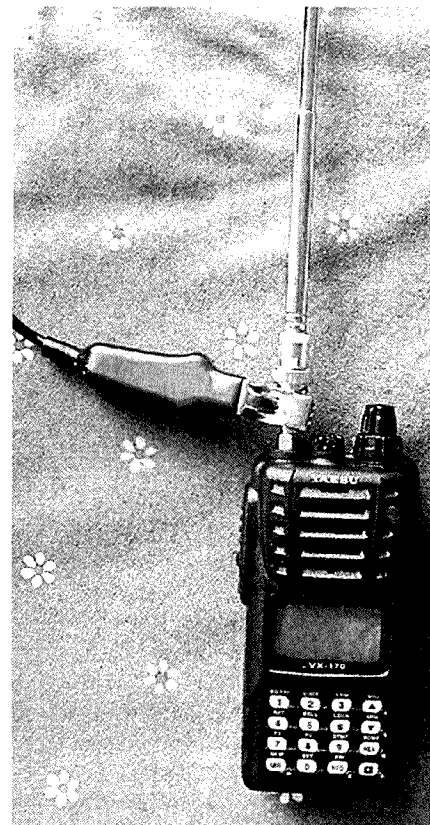


Photo 1: A 2 metre handheld with antenna modification.

connectors. Some of the latter have been fitted with SMA adaptors.

The antenna with a coil at its base is a rather massive five-eighths wave-length long. It pushes the boundaries of what could be safely supported by the connector on the radio. A BNC/SMA adaptor, which allows the antenna to connect to the radio, is a good place to attach the clip; but do not expect miracles of structural strength from this fitting.

Only use this type of antenna when getting it snagged on an obstacle is really unlikely.

As the extendable antenna, adaptor and clip-on wire are not too heavy or bulky, they can be carried in the pocket until needed. For instance, when bush-walking and the rubber duck has passed its point of effectiveness,

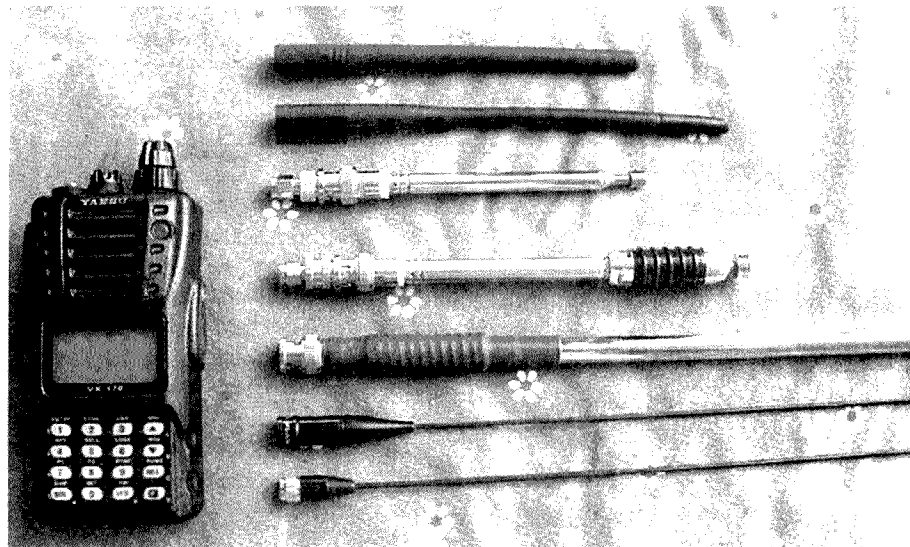


Photo 2: A selection of antennas.

the extendable antenna and clip-on wire can be used to restore communications. But stand still,

because walking and talking is a recipe for getting the rig tangled in something, and damaged.

ar

A 40 metre groundless/tunerless dipole

‘It is especially suited to...difficult backyards’

Wayne Pickard VK2ACY

This 40 metre (half-wave) antenna has been extensively tested, and found to perform consistently on par with a centre-fed dipole or a G5RV at the same height.

The SWR is better than 1.3:1 (very broad-banded) and, I found, almost totally unaffected by nearby objects or height above ground.

It can be used as an end-fed dipole or vee, a sloper, or even as a vertical, and is an excellent performer compared to other dipole configurations when used above poor earth.

During testing, it was fed with varying lengths of RG58 coax; however 21.35 metres gave the best performing match across the whole band. But with a coax length of 14.75 metres, the SWR went wild – of course, that is 3/8 wavelength on 40 metres, after

allowing for a 0.66 velocity factor in the coax.

There is no reason that this design cannot be scaled up or down for other bands.

It is especially suited to locations requiring a lengthy feed-line distance from the radiating section, or for difficult backyards or even for portable/temporary use. Enjoy.

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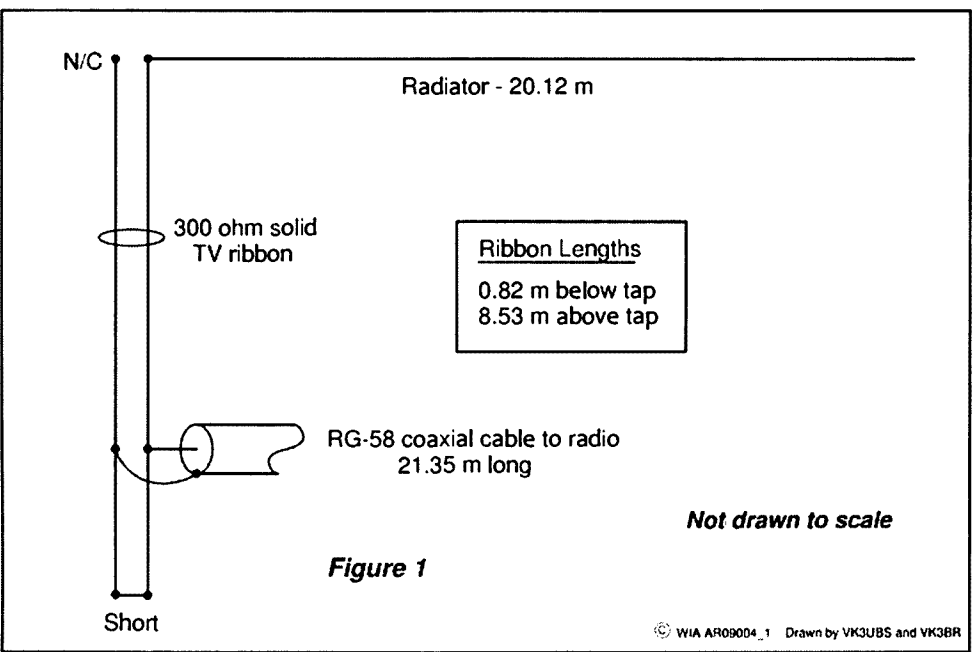


Figure 1: The groundless/tunerless dipole

© WIA AR09004_1 Drawn by VK3UBS and VK3BR

Part 3 of 3

A complete 8 MHz IF system for USB, LSB and CW for a HF transceiver

Peter Wathen VK3EPW

The main IF module

This is part three of the IF system; it describes the construction of the main IF module.

If you have followed the article so far in Part 1 and Part 2, you should have already completed the BFO oscillator module and the crystal filter module, so this part will complete a working IF strip.

Circuit design

I will start with the RF input of the IF strip, refer to Figure 1. It is actually both the input and output. Why? It means only one coax cable is needed to join the RF input/output module to the IF strip. The IF input/output goes to a double balanced diode ring mixer in the RF input/output module through a Pi filter.

The ring mixer is also a bi-directional circuit. At the other side of the mixer the band filter/RF amplifier circuit is diode switched to be both receive input circuit and RF filter/pre-driver module for the transmit side.

Back to the IF design. The input-output goes first to a diode switching arrangement, in RX mode 12 volts RX is fed through R33, R34 and forward biases D5 with current flowing through the 1 kOhm resistor to ground (R35) at the input of the filter module, the positive voltage developed across this resistor is used to reverse bias D3 and

D4 (+12 V TX is at this point zero volts as we are in receive mode).

At the output of the filter module, D1 is fed with 12 volts RX from R1, R2 and passes current to R27, again the voltage developed across R27 is used to reverse bias D2 (+12 V TX is at this point zero volts as we are in receive mode).

The signal path in receive mode is then through C36 through D5 to the input of the crystal filter module; the crystal filter module is powered by +12 volts constant and is powered during both transmit and receive modes, the filtered output of the crystal filter module is then fed through D1 to the first IF amplifier through the matching Pi network; the Pi network takes the 50 Ohm output of the filter module and transforms it to a much higher impedance more suited to the G1 impedance of the dual gate MOSFET.

G2 of the dual gate MOSFET is driven with AGC voltage to vary the gain of the amplifier (approximately +8 V maximum gain and zero volts, minimum gain). The receive 12 volt rail is fed to the drain of the first IF through L1, a 33 uH choke, low resistance to DC but a very high resistance to the 8 MHz signal; the drain output impedance is matched through the Pi network approximately 1 kOhm and stepped up for the G1 of the second IF amplifier to 3300 Ohms, designed with a loaded Q of 12.

The second and third IF amplifiers are the same design with the exception of the Pi network at the output of the third IF amplifier; the output side of

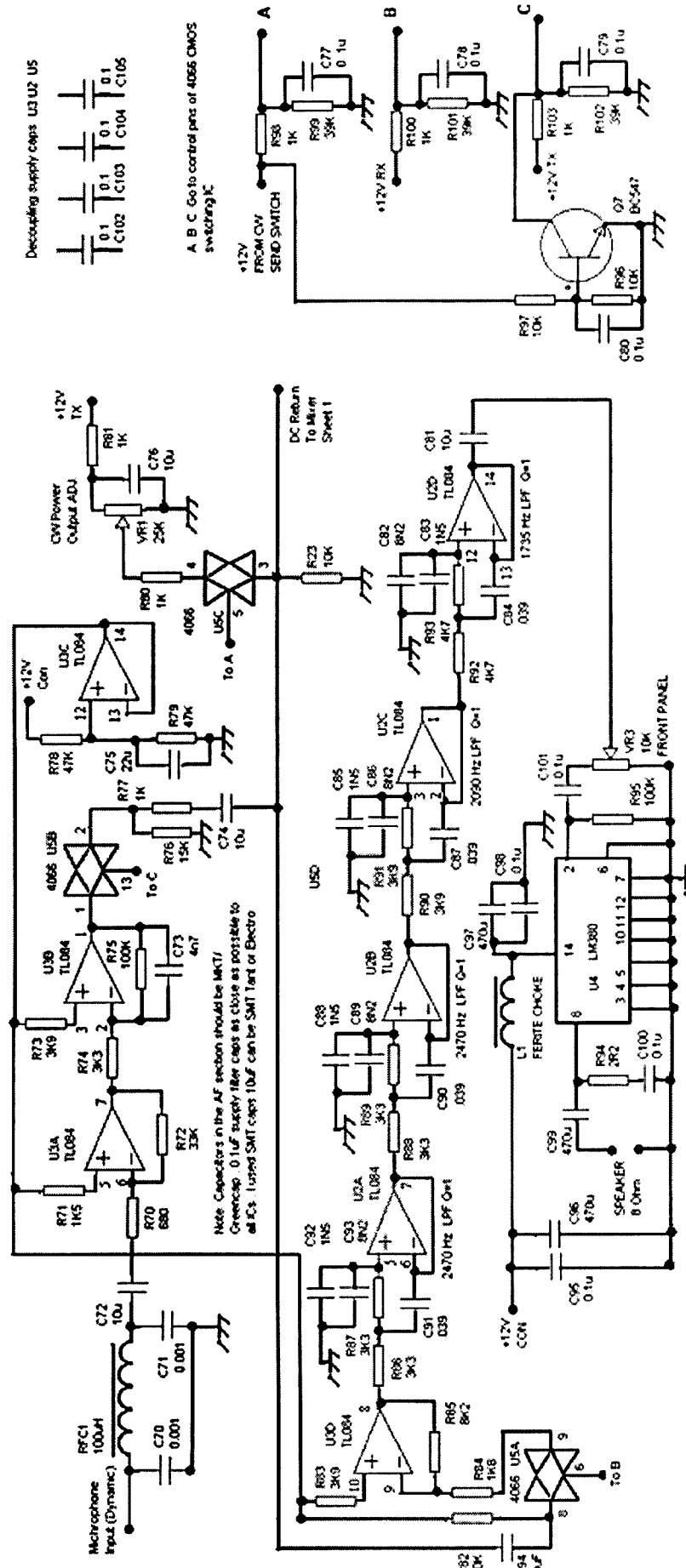
this Pi network is 50 Ohm impedance to match the double balanced ring mixer which is used as both detector and modulator, its bidirectional properties are used to full advantage in this circuit.

In receive, the high impedance (drain) side of this Pi network is picked off by a low capacitance (33 pF) capacitor and fed to the AGC amplifier, another MOSFET which is used as a broad band RF amplifier and followed by a voltage doubler rectifier circuit; it is filtered and then fed to the DC amplifier.

The DC amplifier uses a 1N914 diode (D8) forward biased to get the transistor base voltage very close to its turn on voltage making it a very sensitive DC amplifier. The supply rail of the DC amplifier is regulated at 8 volts by U1 78L08 three pin voltage regulator this gives it a voltage swing at the collector of roughly 8 volts no signal and zero volts at full signal, exactly what the G2 of the MOSFET IF amplifiers require.

The S meter circuit uses two trimmer potentiometers; VR1 is used to set the plus side of the meter to the same as the collector voltage (there is a small difference at no signal as the bias just switches on the transistor) and VR2 is adjusted so that when the collector is at zero volts (full input signal) the meter reads full scale.

The ring mixer is fed with the BFO voltage through a resistive attenuator network; the output of the mixer is then fed through a Pi filter to remove all the RF content and is then fed to the AF section of the circuit.



Decoupling supply caps U3 U2 U5
 C102 0.1 C104 0.1 C105 0.1

A B C Go to control pins of 4066 CMOS switch
 +12V FROM CV SW SWTCH

+12V TX

+12V Con

To A

To C

To B

DC Return To Main Sheet 1

+12V Con

FRONT PANEL

COMPONENT LIST

- RFC1 100uH RF Choke
- C72,C84,C81, 10uF 63V Electrolytic
- C74,C76 10uF 16V TANT SMD
- C75 22uF 63V Electrolytic
- C96,C99,C97 470uF 35V Electrolytic
- C102,C103,C104, 0.1uF (1206)
- C105,C77,C78, 0.1uF (1206)
- C79,C80,C95, 0.1uF (1206)
- C100,C101,C98 0.1uF (1206)
- C70,C71 0.001uF (1206)
- C73 0.0047 GC
- C91,C90,C87,C84 0.039uF MKT
- C92,C88,C85,C83 0.015uF MKT
- C93,C89,C86,C82 0.0082uF MKT
- R94 (USE 4 10 OHM IN PARALLEL) 2R2 (1206)
- R70 680 (1206)
- R77,R80,R81,R98,R100,R103 1K (1206)
- R71 1K5 (1206)
- R84 1K8
- R73,R90,R91,R83 3K9 (1206)
- R86,R87,R88,R89,R74 3K3 (1206)
- R92,R93 4K7 (1206)
- R85 8K2 (1206)
- R82,R96,R97,R23 10K (1206)
- R76 15K (1206)
- R72 33K (1206)
- R99,R101,R102 39K (1206)
- R78,R79 47K (1206)
- R75,R95 100K (1206)
- R91 10K
- R95 100K
- VR3 10K
- R94 10K
- VR1 25K TRIMPOT
- U2 TL084
- U3 TL084
- U4 LM380
- U5 74HC4066
- Q7 BC547

Figure 2: Circuit diagram of the 8 MHz IF strip AF section.

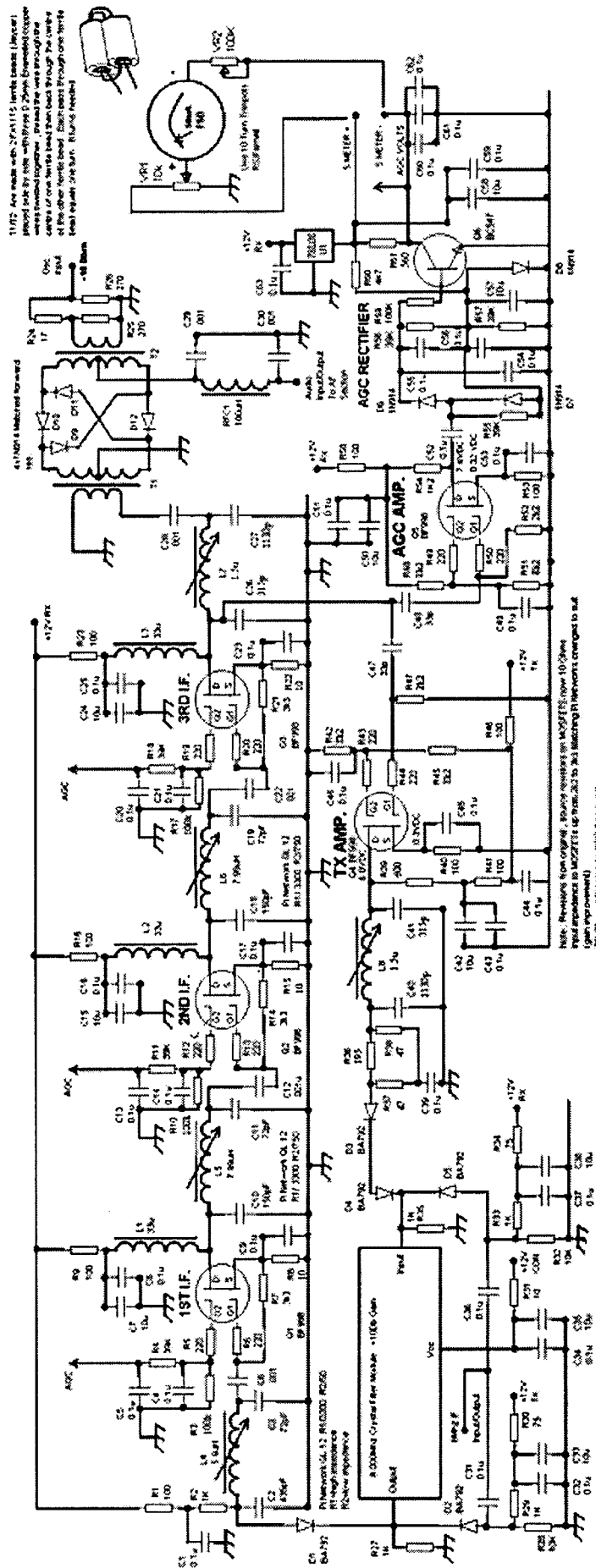


Figure 1: Circuit diagram of the 8 MHz IF strip RF section. (Please note that this circuit is reproduced in AR in the knowledge it may be too small to read clearly – those who wish to see the circuit full size should visit the Amateur Radio section of the WIA website, where it has been reproduced at full size). See table one on page 24 for parts list.

The AF section

In the AF section (refer Figure 2) of the circuit several CMOS switches are used. In receive mode the C switch is on and passes the AF from the mixer to a buffer amplifier and then through several AF low pass filter networks.

The filters were arrived at by ear, mine; they provide a noticeable difference to the AF noise of the IF amplifiers as well as improving the audible interference from nearby signals. In transmit modes C switch is always switched off but either A or B will be switched on depending on the mode you are in.

When SSB is in use (no voltage from CW send switch but 12 volts TX present) then switch B is enabled and switch A is disabled allowing the output from the microphone pre amplifier to be passed through to the mixer. Note the Op amps and AF amplifier are powered by 12 volts constant and are always powered.

In CW mode switch A is on and switch B is turned off by Q1 which is biased on by the +12 V from the send switch; switch C is off as there is no +12 V RX during TX mode. With switch A on, VR1 is set to pass a DC current to the diode ring mixer; it should be adjusted to maximum RF output from the mixer and then backed off till the output drops just slightly. CW keying is performed at the RF power amplifier module.

Transmit design

The output of the mixer during transmit is picked off from the drain of the third IF amplifier by a 33 pF capacitor and fed to G1 of the TX amplifier, yet another dual gate MOSFET.

The output of the TX amplifier is formed across a resistive load, 600 Ohm and a Pi network is used to transform the 600 Ohm impedance down to 50 Ohm for the filter input. A Pi network resistive attenuator is used to attenuate the signal from the TX amplifier to a good level for the input to the filter as well as the final output to the RF filter module (double balanced ring mixer). As the DC drain voltage is still required here to forward bias the switching diodes D3 and D4 the resistive attenuator has a capacitor to ground to pass the AC component

and stop the drain voltage from being shorted to ground through the low value resistors.

In terms of diode switching, the diodes D3 and D4 are forward biased by the TX +12 volts which is passed through the drain resistor of the TX amplifier; voltage developed across the input resistor 1 kOhm (R35) to the filter module is used to reverse bias D4 (RX +12 V is now at zero volts as we are in TX Mode); the RF output of the TX amplifier is then passed to the filter module input.

At the output of the filter module +12 V TX is used to forward bias D2, the current passed develops a voltage across the 1 kOhm resistor at the output of the filter module which is used to reverse bias D1 (RX +12 V is now at zero volts as we are in TX mode).

That is it for the circuit theory.

Construction

I have attached the circuits (Figures 1 and 2) and some pictures of the constructed module (Photos 1 and 2). Please look at the construction method, PCB box, as well as the layout.

The RF side has a logical flow input to output and is much the same as the circuit diagram. RF wiring is made with Teflon coax which you can buy from Jaycar in a made up SMA lead of three metres. On the circuit board remove the outer Teflon coat and solder the braid to the PCB, it makes for a well shielded connection.

Shielding is done on my module with Milo tin cut to correct size strips (use the non ribbed Milo tins); holes are drilled at points along the shielding to make points where tinned copper wire can be soldered to the tin and brought through the PCB both as an earth point to the board and an anchor point for the shielding tin. Components used are available through a combination of RS Components, Jaycar or Farnell Components.

All the PCB artwork for the main module was done with Dalo Pen.

Alignment

The alignment of the completed module is very simple. First connect and adjust the S meter as suggested in

the theory text (must be in RX mode) and then connect a low level 8.000 MHz RF signal source to the input. You can use the BFO module as the signal source (CW Mode) with a switched step attenuator.

Adjust the output so the meter just moves, then adjust all of the RX Pi networks for a peak in meter deflection, then as the meter deflection increases reduce the RF input.

In transmit mode you will need the BFO module connected up to the main IF module and set the modes to transmit as well as CW, the output of the IF strip can now be connected

to a general coverage receiver or oscilloscope.

Adjust VR1 in the AF circuit to maximum voltage (highest current to the ring mixer) then adjust the TX amplifier Pi network for maximum output then go back to VR1 in the AF section and back off until the RF output begins to drop below maximum.

That is it, go build.

A full parts list appears on the next page.

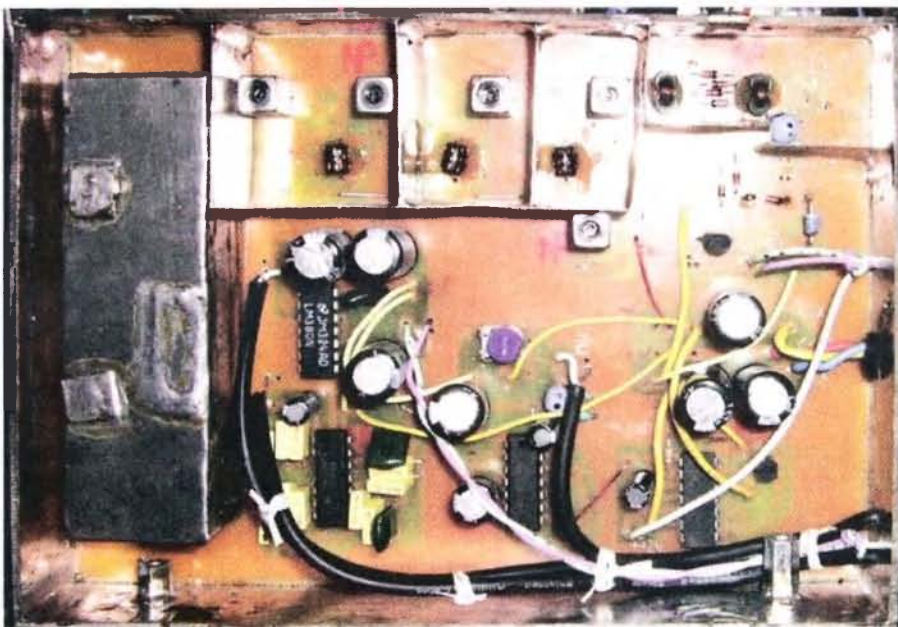


Photo 1: The IF strip - top side.

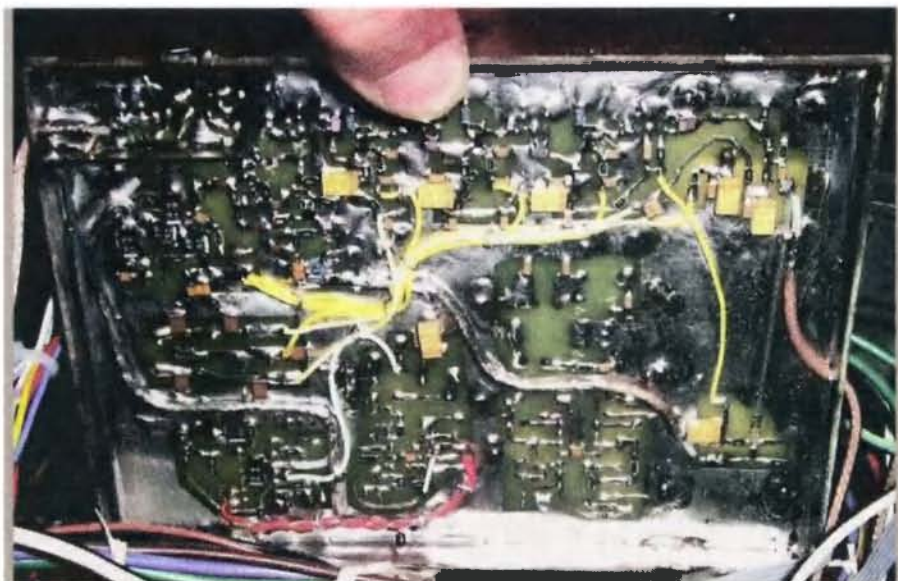


Photo 2: The IF strip - bottom side.

Table 1 Parts list for 8 MHz IF section

Component List

D1, D2, D3, D4, D5	BA792
D6, D7, D8	1N4148
D9, D10, D11, D12	1N4148 (matched forward res.)
Q1, Q2, Q3, Q4, Q5	BF998
Q6	BC547
U1	78L08
T1, T2	FX1115 (2 each)
RFC1	100 uH RFC
L1, L2, L3	FX1115
R8, R15, R22, R31	10 (1206)
R24	16.5 (2 x 33)(1206)
R37, R38	47 (1206)
R30, R34	75 (1206)
R1, R9, R16, R23, R40, R41, R46, R53, R68	100 (1206)
R36	195 (2 x 390) (1206)
R5, R6, R12, R13, R19, R20, R43, R44, R49, R50	220 (1206)
R25, R26	270 (1206)
R61	560 (1206)
R39	600 (2 x1k2) (1206)
R2, R29, R33, R35, R27	1k (1206)
R54	1k2 (1206)
R47, R52	2k2 (1206)
R7, R14, R21	3k3 (1206)
R60	4k7 (1206)
R42, R45, R48, R51	8k2 (1206)
R28, R32	10k (1206)
R4, R11, R18, R55, R56, R57	39k (1206)
R3, R10, R17, R59	100k (1206)
C6, C12, C22, C28, C29, C30	0.001 uF (1206)
C1, C4, C5, C8, C9, C13, C14, C17, C16, C20, C21, C25, C23, C31, C32, C34, C36, C37, C39, C43, C44, C45, C46, C49, C53, C51, C52, C54, C55, C56, C59, C60, C61, C62, C63	0.1 uF (1206)
C7, C15, C24, C35, C38, C42, C50, C57, C58	10 uF 16V SMT TANT
C2	435 pF (330 pF, 100 pF) (1206)
C3, C11, C19,	72 pF (33 pF, 33 pF)
C10, C18	150 pF(1206)
C47, C48	33 pF (1206)
C27, C40	1130 pF (.001, 100 pF) (1206)
C26, C41	315 pF (150 pF, 150 pF) (1205)
0.25 mm Enameled Copper Wire (T1, T2, L1, L2, L31)	
0.125 mm Enameled Copper Wire (L4, L5, L6)	
L4	TOKO 5.9 uH COIL 292CNS-T1044Z 2.2 uH
L5, L6	TOKO 7.99 uH COIL 292CNS-T1044Z 2.2 uH
L7, L8	TOKO 1.5 uH COIL 292CNS-T1044Z 2.2 uH

L1, L2, L3 are FX1115 ferrite beads (JAYCAR) with 10 turns 0.25 mm E.C.W.

L4 (remove original winding, use 0.125 mm E.C.W. and wind 10 turns on both bottom wide dividers then 4 turns each on the next 4 narrow dividers above (they are a tight fit, so wind it on tight) 5.9 uH

L7, L8 (remove top 4 turns from original winding)

L5, L6 (remove original winding use 0.125mm E.C.W and wind 11 turns on both 2 bottom wide dividers then on the next narrow dividers wind 5 turns, 5 turns, 5 turns then 4 turns. The 5 turns just fit to the narrow dividers.

L4, L5, L6, L7, L8 ARE TOKO 292CNS-T1044Z variable inductors available in bulk quantity from Eaton Electrics. They are all 2.2 uH standard and

are easily rewound for different inductances.

Please Note : E.C.W. indicates Enamelled Copper Wire.

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Promoting amateur radio – a school Radio Club

Tim Roberts VK4YEH

This article presents a pathway to creating a school amateur radio Club.

As an amateur and a teacher (of maths) I believe that the future of amateur radio is firmly rooted in education. I will leave the merits or otherwise of the current licensing system – we have it and I will work with it for the betterment of the hobby.

I work at Canterbury College, Waterford, near Beenleigh, roughly half way between the Gold Coast and Brisbane. In 2008, Ron Bertrand VK2DQ helped me get four students through the Foundation course. None of these students went any further than getting their certificate, but one is now working towards his Standard call. This year I have five students in a school club, all using the course work from The Radio and Electronics School, working towards a Standard call. Again, Ron has been of immense assistance in this as have been a number of other hams mentioned later in this article.

In the interests of brevity (that is the maths teacher in me) I will present the rest of this article in note form:

Getting started

If you are a student who wants to start a club at your school, find a staff member to help you. Typically he/she will be found in the maths/science area, but this is not always the case.

Student or staff, if possible get the support of a local club or at least local amateurs. In my case Peter VK4KTX has been a great supporter of our club, as has Keith VK4XAK who donated a handheld for us to use.

Talk to your accountant. If you are being paid to run the club then you can write off the purchase of a NEW rig

and other equipment over a number of years. There is a minimum value here – a \$120 handheld does not cut the mustard, regardless of its merits or how much you use it. You must be able to give evidence in the form of payslips to show that you have been paid for the activity. You will also need purchase receipts for your tax return.

Be sure to include risk assessments. These are very important at my school – as they should be - so make sure you do them properly. Seek help if you are not sure how to write one. Whoever approves your risk assessment will be looking for 'due diligence' – have you identified possible risks and described how you will manage them.

Be prepared for the process to be pedantic – it is in your interests that it is, as your neck will be on the block in the unlikely event that something goes wrong.

Ensure that everyone visiting the school that will be in contact with your club members has the appropriate clearance. Here in VK4, they require a 'Blue Card' for working with children. Find out what your state requirements are and follow them.

Operationally

Be prepared to provide everything. I was lucky enough to scrounge an old stainless steel resuscitation trolley for the 'portable shack'. All equipment sits on this and we wheel it from place to place as required.

Do not plan on a permanent antenna. I use a tripod from a set of workshop lights and vertical antennas for both HF and VHF. Be flexible!

Be prepared to be of no fixed address until you have proven yourself. Our shack is a trolley that sits at the back of the Music Department store room (close to my staffroom, and big enough for the trolley). I wheel it out when we need it.

Be prepared to do a range of activities. In addition to doing theory sessions, I have an antenna construction project planned and we will be playing with fox-hunting later in the year.

Have an operational station at the school on open days demonstrating aspects of the hobby, SSTV, IRLP, voice, and so on. Advertise it well in the amateur community. Plan for it to be a success. Most importantly get your students involved.

Contact other school amateur radio clubs. Our first was Sherbrooke Community School (VK3KID) in late May this year, and we have made arrangements for regular contacts.

Get your club callsign. The ACMA is very receptive. I had a phone call at work to confirm that I was who I said I was, and now we have the call VK4CCR. Involve your students in the operation of the club. One may develop the club website. Keep parents informed. Write regular newsletters with details about what you are doing, specifically mentioning their children.

Print QSL cards for your club. No need to be fancy or in colour - have students design them. Use technologies such as IRLP for long distance contacts using basic equipment. They are an integral part of amateur radio now, use them to your advantage. Keep written documentation of what you do, when you do it and which students are participating. Again you are covering yourself.

Finally, be persistent. The bottom line will always be the mighty dollar. The path to the Canterbury College club has been frustratingly slow at times, but I believe that we now have something worthwhile that will benefit many students in the future.

Please email me at vk4yeh@gmail.com if I can be of any assistance. I am more than happy to help. Good Luck! **ar**

WICEN on wireless watch at Derwent Valley blaze

The Wayatinah fire

Roger Nichols VK7ARN

WICEN Tasmania (South), assisted by other amateurs, provided support to the Tasmania Fire Service for the Wayatinah fire in the Derwent Valley.

The fire started on 1 February and at 23 February was well contained and being patrolled.

The fire management was 'passed on' to Parks and Wildlife Service Tasmania about mid month, as it was contained in the forest and WICEN was released then.

The fire involved approximately 6,500 hectares. The fire fighting effort was divided into several sectors and had multiple helicopter support.

An incident management team (IMT) was set up at the Tasmania Fire Service training centre in Cambridge. WICEN supplied radio operators for the team.

Covering the period 0600 to 2200, three shifts each day were worked. Some operators undertook 'doublers' or 'triplers'. The job involved contacts with IMT staff, helicopters, and with Tasmania Fire, Forestry and Parks personnel on the fireground. It included message passing, collating weather reports and logging personnel.



Photo 1: Scott VK7HSE, working in the radio room at the Tasmania Fire Service training centre at Cambridge, near Hobart.

Each radio operating team of two included at least one who had completed training arranged by WICEN with the Tasmania Fire Service. This led to the awarding of the certificate of attainment PUAOPE002A Operate Communications Systems and Equipment.

The training recognised prior learning, satisfied by holding an Amateur Operators Certificate of Proficiency, and thus was able to focus on Fire Service systems, procedures and protocols.

The need for the training was highlighted during a previous WICEN activation during the Wielangta Forest fires, and is consistent with the WIA emergency radio operator training initiative.

Those involved were Scott VK7HSE, Peter VK7TPE, Michael VK7FMRS, Chris VK7FCSM, Rod VK7TRF, Ian VK7IR, Cedric VK7CSL, Garry VK7JGD, Steve VK7FAME, Reg VK7KK, Dale VK7DG, Chris VK7FCDW, Clayton VK7ZCR, Brian K7HSB, Warren VK7FEET, and Mark VK7FDMF. They were supported by Stu VK7NXX and Roger VK7ARN, who provided roster planning and administrative support.

Suitable volunteers were being sought to assist experienced operators towards the end of WICEN's tour of duty.



Photo 2: Scott VK7HSE and Cedric VK7CSL in the radio room.



Photo 3: Michael VK7FMRS on shift in the radio room.



Photo 4: Chris VK7FCDW with a museum piece - the radio room is nearby.

"Hey, Old Timer..."

If you have been licensed for more than 25 years you



are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a \$5.00 joining fee plus \$8.00 for one year or \$15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to
RAOTC,
PO Box 107
Mentone VIC 3194

Building a simple field strength meter

Ross Pittard VK3CE

vk3ce@amateurradio.com.au

Ever wanted to know how well your antenna is radiating? Is that rubber ducky antenna from the hand held still any good since you sat on it? Is your transmitter transmitting? Is there more signal from the front of your Yagi or the back?

Do not forget a 50 ohm dummy load will show a good SWR, so what we need is a simple way of determining if power is being radiated from your antenna; the answer is a simple to build Field Strength Meter (FSM).

The instrument described here uses a handful of readily available components, takes around 30 minutes to build, requires no batteries or power supply, and gives indication of RF energy from the HF bands to well into the UHF bands.

The theory of operation is similar to the crystal set which was covered in the Foundation training course. Because the FSM needs to be sensitive from HF to UHF frequencies there is no tuned circuit as in the crystal set; all we are doing is converting RF energy with the diodes into direct current to drive either a DVM or an analogue meter. The DVM model will be a little more sensitive as a DVM has a much higher input impedance than an analogue meter and will not load the circuit as much.

The only critical component is the choice of diodes; silicon diodes are not suitable because of their higher forward bias and germanium or Schottky diodes are preferred to

maintain maximum sensitivity of the instrument.

As already mentioned there are two possible ways to construct the FSM; the first is using a digital multimeter (DVM) for the display - refer Photo 1 and the second uses a surplus analogue meter in the range of 50-250 uA for the display - refer Photo 2. I will describe in detail the first method as most people reading this will have a DVM on hand.

As can be seen from the circuit there is not much to it, all the components are available from Jaycar and fit into the smallest diecast box they stock. I used point to point wiring using the RF connector and the pot terminals as convenient mounting posts - refer Photo 3; the junction of the two

diodes and input cap were twisted together first and then soldered.

Remember to keep all the leads as short as possible, or alternatively a small piece of Vero board could be used. Please note the orientation of the two diodes. A short piece of screened microphone cable was used for the connection to the DVM, as an afterthought a small piece of Velcro could be used to temporarily mount the FSM to the top of the DVM if necessary.

When using the FSM remember that the readings you obtain are relative to each other and are not absolute readings.

The best way to start out is to set the FSM up on a table in the back yard and adjust the sensitivity pot for mid range. Try keying a hand held radio a couple

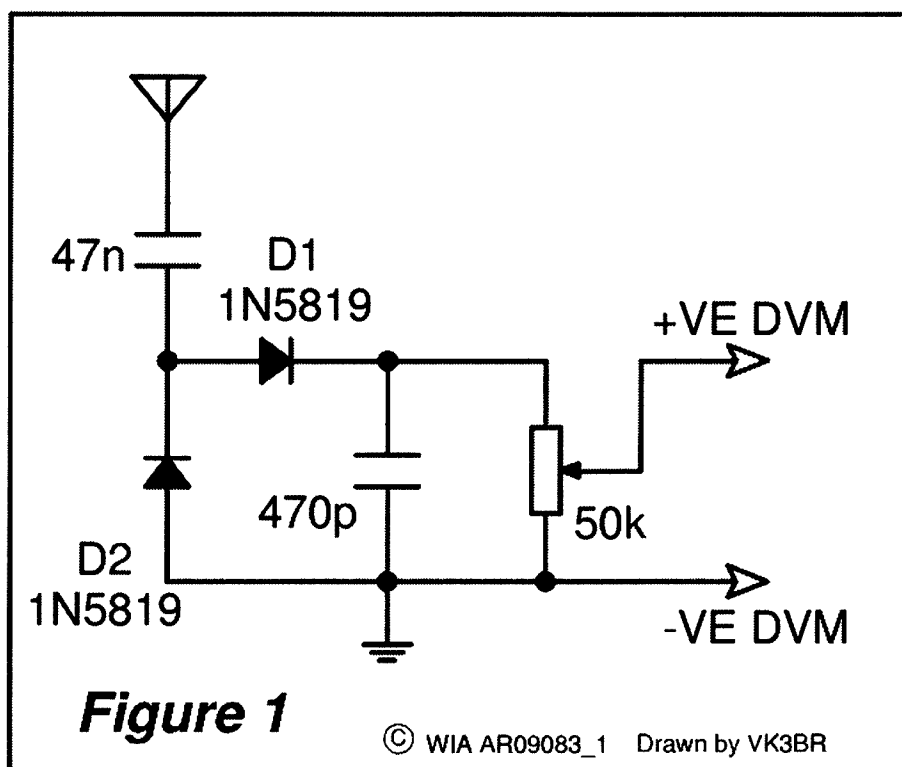


Figure 1

© WIA AR09083_1 Drawn by VK3BR

Figure 1: The FSM circuit.

of meters away and the DVM should display a few millivolts; if not adjust sensitivity a little higher or drop the DVM range, expect a reading of around 500 mV for a typical handheld (H/H).

When you have a reading try rotating the H/H aerial into the opposite plane of the FSM aerial and you should note a drop in level displayed. It is best to use an aerial cut for the band you are interested in on the FSM or alternatively try a telescopic antenna and adjust its length accordingly.

For serious comparisons set the FSM and transmitter up a few metres apart and try different antennas on the

transmitter without adjusting the FSM and you will quickly see the difference in the radiated fields.

That is it for this month, have fun building and experimenting with the field strength meter.

Parts List

- 2 x Schottky Diodes 1N5819 Jaycar ZR-1020 or equivalent
- 1 x small diecast metal box - Jaycar HB-5060 or equivalent
- 1 x 50 kΩ pot - Jaycar RP-7516 or equivalent
- 1 x knob, for the pot
- 1 x RF connector to suit (PL259 or BNC)
- 1 x 47 nF ceramic capacitor - Jaycar RC-5356
- 1 x 470 pF ceramic capacitor - Jaycar RC-5332
- 2 x banana plugs, red and black - Jaycar PP-0400 / PP-0402
- Hook up wire, shielded cable, solder, drill etc
- 1 x 50-100 uA analogue meter (if required)

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Photo 3: Showing the point to point wiring.



Photo 1: Using a DVM for the display.



Photo 2: Using a surplus analogue meter for the display.

Book Review:

Radio Communication Handbook, 10th edition

Drew Diamond VK3XU

Publisher: Radio Society of Great Britain (RSGB). **Edited by** Mike Dennison, G3XDV and John Fielding, ZS5JF. **Soft-bound, 864 A4 pages, comprising 26 chapters, 2 appendices and a free CD. Shipping weight is 2.5 kg. Cost: 33 UK pounds (about \$70).**

Unlike the ARRL, the RSGB does not publish a new Handbook each year. This edition, being the 10th since 1938, has been considerably revised and expanded by 24 respected authors.

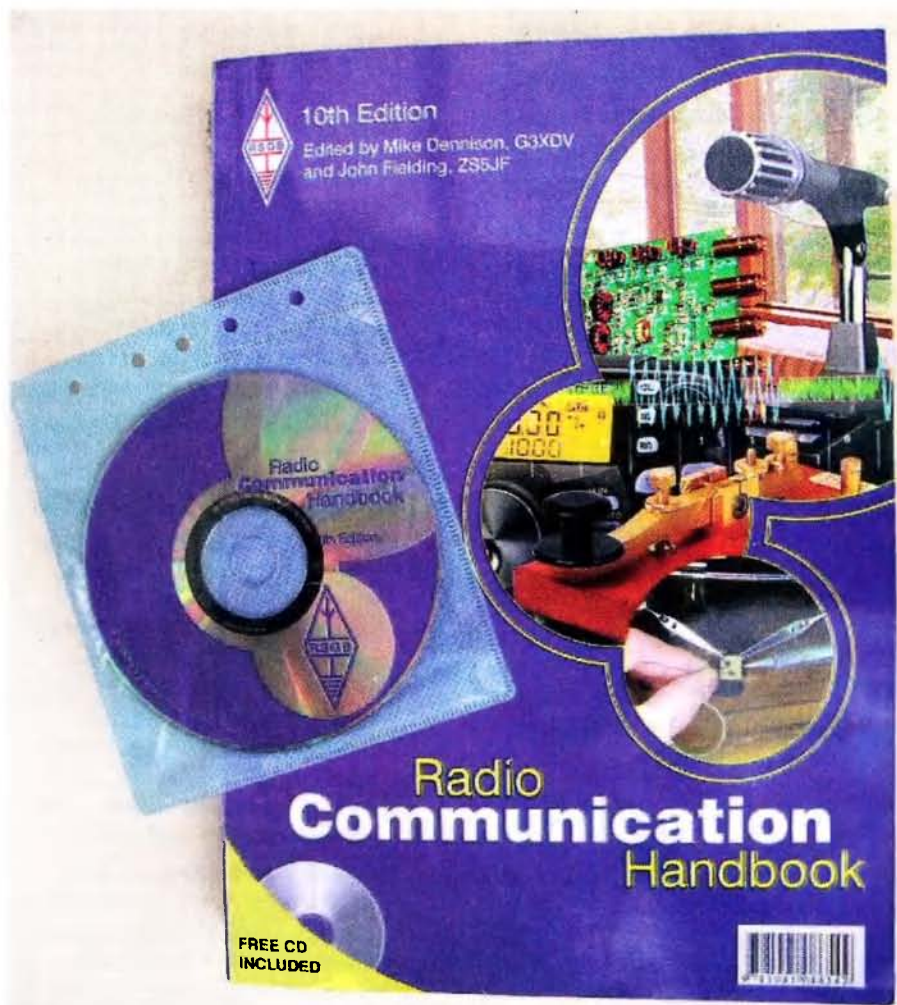
For instance, the digital communications chapter has been completely re-written to bring it up to date. Similarly, the Software Defined Radio and Microwave chapters have been extensively revised. The Satellites and Space chapter now contains an introduction to radio astronomy.

For the enthusiastic adventurer who also likes to take radio along, there is a new 24-page 'Great Outdoors' chapter, where Richard Marshall G4ERP lucidly describes the techniques and equipment needed for success 'in the field'.

The chapters, with my comments, are:

- Principles.** All of the usual electrical, magnetic and radio principles plainly explained. Contains an excellent illustration of balanced and unbalanced transmission lines.
- Passive Components.** Lots of clear photos and drawings.
- Semiconductors and Valves** (electron tubes). The graphical representation of the various common classes of amplifier is particularly good.
- Building Blocks – Oscillators.** Theoretical and practical discourse on the various types of oscillators and signal sources, including phased-locked loops (PLLs) and direct digital synthesis (DDS).
- Building Blocks – Amplifiers, Mixers and Filters.** Practical, proven circuits, including some scratch-built linear amplifiers.
- HF Receivers.** In-depth treatise on contemporary receiver characteristics and circuitry, including the 'polyphase' method.

Continued over leaf



The Radio Communication Handbook 10th edition.

7. **HF Transmitters and Transceivers.** Discusses commercial transceivers and home-built projects.
8. **Software Defined Radio.** One of the largest chapters (56 pages). A must-read for anyone interested in SDR.
9. **VHF/UHF Receivers, Transmitters and Transceivers.** Includes plans for a 400 W linear amplifier for 2 metres.
10. **Low Frequencies.** Receivers, transmitters, antennas and loading coils for 136 and 500 kHz.
11. **Practical Microwave Transmitters and Receivers.** Home-brew, kit-form and modified commercial surplus techniques. Includes laser receiver and transmitter plans.
12. **Propagation.** Contemporary paper on this hot topic. Lucid drawings, tables and illustrations.
13. **Antenna Basics and Construction.** Theory and practice for many popular antenna types. Lots of helpful strategies clearly illustrated.
14. **Transmission Lines.** Relevant theory and practice. Good discussion and illustrations explaining standing waves, impedance matching and baluns. The Smith chart is neatly elucidated.
15. **Practical HF Antennas.** Shows that the UK experience (regarding space and height restrictions) more closely relates to our need for effective 'back-yard' antennas. Includes plans for automatic and manual antenna couplers.
16. **Practical VHF/UHF Antennas.** Plenty of established and new ideas for home-station and mobile antennas.
17. **Practical Microwave Antennas.** Ditto. Includes plans for a moon-bounce dish antenna.
18. **The Great outdoors.** New chapter. Obviously based upon a wealth of practical experience in the field. Includes details for a light-weight collapsible Yagi for 2 m and power sources.
19. **Morse code.** Very much alive, confirmed by its use in many amateur radio applications. Salient information on operating techniques, codes, awards, hand-keys, electronic keyers and paddles.
20. **Digital Communications.** Explains principles, through to established and emerging modes, such as Steve VK2XV/ZTO's 'Jason' incremental frequency keying method.
21. **Satellites and Space.** Orbits, tracking, antennas and equipment for satellite working. Contains a list of recommended reading, and an introduction to radio astronomy and moon bounce (on CD).
22. **Computers in the Shack.** From PC basics to circuit drawing/PCB/simulation, antenna analysis, interfacing, microcontrollers and digital signal processing.
23. **Electromagnetic Compatibility.** Good practical advice on how to prevent and solve interference problems.
24. **Power Supplies.** Components and circuits for conventional supplies. Introduction to switch-mode supplies. Care and application of primary and secondary batteries.
25. **Measurement and Test Equipment.** Analogue and digital meters, component testers. Useful instructions for measuring impedance, SWR, frequency, power, RF current, (relative) field strength, receiver characteristics and transmitter performance.
26. **Construction and Workshop Practice.** Illustrated practical advice for working with common metals and plastics in radio and electronics projects. Construction tips for building enclosures and boxes. How to cut, make holes in, and bend metals with simple tools, fabricate circuit boards and solder components, including experimental board methods.
- Appendix A.**
Appropriate formulas and tables for radio work, including 10 pages of useful filter tables and calculations.
- Appendix B.**
Printed Circuit Board Artwork. High-quality positive board patterns for many of the projects contained in the Handbook.
- Free CD.**
In addition to the Handbook itself, the CD also contains a wealth of information and software for such topics as data modes, logging and station control, antenna analysis, Morse training, mapping, satellite tracking and the Pic-a-Star transceiver.
- The many drawings and photos are excellent, and the Handbook team is to be congratulated on a job well done, for this is a 'handbook' in the true sense, and should well serve the dedicated radio and electronics worker for some time. For that reason (and hence my only grumble), it is a pity that this edition is not also available in hard cover.
- My copy was purchased direct from the RSGB Bookshop (<http://www.rsgb.org>), but should be available in due course through the WIA Online Bookshop at www.wia.org.au



The WIA Centenary Committee

Call for Articles

The WIA Centenary Committee wishes to acknowledge further historical material forwarded by members and relatives. This month, the Committee wishes to thank the following:

- Neil VK6NE for the history of the Subiaco Radio Society (1923-70) and for membership documentation from the 1921 and 1924 period.
- Marlene VK3EQ (ex VK5QO) who forwarded a short essay on her late husband, Brian Austin VK5CA. Marlene is the author of *The First 60 Years of the South Australian Division* – a great resource document about amateur radio in South Australia.
- John Risebrow is a historian from NSW who forwarded information about The Veno Park Plaque which honours G.A. Taylor's army communications. G.A. Taylor was the founder of The Institute of Wireless Telegraphy in 1910.
- Marilyn VK3DMS for scanned images of her "communications" stamp collection.

- Robin Bailey (ex VK3ZAO) for a brief history on his father, Christopher Bailey XPD.

All historical material will be used in Amateur Radio magazine or published on the WIA website. Material will be indexed and placed in the Institute's Archive and will be available for all future researchers.

Thank you to all who have contributed to date, but we would like more! Please help us to preserve the history of our hobby by writing something about your club, outstanding amateur or significant event.

The committee also welcomes articles on the future of amateur radio, the changes foreseen, and predictions for our future. Many new modes are being adopted by the more progressive amateur, how are these going to set the stage for the future amateur?

Contributions can be sent to centenary@wia.org.au

ar

Australian made ANTENNAS Setting a new standard COM-AN-TENA

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115 John Street GLENROY 3046

23 cm 36 ele 2 m boom N-con	\$249
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Tri band 9 ele 10 15 20 m	\$860
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20 m 3 ele 4.9 m boom com/opt	\$494
NEW 2 m broadband 12 dB 144-148 MHz	\$225
2 x 5/8 co-linear 2 m vertical	\$135
Log periodic 6 ele 4.8 m boom	\$705
New 160 m vertical (suburban)	\$355
M B Vert auto switch 1Q/80 m	\$360
40 m linear loaded 2 ele /cap/ hats	\$645
5 ele 20 m beam 40 foot boom	\$995
6 m 6 ele dual drive 5Q/54 MHz	384
NEW 2 m/70 cm/1Q/17 elements Yagi single feed Yagi NBS design	\$283
28-29 MHz dual dr 3 ele Yagi	\$270
70 cm H/gain 70 cm 3 m boom	\$159
2 m 13 ele 6 m boom H/gain	\$245

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Winch-up and tilt-over aluminium and stainless steel three sided construction. Auto brake winches

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New Baluns

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OTY

Around we go again

Dear Sir,
Due to an interest in the "Library Amateur Radio Displays" (AR Nov. 2005) and an enquiry from NZ, I have started the Displays on their merry way again.

There is a new batch of inquiring minds that have matured over the five or six years since the first round was started and also advancements in amateur radio and electronics have taken place.

I am pleased to have received some

complimentary comments but my offer to assist other States is still to be taken up. Unfortunately I am starting to battle 'Mr. Parkinson' which is interfering with my home-brewing but "them's the breaks".

Graeme Wilson VK6BSL

* This is a series of panels prepared by VK6BSL depicting amateur radio activities. The display circulates in Perth and district public libraries.

100 years old and it all started in a NSW pub

The month has arrived – on the 11th it will be the centenary of the start of an amateur radio movement in this country which today is its national society and the world's oldest.

It has the honour by having commenced in 1910 of being two years ahead of the Radio Society of Great Britain and four years ahead of the American Radio Relay League. It all started in Sydney at a meeting held in the smoking room of the Hotel Australia that was at the corner of Martin Place and Castlereagh Street in the heart of Sydney. The building has now been replaced by the high rise of the MLC Centre.

The meeting had been called by the wireless experimenters of the day who felt that a united front would help in dealing with the authorities. The following years had seen the formation of similar groups in the other states. From 1912 there is a call sign list of members of the Wireless Institute of New South Wales with many of the names from the first meeting.

In the early 1920s the various states thought it was time to form a national co-ordinating body. At a meeting of the Wireless Institute of New South Wales chaired by Mr. E. T. Fisk the following motion is recorded in the minutes:

It was decided to write to all Institutes asking them whether they would, in the event of being formed, be willing to join up as a branch of the Wireless Institute of Australia

This apparently took a few years as other records show this occurred in 1924 when the National body was formed.

It was known as the Wireless Institute of Australia.

The States became Divisions. In the middle of this period the NSW Division

was registered as a company on 26 May 1922.

..two years ahead of the Radio Society of Great Britain and four years ahead of the American Radio Relay League

Fishers Ghost ARC provided the radio side of the recent [22nd] Australian Jamboree under the call VI2AJ2010. 1500 contacts were made, reports Ian VK2MCI and he thanks all who assisted in the operation.

The Mid North Coast ARG held their annual Radio Expo in Coffs Harbour in late January with an attendance of 130 advised Gary VK2ZKT President of the group. There was a good selection of traders and displays.

Staying on the VK2 north coast there is the annual Urunga Convention on Easter Saturday and Sunday, a function which commenced in 1948.

Then in June on the long weekend – 12/13 – it will be the 35th annual Oxley Region ARC field day.

This month for those who take part in field events there will be the John Moyle weekend.

Next month there is International Marconi day on 24 April. Most clubs have commenced their meeting schedule for the year.

St. George ARS meet on the first Wednesday evening 8 pm at the 1st Kyle Bay Scout Hall. They have a weekly net on their VK2RLE repeater

6800 Thursday at 8 pm followed at 8.30 pm with a SSTV net.

Orange and District ARC meet on the first Friday.

Hornsby and District ARC have resumed their 2nd and 4th Tuesday meetings. Besides their web site, they can be found on Facebook and Twitter under VK2MA. The Friday morning 40 metre net Morning Tea with HADARC has clocked up five years. Check that one out on 7104 kHz at 9 am.

In the north Summerland ARC has dropped their post box address and mail should now be sent to 414 Richmond Hill Road, Richmond Hill 2480. There is a car boot sale on the 28 March and a Foundation course 13/14 April. Last year the Club had 23 exam candidates who are now licensed. A club active in WICEN they are helping out this month – 13/14 – with a horse enduro at Copmanhurst.

NSW WICEN held their AGM last month. They have reactivated the 70 cm repeater VK2RWS on 438.275. It has a 5.4 MHz negative offset [432.875] and requires a 91.5 CTCSS tone. It is currently located at Berowra.

The Oxley Region ARC will be holding courses early this month – contact via P.O. Box 712 Port Macquarie 2444. In January five Foundation and one Standard candidates became the latest callsigns in the district. Their UHF repeater VK2RPM 8525 has been restored and requires a 123 Hz CTCSS tone to defeat a local triggering signal.

Exams were planned for the western part of the State round Dubbo advises Brian VK2WBK from the ARNSW exam group. Details via mobile 0400 445 829.

Mid June will be the annual Waverley ARS auction.

The ARNSW Homebrew and Experimenters Group meets at VK2WI

Dural on the afternoon of the T&T Sunday, the next on the 28 March. There is a monthly evening meeting on the first Tuesday and a net on the third Tuesday at 8 pm on VK2RWI 7000 and on 80 metres 3650 kHz at 8.30 pm.

Clubs and groups are invited to supply material for this column as the printed word is one way of maintaining a historical record of activities. Please send it to the email address at the head on this column.

Those into building equipment will have noticed that DSE is moving out of stocking components. This is a particular disadvantage to those in country regions and some clubs and groups are looking at developing a buying group to source for their members from city based suppliers.

Some others like to source components from kerb side Council cleanups but this 'stock' is likely to dry up as many Councils are no longer collecting electronic items like all those 'computers'. In future households will have to make other arrangements like

delivering to collection points, some of which attract a fee. Check your Council clean up notice which came out recently.

Amateur Radio New South Wales is moving into the AGM mode with the meeting scheduled for Saturday the 17 April. Their returning Officer Peter VK2EMU has advised the close of nominations for the committee and agenda item will be Saturday the 6th March at noon at the VK2WI site, 63 Quarry Road, Dural. The next Trash & Treasure is set down for Sunday the 28 March. Check out the web site for major items on offer. It will be conducted out of the facilities in the new shed. What is left in the old shed has to be emptied. No [reasonable] offer refused.

The **ARNSW** web site has undergone some changes, mainly the front page: www.arnsw.org.au Also a series of new email addresses has been introduced and old ones are being phased out. Those in place are office, news, membership, disposals and VK2notes which you follow with @arnsw.org.au

As outlined at the start of this column

it is one hundred years this month since that first meeting. **ARNSW** is able to trace its origin back to that meeting.

Their part in some of the celebrations will be this month with a formal opening planned for the "Shed" on Sunday 14 March. A special call sign – VK2FIRST – has been obtained for the month. Also produced is a commemorative plate and mug which is expected to be available on their stand at the Wyong field day.

When the NSW Division observed the 75th anniversary, a function was held at the VK2WI site and a time capsule was created, hopefully it can be located. With the 100th this would be an opportunity to create another time capsule to span a time period to be decided. Keep in touch with the various celebrations by listening to the Sunday VK2WI news sessions or check the web site.

73 Tim VK2ZTM.

ar

Midland Amateur Radio Club Inc. VK3CMZ Radio, Electronics & Astronomy Expo

Midland Amateur Radio Club and Bendigo District Astronomical Society present an Expo during the

Easter Weekend Festival

Old Fire Station Building, View Street, Bendigo

Easter Saturday, Sunday and Monday

April 3, 4 and 5, 2010.

Aim: Promote Amateur Radio and Astronomy to communities within the Central Victorian Region.

AMATEUR RADIO

Morse Code in action. Try your own skills.

Ham Radio Deluxe: One way computers can enhance amateur radio station operation, including associated benefits.

Operating amateur radio stations.

ATV: see how amateur radio operators send and receive their own TV signals.

Antenna models depicting different configurations.

ALARA will be participating in the Expo

Vintage Radio: Display of valve radios from the 1920s, 30s and 40s, all marvellously restored and working.

ASTRONOMY

Astrophotography: see wonderful deep sky images taken with the City of Greater Bendigo Telescope.

Radio Astronomy: what is actually received, and how are those amazing images produced.

Solar Viewing: see the sun as you have never seen it before.

A WIA Centenary Supported Activity

Urunga Radio Convention 2010

Ken Golden VK2DGT

See you at the Urunga Radio Convention, on again this Easter week end, Saturday and Sunday 3, 4 April, 2010 at the Senior Citizens Hall, Bowra Street, Urunga.

This event is the longest running Fox Hunt Field Day in Australia. Two days of Fox Hunting, quizzes, raffles, and pre loved gear and displays. Inquiries welcome.

CHADARC will cater for lunches again this year. Free tea and coffee will be available for those registering. Numbers are required for the optional meal on Saturday night at the Bowling Club – please notify the Committee.

The old cups from the early days are on display at the convention, and other times at the Ocean View Hotel, where some of the early conventions were held. An adjoining lounge is available for those that want to get away from the activities.

Urunga is a quiet village ideally suited to Fox hunting. It is a very relaxing environment on the Kalang River, and has old style charm, which is ideal for families. Close by is Coffs Harbour and Bellingen, or perhaps a drive on



Brian Lacky VK2DLM at Urunga 2009.

Waterfall Way to Dorrigo and the National Park Skywalk, picnic areas and lookouts. Visit the golf or bowling clubs, or walk to the ocean on the meandering footbridge for a spot of surf fishing.

Check the Urunga Radio Convention web page <http://www4.tpgi.com.au/goldy2/> Urunga info on web, links page, where the rivers meet the sea. Ken Golden VK2DGT for URC (krgolden46@hotmail.com) **ar**



Urunga RC - Convention Committee 2009.

GEELONG AMATEUR RADIO CLUB – The GARC

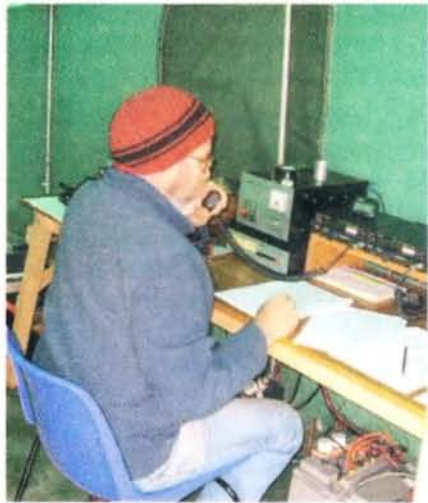
Tony Collis VK3JGC

WIA Summer VHF/UHF Field Day

This year GARC had four teams in the Summer VHF / UHF Field Day event.

Team one: VK3UHF / LUMEG

The location this year was Barabool Hills at QF21CU and covered 50 MHz through to 10 GHz. The multi operators were once again David VK3QM, Chas VK3PY and Charles VK3NX. Once again



VK3PY operating during the contest.

the weather and band conditions made the scoring less than the previous year.

Team two: VK3TU, VK3NW

Once again Team 2 was the 24 hour multi operator team of Ken VK3NW and Bert VK3TU operating from Hick Hill QF01wx west of Macarthur.

Their chosen bands were 2 m through to 3 cm and they achieved, subject to confirmation, in excess of 3,000 points.

Like the other teams they also enjoyed the cyclic rain, hail, wind and sun which played havoc with the microwave communications.

Team three: VK3ALB

VK3ALB/P once again ventured to Mt Leura, Camperdown in QF11ns for the Summer VHF/UHF field day. VK3ALB/P was manned by Lou VK3ALB, Nik VK3BA, Jenni VK3FJEN and Michael VK3FMIC. Bands were 2 m, 70 cm, 23 cm, 13 cm, 6 cm and 3 cm. The weather did them no favours with strong winds and driving rain over the weekend. They were, however, luckier than some to the west and north that reported strong winds, hail, torrential rain and in one case a dust storm! They made over 250 contacts during the 24 hour

event including a very interesting 10 GHz contact with Russell VK3ZQB where they heard heavy rain scatter. Their longest distance contact was over 580 km on 2 m with Andrew VK1DA.

Team four: VK3ATL

This multi operator team comprised DallasVK3DJ, Tony VK3JGC, Gerhard VK3HQ, Gary VK3FWGR, Vanessa VK3FUNY and Lee VK3PK. The bands covered were 50 MHz to 10 GHz; they operated from a site some 500 m ASL in the Otway ranges, locator QF11ri.

In all 98 contacts were made in the 24 hours of which 7 were on 10 GHz. Subject to confirmation, the team scored a little over 2000 points.

The weather was atrocious. High winds and rain with hailstones alternated with periods of sun shine which woke up the millions of flies that plagued them; this area has the reputation of being the wettest in Victoria.

Although very high up, Tasmania was regrettably blocked off by the surrounding hills.



Dallas VK3DJ lining up the 10 GHz dish.



The now familiar VK3ALB/P Field Day caravan.



Line up of the 23 cm to 6 m transceivers.

AGM, PRM80s, Repeaters, SK, ESM

AGM

The Annual General Meeting of Amateur Radio Victoria (The Wireless Institute of Australia Victorian Division) will be held on Tuesday 18 May 2010 at 7:30 pm. As St Michaels School is currently being redeveloped, the location will be advised later.

All members will receive by e-mail or post a copy of the Annual Reports shortly. To ensure prompt delivery please notify the office of any changes to your postal or e-mail address as soon as possible.

PRM80

We have a small quantity of the ever popular PRM8030 radios, pre-programmed for the 70 cm amateur band with all repeaters and a number of simplex channels. These are remote head radios 25/5 watt selectable and come with microphone and mounting bracket. They make an ideal mobile rig where space is at a premium. The remote head and radio can be connected with a standard cat5 data lead. Priced at \$120 each and available from the office.

The channel plan can be viewed at <http://amateurradio.com.au/sites/default/files/PRM80frequencychart.pdf>

The hidden costs of amateur repeaters

From time to time we hear about the funding difficulties experienced by clubs who run a repeater often not for the benefit of their own members, but for the wider amateur radio community. In New South Wales the Lands Department is continuing on its campaign of introducing high site lease charges all in the name of cost recovery and getting a commercial return for access to sites.

Similar things are happening in other parts of Australia which are making repeater operators very anxious. Amateur Radio Victoria funds and

licences most of the repeaters in its state; the annual ACMA licence fees are nearly \$4000.

In addition to this are site fees. Take for instance the Mt William repeater VK3RWZ in Western Victoria; the site fees for this repeater are around \$1,000 a year. Recently VK3RWZ was restored to service after a major antenna failure; rigging costs alone were in excess of \$5,000 for that job plus the new feeders, aerials and radios.

A considerable number of complaints were received when the repeater was not on air, most came from non members of Amateur Radio Victoria and since it has been returned to service only a couple of loyal and understanding members have expressed their thanks.

Another major new cost for repeater operators is the D-STAR network. Amateur Radio Victoria has spent several thousand dollars to get VK3RMM D-STAR Mt Macedon on air. We now find it has few users, most are not even members of Amateur Radio Victoria. Also with D-STAR comes the monthly expense of internet access for the D-STAR internet gateway.

Most amateurs do not understand the amount of effort made by a small number of dedicated people to continually upgrade installations to meet new commercial technical requirements and the continual replacement program for obsolete equipment initiated by Amateur Radio Victoria.

Do you support the organisation that provides amateur radio repeaters in your state? In Victoria, that is Amateur Radio Victoria, why not join today?

On a sad note

We record the passing of Mark Thomas Dods VK3ZR, a long time leadership group member of WICEN (Vic) whose

legacy for that organisation includes its stability and well earned respect within the wider emergency service community.

He received the Emergency Services Medal (ESM) in the Australia Day Honours list, announced after his death. A high award for the contribution of this fine individual, who only agreed to be nominated for it to demonstrate that being a member of WICEN is as valid a contribution as service with any other agency.

The ESM is awarded by the Australian Government for distinguished service by the men and women of Australia's

He received the Emergency Services Medal (ESM)

emergency service organisations, and people who are involved in emergency management, training or education.

Log Books

Do not forget we still have stocks of our highly successful log books for the perspicacious amateur who still likes to keep a paper log (safe from a computer virus or hard disc crash). Contact the office for your copy now, only \$10 each.

Foundation Licence Course

Do you know someone who could be interested in becoming a radio amateur? Then please let them know about the next training and assessment weekend on 20 and 21 March. The study and operational practice guide book for the Foundation licence is also available via mail order for \$26.00. For inquiries or to enrol contact Barry Robinson VK3PV 0428 516 001 or foundation@amateurradio.com.au

699 entities lead to Hall of Fame

It was a proud moment for ALARA when YL Aola Johnson ZL1ALE and her OM Dave Johnson ZL1AMN were recently inducted into the NZ DX Hall of Fame.

Aola is the only lady in New Zealand on the ARRL DXCC Honour Roll with an impressive 349 entities. She is a member of WARO, CLARA, YLRL, ALARA, BYLARA, and YLISB. Aola's DXpeditions with OM Dave over decades has assisted a generation of amateur radio operators worldwide to obtain that elusive new country with a YL operator.

OM Dave has already inspired a whole generation of amateur radio operators with his list of 350 phone entities on the Honour Roll of the ARRL DXCC program and as the anchorman for ANZA Net for many years. He is also the NZ co-coordinator for ITHE, the International Tour Host Exchange organisation that assists amateurs with accommodation when travelling around the World.

People have been travelling extensively during the holidays and I expect to have some travelogues for the next issue.

Until then, 73.

ar



Aola ZL1ALE and Dave ZL1AMN

VK4clubnews

Bunya Mountains and District Amcom annual camp-out

Somerset Dam—the weekend of 17 and 18 April 2010

Invitation

Hi to all fellow amateurs and friends.

Each year the Bunya Mountains and District Amcom (formerly the "Dalby & District Amateur Radio Club") and the Sunshine Coast Amateur Radio Club have a weekend get together at Somerset Dam at the Kirkleigh camping grounds.

This year is set down for the weekend of 17 and 18 April 2010, with some proposing to arrive on the Friday evening and leave on Monday to make a good weekend of it.

Your club members and friends are cordially invited to join in the fun and fellowship and enjoy a time of playing around with various aspects of our great hobby amateur radio.

There is plenty of space for activities and we are having a combined BBQ for the evening meal on the Saturday night. We also have a car boot sale, so it is a great opportunity to move some of that pre loved gear, or perhaps pick up a bargain.

The camp site is booked, so we will need to pay at the gate. I will need

to know roughly how many will be attending, so if you could canvas your members and friends and see what response you have, and get back to us with possible numbers, that would be very helpful.

Contact:

Neil VK4NF on 07 4662 4950, email: holmzie@bigpond.com

Ricky VK4NRL on 0429 726 833, email: ricklammas@optusnet.com.au

Noel VK4NL on 0413 958 216, email: vk4nl@iprimus.com.au

ar

RADAR's new home

Welcome to March issue of AR. Well not too much happening in Queensland at the moment, well not that anyone wants to tell us about anyway. If you have anything going on in the shack, in your local club or even in your neighbourhood that is amateur radio related, tell somebody about it. Let us be proud of our hobby and let people know that we are part of the community. We do exist, we do get out and see the sunlight (do not forget to slip, slop and slap). So what is happening in your part of the radio spectrum?

A new HF net in VK4: 7.093 MHz starting at 0600 UTC.

A new net has started in VK4. Simply called the Afternoon Net it is proving to be a great place to meet up with amateurs from around the north of the state. It was kicked off by Ray VK4NET along with Len VK4CWM as a net where hams from FNQ, NQ and indeed anywhere else can get together for some friendly interaction. Simple guidelines ensure that the net is enjoyable for all who join in. Many and varied topics are discussed along with the latest happenings around individuals shacks. So, if you are free in the afternoons please check in and say G'Day. There is no set net-controller just who ever wants to do the job on the day can chair the group.

TREC

During December Tablelands Radio and Electronics Club (TREC) set up another public display promoting amateur radio in Atherton. Much interest was shown by members of the public. A raffle was also conducted at the same time and the club funds were boosted by quite a tidy sum. Many thanks to Chris VK4YCG, John VK4TL, Dave VK4DK and Stu VK4SDD for manning the display and selling tickets. Also a big thank you to Silo IGA who donated

\$50.00 towards the first prize (\$200.00 voucher for Silo IGA). The winner was Jan Wickham of Tandarra.

RADAR

Rockhampton And Districts Amateur Radio Club is making a new shack. In the past, most RADAR meetings have been held at the local SES building in Charles Street, North Rockhampton (and many thanks to the SES for allowing the club to use their premises for our meetings and will continue to do so). However, it is time to build a working shack for operational and display purposes. With the major idea and input from Jeff VK4NJB; his original concept mid 2009 was to attempt to promote amateur radio and it was in his opinion that this was best done aimed at the younger generation. Jeff's initial thought was schools, but this had many disadvantages and limited exposure. By chance, in thinking that being able to reach all ages of the community would be much better, the idea of the Heritage Village began.

One thing led to another and upon approaching Mr Tom Upton of the Rockhampton Regional Council his permission to engage in negotiations with the Heritage Village Committee was sought. A meeting was organised with Mr Bruce Lentell and Mr Paul Frisby who are Senior Executives of the Heritage Village. So on 22 September 2009 The RADAR Club appointed Jeff Brett VK4NJB as liaison officer for the project and he promptly commenced

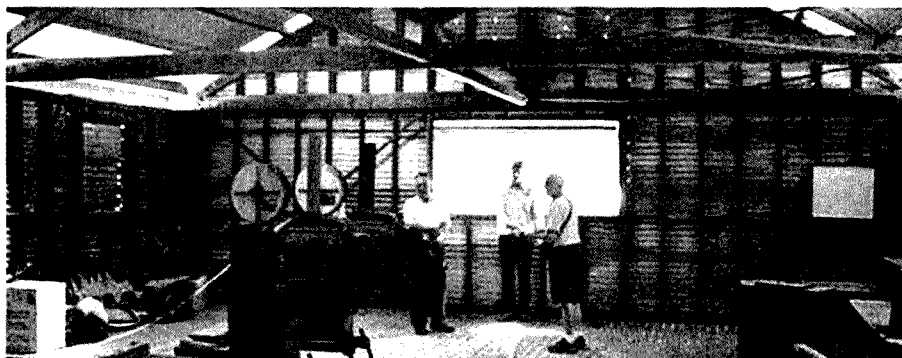
negotiations with Paul Frisby. After much negotiation with Mr Frisby, the club was provided with the last remaining undercover shed at the village. And being very fortunate to be able to get this area it will certainly give RADAR Club the opportunity to become established in the village. With a dusty shed that had been untouched for over ten years a working bee team was created and operation cleanup began. It was indicated to Mr Frisby that the RADAR Club would provide a fully operational working amateur radio station as well as assisting them in the restoration and display of some of their old radio memorabilia.

Jeff is seeking old radio memorabilia that may have a little history with it, or even just an old radio that could be used in the promotion of Amateur Radio, so all donations kindly accepted for display. jcbrett@bigpond.com

Updates will continue monthly throughout the year as "The Village Project" continues in not only promoting amateur radio at The Rockhampton Heritage Village but promoting amateur radio in Australia. Many thanks to Jeff Brett for standing up and taking on this project, and also many thanks to The Rockhampton Regional Council (including The Rockhampton Heritage Village) for allowing the RADAR Club to promote a hobby that we all enjoy.

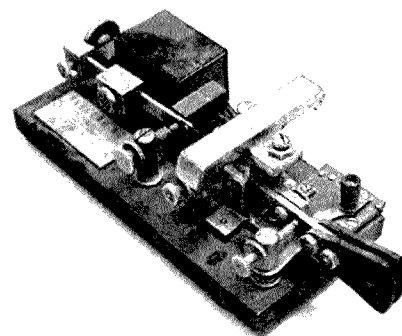
Until next time 73 Chris VK4VKR
From THE SUNSHINE STATE

ar



Some members checking out the new home of RADAR.

Morse keys and Northern Corridors



courtesy www.antiquibuyer.com

I would like to make a request to all amateurs in WA.

I have taken up the challenge to try and establish a Morse key display at the NCRG headquarters for all amateurs to enjoy. For many years the late Dave Couch took his superb display along to Hamfest and I fell in love with some of the old keys he had there. A fixed display at the central area of NPSARC is ideal.

This would join a vintage valve display and a vintage instrument display set up by Neil VK6NE. The keys will be behind glass to stop touching as, after all, they have been lovingly restored!

Do you have a key you would like to loan, not donate, to the display? If so it will be appreciated; it will always remain your property so, when you want it returned, it will be.

On the same subject, please, does anyone know what happened to Dave Couch's collection. If it is still around, or even parts of it are then it would be nice to include those keys in the display where they can be admired. We already have some very rare examples, one from 1921 that is a beauty, so please give it some thought. All keys, sounders and the like offered will be restored if needed before display - if you would like them to be.

Next month's column will see some input from the states various groups. The deadline is the first day of the month.

Thanks in advance for your assistance in WA amateur radio activities and in publicizing them for all to enjoy.

73 Keith VK6RK - vk6rk@wia.org.au **ar**

Michael VK6BHY and myself VK6HV have been experimenting with simple computer-less APRS. It is really nothing more than a simple computer-less system to plonk a symbol onto the map on APRS.fi for the Tiny Tracker™ GPS position encoders located in our vehicles. And being there is only two of us in the North West experimenting with APRS, this is all we are after at the moment.

I am sure we will be onto bigger and better things in the future. 73 until next time, Steve VK6HV.

Thanks Steve, I am up that way for work myself quite regularly, but no one is ever around during the day!

The Hills ARG will have had their annual sale by the time you get this month's magazine and I hope they had a truly successful day, a report to follow next month no doubt.

Northern Corridor open day

On the events calendar for this month is the Northern Corridor Open Day at Whiteman Park on Sunday 14 March. All are welcome and it will be a chance for the club to formally introduce the Neil Penfold State Amateur Radio Centre (NPSARC) to the general amateur population.

It will take the form of a car-boot sale/ sausage sizzle and a guided tour of the facilities and will start at 9 am. Get there early if you want a spot to sell your surplus gear. The original idea behind the Open Day was to celebrate 100 years of the WIA as it is the closest day to the actual anniversary, but the special call sign is not available for another month or so, and they will not be able to take advantage of its use on the special day.

The club station will be in operation (band conditions permitting) and all the radio shacks will be available for inspection and maybe even some DXing.

March is upon us, my Tasmanian holiday is nothing but a memory, the contest season is on its way and there are plenty of things to think about on the radio front. The input from the locals is almost non-existent this month, the only news is from the last frontier, the north-west!

Over to Steve VK6HV:

There have been a few changes here in the North West since last checking in. The number of amateurs has increased by one with Shane VK6FWCR coming up on air from Karratha. Man, oh man, is he keen to upgrade and get that new 40 metre beam up on his 15 metre tower.

We are now back to three active hams in a 500 mile radius! The shift of our local repeater VK6RWR from the 1970s radio hut to the local mining company's communications building is now complete. This small non air conditioned 2 m x 2 m hut appears to have been built pre construction of Cape Lambert and has housed our trusty Phillips FM828 for at least the last 12 years that I have been in the area.

The last 40 years of summer heat, cyclones and ocean air have taken its toll on the hut and with its pending removal, the local mining company dangled a carrot that we could not refuse. For relocating, we have acquired phased dipoles at about 20 metres, a new run of 25 mm (1 inch) hard line coax up the tower and a used but well taken care of UniLab KL150b VHF radio.

Unfortunately the KL did not have either a Morse IDer or remote control we required so this raised the opportunity to connect my standard feature PICAXE-18X repeater controller to the KL. The PICAXE controller was a project I had been working on in 2008/9. The repeater sounds great and the controller is working well. If you are in the North West, give us a call on 146.700(-).

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au

Regional Web Site: reast.asn.au

Meet the Voice BBQ Meet the new ATV desk

Meet the need through WICEN

March 21 is the date set for the 2010 "Meet the Voice" BBQ which again will be held at the beautiful township of Ross in the Tasmanian Midlands. Ross is famous for its convict built bridge over the Macquarie River.

This event is run by the Sewing Circle Net and starts at 10 am and BBQs are supplied, so bring along lunch and enjoy it in great company and "Meet those Voices" you have only heard on the air. Registration is \$5.00 per member or member family. Ray VK7VKV has again offered to organise a car boot sale on the day for those with pre-loved amateur radio bits and pieces. See you at Ross.



The view of Ross Bridge from the "Meet the Voice" QTH

VK7 DX News

Congratulations to Rex VK7MO and the many amateurs who made contacts and records with the VK9NA VHF and above DXpedition team. Rex set an SSB record from Hobart to Norfolk Island on 2 metres over a path distance of 2403 km. One of the key aspects of these contacts was that the group used the weak signal application JT65a in the background to monitor conditions, and as they improved, then an SSB contact was attempted.

VK7 Repeater News

Allen VK7AN and Joe VK7JG have been doing their mountain goat impressions again and servicing the Ben Lomond 70 cm repeater VK7RBH on 438.050

MHz which sits at 1570 m. It now has a new antenna and is working well. Joe and David VK7NTD also attended the damaged tower at the Snow Hill repeater site reported last month to find that the SES has totally dismantled the tower. This unfortunately means VK7REC will be off air indefinitely until other options are considered.

Northern Tasmania Amateur Radio Club

Tony VK7YBG has set up a yahoo mailing group for those who might be interested in getting involved in WICEN in Northern Tasmania. If you are interested then head to Yahoo groups and search for "wicennorth" (<http://groups.yahoo.com/group/wicennorth/>). Tony is looking forward to hearing from you.

Cradle Coast Amateur Radio Club (CCARC)

CCARC held a fund raiser for the club on Valentine's Day in conjunction with the Penguin History Group's Annual Bazaar at the Old Penguin Railway Station and this was a great success. A reminder that the Radio Amateur Old Timers Club news broadcast can be heard in North and North-Western Tasmania on the Mount Duncan repeater VK7RMD, 146.625 MHz on the first Monday night of the month at 8.30 pm.

WICEN Tasmania (South)

During February, WICEN Tasmania (South) provided radio operators for the Incident Management Team located at Tasmanian Fire Service - Cambridge for the Derwent Valley fires. There were two shifts a day covering 0800 to 2200 each day. WICEN have been kept busy these last few months with the Targa Wrest Point tarmac rally and the Hobart Run the Bridge fun run held on Valentine's Day.

North West Tasmanian Amateur TeleVision Group

Access to the VK7AX Packet Radio Gateway and Bulletin Board Systems has changed with RF access to the TNOS Packet Gateway - VK7AX-8 in the Ulverstone area now on 147.600 MHz. The BBS has also been transferred to a new machine and can be accessed using the Telnet protocol. Contact Tony VK7AX if you require access on email: atvgroup@vk7ax.id.au

Radio and Electronics Association of Southern Tasmania

The ATV nights have started again for 2010 in the new larger ATV studio. This has enabled the professional installation of equipment into 19 inch racks, installation of a chroma-key screen, new studio desk and cyclorama (thanks to Paul VK7FPAH) and the reorganisation into a more effective operating and studio space.

We are currently transmitting each Wednesday night (except the first of the month) from 7:30 pm on 444.25 MHz analogue ATV and will soon be moving to digital ATV (DVB-T). Stay tuned for more on this exciting venture. **ar**



Control desk in the new ATV studio.

DXers' MOST WANTED

As usual we start the year with the results of the 2009 DX Magazine's 'Most Wanted Countries' survey that has now been published.

The survey opened in September and closed October 15 2009. Fortunately for DXers, (but not for the survey), three of the "top 25 countries" had DXpeditions taking place during the survey period. So the results may not be an accurate reflection of the current position.

The FT5GA Glorioso Island operation took place between September 15 and October 7. Next was 3D20CR on Conway Reef taking place between September 30 and October 8. And finally, K4M, Midway Island, from October 12 to 19.

Some 'Wanted Countries' undoubtedly will be activated this year but there are some in the top 25 that I think we will have to wait a lot longer for amateur activity!

2009

The biggest falls for 2009 were: KP5 - Desecheo (down 94+ places), VK9W - Willis (88), T2 - Tuvalu (32), VK9M - Mellish (28), TL - Central African Republic (23), FJ - St. Barthelemy (20), H40 - Temotu Province (19) and the United Nations (17).

These falls were undoubtedly due to the operations of K5D, VK9DWX, T27A, T27OU, T2G, VK9GMW, TLoA, multiple DXpeditions to St. Barts, H40MS, H40FN, H40FP and two major operations from 4U1UN.

So what have we got to look forward to this month?

First there is still no news on the proposed trip to T19, Cocos Islands, that was scheduled for February!

Harry GoJMU has gone to back to Malawi for about three months. Look for him to be QRV as 7Q7HB. His main

Most Wanted Countries 2009

Rank	Prefix	Country
1	P5	North Korea
2	KP1	Navassa Island
3	ZS8	Prince Edward & Marion
4	3Y/B	Bouvet Island
5	7O	Yemen
6	VK0/H	Heard Island
7	FT5W	Crozet Island
8	FT5G	Glorioso Island
9	FT5Z	Amsterdam & St. Paul
10	VP8/S	South Sandwich Islands
11	BS7H	Scarborough Reef
12	VP8/O	South Orkney Islands
13	SV/A	Mount Athos
14	HK0/M	Malpelo Island
15	VK0/M	Macquarie Island
16	FR/T	Tromelin Island
17	ZL9	Auckland & Campbell Is.
18	KH5K	Kingman Reef
19	PY0/S	St. Peter & Paul Rocks
20	KH5	Palmyra & Jarvis
21	FT5E/J	Europa - Juan de Nova
22	KH4	Midway Island
23	KH9	Wake Island
24	3D2/C	Conway Reef
25	BQ9P	Pratas Island

preference is PSK and CW. QSL direct only via GoIAS.

Cezar VE3LYC will attempt to activate East Pen Island (NA-231), a new one, for three days between 26 and 31 March. Intended callsign will be VY0V. Cezar reminds everyone that an earlier try he undertook with G3OCA in July 2007 was unsuccessful. The outcome of this new attempt will be determined

by local conditions, weather and safety factors.

Fancy a trip to Bahrain next year?

The RSGB website, <http://www.rsgb.org/news/newsitem.php?id=3>, states, this is "a DXpedition with a difference." John Edwards MoJAX is looking for 22 with full licenses to go to Bahrain in February, 2011. The

two-week operation will be from the Intercontinental Hotel with eight stations on the air fulltime, 24 hours a day. The operators will be in three shifts. John is making all the arrangements, travel and accommodation. A preliminary trip will be in February, 2010 to make arrangements for where antennas will go, etc. You can contact MoJAX through England's RadCom offices with your "qualifications," if interested!

The upcoming 3W6C Vietnam IOTA DXpedition will be focusing on the low bands. They are putting up "high-performance antennas" including several four-squares.

They expect these plus an excellent site will allow lots of 80 and 160 contacts, especially with North America and Europe. Look for 3W6C 10 to 18 April, with four stations on the air 24 hours a day. www.3w6c.qrv.ch

Look for Niels OZ8KR from The Gambia where he will be active with the call C56KR from 5 to 24 March. Activity will be on 3.5 through 28 MHz on SSB. He will be running 100 watts and using wire antennas "close to the Atlantic Ocean". This will be a "holiday style operation". QSL via OZ8KR.

Jersey, GJ, will be activated by a Belgian Group, ON4PQ, ON5HC, ON5MF, ON7PQ and ON7USB who will operate CW, SSB and RTTY on 80-10 metres as MJ/OP9X/p from Les Minquiers (EU-099), 31 March to 7 April. QSL via ON4PQ, direct or bureau. They will have a web site active for the operation at <http://www.eu099.be>

Y19PSE. 3 to 11 April will see activity from Erbil, Iraq by quite a large group including N6PSE, AH6HY, JH4RHF, K3VN, N2WB, N6NU, N6OX, NI6T, W8HW and Y11UNH. Current plans are to have four K3 transceivers and one Flex 3000 and four Acom 1010 amplifiers. For antennas they will be using 2 two element Steppir Yagis, hex beam, Steppir vertical (7-50 MHz) and an inverted L for 1.8 through 7 MHz. Listen for Y19PSE on the following suggested frequencies:

CW - 1824, 3504, 7004, 10104, 14024, 18074, 21024, 24894 and 28024

SSB - 1845, 3780, 7065/7180, 14195, 18145, 21295, 24945 and 28495

RTTY - 7035, 10140, 14080, 18100, 21080, 24920 and 28080

The pilot station for Y19PSE will be Chuck AA6G (aa6g@wildblue.net) who will be handling the West Coast, Don N1DG (don@aurumtel.com) for the East Coast, and Toshi JA1ELY (ja1ely@bb.mbn.or.jp) for JA. The team plans to post their logs during the DXpedition. QSL chores for Y19PSE will be handled by N6NKT.

There certainly has been a lot of activity recently from CEoZ and yet another operation, this time by CEoZ/LA9SN on Robinson Crusoe Island, Juan Fernandez. This is scheduled for 10 to 23 March. Operator Al plans to stay mostly on CW, 80-10 m. www.la9sn.com.

ZS8MI (Marion Island, 1989) and ZS9Z (Walvis Bay, 1990) cards are coming out. ZS6EZ is enclosing notes explaining the delay. The return address on the ZS8MI envelope is: Chris R. Burger (ZS6EZ), P.O. Box 4485, 0001 Pretoria, Republic of South Africa.

Vic EA5YN has announced that he and Elmo EA5BYP and Javier EA5KM are heading to Annobon Island (AF-039) in April 2010. 3Co ranks number 35 on The DX Magazine's 2009 Most Wanted Survey. The last DXpedition there was 3CoM in October/November 2006. Plans are for activity on 1.8 through

28 MHz on CW, SSB and RTTY, with concentration on CW and the low bands. More details are expected soon as well as a Website. This is certainly high on a lot of wanted lists in Asia/Pacific.

Last minute news:

Mirek VK6DXI has just received a new callsign in Zimbabwe - Z21DXI.

I quote from his e-mail "I am travelling there on business and my time on the radio will be limited. I will do my best to make as many QSO as possible in my spare time. Overall QSL manager is SP5UAF. But if I will get any cards from VKs via buro, of course I will reply to them same way. Looking forward making as many QSOs as possible....

Expected activity time 5-13.02 2010
73

Mirek VK6DXI now also Z21DXI"

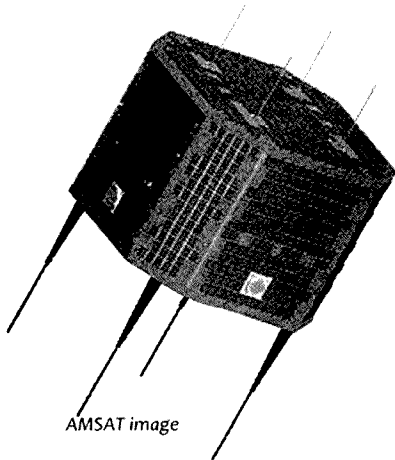
Good luck in the pile-ups until next month.

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/trial.htm



Martin G3ZAY (left) and G7VJR Michael operating during their recent VK8DMN trip.

HO-68 China's new satellite of Hope



AMSAT image

Description

XW-1 comes from CAMSAT, a non-profit organisation dedicated to amateur satellites in China. XW-1 is in the microsatellite class with a mass of 50 kg. Its shape is roughly cylindrical with a diameter of 680 mm and a length of 432 mm. The solar cells have a high efficiency of 26% and will supply up to 21 Watts. It has lithium-ion batteries with a capacity of 15 Ah.

The 2 m receiving antennas consist of four monopoles configured for left-hand circular polarisation. The 70 cm transmitting antennas are also four monopoles but are configured for right-hand circular polarisation. There are two experimental payloads. One is a physics experiment using multicoloured granules. The other is a CMOS camera for taking pictures of Earth. The launch was also the first time this version of the Long March rocket had been used with two satellites.

XW-1 has been put into a circular, sun-synchronous orbit with an altitude of 1200 km. This makes it the highest amateur FM transponder to date. In comparison this is the same as FO-29 at apogee, but 250 km lower than AO-7. Maximum pass time is 20 minutes and the footprint diameter is 7275 km.

On the amateur radio side there is a mode V/U linear transponder, a mode V/U FM repeater and a mode V/U PacSat BBS. Power outputs are 1 Watt. It also has a 200 mW, 15 wpm CW telemetry beacon that operates continuously on 435.790 MHz.

Commissioning

Since launch to time of writing, XW-1's transponders have been controlled by the groundstation. They are set with timers with activation periods ranging from 13 to 45 minutes. It is still early in the life of XW-1 and the controllers are determining its electrical characteristics so they can work out

Launched in December last year, China's first amateur satellite has impressed many with its range and ability. It is named XW-1 where XW translates as 'hope'. XW-1 was granted an OSCAR number and is designated HO-68 (Hope Oscar).



AMSAT-VK

AMSAT Co-ordinator

Paul Paradigm VK2TXT

email: coordinator@amsat-vk.org

Group Moderator

Judy Williams VK2TJU

email: secretary@amsat-vk.org

Website:

www.amsat-vk.org

Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK 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

In South Australia

VK5TRM, Loxton on 147.125 MHz

VK5RSC, Mt Terrible on 439.825 MHz

IRLP node 6278, Echolink node 399996

In Tasmania

VK7AX, Ulverstone on 147.425 MHz

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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.

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 give hams national communications and handheld access into New Zealand at various times both day and night.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

how to get the best out of the satellite. The schedule is regularly published on the AMSAT-BB mailing list and is available on the CAMSAT website.

But if you do not have a schedule to hand, the CW telemetry beacon will tell you what mode it is in. A CW frame consists of "BJ1SA XW XW '13 channels of telemetry' XW XW". The 13 channels of telemetry are 3 digits long using a short form of numbering (where T=0, A=1, U=2, V=3, 4=4, E=5, 6=6, B=7, D=8 and N=9. LUSAT LO19 used the same coding). It is the second channel that has the operating mode information:

TTT = beacon only

TTA = beacon and linear transponder

TAT = beacon and FM repeater and PacSat BBS

ATT = groundstation uploading software

The CAMSAT website has telemetry decoder software and a telemetry specification document.

Linear transponder.

The 50 kHz wide linear transponder is an inverting type (LSB on uplink for USB downlink) with a 1 Watt output. This is similar to FO-29 but XW-1 has a 3 dB advantage by using only half the bandwidth. Uplink is from 145.925 to 145.975 MHz and downlink is 435.765 to 435.715 MHz. Centre of the band is 145.950 / 435.740 MHz.

FM and digital transponder

The FM voice and digital transponder use the same uplink and downlink frequencies. The uplink is on 145.825 MHz and the downlink is 435.675 MHz.

This has created some problems with clashes between voice and digital signals. It has also been found that multiple 67 Hz CTCSS tones will give phasing problems and not be properly decoded at the satellite. Too many trying at the same time and everyone misses out. During voice QSOs it is normal to hear packet bursts between overs.

The digital side uses 1k2 AFSK, same as the ISS and most terrestrial packet. Any CTCSS tone must be turned off. Files uploaded to the BBS are automatically deleted after 5 days. The CAMSAT website has a document on using the Pacsat BBS.

References—Finding Hope

CAMSAT's website is at <http://www.camsat.cn>

There is a current operations schedule, brief description of XW-1 and the above mentioned files that can be downloaded.

Mike Rupprecht DK3WN also has a telemetry decoder that can be found at:

http://www.dk3wn.info/sat/afu/sat_xw1.shtml

Correction to last month's article

There was some confusion with the designations of the latest Russian satellites. An email from Alex RW3DZ to Mike DK3WN and cc'd to the AMSAT-BB mailing list has set this straight.

RS-28 is UGATUSAT and has failed due to an electronic malfunction. RS-38 is Tatyana-2 and is operational. Alex also wrote that RS-39 (Chibis) is under construction and may be launched next year, and RS-40 (Yubileiny-2) will orbit this year. Hopefully one of these will have a transponder on board and not just a CW beacon.

So to correct last month's column it should have been:

RS-38 TATIANA-2 (35868)

Launched: 17/9/2009

Status: Operational. RS-38 sends CW telemetry in a similar format to other RS-series satellites.

Mode: -/U CW telemetry

Beacon: 435.490 MHz

Final Pass

I have not had much of a chance to use XW-1 so far. The beginning of the year is always busy and then to be horizontally polarised with the flu for 3 weeks did not help. So far I have heard the beacon several times and some QSOs on the linear transponder and FM transponders. Signals have very good quality and strength. Congratulations to CAMSAT for an excellent satellite.

ar



EZARC is pleased to announce GippsTech2010. This year the main program will be held on Saturday July 10 and Sunday July 11.

This event has a well-recognised reputation as the premier technical conference in VK, with its focus primarily on 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.

Anyone who presented at GippsTech2009 and has not yet forwarded their material for the *Proceedings* volume will receive a reminder from VK3PF very soon!

Further details can be found at the Eastern Zone Amateur Radio Club web site at <http://www.vk3bez.org/>



Call for papers

Amateurs (and others with material to contribute) are invited to submit titles and outlines for topics to be presented at GippsTech2010.

Presentation slots can be brief (5 – 10 minutes) through to one hour. Anything longer – you will need to justify!!

Potential presenters are welcome to contact the Chair of the Organising Committee, Peter VK3PF (vk3pf@wia.org.au), direct for further information or to suggest a topic.

ar

Contests

Craig Edwards VK8PDX

vk8pdx@yahoo.com.au

PO Box 285, Alice Springs NT 0870

CONTEST CALENDAR

March	6-7	ARRL International DX Contest	SSB
	13-14	RSGB Commonwealth Contest	CW
	13-14	Spanish EA PSK31 Contest	PSK31
	20-21	John Moyle Memorial Field Day	CW/Phone
	20-21	Russian DX Contest	CW/SSB
	20-22	BARTG Spring RTTY Contest	RTTY
	20-21 (tbc)	European EME Contest (event 1)	CW/SSB
	27-28	CQ World Wide WPX Contest	SSB
	27-28 (tbc)	European EME Contest (event 2)	CW/SSB
April	3-4	Polish SP DX Contest	CW/SSB
	3-4	Spanish EA RTTY Contest	RTTY
	10-11	Japan International DX Contest	CW
	10	European Sprint	CW
	11	HF International Vintage	CW/SSB
	17	TARA Skirmish	PSK31
	17	European Sprint	SSB
	17	Holyland DX Contest	All
	24	Harry Angel Sprint	CW/SSB
	24-25	Polish SP DX Contest	RTTY

John Moyle Memorial National Field Day Contest

Full details were in last month's column for this event, but here is a brief reminder. 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. The contest takes place on the 3rd full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 20-21 March 2010. 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.

CQ World-Wide WPX SSB Contest

The CQ World Wide WPX SSB Contest is one of the biggest events of the year

and the bands explode into action. If the improved solar conditions from the 2009 CQWW DX SSB contest are any indication, then this year's WPX event should be spectacular.

Now that I have put up a 15 m monoband Yagi, I simply cannot wait for this weekend to arrive. CQWW WPX SSB is on 27-28 March and goes for 48 hours from 0000 UTC Saturday to 2359 UTC Sunday.

Visit www.cqwpw.com/ to view the full rules.

Harry Angel Sprint

Ian Godsil VK3JS Contest Manager announces this event for 24 April 2010. This year marks the 12th 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. The object is to make as many contacts as possible on band the 80 metre band.

Modes:	CW and SSB
Category:	Single Operator
Sections:	CW, Phone, Mixed (please choose ONE ONLY).
Frequencies:	CW: 3500 - 3535 kHz, Phone: 3550-3590 kHz; 3650-3665 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, mode, RS(T), serial numbers sent and received for each QSO. Sending Logs: Email is the preferred method to vk3js@zoho.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, 7th May, 2010. 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: Please submit your logs as soon as possible after the Contest and do not forget to include your postal address (you never know - you may be a section winner!).

The VKCL logging program covers this contest. This way everything can be kept electronic. Please make this a special effort to commemorate this 12th Anniversary within the WIA 100 Years celebrations.

HF International Vintage Contest

This event takes place on April 11 from 0800-1200 and then 1400-1800 UTC in both SSB and CW. For more information please visit www.contestvintage.beepworld.it/ or contact the contest manager Peter IV3EHH at iv3ehh@iv3ehh.itor

EA RTTY and PSK31 Contests

The PSK31 contest is on 1600 UTC 13 March to 1600 UTC 14 March. Then the RTTY contest is held from 1600 UTC 3 April to 1600 UTC 4 April on the 10, 15, 20, 40 and 80 m bands in the usual band segments.

Spanish stations will provide their province abbreviation but all other countries simply give an incremental serial number starting at 001. The good thing about these events are that each VK call area will count as a multiplier so if propagation allows, the Australian stations should be very popular.

Full details are available at www.ure.es/contest.html.

SP DX Contest

On 3 April at 1500 UTC to 4 April at 1500 UTC the Polish DX contest is held on 160, 80, 40, 20, 15 and 10 m on SSB and CW. Polish stations will provide RS(T) plus a letter abbreviation and all others provide an incremental serial number from 001.

All details are available at www.spdxcontest.info/en/

Japan International DX Contest

The JIDX CW contest is held from 0700 UTC 10 April to 1300 UTC 11 April on all the non-WARC bands.

In this event you can only work Japanese (and JD1) stations and the exchange you give is an RST and your CQ zone number, in return you'll receive an RST and two digit number from 01-50 indicating the stations prefecture number.

In last year's SSB event, I did a SOSB effort on 20 m but found some difficulties in getting the Japanese stations' attention because in the mornings most of them were beaming to USA and then in the afternoon the beams are swung over to Europe. Nevertheless it is a good event to go in, especially if you chase JCC and JCG numbers. Full details are at <http://jidx.org/>

European Sprint

In these Sprint events, Australian stations can only work Europeans.

The CW Sprint is at 1600 - 1959 UTC 10 April and the SSB Sprint is at 1600 - 1959 UTC 17 April.

The event only occurs on 20, 40 and 80 m with the pilot frequencies being 14250, 7050 and 3730 kHz for SSB and 14040, 7025 and 3550 kHz for CW.

The exchange is your callsign, the other station's callsign, your serial number starting at 001 (no RST required) and your name.

There is a QSY rule where if any station initiates a call (by sending CQ, QRZ?, etc.), the caller is permitted to work ONLY one station on the same frequency and thereafter move AT LEAST 2 (two) kHz before calling another station or before soliciting other calls again (CQ, QRZ?, etc.).

For full details go to www.eusprint.com/

VHF/UHF – An Expanding World

David Smith VK3HZ

vk3hz@wia.org.au

Weak Signal

It is a short month this month with the AR deadlines being brought back a bit. Nevertheless, there has been a bit happening of interest.

On January 23, a large Sporadic E opening produced some good 2 m contacts. At 0054 Z, Ron VK4DD worked Brian VK5BC over 1567 km. Then followed a series of contacts involving VK4s DD, CDI, JMC, OX, ARN, ACE, WR, EKA and EME with VK5s BC, ZK, NY and DL.

At 0137 Z, Ray VK4LK further north worked VK3AMZ (1730 km) and VK3ZRT. By 0150 Z, the skip had shortened so that VK5BC worked VK2XW (1345 km). After a short lull, the E's moved further south allowing Rex VK7MO to work VK4JMC and VK4DD. By 0300 Z, the band had closed.

On the evening of January 28, tropo conditions were excellent between VK5 and VK6. At 0715 Z, Phil VK5AKK worked Wally VK6WG on 2 m (5x3) and 70 cm (5x1).

By 0930 Z, Brian VK5BC reported that both the VK6REP and VK6RST 2 m beacons were 5x9. He also worked Wally on 2 m (5x9) and 70 cm (5x5). VK5ZK and VK5ACY also had good contacts with Wally.

By the following morning, conditions had shifted, strongly favouring an inland path to Leigh VK2KRR. At 1930 Z, he reported hearing many VK5 beacons and repeaters up to S9+. At 2000 Z, the VK6RST 2 m beacon was heard at 5x1 – a distance of 2675 km.

Soon after, VK6REP (2310 km) was heard at 5x1. He then worked Wally VK6KZ via the VK6RMS repeater (2817 km distance to the repeater). He also worked simplex to Max VK6FN in Manjimup (2821 km). The signal was a stable S5 for nearly an hour, and Max

was only running a 1/4 wave vertical with 60 W. Signals were building and at 2115 Z, Leigh worked VK5s BC, AKK, ZK and GF on 23 cm - all at 5x9+ levels.

At 2159 Z, Wally VK6WG in Albany was worked on 2 m at 5x5 over 2648 km. At 2237 Z, they made contact on 70 cm (5x1), setting a new VK2 record. They tried on 23 cm, but were unable to make a contact.

2 m Band Sporadic-E Summary

The season for sporadic E on 2 m is effectively over now. Based on reports logged on the VK Logger since the first Sporadic E contacts for the season, Rex VK7MO has prepared an interesting summary graph showing distances worked via Sporadic E over the season. See Fig. 1.

After the first burst on November 27, there was a lull of three weeks until the next good opening on December 17. The band opened with a vengeance on December 29 continuing each day (except the 4) until January 6.

The longest-distance contact (3182 km) from ZL1IU to VK5AKK occurred on January 5 – probably tropo-assisted sporadic E contact given the strong

signals from ZL1 into VK3 at the time. Finally, as reported above, there was a good opening on January 23 reaching to southern Tasmania.

East Gippsland Report

Norm VK3DUT is located between Bairnsdale and Lakes Entrance in East Gippsland. He is a regular on the VHF/UHF bands and sent in a short summary of the highlights for his summer period:

A few brief notes of my operation over last couple of months, between the 'salt mine' commitments of running a small, but very busy, blueberry farm. I do try to get on most mornings for a few minutes for regular A/E contacts to VK1/2 etc. Needless to say, I have also missed a few openings, especially the sporadic-E ones.

The QTH is about 50 m ASL, surrounded with light to moderate bush and rising ground to the west, NW and the east - nothing too drastic but still a very noticeable attenuator, especially at the higher frequencies.

I run 4x7-el light-weight quads on 6 m, 100 W to 4x13-el Yagis on 2 m, 10 W to 4x25 on 70 cm and a single 42-el on 23cm

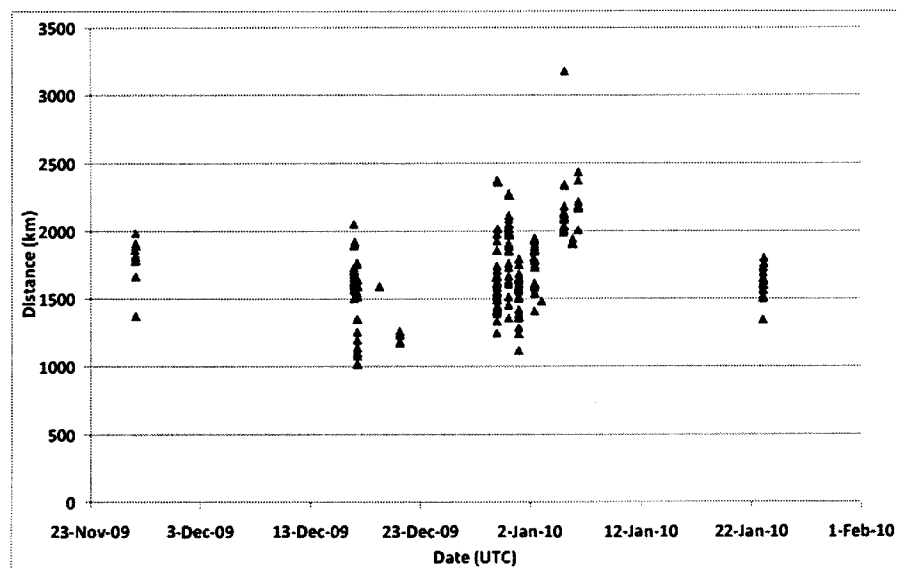


Fig 1. 2 m Sporadic E Contacts

with 40 W. All antennas are homebrew (see photo 1).

Some Log notes:

- 15/11/09 - heard VK5RSE at 5x5 which is fairly good for this loc and ended up working Russell VK3ZQB on 2 m S9++ then on 1296 at 5x2;
- 17/11/09 - worked Bill VK5ACY on 2 m on a long M/S burn S9+ both ways;
- 6/12/09 - heard DL8EBW digi sigs off the moon - first time;
- 10/12/09 - heard JE6EXN S1-2 off the

- moon (probably good enough for ssb?);
- 15/12/09 - VK7AC worked 2 m / 70 cm / 23 cm, VK7MO 2 m / 23 cm,
- 16/12/09 - VK7AC peaked S9+ on 23 cm, also VK7HDX 2 m and 70 and VK7JG on 6 / 2 / 70 - a very strong duct!;
- 17/12/09 - VK4BLK 2 m S4-5;
- 20/12/09 - VK5AKK 5x3, heard 5NY 5x4;
- 30/12/09 - Troppo & E's, 2 m -VK5DK, VK1BG, VK2ZRE, VK2KOL, VK7MO, VK4s LMB, JOO, FNQ, BLK, BKP, FP, VK7XX, VK7JG.

- 30/12/09 - ZL1IU up to S9 on 2 m and S1-2 on 70 cm for my first ZL1 on 70 with only 10 w - 2337.5 km, nil on 23 so far;
- 31/12/09 - VK4FNQ, BKP, FP, EK, MDX, ZD;
- 5/1/10 - 2 m ZL1IU, ZL1RS E's this time;
- 20/1/10 - 2 m VK5AKK, VK5NY;
- 21/1/10 - VK5NY 54-5, VK5VF/b 529

Sadly I missed out on VK9NA (not sure if they worked any VK3), so I still need a VK9 on 2 m. So far, I have worked / confirmed VK1-8 and VK0 (Macquarie) and ZL1 - 4. I am sure VK9 Norfolk, Lord Howe and Willis are within our reach at least on 2 m given the right opportunities as well as FK8 etc. but we will not hold our breath, Hi.

2.4 GHz Band and WiFi Interference

Rod VK4KZR, in the north-western suburbs of Brisbane, has been tapping the ether again with his Spectrum Analyser. He attached it to his 2.4 GHz dish, 12 m up his tower, pointed down the street and then let the Analyser collect data over a 5-minute period in Peak-Hold mode. See Photo 2.

The arrow indicates the standard weak signal operating frequency for Australia – 2403.1 MHz.

Rod's results show that, even though there appears to be a quiet spot around our current focus frequency of 2403.1 MHz, there is lots of noise not far away. In practice, the band is very noisy to the point of being almost unusable for weak signals in a suburban area. So why do we persist with this frequency?

Our frequency allocation on 13 cm extends from 2400 to 2450 MHz. We also have a small allocation from 2300 to 2302 MHz.

We could move operations to 2400.1 MHz, just beyond the bottom of the WiFi allocation. This may not solve all interference issues as there are devices like AV Senders that operate in this area using wideband FM. As well, this area is reserved in the Band plan for satellite operation, although it seems that no active or planned satellites would be operating below about 2400.25 MHz.

The other option, as has been raised before, is to move all operations to the 2300 to 2302 MHz segment. The EME

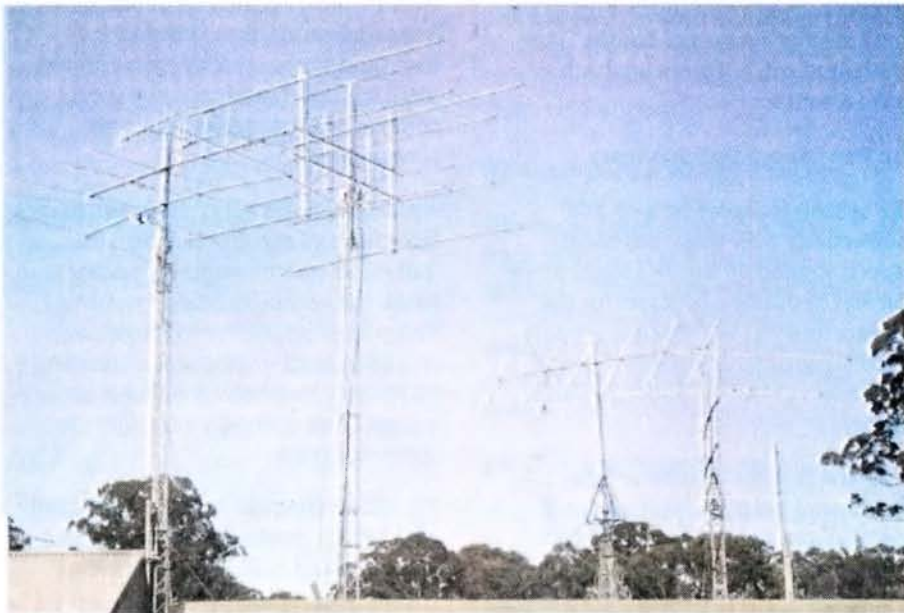


Photo 1. The VK3DUT Antenna Farm

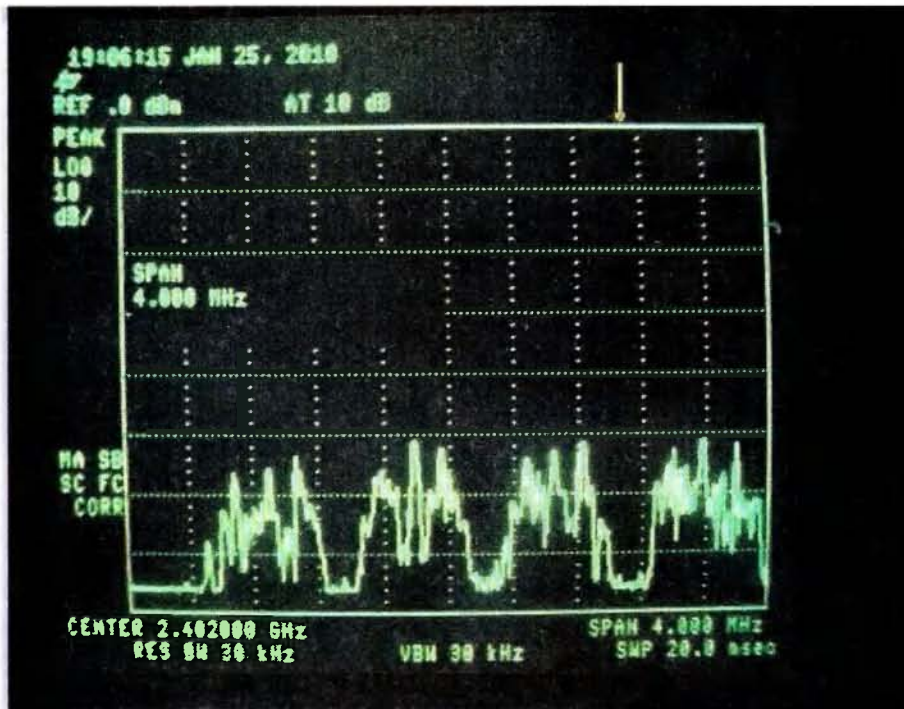


Photo 2: Spectrum – 2400 to 2404 MHz

community is already operating in this area for the very reasons discussed here. The problem with this move is that, for most current operators, such a frequency change would involve more than just a crystal change. Many modern 2400 MHz transverters, such as the Minikits/VK5EME design, use filters etched on the PCB. These filters are too narrow to allow operation on 2300 MHz. So, for many, the frequency change would involve buying/building a new transverter (or using a modified filter design for the lower QRG – Ed).

The other downside to moving to 2300 MHz is that New Zealand - the only country who we could potentially communicate with (terrestrially) on 13 cm – does not have access to this frequency block. The ZLs are currently pushing for their weak signal operations to move down from 2424 MHz to somewhere between 2396 and 2404 MHz.

The WiFi interference situation is only going to get worse. Perhaps we need to bite the bullet and make the change to either 2400 MHz or 2300 MHz before too many more people become active on 13 cm.

VK3ER Field Day setup

Peter VK3QI has been busily improving the microwave capabilities of the Eastern and Mountain District Radio Club (EMDRC) VK3ER Field Day station. VK3ER is a very professionally run station that always scores well in the 24-hour multi-op section of the VHF/UHF Field Days. However, they were missing out on points by only being operational on bands up to 23 cm.

Additions to the VK3ER setup now include:

- 1296 MHz – 400 W to a 1.2 m offset-fed dish (dual 23/13 cm feed)
- 2403 MHz – 180 W to a 1.2 m offset-fed dish (dual 23/13 cm feed)
- 3400 MHz – 2 W to a 0.8 m offset-fed dish
- 5760 MHz – 2 W to a 0.8 m offset-fed dish
- 10,368 MHz - 3 W to a 0.8 m offset-fed dish

The 3, 5 and 10 GHz Transverters are mounted at the feed points of the dishes with the common 145 MHz IF, 10 MHz GPS-locked reference signal and control signals fed up to them.

The antenna mast is pictured – less the 10 GHz dish which is still to be attached. (Photo 3)

Well done Peter, and we look forward to some big Field Day results from VK3ER.

VK1DA Summer VHF/UHF Field Day Activities

Andrew VK1DA sent in this report of his efforts for the recent field day:

Dale VK1DSH and I operated from Mt Ginini for the Summer VHF/UHF Field Day contest. The weather was initially fine but a thunderstorm developed by late afternoon. By about 7 pm this had cleared and the night was eventually clear and relatively mild and even the wind was only slight overnight.

The station was operated on the lower four bands (6 m to 23 cm) and on 3 cm. The 13 cm band was to have been used but a vital component, the feed for the grid dish, had been left at home. By late Saturday

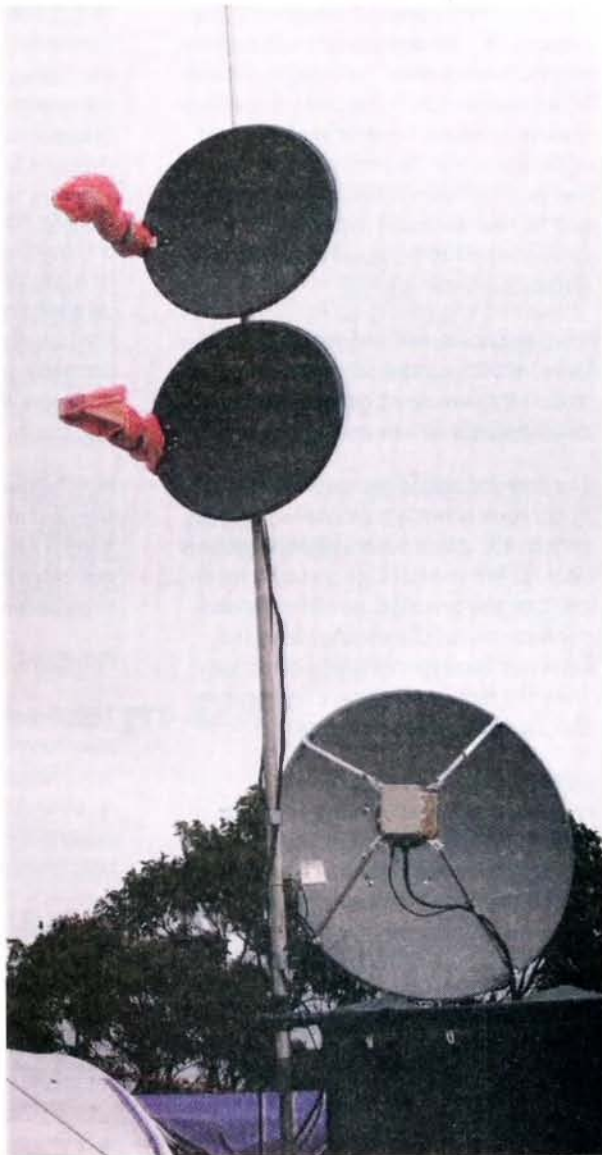


Photo 3. VK3ER New microwave field day mast.



Photo 4: VK1DA's makeshift 13 cm feed.

a replacement feed had been built (see picture) in the hope that it would allow some contacts to be made with the only other station operating on 13 cm, which was Andy VK2AES operating from east of Bungendore. The makeshift feed was put into use on Sunday morning and turned out to be sufficient for a good contact to be made over a 70 km distance. (Photo 4.)

After perseverance and patience from Dave VK2JDS several contacts were made with him on 23 cm after initial easy contacts on 2 m and 70 cm.

The first successful contact with Dave on 23 cm took about 45 minutes of trying various things on both SSB and CW. It is only 272 km - not a huge distance for 23 cm - but the terrain is not friendly and our location on the south side of the hill is not ideal for northerly directions. Then the next morning we repeated that success, which was great.

By the end of the event the log contained about 146 contacts across all bands. Activity was lower than hoped for, which we thought may have been due to the recent intense activity of many keen operators trying to work VK9NA, plus we knew of one rover operation, which unfortunately was not contactable from our location.

The thunderstorm activity in southern VK2 had affected several stations in our region, in particular the Kosciusko operation, and the rain in Victoria also probably discouraged some operations there on Sunday.

Despite this we had an enjoyable time on the hill and I was particularly happy to make the contact with Andy on 13 cm using the makeshift dish feed. Proves the benefit of taking spare cables and connectors to your field events. Dale's 3 cm contacts were also very helpful for our score.

But the main thing is we did get out in the field and had some fun, talked to friends old and new, used the radios and got more experience to make next time even better.

February's Missing Bit

Those reading last month's column may have noticed that a section of it was missing at the bottom of page 17. As this included part of a contributed report, I have included the missing part below:

"... At 0520 Z, Phil VK5AKK worked Wally on 23 cm at 5x1 over 1897 km. At 1030 Z, Mike VK3BDL worked Wally on 2 m (5x2) and 70 cm (5x2) over a path of 2447 km. Wally was also worked on

2 m by Jim VK3II (5x3 at 2483 km) and Graeme VK3GL (5x1 at 2476 km).

The following morning, conditions were good up along the VK2 coast. At 2040 Z, following a JT65 contact, Steve VK2ZT worked Rex VK7MO on 70 cm SSB at 5x6 over 1196 km.

So, a bumper start to 2010 and I am sure there is plenty more to come.

Northern VK6

We do not hear very much, if anything, about weak signal activity in northern VK6. Steve VK6HV located in Wickham, approximately 1600 km north of Perth sent in a brief report on recent activity in the area:

VHF tropospheric ducting has arrived to the Pilbara region in the North West of Western Australia as usual and on schedule. In my 12 years in the townships of Karratha and Wickham, I can not say I remember NOT having numerous openings during the hot and humid summer months. And again, the beginning to this summer has been no different. I've just seemed to take a bit more interest in it this year..."

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

Rex Moncur VK7MO

JT65M on Six Metres

During January, a number of stations were seen to be experimenting with JT65M on 6 metres using meteor scatter. In comparison with two metres, the duration of meteor pings are around 9 times (frequency ratio squared) as long and the strength about 27 times (frequency ratio cubed) as much. The longer duration pings allows the use of the slower JT65M mode which works some 15 dB lower into the noise than FSK441 used on two metres. The improved weak signal performance of JT65M combined with the increased signal levels more than overcomes the higher external noise and lower antenna gains at 6 metres and QSOs can typically be completed in 5 to 10 minutes compared to 20 to

40 minutes on 2 metres. Stations seen on the VK logger experimenting with JT65M during January 2010 included, Darrell VK2BLS, Gerry VK2APG, Scott VK4CZ, Brian VK4EK, Phil VK4FIL, Glenn VK7AB and John VK7XX. In line with the WIA band plan stations are using the focus frequency of 50.230 MHz.

Newcastle Channel 5a TV as a Frequency Reference and Propagation Indicator

Back in 2006, Rex VK7MO reported (GippsTech 2006 page 60) that the Newcastle channel 5a TV video carrier provided a very stable frequency reference with a drift of less than a mHz over 2 months on a frequency of 138.276025 MHz (+/- 0.1 Hz). Within a few months of that report

the frequency jumped to around 138.276011 MHz and was much less stable. Recently, shortwave listener Todd Emslie reported in the VK logger forum on his method of measuring TV video carrier frequencies to 1 Hz precision using the frame frequency of TV stations in Sydney as the reference. Todd concluded that Sydney's ABN2 and TCN9 are both equally effective as accurate reference sources for the 15625 Hz TV-derived unit, but that TEN10 and (especially) ATN7 are totally useless as reference sources. A comparison with Rex's measurements of Newcastle 5a at the same time showed an error of less than 30 mHz.

In these tests Rex was monitoring 5a video carrier on troposcatter by using Spectrum Lab with a bin-width

Digital DX Modes

of 1 mHz. Rex reports that the 5a video carrier does vary on a daily basis by up to 250 mHz. If we take the nominal frequency as 138.276 MHz then the actual frequency typically varies from 10.7 Hz high on a hot day in Newcastle to 10.9 Hz high during a summer evening and is likely to rise further during the winter. While winter measurements still need to be made it appears that even in its current and less stable condition Newcastle 5a can provide a reference to within 1 Hz based on 138.276011 MHz.

For these tests Rex was monitoring what is a very weak signal via troposcatter over a 1142 km path by using very narrow binwidths on Spectrum Lab and comparing against

a double oven GPS (2 parts in 10^{11}) locked HP synthesizer with a 10 mHz resolution. The multi-pathing on troposcatter introduces spreading of the signal by around +/- 30 mHz so the error should be no worse than 50 mHz. The effect of troposcatter spreading means that narrowing the binwidth below about 100 mHz by factors of 10 does not provide a full 10 dB improvement in Signal to Noise ratio (S/N) as some of the energy is lost. Nevertheless, narrowing from 100 mHz to 10 mHz still gave an 8 dB gain in S/N while a further narrowing to 1 mHz gave only an additional 3 dB. Still for those who might be using Newcastle 5a as propagation monitor it is worth using very narrow bandwidths of 10 mHz or less to find the signal.

The downside of using such a narrow binwidth is that at 10 mHz the receiver must be stable within the bin for 100 seconds.

Unfortunately, Newcastle 5a will close in the next year or so with the conversion to digital and a new propagation monitor and frequency reference will need to be found. VK7 is working on up-grading its beacons with GPS locking. Of course the upside of the closure of channel 5a is that it will eliminate a source of interference for those close to the TV transmitters.

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 continued to be an interesting month on 6 m. Good VK 'E' openings continued with some further interest being added by the Norfolk Island VK9NA and YJoMM DXpeditions.

Michael VK3KH reports:

The team from the recent VHF/UHF/uWave DXpedition to Norfolk Island always knew six metres would play an important part in our operation, but we were definitely not ready for what eventuated.

Arriving on the island late on January 1, the gear was picked up from the freight company early the next morning, Saturday 2. The six metre gear consisted of an FT897D running 100 W to a 3 element Cushcraft Yagi, 4 metres high. The gear was set up at the accommodation and was operational by 4 pm that afternoon. We scanned the bands, and put out a few calls. Nothing happened, then at 4.25 pm local NI time (0455 Z) on 50.125 out of the speaker jumped Adam VK4CP at 5/9. Then it started... and for the next 3.5 hours Michael (VK3KH) and Alan (VK3XPD) worked 75 stations. This included A35.

Sunday 3 January at 8.30 am local time (yes, that early), 6 metres came to life again and over the next 30 minutes we

worked 21 stations. We then went off to breakfast and the Sunday Market. We returned at 10.45 am local and 6 metres was still open. Alan JUMPED back on the mike and almost immediately worked E51CG & 3D2JS, he then continued working stations till noon when we stopped for lunch. Alan, a previous 6 metre sceptic, was definitely enjoying working the pileup.

After lunch we returned to 6 metres and continued working stations until 4.16 pm local time, when the band closed. All in all, an amazing day with 71 stations

worked including VK4UH (Kevin, who was to join us several days later) while he was mobile on Bribie Island in his car.

Over the next few days, six metres slowed as the Sporadic E seemed to go into hibernation. On Thursday 7 Kevin (VK4UH) took over the mike and worked 45 stations, including VK6JJ to give us our 7th Australian call area. He also worked a 2010 commemorative station V12AJ2010.

It was not until the last few days of operation that it returned for one final



Michael VK3KH and Alan VK3XPD working 6 m from Norfolk Island

blast. We had several hours of 6 metre openings with another 70 contacts added. I guess that was as it should be, as we were there to work other higher bands as well.

In Summary, after 10 days of operation, VK9NA had worked 6 countries and 61 grid squares for a total 261 contacts on 6 metres. Call areas include A35, E51, 3D2, ZL1, 2, 3 & 4 and VK1, 2, 3, 4, 5, 6, 7 & 9.

The longest distance worked was to VK6JJ, at a total of 4922 km. For many of those contacted it was their first on 6 metres to VK9N. A good result for everyone. Thanks to all who worked hard to contact us.

Late in the month another DXpedition using the callsign YJoMM took place from Vanuata and it was great that they activated 6 m. Adam VK4CP was again alert and first to work them on 25 January.

Contacts were then complete with ZL4LV, ZL1RS, ZL3NW, ZL3JT and finally with Norm VK7AC. Australia Day 26 January proved better with several contacts into VK4 and then extending to VK3 and eventually contacts into VK5 with contacts complete with VK5s BC, ZK & PJ up to 5/3.

The 27th was also successful with several contacts being completed into VK4 including northern VK4, VK2 and again VK3 and VK5NY. They also completed a contact with Paul A35A in Tonga.

The above again showed that many contacts are possible into the Pacific Islands areas and it has been great to have at least a couple of DXpeditions activate 6 m.

Meanwhile Paul A35A from Tonga continued to regularly work into VK/ZL and logged the following:

1 January

VK5ZK 50.110 CW 529, VK4WR 50.110 USB 55, VK4CZ 50.110 USB 59, VK4EK 50.110 USB 57, ZL1AVZ 50.110 USB 57, VK2DJ/P 50.110 USB 55, VK4FI 50.110 USB 57, VK4ADC 50.110 USB 53, VK4KLC 50.110 USB 57, ZL1AVO 50.110 USB 55, VK4CAG 50.110 USB 55, VK4HG 50.110 USB 55, ZL4PW 50.110 CW 539.

2 January

VK9NA 50.125 USB 57, VK2HN 50.110 USB 59, VK2APG 50.110 USB 59, VK2ZQ 50.110 USB 55, VK2IR 50.110 USB 57, ZL3AAU 50.110 USB 57, ZL3NW 50.110 USB 57,

ZL3ADT 50.110 USB 55, VK2PB 50.110 USB 55, VK2JDS 50.110 USB 55.

3 January

VK2FAD 50.110 USB 55, VK4AHW 50.110 USB 59, VK4DDC 50.110 USB 59, VK9NA 50.110 USB 59, VK2BA 50.110 USB 59, VK4MA 50.110 USB 57, VK4DD 50.120 USB 55, VK4RY 50.120 USB 55, VK4HJ 50.120 USB 55, VK4CWJ 50.120 USB 33, VK4KAC 50.120 USB 55, VK4BEG 50.110 CW 339.

7 January

ZL3AAA 50.110 USB 57, ZL3JT 50.110 CW 559, VK7GK 50.110 CW 549, ZL3NW 50.110 CW 579.

8 January

VK7XX 50.110 CW 599, VK7GK 50.110 USB 55, VK7XX 50.110 USB 59, VK3DUT 50.110 USB 59.

14 January

VK2BCC 50.110 CW 559.

22 January

VK3AAU 50.110 CW 538.

27 January

YJoMM 50.110 USB 53, VK4DD 50.130 USB 57, VK4NA 50.130 USB 55, VK4CZ 50.130 USB 57.

28 January

ZL3NW 50.110 CW 539, VK2BHO 50.110 CW 559, VK7AC 50.105 CW 579, VK6KXW 50.105 USB 43, VK6RO 50.105 USB 33, VK6JJ 50.105 USB 53.

Well done Paul and good to see the month ending with contacts into VK6 (7000 km).

Willem DU7/PAoHIP in Lapu-Lapu City, Philippines continued to look for VK/ZL most days and was rewarded with some good contacts into VK2, 3, 4 and 5 on the 25 January. Willem also worked Norm VK7AC on the 29 January.

Victor E51CG Raratonga, South Cook Islands also worked into VK several days during January. On the 1 January Victor worked Garry VK5ZK, Roger VK5NY and Graeme VK4CAG then on 2 and 3 January worked several VK2 and 4's and VK9NA. On 4 January Victor had a good opening into VK7 working several stations including John VK7XX, Norm VK7AC, Laurie VK7ZE, Joe VK7JG and Dave VK7AAD and then conditions moved north and Victor worked Russell VK4BEG in Malanda, Col VK4CC and VK4HJ. Things then went quiet for Victor until the 27 January when the

band opened early in the morning with good contacts completed into VK2, 4 and 5.

Dave VK9WBM Willis Island was also worked from VK2 and 4 on 3 January and on 7 January Dave managed good contacts with VK5ZK, VK5GF, VK5BC/p and VK7XX, VK7AC and finished the day working VK6OX and VK6SIX. On the January Dave worked into ZL3.

Although there were some quiet days good local VK/ZL Es continued throughout the month. Although it had been a reasonably quiet summer on 6 m for VK6, late in the month there were some good openings from VK6 to the eastern states and ZL with a good opening on 30 January to ZL1, 2 and 3.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com

ar

Portishead Once in a decade CW opportunity

To mark the 10th Anniversary of the closure of the world's largest Maritime Radio Station Portishead Radio / GKA, a special callsign GB10GKA has been granted.

GB10GKA is being activated for a period of one month 30 April 2010 through 27 May 2010.

Special Anniversary QSL cards will mark this historic event, eQSL will also be used. Certificates for contacting GB10GKA on more than 4 HF bands will be available via soft copy at no cost to the winners.

Point of contact: Tony Roskilly G3ZRJ
g3zrj.morsekey@btinternet.com

Information about Portishead Radio can be found at:

<http://www.gka.btinternet.co.uk/>

Do not miss the opportunity to participate in this unique event and get the certificates and card to show your involvement.

Haiti shattered, Darwin closed, RA goes Palau

2010 must be an extraordinary year!

A massive earthquake hit Haiti on 12 January. The capital city of Port-au-Prince was completely flattened and over 150,000 people were killed and over half a million or more are homeless. Communications were severely disrupted and shortwave became the primary means of short-term communications because of the damage to the existing infrastructure. Several major international broadcasters quickly established programming in Creole, which is a local French dialect.

The Voice of America in Washington increased their output in both standard French and Creole, mostly for rebroadcast via local FM outlets.

They also commenced relays from airborne FM senders, utilising the same teams that were involved in the psyops operation in Afghanistan. The shortwave broadcasts were added in to cover the whole nation.

The BBC World Service also commenced broadcasting mostly in English and Spanish with some Creole input. However these did not come from London but Miami in Florida. Apparently the "Beeb" has been broadcasting to Latin America in Spanish from there without any fanfare. I believe that the BBC World Service has already commenced broadcasting in Hindi and Urdu from New Delhi, instead of Bush House in London. Programs in some African languages will also be from an unknown West African nation.

The former Radio Australia site near Darwin closed down on the 31 January. It had been leased by Christian Voice, an English evangelical group with shortwave senders in Zambia and Chile. There is no word as to what will happen to the site yet; there are indications that the remaining senders and antennas will be dismantled.

Radio Australia has been using Darwin to relay programming in Chinese, Indonesian and recently Burmese and hurriedly scrambled to find senders to relay their programs. Spare capacity was quickly found on the World Harvest Radio site in Palau as well as in the United Arab Emirates. Radio Australia has been using Taiwan and Singapore to complement their Shepparton output.

I was very saddened to hear of the recent death of Ted Carter, who was at one time VK7EC. I met him 50 years ago at the Northern branch of the WIA. Ted was a monitor for some major international broadcasters and he encouraged me when I started out listening on shortwave.

In fact I obtained my first copy of the World Radio TV Handbook circa 1960. He helped me identify a Filipino AM station on 570 kHz, which I heard when 2YA in Wellington

went silent around 1100 Z. From memory it was DXWW but it was difficult because of a persistent frying noise on the channel. Ted identified it as coming from a fluorescent tube and I recollect getting into hot water with my parents because I was forever turning it off. Sadly 2YA eventually went 24 hours and I never was able to hear DXWW again.

Radio Australia

Here is the schedule for the additional Radio Australia transmissions from the new sites from T8WH Palau. HBN refers to its former callsign of KHBN. Palau used to be part of the American administered Mariana Islands and the FCC still co-ordinates frequency planning.

2200-2400 on 12040 HBN 100 kW / 270 deg to SEAs
(in English)
0000-0030 on 15225 HBN 100 kW / 270 deg to SEAs
(in Indonesian)
0100-0130 on 15655 HBN 100 kW / 270 deg to SEAs
(in Burmese)
0400-0430 on 15780 HBN 100 kW / 270 deg to SEAs
(in Indonesian, also not 15785)
0500-0530 on 15590 HBN 100 kW / 270 deg to SEAs
(in Indonesian)
1600-1630 on 9965 HBN 100 kW / 270 deg to SEAs
(in Burmese, not Chinese)
1300-1430 on 9890 HBN 100 kW / 318 deg to SEAs
(in Chinese)

Radio Australia via the United Arab Emirates is:

UAE additional frequencies of R Australia via Al-Dhabbaya:

2200-2330 on 5935 DHA 250 kW / 105 deg to SEAs (in Indonesian)
2300-2330 on 5955 DHA 250 kW / 090 deg to SEAs (in Burmese)
1100-1300 on 17880 DHA 250 kW / 090 deg to SEAs (in English).

These frequencies would be valid until the 29 March when the A-10 broadcasting period commences.

March 29 is when major changes come into effect, coinciding with commencement of Summer time in Europe. This period A-10 will last until September 25. I do expect that there will be more broadcasters scaling back their shortwave output due to reduced audience numbers. Radio Prague has been saved yet will be restricted to a single transmitter and a cutback in programming output.

Here is an interesting piece of nostalgia on the Web. Interval Signals from the past can be heard at <http://garlinger.com/QLS/montage.mp3> You will be shocked as I was at the number of famous sounds that have disappeared from the ether. A lot of memories for sure.

Well that is all for now. Until next time, good monitoring! **ar**

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Ted Thrift VK2ARA, vk2ara@wia.org.au

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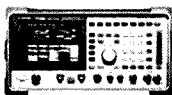
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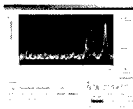
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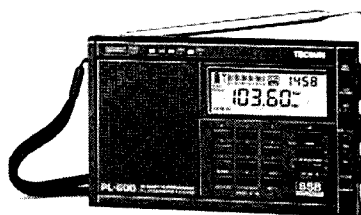
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VK5news

The Summer VHF - UHF Field Day Dale VK5LD meets Clare Valley

Dale Loffler VK5LD

I operated a one-out portable station in the Summer VHF/UHF field day, from a spot near Spring Gully Conservation Park in the Clare Valley, about two hours north of Adelaide.

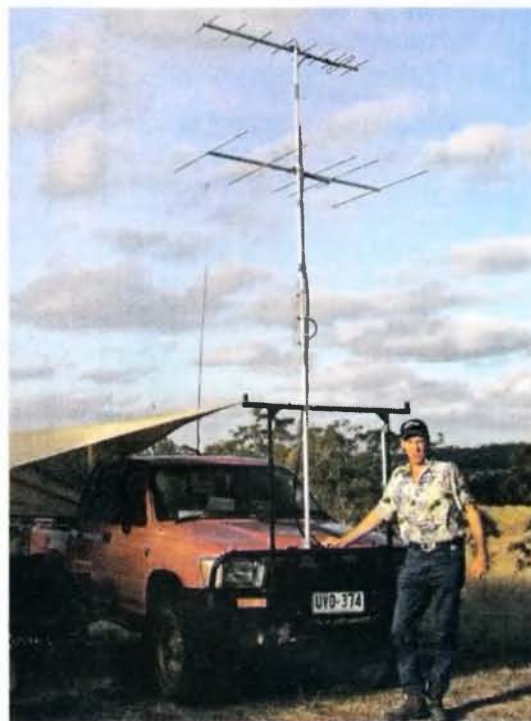
In the 24 hours I made 138 contacts on this my first attempt. The weather was quite pleasant but it did get cold during the night, and more blankets would have been nice. There was a small passing shower of rain on the Sunday morning.

Propagation varied but was fairly restricted to local stations up to 200 km with no DX reported, not even on six metres. I was particularly pleased to make 21 contacts on 23 cm, which was a new band for me.

The antennas used were a five element Yagi on 2 metres, a nine element Yagi on 70 cm and a quadruple diamond antenna on 23 cm, all homebrew. They were rotated by a rotator mounted on the bull bar powered by an inverter. There were also verticals on the roof of the vehicle for 6 metres, 2 metres and 70 cm.

My radios were a Kenwood TS-2000X, Icom IC-V8000 for 2 metres FM and a Wouxun handheld with linear amplifier for 70 cm FM.

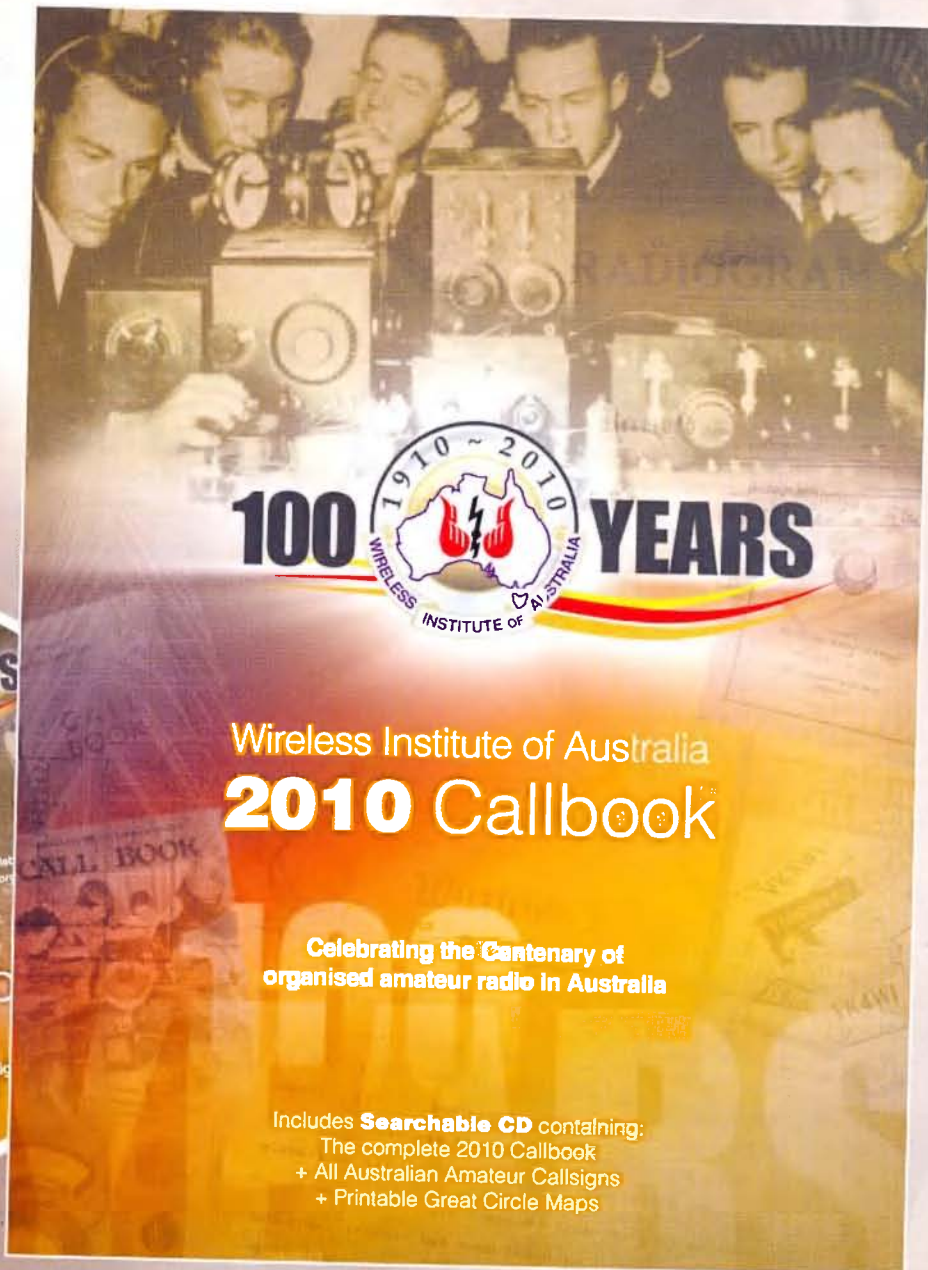
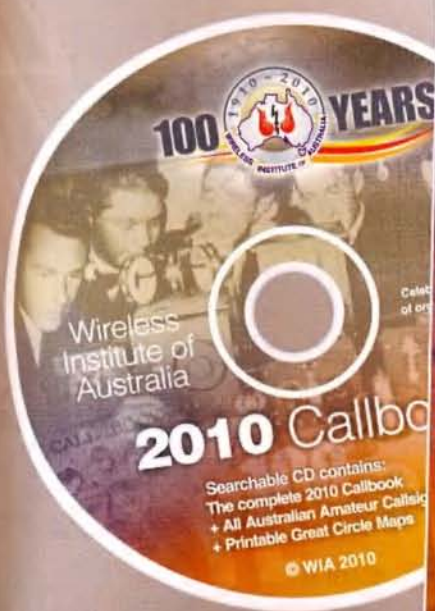
The vehicle, with the portable 'shack' to the left, and the operator Dale VK5LD.





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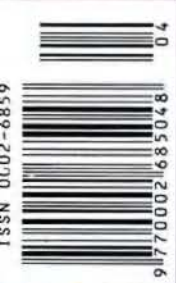


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Our cover this month



The VK9NA team on Mount Pitt in January: Michael VK3KH, Alan VK3XPD and Kevin VK4UH with their 1.2 m dish and mast holding other antennas.

Photograph by Kevin Johnston VK4UH. See their story commencing on page 23.

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Editorial

Peter Freeman VK3PF

One century down

The middle of March saw celebrations held in Sydney to mark the centenary of the formal commencement of organised amateur radio within Australia. There are some brief reports in this issue and we may receive more details for inclusion in a future issue.

With that milestone passed, planning is full steam ahead for the WIA Centenary Annual General Meeting Weekend of Activities, to be held in Canberra over the last weekend in May. Members should have received their formal Notice of Meeting with the March issue of Amateur Radio. Further details can be found on the WIA website – simply click on the link on the lower right side of the home page to find all the celebration information.

I have had my arm twisted to prepare a presentation, so must attempt to find some time to research the topic to which I must speak. The challenge, I suspect, will be to decide the material to be included and what to leave out.

The future

As you will see in Michael Owen's Comment, planning for the next World Radiocommunications Conference is already underway. I recommend that you all read Michael's comments, as he highlights issues that, I believe, should be on the mind of every amateur licence holder, regardless of whether or not they are a member of the WIA. A key reason for the formation of an organised group of radio experimenters was to act as an interface to the authorities – this is probably even more important today than 100 years ago, given the increased pressure from many potential users for access to the radio spectrum.

I still hear individuals complaining about how some past event, usually many years ago, justifies a stance to not join the WIA. Have people failed to notice that we are effectively a new body, only a few short years old, but built on a foundation first laid in

March 1910? The structure of the WIA is now very different from that prior to the formation of the new national organisation, as opposed to the previous federal structure.

One aspect is still in place – the organisation still relies heavily on the contributions of many volunteers to undertake many tasks. But the Board is moving the organisation ahead.

Importantly, the WIA is still seen as the key voice for amateur radio by the ACMA. Individuals and smaller groups may be able to raise issues via local politicians, but our voice is strongest when we act and speak collectively.

I urge all members to speak to their fellow amateurs who are not members of the WIA and urge them to consider joining. The key point is that we have a stronger voice collectively. You may be able to complain about some aspect of the hobby, or put some particular view. The best way that can influence the direction of the WIA and therefore the hobby in Australia is to become a financial member AND to participate in dialogue with the organisation. This may be through letters to Board members, "Over to you" items to this magazine, via the coordinator for a particular activity (for example, the WIA Awards scheme), or simply by attending the Open Forum at the Annual General Meeting. Of course, a consensus position may be reached that is in disagreement with your position, but at least you will know that your view has been heard and considered.

Our organisation will gain in several ways if membership increases. There may be more individuals willing to assist, even if only for a small defined task – for example, operating the VK100WIA station for a few hours during the six months that the callsign is available, through your local club. The budget bottom line will be a little better for the organisation, which means that there is more work that can be accomplished. But most importantly, having a numerically larger organisation will make our collective voice louder.

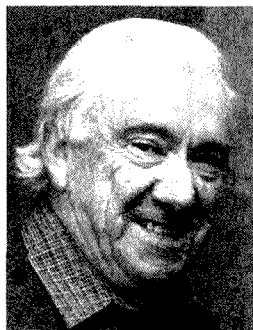
Join up a new member soon.

Cheers, Peter VK3PF

Editor

ar

Yesterday, Today and Tomorrow



Michael Owen VK3KI

On Saturday 13 March 2010 I arrived in Melbourne from Bangkok, after five days at the third meeting of the Asia-Pacific Telecommunity Conference Preparatory Group for WRC 2012, the so called APG meeting, on behalf of IARU Region 3.

The next day I attended the opening of the new building at the Amateur Radio New South Wales property at Dural, which was also a celebration of the founding meeting in Sydney 100 years ago.

A highlight of the opening of the new building was the cutting of the cake by three of our older amateurs, David Thompson VK2BDT, born 1919, Pierce Healy VK2APQ born 1911 and Bill Hall VK2XT born 1912.

To me the combination of these activities was an extraordinary juxtaposition of the past, the present and the future.

The opening of the new building was very much the present, a facility where potential amateurs can be trained and assessed, a facility to attract those who could be interested in becoming radio amateurs, a facility for operational activities as well as providing the storage that seems always to be needed.

The past were people like Pierce Healy talking about who he could recall as his mentors or teachers all those years ago, when he became interested in wireless and Bill Hall showing me some of his very old magazines, including a QST from 1919.

But in a funny way the past was a mirror of the future.

As was pointed out in the articles in March 2010 issue of *Amateur Radio*, the inaugural meeting of the Institute of Wireless Telegraphy of Australia was to create a body better able to "protect legitimate experimenting",

or at least the interests of those who were experimenting or who wished to experiment with wireless.

What has that to do with the APG?

In the August 2009 Comment in *Amateur Radio* I wrote about the growing importance of the regional telecommunications organisations, and named the six that had been identified by ARRL CEO David Sumner K1ZZ. The regional telecommunications organisations seek to achieve agreement for a common position among their members, the national administrations of their member countries. That amounts to a block of votes for a particular position at a WRC.

The regional telecommunications organisation relevant for our part of the world is the Asia-Pacific Telecommunity, which has 34 member countries, including Afghanistan, Australia, Cambodia, China, Fiji, India, Indonesia, Korea, Japan, Malaysia, New Zealand, Pakistan, Philippines, Singapore, Thailand and Vietnam to name just some, and which covers that part of the world identified by the ITU as Region 3.

But this was the first time that I was able to observe our own Region 3 regional telecommunications organisation at work.

WRC 2012 has one agenda item of direct interest to the amateur service, agenda item 1.23: the proposal for a secondary allocation of about 15 kHz in parts of the band 415 – 526.5 kHz, and a number of other agenda items that could affect the amateur services indirectly.

I took the time to have a look at what had changed in the seven or eight years since the APG was meeting for WRC 2003, the WRC that addressed Article 25 of the Radio Regulations (the Article dealing with the amateur services) and the amateur allocations around 7 MHz.

Two things immediately struck me.

The APG has adopted procedures that make achieving a common position very much more likely today than in the period of preparation for WRC 2003, when unless there was strong support,

no position was the likely outcome.

Many administrations in Region 3 now regard the APG as being of much more importance than they did in 2002, when the third meeting of the APG for WRC 2003 was held.

One needs simply to compare the resource devoted by administrations to the APG then as against the resource devoted now, by looking at the number of delegates from a number of countries.

In 2002 China had 8 members in its delegation, and 2010 it had a delegation of 30 members, while Indonesia had 5 members in 2002 and in 2010 had a delegation of 21. In the same time Malaysia increased its delegation from 11 to 21, and New Zealand increased its delegation from 4 to 7. Australia also increased the number in its delegation and even Iran increased its numbers from 7 to 10.

The conclusion I have reached is that so far as the administrations in Region 3 are concerned, the meetings of the APG prior to a WRC have become an essential part of the WRC cycle.

Why does a WRC matter?

Because a WRC decision in relation to the amateur services, whether positive or negative, will eventually affect all amateurs.

What does that mean for the WIA?

It means that instead of looking at participating in the preparation for a WRC and the actual WRC, we need now to look at the preparation for and the participation in the APG, a week every year, and perhaps even two meetings in a year.

It means resource, primarily in people of skill and expertise, but also of funds to support those people.

The threats that the Institute of Wireless Telegraphy, soon to become the Wireless Institute of Australia, was formed to meet still exist.

They may be more complex, they may be different, but we still need a single, strong and clear voice to represent us as what is decided in the international arena does affect every Australian amateur.

Dick Smith Patron of the WIA's Centenary Celebrations

The WIA is very pleased to announce that Dick Smith VK2DIK has agreed to be Patron of the WIA's Centenary Celebrations.

Dick is one of Australia's best known entrepreneurs, businessman, aviator and modern day explorer. He obtained his amateur licence when he was 17.

He founded Dick Smith Electronics, the Australian Geographic and Dick Smith Foods.

He was made an Officer of the Order of Australia in 1999 for service to the aviation industry, and was the 1986 Australian of the Year.

In accepting the position of Patron for the WIA Centenary Celebrations, Dick Smith said "I am delighted to support an organisation that traces its history back 100 years but at the same time is looking to the future by encouraging a new generation of radio amateurs."

WIA Appoints Manager

The WIA Board met in Melbourne over 20/21 February 2010. Much of the time was spent considering the financial position, the provision of services for members and the future.

The directors recognised that the WIA now had the security of a contract with ACMA for the WIA to manage the examinations, the issue of certificates of proficiency and the management of call signs but acknowledged that meeting the WIA's obligations under the contract meant that the office has to devote a significant part of its present resources to those tasks.

The Board also felt that the WIA had to reduce its reliance on volunteers for the provision of the administrative core which provides many of the services it offers to members and supports those offering other services.

The Board resolved to engage a manager. The Board believes that the current office workload justifies additional staff and that a manager will provide continuity and the WIA's ability to provide services to members will be enhanced.

For some months the WIA has been employing someone on a part time basis to provide assistance in the office. That person is Mal Brooks.

Whilst Mai is not yet an amateur, he comes with a background and experience, including experience as the Executive Officer of a not-for-profit industry association.

The directors fully recognise that the WIA will never be able to do the many things that it does without the work of dedicated and skilled volunteers. They also believe that at the heart of the organisation must be an administration that is effective, efficient, responsive and friendly. Mai will be a meaningful part of that administrative heart.

Board appoints new Director

The WIA recently announced that it had been informed by WIA Returning Officer, Chris Chapman VK3QB, that Phil Wait VK2ASD, Bob Bristow VK6POP and Chris Platt VK5CP had been elected unopposed as directors of the WIA.

As a new director, Chris Piatt's term as a director commences at the conclusion of the WIA Annual General Meeting on Saturday 29th May 2010.

However, in light of the recent resignation of Ron Bertrand VK2DQ due to ill health, the WIA Board has appointed Chris Piatt VK5CP as a director for the balance of Ron's term, until his appointment in accordance with the Returning Officer's declaration takes effect.

ARNSW Celebrates Centenary and Opens New Building

On Sunday 14 March 2010, Amateur Radio New South Wales opened its new building at the VK2WI Dural site and at the same time celebrated its formation 100 years ago.

Over 100 members attended the celebrations of the Centenary of the formation of the movement which



has become today's WIA and marked the event with the cutting of the Centenary Cake by three "Elders", Pierce Healy VK2APQ born 1911, Bill Hall VK2XT born 1912 and David Thompson VK2BDT, born 1919.

(Full story page 39. Ed)

On Wednesday evening 10 March, Tim VK2ZTM and Mathew VK2YAP had a 20 minute live interview on ABC Radio Statewide Program covering the Centenary Celebrations.

Neil Penfold State AR Centre Opening

An estimated crowd of 150 people travelled from metropolitan Perth and from country locations as far away as Kalgoorlie to attend the official opening of the Neil Penfold State Amateur Radio Centre at Whiteman Park. The Centre is the home of the Northern Corridor Radio Group Inc. The NPSARC was officially opened by Neil Penfold VK6NE.

This magnificent Amateur Radio facility was built by club members over several years, providing the club with a wonderful facility for contesting and other club activities.

The day was celebrated with a car boot sale, sausage sizzle, "open house" of the clubrooms, a raffle and many face to face QSOs.

WIA National Inwards QSL Bureau Changes

Following a review of the current inwards Bureau operation, the WIA Board agreed to change the arrangements for Inward Bureau operation.

A new National Inwards QSL Bureau service is being introduced in an effort to expedite the availability of inwards cards from overseas bureaus for WIA members.

The Inwards Bureau has established a central P.O Box 2040 Bayswater Vic 3153, Australia for the new service.

All overseas bureaus are being notified of the change, being requested to amend their records and procedures and to send future VK card consignments to the central PO Box 2040.

QSL cards from WIA Members for overseas contacts should continue to be sent directly to the Outwards QSL Bureau, PO Box 3073, Teralba NSW 2284.

Got the ticket, got to get the station

Ross Pittard VK3CE and Geoff Emery VK4ZPP

vk3ce@amateurradio.com.au

This month we have another interesting contribution from Geoff. Emery VK4ZPP (vk4zpp@wia.org.au). Thanks again Geoff and please, everyone, remember to keep the articles and feedback coming in.

All new licensees now have to pass a practical test to get their amateur ticket. One area that can consume much time is finding the right equipment that fits one's personal budget and area of interest.

These days there are recognised 'amateur' brands of equipment and accessories and generally they do the job they are designed for quite well. However, in days gone by, one of the amateur radio operator's best assets was a well stocked junk box. This grew and evolved as one continued in the hobby. Much of what was in the junk box was discarded commercial and military bits and pieces.

Although ex-military equipment is now as rare as hen's teeth, there is much to be found in the ex-commercial area. As the HF land mobile service disposes of older gear, things like power supplies and antenna matching units can be picked up cheaply by the Foundation licensee. Just because the brand name is not readily linked to amateur use does not mean the equipment should be overlooked. The laws of physics, upon which radio is built, do not change because of the manufacturer's name badge.

Another source of accessories is the CB market with many SWR/power meters and field strength meters that can be used successfully at Foundation power. As the mobile phone industry replaces equipment, 50 ohm terminations (dummy loads), which can work up to microwave frequencies are available second hand very cheaply. You may have to use an adapter if the RF connector is different from your station equipment but again these items

are available via internet shops at historically ridiculously low prices.

Now if you look back to the requirements of the Practical Assessment, as given in the 'Foundation Licence Manual' you will recall how to connect your transceiver through the meter/matcher to the antenna.

The easiest way to check a CB type SWR/power meter is to connect it to a dummy load. With your transmit power set to 10 W and the meter set on forward power (AM, FM or CW but not SSB) briefly key the transmitter and adjust the calibrate/sensitivity knob for full scale deflection as shown on the scale. If when you switch the meter to SWR, your meter shows close to 1.1:1 SWR then you know this meter will be fine to use. Do this on the bands that you can use from 80 m through to 10 m.

In the *Codan* brand antenna matching units supplied for many years with crystal locked land mobile and marine radios, the internal circuit appears to remain similar in various models. These are basically an L-match with the inductor wound over a specially shaped ferrite toroid. Some have ceramic insulators for connection of 'long wire' antennas, that is, end fed and some with SO-239 for coaxial cable connection. Some include a switch circuit allowing connection of two antennas.

An experiment conducted by Ray VK4TPT and Van VK4VAN from the Maryborough Electronics and Radio Group, MERG, proved that removing the ceramic insulated binding post on these type of units and replacing it with an SO-239 allowed the tuning of a range of usual amateur HF antennas. The test unit had provision for two antennas and the other connection remained unaffected by this modification thus allowing a choice of two antennas.

No doubt other makes of commercial land mobile and marine antenna matchers will work similarly to the *Codan* units. I noted that the marine version of these matchers suggest using a wire of about five to seven metres for maritime use. This means that this ATU would be good as a field day or travel accessory with the use of less than ideal antennas.

As with all bits of equipment, familiarity is the key to successful and easy use. Just as we 'play' with games machines, a new mobile phone or other things, we need to 'play' with our station so that adjustments and control of settings is no longer a chore. With the transceiver, using the dummy load instead of the antenna provides a way of getting used to what happens when we push different buttons and twiddle different knobs with the knowledge that we are not causing QRM if we go into transmit.

With many of the commercial ATUs there is a meter or lamp with instructions to tune for maximum deflection or greatest brightness. Ignore this as the radio may have been designed to emit significantly more power than the 10 W Foundation limit. Use your radio settings and the in-line power meter instead.

At this stage we have yet to consider what type of antenna to use. This subject alone can fill your library with books. As a starting point, I suggest reading Ron Bertrand's article 'Understanding and building the OCF dipole antenna', p 15, *Amateur Radio*, Jan/Feb 2009.

Remember, amateur radio is an experimental hobby, so do not be afraid to fiddle. You will be surprised at how learning from practice makes the book learning come alive.

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Multimedia computer headset adaptor with PTT for ham rigs

Ben Broadbent VK5BB

What is your choice of microphone for your style of operation? A hand microphone, desk microphone or headset?

In my early days (early 1970s) and of course whilst mobile, the handheld microphone was my choice. Even after I acquired my first desk microphone it was not my main choice for operating at my station desk.

Do not know why, maybe it was something with which I was not comfortable? Later with a change in career, I was a technician supporting a major communications centre and here the desk microphone and foot switch PTT ruled! With an upgrade, all operators were moved onto headsets, mainly to reduce noise due to the new open space environment. During this period I also spent some odd time as a relief radio dispatch operator.

I have also operated as a WICEN base communications operator for the Classic Car Rally here in VK5 and supplied my own headset and foot PTT switch on day two, as my PTT fingers were worn out after day one. Oh boy, can those PTT handheld microphone button springs get hard to press when constantly PTTing all day!

As time went by, moving house and shack, raising a family, I was able to continue my hobby playing with amateur radio and the hand microphone still ruled!

Later, with a new rig, well new to me, an Icom IC-756Pro2, I decided that the shack needed a new radio desk and that here I would finally come to realise some order and set myself up in some style.

I dug out my old desk microphone, changed over the insert to suit the Icom rig and I was now sold on the

desk microphone for the station. I also rounded up another desk microphone carcass, rebuilt it and I had a second microphone for my VHF/UHF rig.

It was great for rag chews, flick the PTT into lock and chat away hands free, and be able to write notes into my log (remember them?) and note pad. Comments from the other end were good though there was the occasional comment of QSB on my audio.

Ah, the problem quickly worked out, if I turned away or leaned back from the desk microphone, the audio faded. Solution? A headset with boom microphone of course!

I looked into my junk box, dragged out some old headset bits and looked them over. Sure I could rebuild something into a workable headset and adapt it to the radios.

Looking around at my laptop computer, I took a long look at the multimedia headset that I used to record the odd segment for the VK1WIA broadcast and the like. It was nothing that special, a light weight headset with a neat flexible boom microphone that I liked. The audio from the microphone was quite good to my ears and I plugged the speakers into my rig and listened to receive audio on 80 and 40 metres. It was very acceptable and comfortable to me.

OK, now I needed to make up an adaptor interface with PTT operation to connect the headset to my rigs.

The headset I had was one I picked up for about \$20.00 at one of the large retail stores, and it had two 3.5 mm plugs, one for the microphone and one for the headset speakers. Thinking about its configuration

and how it operates into a computer sound card, I made the assumption that it was an electret insert, with the computer supplying the bias voltage. Checking my rig microphone circuits, yes there was bias voltage available and yes it appeared Murphy was off on holidays and my idea might just work!

The end result is illustrated in the attached circuit, drawings and notes. The microphone plug wiring is to suit the eight pin plug for Icom radios, but if you have another make, it should not be too hard to change the wiring to suit your rig.

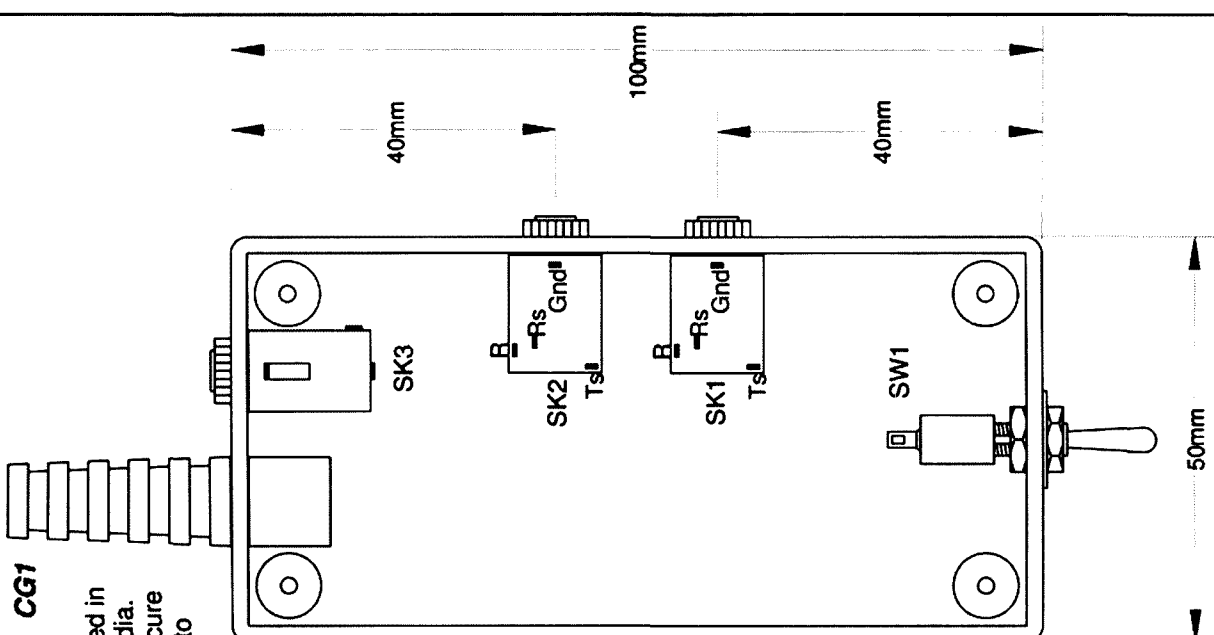
I strongly recommend that you consult your rig's hand book for the microphone plug wiring and also check the circuit diagram of the handheld microphone just to confirm that the circuit here is similar.

I cheated here; I did not design my circuit from scratch, I used the one as given in my manual. Why do it the hard way, when the circuit is already worked out, especially if you get good or reasonable reports on your audio quality?

I am right handed and I designed my adaptor to be operated under my left hand and positioned to the left of my operating position, log book and note pad. With the box lid as the base, it gives a clean presentation, the plugs and leads to the headset come out on the left hand side and away from directly in front of me.

With my left hand resting on top of the box and my thumb on the PTT switch, for short overs, I just press my thumb down to PTT. For longer overs, my thumb just flicks the PTT switch up into the lock position. When finishing the over, a quick tap down returns the switch to the centre off position. What could be easier?

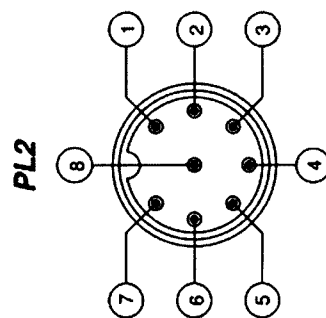
It keeps both hands free, one to write, the other to tune or adjust the rig.



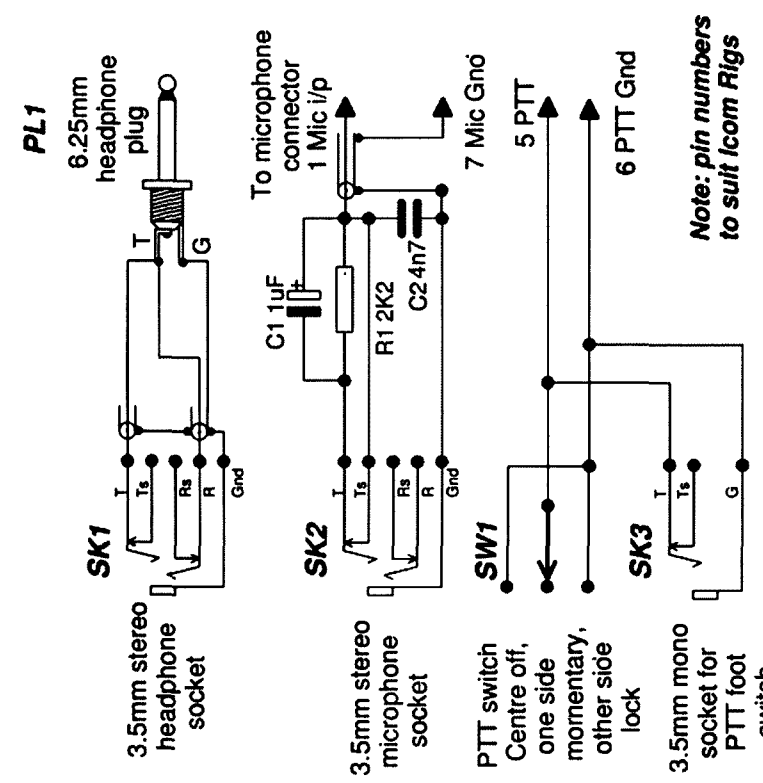
CG1
 Cable grommet strain relief (CG1) fitted in hole to suit last groove, approx 8mm dia. Fit cables through strain relief and secure with a small cable tie and pull back into the rubber inside the box.

Suggested component layout within jiffy box. View with lid off. When assembled, lid forms base and fitted with small adhesive rubber feet just in from screws. This layout will suit for left handed operation.

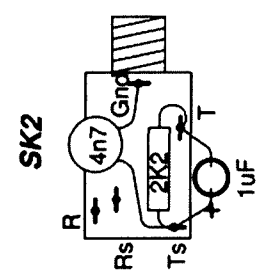
SW1 - PTT switch. Fitted so that in normal operation, press down for momentary PTT, and lift up for PTT Lock. (momentary position is towards lid)



PL2
 8 pin microphone connector rear/solder view. (Icom)



Note: pin numbers to suit Icom Rigs



SK2
 Component layout on microphone socket.

Parts list

- SK1, SK2 3.5mm stereo chassis socket
- SK3 3.5mm mono chassis socket
- R1 2K2 1/4W
- C1 1uF 16V electro
- C2 4.7nF
- SW1 miniature SPDT, mom/centre off/on plug to suit rig headphone socket
- PL1 plug to suit rig microphone socket
- PL2 Cable Grommet strain relief (RG58 BNC Crimp plug boot Jaycar Pt No PM-0648)

Suggested cable:
 For mic and PTT, figure '8' twin shielded cable, for headphone, 2 core shielded cable. Length approx 600mm or to suit user.

Figure 1: The drawing of the headset adaptor interface.

Switch on your rig's VOX of course! I have also included the option to be able to use a foot switch PTT just in case I want to use the adaptor in a Comcen style of operation or even, contesting. It keeps both hands free, one to write, the other to tune or adjust the rig.

Construction is fairly straight forward and will depend on your selection of components. A little bit of ingenuity will help, but you have to supply that.

Construction tip

Some Jiffy boxes have formed slots inside to hold circuit boards and these can make it difficult to fit the 3.5 mm sockets. You can pare out the ribs forming the slots carefully if you use a sharp 6 mm carpenter's wood chisel. Put the box on edge with the surface with the ribs you want to remove on the bottom and on your work surface.

Rest the rear of the box against a stop, a clamp clamped on the edge of your work surface should be fine. Lay the chisel down flat, chamfered edge up and shave off a thin layer of the top of the ribs. Do not try to take out too much plastic all at once, slowly and carefully is the way to go. You only need to take out the ribs immediately where you need to place the 3.5 mm sockets.

If you want to use the box with your right hand and to keep cables clear of your working area, fit the sockets on the other side of the box, or even fit two extra and wire them in parallel and get the maximum of flexibility for your operation.

If you want to use the adaptor with different rigs that have different microphone plugs, fit a DIN socket in the back in place of the cable grommet and make up different leads to suit the different microphone connectors.

Lead lengths? I found 600 mm was long enough without getting too much lead in the way. You may need longer, depending on your placement preference for the box or where you need to connect to your rig. There are many possibilities to adapt this headset interface to your own personal style of operation.

Have fun.

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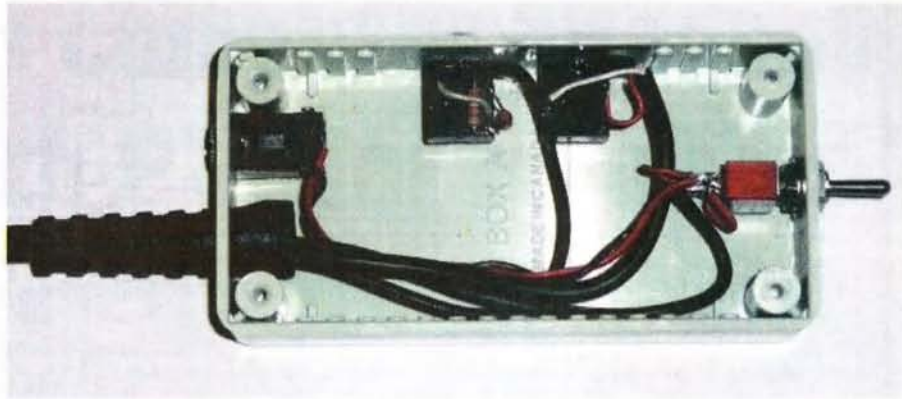


Photo 1: Internal view of the wiring of the headset adaptor interface.



Photo 2: The finished headset adaptor interface.

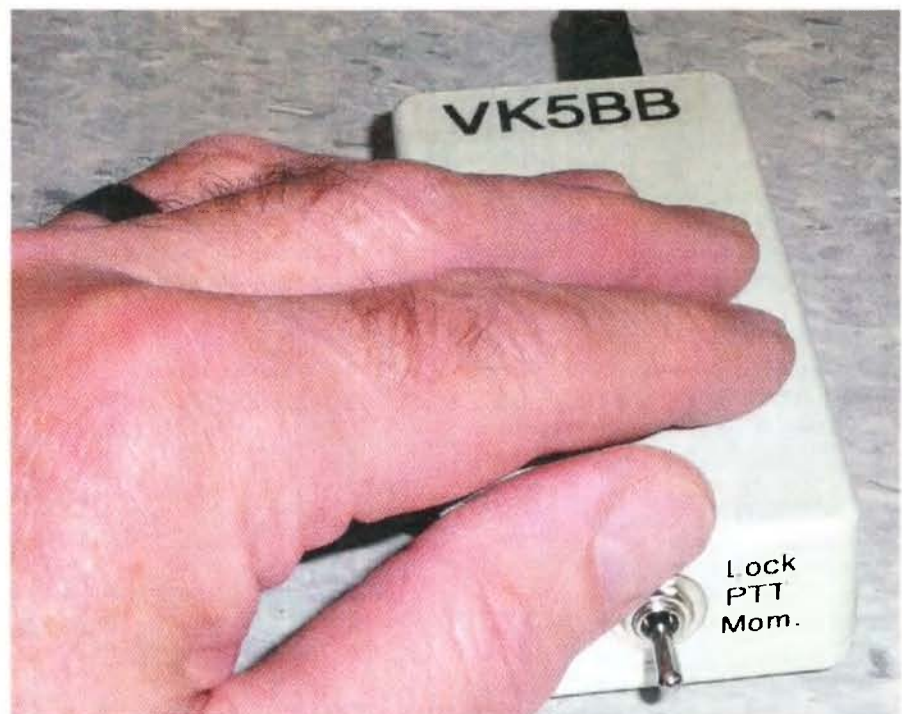


Photo 3: The headset adaptor in use.

The ultimate multiband dipole

Rick Hill VK6XT

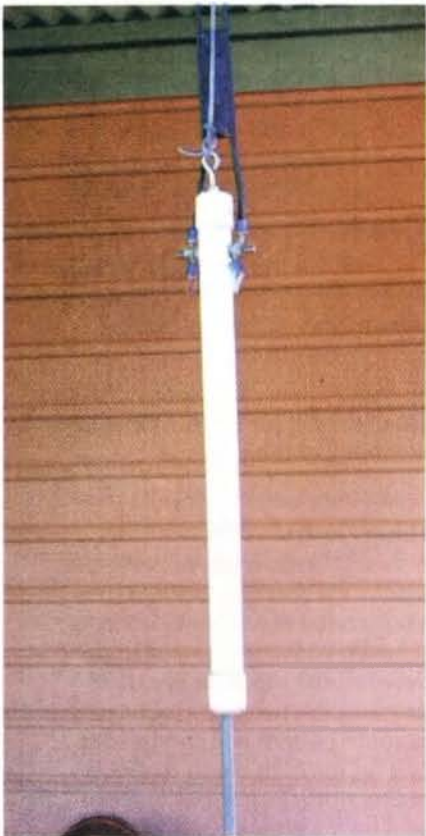


Photo 1: The W2DU balun used on the prototype antenna.

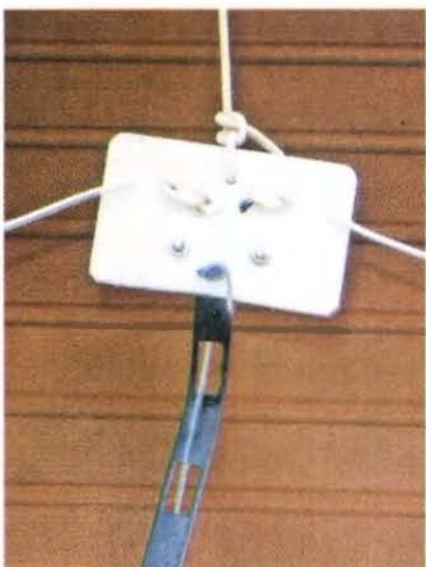


Photo 2: The feedpoint insulator and strain relief.

Introduction

Getting operation on several HF bands from one antenna has been the quest of numerous amateurs for decades. The results of these endeavours have resulted in the development of trap dipoles, Windom or OCF antennas, broadband resistively loaded dipoles and the G5RV, amongst others. The object of the exercise is to obtain operation on as many frequencies as possible with the minimum of complication in the way of antenna 'tuners' or matching units. Since the 1980s the 'game' has changed somewhat, with two additional factors to consider. One of these is the common use of transceivers with solid state finals and the other is the introduction of new bands at 10, 18 and 24 MHz, post WARC79. None of the antennas previously mentioned truly meets all these requirements.

In 1985, Brian Austin ZS6BKW at the time and now G0GSF, published his results for optimising the G5RV using the new-fangled personal computer. This antenna seems to be fairly unknown in VK, as I get a lot of enquiries if I mention that I am using a 'ZS6BKW'. Technically, the antenna has been researched thoroughly – L.B. Cebik W4RNL has written a great article for those who really want to explore the theory. In practice the antenna is very similar to the G5RV, the obvious differences being that it is a little shorter in the flat-top and a little longer in the feedline. The key factor of the design is the impedance-matching functions of the feedline. The original version used an open-wire feedline of 400 ohms nominal impedance. It is quite possible to build the antenna using 450 ohm ribbon or even 300 ohm TV ribbon, as long as the different velocity factors are taken into account.

Practical outcomes

This antenna will operate efficiently on SIX amateur bands without the use of a 'tuner', and with a VSWR

better than 2 to 1, allowing most rigs to operate at full power. These six bands are (parts of) the 40, 20, 17, 12, 10 and 6 metre bands. Using a tuner will allow operation on all bands, 160 metres through to 6 metres, with the possible exception of 30 and 15 metres. It is quite feasible to scale the dimensions of the antenna. Personally, I have scaled it by 0.68 to make a 30/15 metre variant, and also doubled the dimensions to make a great 80/40 metre antenna, albeit with a very long feedline being required.

Downsides

It can be a challenge to 'fit in' the required feedline length if you only have low antenna supports. Wet weather can detune the feeder enough to cause SWR problems in some cases.

Construction and optimisation

My current version of the antenna uses 450 ohm feedline (type no. JSC1318) and heavy-duty stranded PVC-insulated wire for the dipole (50 x 0.25, the equivalent of no.13AWG). I have threaded a nylon 'Whipper snipper' cord through the windows of the feedline and pulled it up tight to give support to the ribbon and as an attempt to stop it flapping in strong winds.

The velocity factor of the feedline can be checked as follows: connect a low power 50 ohm resistor across the end of the feedline, in place of the dipole, and sweep for a sharp dip in SWR using an analyser (or a QRP power source) and a SWR meter. A dip at 11,270 kHz should be evident, indicating an exact half wavelength feedline at that frequency (note well, this is outside the ham bands). A typical feedline length is 11.18 metres for the solid black TV ribbon (it is getting hard to find these days). My feedline shows a velocity factor of 0.923 giving a length of 12.276 metres, compared to the theoretical value of 13.3 metres.

Once the feedline is tuned to frequency, the dipole can be connected and pruned to length. What we are looking for here is best SWR in the middle of the 20 metre band, say at 14.150 MHz. There will be variations in the final length depending on whether the wire is bare or insulated. The final height, and whether erected as a flat top or inverted vee, will also influence the length. Antennas made using 300 ohm ribbon have been found to require a slightly longer wire length, about 14.2 metres per side.

My antenna has 12.276 metres of feeder and 13.5 metres either side in the dipole. The feedline is hung at about 18 metres, and spaced out from my tower about 600 mm. The dipole is slightly 'Vee'd' with the ends about 10 metres off the deck. I personally use a balun at the junction of ribbon to coax although it is entirely optional. You probably should leave it out unless there are signs of RF in the shack. I use a Riesert W1JR style of balun; it is 10 turns of RG58 wound on a ferrite toroid type FT240-61. Previously I used a W2DU type of balun with identical results. It will be noticed that the minimum SWR on the 17 metre and 12 metre bands is actually outside the band, normally a bit lower in frequency. This is a function of the design and cannot be corrected by length adjustment, the important thing

being that the SWR is useably low on the ham frequencies.

On air

The antenna performs as well as anything else of similar size and height and better than anything else in this price range! When used on 80 metres it will be found to be only a tad down on a full-size dipole. On 6 metres, I was very surprised to be able to work another station about 150 km away on SSB. DX performance is quite similar to the G5RV. I find that I can work plenty of DX using digital modes when the bands are open but you cannot expect too much in the kilowatt alley of 20 metres SSB. The theoretical radiation pattern is essentially similar to the G5RV; omni-directional on 80 metres, possibly favouring broadside on 40 and 20 metres and a multi-lobed pattern on the higher frequencies.

In conclusion, if I could have only one antenna, this would be it. It is probably worth the effort to make

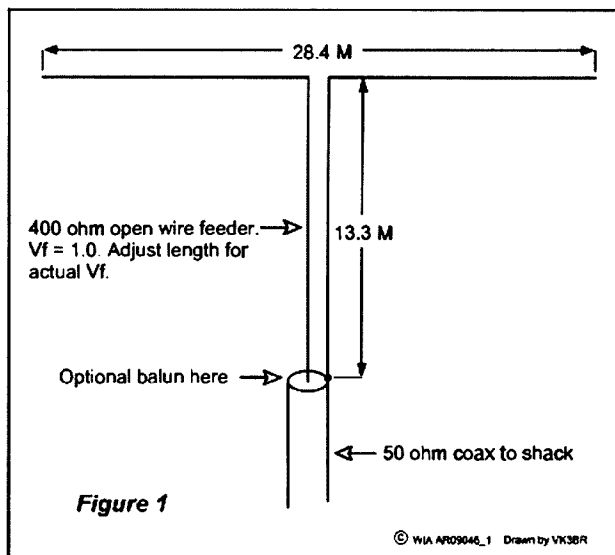


Figure 1: Diagram of the ZS6BKW dipole.

up some open-wire feeder of about 400 ohms Z_0 , for the best mechanical durability of the antenna.

Things to try

It should be possible to bring the legs of the antenna forward into a horizontal vee, making it into a V beam. With the internal angle between the dipole at about 75 degrees, the two main lobes of the azimuth pattern will combine as one on the high bands to give a bidirectional pattern with about 5 dB gain over a dipole.

Big releases for Vertex Standard

Vertex Standard has indicated some exciting times ahead for amateurs interested in both the HF and VHF/UHF bands.

This is with the imminent release in Australia of the FTM-350R dual band VHF/UHF transceiver, to be followed shortly thereafter by a major offering in the HF/50 MHz arena, the FT DX 5000MP, which is designed to fit between their high end FTDX 9000 series transceivers and the popular FT-2000 series.

The FTM-350R is ready for release in VK now, and may possibly be available through the Yaesu dealer network by the time you read this.

Features of the FTM-350R include a large LCD display with eight colour options, a multi-purpose global positioning system display, a huge memory channel management capability including 500 independent memory channels, a dual band AF monitor for FM/AM broadcast monitoring and an easily separated display control head allowing separation from the main RF power unit.

It is APRS® compatible, has dual built-in speakers on the rear of the control head for easy FM broadcast listening and has a built-in barometric pressure sensor.

The FT DX 5000MP may still be a few weeks away, but news of its coming will be advised in May AR. Well worth waiting for, I suggest!



Part 3 WW1 and closure

An Arena of Wonder – QSP

Peter Wolfenden VK3RV

The history of amateur radio in Australia continues. Chapters one to six of this series have been published in the previous two issues of *Amateur Radio* magazine.

7 World War I and closure

Extract from the log of Arthur Cotton XVS (later A5HY). See Figure 1.

The advent of WWI caused the closure of all experimental stations in Australia from August 1914. The committee of the Wireless Institute of Victoria received from Mr Balsillie, the Commonwealth Wireless Director, a request for competent operators "...to be called upon when required" (1).

All Australian experimenters received instructions from the Post Master General's Department to dismantle aerials, gear and appliances within 24 hours and to lodge their equipment at the local Post Office. See Figure 2.

The Navy resumed control of the radio spectrum in March 1916. About five months later all aspects of Shaw Wireless Ltd were purchased by the Government for the use of the Navy. The repercussions of this were massive, ending up as a Royal Commission on Navy and Defence Administration in 1919 (2). Newspaper headlines screamed "NAVY SCANDAL" as the story started to unfold in the House of Representatives (3).

During the war, many experimenters enlisted and as a result most "radio" clubs and societies either closed down or became moribund. The war desperately needed wireless operators, indeed anyone with Morse code proficiency was snapped up by the services. Wireless, like aviation, was a new science lacking a reservoir of competent operators,

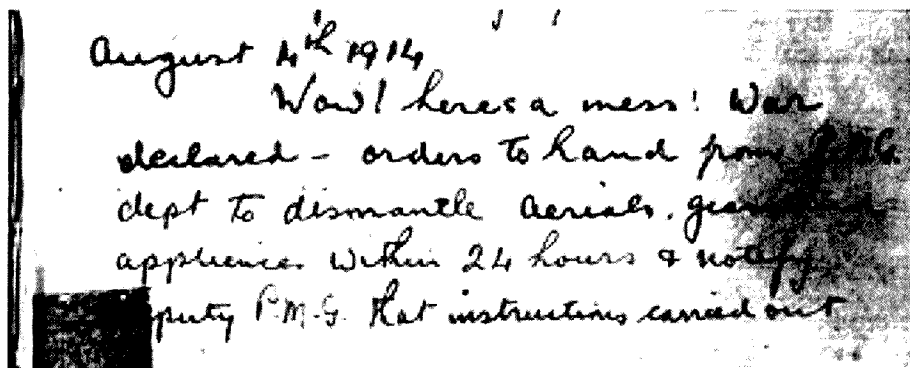


Figure 1: An extract from the log of A5HY, 4 August, 1914, noting war declared (VK5CTY).

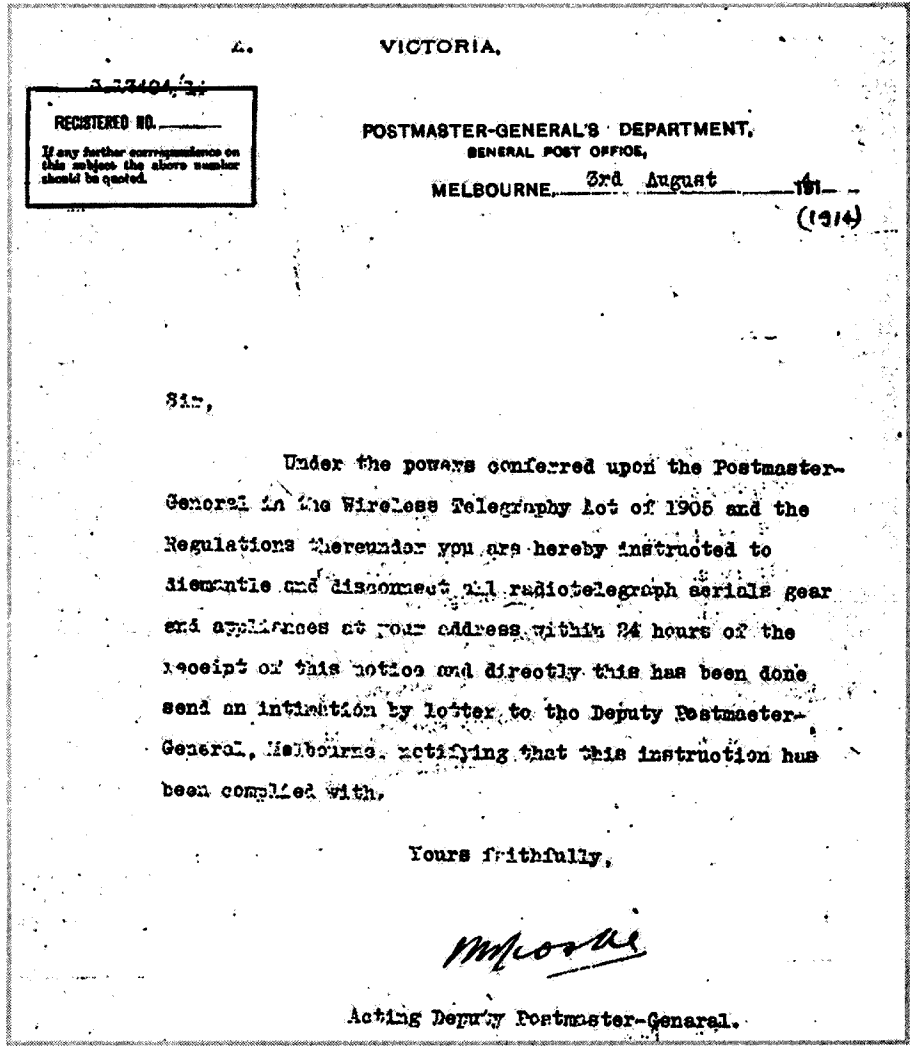


Figure 2: A copy of the PMGs "closure letter", 3 August, 1914.

consequently many adventurous teenagers put up their age to enable them to enlist in a bid to break away

from boredom at home!
At the August 1914 meeting of the

WIV "It was decided to hold together as an institute to ensure the return for apparatus and right to experiment further after war trouble was over" and "that the institute offer its services to the Defence Department for any duty the department might consider its various members capable of performing."

There are also reports that some experimenters loaned or donated their equipment to the Navy or other government department. Walter Witt's (XKW) Ford spark-coil transmitter was used for short range communications between ships at sea and Victor Nightingall's (XKK) aerial mast – all 47.5 m (156 feet) of it was donated to the Postmaster General's Department, "to be removed at the Department's expense and in

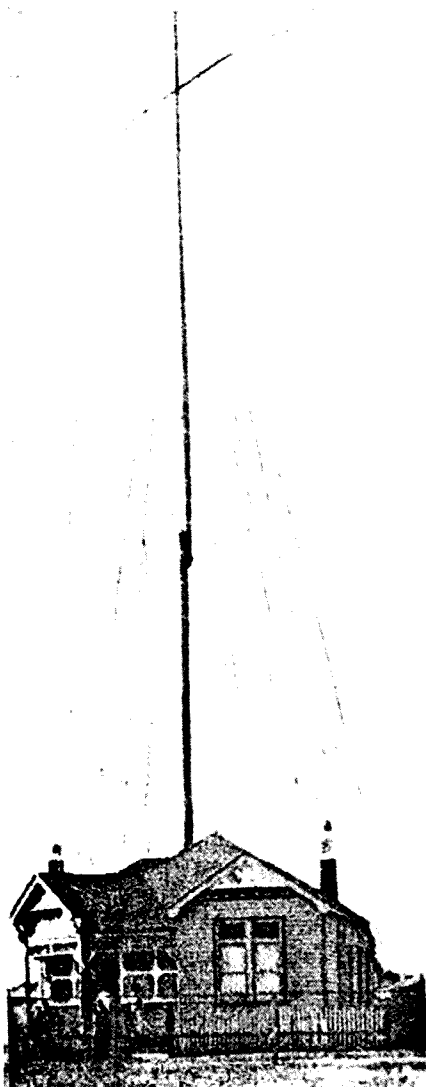


Figure 3: Victor Nightingall's mast and aerial was donated to the Post Master General's Department! Their removal problem! (Nightingall File, WIAA)

accordance with the demands of the Department of Defence"! (4, 5) See Figure 3.

8 Trying to get back "on the air"

Although Armistice was signed on 11 November, 1918, the control of the spectrum in the UK, USA and Australia was jealously retained by the respective Navies. The USA led the way back to "normality" and then only after the Director of Naval Communication Service under much pressure from Congress removed all restrictions in September, 1919. UK and Australia followed, however many restrictions remained in force for some years (6, 7, 8).

In Australia, the Navy was very reluctant to relinquish control. Amateur experimenters and commercial interests alike became frustrated by the prolonged delay and, during 1919, Ernest Fisk, Managing Director of Amalgamated Wireless, Australasia, became involved with the WIA (NSW) and was pro-active in having the spectrum re-opened to the experimenters. At this distance, it is unclear as to exactly what were his real motives. Perhaps we should accept that his efforts were intended for the betterment of experimenters generally, but we should also bear in mind that he was foremost a company man, very much involved with the commercial aspects of wireless and keen to expand his business activities. He was a "centre stage" player and regaining access to the spectrum would have been foremost on his mind!

Just prior to the formation of the South Australian Section of the WIA in September, 1919, Sea, Land and Air magazine reported: "Wireless Institutes are now being formed in all the Australian States, and when they are completed it is expected that they will be linked into one Commonwealth organisation, in order to work for the common benefit of all experimenters and private users of wireless apparatus" (9).

The claim that "Wireless Institutes were now being formed..." seems to imply that there were no earlier Institutes, although in many instances, office bearers of pre-WWI Institutes continued in office bearing positions during the post-WWI

restructure. Hyperbole surrounded many reports of activities in the numerous radio journals appearing during the years after WWI. Reading these magazines today leaves an impression of a deal of 'manipulation' of people, organisations and events by those in a hurry to make change!

Prior to the Navy issuing receiving licences after the war, many experimenters quietly rebuilt their stations and commenced tuning into the ether again. One was Arthur Cotton of Adelaide, XVS prior to the war. He felt that the government owed him the unused portion (173 days) of his paid up pre-WWI licence.



Figure 4: Arthur Cotton A5HY, circa 1927.

In August, 1919 he wrote to the PMG about the situation; but nothing was heard until 29 January, 1920! Quoting from Arthur's log book, the reply stated that his letter "...was referred to the Naval Department which had given it much consideration and decided to give me pro rata credit for the unexpired portion of my licence issued pre war (not so bad), but it will be allowed not now, but when the new regulations permit renewal" (10).

Arthur pressed on with re-establishing his station - "...I have, however received my junk back from quarantine [the local post office] and have erected a nice new mast and aerial and enjoyed a fortnight's good fun on 600 metre reception when I had a visit from a Naval Officer (Square rig and brass buttons)! He reminds [me] of the fact that I

must QRT until a proper permit is forthcoming (much good exercise hauling aerial up at nights)."

Then "...After a long wait, the 9th of June brings a letter stating that my temporary permit, No. 210 is withdrawn and if I take out a new licence, it will be extended 173 days but if a new licence is not taken – nothing doing. Also, a remittance of £2-0-0 must accompany an application. This was done and a licence was duly received to listen only - Non-regenerative" (10). The licensing situation was starting to move. The Navy commenced issuing temporary receive only licences from November, 1919; now further pressure was being placed on the authorities to make available transmitting licences.

During November, 1920, the South Australian Division was so concerned about "valve licences" being made available to incompetent persons that they decided to approach the authorities over the matter! Early valve receivers, if incorrectly operated, could radiate and cause interference (9). The Victorian Division contacted other states requesting them to agree to appoint

proxies from within the Victorian Council (of the Institute) to represent them on a possible Federal Council which itself was to approach authorities to re-issue transmitting licences and obtain due recognition of a Federal WIA (6, 9).

Most wartime restrictions were removed by the Government in late 1920 and the PMG regained control of examinations. But transmitting licences were not generally made available until late 1922. EW Cole (Book Arcade) Publisher produced *Wireless Telegraphy* in 1920, a small handbook which provided guidance to potential commercial and amateur wireless operators wishing to study for the new examinations. The text covered the Marconi, Telefunken and the Australian Balsillie wireless systems together with general theory (11).

The new Controller of Wireless was Jim Malone. He was generally sympathetic to experimenters and issued a number of special transmitting licences "ahead of time". One was for the Wireless Institute (Vic), which from May, 1921 was granted permission to transmit nightly from rooms which the

Institute had taken at the Arcade Hall in Chapel Street, Prahran (6, 12) .



Figure 5: James Malone (WIAA).

Another example is the South Australian Institute being allowed to establish an experimental wireless telegraph station at the residence of its Honorary Secretary, Clement Ames in Torrensville. The station operated from September, 1921, initially under

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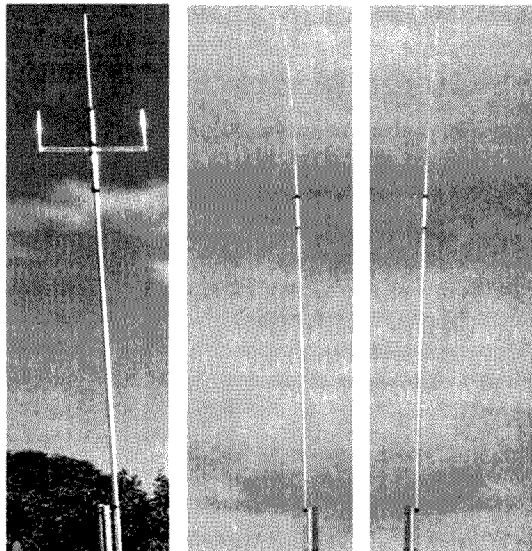
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the call sign S519 changing later to 5AV. It is understood that there were a few others (13).

It is appropriate to record here, that over the years, the relationship between the PMG (their predecessors and their successors) and the WIA appears to have been amicable and professional.

Perhaps in the past, this was because radio men were dealing with radio men who understood the technical ramifications of a decision, but we should not forget that the authority also wanted to deal with one experimental/amateur voice and the WIA finally gave them that single voice. There were of course differences of opinion and sometimes misunderstandings, but as a general rule, once difficulties or objectives were recognised by each party, a mutual approach usually followed which led to a solution for the problem.

I am particularly referring here to administrative issues – policy or political matters have at times been very hard on experimenters and on occasions caused the WIA to make a public stand in an attempt to seek support and an acceptable outcome. This did not always happen! (14, 15).

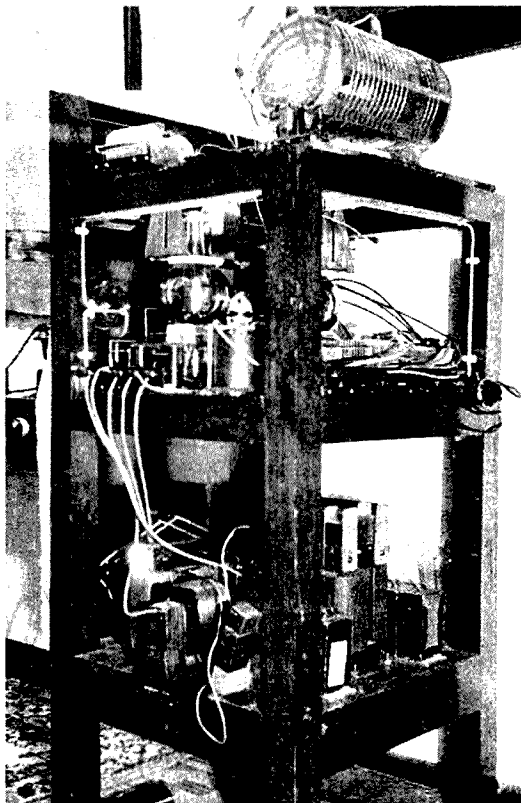


Figure 6: The 2WI station, in 1925.

By the end of 1921 there were sufficient stations using regenerative receivers that interference was being experienced by all users of the spectrum in some parts of the country. The earlier fears of the South Australian Division had been realised!

Because of the interference, newspaper reports in July, 1922 proclaimed that experimenter's licences were in jeopardy. Moves were afoot to secure the cooperation of all Divisions in the protection of experimenter's rights.

A reduction in the abnormally high licence fee was again sought and in August, 1922 the SA Division sent a letter to the Prime Minister about the status of amateur experimenters. At that time the PM's department was responsible for overall spectrum management via Jim Malone, Controller of Wireless for the Commonwealth. In reply the Division was advised that "the question of radio control is being considered by Federal Parliament"; it was obvious that major changes were at hand (6, 16).

The hiatus in making transmitting licences readily available generated a deal of impatience on the

part of potential amateur experimenters and those wishing to open up the commercial possibilities of wireless. The only stations receivable by those who had paid for their licences were the coastal stations (recently taken over by AWA), ships at sea, a few land stations including Institute stations, the occasional official telephony experiment and perhaps the odd impatient "pirate"!

A number of "would be" experimenters keyed their oscillating valve receiver, which operated as a low powered transmitter, enabling short range communications – all highly illegal!

The Postmaster General's department was still trying to deal with this issue in 1924 even when it was possible to obtain a transmitting licence! Complaints were made by the Institute to the PMG about

the unreasonable delays in issuing licences to qualified people "...and as a result a number of unlicensed transmitting stations had been established, or in some cases the licensed receivers were being used in an illegal manner for the purposes of transmitting" (17).

Before we leave this period of our history, it should be mentioned that it was at about this time that lady operators joined the ranks of experimenters.

Initially a fairly "rough start" for those prepared to venture into the all male domain of volts, amps and Hertzian waves. The first report of formal interest was revealed during 1919 when a Miss Rogers made an enquiry about the possibility of joining the South Australian Division. The institute replied (after consulting with other States), that "This Institute at present is unable to admit lady members" (9). Was this one of the reasons for the VK5s rapidly changing their minds in December, 1919 to drop the constitution drafted in NSW in favour of their own?

Florence Wallace (later McKenzie) is the first known licensed lady amateur in Australia. A qualified electrical engineer, she operated a wireless/electrical shop in the heart of Sydney from 1921 (13). In a 1927 call sign list, she is shown as VK2GA. Florence was a very active and respected lady operator, who was involved with establishing *Wireless Weekly* magazine in August, 1922.

Florence, or "Mrs Mac", established the WESC (Women's Emergency Signal Corps) which provided a no-charge Morse code training facility. From this grew the WRANS, the Women's Royal Australian Navy. "Mrs Mac" trained many! From this time on, the number of lady operators grew; many however, remained behind the anonymity of Morse code operation!

Today, Australia has many lady operators using all modes and operating on most bands, they are supported by their organisation ALARA (Australian Ladies Amateur Radio Association), formed in 1975, which is affiliated with the WIA.

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ar



Figure 7: Florence Wallace (later McKenzie) (*Australasian Wireless Review* January, 1923).

Software Defined Radio

- a look at the Flex-3000.

Brian Morgan VK7RR



Photo 1: Brian VK7RR at his portable operating desk, the laptop in the foreground and the SDR Flex-3000 on the right.

Do you remember your first foray into radio? I certainly remember mine. My boyhood was spent building crystal sets, then graduating to a one valve regenerative receiver, then two valves and then, one day, a two transistor radio built on a masonite board. I thought all my Christmases had come at once with its performance so much better than the valve radios.

The next fifty plus years have kept me interested in the ever changing challenges of amateur radio. Yes, I have progressed through surplus military receivers, 10 valve home built receivers with the then innovative product detectors which made copying SSB so much easier, to Yaesu, Icom and Kenwood transceivers, all the while



Photo 3: A photo of the complete station, with the 10 + 10 watt external audio amplifier (referred to in the text) sitting on top of the Flex-3000.

being distracted by building or repairing repeaters or some home brew project or another.

Three years ago I was exposed to the new concept of a software defined radio, one which defied almost all of the then accepted conventions and did not even have a tuning knob. I was intrigued and could not wait to purchase the Flex-5000 radio and then, early in 2009, the Flex-3000.


This is not intended to be a technical article but a practical description of a new concept in transceivers.

My shack still has a Yaesu FT-1000MP Mark 5 sitting on the bench but it no longer even has an antenna attached to it, so taken have I been with the Flex radio.

The 5000 has become my home station and the 3000 is compact enough to be taken portable as you can see. And yes, that is snow outside the window.

The Flex-3000 and my laptop both sit inside a traditional laptop bag. It is slightly bigger and a little heavier than the laptop, weighing in at four kgs.

The radio puts out 100 watts on all HF bands and six metres. The power can be varied manually for each band, by a very accurate drive control but can also be adjusted by software, so as to drive linear amplifiers and so on, at different drive levels. It does not have



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Photo 4: A discrete photograph of the radio on a reflective surface.



Photo 5: A view of one of the hardships the author has to endure when playing amateur radio in the highlands of Tasmania.

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conventional ALC, but then again, if you set it up correctly, it does not need it.

The software defined radio, as its name implies, is as much to do with computer operating as it is to do with sitting by a ham rig. It does not require any more knowledge of computers than operating Windows XP.

The basic radio comes with PowerSDR, the software which gives you a transceiver like appearance on your computer screen and which provides for all the functions we would expect in a conventional transceiver.

With additional software, some of which is obtainable free of cost and some of which requires a nominal payment, it is a simple matter to set up operating on all digital modes, including, RTTY, Packet, PSK31, SSTV and so on. No external devices, such as a modem, are necessary as all connections are done electronically through the use of this software.

Let me explain what I mean. In a conventional radio, if we want to run in digital mode, we have to run cables from our radio to a decoder/encoder or, these days, to the soundcard of our computer. In the

case of my Yaesu, this required about a dozen different cables, some to take audio to and from the radio, one to enable the radio to be tuned via the computer (CAT), one to key the radio for RTTY, another to key it for CW and I have probably forgotten several.

With the Flex, there is one cable, that being a common old garden variety firewire cable. Whilst not as well known as a USB cable, most modern computers have a firewire connection. This permits higher speed data exchange between the computer and the radio than one can achieve with USB2. No other cables are needed. We do not use the sound card in the computer because all processing is done digitally thus limiting the risk of introducing unnecessary distortion. By comparison, most of the processing in my Yaesu station was done in analogue.

The difference is immediately noticeable in weak signal conditions, where you are competing with the noise, so that a Software Defined Radio will decode PSK signals which are below the audible level.

If you have ever used a computer for station operation you will have

encountered the problem of trying to have several programs interact from one serial port of the computer. These days we are lucky if our computer has even one serial port, much less more than one and I have had a great deal of trouble using USB to serial adapters.

A comport (which is the connection to the computer via the serial or USB port) can only talk to one device at a time, so that if you want the computer to control your radio, antenna and perhaps rotator all at once, some other process needs to be used, to avoid a comport conflict where the first program to be engaged hogs the comport and prevents its use for any other process. In the bad old days I would find myself forgetting that I had a program open, then open, say, a logging program and then have the computer disable that program's CAT feature because it was already in use.

Because we are talking about a software defined radio, we can use software to achieve this. First, there is a free program (DDUtil), written by Steve Nance K5FR which works hand in hand with another program Com0Com which simulates pairing of comport from real ones to virtual comport.

With these two programs you can load and run a logging program, a digital decoding program and a rig controller all at the same time, and again, without needing any leads. It is all done in software.

Connecting audio between the radio and the digital programs is also done in software using a paid program (NTONYX) which provides a virtual audio connection between them.

In my home station, I was running a 4 element SteppIR until high winds earlier this year re-shaped the driven element. I am still waiting for SteppIR to provide the promised replacements. However, that is another story.

The SteppIR is designed to follow band change commands automatically, and also, within the band, it will adjust the element lengths as you tune up and down the band.

My rotator is an Alphaspid which is also designed to integrate into the CAT commands coming from

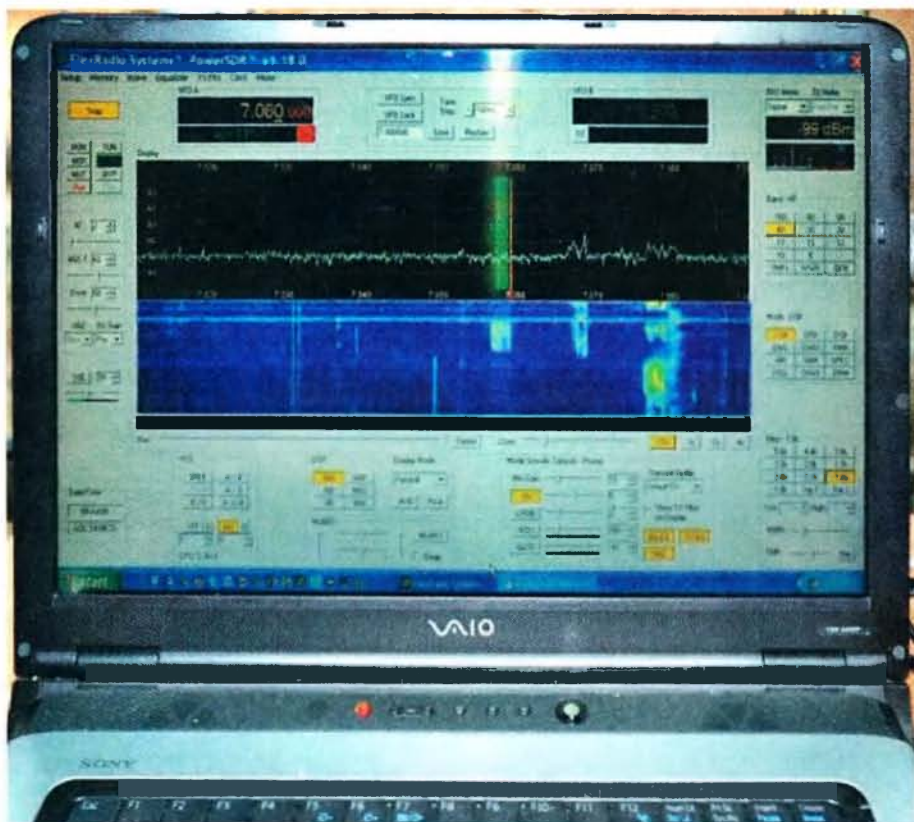


Photo 2: A screen shot of the Flex-3000 at work, in SSB mode, on 40 metres. The strong signal in the centre was the station to which I was tuned at that time.

the computer, so that my logging program will tell it the short or long path bearing of the station I wish to work, and without touching a button, the antenna as if by magic turns in that direction. All of these functions occur without any conflicts, through the use of the software outlined above.

There is of course a cable to the rotator and the SteppIR controller, but we can't have everything!

At my weekender in the central highlands of Tasmania, I have one antenna at present, a full wave loop on 80 metres. The Flex 3000 has a built in ATU which, so far, I have found will present me with a satisfactory match on all HF bands.

I am sitting here writing this article on the computer which is also driving the radio, whilst I listen to a busy Saturday afternoon of activity on 40 metres. Boy the ZL's are strong today.

The one feature which most struck me by the demonstration of the Flex radio was its narrow band performance. It is quite amazing to reduce the receiver pass band on CW to, say, 100 Hz and be able to read the other station without any of the ringing that we have come to expect with narrow crystal filters. With a Flex radio, there are also no more filters to buy; they are all on board, in the form of software.

The other features, which I have now come to treat as a must, are the panadaptor and the waterfall. These give you a digital picture of the segment of the band that you are tuned to. I have found on a number of occasions that six metre beacons, which are too weak to read, can be seen on the waterfall. Indeed, as the MUF increases, you can sit and watch as these signals climb above the noise floor until ultimately the human ear can start to read them.

You no longer have to sit tuning up and down the bottom part of six. All you need do is cast an occasional look at the computer screen and this will tell you what the band is doing.

And if you are using digital modes, with the Flex-5000 or 3000, centre the cursor over a station showing on the panadaptor, click on the right mouse button and then left click and you are tuned to that station.

I have experimented with MixW and TRX-Manager, to name the two that I have most used, as rig control programs, which also allow me to keep a digital log. There are a number of others, including Ham Radio Deluxe. At the end of the day, I think it comes down to personal choice. Each of these programs has certain features that the others don't have. In my case I have cheated a little as I have added several features which

you can load and run a logging program, a digital decoding program and a rig controller all at the same time, and again, without needing any leads. It is all done in software.

allow me to do additional functions in the program of my choice.

Now to the Flex-3000 itself. On the front it has an illuminated, in blue, on/off switch, a 5 mm socket for a CW key, a ubiquitous RJ45 for the mike, and a 5 mm socket for headphones.

On the back are the antenna input BNC connector and controls for external PTT, such as a footswitch, a logic out for switching a linear, line level out for audio to external amplified speakers and the flex wire cable from the computer. A robust four pin connection for 13.8 volts at 25 amps completes the layout.

The Flex 3000 does not have multiple antenna sockets, whereas the Flex 5000 does. I do not see this as a disadvantage because the radio is intended to be used as a portable rig so that external connections are necessarily kept to a minimum.

In the shack, I found it useful to build a dual channel 10 watt audio amplifier which is in a box painted, as close as I could find, to the distinctive blue of the Flex-3000. I prefer using large

speakers in enclosures to powered computer speakers in plastic containers.

The excellent received and transmitted audio from the Flex radios has frequently been commented on by people exposed to them for the first time. On SSB, the audio can be shaped by a graphic equalizer which can adjust transmit and receive audio to your own preference.

And as if that is not enough, because this rig is set up to operate via a computer, if you are connected to the Internet at each end, you are able to operate it remotely. Band change is by the flick of the mouse, tuning is by the scroll wheel, audio gain is again by the flick of the mouse and transmit and receive audio are, in my case, carried via Skype. The two computers are linked by Tight VNC, a very simple program to set up.

With a Flex radio this process is just so simple and would be used between my home and my weekender, if only we had broadband there!

In conclusion, my experience with the big brother, the Flex-5000 left me wanting its younger sibling and mine was in the first batch ordered. I received it about a month ago and have been extremely happy with it to date. I am still in the learning phase, but set up probably had me on the air within an hour of unpacking. And that also required me to make up an adapter for my headset to fit the RJ45.

If you are thinking of changing rigs then these are excellent value for money. Indeed, I would have to say that by comparison with the Big Three, in my humble opinion, the receiver on the Flex-5000 is the best that I have used. It is too early to make any definitive comments on the Flex-3000 but it has some very unusual features, as it started to snow outside whilst my XYL was taking the photos for this article. That is a feature that I have not seen mentioned in the detailed instruction manual!

Photos 1, 2, 3 and 5 by Sue Morgan VK7KSU; Photo 4 by the author.

Tall trees from little acorns grow

- or the value of a technical education!

Peter Wolfenden VK3RV

For much of the last century, an education at a local technical school was considered by many to be very beneficial for a worth-while career.

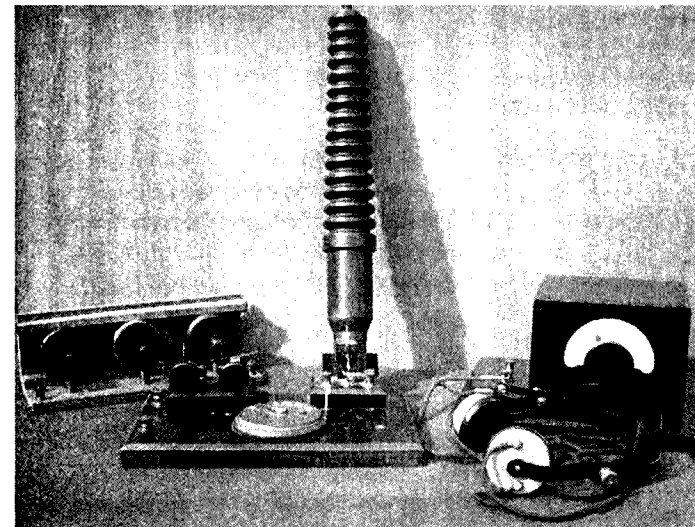


Figure 1: Detectors and acoustic amplifier, Stawell.

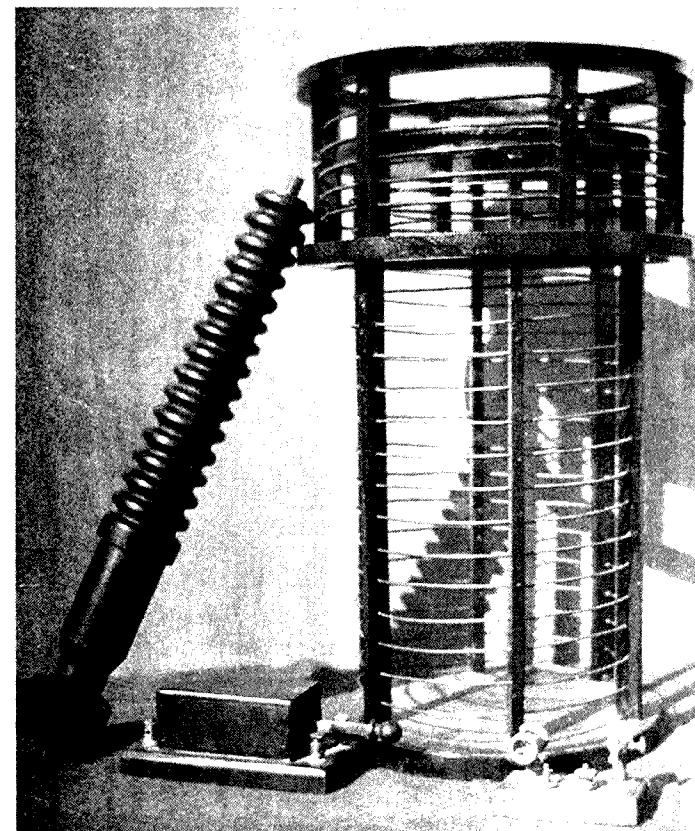


Figure 2: Lead-in insulator and helix, circa 1916.

Communities even banded together to finance the construction of technical schools such as in Prahran, Melbourne where the local Mechanics Institute, itself a place of informal education, saw fit to construct, at its own cost, a substantial technical school – Prahran “Tech.”. When completed, the Institute handed the school over to the State Minister for Education on a “peppercorn rental” for the purposes of technical education within the municipality (1).

Many leaders of industry and commerce received their formal education at such institutions. Indeed, often those involved with industry and some professions gave freely of their time to help run organisations such as Mechanics Institutes and local Schools of Mines.

The Stawell School of Mines (later the Technical School), obviously unknowingly at the time, played an important part in Australia’s early wireless history.

About 1915, a young Albert Horbury took up a teaching position at the school where he luckily had access to many workshop facilities essential to make early wireless equipment.

But this story starts some years before Albert took up the teaching job at Stawell. According to the Argus newspaper, he had been experimenting with wireless in Ironbark (Bendigo, Victoria) since about 1909 when he was only 14 years old! Albert successfully received messages from ships outside of the Port Phillip Bay Heads, a distance of about 200 km, and by the age of 18 had taught another lad from Bendigo sufficient to allow them to communicate across the town. Much of his equipment was home-made including storage batteries made from large jam and preserving jars more than likely to his mother’s disgust! By 1914 Albert was formally licensed as XLC and is included in the WIA 1914 Call Book. The address given is simply “Bendigo” (2, 3).

1916 saw a new student at the Stawell Technical School, indeed a lad who was destined to contribute to the Australian fabric in many ways over his working years, including a major part in Civil Aviation.

Ivan Hodder was the keen student and it did not take long for him to discover that Mr Horbury had an interest in wireless. Ivan asked if he would teach him something about wireless telegraphy. However, it took some time before Albert agreed to do so and then only after young Ivan rounded up sufficient students to run a wireless class.

Eight of his mates from the local Boy Scout troop were ‘enlisted’ and the teacher then put a proposal to the school’s Principal to run a wireless class at no cost to the school. The school however, charged the students

10/- (\$1.00) per term for Albert Horbury's expertise – but first official permission had to be sought by the school!

The wireless spectrum and wireless itself was highly controlled and regulated by the Navy during and after WWI and it was necessary for the Principal to obtain permission from the Navy to run the instruction classes in wireless theory and practical knowledge of wireless equipment. The school's request was approved by Commodore Cresswell, the man in charge of the RAN Radio Service.

By the end of 1916, Albert Horbury felt that his class had enough theoretical knowledge to proceed to the next stage – the practical application of the 'science'. Some simple experiments were conducted and with the aid of the school's workshop facilities, tuners, loose couplers and a variometer were made.

Transmitter items followed a little later; key components being a high voltage lead-in insulator, a large transmitter helix or coil and a high voltage "tank" capacitor made from sandwiched sheets of zinc and photographic glass plates acting as the dielectric. A smaller version of the station was made for portable operations. This was often loaded onto a buggy and at weekends taken a few miles out into the bush where two way communications with the "base station" were made. According to Ivan, the construction of all of the components and equipment was achieved in about one year!

See Figures 1, 2, and 3.

Moving forward a few years, Stawell Technical School student Ivan Hodder later qualified as a maritime wireless operator and went to sea. In 1924 he applied for a studio technician's position with 3LO broadcasting station in Melbourne, when it was still a commercial station. 3LO was partly owned by retail store Buckley and Nunn who enticed Ivan away from the studio job to operate its radio sales department.

The return to amateur radio took place in about 1930 when Ivan obtained VK3RH and operated from a farming property, Riachella near

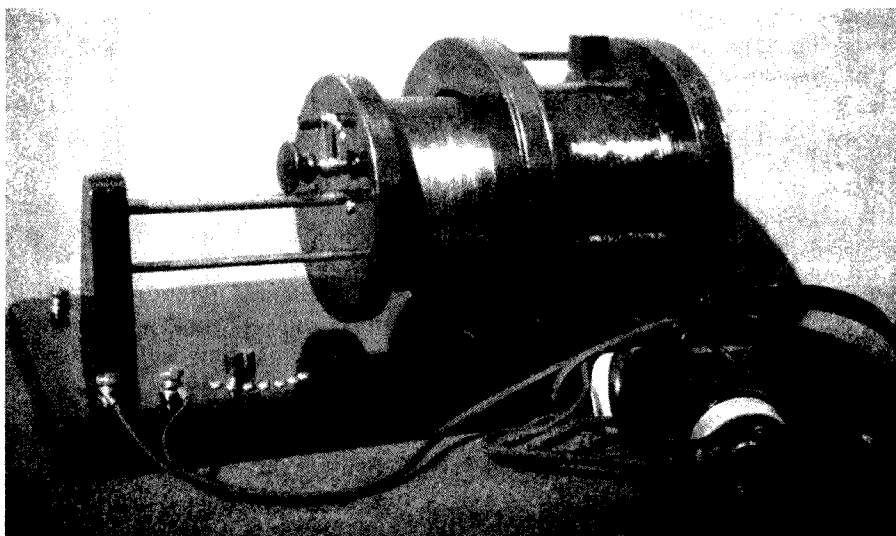


Figure 3: Loose coupler and crystal receiver.



Figure 4: 1934 bushfire transceiver with four watts output.

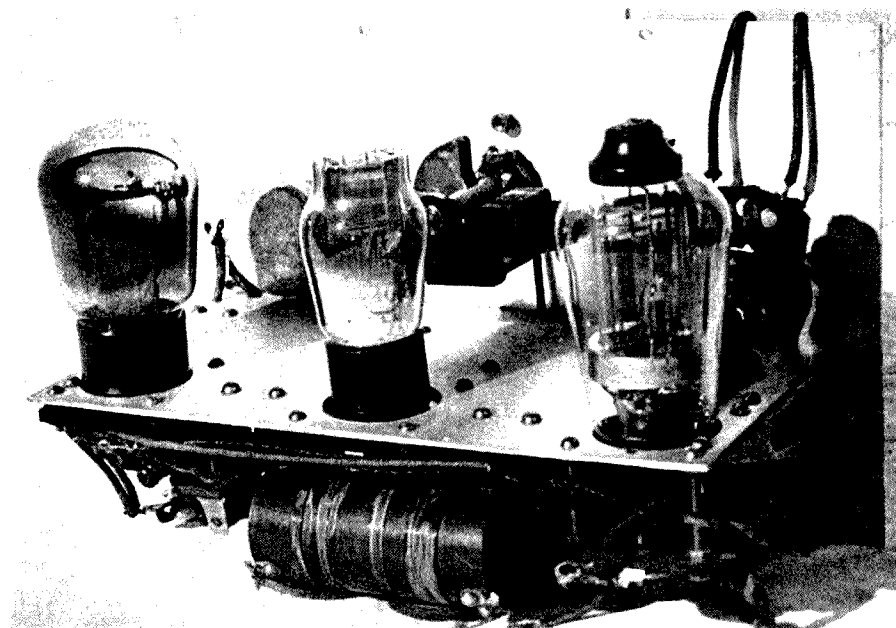


Figure 5: Rear view of the 1934 receiver.

Stawell. He joined the WIA and was elected to the VK3 Council as the Country Representative. Later he became a Vice President of the Victorian Division (4).

During 1934 Ivan built a transceiver for the Glenorchy/Riachella Bush Fire Brigade, No 1 Victorian Registered Brigade. The HF transceiver had a four watt, 80 metre, crystal controlled transmitter which could be operated in phone or telegraphy mode. The receiver used a regenerative detector and could receive on 80 or 40 metres; the whole lot operated from a six volt car battery by means of a heavy duty vibrator supply especially manufactured by Eclipse Radio.

This was probably the first two way radio in Victoria, maybe Australia, for bush fire fighting although Ivan recorded that no fires occurred in the two years after it was built! (5)

See Figures 4, 5, 6.

1938 brought a total change for Ivan when he was offered and took up a job as Radio Inspector with the Civil Aviation Branch in August that year. And so began a twenty six year career with Civil Aviation which took him all over the world and involved him in the rapid expansion of international flights and the communication and navigation aids necessary for that expansion.

He was also involved in the setting of standards for flight crew using

radio equipment and later produced the Air Navigation Orders and Flight Radio Operators Manual.

Ivan retired from Civil Aviation in August 1964 when according to him "I had become too old and decrepit to work any longer for the "Guvmint" and received the golden handshake"!

I wonder how many students from Stawell School of Mines benefited from Albert Horbury's enthusiasm for wireless telegraphy and how many "tall trees from those little acorns grew"?

There is a small "twist in the tail" of this story. At the time Ivan was being examined for his Commercial Operators Certificate of Proficiency in 1919 by Lieutenant AF Newman of the RAN (the Navy was still in control of the spectrum at this time), the high results he achieved were remarked on by the examiner.

Ivan then told him of his experiences at the School of Mines in Stawell and later showed him photographs of the equipment constructed by the boys. The Lieutenant was astonished to see the equipment and then proceeded to tell Ivan that it was he who had drafted the letter of permission for the school to conduct the wireless classes issued under the signature of Cmdr. Cresswell.

However, he continued, it was never intended that the permission extended to the construction and operation of any wireless equipment! Lieut. Newman added that if the Navy had become aware of the activities at Stawell during the war, the teacher and students all risked going to gaol! Paradoxically, the signature on Ivan's 1919 Certificate of Proficiency was.... Cmdr. FG Cresswell RAN! (4, 5).

References

1. Prahran Mechanics Institute website www.pmi.net.au
2. Argus Newspaper, Melbourne, Youthful Wireless Expert, 7 May 1913, p 5.
3. Wireless in Australia, Wireless Institute of Victoria, 1914.
4. OTN, Journal of the Radio Amateurs Old Timers Association, March 1987, p 8.
5. Ivan Hodder file, WIA Archives

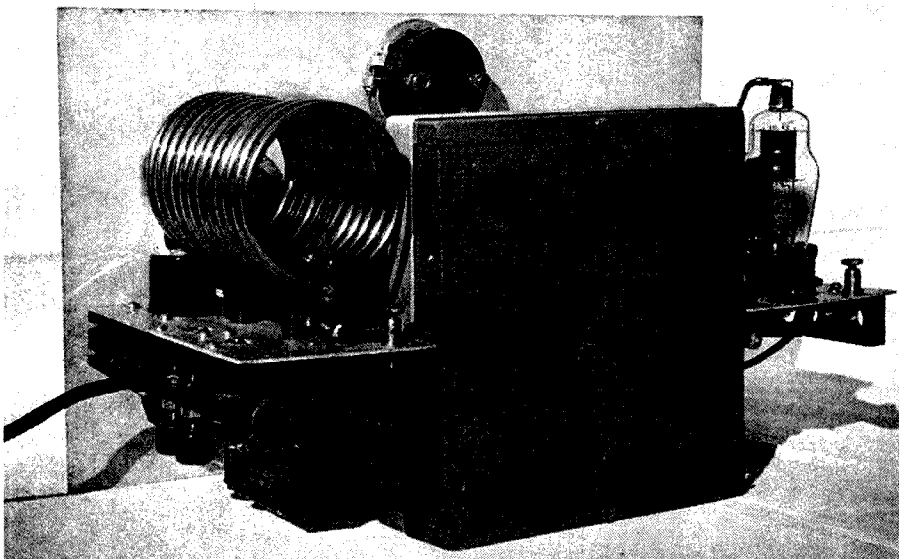


Figure 6: Rear view of the 1934 transmitter.



Figure 7: Ivan Hodder at Stawell, 1918. Note the AIF badge.

Cover story

VK9NA Norfolk Island (RG30xx) VHF/UHF/microwave DXpedition January, 2010

Kevin Johnston VK4UH, Alan Devlin VK3XPD and Michael Coleman

During the first two weeks of the New Year, the VK9NA team operated two portable stations, covering all VHF and microwave bands from 50 MHz through 10 GHz, with DX capability, from Norfolk Island. The aim: to provide contacts from this unique South Pacific location to amateurs in Australia, New Zealand and beyond on the higher frequency bands. The DXpedition was the first planned activity of the WIA Centenary year celebrations. Details of the activity and the results achieved are presented.

Norfolk Island (NI)

Geographically Norfolk Island is a small island in the South Pacific Ocean (29 07'S 167 57'E) located between mainland Australia to the west, New Zealand to the east and New Caledonia to the north. The island has a population of just over 2000 permanent residents and an area of around 35 square kilometres.

Although an Australian Territory, in 1979 Norfolk became self governing and independent from Australia. Children born on Norfolk Island are Australian citizens; however the population of the island are somewhat unique in that they are the only group of Australian residents who are not represented in the Commonwealth Parliament of Australia and who lie outside

of the normal Australian taxation, education, legal and Medicare health care systems. No income tax on Norfolk!

The island is steeped in the history of the early European settlement of Australia, having been first sighted in 1774 by Captain James Cook on his second voyage to the South Pacific. He is said to have named the island after the Duchess of Norfolk and noted that the island was a great source of tall straight trees suitable for ship's masts and flax plants for sail making, both of great importance at that time to the British Royal Navy.

History shows however that both these assumptions

would prove to be false, the wood of the Norfolk Pines proving too brittle as ship's masts and the flax being inferior to that found in New Zealand.

Interestingly the first settlement was established on Norfolk in 1788, the same year as the first settlement in the new Territory of New South Wales – both towns being named "Sydney". Sydney NI was later renamed Kingston.

Between December 1786 and 1813, and then again between 1824 and 1855, the island entered a darker



Michael VK3KH, Alan VK3XPD and Kevin VK4UH with their 1.2 m dish.

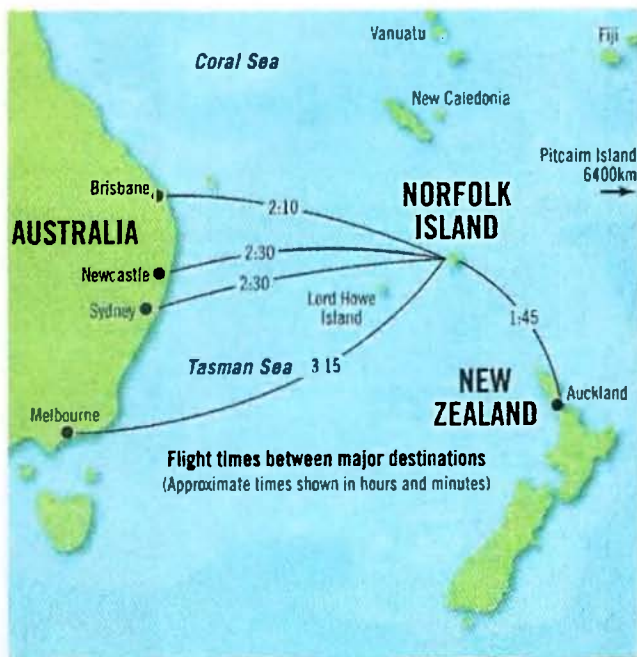


Figure 1: Map with flight time distances to capital cities.

period of its history as a penal colony for British convicts. This period was renowned for its merciless and cruel brutality inflicted upon its inmates.

In 1824 Thomas Brisbane, Governor of New South Wales and Norfolk Island wrote "The felon who is sent there is forever excluded from all hope of return". Norfolk was also known as "a place of the extremest punishment short of death". By 1847 the British Government had closed the penal settlement, the last remaining convicts being transported to Van Diemen's Land VK7.

A year later, 1856, saw the colony rejuvenated with the resettlement

by Pitcairn Islanders, descendants of the Bounty mutineers and their Tahitian partners, after having been pardoned by Queen Victoria and her government. The island became the base for traditional farming and whaling fleets.

During WW2 Norfolk assumed great military significance in the Pacific conflict as a key airbase and refuelling depot between Australia, New Zealand and the Solomon Islands. The Garrison was primarily under the control of the NZ Army.

Today, Norfolk supports a friendly and thriving community of Islanders relying mainly on farming, fishing and tourism for its economy. Most residents hold down three or four jobs. There is no income tax and no council rates, currently only a GST on purchases and a fuel levy. Most residents never lock their cars or houses, everyone is known and crime is almost non-existent. Cars usually only have two or three digits on their registration plates and there is only one roundabout on the whole island.

There being so few surnames amongst the Islanders, the local telephone directory lists most subscribers by their nicknames. There is a hospital providing basic services and air retrieval to the Australian mainland where necessary.

The island has a terrestrial TV service

with most Australian networks available and a local station. There is a wireless 2.4 GHz internet service and a local mobile phone network. Unfortunately the mobile phone network does not support international roaming at the present time. The Norfolk Island airport is equipped for international flights and accommodates moderate sized jet aircraft including the Boeing 737-300.

There is however no natural harbour on the island and only modest loading jetties. Most goods including heavy machinery are brought by sea and craned onto small landing craft for transfer to the shore. The cost of living is expensive since most commodities must be brought from the mainland. Fuel costs \$2.50+ per litre and electricity, generated at the diesel fuelled power station, costs around 65c/kWh.

From an amateur radio perspective

Norfolk Island VK9N is not a rare DX location. Many visiting HF based activities have been undertaken from the island even in recent years. There are also several licensed amateurs resident on the island who are active on HF. Further Norfolk was, until his death in 2009, the home location of Jim Smith VK9NS and his wife Kirsty VK9NL, two of Australia's best known and most highly regarded HF

Table 1: Equipment used by VK9NA.

Base and portable equipment in detail.

Base Station at Shiralee site

Yaesu FT-897D multi-band, all-mode transceiver, 100 watts on 6 m, TE Systems 1454 linear delivering 360 watts on 2 m

3 element Yagi on 6 m

10 element Yagi on 2 m

6 metre, 3 section guyed mast,

Power – mains supply

Portable station on Mt Pitt

Yaesu FT-817ND 2 m and 70 cm PA driver, running DIGI, SSB and CW modes,

Kenwood TS-2000, alternate/backup all-mode transceiver,

Yaesu FT-817ND as the microwave IF transverter driver,

Laptop Computer for monitoring VK Logger, Hepburn and EchoLink,

Tokyo High Power HL.180 PA 2 m linear delivering 180 watts,

Mirage D1010 70 cm linear delivered 120 watts,

1200 mm Prime Focus microwave dish with various microwave feeds,

1296 MHz, VK5EME based transverter, 85 watts integrated PA, GPS lockable,

2304 MHz, transverter, 20 watts internal PA or 100 watts with an external PA,

3400 MHz, transverter, DB6NT based, Ionica PA delivering 20 watts,

5760 MHz, transverter, DB6NT based, Codan PA delivering 15 watts,

10368 MHz, transverter, Miteq based, modified Ku NEC 5 watt PA, GPS lockable.



Michael VK3KH updating details on the VK Logger watched by Alan VK3XP.

From a VHF/
microwave
perspective....

The island
represents a
unique location, a
new DXCC entity,
a new island
and a rare grid-
square, RG30xx. .

operators and DXpeditioners.

From a VHF/microwave perspective, the situation was very different. The island represents a unique location, a new DXCC entity, a new island and a rare grid-square, RG30xx. There were virtually no reports of any VHF activity from the island and no formal records had ever been claimed for contacts from this location.

From the geography of the island it was likely that contacts would be possible from Norfolk, under appropriate conditions, to all Australian and New Zealand call areas on 50 MHz. With good propagation, contacts should also have been possible at 144 MHz to the eastern and southern Australian call areas (1500 km minimum) and to both north and south New Zealand islands (800 km minimum) using moderately powerful stations and appropriate tropospheric and enhanced modes of propagation.

There was also the tantalizing possibility of UHF and microwave across-water paths, under exceptional conditions.

Conversation with a long standing ham resident of the island, John Anderson VK9JA, an ex-radar technician who was stationed on NI in WWII, was very interesting. He described periods where radar reflections were received from the New Zealand coastline and other islands way beyond the normal operating range of the radar, under certain tropospheric conditions.

He also shared his experiences

when, prior to 1975 when the first TV station was established on the island, residents were receiving VHF television signals from mainland Australia, at good signal strengths, during the summer afternoons and evenings.

Planning and preparation

Prior to shipping the equipment to Norfolk, the complete station was tested, on two separate occasions, under portable conditions, to simulate the exact operating scenario expected on the island. All equipment deficiencies and operational issues were identified

and corrected before departure.

At the two portable "testing" locations, firstly at Berwick, south east of Melbourne, and later at Geelong, operating techniques were fine-tuned and valuable experience was gained in the use of digital modes from a portable location. A few days after the Geelong shakedown the team was ready to start packing and shipping the gear.

A preparatory visit to the Island by Michael VK3KH had identified a number of possible operating sites. Few coastal sites however offered unobstructed paths to both VK and



All dish feeds 1.2, 3, 5, 10 GHz with coax feed and alternative 10 GHz waveguide feed for 1.2 m dish.



2.4 GHz "beer-can dish feed".

ZL from a single location. The highest point on the Island is Mt. Bates at 319 m above sea level (asl). This site however is in the middle of a national park area with very limited access by foot only.

Alternatively Mt. Pitt on the northern side of the Island is at 318 m asl, has road access almost to the summit, a possible operating location and has near 360 degree sea visibility. On the down side, the site is the location of the local television and FM broadcast radio station transmitters, 2.4 GHz WiFi internet network, aviation and other two-way VHF radio transmitters and antennas and also the automatic aircraft searchlight beacon.

The provision of power for portable operation at Mt. Pitt was problematical. Mains power was not available and the use of petrol AC generators would likely not be allowed even for battery charging.

Compounding this problem, neither lead acid batteries nor indeed petrol generators can be carried as air freight. Sulphuric acid is both a corrosion risk and a dangerous oxidizing agent. Residual fuel or oil, if spilled from generators, would pose a fire hazard as would any type of high current battery in the event of a short circuit in transit.

Initially we considered buying car batteries on the island on our arrival, with the intention of leaving them

behind on departure. We contacted a local service station on the island to see if it would be possible to hire batteries for the operation. To our surprise the proprietors of the Central Service Station, showing the amazing generosity typical of the island residents, loaned us a pair of 70 Amp-Hour batteries, free of charge with no deposit or identification being required.

Equipment, antennas and power supplies

The primary aim of the VK9NA activity was operation on the VHF and microwave bands. Limited HF capability was planned for liaison purposes only. Prior to arrival on Norfolk, over 94 kilograms of the heavier and bulkier hardware was air-freighted in advance to the island. The remaining smaller and more fragile gear was carried as checked-in and carry-on luggage on our flights over from Melbourne and Brisbane.

The total equipment pool included transceivers, transverters, power amplifiers, linear amplifiers, power supplies, ATUs, battery chargers, multiple Yagi antennas, two EMDRC portable telescopic antenna masts and a 1200 mm microwave dish antenna with separate feeds for each of the microwave bands.

Also a limited toolkit and all of the necessary mounting hardware, feeders, power leads and interfaces.

Sufficient gear to enable operation on all bands from HF, through 6 metres, 2 metres, 70 cm, 1296 MHz, 2.4 GHz, 3.4 GHz, 5.7 GHz and 10 GHz, with some limited reserve capacity in the event of failures and breakdowns.

During the planning stages it was decided to establish two separate operating locations. The first was established at the Shiralee Cottages Accommodation located at the Burnt Pine township. This station was operated on 2 m and 6 m only. The 2 m and 6 m Yagi antennas were erected on the first portable mast and left in place for the duration of the trip. With the benefit of a mains electricity supply, prolonged high power was easy to achieve from this station.

The second would be an entirely portable station established at the Mt. Pitt site, running all bands from 2 m up. The 2 m, and 70 cm Yagi antennas and the 1.2 m dish, for the microwave bands, were erected on the second portable mast. Beam heading of the entire antenna system was achieved using "hand-draulic" technology!

Without access to mains or generator power this station, running 200 watts, was powered by necessity entirely from a battery supply. The 12 volt lead-acid batteries were arranged in series to provide a high-current, high-capacity 24 volt supply. A 40 amp, 24 volt to 13.8 volt DC-DC inverter was then used to power the main transceivers, linear amplifiers and ancillary equipment.

Most of the microwave gear, which required 24 volts for operation, was powered direct from the 24 volt supply. The station laptop computer was operated from a small 12 V to 240 volt AC inverter.

Operation from Mt. Pitt was entirely in the open with virtually no natural shade available. A single collapsible card table constituted the entire operating space for the radios and laptop computer. Large plastic refuse bags, sourced on the island, were available to cover the equipment in the event of rain. A borrowed umbrella was pressed into service to allow the laptop screen to be read in direct sunlight.

Road access to Mt. Pitt ended at a



Michael VK3KH operating on Mt Pitt – grabbing all the shade under the umbrella.

locked gateway about fifty metres or so below the summit. The entire station including all of the RF equipment, batteries and transport cases were manhandled up and down the hill at the start and end of each operating session on the hill.

Initially it was planned to recharge the station batteries overnight for the following morning and during the afternoons for operation during the evenings. Prolonged high-power, high duty-cycle operation, particularly when operating data modes JT65a and FSK441 in the morning periods, proved to be very demanding on the battery supply.

By closely monitoring the individual battery voltages in the 24 volt series system, it was apparent that the single set of batteries would only provide power for 2-3 hours of operation. A second set would be required to allow the full 5-6 hours of operation from Mt. Pitt each day. Once again the generosity of the Norfolk Island community was evident and we were loaned a second set of batteries, again free of charge.

Having two complete sets of batteries, it was possible to change over the supply when one set became discharged. The flattened batteries were then recharged in parallel, using a custom set of jump-leads fabricated on the island, connected across the alternator of the hire vehicle running at tick-over at the bottom of Mt. Pitt. All four batteries were then fully charged, using mains power, each afternoon and night at the Shiralee location.

Operation

Operation was undertaken on every day of the activity. The operating schedule was adapted depending on propagation and conditions on the respective bands. In general all activity was from one site only at any one time. Every attempt was made to maximize the opportunity for contacts for both the VK and ZL VHF communities to Norfolk.

Each morning the station was established on the hill at around dawn while mainland VK would still be in darkness. Initially focusing on Meteor Scatter propagation at this time of the morning, using FSK441, it became apparent on many days that tropospheric propagation was starting much earlier than we had expected. Operating modes were changed appropriately to best use the propagation available.

In the middle of the day and during the early afternoon periods, predominant activity was on 50 MHz from the Shiralee Cottage site. Local TVI issues on both 6 m and 2 m limited our activity from this site in the evenings.

In the mid afternoon on most days the Mt. Pitt station was re-established. Every attempt was made to utilize Sporadic E and troposcatter propagation for contacts using JT65a, CW and SSB as each became possible. In the evenings operation was continued until there was no further propagation, well after nightfall on many occasions. Little contingency was in place for our operation in the dark or cold without protection from the elements.

In the morning period, data modes FSK441 or JT65a were attempted first as propagation developed. Were signals

New WIA records set by VK9NA, January 2010

The amount of excitement and enthusiasm created amongst the VHF community was gratifying. Log-ins to the VK-Logger were at record levels. Many stations in VK and ZL travelled great distances to activate portable stations to attempt contact. The DXpedition completed 408 QSOs on the VHF to microwave bands. 62 grid squares were contacted representing all but VK8 and VK0 Australian call areas.

Table 3: Records set by VK9NA.

50 MHz	VK9NA to VK6JJ	4933.2 km
144 MHz	VK9NA to VK7MO	2404.7 km
432 MHz	VK9NA to VK2BXT	1735.4 km
1296 MHz	VK9NA to VK2DVZ	1513.2 km
2.4 GHz	VK9NA to VK4OX	1500.0 km

Table 2: Summary of QSOs made by VK9NA.

Band/Mode	DXCC	Grid Squares	QSO
6 metres			
Phone	6	60	258
CW	1	1	3
Total	6	61	261
2 metres			
Phone	3	16	96
CW	3	3	4
Digi	2	10	20
Total	3	19	119
70 cm			
Phone	3	5	13
CW	1	1	2
Digi	1	1	1
Total	3	5	16
23 cm			
Phone	3	4	9
CW	1	1	1
Total	3	4	10
13 cm			
Phone	1	1	1
Total	1	1	1
Total			
	6	62	408

to rise, attempts were then made on CW and eventually SSB as conditions improved. Progression was then made up the frequency bands with individual stations, through each mode as conditions would allow. Simultaneous operation on multiple bands was problematic due to limitations on available power and cross interference due to common IF frequencies, etc.

Problems, failures and breakdowns

It would have been a miracle for any plan to run entirely smoothly. Quite late in the planning for the VK9NA activity, after the air freighting of equipment and our own flights had been arranged, it became apparent that the whole trip was under threat because of insurance issues.

Despite the small size of our activity and the microscopically small risk to the public we found that we were required to have \$10 million Australian Public Liability Insurance in order to operate from Mt. Pitt, which was considered to be within the National Park. The same level of cover required to host an outdoor pop concert!

The cost of providing such insurance, for three individuals, was prohibitive. Eleventh hour intervention by the WIA provided the necessary insurance cover-note for us as Institute members since the activity was sponsored as part of the 100 year Centenary celebrations. The day was saved.

Amazingly all of the heavy equipment and antennas "eventually" arrived on Norfolk intact and undamaged, the dish seemed however to have come via a very circuitous route.

The distribution of broadcast television at the Shiralee Cottages resort defied our complete understanding. At some stage at least the received UHF digital TV signals appeared to be transverted down to somewhere around 60 MHz for distribution around the holiday complex. Consequently some beam headings on the 6 m Yagi on SSB caused the pictures on our own TV to freeze. Amazingly there was never a problem on CW. We decided therefore to restrict our activity on

this band during normal evening viewing hours.

After each daytime operation from the Mt Pitt site, usually in the early afternoon, we would transfer operation to the Shiralee Cottage site. The tethered portable mast, supporting the 2 m and 70 cm Yagis was roped-off and left erected but the 1.2 m dish was usually removed to minimize the chance of wind damage. This was to save time and manpower and to avoid having to erect the Yagis in failing light.

On one perfectly clear afternoon, we fatefully left the dish in place. As bad luck would have it, a sudden squall blew up with high wind and heavy rain - the first in Norfolk for over three months. Our return to the site was met with the realization that the mast had collapsed. With the added wind-loading of the dish, a guy had pulled its peg from the wet ground and the mast had fallen. We suffered extensive damage to both Yagis which had nose-dived into the earth. Unable to fix the antennas on-site in the failing light we transported everything back to the Shiralee Cottages accommodation and carried out repairs until the early hours of the morning. The boom of the 2 m Yagi was straightened using the limited tools and resources at our disposal. A number of nuts and bolts were replaced and the antenna tested on the ground.

The 70 cm Yagi was not as fortunate. The 6 m boom of the antenna was badly bent and was irreparably fractured through a pair of element mounting holes. The only practical solution was to foreshorten the boom to 4 m and accept the loss of the last few elements. The complete antenna system was successfully reinstalled at dawn at the Mt. Pitt site the following morning.

The only electrical failure we suffered was to our mains-powered 24 volt switched-mode "smart" battery charger, which we had been using to recharge our single set of batteries overnight at the residence. As described it became apparent that the current demands of high power data modes would seriously limit our available operating time.

In an attempt to prolong battery life, when the current demand was very

high, we attempted to float charge the batteries on-site by running the smart charger from the 12 V to 240 volt mains inverter, connected across the 12 V supply in the hire vehicle, at the foot of Mt. Pitt.

A long extension main lead brought the 240 volt AC power from the inverter in the vehicle to the smart charger at the operating site. The arrangement appeared to work initially but not for long. The smart charger failed with the spectacular destruction of one of its electrolytic capacitors.

The 240 volt inverter proved not to be a true sine wave type which was the likely cause of the failure. A larger sine-wave inverter may have solved this problem and may be considered in the future.

The acquisition of the second set of loan batteries solved both the power limitation and charging time issues. We were then able to use one set of batteries while the other set was on charge and swap over as necessary.

Homeward bound

Prior to our return to the mainland, some of the hardware, including the VK9NA DXpedition dish antenna, was left behind on Norfolk as a display at the local radio museum run by John VK9JA. Who knows what the future may hold for future activity?

All of the major RF equipment made it back undamaged. The Yagi antennas and masts were repacked in their poly transport tubes, however on return the packing tubes were badly damaged with the pipe end-caps smashed or lost in transit. It could however have been much worse.

All three operators at VK9NA found the experience exciting, rewarding and at times exhausting. Listening to white noise for hours on end, particularly using the DSP noise reduction, which the team nicknamed "The Imaginator", can play tricks with the mind.

While calling "endlessly" into that noise, a lone evening meteor ping would frequently lift three or more voices out of the static, just for a split second, one after the other.

Concludes on page 64

An active loop receiving antenna and converter for 136 kHz

Drew Diamond VK3XU

From initial tests and study, it appears that, for urban locations, better results are generally obtained where a loop (ferrite 'loop-stick', or 'frame') antenna is used for receiving LF signals. To allow us to use an ordinary HF receiver, one that covers (say) three or four MHz, the 136 kHz LF band is converted up to 3.136 (or 4.136) MHz.

Apart from positioning, use of the 'main' transmitting antenna offers little discrimination against the usual

galaxy of locally generated noise, whereas a tuned loop can typically be oriented to obtain a worthwhile, and often remarkable, improvement in signal-to-noise ratio (Reference 1).

Because the loop is resonated at the receiving frequency, the natural selectivity of the circuit will significantly attenuate the strength of (possibly problematic) out-of-band signals before they are presented to the converter chip.

Offered are details of a simple, tuned, balanced loop

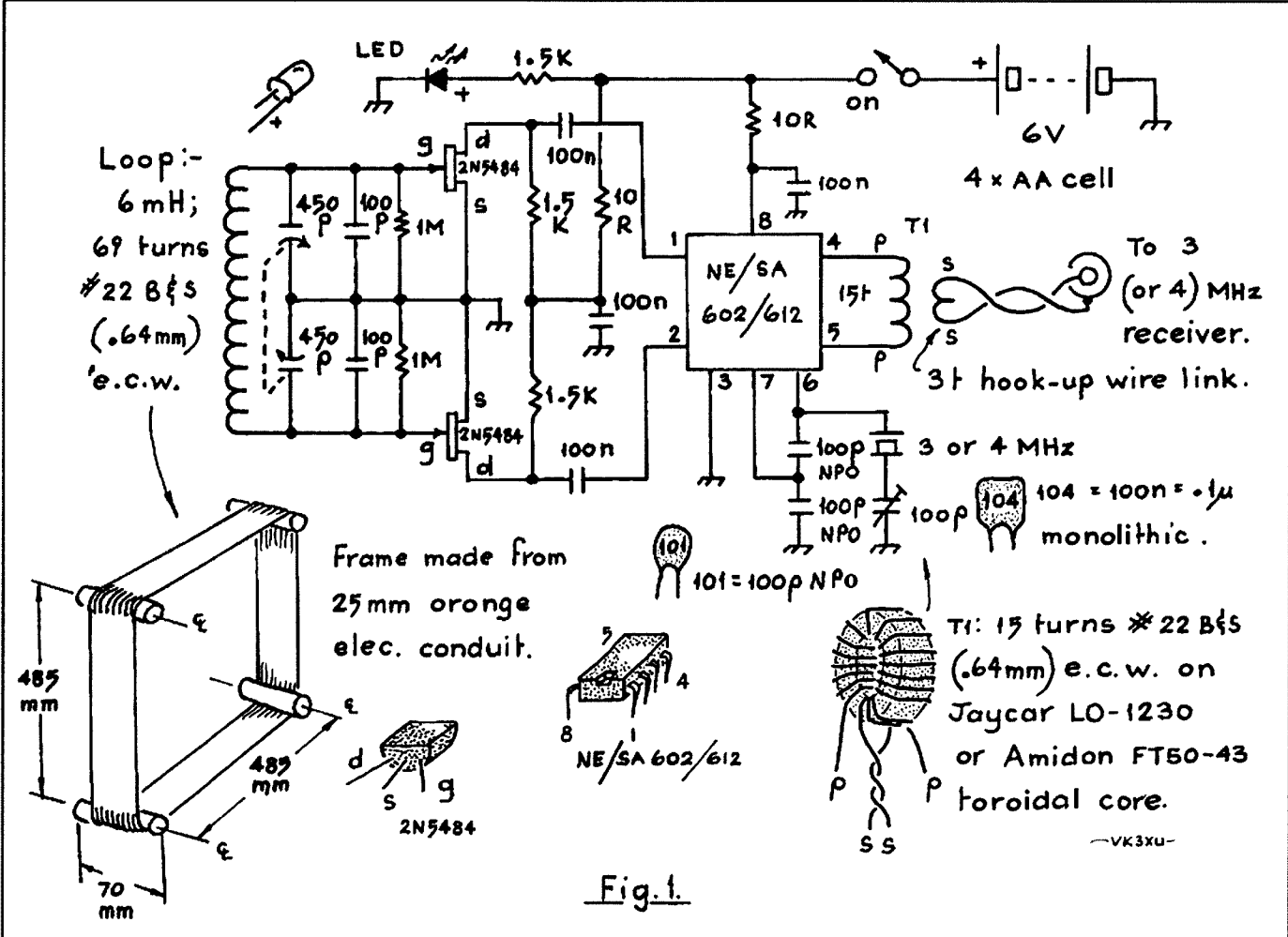


Figure 1: Schematic of the active loop receiving antenna and converter for 136 kHz.

antenna and converter for sensitive listening between about 120 and 230 kHz.

Circuit

A 69-turn, ~500 mm square wire loop coil of 6 milliHenries is resonated by a two-gang broadcast type variable capacitor (it was found that a well-made loop yields a measurably higher 'Q' and better sensitivity than a ferrite-rod/loop-stick). The frame of the capacitor is connected to chassis ground, thus forming a balanced tuned circuit, which ensures that the loop is only responsive to the magnetic (H) component of the incoming wave (simple unbalanced circuits may respond slightly to the electric component also, thus skewing the null in direction-finding applications).

For an electrically (and physically) small antenna, a substantial amount of amplification is required to lift the signal level to a value comparable to that obtained from a 'full-size' one. Initial pre-amplification is provided by a balanced (or push-pull) pair of ordinary 2N5484 FETs (Figure 1). A 100 pF NP0 ceramic capacitor is connected between the gate and source of each FET to discourage entry of unwanted VHF and UHF signals.

A popular NE602 balanced mixer chip, with an internal crystal-controlled

oscillator of three (or four) MHz, translates 136 kHz to 3.136 (or 4.136) MHz, where the wanted mix product is coupled to the receiver's input by use of a broad-band transformer primary between pins four and five of the chip. Signal is extracted via a three-turn link (s)secondary winding (Reference 2).

Construction

The prototype model is housed in a Jaycar ABS plastic box measuring 115 x 90 x 55 mm, P/N HB-6246, pictured in Photo 2.

Components are accommodated upon a 'paddyboard' (Reference 3) circuit board measuring 68 x 40 mm. A suggested layout is depicted in Figure 2 and Photo 3. Alternatively, any preferred wiring style (such as 'ugly') may be employed, provided that component leads are reasonably short, and a 'ground-plane' circuit board is used.

Use super-glue, or preferably hot-melt glue, to affix the pads/strips upon the circuit board, whereby a tiny sliver of solid glue is attached to the underside (fibre) of the pad. Melt the glue evenly with a soldering iron, then place the pad/strip in the exact spot required. If you need to move a pad, apply the iron to the copper side of the pad to soften the glue, then remove and re-position as required.

The antenna loop coil is made with 22 B&S (0.64 mm) enamelled copper wire (ecw) wound upon a frame made from ordinary 25 mm diameter orange electrical conduit, as shown in Figure 1. The wire is laid side by side upon 70 mm 'out-rigger' lengths of conduit, which are hot-melt glued into the corners, as illustrated in Photo 4. A Perspex (or similar low-loss material) triangle should also be glued inside each corner to buttress the assembly.

The loop assembly may be attached to the box in a manner similar to that illustrated in Photo 2, where two spaced 120 x 70 mm rectangles of Perspex provide a robust attachment atop the ABS box. Provide a tag for the start and end of the winding. The conduit may be fixed to the Perspex with a bead of hot-melt glue along each side of the join.

If you have access to a lathe, fix the spool of wire, using a suitable mandrel, in the lathe's three-jaw chuck. A 'dead' centre in the tail-stock may provide a means of adjusting the friction (and thus the winding 'tightness'). The lathe's gearbox should be in 'neutral', allowing the spindle to rotate freely. Terminate the start of the winding upon a solder tag. You may find it useful (as I did) to slide wooden handles, made from round timber, into two diagonal 'out-riggers' so that the assembly may be

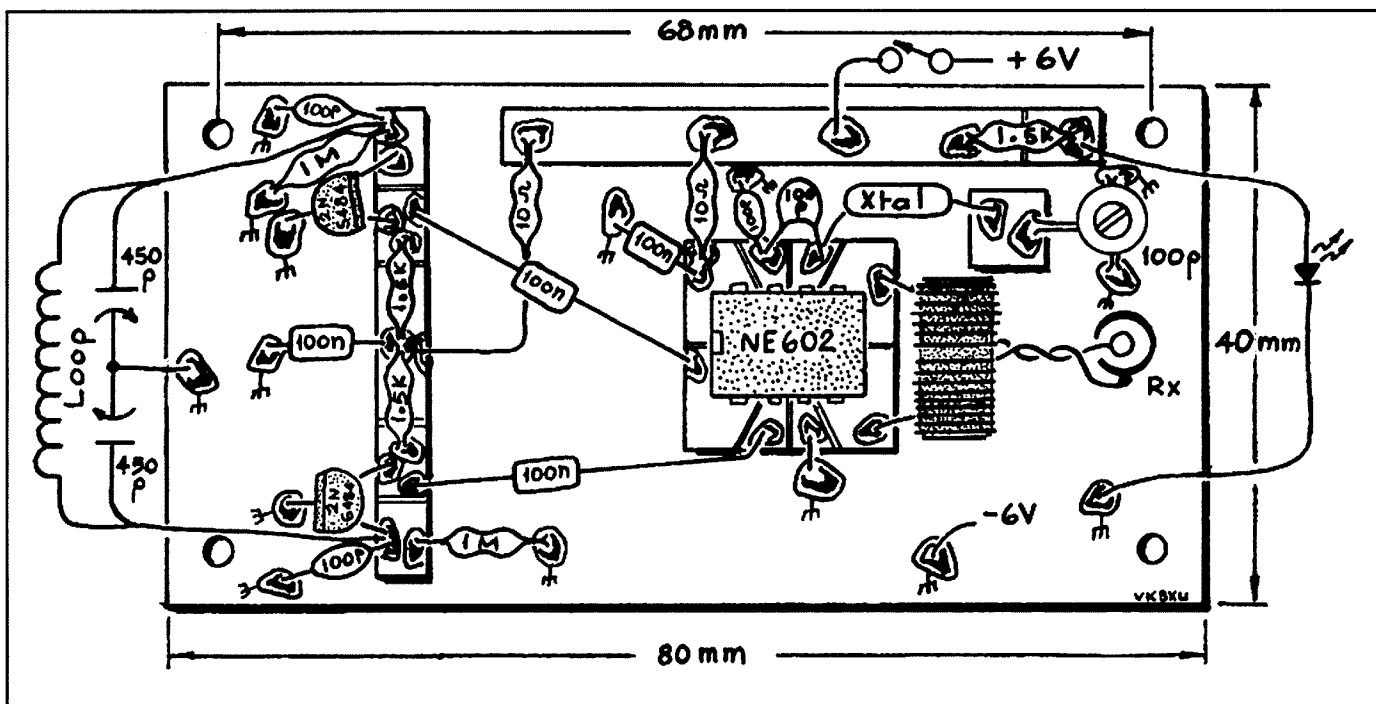


Figure 2: Suggested layout of the components on the 'paddyboard'.

rotated hand-over-hand, and thus apply the winding to the frame.

With the winding done, apply a bead of hot-melt glue across the winding in three or four equi-spaced places, around the perimeter of the loop.

The variable tuning capacitor, visible in Photo 3, is a small 450 + 450 pF dual-gang Philips gang salvaged from an old Australian broadcast set. These are fairly common around the swap-meets. Or you could use a similarly ubiquitous Roblan 450 + 450 pF part. It is suggested that your capacitor be fitted so that the spindle emerges at the side of the box, as shown.

The 6 V battery of four AA cells may be accommodated in a holder, such as the Jaycar PH-9204. It can be attached to the lower outside surface of the box with small screws and nuts, or simply fixed there with hot-melt glue. The LED is fitted into the front panel to serve as an 'on' and battery condition indicator.

Operation

Inspect your wiring and soldering for quality and accuracy. Confirm that the FETs and NE602 are correctly fitted, and that your battery of AA cells is properly installed.

Connect the converter output to the receiver input using any reasonable length of 50 ohm coax cable. Tune the receiver to three (or four) MHz, where you should hear the crystal oscillator's signal. Switch on, and adjust the 100 pF trim capacitor so that exactly 3.000 (or 4.000) MHz is generated, thus establishing 'zero frequency'.

Carefully adjust the variable capacitor for a peak in noise/signals. Check that the loop antenna can be peaked at any frequency between about 120 and 230 kHz. The set-up will sound quite lively. Any local noise/interfering signals should be reducible by careful rotation of the loop's plane. A 'feel' for how the loop/converter is working may be obtained by searching for navigation beacons above about 200 kHz.

The loop provides (perhaps surprisingly) good performance indoors. However, at a distance from electric power lines and appliances, a portable receiver/loop combo gives excellent results. For receivers that



Photo 1: The active loop receiving converter in operation.

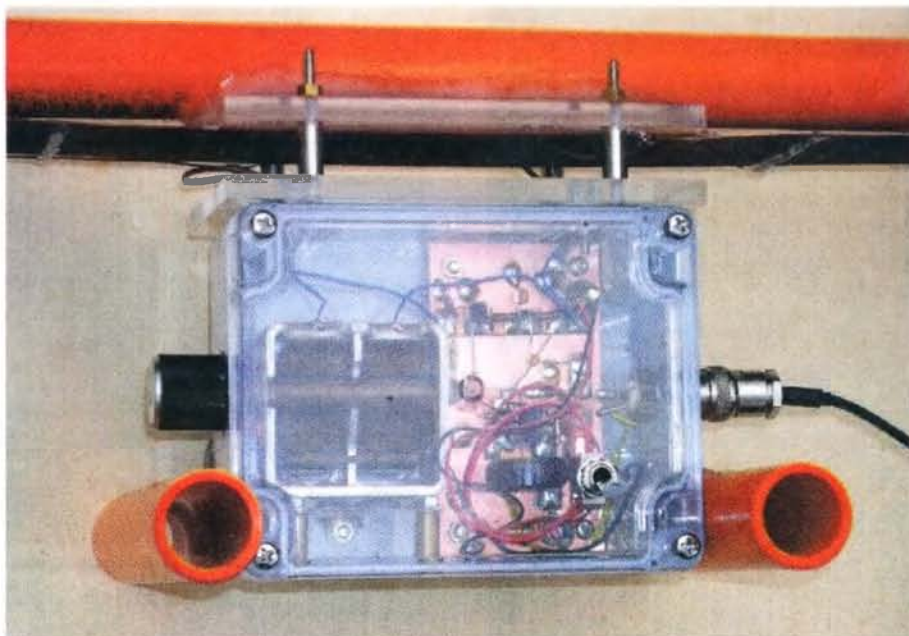


Photo 2: Perspex assembly.

have a DX/local switch (such as the popular Sangean and Degen sets), it should be found that the DX position is seldom required (thus giving better strong-signal handling).

As long as a reasonable separation is maintained between a transmitting antenna and loop, no damage should be caused to the converter or receiver. However, an accidental transmission into the output of the device would probably damage the NE602.

Counter-intuitively, perhaps, the null is through the axis of the loop (that is when the loop is 'broad-side on' - see Reference 1).

The loop must not be allowed to get wet. For permanent use outdoors, therefore, it is suggested that the antenna be housed inside an inverted plastic rubbish-bin, or similar contrivance. Otherwise it may be possible for the converter to be located in a remote out-building if available (where a metal roof does not appear to significantly reduce

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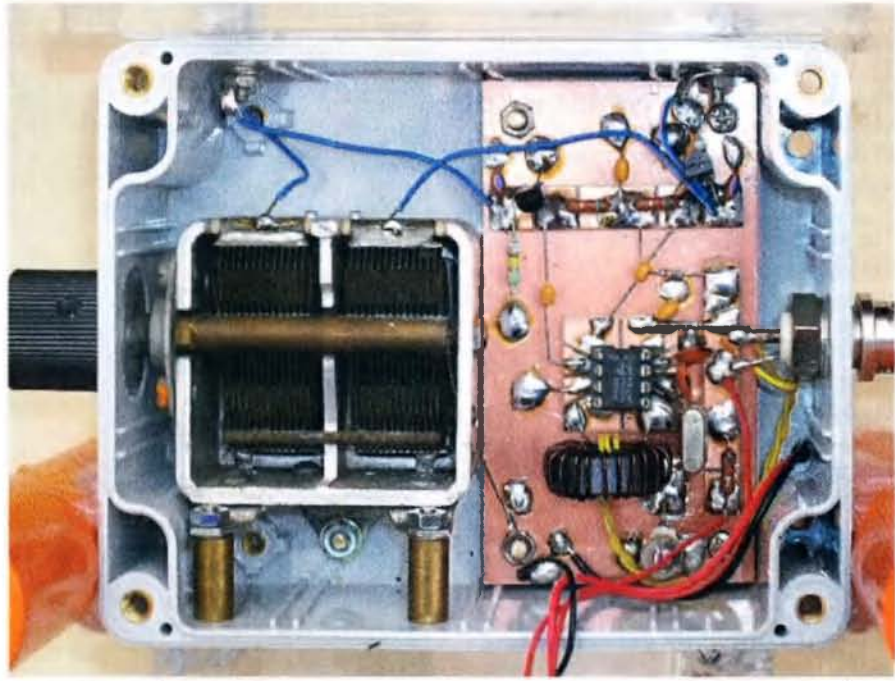


Photo 3: A view of the components mounted on the 'paddyboard' with the box lid removed.

signal levels) and powered through the coax from a 'phantom' battery supply (Ref. 4).

Parts

All the ordinary components are available from our usual parts suppliers, including Altronics, Electronic World, Jaycar, Rockby and Semtronics. Sources for the ABS Box, toroidal core and variable capacitor are mentioned in 'Construction' above.

A single length of 25 mm electrical conduit may be purchased from Bunnings or Mitre-10.

Perspex off-cuts are often obtainable, free for the asking, from the scrap-bin of your local plastic sign maker.

I am not in the parts business. Nevertheless, if, after earnest efforts, one or two items remain elusive (like the NE/SE602/612), do 'phone on 03 9722 1620, or post me a line (no e-mails, please), as it may well be that I have spares on hand, or can suggest a source.



Photo 4: One corner of the loop, showing turns wound side by side upon an 'out-rigger'.

References and Further Reading

1. 'Small Loop Receiving Antennas'; Joseph Carr, *Electronics World*, November 2000.
2. 'NE602 Primer'; Joseph Carr, *Elektronika*, Jan 1992.
3. "'Paddyboard' Circuit Construction - Revised", *Amateur Radio*, May 2005.
4. 'An Active Loop Receiving Antenna for 7 ~ 29 MHz', *Amateur Radio*, May 2009.

Conference discusses amateur radio emergency communications

Jim Linton VK3PC

The role of radio amateurs assisting in times of natural disasters or other emergencies is well known. This report looks at a recent international gathering of those involved in these activities.

The 5th Global Amateur Radio Emergency Communications Conference (GAREC) hosted by the Japan Amateur Radio League (JARL) and held in Toyko saw 29 participants from 14 countries share their knowledge and experiences.

JARL President Shozo Hara JA1AN in his opening address mentioned how the re-establishment of amateur radio in Japan in 1952 was soon followed by emergency communications related to a typhoon.

Shozo JA1AN said Japan has many beautiful places by the sea and in the mountains. On the other hand, natural disasters occur due to volcanoes, typhoons and earthquakes.

Looking back to 1995, the huge 'Hanshin-Awaji Earthquake' hit Kobe and neighbouring areas flattening houses, sparking fires and killing more than 6,400. Local radio amateurs supported by the JARL operated emergency communication for a prolonged period.

Shozo JA1AN said since then Japan's radio amateurs have continued to assist in times of disaster. The JARL through its branches has 'cooperation agreements' with local governments and actively participates in emergency communications drills.

GAREC-2009 was held 24-25 August with the theme 'Emergency Communications across Borders' and attended by representatives from Australia, Brunei, Canada, Finland, Japan, Korea, Italy, Hong Kong, Netherlands, New Zealand, South Africa, Thailand, United Kingdom and the USA.

Keep CoA clear in times of need

IARU Region 1 Coordinator for Emergency Communications and the organiser of the twice-yearly GlobalSET, Greg Mossop G0DUB, discussed experiences with the Centre of Activity (CoA) frequencies that were first introduced in 2005.

Three frequencies – 14300, 18160 and 21360 kHz – were chosen to provide intercontinental coverage in times of emergencies and during training exercises in GlobalSET and local simulated emergency tests.

The CoA is not a spot frequency but a starting point, designed for wide area events such as the Indian Ocean tsunami.

While two other CoA, 7060 and 3760 kHz were chosen by IARU Region 1 and subsequently adopted by IARU Region 2, it had always been intended that 80 m and 40 m frequencies be decided on a regional basis.

IARU Region 3 will consider the issue of CoA and while it is likely to adopt the 20 m, 17 m and 15 m band frequencies, a decision is also expected on CoA within its region for 80 m and 40 m.

Emergency communications in action

There was an interesting session on three earthquake disasters. These disasters were the Hanshin-Awaji earthquake in Japan (1995), China's Great Sichuan Earthquake (2008) and Italy's L'Aquila earthquake (2009).

A fourth presentation, 'Bushfire Communications – Australia', gave an insight into the roles of WICEN and RECOM (Red Cross Emergency Communications) during the Black Saturday disaster of February 2009.

The RECOM experience was of particular interest to GAREC attendees from several other countries who are interested in



*Jim Linton VK3PC
Chairman IARU Region 3
Disaster Communications Committee*

establishing and further developing emergency communications relationships with their Red Cross societies.

Other radio societies are being encouraged to explore the possibility of reaching an agreement of understanding in relation to emergency communications with their local Red Cross.

The IARU and the International Federation of Red Cross and Red Crescent Societies (IFRC) signed a memorandum of understanding (MoU) last year that provides mutual recognition and encouragement for the roles of the Red Cross and the amateur service.

IARU President Tim Ellam VE6SH told GAREC-2009 that the IARU is looking at other non-government organisations that may be suitable for similar MoUs.

The IARU continues to promote the role of amateur radio wherever an

opportunity arises. It is producing a new emergency communications brochure for use to inform the International Telecommunications Union and others about the skills of radio amateurs and their resources in times of need.

The World Radio Conference in 2003 changed the International Radio Regulation Article 25 to better recognise and enhance the ability of amateur radio to prepare for and provide emergency communications.

While those important regulatory changes, including provisions permitting the passing of third party traffic have been included in the local regulations of a number of countries, many are still to do so.

During the conference a variety of reports and experiences were provided, including the following:

Dutch Amateur Radio Emergency Service (DARES), a foundation run by a seven member board, with no members but 'participants' located in 25 regions, that had formal government recognition

Amateur Radio Emergency Service in Hong Kong and the Pearl Delta region, having 200 active members training for the worst to provide local and regional emergency communications

Brunei Darussalam Amateur Radio Association was involved in flash flooding and landslides (January 2009) and due to its activities is now a recognised resource by authorities

HAMNET, the National Emergency Communications division of the South African Radio League (SARL), provides communications for emergencies and works with all non-government organisations

The Japan Amateur Radio Industry Association representative, Kiyoshi Sakurai JA3FMP, talked about the 'predicted catastrophic earthquake' for the Kii Peninsula, on the western Japanese island of Honshu.

An emergency radio plan is ready to help respond to this likely earthquake spot that has scattered communities in mountainous areas.

Kiyoshi JA3FMP, who is also ICOM's Technical Development Department Director, explained how D-STAR repeater sites have been identified to enable that technology combined with GPS to play a role in emergency communications.

In another technology presentation, Bonnie Crystal VR2/KQ6XA provided information on the High Frequency Network that began in June 2007. Its Global Automatic Link Enabled (ALE) system that supports both voice and data, promises to link stations on HF with a 90% reliability 24 hours a day 365 days a year, and may have a great role in emergency communications in the future.

For more information, including the presentations made at this and previous conferences and the official GAREC-2009 statement, they are on the website www.rientola.fi/oh3ag/garec/

Jim Linton VK3PC attended GAREC-2009 to represent the IARU Region 3 as the Chairman of its Disaster Communications Committee and was a member of the conference's program committee.

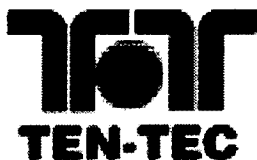


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Tim Mills VK2ZTM

vk2notes@arnsw.org.au

We are past the 100 year point and counting down for 2110. Will the hobby as we know it still be about? Only time will tell. Back to the present.

The recent **Central Coast Field Day** had a mild final day of summer at the Wyong racecourse. More than 1300 went through the gates from first light, chasing the bargains offered by the 58 boot sellers until the trading area opened at 0900. Eight candidates sat twenty three assessments provided by the **ARNSW** exam team.

On the Saturday evening 42 attended the Centenary dinner hosted jointly by the **CCARC** and **ARNSW** at the Wyong Bowling Club. The members of the **CCARC** have to be thanked for their time and efforts in providing the day for those attending from all parts of VK, ZL and beyond. It will all be on again next February but the date is not known until the racing schedule is announced.

With Easter upon us, it is time to attend the **Urunga Convention**, the longest running Fox Hunt Field Day in Australia, on the mid north coast of VK2. The event is on Easter Saturday and Sunday at the Senior Citizens Hall, Bowra St, Urunga. There is a dinner at the Bowling Club Saturday night and you need to advise if you are attending. Members of **CHADARC** provide the operations. The web site for the convention is www4.tpgi.com.au/goldy2 or contact Ken VK2DGT krgolden46@hotmail.com

Staying on the north coast, Gary VK2ZKT thanks all who attended the **January Radio Expo** sponsored by **MNCARG** in Coffs Harbour and says it will all be on again next January. Check out their web site www.mncarg.org for their range of kits and other good information. Still in the region, it is Port Macquarie in June for the **Oxley Region ARC** annual field day Saturday and Sunday of the long weekend - 12 and 13. Finally to **Summerland ARC**, where they are holding a Foundation

course and assessments April 17 and 18. Their **Northern Rivers WICEN** group has horse enduros 15 & 16 May and again 10 and 11 July.

The **Kurrajong Radio Museum** curated by Ian VK2ZIO is seeking to build up the collection of Australian call books. Ian says the big gap he has is from 1947 to 1976. If you no longer need those old editions, use it as an excuse to visit one weekend. Contact Ian on 02 4573 0601.

A Sydney based club is being formed at North Ryde as the **Macquarie University Amateur Radio Club**. Contact Adam VK2JSI at vk2jsi@muarc.org or by phone 0415 371 990. The University is a centre of excellence in electronics, telecommunications and wireless engineering.

NSW WICEN held their AGM in February and the following State Management Committee was elected: President—Malcolm Alexandra VK2YVA; Senior VP - Crompton Allen VK2HRX; Junior VP - Alan Whitmore VK2DAN; Secretary/Treasurer - Nicholas Fisher VK2ZNF and committee members Julian Sortland VK2YJS, David Sims VK2HSS and Peter Heggie VK2GPH. The Hawkesbury Canoe Classic is over the weekend 23 and 24 October. Web site is www.nsw.wicen.org.au email operations@nsw.wicen.org.au or phone duty operator - 0408 397 217.

Manly Warringah RS recently thought they were about 75 years old and celebrated accordingly. However Richard VK2SKY found a reference to the club providing a demonstration of receiving and playing 'a concert' in Manly - by wireless - from experimental stations across the harbour at Rose Bay and Darling Point. Mr Fisk was in attendance and explained about the new 'wireless' system. That was in 1923 - the year 'broadcasting' started. **MWRS** have upgraded their VK2RMB 8175 UHF repeater and it now supports both analogue and P25 digital modes. The CTCSS access tone has been changed to the new 91.5 Hz and for more details

check out www.mwrs.org.au The club has announced its first Amateur Radio Licence Youth Grant. The aim of the grant is to attract young enthusiasts to the hobby of amateur radio, to help ensure the future of the hobby and the **Manly-Warringah Radio Society**.

Applicants can apply for the Grant, then study for their Amateur Radio licence and sit for their assessment at the MWRS club. If they pass the exam, MWRS will fund \$100 towards the cost of the assessments and the ACMA cost for the first year of their amateur radio licence. For the full details check out www.mwrs.org.au

International Marconi Day occurs on 24 April. VK2IMD operation will be provided by **HADARC**. www.hadarc.org.au Use this web site for details of their training and assessments and meetings on the second and fourth Tuesdays at the Mt. Colah Community Centre, Pierre Close, Mt. Colah. It is opposite the eastern entrance and footbridge over Mt. Colah Railway Station. The **Illawarra ARS** meet on the second Tuesday - this month the 13th. www.iars.org.au The **Riverina** region are using repeaters VK2RWG 6750, VK2RTD 6800 and VK2RGF 6850 to provide news coverage at 1000 Sunday and 1930 Tuesday advises John VK2YW President of the **Wagga ARC**. **Waverley ARS** will have their annual auction in July. They also hold regular training and assessments. For education inquiries education@vk2bv.org The **Hunter Radio Group** meets on the second Friday at NBN TV studios. Their news net is Monday at 1930 on 3593 kHz and Newcastle and Central Coast repeaters, VK2RNC 6900 & 8025 and VK2RAG 6750.

VK2 had several other Centenary events in the past few weeks. A few gathered at the former Hotel Australia site on 11 March. On Sunday 14 March, ARNSW commissioned their new premises at the VK2WI site. Pictures and stories will appear in a future issue of AR. As part of the celebration ARNSW had made a commemorative plate and mug. These

VK2news continues

are available at events conducted at the Dural site. The March Trash and Treasure was conducted from the new facilities, which meant not having to cart everything out of the old shed for access and searching for the bargains. Donations and SK Estates has kept a good stock level. Thanks for remembering this ARNSW service. The next T&T at the end of May.

This month ARNSW will be holding their AGM on Saturday the 17th at the VK2WI site.

The former email address of vk2wi@ozemail ... has been discontinued. Use office@arnsw.org.au in its place or one of the others advised in recent notes. At the forthcoming AGM, Brian VK2TOX, the web master for ARNSW, retires. Thanks Brian for your efforts. Ross VK2ER continues the VK2BWI Morse session on Thursday at 2000 hours on 3550 kHz. Do you like Morse? Can you give him a hand? Call in at the end of the session. Out of broadcast hours there is the automated VK2WI Morse on 3699 kHz.

A new series of identifications graces **VK2WI News** presentations. The voice is that of John VK2JPM. Now – a request to all amateur operators. Be familiar with the schedules of those providing news bulletins so they can have a clear channel. This is the problem confronting the VK2WI Engineers where after half a century on crystal locked frequencies some are still not aware of the Sunday bulletins. It is the practice of news stations to use a regular time and frequency for these bulletins. Details of all these operations can be found on the WIA web site under "News & Events – Where to Find Us". Also introduced to VK2WI News is an email address for sending call back, beacon and general reports\ callbacks@arnsw.org.au

During the summer period Jack VK2XQ provided his usual detailed six metre activity report, compiled on Sunday morning with the very latest news. Jack advised activity has dropped off recently. There may be reports if anything news worthy occurs otherwise the segment will return next summer season. Thanks Jack.

73 – Tim VK2ZTM

ar

VK4news

Christopher Comollattie VK4VKR

Email: qtc@wia.org.au

The year is slowly but surely passing us by, with many projects happening around VK4 – we best keep at them or Christmas will be upon us. And speaking of projects, does your club have anything on the go at the moment?

Clareview

The Clareview event is soon upon us (told you the year is passing us by!) This is an annual migrating event that occurs at Clareview (between Rockhampton and Mackay). Amateur radio operators from near and far travel to this beautiful spot of paradise in Queensland to annoy the locals with their fleet of buses, campervans, caravans, four wheel drives, passenger sedans and not to forget the odd motor bike or two.

You can pick these migrating operators out from the locals, as normally they have a selection of antennas attached to their method of transport. The transport is not only to transport themselves, but also their wives and children and most of importantly of all "the unwanted treasures".

"Unwanted treasures" for the monster auction are like the precious gem of the RF spectrum to an amateur operator. They feel that they need to donate these items of interest (and it does cause quite an interest as you can watch them wandering around the auction table, picking up various items with great curiosity).

But when the auction starts there is no time to relax. Chests are out, vocal cords are cleared and bidding arms are poised ready for action. The bidding begins. Come and watch the spectacular display of the auctioneer as The Migrating Amateur Radio Operators bid hard against each other, dollar for dollar: sorry "High Rollers Only", no fifty cent bids allowed. Bidding can be fast and furious..... And sometimes hmmm, a little slow.

But come and see this event for yourself, proudly organised by the Rockhampton and District Amateur Radio Club along with the Mackay Amateur Radio Club on 1 and 2 May 2010 (Mayday long weekend). On-site accommodation is available in

cabins, caravans or even pitch a tent in the camping ground and enjoy that natural surrounds of the Clareview Beach. More information is available from Don Wilchefski VK4BY on 07 4928 0065.

To book a spot at the Clareview Beach Holiday Park call 07 4956 0190.

Bayside District

Bayside District Amateur Radio Society has a weekly net on 3.567 MHz at 1930 (EST) Wednesday (QRM +2/3 kHz)

Afternoon Net

The newest net in VK4, simply called the AFTERNOON NET, is proving to be a great place to meet up with hams from around the north of the state. It was kicked off by Ray VK4NET along with Len VK4CWM as a net where amateurs from FNQ, NQ and indeed anywhere else can get together for some friendly interaction. Simple guidelines ensure that the net is enjoyable for all who join in.

Many and varied topics are discussed along with the latest happenings around individual's shacks. So, if you are free in the afternoons please check in and say G'Day. There is no set net controller, just who ever wants to do the job on the day.

Bundaberg Amateur Radio Club

IT'S WAR IN THE WIDE BAY.... Well not quite, it is just the annual High score Challenge for HARRY ANGEL SPRINT participation.

In April, the adjacent clubs of Bundaberg and Hervey Bay compete for an aged trophy and have a lot of fun in the process so they thought they would share this for anyone looking for ideas to foster some good natured competition and a lot of laughs.

As the Harry Angel Sprint runs for only 106 minutes, it is accessible to young and old and provides the perfect battle ground. The object of our interclub challenge is to encourage Club Member participation in the Sprint. It is NOT a contest for the highest individual score; rather it provides a ratio of how many members with callsigns could participate against how many actually do participate.

After they arrive at a ratio or factor for each club they rely on the official point scores published in AR for each callsign. Of course club Secretaries have to be honest and communicate their true 'callsign numbers' at the date of the event and NO ring-ins! Hervey Bay tried that one year and all hell broke loose.

In retaliation BARC tried to 'doctor' the trophy to win years in advance... neither ploy worked. The Interclub BBQ is held in July each year and that is when the Pat Dryden Trophy is awarded to the winning club amidst tales of cheating and score rigging and a lot of good natured ribbing.

To summarise:

Do everything possible to get your members on air and making contacts in the H.A.S. (Bribery does not work but appealing to club pride may be a big stick). Berate your members to send in their scores, a big stick will be necessary at this point.

Take the total number of Club Members you have and discard this number! The important number is how many CALLSIGN members are in each club. Wait for AR to publish results. How many of your club CALLSIGNS participated in H.A.S.?

Divide the total participants by the total number possible to give each club a "Factor". Add up the points for each callsign to arrive at your club total (as published in AR). Multiply the total club point score by the club's Factor. This gives each club a new "Score" – and the highest score WINS.

Hold an interclub get together and accuse the other club of cheating or something. It is essential to laugh and be of good cheer whilst doing all of the above or the 'spirit' of Harry Angel will be lost. If any clubs would like more info on how to run the interclub challenge and some ideas on cheating and rigging, contact the secretary at the Bundaberg Amateur Radio Club at secretary@barc.asn.au

Lady Larcom

Just a brief note of information of a new (currently experimental) repeater at the Volunteer Marine Rescue site at Lady Larcom, a hill some 14 km North of Gladstone. It is operating on 438.675 negative offset with a 123.0 CTCSS tone and the Ident VK4SZ EXP.

Favourable reports have come from Yeppoon and we hope the "Footprint" will reach the town of 1770. Anyone travelling in the Gladstone Region is asked to "give it a go" and report their findings.

It is intended to formalize the Licence Application in the near future with the hope of the callsign VK4RGL. The repeater is a Vertex Standard VXR-9000U on loan from Stuart VK4SZ, currently running 35 W from the diplexer.

The Telewave TPRD-4544 diplexer, Andrews LDF5-50 coax and Antenna Agencies BU3 antenna are on loan from Paul Beales VK4XPB. Rigging work on the 30+ m tower was carried out by Stuart and Michael VK4FMCF, with the antenna mounted on the top Northern Leg.

Many thanks go to VMRG and Jones Communications for their support in this project. Information supplied by Paul Beales VK4XPB 0427 579 271 vk4xpb@wia.org.au

BARC

Brisbane Amateur Radio Club has 28 members, the youngest member in his early 20s and the oldest member is 84. Meetings are at the Queensland Maritime museum at the Eastern end of Southbank on the second Friday of the month, Social meeting on the fourth Friday and Business meetings are followed by a talk.

There is a lighthouse on site and also a lighthouse ship which makes it rather unique club site. How many other radio clubs have a lighthouse at their meeting place? This would make it easy for the Lighthouse weekend.

Committee members are: President Michael Cooper VK4MX, Vice President Bruce Bell VK4TRS, Secretary Peter Holtham VK4COZ, Treasurer Les Parker VK4SO.

The Brisbane Amateur Radio Club also conducts the Brisbane "BARCFEST" which has been held since 1982. It is held on the day before Mothers Day

and this year will be held on Saturday 8 May at the Mount Gravatt show grounds.

The club operates the 70 cm repeater VK4RBA, located on the south side of Brisbane. At present it is in test mode on 439.950 output and 434.950 input. It also uses 123 Hz sub audible tone access. Nets are held on Monday evening at 0800 Z on 28.450 MHz and on Wednesday evening at 0800 Z on Brisbane repeater 147.00 MHz. Anyone is welcome on the nets at any time, Les Parker VK4SO is station master. More information is available from Les VK4SO parkerlf@optusnet.com.au

TARC

Townsville Amateur Radio Club has Cyclone Track Maps now available for APRS. Just in time for the curly wind season, maps suitable for Cyclone Tracking across Northern Australia are now available for the Windows uiVIEW APRS Client and the Linux XASTIR APRS Client.

Based on a terrific range of Cyclone Tracking Map graphics, authored in 2004 by Carl Smith on the Gold Coast using a battered but trusty 300 MHz Mac G3, the maps have been formatted and calibrated for uiVIEW by Gavin VK4ZZ and for XASTIR by David VK4BDJ and are now available for download from The Townsville Amateur Radio Club's Website in the Documents section.

There are also other map collections for uiVIEW and XASTIR available there. The maps have been road tested recently tracking TC Olga and TC Neville as dead reckoning updating active objects. Surf to <http://www.tarc.org.au> go to Documents section to download and use. Grab the TARC WICEN Cyclone Tracking Map PDF to use in the shack for when the next series of curly winds come visiting.

TARC's social calendar for April: TARC Management Meeting, Tuesday 6 April from 7:30 pm at SES HQ, TARC Project Night Tuesday 13 April from 7:30 pm at SES HQ, TARC Social Evening Tuesday 20 April from 7:30 pm at SES HQ, Ann Renton Memorial Ladies Net Tuesday 27 April from 7:30 pm on Townsville VHF Repeater.

Further information also available at TARC website: <http://www.tarc.org.au>

Until next time 73 Chris VK4VKR

From The Sunshine State

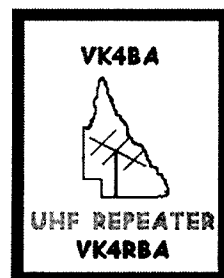
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Barcfest 2010

Mt Gravatt Showgrounds
1644 Logan Road, Mt Gravatt QLD 4122

Saturday 8 May

Doors open 9.30 am
Admission still only \$7.00



For information and site bookings
Contact Les VK4SO on 0411 729 642
Email: parkerlf@optusnet.com.au

Tea, coffee, cold drinks, sandwiches etc will be available at the venue.

ARNSW Centenary Celebration 1910 - 2010

On Sunday 14th March 2010 "Amateur Radio New South Wales" opened its new building at the VK2WI Dural site and at the same time celebrated its formation 100 years ago.

Over 100 members attended the celebrations of the Centenary of the formation of the movement which has become today's WIA and marked the event with the cutting of the Centenary Cake.

The two level building has 450 square metres of working space. It will be put to the test on Sunday 28 March when the bi-monthly Trash and Treasure will operate from its new storage facilities. No longer will it be necessary to extract and display T & T items stored in the former cramped original shed.

Three "Elders", (left to right in the photograph) David Thompson VK2BDT, born 1919, Pierce Healy VK2APQ born 1911 and Bill Hall VK2XT born 1912 cut the Centenary Cake, with ARNSW President Beth Langley VK2AO looking on.

ARNSW also celebrated on 11 March - the anniversary of the founding -

with a gathering at the site of the former Hotel Australia in the Sydney CBD.

On Wednesday evening 10 March Tim VK2ZTM and Mathew VK2YAP had a 20 minute live interview on ABC Radio Statewide Program covering the following day's Centenary Celebrations.



Contest News

Congratulations to Rex VK7MO as one of the winners of the 2010 Ross Hull Contest. Rex took out the Digital Modes section with 530 points, closely followed by Wayne Pearson VK5APN with 525 points all gained on 144MHz.

VK7 Repeater News

Brian VK7RR on 25 February 2010 replaced the antenna on the Hobart UHF repeater, VK7RTC. The original antenna was erected in late 1983.

This repeater was upgraded last year to a commercial Unilab and reports on audio quality and coverage are excellent. Reports to Brian VK7RR.

Northern Tasmania Amateur Radio Club

The NTARC AGM was held on 11 February 2010 with the following officer holders being elected: President - Bill VK7MX, Vice-President - Peter VK7PL, Treasurer - Ann VK7FYBG, Secretary - Jason VK7ZJA and Committee member - Peter VK7PD. Phil VK7JJ has created a new website for NTARC which can be found at: <http://www.ntarc.net/>

Phil has also been experimenting with a very interesting new path analysis application called "Splat", created by John Magliacane KD2BD.

It is very easy to use and can be found at: <http://splat.ecok.edu/> and Phil has setup an information page at: <http://www.perite.com/vk7jj/Splat.htm>

Cradle Coast Amateur Radio Club (CCARC)

The CCARC AGM was held on 27 February 2010 with the following office holders being elected: President - David VK7EX, Vice-President - Dick VK7FORF, Secretary - David VK7DC, Treasurer - Vernon VK7VF and Committee Member - Eric VK7FEJE.

CCARC held a successful garage sale on 14 February in conjunction with the Penguin History Groups Annual Bazaar and it is intended for this to be a regular event to help raise funds for the club.

North West Tasmanian Amateur TeleVision Group

The Club's first AGM was held 13 February 2010 with the following office holders elected: President - Tony VK7AX, Vice-President - Jim VK7JH, Secretary - Steve VK7EQ, Treasurer - Ivan VK7XL and Committee Member - Neil VK7ZNX. Random Node Calling has returned to IRLP Nodes 6124 and 6616. Using the DTMF code "####" the node will automatically connect to a random free and idle nodes somewhere in the world.

WICEN Tasmania (South)

WICEN assisted with providing communications for the inaugural Hobart 'Run the Bridge' run over the Tasman Bridge with 1400 runners and walkers completing the 10 km course from Bellerive on Hobart's Eastern shore to Salamanca Place on 7 February 2010. WICEN used commercial VHF and UHF licensed frequencies along with amateur frequencies for the event and a UHF repeater on Rosny Hill to extend the range of the handhelds. WICEN took the opportunity to publicise amateur radio in the very public place.



Radio and Electronics Association of Southern Tasmania

The AGM of REAST was held 21 February 2010 with the following officer holders elected: President - Gavin VK7HGO, Vice-President - Justin VK7TW, Secretary & Public Officer - Tony VK7FTCL, Treasurer - Richard VK7RO with Committee Members - Barry VK7TBM and Warren VK7FEET.

Richard VK7RO gave the REAST March presentation on his experiments with 7 MHz long wires, dipoles, Beverages, K6STI terminated loops and receiving loops. These experiments were conducted in the grounds of the former OTC Marine Wireless station on top of the Queen's Domain. This talk was very well received judging by the discussion after the talk.

The ATV Experimenters' nights are back in full swing with some notable visitors in recent Foundation licensees Dave VK7FDJB and Geoff VK7FGGA, and Ian VK3AXH who let us know of his EME experiments and the many contacts he has made using this mode on 1296 MHz. A great big thank you to Paul VK7PAH who has constructed our purpose-built professional presenter's desk. **ar**

Jim Linton VK3PC

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Returning to amateur radio

The steady trend, although involving a relatively modest number, is seeing lapsed radio amateurs inquiring about getting back into the hobby.

Each has his/her own story, such as a pending retirement, changed personal circumstances, or having heard that amateur radio has changed greatly in the past five years.

In the past 12 months, Amateur Radio Victoria has helped a dozen such individuals to have their licences restored with just a little paperwork. Perhaps you know of a lapsed radio amateur who could be encouraged to resume their interest in radio?

Event a huge success

Centre Victoria RadioFest No. 3
Sunday 14 February - Kyneton Racecourse

Reach for the stars by attending the biggest radio event in Victoria. This theme includes astronomical amateur television, astronomical logging and handling space samples on the phone.

All the major commercial traders will be there. They would not miss a and neither should you. Plenty of bargains too in the second-hand market and car boot sales area.

Amateur Radio Victoria

Centre Victoria RadioFest is a fantastic event

GREAT SUCCESS

See you at the next event!

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

Amateur Radio Victoria and the Central Goldfields Amateur Radio Club

100 YEARS

The Centre Victoria RadioFest held on 14 February at Kyneton was successful in more ways than one.

Almost 600 people attended including first time visitors from New Zealand and Japan, plus a number from VK2, VK5 and VK7.

The Amateur Radio Victoria team with the support of 20 enthusiastic members of the Central Goldfields Amateur Radio Club made things go smoothly. It was the CGARC's major fundraiser for the year.

The Kyneton Country Fire Authority brigade through its catering, using some locally supplied donated or subsidised food, raised \$2,000 that will buy much needed fire truck equipment and firefighter training.

Amateur Radio Victoria is proud to be able to assist local volunteers with their fundraising efforts and also put on the third RadioFest, a great social and networking event.

The Melbourne ATV group had an excellent live digital amateur television display, Scout Radio and Electronics Service Unit ran foxhunting sniffer hunts, Tony Hambling VK3VTH facilitated the well attended four mini-lectures. The presenters put a lot of effort into their contributions to the event and thank you to them.

The Voice of the Centre Victoria RadioFest, Bruce Lees VK3FFF, made program announcements, conducted interviews and was master of ceremonies at the door prize draw.

Well done to the Bendigo District Astronomical Society and all others in the Club Corner Precinct with a record 14 clubs and organisations putting on displays.

Again it was eagerly supported by all the major commercial traders, specialist traders, plenty of private second-hand equipment sellers, the Club Corner Precinct with a record 14 clubs and organisations taking part, four well attended mini-lectures - all making up Victoria's biggest amateur radio event.

Thank you to Australia's largest amateur radio dealer Strictly Ham for the major door prize of a Yaesu 2-metre FM hand-held transceiver, PK-Loops a tuneable AM radio antenna, the WIA for six special WIA Centenary Packs and posters and Vertex Standard a coffee cup and CD.

Bring back general meetings?

Recently a few members have suggested that Amateur Radio Victoria could resume member meetings.

The practice of monthly meetings was discontinued due to a lack of interest, back in the days when the statewide organisation was located at Brunswick Street Fitzroy.

However there have been specialist meetings since then concerning education, public relations activities, emergency communications and repeater coordination. There appears to be scope for another meeting concerning the promotion of amateur radio into schools.

It may be time to hold a meeting of members on a particular topic or with a guest speaker. While at this stage monthly meetings are not being considered it would be good to hear the views of more members.

Volunteer card sorters

The VK3 Inwards QSL Bureau needs volunteers to sort cards as they arrive at the Amateur Radio Victoria office from overseas QSL bureaux.

If you are able to assist with this work on Tuesdays at the office, 40g Victory Boulevard Ashburton, then give John Brown VK3FR a call on the day 9885 9261 or drop him an email at arv@amateurradio.com.au

Annual General Meeting

The AGM of Amateur Radio Victoria (The Wireless Institute of Australia Victorian Division) will be held on Tuesday 18 May, at 7:30 pm. As St Michael's School is currently being redeveloped, the location will be advised later.

All members will receive by e-mail, or post if their email address is not recorded, a copy of the Annual Report. At the AGM a time-capsule containing member contributions from the WIA's 75th anniversary will be opened.

AHARS

Christine Taylor VK5CTY

AHARS held its AGM in February.

There were no changes to the committee, so John VK5EMI is President, Leith VK5KLT Vice President, Richard VK5ZNC Treasurer, Secretary David VK5KC and committee members Graham VK5ZFZ, Jim VK5TR, and Christine VK5CTY, with Barry VK5BW co-opted member dealing with Repeaters and deceased estates.

An interesting talk was given on the night by Steve VK5AIM about heterodynes and super heterodynes. He said a heterodyne is a mixer and that we are using mixers in many activities, even stirring a cup of tea to the mixers in our radios.

He had done research into the history from the discovery of the heterodyne, that extra tone that is produced when two tones are mixed, to the uses of the principle in all radio equipment.

Robin VE3FRH spoke at the luncheon held at the Blackwood RSL rooms on the last Friday of the month. Robin and his XYL had just come back from a few days with Tony VK5ZAI in the Kingston, SE area and were WA bound.

Robin has been involved in AMSAT almost from the beginning when he heard those tiny 'blips' from the first OSCAR. He was President of AMSAT North America for four years and has kept his interest all through the years.

He well remembers OSCAR 13 which was only expected to run for a few months but which ran for years. He

also recalls the reappearance of OSCAR 7 (AO7) which died for nearly 18 years and then reappeared when the batteries that had stopped because of a short circuit, came to life when the short circuit became an open circuit each time it was in the sunlight, running directly from the solar cells.

He mentioned several Australian amateurs involved in early experiments who were remembered by some of the older AHARS members.

He told of some of the many changes that have occurred in the field, for example, in 1969; Jan W3YI carried the first AMSAT across US by air with it sitting on the seat beside him. Now the anti-terror laws prevent this.

In the early days all the work was done by amateurs, now the universities are offering to do the research. Then satellites were only launched if they could be made to fit a space available in a projected rocket. Now we have to pay several million dollars buy space.

Speaking of money: For one satellite, for which amateurs raised \$1,000,000 to build and launch, it has been estimated it would have cost \$135,000,000 if it had been built commercially.

Much early technology was designed by the Germans and was free to be used by all. Some recent technology designed in the US was not allowed to be shared around the world, in the usual way, because this is no longer allowed by law.

One story was about an enquiry from the US government to do with the accuracy of the satellites we use for our GPS devices. The question was whether the GPS positioning system would work for objects in higher orbit than the GPS satellites? Answer: using the system to locate several AMSATs, was yes. The positions given

were within 100 metres of the true positions. The GPS system works on its blind side, too.

A surprising discovery was that measurements of the radiation as the AMSAT went in and out of the Van Allen magnetic belt, was that, contrary to expectations, the radiation did not rise toward the inside and fall as they approached the outside of the belts. In fact the radiation rises rapidly, then falls away as you proceed deeper into the belt, then it rises again as you leave the belt. One day use may be made of this strange discovery.

I am sure that amateurs in other parts of Australia where Robin has been booked to speak will enjoy the talks as much as we, in AHARS, did.

Australia's involvement in amateur satellites goes back to 1965. There is a report in the May AR (p14) about "Project Australis". The Federal Convention of 1966 sponsored "Project Australis" and in November 1969 issue of AR on p 19 there is a report of the forthcoming launch of Australis as Australia OSCAR-5, (Ed: launched 23/10 70

For more information about AMSAT and for programs to locate satellites, go to www.amsat.org

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Diana, XYL of VE3FRH, Robin VE3FRH and John VK5EMI.

RAAF Signals & Radar Association of SA

The annual luncheon will be held
on Thursday 15 April 2010

(12 noon for 1230 lunch)

(Please bring your Seniors Card)

Venue: Marlon Hotel, Marion
Road, Mitchell Park

Public transport Bus M44, Stop 24

RSVP to one of the following
committee members before
14/4/2010:

President & Secretary: Ray
Deane VK5RK Phone 8271 5401

Assistant Secretary: Ron Coat
VK5RV Phone 8296 6681

Ray Deane Honorary Secretary

AMSAT

David Giles VK5DG

vk5dg@amsat.org

A quiet month

February was a quiet month for amateur satellite launches. To fill the spectrum, I present two signal generator projects instead. Also there is news of this month's DXpedition to Vietnam that will have satellite operation and an update on the ARISSat project.

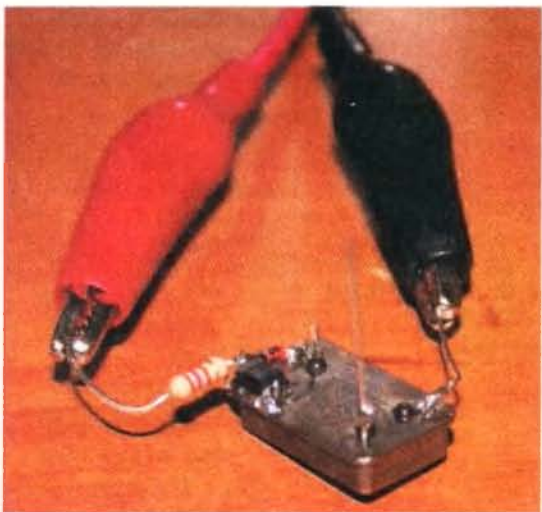


A simple signal source

I alluded to this simple signal source in my article on using the S-band downlink of AO-51 (refer AR May 2009). It consists of little more than a 24 MHz oscillator module and a way of powering it. My module was salvaged from an old PC motherboard. A 5.1 V zener diode and a 270 ohm voltage dropping resistor allow operation from a 9 V battery. A 1 uF capacitor is used for decoupling. A 78L05 voltage regulator would be a better solution but there were plenty of zener diodes in the junk box. The oscillator module case has a square lip corner to designate pin 1. The antenna is the clipped lead from a resistor connected to pin 7 (they are the size of a 14 pin IC even though they have only 4 pins). The 24 MHz value isn't critical. 12, 36, and 48 MHz oscillators will probably work as well.

The signals from this source can be easily received across a room at 144, 432, 1296 and 2400 MHz.

My FT-817 reads S9+ signals on 144 MHz and S7 on 432 MHz on the outside antennas with the signal source in the steel shed; a distance of about 8 m. Do not expect precision frequency accuracy or stability. So far I have used it to test a few antennas and down-converters on 2.4 GHz and antennas on 70 cm.



VK5DG simple signal source

A second signal source

Geoff VK2ZAZ sent me details of the signal source he uses for 2.4 GHz. The exact module is no longer listed on Jaycar's website, but similar devices should be usable.

He uses the Airwave Technologies AWM630TX 2.4 GHz wireless Audio/Video transmitter module that was available for less than \$20 (Jaycar catalogue number QC-3598). The module will put out a huge signal (1 mW) at 2414.05 MHz.

Whilst this is 12.75 MHz higher than the 2401.2 MHz signal from AO-51 it is close enough. There are spurious peaks around 2401.2 MHz but many dB down allowing further test signals.

He uses 4.5 V from 3 AA size cells to allow portable use of the signal source. The cells are in a 4 cell holder with a short across the spare position.

You can put an audio signal into the unit on pin 4 (or 5) of up to 3 volts in level, this makes it easier to identify the signals.

The 2.4 GHz chip draws about 50 mA, so powering from the 3 AA cells is no problem. The module was assembled onto veroboard and mounted in an aluminium case.



13 cm signal source by Geoff VK2ZAZ.

3W6C DXpedition

Another DXpedition within reach of Australia will be happening this month. The 3W6C Team will be operating from Côn Cỏ Island located in the Gulf of Tonkin off the coast of northern Vietnam during April 10 to 18. Michael HB9WDF reported to the AMSAT-BB mailing list that Hans-Peter HB9BXE will be the main satellite operator (when he is not being team leader and head CW operator). He will be using an FT-897 and home-brewed "Easysat" antenna for 2 m and 70 cm, and a 10 m crossed dipole.

They expect to be active on AO-7, AO-51 and the FM transponder of HO-68. They will also try SO-50 and SO-67 if there is time. From Australia AO-7 and HO-68 will be the best options, the other three might make it to Darwin. AO-7 has been used for several long distance QSOs (7500-7800 km) this year and is the only choice for those in the southern states. Not all passes will be used. The FT-897 will not have computer control so AO-7 operation will be challenging without Doppler correction on his uplink. It is unlikely he will be hearing his own downlink. If there is a pile-up they request only

callsign, signal strength and grid square reports. The website for the DXpedition is www.3w6c.qrv.ch

ARISSat Design review

Gould Smith WA4SXM reported that the ARISSat team held a critical design review meeting during February. 23 presentations were made to give an overview and status of the parts that make up ARISSat. Here is a quick summary from those presentations.

All ten cables have been assembled. The Internal Housekeeping Unit (IHU) hardware is fully tested. The software is under ongoing development. The power supplies that convert from the 28 V – 36 V of the battery down to 5 V and 3.3 V have been hardware tested but some software needs developing.

The antennas need to be assembled and tested. The flight version of the astronaut control box needs assembling. The flight mechanical structure is not completed. The software defined transponder (SDX) prototype hardware has been tested but the flight version needs to be constructed and tested. The cameras have been tested. There remain

mechanical issues with mounting and mirrors. All the software needs verification.

The silver-zinc battery has been purchased but needs its characteristics measured and tested with the rest of the power supply sections. The solar panels will have Lexan covers to protect them before deployment. Tests are needed on how the Lexan panels will affect the amount of electrical power generated and the spacecraft temperature. If the panels are removed then it gets full power but it complicates the amount of work during deployment by the astronauts. The maximum power point tracker is used to extract the most power from the solar panels. It needs to be fully tested with the test battery and under simulation.

The telemetry system needs more software developed and the characteristics of the sensors measured during the environmental tests. The rest of the transmission system (CW, SSTV, FM voice, and BPSK) has been tested and only minor additions are needed.

The design for the shipping container to get ARISSat to Russia has not been



AMSAT-VK

AMSAT Co-ordinator

Paul Paradigm VK2TXT
email coordinator@amsat-vk.org

Group Moderator

Judy Williams VK2TJU
email secretary@amsat-vk.org

Website

www.amsat-vk.org

Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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, 91.5 Hz CTCSS tone access

In South Australia

VK5TRM, Loxton on 147.125 MHz

VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania

VK7AX, Ulverstone on 147.425 MHz

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

started. The Russian experiment to measure vacuum as ARISSat de-orbits won't be available for testing until the satellite has gone to Russia. Simulation programs have been used for software development so far.

The interconnect board has problems with isolating power between solar panel and batteries. This is the only area that has been identified in the presentations that will terminate the mission. If the main battery fails then ARISSat will be unrecoverable. The design calls for a way to isolate the battery from the solar panels if it fails.

Overall the flight hardware needs finishing. Then it will need environmental testing where it is subjected to extremes of vibration and temperature in a vacuum. Plenty of minor but vital work needs to be done to complete ARISSat, even down to painting it with signage in English and Russian. The software will probably be ongoing until it is ready to be launched.

PDF files of the 23 presentations are available from the ARISSat website at www.arissat.org

The launch date was put back earlier

this year (it was originally intended to go in January). Discussions with NASA are under way for a launch later this year.

Final Pass

Home-brewed test equipment does not need to be complicated. Better yet when potential sources of unwanted signals can be put to good use. The ARISSat presentations give another glimpse into how much effort is put into constructing satellites.

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The WIA Centenary Committee Call for Articles

The WIA Centenary Committee wishes to acknowledge receipt of further historical material forwarded by members and others. This month, the Committee wishes to thank the following:

- Helene VK7HD for a tape recording of a radio interview she did in December 1986 about ladies in amateur radio. This will be added to the WIA's Sound Archive.
- Bruce Carty, Chairman, Radio

Yesteryear for a CD ROM of a number of articles relating to the early history of AM Radio in Australia. This will be added to our Archive for use by future researchers. Some interesting material can be found on their website: www.radioyesteryear.com.au

- Britt VK3AOB transferred early "u-matic" video tapes to DVD. These contained images of a number of well known amateurs interviewed on commercial television and will be added to the institute's archive.

Thank you to all who have contributed to date, but we would like more! Please help us to preserve the history of our hobby by writing something about your club, outstanding amateur or significant event.

The committee also welcomes articles on the future of amateur radio. The changes foreseen and even predictions for our future. Many new modes are being adopted by the more progressive amateur, how are these going to set the stage for the future amateur?

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VK3news from Tony Collis VK3JGC

Geelong Amateur Radio Club – The GARC

IRLP at the GARC

Nick VK3TY reported the predictable decline of the IRLP operation, using node 6572, over the Christmas and New Year period. December & January operations have been stable.

Connection Type	Jan 2010	Dec 2009	Nov 2009
Connections to other nodes	21 (54%)	22 (31%)	74 (72%)
Connection to the GARC node	11 (15%)	15 (35%)	23 (22%)
Connections to reflector sites	7 (18%)	6 (14%)	6 (5%)
Traffic Totals	39	43	103

At this juncture the node is operating in simplex mode with low power from Bannockburn. The end game is to operate it through VK3RGC; which itself is going through an upgrade by Ken VK3NW, Bert VK3TU and Peter

VK3WK, but progress is slow due to problems with site access.

New Members for the GARC

At the start of 2010, two members were elected into the Club, Chris Murphy and Stewart Wilson VK3FEMY.

Australia's Biggest Morning Tea, for Cancer Relief

The GARC's participation in this Australia wide event is being organised

by Vanessa VK3FUNY and Jenni VK3FJEN at the club house in Storrer Street, East Geelong, to take place on Saturday 29 May from 10 am to 2 pm. This will be gold coin donation event. The Biggest Morning Tea is the leading Cancer relief fundraising event and the largest, most successful event of its kind in Australia. Over \$60 million has been raised since it first began in 1994.

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Vanessa VK3FUNY



Jenni VK3FJEN

spotlight on **SWLING**

Robin L. Harwood VK7RH

It has been a surprise to me that a quarter of the year has already passed by. The good news is that the Sunspots have increased, allowing improved propagation. The downside is that there have been further cutbacks. I believe that there is now a proposal for the International Broadcasting Bureau to close down the only remaining US transmitting site at Greenville, North Carolina. The IBB supervises the VOA as well as surrogate clandestine broadcasters such as RFE/RL, Radio Farda and Radio Marti. This does not mean that these stations are closing but should continue from sites outside of the continental United States. Whether this proposal will go ahead is unclear at present.

The former Radio Australia site on Cox Peninsula in the Northern Territory did indeed fall silent on January 31st at 2359 UTC. It was leased for the past five years by a British-based evangelical network. Programs came from a studio near Maroochydore (Qld). I believe a review was made last year, and a decision was made not to renew the lease, when it fell due on the 30th of June. Radio Australia did use their former site over that period and had to hastily find alternative sites when Cox Peninsula closed down. As far as I am

aware there are no plans to resurrect the site and the senders have probably been dismantled anyway.

Propagation has certainly improved with the higher frequencies at last being heard. Predictions are that there will be a rapid return to higher numbers with the peak perhaps around July 2012, which coincidentally is the time of the Olympics in London. A good indicator of how propagation is faring can be gauged on 7130. This has become an unofficial DX calling frequency. I find the weekday net organised by VK7ROY at around 1030 a reliable marker to evening propagation. Also around 2000, several VK's have had success working into Europe and the east coast of North America.

Some of you may be wondering as to the identity of the strong broadcast station on 7110 in our local early mornings. I can confirm that it originates from Addis Ababa, Ethiopia and is in local languages. I can also hear it on 9704 at the same time. The same station is on 7175 but in a different language akin to Arabic. The only time I previously heard Ethiopia was close to 40 years ago when I heard a station operated by the former

Sudan Inland Mission (SIM) in English. It was around 15100 at 0100. It was the only time I heard it and now Ethiopia is easily being heard daily.

Incidentally there has been an ongoing war between Ethiopia and its former northern province of Eritrea. Both nations regularly jam each other's transmissions and both seem to have picked the now exclusive 40 meter amateur allocation between 7100 and 7200 to conduct their radio war.

I have reported that Burma, now known as Myanmar, was being heard around 9730 at 1030 till 1130. It was not strong and was easily wiped out by the BBC in Singapore, broadcasting in Burmese. Now this station has popped up on 7186 from 1130 with a much stronger signal. Perhaps they have chosen this channel because international broadcasters have now mostly vacated this portion of the band. It is no accident that North Korea also freely operates in this portion of 40 meters as Myanmar and North Korea have close military and political ties.

Do not forget you can email me your news and comments to vk7rh@wia.org.au

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GippsTech 2010

EZARC is pleased to announce GippsTech2010. This year the main program will be held on Saturday July 10 and Sunday July 11.

This event has a well-recognised reputation as the premier technical conference in VK, with its focus primarily on 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.

Anyone who presented at GippsTech2009 and has not yet forwarded their material for the *Proceedings* volume will receive a reminder from VK3PF very soon!

Further details can be found at the Eastern Zone Amateur Radio Club web site at <http://www.vk3bez.org/>



Call for papers

Amateurs (and others with material to contribute) are invited to submit titles and outlines for topics to be presented at GippsTech2010.

Presentation slots can be brief (5 – 10 minutes) through to one hour. Anything longer – you will need to justify!!

Potential presenters are welcome to contact the Chair of the Organising Committee, Peter VK3PF (vk3pf@wia.org.au), direct for further information or to suggest a topic.

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Contests

Craig Edwards VK8PDX vk8pdx@yahoo.com.au

It is fair to say that the radio sport year is well underway and when you couple that with improved solar conditions, then contesting is becoming a hell of a lot of fun, even if you just spend a little bit of time during an event to tune the bands.

An example of that is the WPX RTTY contest. This weekend clashed with

Valentine's Day and more importantly my birthday! So it was a casual effort at best and I spent time looking for new band countries on 40 m and 15 m.

It was a great thrill to bag some new ones. The almost hopeless frustration of finally making a QSO with CN2R on 15 m after an hour of calling was balanced by grabbing 4O3A on 40 m after one call early Monday morning! Even with this casual effort there were

over 200 Qs in the log and was lots of fun. So just remember you do not need to be going for a certificate and spend a lot of hours in front of the rig to enjoy a contest.

As I write this I have been given approval from the work boss and home boss to make a serious effort on the WPX SSB contest so fingers crossed those sunspots continue rolling in.

Results of the inaugural 2009 VK Shires Contest

Winners:

VK Single Op VK7ZE - donated by Phil Smeaton VK4KW

VK Multi Two VK4WIL - donated by Laurie Porter VK4VCC

VK Single Op Foundation VK2FEDS - donated by Nick Hacko VK2DX

VK Single Op Rover VK5HRT (now VK8PDX) - donated by John Ferrington VK6HZ

VK Multi Two Rover VK4YN - donated by Trent Sampson VK4TI

DX Single Op

North America W6RKC - donated by Craig Edwards VK8PDX

Asia JA6DIJ - donated by Diane VK4KYL and Bill Main VK4ZD

Europe IZ8GNR - donated by Andrew Munson VK4HAM

VK5NJ Trophy Most CW contacts by any station - VK4YN.

Committee Award for outstanding contribution to the contest - Neil Shand VK4FHYH.

Neil travelled from Brisbane to Goondiwindi Shire for the contest a round trip of 700 kilometres - thanks from the committee and everyone else who managed to get Goondiwindi Shire in the log due to your efforts.

Thanks to everyone who made special efforts for the contest - great publicity from our WIA Contest Editor VK5HRT (now VK8PDX), VK3HJ who made an effort in activating multiple shires, VK4YN portable and anyone who actually operated in the contest well done. Regards to you all, Trent VK4TI and Bill VK4FW.

C ALL	SCORE
Single Op	
VK7ZE	115432
VK4VCH	46110
VK2TSB	32704
VK4SN	26082
VK2HBG	18648
VK3LDR	15707
VK5NPR	13624
VK4VDX	12288
VK4ATH	10260
VK2BPL	10120
VK4IM	9265
VK3HJ	8774
VK4HG	8748
VK3ZPF	6840
VK3AVV	4725
VK4XY	4502
VK2KDP	3696
VK2VRD	2585
VK4PDR	2544
VK4MHZ	2337
VK2HV	2322
VK7VH	2205
VK7AD	2112
VK2IO	2100
VK2IO	2100
VK4CL	2058
VK2LCD	1786
VK2NCD	1638
VK4FNQ	1584
VK3ZGP	1443
VK2MRN	1360
VK3AJ/8	840
VK2HHS	784
VK2GR/8	704
VK3TDX	440
VK3KIH	440
VK2ZCM	272

VK3TX	100
VK2TTL	64
VK4PJC	56
VK4SWE	25
Multi Two	
VK4WIL	68257
VK2BV	11160
VK2LE	990
Single Rover	
VK5HRT	35168
Multi Op Rover	
VK4YN	31725
VK4GHL	31416
Foundation	
VK2FEDS	42504
VK7FWAY	19992
VK4FABC	17649
VK2FAJA	17094
VK2FHRK	11000
VK2FDDK	4884
VK4FHYH	1296
VK4FABD	783
VK3FAJM	100
Asia	
JA6DIJ	16
JA7OWD	1
North America	
W6RKC	100
KD6HHG	6
Europe	
IZ8GNR	4

CONTEST CALENDAR

April	3-4	Polish SP DX Contest	CW/SSB
	3-4	Spanish EA RTTY Contest	RTTY
	10-11	Japan International DX Contest	CW
	10	European Sprint	CW
	11	HF International Vintage	CW/SSB
	17	NZ Sprint – 80 m	RTTY
	17	TARA Skirmish	PSK31
	17	European Sprint	SSB
	17	Holyland DX Contest	All
	24	Harry Angel Sprint	CW/SSB
	24	NZ Sprint – 40 m	RTTY
	24-25	Polish SP DX Contest	RTTY
	30 April to May 6	Westlakes CQ Repeater Contest	All
May	All	WIA Centenary QRP Contest	CW/SSB/AM

Kiwi Digital Modes Group - 2010 VK/ZL RTTY Sprint

The second running of the Kiwi Digital Modes Group RTTY contest will take place in April 2010.

Each station is to be contacted once per night. All duplicate contacts on the same night will be eliminated from the operator's log sheet.

This contest will take the format of a one hour sprint run over two consecutive Saturdays. The first night will be on 80 metres and the second night will be on 40 metres.

The contest is open to all licensed amateur radio operators living in the VK & ZL callsign districts.

Saturday April 17th 2010 – 1000 UTC – 1100 UTC, 80M only

Saturday April 24th 2010 – 1000 UTC – 1100 UTC, 40M only

Operators can choose to enter one of the three following categories:

80 metres only.

40 metres only.

80 metres / 40 metres combined.

Certificates will be issued for the following categories:

80 m only: The top three scores from VK and top three scores from ZL.

40 m only: The top three scores from VK and top three scores from ZL.

80 m / 40 m combined: The top three scores overall irrespective of which country the contestant has entered from.

In other words there will not be separate certificates issued for the top three from each country as is the case in the 80 m and 40 m only categories. This will hopefully encourage more operators to partake in both nights.

The points system is as follows:

1 point for each ZL to ZL contact.

1 point for each VK to VK contact.

3 points for each VK to ZL and ZL to VK contact. This puts a little more emphasis on working the DX contacts between VK & ZL.

Log Sheets are to contain the following:

Callsign of station worked.

Time.

Signal Report Sent & Received.

Points Claimed for Each Contact.

A separate Log Sheet is required for each night of the contest with the operating band and date specified. In addition, a separate summary sheet advising what category is being entered into along with the operator's Name, Address, Callsign and a declaration that all good amateur radio operating practices have been observed for the duration of the contest.

Logs are to be received by the organizer no later than 23 May 2010.

Logs can be sent electronically to: zl2sky@zl2ko.org.nz

Alternatively they can be posted to:

KDMG RTTY CONTEST
365 High Street
Dannevirke 4930
New Zealand

Continued overleaf

Take your marks!!

106 minutes sprint Harry Angel Memorial Sprint 2010

24 April 2010 1000 Z – 1146 Z

This year is the 12th Anniversary of an annual Contest to remember VK's oldest licensed operator, Harry Angel. 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 band 80 metres, using modes CW and SSB.

Category: Single Operator

Sections: CW, Phone, Mixed (please choose ONE ONLY).

Frequencies: CW: 3500 - 3535 kHz, Phone: 3550-3590 kHz; 3650-3665 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, mode, RS(T), serial numbers sent and received for each QSO. Sending Logs: Email is the preferred method to vk3js@zoho.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 2010 May 7th Friday.

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 12th Anniversary within the WIA 100 Years celebrations.



WIA Centenary QRP Contest May QRP Contest 2010

Sponsored by the VK QRP Club, the following contest is designed to encourage interest in the use of low-level power to make contacts during the month of May 2010.

All licensed Amateurs are eligible to participate and are encouraged to do so.

The only limitation is that output power must be kept within QRP bounds of five watts for CW contacts and ten watts for Phone.

Object is to work as many stations as possible during the month of May 2010, operating within a three-hour time slot each evening, then to select your best 20 days of the month as your entry to the contest.

Categories: Open and Foundation Licensees.

Bands: 80 and 40 metres

Modes: CW, AM, SSB

Hours of Operation: 1000

- 1300 UTC daily. (During the last hour, E stations are asked to listen particularly for C and W.)

Exchange RS(T) and Serial Number starting at 001 and incrementing by one for each contact.

Scoring: To make scoring as uniform as possible, we shall use the natural groupings of States as follows --- Eastern E (VKs 4,3,2,7); Central C (VKs 8,5); Western W (VK6), External (VKs 9,0); DX (any call area outside VK).

Contacts within each group score one point per QSO;

Contacts between E and C score two points per QSO;

Contacts between E and W score five points per QSO;

Contacts between C and W score two points per QSO;

Contacts from all mainland areas to External score 10 points per QSO.

Contacts from all VK areas to DX score 20 points per QSO.

Logs should show the name, postal address and callsign of the entrant; callsign of station contacted; exchange; best 20 days of logs as selected by entrant.

Send logs to VK3JS, 121 Railway Parade, Seaford, 3198; or by email to vk3js@zoho.com by 2010, Friday 11 June. (Email is the preferred method.) (NB Do not forget to include your postal address, as you cannot know if you may be a winner!)

Certificates will be available to the highest scorers in each State in each Category and Mode for best 20 days.



SUMMER VHF-UHF FIELD DAY 2010: RESULTS

Contest Manager: John Martin VK3KM

The Summer VHF-UHF Field Day attracted 86 logs this time, which is another new record. Congratulations to all. See you again in June. Remember that stations entering all three 2010 Field Days will receive a special certificate in December. The certificates will be based on callsign, so to be eligible you must operate under the same callsign each time.

A change for the Winter Field Day will be the introduction of a new Rover section. Full details will be published in *Amateur Radio* magazine and on the WIA web site.

Call	Name	Location	50 MHz	144 MHz	432 MHz	1296 MHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	TOTAL
Section A: Single Operator, 24 Hours											
VK4OE	Doug Friend	QG61, QG62	83	363	555	648	530	210	-	360	2749
VK3ZL	Tim Dixon	PF84, 85, 95, 96	21	216	270	544	420	530	-	-	2001
VK3LY	Bill Day	QF04	158	480	710	704	-	-	-	-	2052
VK5AKH	Andrew Hall	PF85, PF95	89	318	390	480	-	-	-	-	1277
VK5OQ	Keith Gooley	PF95	49	231	330	464	-	-	-	-	1074
VK2YJS	Julian Sortland	QF56	-	75	115	-	-	-	-	-	190
Section B: Single Operator, 8 Hours											
VK3BJM	Barry Miller	QF23	21	330	490	592	210	-	-	-	1643
VK3YFL	Bryon Dunkley-Smith	QF22	70	288	300	592	-	-	-	-	1250
VK4ADC	Doug Hunter	QG61	186	312	320	392	-	-	-	-	1210
VK5AKH	Andrew Hall	PF85, PF95	54	225	305	448	-	-	-	-	1032
VK1AGP	Greg Parkhurst	QF44	39	390	320	-	-	-	-	-	749
VK5HZ	Darryl Ross	PF95	-	174	235	-	-	-	-	-	409
VK4NA	Alan Wills	QG62	-	96	160	-	-	-	-	-	256
VK5KLV	Les Virgo	PF87	32	165	-	-	-	-	-	-	197
VK4JAZ	Grant McDuling	QG62	-	63	-	-	-	-	-	-	63

Call	Name	Location	50	144	432	1296	2.4	3.4	5.7	10	TOTAL
			MHz	MHz	MHz	MHz	GHz	GHz	GHz	GHz	
Section C: Multi Operator, 24 Hours											
VK3UHF	LUMEG (1)	QF21	106	780	1030	1352	1030	470	740	860	6368
VK3ER	EMDRC (2)	QF22	264	969	1245	1416	1050	230	230	-	5404
VK3ALB	(3)	QF11	-	684	850	1192	840	-	360	770	4696
VK4WIS	(4)	QG63	193	657	730	752	630	-	-	460	3422
VK3TU	(5)	QF01	-	366	555	600	590	230	460	500	3301
VK3JTM	(6)	QF12	56	342	465	696	620	-	-	360	2539
VK5ARC	SCARC (7)	PF94	203	672	790	680	-	-	-	-	2345
VK1DA	(8)	QF44	39	696	760	392	210	-	-	230	2327
VK4WR	(9)	QG61	137	546	635	792	210	-	-	-	2320
VK5SR	SERG (10)	QF02	-	243	355	352	430	-	320	440	2140
VK3ATL	GARC (11)	QF11	32	381	615	560	-	-	-	470	2058
VK3APC	MDRC (12)	QF22	160	348	535	688	-	-	-	-	1731
VK2MA	HADARC (13)	QF56	189	582	440	176	-	-	-	220	1607
VK2HZ	BMARC (14)	QF56	151	270	290	-	-	-	-	-	711
VK5LZ	Elizabeth ARC (15)	PF94	40	288	340	-	-	-	-	-	668
Section D: Multi Operator, 8 Hours											
VK3ALB	(3)	QF11	-	381	500	616	690	-	220	570	2977
VK4WIE	CBRS (16)	QG62	246	384	175	496	-	-	-	210	1511
VK2AWA	Contest Group (17)	QF56	248	513	340	264	-	-	-	-	1365
VK4SN	(18)	QG62	223	285	300	-	-	-	-	-	808
VK5OM	(19)	QF02	-	165	215	-	-	-	-	-	380
VK2AWI	ARNSW (20)	QF43	-	198	160	-	-	-	-	-	358
Section E: Home Station, 24 Hours											
VK3MY	Ross Keogh	QF22	73	537	875	1176	880	-	-	-	3541
VK3KH	Michael Coleman	QF21	44	282	410	568	460	-	-	-	1764
VK3ZQB	Russell Lemke	QF11	-	228	365	560	-	-	-	570	1723
VK4ZDP	David Purkis	QH32	179	429	670	256	-	-	-	-	1534
VK3XPD	Alan Devlin	QF22	-	207	400	560	-	-	-	220	1387
VK2AMS	Mark Swannack	QF68	51	450	415	144	160	-	-	-	1220
VK3PF	Peter Freeman	QF31	106	258	300	448	-	-	-	-	1112
VK2EI	Neil Sandford	QF68	50	411	220	168	250	-	-	-	1099
VK2JDS	David Scott	QF46	34	480	230	352	-	-	-	-	1096
VK3VFO	Nick Kraehe	QF31	73	450	360	176	-	-	-	-	1059
VK2KRR	Leigh Rainbird	QF34	-	339	285	368	-	-	-	-	992
VK4TJ	John Kirk	QG52	44	282	290	304	-	-	-	-	920
VK2MER	Kirk Mercer	QF55	38	429	235	208	-	-	-	-	910
VK5NE	Paul Roehrs	PF95	63	402	445	-	-	-	-	-	910
VK5LSB	Simon Brandenburg	PF94	39	363	480	-	-	-	-	-	882
VK4DMC	Dale McCarthy	QH22	120	327	315	-	-	-	-	-	762
VK5ALX	Alex Glinski	PF86	69	249	200	192	-	-	-	-	710
VK2TG	Robert Demkiw	QF55	69	198	390	-	-	-	-	-	657
VK4AR	Gary Ryan	QG62	55	207	330	-	-	-	-	-	592
VK3KIS	Andrew Kayton	QF22	38	117	165	216	-	-	-	-	536
VK5NY	Roger Bowman	PF94	34	99	165	168	-	-	-	-	466
VK2BHO	John Hodgkinson	QF55	47	168	190	-	-	-	-	-	405
VK4FNQ	John Goldfinch	QG29	64	192	135	-	-	-	-	-	391
VK3HV	George Francis	QF31	83	111	170	-	-	-	-	-	364
VK1PAR	Al Long	QF44	26	192	135	-	-	-	-	-	353
VK2NR	David Porter	QF56	-	105	170	-	-	-	-	-	275
VK2JTV	Peter Mahoney	QF56	-	153	120	-	-	-	-	-	273
VK3TOM	Tom Steadman	QF31	23	81	125	-	-	-	-	-	229
VK5FANA	Adrian Addison	PF85	-	225	-	-	-	-	-	-	225
VK4MHZ	Brendan Cannon	QG62	-	96	105	-	-	-	-	-	201
VK3BG	Ed Roache	QF24	21	63	105	-	-	-	-	-	189
VK4EKA	Dougal Johnson	QG62	21	168	-	-	-	-	-	-	189
VK3FZ	Roger Stafford	QF22	21	39	110	-	-	-	-	-	170
VK5FMPJ	Patrick Morgan	PF94	-	150	-	-	-	-	-	-	150

Notes continue next page

Notes

- (1) Lara UHF-Microwave Experimenters Group: David Learmonth VK3QM, Charlie Kahwagi VK3NX, Chas Gnaccarini VK3PY
- (2) Eastern & Mountain District Radio Club: VK3AVV M. Subocz, VK3QI P. Forbes, VK3WT M. Chadwick, VK3WWW J. Bramham
- (3) Lou Blasco VK3ALB, Nik Presser VK3BA, Jenni Blasco VK3FJEN, Michael Blasco VK3FMIC
- (4) Sunshine Coast ARC: Wayne Shaw VK4WS, John McPherson VK4JMC, Cec Tysoe VK4FMOZ, Bill Booth VK4WB, Richard Philp VK4RY, Leicester Hibbert VK4ALH, Kirsty Golder, Dave Carr
- (5) Bert Gnaccarini VK3TU, Ken Jewell VK3NW
- (6) VK3JTM : Tim Morgan, VK3YLV : David Timms
- (7) South Coast ARC: VK5KBJ, VK5HSX, VK5LA
- (8) Andrew Davis VK1DA, Dale Hughes VK1DSH
- (9) Alan Meek VK4WR, Adam Maurer VK4CP
- (10) South East Radio Group: Colin Hutchesson VK5DK, John Drew VK5DJ, Tim Hann VK5AV, Ian Bishop VK3FNBL, Trevor Niven VK5NC
- (11) Geelong ARC: Garry Allwood VK3FWGR, Lee de Vries VK3PK, Dallas Jones VK3DJ
- (12) Moorabbin & District Radio Club: Ian Morris VK3IFM, Lee Moyle VK3GK, Gerard Werner VK3GER
- (13) Hornsby & District ARC: Rod VK2DAY, Paul VK2FMAM, Steve VK2BCD, Paul VK2PDS, Peter VK2TTP, Dave VK2FDIW, Dave VK2DMH, Justin VK2CU
- (14) Blue Mountains ARC: VK2AOR, VK2FTTP, VK2LET, VK2FMJB
- (15) Elizabeth ARC: Bruce Gauci VK5VAB, John Ross VK5NI
- (16) City of Brisbane Radio Society: John Morris VK4MJF, Ron Croucher VK4CRO
- (17) VK2AWA Contest Group: VK2BD, VK2IM, VK2OJ, VK2VK, VK2BPL, VK2FHRK
- (18) VK4SN, VK4TI, VK4HAM
- (19) Jim Bywaters VK5OM, Den Sharp VK3FDAS
- (20) Amateur Radio NSW: VK2JDH, VK2JDD, VK2KCM

Ross Hull Memorial VHF-UHF Contest 2010: Results

Contest manager: John Martin VK3KM

Activity in this year's contest was again far less than hoped for. After the 2009 test run of a scoring system based on Maidenhead locators, the comments received indicated that the scoring system should revert to the traditional distance-based scoring, so as to allow the scores to fully reflect achievement in making DX contacts. The change was made for this year's contest, but unfortunately it did not lead to increased activity.

The other change made this year was to relax the scoring restrictions on 6 metres, by doubling the band multiplier and removing the scoring cap on sporadic E contacts. This brought about some increase in 6 metre activity, but it did not flow through and stimulate more activity on the higher bands. The aim of the scoring system has been to keep

the scoring potential of all bands approximately equal, but at present they are quite unequal. The 6 metre scoring will be reviewed, especially as the solar cycle develops, but the most desirable fix for the scoring inequality would be an upsurge of contest activity on 2 metres and higher bands.

How to achieve this is still not clear. It is not difficult – one whole month in which to make DX contacts, but the scoring is based on up to seven contest days. Many entrants have achieved excellent scores while operating for less than seven days.

Congratulations to this year's winners, Ted Thrift VK2ARA and Rex Moncur VK7MO. Also noteworthy is Gavin Brain VK3HY for achieving the top score on 432 MHz, and Stephen Hayman ZL1TPH for making the top scores on 144 and 1296 MHz.

Call	Name	50 MHz	144 MHz	432 MHz	1296 MHz	TOTAL
Section A: All Bands						
VK2ARA	Ted Thrift	2638	108	85	-	2831
VK3HY	Gavin Brain	472	183	220	152	1027
VK2AH	Brian Farrar	796	126	65	-	987
ZL1TPH	Stephen Hayman	-	300	-	208	508
VK2TG	Robert Demkiw	254	147	85	-	486
VK6ADI	Barrie Burns	289	129	-	-	418
VK5FMPJ	Patrick Morgan	-	6	-	-	6
Section B: Digital modes, All Bands						
VK7MO	Rex Moncur	-	530	-	-	530
VK5APN	Wayne Pearson	-	525	-	-	525
VK3HY	Gavin Brain	-	432	-	-	432
VK1WJ	Waldis Jirgens	-	165	-	-	165

**ROSS HULL CONTEST
LIST OF WINNERS 1950 – 2010
appears on page 56**

Gridsquare Standings

at 12 February 2010

Guy Fletcher VK2KU

144 MHz Terrestrial

VK2FLR	Mike	113
VK3NX	Charlie	106
VK2KU	Guy	102
VK3PF	Peter	88
VK3HZ	David	85
VK2ZT	Steve	80 SSB
VK2ZAB	Gordon	78 SSB
VK5AKK	Phil	78 SSB
VK2DVZ	Ross	77 SSB
VK3PY	Chas	73 SSB
VK3CY	Des	71
VK3BDL	Mike	65 SSB
VK7MO	Rex	64
VK2EI	Neil	63
VK3QM	David	63 SSB
VK2TK	John	62
VK3BJM	Barry	61 SSB
VK4FNQ	John	59
VK4FNQ	John	58 SSB
VK3II	Jim	56
VK3II	Jim	55 SSB
VK3WRE	Ralph	55 SSB
VK3PF	Peter	54 SSB
VK3ZLS	Les	51 SSB
VK2AMS	Mark	50 SSB
VK4CDI	Phil	49
VK3HY	Gavin	48
VK5BC	Brian	48 SSB
VK3CAT	Tony	46
VK3VG	Trevor	46 SSB
VK7MO	Rex	46 SSB
VK4CDI	Phil	45 SSB
VK7MO	Rex	44 Digi
VK4KZR	Rod	43
VK5BC/p	Brian	42 SSB
VK3PF	Peter	39 Digi
VK4TJ	John	39 SSB
VK2TK	John	35 SSB
VK2KOL	Colin	34 SSB
VK3DMW	Ken	34
VK6HK	Don	34
VK2TG	Bob	33 SSB
VK3EJ	Gordon	33 SSB
VK3ZUX	Denis	33 SSB
VK1DA/p	Andrew	31
VK2MER	Kirk	30 SSB
VK3VHF	Rhett	29 SSB
VK1WJ	Waldis	27
VK2EAH	Andy	27
VK2TK	John	27 Digi
ZL3TY	Bob	24

VK3TLW	Mark	23 SSB
VK4EME	Allan	23
VK1WJ	Waldis	22 Digi
VK3BG	Ed	22 SSB
VK3II	Jim	21 Digi
VK4CDI	Phil	21 Digi
VK3ECH	Rob	20 SSB
VK6KZ	Wally	20
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
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	9 Digi
VK1WJ	Waldis	6 SSB
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 CW
VK4AIG	Denis	5 SSB
VK4JAZ	Grant	3 FM
VK2DVZ	Ross	2 Digi
VK2AMS	Mark	1 Digi
VK3QM	David	1 Digi
VK4FNQ	John	1 FM

144 MHz EME

VK2KU	Guy	372
VK2KU	Guy	357 Digi
ZL3TY	Bob	300
VK3AXH	Ian	265 Digi
VK4CDI	Phil	182 Digi
VK7MO	Rex	155 Digi
VK2FLR	Mike	120
VK3CY	Des	70 CW
VK2AWD	David	65 Digi
VK2KU	Guy	43 CW
VK3DDU	Paul	39 Digi
VK2ZT	Steve	28 Digi
VK3VHF	Rhett	20 Digi
VK3HZ	David	19
VK3II	Jim	14 Digi
VK3NX	Charlie	5 CW
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
VK3NX	Charlie	48 SSB
VK3QM	David	48 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3BJM	Barry	38 SSB
VK3HZ	David	38
VK5AKK	Phil	38 SSB
VK2DVZ	Ross	34 SSB
VK2ZT	Steve	32 SSB
VK3BDL	Mike	32 SSB
VK3CY	Des	32
VK3WRE	Ralph	32 SSB
VK3PF	Peter	30
VK3PF	Peter	29 SSB
VK5BC	Brian	25 SSB
VK1DA/p	Andrew	24
VK3VG	Trevor	20 SSB
VK7MO	Rex	20
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2AMS	Mark	17 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	15
VK4CDI	Phil	14
VK4CDI	Phil	14 SSB
VK6KZ	Wally	13
VK2EI	Neil	12 SSB
VK2KOL	Colin	12 SSB
VK4TJ	John	11 SSB
VK2TG	Bob	10 SSB
VK3AL	Alan	10 SSB
VK3ECH	Rob	10 SSB
VK4FNQ	John	10 SSB
VK3VHF	Rhett	9 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK2FLR	Mike	6
VK3DMW	Ken	6
VK4EME	Allan	6 SSB
VK6DXI	Mirek	6
VK1WJ	Waldis	4 SSB

VK2EAH	Andy	4 SSB
VK3PF	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK4CDI	Phil	4 Digi
VK2ZT	Steve	3 Digi
VK3VHF	Rhett	3 Digi
VK4AIG	Denis	3 SSB
VK4JAZ	Grant	3 FM
VK2DVZ	Ross	1 Digi
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz EME

VK4KAZ	Allan	14 CW
VK4CDI	Phil	13 Digi
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK3NX	Charlie	5 CW
VK3AXH	Ian	4 Digi
VK3HZ	David	4
VK2ZT	Steve	2 Digi
VK3VHF	Rhett	1 Digi
VK5BC	Brian	1

1296 MHz Terrestrial

VK3PY	Chas	39 SSB
VK3QM	David	39 SSB
VK3NX	Charlie	37 SSB
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2DVZ	Ross	25 SSB
VK2KU	Guy	25
VK5AKK	Phil	24 SSB
VK3PF	Peter	20
VK3BJM	Barry	19 SSB
VK3KWA	John	19
VK3PF	Peter	19 SSB
VK3BDL	Mike	17 SSB
VK3HZ	David	17
VK3WRE	Ralph	17 SSB
VK2ZT	Steve	12 SSB
VK3VG	Trevor	12 SSB
VK4KZR	Rod	12
VK3BG	Ed	11 SSB
VK7MO	Rex	11 SSB
VK1DA/p	Andrew	10
VK2TK	John	10 SSB
VK3UDX	Geoff	10 SSB
VK3TLW	Mark	8 SSB
VK2AMS	Mark	7 SSB
VK3AL	Alan	7 SSB
VK3DMW	Ken	7
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
VK4CDI	Phil	4 SSB

VK6KZ	Wally	4
VK4EME	Allan	3 SSB
VK5BC/p	Brian	3 SSB
VK6DXI	Mirek	3
VK7MO	Rex	3 Digi
VK2FLR	Mike	2
VK3CY	Des	2
VK3PF	Peter	2 Digi
VK3QM	David	2 Digi
VK4AIG	Denis	2 SSB
VK4FNQ	John	2 SSB
VK4CDI	Phil	1 Digi
ZL3TY	Bob	1 SSB

1296 MHz EME

VK3NX	Charlie	43 CW
VK4CDI	Phil	30
VK4CDI	Phil	30 Digi
VK7MO	Rex	30
VK7MO	Rex	27 Digi
VK4CDI	Phil	3 CW

2.4 GHz Terrestrial

VK3PY	Chas	18 SSB
VK3NX	Charlie	17 SSB
VK3QM	David	17 SSB
VK3WRE	Ralph	11 SSB
VK3PF	Peter	7 SSB
VK3HZ	David	5
VK4KZR	Rod	4
VK6KZ	Wally	4
VK3BJM	Barry	3 SSB
VK1DA/p	Andrew	2
VK3PF	Peter	2 Digi
VK3VHF	Rhett	2 SSB
VK2AMS	Mark	1 SSB
VK2DVZ	Ross	1 SSB
VK2EI	Neil	1 SSB
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB
VK3ZUX	Denis	1 SSB

2.4 GHz EME

VK3NX	Charlie	30 CW
VK7MO	Rex	9
VK7MO	Rex	7 Digi

3.4 GHz Terrestrial

VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3WRE	Ralph	8 SSB
VK3PF	Peter	6 SSB
VK6KZ	Wally	4

3.4 GHz EME

VK3NX	Charlie	12 CW
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5.7 GHz Terrestrial

VK3NX	Charlie	14 SSB
VK3QM	David	12 SSB
VK3WRE	Ralph	9 SSB
VK3PY	Chas	8 SSB
VK3PF	Peter	7 SSB
VK6KZ	Wally	4
VK3BJM	Barry	2 SSB
VK3PF	Peter	2 Digi
VK6BHT	Neil	2 SSB
VK3ZUX	Denis	1 SSB

5.7 GHz EME

VK3NX	Charlie	14 CW
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10 GHz Terrestrial

VK3PY	Chas	15 SSB
VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3PF	Peter	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
VK4KZR	Rod	2
VK7MO	Rex	2
VK1DA/p	Andrew	1
VK3BG	Ed	1 SSB

10 GHz EME

VK3NX	Charlie	14 CW
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24 GHz

VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK3NX	Charlie	2
VK6KZ	Wally	2

474 THz

VK3WRE	Ralph	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 <http://vhfdx.radiocorner.net> Click on Gridsquares.

Next update of this table will close on or about 11 June 2010.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

International SOTA Weekend, 1-2 May 2010

Tom Read M1EYP

After the success of last year, the **Summits on the Air Management Team** announce another "International SOTA Weekend", to be held first weekend in May.

The original concept by Sean M0GIA was for an event to encourage summit to summit contacts between the many International Associations that comprise SOTA, and to give Chasers the opportunity to work as many different associations as possible.

This does mean that HF may be required but does not mean that this is solely an HF event; all licensed bands can, and where possible should, be used to make contacts. The choice of operating band and mode is left to

the individual activator as always.

The International SOTA Weekend in 2009 was such an overwhelming success the MT proposes that this should become an annual event on the first weekend in May every year. The first weekend being defined as the weekend that immediately precedes the UK May Day public holiday (which is always the first Monday in May).

This year the International SOTA Weekend will be held on the 1st and 2nd of May 2010 and all prospective activators are encouraged to post their planned activations on SOTAwatch as soon as is practicable.

SOTAwatch: <http://sotawatch.org>

SOTA website: <http://www.sota.org.uk>

OTY letters

IRLP came to VK5RMN The Bluff At Port Pirie

It is now over twelve months since IRLP was installed on The Bluff at Port Pirie.

IRLP was installed with little consultation with the locals who use the repeater. I once challenged one of the installers as to why this was so and was told the Whyalla and Moonta Radio Clubs were contacted and agreed that IRLP be installed.

As I have monitored the repeater for quite sometime and over a lot of hours since installation I wish to report the following on its use.

I have only heard one member from the Whyalla club, one from the Moonta club, three from Port Pirie and the occasional call from operators outside The Bluff area using IRLP. I can name at least six local operators who

no longer use this repeater, since the IRLP installation.

I hear the tone noises being entered and nobody calling or talking, operators using the nodes with out calling to see if it is in use along with many other unusual ways of using the repeater.

After the installation I received two pages on how to operate the IRLP node and "Rules for using IRLP nodes". I wonder how many that use it also received a copy?

It is a real shame to note that operators are not using the repeater because of the above.

I wish to ask, "Is it really worth having IRLP on this repeater"?

Paul Meier VK5MAP

Around we go again

Dear Sir,

Due to an interest in the "Library Amateur Radio Displays" (AR Nov. 2005) and an enquiry from NZ, I have started the Displays on their merry way again. There is a new batch of inquiring minds that have matured over the five or six years since the first round was started and also advancements in amateur radio and electronics have taken place.

I am pleased to have received some complimentary comments but my offer to assist other States is still to be taken up. Unfortunately I am starting to battle 'Mr Parkinson' which is interfering with my home-brewing but "them's the breaks".

Graeme Wilson VK6BSL

Silent Keys

Mike Eden VK7ME

It is with great sadness that I inform you of the passing of Mike Eden VK7ME at 10.00 am Monday 15 February 2010. Mike was a very active amateur on our HF bands for many years and he started as an amateur in the UK in the early 1950s.

Mike saw service in the Merchant Navy before and during the Second World War, and joined the Royal Air Force as a Morse decoder, stationed at Changi after the war.

He returned to England for a number of years then moved to Australia with his wife Irene, living in NSW for a short time before moving to Tasmania.

I first met Mike in the early 70s at my first Myalla JOTA, by this time Mike and Irene had settled happily in Mount Hicks.

We will miss you Mike, your gift of the gab, your quick wit..... now a silent key. Vale, Mike.

Submitted by Dale VK7NDH, Sec/Treas: West Coast Radio Group

Boy (A.G.) Cory VK2DTH

North Star, NSW, Australia

Boy passed away peacefully on 2 March 2010, aged 98.

He was a keen amateur gaining may global DX awards including 5BDXCC.

Boy was a pilot with rank of Flight Lieutenant during WWII and also a qualified navigator.

He returned to the family property at North Star after the war, he married Olive and had two children.

Boy is survived by his children Elizabeth and Peter and his grandchildren, all of whom he was very proud.

Boy encouraged me to become an amateur, a hobby I still enjoy to this day.

Submitted by Tim Barthelson VK4VI.

DXnews & views

VK4OQ, P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.

E-Mail: john.bazley@bigpond.com

At the time of going to press we still have not received any definitive information on the forthcoming DXpedition to Annobon Island in April, apart from focusing on the low bands, and with an emphasis on CW. The team have promised to announce full details at the beginning of April.

Sang Hoon Lee **DT8A** plans to be QRV on CW (with a preference for this mode), SSB and RTTY from the South Shetlands covering all bands from 160-10 m until 31 January 2011. The station is located on King George Island, King Sejong Station on the Barton Peninsula. Sang says he is with the 23rd "overwintering party." Sang's home call is DS4NMJ. QSL via HL2FDW.

Preparations continue for the **3W6C** Con Co Island, Vietnam expedition, with departure for the island in early April. The operators will fly on an A380 from Zurich to Singapore, then on to Vietnam. All the laptop logging computers have been set up with the logging software. The last shipment of gear being sent on ahead goes out early this month, March. The team expects to be on the air from April 10 to 18 with four stations "on 24/7", emphasizing the low bands and targeting North America and Europe. The **3W6C** Website can be found at www.3w6c.qrv.ch

Ciro PY7ZY, Fred PY2XB, Jim PY7XC and Andre PY0FF will be active as PW8J from Ilha dos Lençois, in the IOTA group SA-041, from 9 to 15 June. They plan to have three stations with two amplifiers, verticals and wire antennas. From 16 to 18 June they will operate as **PW8L** from the island of Sao Luis, IOTA SA-016. QSL to P.O. Box 152, Joao Pessoa - PB, 58010-970, Brazil. The website for the expedition is at www.pw8j.com [TNX PS7AB].

Marion Island. Pierre ZS1HF has announced he will be active as **ZS8M** from Marion Island (AF-021) "from the end of April once the 'SA Agulhas' has returned to Cape Town". Pierre says he is taking up "the position of radio/

electronics technician for a year". Further information is expected in due course. Let us hope that this time we will see some activity from there!

Mike UK8OM reminds everyone when QSLing to **Uzbekistan**, do not send green stamps in your envelope as they are routinely stolen. Also effective January 2010 only envelopes produced in Uzbekistan can be mailed from that country. So Mike advises those QSLing stations in Uzbekistan to not send SAE but rather a mailing label.

If you need a QSL confirmation for any of these past **DK2WV** operations you have until April 2010 before Karl will close the logs: 3D2WV (Conway Reef), T33WV (Banaba) and 3V8W (Tunisia). His address is listed at www.qrz.com/db/dk2wv

Don Greenbaum N1DG reports that the **K4 Midway Island** DXpedition logs have been uploaded to LoTW and printed cards are expected to go out in March.

The Northern California DX Foundation (NCDXF) recently reports approving funding for the upcoming ZL8X (Kermadec) and E4X (Palestine) DXpeditions. Of late they have also agreed to support the 3C0C (Annobon) and Y19PSE (Iraq) DXpeditions.

Franck F4DTO and Patrick F4GFE will be active as ZA/homecall from Elbasan, **Albania** from April 15 to 24. They plan to operate SSB and some CW on 40 to 10 metres using 100 watts and monoband dipoles. QSL via home calls, bureau preferred.

Steve 9M6DXX has joined the team of operators who will be active from four **T32 IOTA** new ones in March-April. They plan to have four stations from two operating sites on each island. Four different callsigns will be in use: T32MI (Malden Island, OC-279), T32SI (Starbuck Island, OC-280), T32CI (Caroline Island, OC-281) and T32VI (Vostok Island, OC-282). QSL via SM6CAS. The website for the expedition is at t32line.webnode.com

OD5/DL6SN is now in **Lebanon** and will stay until the end of the year. He plans most of his activity to be CW on 40metres through to 10metres. QSL via DO8LA.

Hugh K6HFA plans to operate from several **South Pacific** islands between March 3 and April 26 as follows: March 3 to 10 - **Samoa** (5W) OC-097; 12 March to 2 April **Tonga** (A3) OC-049, OC-123 and OC-064; April 6 to 12 **Wallis** (FW) OC-054; April 13 to 21 **Tuvalu** (T2) OC-015; April 23 to 26 **Fiji** (3D2) OC-016 or OC-156. He will operate CW, SSB and maybe some RTTY on 80, 40, 30, 20, 17, and 15 metres, with 100 watts and a vertical. Further information is expected in due course. QSL via home call.

Alex UX4UL has his **Maldives Islands** licence to operate starting on February 18 through to May with the callsign 8Q71A. He is will be on CW and PSK on 40, 20 and 17 metres. QSL via UY5ZZ.

4L3A in **Georgia** plans to be in the CQ WPX SSB events (the latter the last weekend in March). Operating will be UR9QQ as 4L9QQ, 4L2M, 4L4CC and 4L5DJ, with three operating desks, an Icom IC-775 with 1 kW to a quad and two-element 80 m delta switchable from 300 degrees to 120 degrees and an inverted V for 160; an Icom IC-756PRO3 with kW and 3-element Spiderbeam for 20, 15 and 10, plus a 2-element 40 m inverted V; and a Kenwood TS950SDX to 500 watts amp and 15 and 10 m Spiderbeam, plus a dipole for 40.

The planned S2DX (Bangladesh) IOTA expedition to AS-127, St. Martin's Island, has been postponed. The licence and operating permission have not arrived in time. This was scheduled for the third week of February. Organizers continue talking to the authorities to get everything in order for early rescheduling. Keep an eye on their website: www.s2dx.org

In Radio Arcala news, Ville OH2MM is making a permanent relocation of QTH to **Brazil** where he has the callsign PY2ZEA. Look for him on the

air soon. He will operate from CR2X in the Azores in his "farewell operation from Europe." OH2BH and OH2PM, Martti and Pertti, will join him there as a multi-op in the ARRL Contest. QSL via OH2BH.

Larry VQ9LA says the **VQ9X** log periodic antenna has been repaired by a US Navy antenna team. It now has new half-inch hardline, and the cyclone damage repaired. The repairs took a crew of seven people, and a 135-foot bucket truck, four hours.

Michele IK5ZUI moved to his new home on Nosy Be Island (AF-057) and will be QRV from there as **5R8UI** for about one year. QSL via IZ8CCW.

For the collectors of eQSL's, The DX and HF Contesting Committee of the DARC and the operators of the Electronic QSL Card Centre (www.eQSL.cc) have agreed to set up a development partnership. The goal is to create an electronic server-to-server transmission system for submission of electronic QSLs (eQSLs) to the online DARC Contest Logbook (DCL). Soon

eQSL users will be able to transmit their eQSLs electronically into the DCL for application of various DARC awards.

Tevfik TA1HZ reports that the Turkish Special Wireless Activity Team (TCSWAT) will be operating as **TC57A** from 22 April to 25 April from **Kocacimen Tepe** overlooking the **ANZAC Beach** (KN30dg) using 100 W Yaesu FT-857 rigs and dipoles plus a Diamond BB7V vertical. They will be looking for contacts with VK amateurs. However; if there will be any VK hams coming over for ANZAC Day to Gelibolu, our team will be more than happy to have them as our guests at the camp area and at the mike – in the field we usually use 145.500 / 433.500 MHz for simplex activity.

Good luck in the pile-ups until next month.

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/trial.htm

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TX4T operators: Nigel G3TXF, Jacques F6BEE, Phil FO8RZ and Gilles VE2TZT.

ROSS HULL CONTEST – LIST OF WINNERS 1950 – 2010

1950 - 1951	VK5QR	R. Galle	1980 - 1981	VK6KZ	W. J. Howse
1951 - 1952	VK5BC	H. Lloyd	1981 - 1982	VK6KZ	W. J. Howse
1952 - 1953	VK4KK	A. K. Bradford	1982 - 1983	VK6KZ	W. J. Howse
1953 - 1954	VK6BO	R. J. Everingham	1983 - 1984	VK6KZ	W. J. Howse
1954 - 1955	VK4NG	R. Greenwood	1984 - 1985	VK3ZBJ	G. L. C. Jenkins
1955 - 1956	VK3GM	G. McCullough	1985 - 1986	VK3ZBJ	G. L. C. Jenkins
1956 - 1957	VK3ALZ	I. F. Berwick	1986 - 1987	VK3ZBJ	G. L. C. Jenkins
1957 - 1958	VK3ALZ	I. F. Berwick	1987 - 1988	VK5NC	T. D. Niven
1958 - 1959	VK3ALZ	I. F. Berwick	1988 - 1989	VK5NC	T. D. Niven
1959 - 1960	VK4ZAX	D. R. Horgan	1989 - 1990	VK3XRS	R. K. W. Steedman
1960 - 1961	VK3ARZ	W. Roper	1990 - 1991	VK3XRS	R. K. W. Steedman
1961 - 1962	VK5ZDR	M. J. McMahan	1991 - 1992	VK3XRS	R. K. W. Steedman
1962 - 1963	VK4ZAX	D. R. Horgan	1992 - 1993	VK3XRS	R. K. W. Steedman
1963 - 1964	VK5ZDR	M. J. McMahan	1993 - 1994	VK3XRS	R. K. W. Steedman
1964 - 1965	VK3ZER	R. W. Wilkinson	1994 - 1995	VK3XRS	R. K. W. Steedman
1965 - 1966	VK3ZDM	J. R. Beames	1995 - 1996	VK2FZ/4	A. Pollock
1966 - 1967	VK5HP	J. H. Lehmann	1996 - 1997	VK2FZ/4	A. Pollock
1967 - 1968	VK3ZER	R. W. Wilkinson	1997 - 1998	VK2FZ/4	A. Pollock
1968 - 1969	VK5ZKR	C. M. Hutchesson	1998 - 1999	VK3XPD	A. P. Devlin
1969 - 1970	VK3ZER	R. W. Wilkinson	1999 - 2000	VK3EK	R. G. Ashlin
1970 - 1971	VK4ZFB	E. F. Blanch	2000 - 2001	VK4TZL	G. R. McNeil
1971 - 1972	VK5SU	J. W. K. Adams	2001 - 2002	VK4TZL	G. R. McNeil
1972 - 1973	VK5SU	J. W. K. Adams	2002 - 2003	VK3EK	R. G. Ashlin
1973 - 1974	VK5SU	J. W. K. Adams	2003 - 2004	VK3EK	R. G. Ashlin
1974 - 1975	VK5SU	J. W. K. Adams	2004 - 2005	VK3UH	L. Mostert
1975 - 1976	VK5SU	J. W. K. Adams	2005 - 2006	VK4TZL	G. R. McNeil
1976 - 1977	VK4DO	H. L. Hobler	2006 - 2007	VK3KAI	P. L. Freeman
1977 - 1978	VK3OT	S. R. Gregory	2007 - 2008	VK1DA	A. Davis
1978 - 1979	VK4DO	H. L. Hobler	2009	VK3EK	R. G. Ashlin
1979 - 1980	VK3ATN	T. R. Naughton	2010	VK2ARA	E. Thrift

VK6news

Keith VK6RK - vk6rk@wia.org.au

Greetings all VK6ers and welcome to this month's VK6 notes.

We have had a fair bit of activity recently including the Hills ARC Annual Sale on Saturday 27 February, which was well attended by the local amateur population. A report from the group has not arrived so as I was there myself I will take the liberty of reporting.

It was a very hot day, 37°C, and traders inside the hall were definitely cooked! There were about 100 people through the doors and the sausage sizzle did a roaring trade. There had been a generous donation of raffle prizes from Kylea of Hamshack and Ian VK6LCT of Timberden Plant Hire which made for a fair bit of interest when they were drawn. The winner of the FT-897D was Jack VK6KDX and, as he had gone home by then, I accepted the prize on his behalf and delivered it on my way home. Jack was delighted as he is a lover of these radios and already owns two of them!

Second prize was an FT-817, won by Brian VK6ABM and third prize was a 2 m/70 cm collinear vertical won by Mark VK6???. All in all a good turnout on a hot day and, I believe, the traders did well too. It was also good to see Mick VK6IN, the former HARG secretary, up and about after his recent illness.

Now a report from Terry VK6ZLT, from the WA VHF Group.

The WA VHF group would like to announce that the Busselton beacons VK6RBS, 1.3 GHz and 10 GHz, are now back on air after a long period of silence whilst looking for a suitable operating site. Many thanks go to the untiring effort of Wayne VK6JR to establish an interim home in Dunsborough on the way to a more established site in the offing. Many thanks, Wayne.

Club activities have started well this year with the members fine tuning and troubleshooting of their newly acquired SDR receivers to "noise in the ham shack" with an excellent introduction by Cedric VK6CD. Forthcoming discussions involve the

promotion of amateur radio from a VHF/UHF perspective in conjunction with the Centenary celebrations in our September time slot.

Thanks Terry and we look forward to hearing more of the SDR saga.

In last month's notes I made a request for information about the Morse/telegraph key collection of Dave Couch VK6WT SK. I have had some considerable input from local amateurs and by the time this appears in your mail box I hope to have some positive news to report, please watch this space. It would be a terrible shame if such a fine collection could no longer be displayed for all to see. I believe the majority of amateurs enjoy the beauty of a Morse key even if they do not have the skills to do them justice! I certainly do not have the skills, but I am working on them.

The contest season is upon us and by the time you read this the John Moyle Field Day will have been and gone. I hope the reports of outdoor activities will be available for inclusion in the May notes column. I believe at least two local groups are planning a bigger effort than last years and maybe the pictures will follow? The NCRG will be making their usual big effort in the CQWW WPX SSB contest on 27-28 March and I'll report on that next month.

I will also report on the NCRG Open Day at the Neil Penfold State Amateur Radio Centre (NPSARC) in Whiteman Park, which was held on Sunday 14 March. I hope you were all there and you were one of the lucky prize winners!

I would like to take this chance to ask the group Secretaries out there to contact me



First prize – Keith VK6RK receives the first prize, a FT-897D, on behalf of Jack VK6KDX.

on my email address and fill me in on your membership numbers, special projects, aims, anything at all. It is all appreciated and this is a way of letting other local amateurs, who may not belong to your group, find out about you and maybe even join up.

All the very best DX and see you next month.



Second prize – Brian VK6ABM receives the FT-817.

VHF/UHF An Expanding World

David Smith VK3HZ

vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

At this time of year, the weather conditions in this region can produce some quite intense tropo openings over relatively short distances.

For instance, on the evening of 1 March, the VK5RSE beacon, over 430 km away, was 5x9+ on all its operating bands (2 m, 70 cm and 23 cm). It was a similar strength the following morning. These are the times when the microwave enthusiasts at each end need to drag their gear up to a nearby hilltop because it is almost certain that the microwave bands will be open for good contacts.

Colin VK5DK in Mt Gambier experienced some good conditions recently to the west. He reports:

On the morning of February 19, there was a 144 MHz opening to VK6 with two contacts to the far south-west corner of VK6 from Mt Gambier (south-east corner of VK5) – distances of 2365 km (VK6JR) and 2325 km (VK6APK).

Wayne VK6JR (Dunsborough) called CQ beaming east (2306 Z 18/02) and I contacted him with a 5 x 5 report sent and received a 5 x 2 report in exchange from Wayne. At the conclusion of the contact at 2310 Z, I was called by Alek VK6APK (Marmion) with 5 x 3 reports both ways. Alan VK3XPD could not hear anything of VK6JR, but did hear very weak signals from VK6APK.

During the opening the VK6RST 144.564 MHz beacon (Mt Barker) and VK6REP (Esperance) 144.567 MHz beacons were both around S5 but nothing heard of the VK6RPH beacon in Perth. It was found out later that the VK6RST (Mt Barker) 70 cm beacon was off air due to storm damage, as reported by Rob VK6LD, but it is hoped to be back on air very shortly.

The VK6REP beacon increased in signal strength and was up to S7 at 0200 Z.

I was fortunate to meet Murray ZL3MH at the recent Hamfest in Kyneton. Murray lives in the outskirts of Christchurch and so has a fairly formidable attenuator between his QTH and VK. Nevertheless, he has managed to work into VK on 2 m. He sent the following:

I specialise in 6 m and 2 m DX and have worked quite a few VK3 stations including right into Melbourne on 2 metres.

We have had only one two metre opening to VK this season, on 6 January. I worked Ross VK2DVZ 5/2, later S9, VK2AMS and heard Neil VK2EI. If it had not been for John ZL3AAU following the Pagers and Ch 5a and his ring around, nothing would have been worked.

I still use the same gear I have had for many years. My gear is a 12-element Yagi fed with LDF4-50 coax at 10 m, 80 watt MRF245 HB amp, FTV250 with mods, FT101ZD MK3 on two metres. On six metres, there is a 4-element Yagi to FTV650B and a FT101ZD MK3. We have 8000 ft of Southern Alps in the way, so Sporadic E is the only way.

Here, all DX contacts are over 2000 km.

VK5MC EME Activities

Chirs VK5MC near Millicent sent in the following report of his EME activities:

I came on 1296 MHz for the full moon on 30 January just to see who might be around and was expecting a lot. I heard some Digital signals and tuned down the band and was surprised to hear a strong SSB signal. 8J1AXA was on for their moon rise also and was in contact with Dave VK2JDS. I waited until their contact was over and received a 5x6 report from them and gave a 5x5.

Their station is an 18-metre dish, which has been operational on 144/432 and now 1296 MHz. They said that they should be able to work a station running 10 Watts to a 3-metre dish on CW, and even less on JT65.

Any information on their operation

can be obtained on the 8J1AXA web site. For those who wish to try, they also have a logger operating.

I continue to be amazed at the simple operation of my VK5DJ tracking system which has been upgraded with a built-in time clock, so that I do not have to start from scratch each time I get a power glitch – something that seems to happen quite a bit out in the bush. The tracking system has many user-defined variables in it for moon and satellite tracking. It has a wide range of encoder inputs, depending on your needs, including a simple potentiometer. John VK5DJ does still have some boards available for this project.

I have been playing with a SDR Softrock receiver here and have just been able to get it going, but it certainly looks promising for those wishing to see a segment of the band be it microwave or some other band. Currently I am able to see 90 kHz of 1296 MHz, and can see at a glance any JT, SSB or CW station that may be on at that time without turning a dial. Information will be presented at GippsTech in July.

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



In our
Year 100
if each member recruited just
1
other non-member amateur to the
WIA, we would increase our
membership by
100
percent

Who do you know?

Starting up with Small Station 2 metre EME

Wayne VK5APN reports: *Well being only new to the digital modes (and getting back seriously into AR) for some 3 weeks, I realised that the moon was going to be in a good position and close to earth on 30/31 January. I emailed EA6VQ (Gabriel) as his Web site indicates that he can work people off the moon who have a single Yagi and 50 W.*

So I got up a bit earlier before the MS session on the Saturday. The moon was near the horizon, listened but heard nothing. The next day went out at 0400 and the moon was up at 30 degrees. A bit high. So I went to the N0UK logger. I saw ES6RQ posting his frequency. So as I was passing time for the moon to get closer to the earth, all of a sudden I see JT65b traces on the screen. Decoded as ES6RQ. I could not believe it as the moon was at about 20 degrees elevation. So started calling him, and succeeded in working him.

Then came the entourage of callers all trying to work a unique grid (PF). I almost succeeded with Joop (PA0JMV) saw his RO but nothing decoded into text at -30. Did try with Joop for the next 3 days, but no contact occurred. Call signs exchanged both times, then he only decoded my calls twice, then nil; for the 3 days attempts. [Wayne completed with PA0JMV on 27 February and EA6VQ and I2FAK on 28 February 2010]. My set up is an IC-706, Dick Smith amplifier kit running 80 W into 10 m of RG-213 coax to a 10 element YU7EF Yagi, 6 m high. No Preamp, no elevation and no high stability oscillator or GPS locked. I was simply over the moon.

New digital mode ROS

José Alberto Nieto Ros has introduced a new Digital mode called ROS which has potential for application at VHF with weak signals. Information and download can be found at <http://rosmodem.wordpress.com/2010/01/30/ros/#comments>

The mode has speeds of 16 and one baud with faster speed being designed for typing speed and the slower speed for very weak signal work. The mode is based on spread spectrum techniques implemented as FSK and includes

Forward Error Correction (FEC). It is designed to cope with interference and issues such as multi-path propagation and might overcome the problem that JT65 suffers on terrestrial contacts with meteors.

Computer to computer testing against a noise source shows the slower speed works reliably to around -27 dB which is similar to WSJT's deep search decoder but with the flexibility to send any random piece of text. It has been used successfully on HF and there are a few examples of successful EME contacts but many users are reporting difficulties on VHF.

Testing between VK3II (FT-736) and VK7MO (IC-910H) showed that it performed reliably at around -24 dB with VK7MO transmitting and decoded very poorly the other way. A test between VK3VHF (IC-910H) and VK7MO (IC-910H) showed that ROS was reliable to around -22 dB both ways.

It seems the main problem is that ROS uses a very wide bandwidth from 400 to 2625 Hz and that many rigs may not be able to TX or RX the full range of frequencies. The problem is even worse as the mode is designed to cope with frequency errors of up to +/-200 Hz which means one needs a bandwidth from 200 to 2825 Hz on receive.

As this column was being prepared a new version of ROS (version 2.2.4 designed for EME) was produced with narrower bandwidth (about 100 Hz) which should be a significant help with typical VHF receivers and transmitters. A signal generator test of this new version was carried out to compare it with JT65a in the RF environment using an IC-910H receiver. The tests results are all referenced to the WSJT dB scale with the signal generator modulated with the JT65a or ROS signals. To provide a reference for the test the signal generator level was adjusted so that JT65a was just decoding reliably with the Kotter-Vardy decoder (no prior knowledge) at which level WSJT was reporting a signal level of -24 dB, consistent with K1JT's measurements. The ROS results were then obtained by reducing the signal level from -24 dB to -30 dB with the levels and

decodes as shown below:

-24 dB

```
RX: <02:07 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:10 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:13 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <CANCEL>
RX: <02:16 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:22 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
```

-26 dB

```
RX: <02:25 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC I_O <STOP>
RX: <02:29 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:32 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:35 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
```

-27 dB

```
RX: <02:38 UTC> <9.8 Hz.>
VK3II VK7MO QE37PC O/O <STOP>
RX: <02:41 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC SOO <STOP>
RX: <02:45 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
```

-28 dB

```
RX: <02:48 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:50 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <CANCEL>
RX: <02:53 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC M/O <STOP>
RX: <02:56 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
```

-29 dB

```
RX: <02:59 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC>400 <CANCEL>
No Frame Acquisition
RX: <03:05 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <03:08 UTC> <9.8 Hz.> 4A?TI
VK7MO QE37PC OOO $HGW
<CANCEL>
```

-30 dB

```
No Frame Acquisition
RX: <03:13 UTC> <9.8 Hz.> VK045
VK7MO QE37V#%?O<CANCEL>
No Frame Acquisition
No Frame Acquisition
```

While there are some errors in the

ROS decoding at -26 and -27 dB it is still giving about 50% correct decodes at -28 and -29 dB which is similar JT65a in the Deep Search mode. Following the signal generator tests a brief tropo-scatter test at 250 mW was conducted between VK7MO and VK3II over a 520 km path with ROS version 2.2.4 in EME mode with the results below:

250 mW ROS

RX: <23:15 UTC> <0.0 Hz.> VK3II
VK7MO QE37 OOO <STOP>
RX: <23:17 UTC> <0.0 Hz.> VK3II
VK7MO QE37 OOO <STOP>
RX: <23:22 UTC> <0.0 Hz.> VK3II
VK7MO QE37 OOO <STOP>

RX: <23:25 UTC> <0.0 Hz.> VK3II
VK7MO QE374\$KJ9?=<STOP>
RX: <23:32 UTC> <0.0 Hz.>
VK3II VEM6GT?W#XIM4C\$*QO=
<CANCEL>

250 mW JT65a

233900	1	-25	-1.1	0	3*	VK3II
VK7MO	QE37			0	10	
234000	5	-23	-1.6	0	3*	VK3II
VK7MO	QE37			1	10	
234100	1	-27	-1.1	0	12*	VK3II
VK7MO	QE37			0	10	
234200	1	-25	-1.1	0	3*	VK3II
VK7MO	QE37			0	10	
234300	0	-30	3.9	0	18	NIL
DECODE						

234400 3 -25 -1.2 0 3* VK3II
VK7MO QE37 0 10

While tropo-scatter varies considerably such that many more tests would be required to achieve reliable results this initial testing does suggest that ROS provides comparable performance to JT65a on tropo-scatter and may be slightly better if there is no prior knowledge of the call signs.

As this report was being finalised a further new version 2.2.5 was released so things are changing very rapidly.

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

The Magic Band – 6 m DX

Brian Cleland VK5BC

February provided some good Sporadic E openings early in the month and then late in the month the first TEP openings for a long time with one excellent opening from VK4 to JA.

On 3 February, a good late afternoon early evening opening from VK5 to ZL, VK1,2,3,6&7 which extended from VK6 to ZL in the early evening with Kerry ZL2TPY working several VK6s. During the opening Norm VK7AC worked Kaz VK8ZKZ in Alice Springs, good to hear a station active from the Alice area; it has been very quiet since Jeff VK8GF moved back to SA. Also good to hear Rick VK6XLR in Geraldton WA, Grid Square OG71hf back on the air and active on 6 m. This is a reasonably rare grid square and he is currently the only 6 m operator in the area and Rick reported he worked John VK1JST 55, Bob VK2ABP 56, Ken VK3AKK 57, Norm VK7AC 59, John VK7XX 57, Noel VK3FI 57, Alex VK5ALX 57, Brian VK5BC/p 55, Roger VK3FZ 57 and Gerry VK2APG 57 during the opening. Rick says "not bad for 60 minutes work and his first 'dogpile' and apologies to those who missed out".

On the morning of 10 February, the band opened early with very strong signals from VK5 to VK4 Brisbane area. Brian VK5BC completed good contacts with VK4s FIL, JMC, DDC, ID, TBW/m, RY, WTN, ACE, WM, and CC. Same morning Brian VK4EK in Sapphire worked David VK3AUU and Bob

VK3ZRT and Col VK4CC had several contacts into VK3 & 7. Col reports he was in QSO with Mike VK3KTO when they heard Ken VK3ZER in Bonbeach, Victoria call. We were Ken's first ever 6 m contact which was both a surprise and an honour, even more so when Ken revealed that he was running 6 W into a double bazooka at two metres above his gutter line. The double bazooka was broadside east/west and Ken was a solid 5x4 to Logan City, Queensland. Always good to hear of new stations on 6 m and hope this contact may encourage Ken to become a regular 6 m operator.

Received a note from Bernie VK4KAC Sunshine coast reporting on his January 6 m activity:

'Apart from working A35A on and off through the month I was lucky enough to work VK9NA on 3 January at 2135 on 6 m not long after they came up on air at 5x3 but the signal lifted shortly after our contact to S9 and then just as quickly as they came up they were gone and the Southern boys got to work them.'

A bit later in the day at 0240 I worked VK4APE in Charters Towers for a new Grid on 6 m at 5x5, and then went on to work Dave VK9WBM on Willis island for yet another new grid on 6 m at 5x5, then to cap off my day I worked 3D2JS on 6 m also at 5x5 both ways for yet another new grid.

All in the same day which I was very

pleased with, I also worked a number of stations on 2 m SSB but I have not listed them.

I believe that 3D2JS was using a loaded up 20 m wire dipole on 6 m.

Below is my list of stations worked on 6 m for January 2010, some of them more than once not a lot but I was not always at my station:

VK1DJA.
VK2APG, KNS, BHE, ADM, AH, ARA, BGL.
VK3AUU, AIG, HJ, CCR.
VK4APE (some locals not listed)
VK5DK, GA, ZK, PJ.
I did hear a VK6 come up briefly and go.
VK7PD, XX, AN.
ZL2AO.
E51A Beacon was heard several times but have not worked him yet.
VK9NA, VK9WBM.
3D2JS.
A35A.

Not bad from a vertical at 6.5 m, as the beam was down for repairs.'

Steve VK3OT in Western Victoria experienced a good TEP opening to Japan early evening on 21 February and reports at 0730 UTC he was hearing VK8RAS/b weakly and then as the TEP extension kicked in at 0800 UTC JA6YBR/b 50.017 peaking 599. Steve then worked the following stations all on CW:

0809 UTC JA6AZU 110 PM51mp
 0810 UTC JG3LEB 110 OSAKA
 0813 UTC JA6JNF 110 PM53eo
 0815 UTC JH3LBD QSY 105 Koh Hyogo PM74
 0816 UTC JA5FFJ 50.105 Take PM63un
 0817 UTC JE6URC Taka Kumamoto
 0818 UTC JA6WJL Nagasaki
 0819 UTC JE6KJT
 0821 UTC JA6GWX Fukuoka
 0822 UTC JF6TAC
 0823 UTC JH6CDI Nagasaki
 0824 UTC JR6EXN Hide Fukuoka
 0825 UTC JA4DWR Taka PM63 Yamaguchi
 0825 UTC JA6KTY Kei Fukuoka
 0826 UTC JA3APL Take Kyoto
 0829 UTC JA6LYY
 0833 UTC JA4FM Aki
 0835 UTC JH6MXJ
 0836 UTC JA3EGE Ken Osaka
 0840 UTC JA1RL WJST 50.195
 The JA6YBR/b was still 579 0850 UTC but fading and at 1000 UTC the VK8RAS/b faded out.

On 24 February the best TEP opening for over a year to Japan from an area covering VK4 (Mackay south) to northern VK2 occurred. Brian VK4EK in Saffire reported:

Heard weak SSB 0335 UTC on 50.110.

Band to JA opens 0337 UTC with JA1RJU worked with 5/9++ both ways. (weak SSB and then bang! 5/9++ signal.)

Band closes at 0613 UTC.

Worked 33 JAs in that period, most signals 5/9 and some 5/9+. Could have worked many more JAs but had a few breaks and spent time listening for HLs, etc.

Worked JA areas 1, 2, 3, 4, 7 & 8.

Heard one very weak BY??? call on 50.110, but too many JAs on the frequency.

When the band opened both 49.750 and 43.650 were 5/9 and stayed that way most of the times I checked, same as last winter JA TEP opening when I worked a few JAs.

During this opening Paul VK4MA in Hervey Bay reported working over 100 JA plus 2 x HL (Korea) stations and stations in the Brisbane area and Mike VK2OT near Grafton worked several JAs.

Another good TEP opening from Northern Queensland on the evening

of 27 Feb. Gary VK4ABW reports:

The Chinese TV on 49.750 was rising fast at 0600 Z so I started calling CQ on 50.110. At 0645 Z, Willem DU7PAOHIP answered me and we quickly exchanged a 5/5 report. About 5 minutes later Willem was up to S9 and still calling so we exchanged 5/9 reports, with Willem then QSYing down to 50.105 leaving 110 clear. I put out a few more calls but the Chinese TV was going down rapidly so I gave it away

Then at 1000 Z I heard the 49.750 TV rising again and reached 30 over 9 shortly after. A check for beacons revealed the JA2IGY, JA6YBR & JA1ZYK beacons coming in nicely at 1043 Z, so I put out a CQ on 50.110 and was immediately swamped by JAs.

I QSYd to 50.130 and proceeded to work JK1NMY, JO3DDD, JA6UDI, JE2LDW, JH7GYC, JN1GHS, JA1GHR, JL4DJM, JE2EHP, JA2IVK and JE6DOI from 1044 Z till 1100 Z.

I then did another quick check of the beacons, which were pounding in at S9 so it was back to 50.130 to call QRZ. I then worked JA6WJL, JH4ADV, JF1UVJ, JE2KUG, JH6BPG, JG3LGD, JM1TWR, JE3PCP, JA1SFL, JA4DLP, JA6BDB, JH1NYM, JH4DYP, JR3JFZ, JR4IMV, JK3NSD, JE6HJT, JQ3DUE, JA3EGE, JA1QVM, JA1BAN, JA6KTY, JA3MNC, JA4SVS, JR1EMM, JR3KQJ, JM1WBB, JA6TEW and JA2CXH from 1102 Z till 1153 Z with many stations 5/9 plus.

I could hear the band shifting west (typical for evening TEP) and a cursory check for beacons revealed the JA beacons were going down.

I spotted the Okinawa Island beacon coming in 5/5 and was surprised to hear the Hong Kong beacon on 50.075 at S3. Another quick call on 50.130 netted JH3DMP and JM1SGJ at S2 and S3 respectively at 1157 Z. I checked 50.110 and could hear the JAs calling but did not to respond as the band was shifting very quickly.

I then spotted some SSB on 50.115 (IC-7700) and went to investigate finding VR2XMQ at S5 calling CQ. We exchanged reports at 1215 Z and I

stayed on frequency but did not hear him working anyone after our contact. We chatted for a few more minutes around 1225 Z before finally giving it away. I then QSYd back to 50.110 and worked JE6AZU at 1240 Z S7 for my last contact that evening. The JAs were still calling at 1330 Z but were extremely weak by then.

On the same evening (27 February) Stuie VK8NSB in Darwin who has put up a 3 el Yagi worked Joel KG6DX Guam.

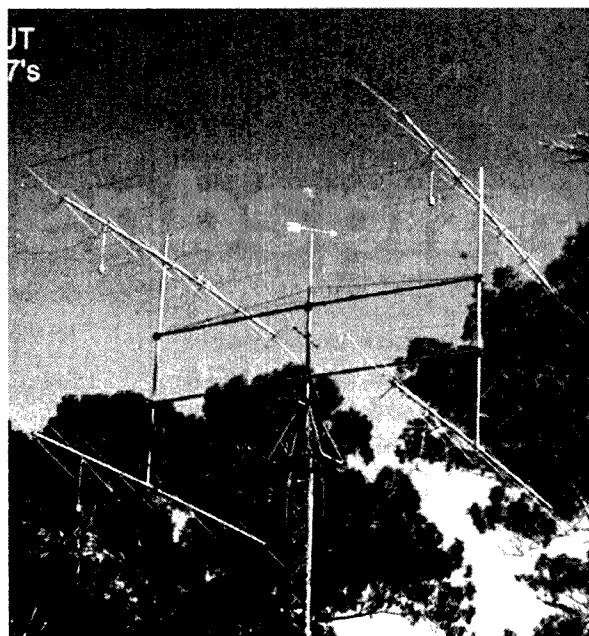
Norm VK3DUT's reports a good summer season and in between his work commitments working many stations including 9V1TT Singapore and VK9WBM Willis Island as new ones. Norm is now using 4 x 7el Quads, picture below.

New release

Adam VK4CP has recently released another update of VK LOGGER (www.vklogger.com) and if you are interested in VHF/UHF activity in VK it is definitely a site you should visit.

Finally sunspot cycle 24 is picking up and we are starting to see some interesting conditions as reported above on 6 m and it will be interesting to see what March/April brings us. Keep a lookout on VK LOGGER.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com



The antenna array of four seven-element Quads belonging to Norm VK3DUT.

Hamadsclassifieds

free to members

FOR SALE - VIC

Peak LCR passive component analyser, model LCR40. \$100.00. Contact Roderick VK3YC on 0413 074 386 or email vk3yv@wia.org.au

Professional radio operating console desk. \$250.00 ONO. Local pick-up only. Phone Terry VK3YJ on 03 9315 0186.

Yaesu FT-1802ME, 2 metre, 5-50 watt, RX 136-174 MHz. Never been mobile. EC. \$150.00.

Quansong 2 metre, 5 watt HH, including batteries and charger, hardly used, \$80.00.

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Uniden 750 mW UHF CB HH, 40 channels, including spare battery and charger, new in box, never used, \$50.00.

Leader LSG-10 signal generator, up to 300 MHz, as is, make an offer.

VCT 3 valve tester, nine valve bases, as is, make an offer.

Multi voltage battery tester, as is, make an offer.

Stan VK3BNJ, phone 03 9743 6708 or 0418 453 671.

FOR SALE - OLD

A TS-430, 12 volt, 20 amp power supply in good condition, plus a non-functioning TS-430 transceiver, SP-430 external speaker and TS-430 mobile mounting bracket. Receiver has a fault in the control circuit, but would make a good spare parts item. I am beyond the point where I can do the repairs. The lot for \$100.00. Contact Harry VK4EL on 07 5445 2647 or email glenviewinfo@optusnet.com.au

WANTED - QLD

I am looking to purchase a copy of Radio Theory Handbook for Amateur Operators 3rd edition by Fred Swainston. Do you have this book and no longer want it? I am willing to pay reasonable money for this book.

Email Chris at vk4vkr@wia.org.au, QTHR.

FOR SALE - SA

The popular VK5IST Antenna Analyser kits are still available - see AR article December, 2009. Our apologies to those who were unable to get a kit recently, but parts were in short supply. This has now been rectified. 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

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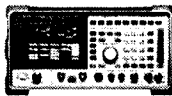
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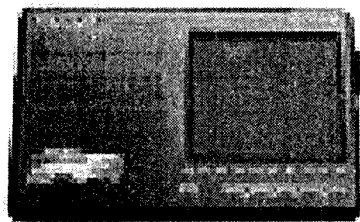


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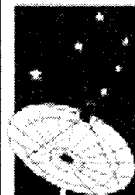
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VK9NA Norfolk Island (RG30xx)

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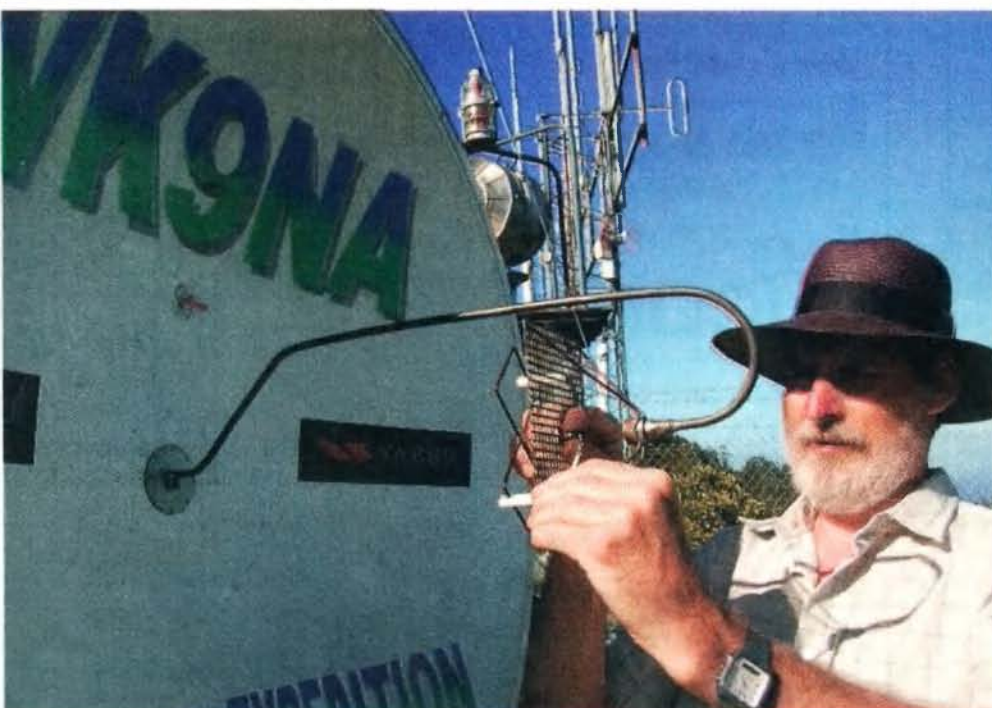
Central Service Station, Norfolk Island

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Ballarat Amateur Radio Group

The team also wishes to acknowledge the VK-Logger website. This amazing resource, provided by Adam Maurer VK4CP, was a key factor in the success of our efforts. Finally, the on-line Hepburn tropospheric propagation prediction system was a significant assistance to us. We urge the VHF communities on both sides of the Tasman to support both of these facilities.

All photos by Kevin VK4UH **ar**



Alan VK3XPD attaching the 23 cm feed to the 1.2 m dish.



Snap shots from Norfolk VK9NA

Clockwise from above
Norfolk Island aerial view (photo courtesy VK9NI).
Kevin VK4UH operating CW to VK on 23 cm - "the grass key".

Operating set-up at Mt. Pitt site, (the island's communication towers in the background).
Sunset on Mt. Pitt. (Photos by Kevin VK4UH)



Do you have a great shot of a radio related activity and a story to tell? In the first instance email the editor VK3PF.

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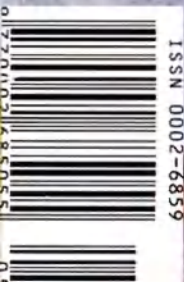
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Our cover this month

Emma VK2FEMM enjoying a contact from her Troop camp site during the Australian Jamboree 2010, held in January at Cataract Scout Park south west of Sydney. Fishers Ghost Amateur Radio Club entertained almost 700 Scouts with radio activities and activated the special callsign V12AJ2010 during the Jamboree. The report starts on page 31.

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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Office (until stocks are exhausted), at \$8.00 each (including postage within Australia) to members.

Photostat copies

If back issues are unavailable, 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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Peter Young VK3MV

Editorial

Peter Freeman VK3PF

Scouts and amateur radio

Many licensed amateurs will have had exposure to our hobby – amateur radio – through an association with the Scout (or Guide) movement. Some will have been exposed to amateur radio when a Scout or Guide group participated in Jamboree On The Air (JOTA). Others may have had the pleasure while attending a Jamboree and been exposed to an amateur radio station whilst there.

As a Scout, many years ago, I had the pleasure of attending a Jamboree in the then outskirts of Sydney. Thinking of the event raises many memories, but none involved radio.

Why should we all be interested in the Scout and Guide movements? It should be clear to all readers – any involvement with a group of young people is an opportunity to demonstrate aspects of the variety of experiences that OUR hobby can present. I fully acknowledge that only a small proportion of those exposed may have a flame of interest ignited, but any such flame may lead to a new amateur operator in the future.

As part of my personal experiences and development as a Scout, I was never directly exposed to amateur radio. If I had been so exposed, perhaps I may have become an amateur earlier in my life or perhaps I may have been turned away, as my mind may not have been ready for this hobby.

In this issue we have a report of the radio activities offered by the Fishers Ghost Amateur Radio Club at the national Jamboree in January this year (AJ2010). Yes, perhaps this report is now “old hat”, but it arrived just after the April edition had gone to print.

This raises a couple of issues for readers who have a newsworthy item to report. Clearly, you should submit a report as soon as possible after the event and you must consider our deadlines. Any report received after the end of the first week in a month will be delayed by at least a month.

A World Jamboree typically occurs every four years. The AJ2010 event was an Australian national event and in 2011, the 22nd World Scout

Jamboree will gather in Sweden. So there are other opportunities available to a Scout to participate.

JOTA/JOTI

We do have an annual opportunity to showcase our hobby to Scouts and Guides: Jamboree On The Air (JOTA) and Jamboree On The Internet (JOTI), usually held on the third weekend of October each year. So, every year, we can expose members of two significant youth movements to OUR hobby, amateur radio. An individual amateur can be involved, but JOTA/JOTI is better suited to a group or a club to operate a station. Get involved in JOTA/JOTI and explore what might be possible.

Contact your local Scout or Guide group and offer your services, NOW. Be Prepared (Scouts, past and present: excuse the pun!) – involvement could range from setting up a portable station at a remote campsite without power, setting up at the local Scout or Guide hall, or even arranging for the Scouts or Guides to visit the local Club (or individual amateur) shack to listen and make some contacts with other JOTA/JOTI participants just down the road or on the other side of the world.

So why an entire Editorial discussing amateur radio and Scouts/Guides? If you do not get organised very soon, you will NOT be able to participate and local youngsters will miss out.

In these times, there are a myriad of forms to be completed and approvals gained! Start early, plan ahead and all involved will have an enjoyable weekend “playing radio” in October, with a group of young people, even if they are initially reluctant to pick up the microphone and to press the PTT button!

Enough on youngsters! I look forward to catching up with readers who attend the Centenary AGM in Canberra at the end of the month. Check out the details of the event in this edition, or on the WIA website.

Cheers, Peter VK3PF

ar



Michael Owen
VK3KI

Publicity, the Media and amateur radio

At the end of this month the WIA will be holding its Annual General Meeting in Canberra.

The AGM and Open Forum are now features of our year, not because the formal statutory meeting has suddenly become really interesting, but because the Open Forum gives everyone the chance to talk about whatever they want to, and because we have met in a place and with a theme very different from the year before, providing an interesting environment to participate directly in the WIA.

This year, though, is very special. We celebrate 100 years of organised amateur radio. We do so in Canberra, the national capital. We focus on history; with Saturday afternoon full of fascinating presentations.

As I write this there are eight weeks to go. Yet over 100 people have already registered, so I urge you (if you have not already done so) to register to participate in a memorable weekend. The easy online registration is on the WIA website.

Also, in May, the WIA will be able to use the special callsign VK100WIA, and then in three day blocks, the affiliated clubs who have registered to use the callsign will be able to use it from the start of June until the end of October.

As reported elsewhere in this issue, the clubs using the callsign are being sent a 'Media Kit' to assist them in getting publicity for the amateur radio, their club and the WIA. Of course, a club conducting an activity not involving the callsign is more than welcome to request the 'Kit'.

But why do we suggest that amateur radio needs to promote itself?

There may be a number of reasons.

One is that we need to continue the

trend of an increasing number of amateurs. If, as was the case until recently, the number of amateurs is steadily decreasing, those who covet the spectrum currently allocated to the Amateur Service have an argument based on that alone.

As we have said before, the initial rush after the introduction of the Foundation licence has gone and now we need to find ways of encouraging new people to become interested.

Then, many clubs would like more members, and new amateurs trained and assessed by a club often represent new members for that club.

And the WIA would like new members, too.

We are suggesting that the centenary can provide a focus for a "story". Talking about how it all started and how much has changed in 100 years is a good way of leading into the story of what amateur radio is and what it does for a community.

Do not forget that the provision of emergency communications will be seen as interesting by many.

But amateur radio also provides scientific learning, which may be very important for young people before they make career choices.

But it is also an interest, a hobby. Amateur radio is many different things to different people. And we get enjoyment from whatever aspect we choose, whether it is talking to other people with the common interest, investigating technical issues, taking part in contests or seeking awards, competing in direction finding contests or in any of the many aspects of amateur radio.

I have continually talked of promoting amateur radio in a local community. It is often easier to get a local story into a local newspaper or radio station, or even a regional television station than it is in the vast cities like Sydney and Melbourne.

So, what may be interesting to the radio presenter or the journalist or

indeed the public may be different things in different places, no doubt at different times.

I do not suggest that all clubs will want to seek publicity, and I would not suggest that all clubs want to train and assess new amateurs. I understand that some clubs were formed to meet a particular interest.

I also know that many clubs are more general in their interests and anxious to attract, train and assess new amateurs and find new members.

I have looked at what the clubs have put under the heading of "Other Activities" and "Publicity" on the VK100WIA Roster.

Some are still working on it, registering "TBA" or the like. Hopefully the 'Kit' will encourage them to think of good ideas.

Others are engaging in usual activities but this year opening the activity to the public. Some of us are much better than others at walking up to a stranger and just talking about amateur radio. But who does what is part of the planning.

If you have a successful activity, share it with everyone. A news item for the WIA website, perhaps with a photo, is a very good way of sharing what you have done with others.

And sending us press clippings or notes of items on radio or television really does encourage everyone and also may give others ideas.

Suggestions on improving the 'Media Kit' are also welcome.

So, may I urge everyone in this important year to think about how amateur radio, your club or the WIA can be promoted in your community?

Do not think that talking of history is an indifferent way of attracting new amateurs and new members. It may be just the right starting point to move to the aspects of today's amateur radio that will attract interest.

Publicity support for Clubs

The 21 clubs rostered to use the special callsign VK100WIA in June and July have received a comprehensive package of material to help them promote amateur radio, their club and the WIA Centenary.

The material is ideal for any club that wants to promote an event or activity and gain positive media publicity for amateur radio.

While clubs on the VK100WIA roster will automatically receive this material about eight weeks prior to their three-day rostered slot, any other WIA affiliated club can request a copy from the WIA National Office.

In a covering letter the WIA President Michael Owen VK3KI explains that the resources being provided include media liaison advice, a template media release, background sheets and guides.

Clubs using this package will easily be able to create a 'Media Kit' to send to their local news media.

Michael VK3KI said a number of clubs had asked him and other WIA directors at hamfests and meetings for this kind of support. "We now look forward to seeing the results of club media campaigns."

Clubs supporting the Centenary

The WIA Centenary Committee has added new activities to the celebration program for the Centenary of Organised Amateur Radio in Australia. Three new events are now *WIA Supported Centenary Activities*.

These will play a role in promoting amateur radio, encouraging more people to consider becoming a radio amateur and highlighting the historical occasion of the Centenary.

The Gippsland Gate Radio & Electronics Club (GGREC) south-east of Melbourne in association with the Koo-Wee-Rup Historical Society, will from 16 to 18 June re-enact the first exchange of wireless press messages between the United Kingdom and Australia in 1921.

GGREC President Chris Chapman VK3QB says that this event, in addition to promoting amateur radio, will recognise the contribution that the local community made to these early days of pioneering and advancement of our country delivered by wireless telegraphy.

Another event is the 35th annual Oxley Region Amateur Radio Club Field Day at Port Macquarie New South Wales 12-13 June. Club President Henry Lundell VK2ZHE also advises that this is the club's 40th anniversary year.

The third event is the RadioActive Amateur Radio Award for Scouts being held during the entire month of July. This will promote amateur radio and the Centenary.

There has been strong growth in the number of Scouts and Scout leaders who are radio amateurs since restructure of the licence system occurred five years ago.

Scouts Australia JOTA-JOTI Coordinator and WIA Director Bob Bristow VK6POP said it is recognised the WIA played a key enabling role to deliver the new era of amateur radio including the Foundation Licence.

In appreciation, the radio amateur Scouts will support the WIA Centenary with an on air activity promoting the significance of this important milestone throughout the Scout movement.

Bob VK6POP said for the month of July, Scouts will get on air to make contact with as many other Scouts as possible and also seek QSOs with the special callsign VK100WIA.

While also having fun and honing their operating skills, they can also qualify for the RadioActive Amateur Radio Award for Scouts.

WIA Centenary ARISS contact

Students from Canberra's Trinity Christian School are to talk to an astronaut on the International Space Station during an ISS contact to take place during the WIA Centenary dinner in Canberra this month.

School Principal Carl Palmer VK1TP/ VK2TP is very pleased that ten students will be given such an honour to attend the WIA Centenary dinner and talk with the astronaut.

The school at Wanniasa, in the beautiful Tuggeranong Valley at the southern end of the ACT, will celebrate its 30th anniversary next month, adding to what will indeed be a very special occasion.

Australian ARISS Coordinator Tony Hutchison VK5ZAI is finalising arrangements for the contact between the International Space Station NA1SS, and the WIA special callsign VK100WIA, on Saturday 29 May during the WIA Centenary dinner.

Special Event for ANZAC Day

Many Australian and New Zealand radio amateurs will have operated on ANZAC Day – Sunday April 25 – as an amateur radio salute to the servicemen and women in many conflicts. CW - Morse code - was used as a means of communication during WW2, Korea, Malaysia and even early Vietnam. Museum ships, including the HMAS Whyalla, will be utilised to honour this event.

Meeting of the Macedon Ranges Amateur Radio Club

The Macedon Ranges Amateur Radio Club (MRARC) VK3RA recently made a solid launch as Victoria's newest amateur radio club. The first meeting was held on March 20 with 22 new members getting behind the club.

An executive of Peter Willmott VK3TQ as president, Graeme McDiarmid VK3NE as secretary and Peter Wolfenden VK3RV as treasurer were elected. A committee of Richard Hoskin VK3JFK, Gary Greer VK3GSG, Colin Smith VK3YWY and Derek Tomlinson VK3NQ were also elected.

MRARC has affiliated with the WIA, and welcomes all radio amateurs and those who would like to get involved in the hobby to come along.

The club has also launched its new website <http://www.mrarc.org>

Making your leads and connectors a little more professional looking

Ben Broadbent VK5BB

Have you ever made up leads with connectors on the ends and then thought that it was missing that something? Maybe you have looked at that home brew lead you have just made up and compared it with a commercial lead and thought, 'I wish I could have a nice looking strain relief similar to that one!'

Well you can with a little ingenuity. Have you seen those professional looking RG58 coax leads that have strain relief boots on the cable butted up against the connector? You can buy a version of those boots quite readily and they are just the right size for fitting to many connectors other than RG58 crimp connectors.

One supplier calls the component, 'Crimp plug boot' (Jaycar part number PM-0648). They can be found at several other sources.

I have been using these boots for many years. They make my home brew cables look really neat and professional looking, with the benefit of the strain relief function as well.

Back in the late 1980s, when I got involved with packet radio, I had to make my own leads to go between the TNC and computer. Here DB 9 and DB 25 connectors were used and I did not like the method that is provided with the connector shells for securing the cable.

When using the provided cable clamps and fitted to the shell and the shell halves screwed together, the cable was still loose, even though it was secure and would not pull out or break the wires off the soldered pins. Also where the cable exited the rear of the connector shell, there was an unsightly gap around the cable.

Now I had a collection of these boots in my box of bits for making up coax leads and the box just happened to be out and in view. While I was making up a lead, it occurred to me that the boot could be fitted into the rear of the DB 25 shell; the groove of the boot would nicely fit the cable exit thus securing the boot when the shell halves were screwed together.

To secure the cable inside of the boot, I just used a small cable zip tie and when pulled back into the boot, it had enough bulk to prevent itself from being pulled through.

For the smaller DB 9 shell, I had to shorten the boot by cutting it several ridges back from the larger end. When the shell halves were screwed together, the boot was nicely clamped. Using the cable zip tie secured the cable inside of the shell.

You can also use these boots for cable grommets through the walls of your project boxes, that is, 'jiffy box'. Just drill a hole where you want the cable to exit. The hole size should be a bit smaller than the last groove at the larger end of the boot. You just then need to work the boot through the hole, from the inside of the box,

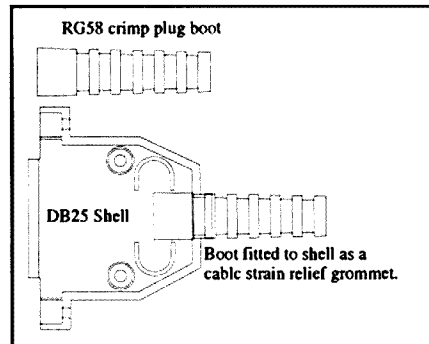


Figure 1: Shows how the boot is fitted to the shell as a cable strain relief grommet.

fit and secure the cable using a cable zip tie on the inside of the box. I find that if you pull the cable back a bit so the zip tie pulls just inside of the boot, it makes a very secure clamp and the cable will not pull out.

The drawings and photos should give you a good idea of the concept and the rest is up to your imagination and ingenuity.

Have fun.

ar

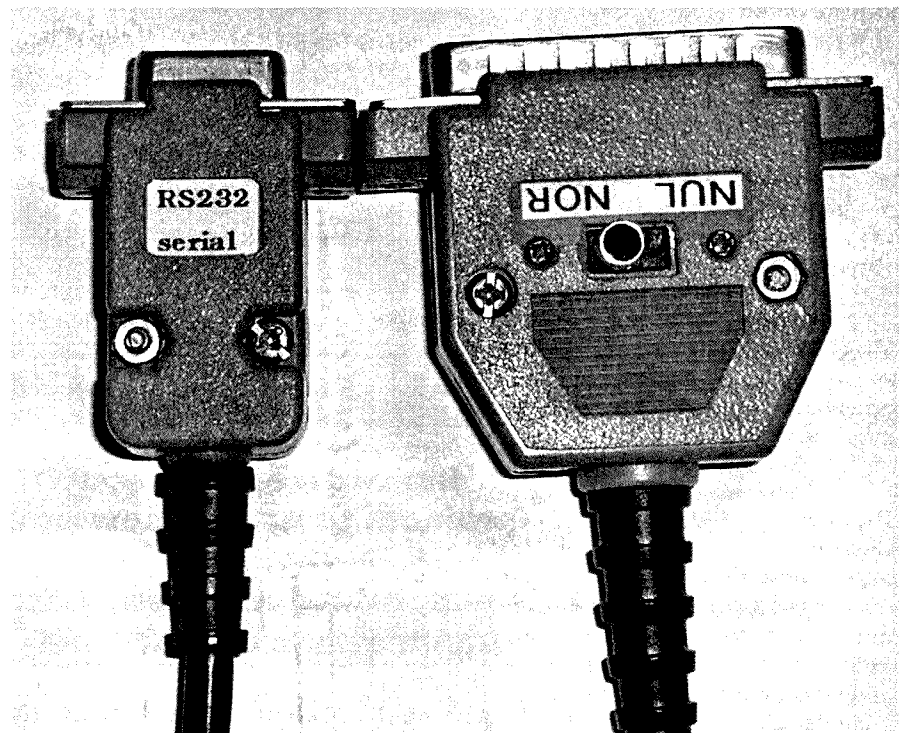


Photo 1: The completed connectors, with their professional look.

Advisory Committees — Call for Nominations

Pursuant to clause 18.12 (e) of the Constitution the WIA Board has made Regulations providing for an Advisory Committee for each State of the Commonwealth, the Australian Capital Territory and the Northern Territory, each comprised of three elected members (the Members) and one member appointed by the Board (the Nominated Member). The full Advisory Committee Regulations may be found on the WIA website <http://www.wia.org.au/>

The function of each Advisory Committee is defined in the Regulations as follows:

- (a) To provide advice and information to the Board or to any person authorised by the Board to seek advice or information in relation to any matter identified by the Board or by a person so authorised;
- (b) To promote amateur radio, the WIA and membership of the WIA by means including but not limited to:
 - (i) Maintaining such stock of forms, brochures and other material as is determined from time to time by the Board and in such numbers and subject to such procedures as the Board shall define from time to time;
 - (ii) Establishing and manning or causing to be manned stands and stalls at appropriate gatherings of radio amateurs or at functions or events promoting amateur radio generally;
 - (iii) Promoting and selling and causing to be promoted and sold WIA membership, WIA books and products at stands and stalls and otherwise;
- (c) Making available and encouraging others to make available local news for WIA broadcasts and releases;
- (d) Liaising with affiliated clubs as requested by the Board and at the request of and for the Board arrange and organise conferences of affiliated clubs from such part of such Areas as are identified by the Board, and
- (e) Undertake such other tasks and functions as are agreed from time to time.

The term of the present elected members of the Advisory Committees ends on 1 October 2010.

Nominations are called for from WIA Members seeking

election as a Member of an Advisory Committee with a term of three years commencing 1 October 2010. A Member of an Advisory Committee must be a voting member of the WIA, must reside in the Area of the Advisory Committee and must hold an Australian amateur radio licence. A retiring member of an Advisory Committee is eligible for re-election.

Any person wishing to nominate as a candidate for election as Member of an Advisory Committee of the WIA must deliver or cause to be delivered to the Returning Officer by not later than 22nd June 2010:

A statement signed by the candidate signifying his or her willingness to be a candidate for election as a Member of an Advisory Committee, (stating which), and signifying his or her willingness to perform and carry out the functions identified above together with

- the name and age;
- the full residential address;
- the occupation;
- the callsign of the candidate, and
- such other biographical details or other information as the candidate wishes to accompany the ballot papers, but in all not exceeding 250 words.

Delivery to the Returning Officer may be made by hand when the WIA national office is open at,

Unit 20, 11-13 Havelock Road, Bayswater, Victoria 3153

Or, by mail to,

P0 Box 2042, Bayswater Victoria 3153

Nominations received by facsimile or by other electronic means cannot be accepted.

If there are insufficient nominations for Member of an Advisory Committee, the Returning Officer must declare the persons nominated to be elected unopposed and the Board, following the declaration of the result of the election must make appointments to fill any position for which there were insufficient nominations.

Chris Chapman VK3QB

2010 Club Grant Scheme

**Innovative ideas sought for
projects to attract new amateurs**

and

**projects supporting emergency communications
Applications close 31 July 2010**

The rules and application form can be downloaded from
<http://www.wia.org.au/members/affiliation/about/>

Part 4 Regulation, Communication, Federation An arena of wonder

Peter Wolfenden VK3RV

The history of amateur radio in Australia continues. Chapters one to eight of this series have been published in previous issues of *Amateur Radio* magazine.

9 New Regulations!

The Wireless Weekly of 4 August 1922 reported:

"A statement of the utmost importance to experimenters was made by Mr. Hughes in the House of Representatives on July 28th according to the Melbourne Correspondent of the Evening News.

The Prime Minister stated that facilities granted in other parts of the world would be given to amateurs here under proper control. No restrictions, other than those to prevent interference, would be imposed.

He would see that the wireless company did not interfere in the enforcing of the laws, but that control was by disinterested Government officials.*

This must be considered one of the best bits of news concerning their hobby that the experimenters have ever heard; and coming as it does, on top of the intimation that licence fees may be reduced, makes their outlook very much brighter.

The amateur will look to Mr. Hughes to keep his promise to the letter."

* Commercial Stations – in particular AWA, partly owned by the Australian Government – were often referred to as The Wireless Company.

Prime Minister Hughes was regarded as a good friend of the amateur experimenters. It also is interesting

P. M. S. Dept.
Department of the Navy,

R.A.N. RADIO SERVICE,

Melbourne, 13th March, 1922.

Sir,

With reference to previous correspondence relative to the permission granted to you to experiment with Wireless Telegraphy Apparatus, I forward herewith, for retention by you, one copy of the Licence, which has been duly completed by the ~~Postmaster General.~~
~~Minister for the Navy.~~

Yours faithfully,

Mr W. R. Gronow
346 St. Kilda Road,
Melbourne
J. Malone
Acting Director of Radio Service.

C.10900.

Figure 1: A letter received by Bill Gronow 3WG advising him of his licence. Note the manual changes to the letter-head and responsible officer. The PMG's Department administered the radio spectrum following a long drawn out process in which the Navy attempted to retain control. (WIAA).

to note that a Wm. Hughes, Jr., of Rozelle, was shown as holding call sign XFX in the 1914 Call Book (1).

The annual dinner of the Victorian Division in October produced further interesting input from some of the guests.

Jim Malone, Wireless Controller for

the Commonwealth stated:

"that new regulations had been prepared, but as they had not as yet been approved, their contents could not be made public" and "the institute could do a great deal of help to the Government to 'police the ether'. He suggested that amateurs should appoint one of their number

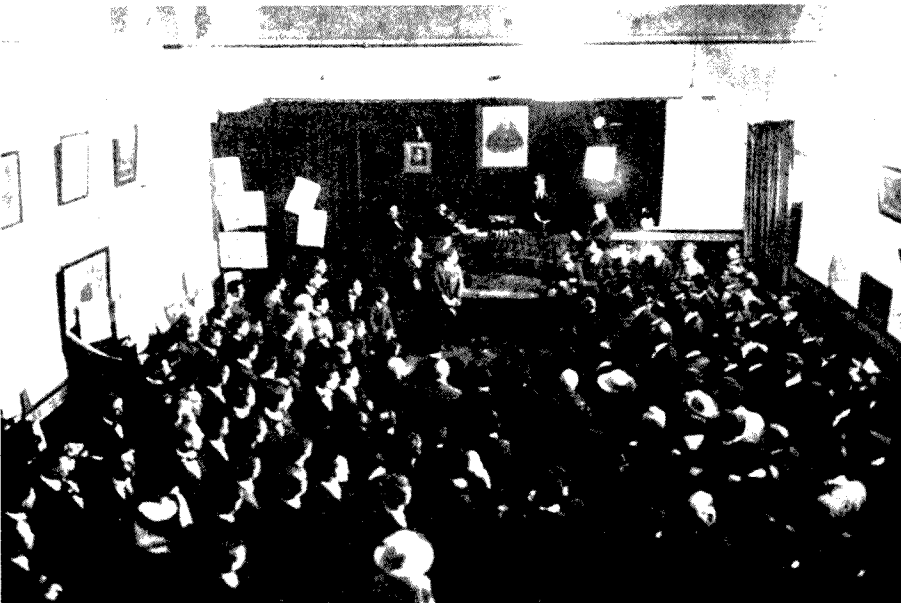
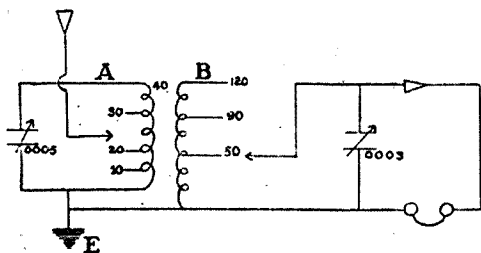


Figure 2: View of the Sydney exhibition in 1923 (Australasian Wireless Review Jan. 1923).

With the Compliments of Station 3 A.R., Melbourne.



A Super Crystal Circuit.

Specially designed for selectivity, so that crystal-set holders can separate the various broadcasting stations.

SPECIFICATIONS. - COIL A. 40 turns of 20 gauge D.C.C. Wire on a three-inch former, tapped at 10, 20, 30 and 40 turns.

COIL B. 120 turns of 20 gauge D.C.C. Wire on a three-inch former, tapped at 50, 90 and 120 turns.

Figure 3: 3AR QSL card showing the circuit diagram for a crystal receiver.

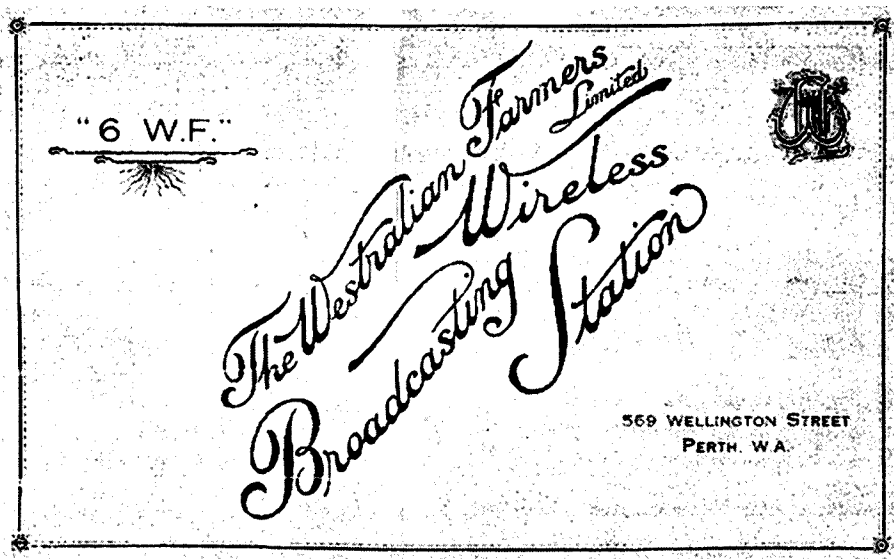


Figure 4: The cover of a brochure issued by 6WF (WIAA).

to act as an honorary radio inspector."

Colonel Williams representing the army signalling corps said: "... that he looked to the institute to provide operators in any future war in which the Empire might be involved. Wireless would be the most important method of signalling in the next war".

Another guest was Commander Creswell who represented the Navy which was in the process of losing its strangle-hold on the spectrum (2).

The Government duly released the new regulations which were published in radio magazines in December 1922 (3).

Activity in the experimenter's allocation continuously increased during 1922/3 when reception of 'phone' or voice transmissions generated much public interest. In September 1922, the Sydney Metropolitan Radio Club organised Australia's first Radio Exhibition where the President, R.C. Marsden, demonstrated telephony reception.

Various forms of "un-official" broadcasting by experimenters, including "Radio Dances", entranced the public and many of those involved in the transmissions were destined to play important roles in "professional broadcasting".

During this time, because of the increased interest in wireless - particularly telephony - many distinguished people of high standing including those from education, industry and the "commercial" side of wireless were admitted to membership of the Institute (4).

Experimenters were destined to be largely relieved of their popular "broadcasting" activities by late 1923, as the commercial world was set to take control of most of that part of the spectrum and of course, through it, a new source of revenue.

History tells us that the initial foray into broadcasting using "sealed sets" was doomed, brought on largely by the fact that by mid 1924 there were only 1400 receiving licences issued for all of Australia! (5) Consequently, further major changes were at hand in the form of Class A and B "open" broadcasting stations, a decision which almost immediately increased

the number of licensed receivers by a factor of ten! (6)

Experimenters however, were about to experience another exciting time and arguably one of their greatest moments: the great "DX explosion" of 1923/24. This was the time when the world shrank for those experimenting with short waves. 1 May 1923 saw the commencement of the "Trans Pacific Tests", organised locally by the WIA and in America by the ARRL. It was an attempt to receive wireless telegraphy from America which initially bore limited results, but by 17 May many American stations were heard in Australia. Newspapers closely followed the advances of the amateur experimenters led here by HK Love and RA Hull.

The Melbourne Argus of 19th of June 1923 reported:

"AMATEUR WIRELESS TESTS, MESSAGE FROM AMERICA,

Wonderful Results. ... Mr. M. Howden of Box Hill, has been by far the most successful of the Melbourne Experimenters, having heard no fewer than 22 of the 23 calls recorded in Melbourne. Messrs. R. Hull and C. Hiam, of St. Kilda were next with six calls and Mr. H. K. Love third with four calls...only three stations are reported as being heard in Sydney."

At a Victorian Division meeting held

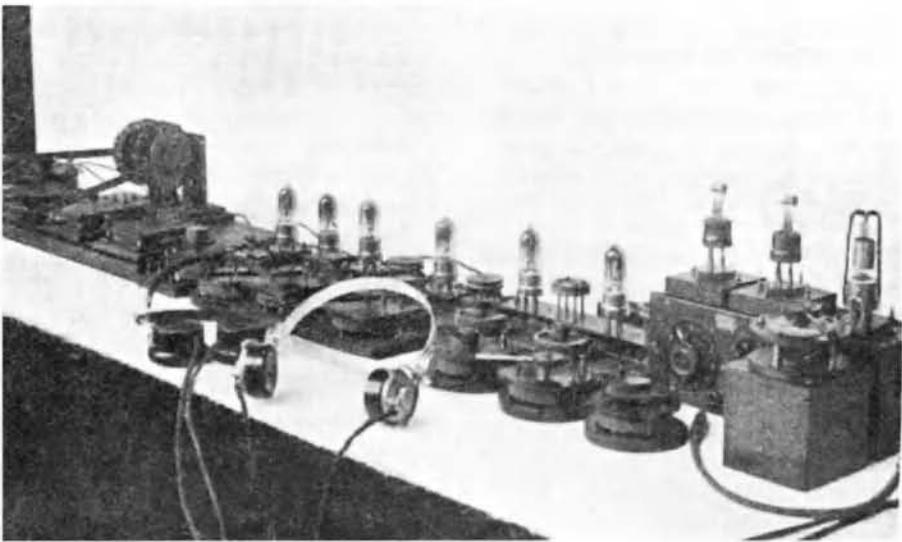


Figure 5: A receiver for the proposed Trans-Pacific tests made by Ross Hull 3JU and Charlie Hiam 3LW, using 6 RF valves – with an additional five proposed! (Australasian Wireless Review, April 1923, p43. WIAA)

A Monthly Journal

JUNE 15, 1924



NEW-SYSTEM WIRELESS

RADIO, REFINED AND SIMPLIFIED

ADD to Your Wireless Pleasures,
 SUBTRACT from Your Radio Difficulties,
 MULTIPLY Your Reception Satisfaction,
 DIVIDE Your Experimental Disappointments.
 This can be done by no surer means than by using New System "TrueMusic" Wireless Equipment.

T.M.C. TRUE MUSIC

The Recognised Best---

New System TrueMusic Wireless is assuredly the New Star in the Radio World. With equipment of this All-British quality, you can command the best the Broadcasting Stations but not least have to give.

New thrills, New surprises, Remarkable clearness, Astonishing distinctness; all will be yours when you have selected your Receiving Set and Accessories from the list of genuine English Products here and now procurable.

Call at any Radio Establishment dealing in New System Wireless Apparatus, or write direct to us.

New System TrueMusic 3-Valve Receiving Set

The model illustrated is of highly efficient reception ability. It is of good appearance, and has a distinctive feature in the Loud Speaker which is built in the speaker cabinet.

The instruments are mounted upon a panel of highest quality tested chrome. A special Terminal is provided for another Loud Speaker, which can be used simultaneously in another room, if desired.

Listening-in with Headphones is also possible.

All-British Manufacture, pre-war standard throughout.

Price £38-0-0. (Not including Headphone) Carriage Extra

HEADPHONE, LOUD-SPEAKERS, and all Accessories—All British make. Moderate Prices.

T.M.C. TRUE MUSIC

New System Telephones

PTY. LTD.

280 Castlereagh Street, SYDNEY. Tel. M. 3230

25-27 QUEEN'S BRIDGE ST., SOUTH MELBOURNE. Tels. Cent. 11130 and 1701

NEW-SYSTEM WIRELESS

Figure 6: Cover of the 1924 WIA Exhibition Program.

Figure 7: The cover of the Radio Experimenter, the official organ of the WIA.

a few days later, a full report of the tests was made and donated prizes were divided between the four experimenters above. The diversity of prize donors reflected the intense public interest in the amateurs using short-waves and their home-made stations:

P. H. McElroy of Homecrafts, the man who called the first meeting which established the Amateur Wireless Society of Victoria in 1911, was one donor. Another was Oliver J. Nilsen and Co., Electrical Engineers, about to become operators of 3UZ, Melbourne's first "B Class" station. Other prizes were donated by: The Argus, The Australasian, Wireless Weekly and Sea, Land and Air (7). The spoils of those few frantic weeks of activity spurred on amateurs and boosted their standing within the general community to the extent that photographs and reports of their stations were published in the daily press! (8)

Consequently, even greater administrative issues were at hand including the need for international planning of spectrum and call signs. No longer were experimenters "playing in their own back-yard". Now they had to really think "globally" – although full international wireless regulation did not begin until after the International Telecommunications Union's Washington Conference in 1927. Needless to say, the experimenter's ranks continued to expand steadily (9).

11 A Federation of Divisions

And so in May 1924, a meeting took place at the Melbourne Town Hall. This was held in conjunction with a Wireless Exhibition organised by the Victorian Division of the W.I.A. The Souvenir Program for the Exhibition contained not only the many advertisements from stall holders, but it also details the history of experimenters and the W.I.A. itself.

The opening page summed up the situation at that time:

"It will come as a surprise to many people to learn that the Wireless Institute of Australia is a very old established organisation, and was formed in 1910. It will be equally new to them to learn that for nearly

ten years before this time individual members of the community had been laboriously carrying out valuable experiments and assisting to disclose the fundamental principles of one of the most wonderful and useful sciences which have been offered to mankind..."

All well within living memory of many involved with it!

And under "The Convention" heading:

"It has long been realised that the Federation of the various branches of the Institute and the formation of a Federal Executive would be a very desirable accomplishment and a big step forward for the experimental movement in Australia, but until now, one thing or another has always prevented a closer affiliation of the various State executives than has so far existed. The convention to be held on Friday, however, promises an opportunity for the various States to meet on common ground and lay the foundation of an all-Australian organisation and to the Victorian Division goes the privilege of being the convener of the gathering." (10)

The exhibition was considered "a splendid success with attendances exceeding all expectations." The convention's aim "was the federation of the several divisions into a compact body, the Wireless Institute

of AUSTRALIA, not only in name, as heretofore, but in fact" (11).

New South Wales, Victoria and Tasmania sent representatives and Queensland, South Australia and Western Australia relied on proxies supplied by Victoria. A number of well known early experimenters were among the delegates including Phil. Renshaw from Sydney, Howard Kingsley Love, Max Howden and Ross Hull from Melbourne. Ross Hull later moved to Sydney where he was chairman of the WIA Delegates Council (Clubs) during the mid 1920s.

Mr. Love was elected chairman who, on opening the meeting said: "there were several endeavours to achieve Federation of the Institute without success. It was hoped that all previous difficulties had been overcome and that it was possible to form a permanent organisation for general good."

Mr Renshaw (NSW) stated "that the New South Wales Division of the Institute was prepared to cooperate in any movement which could make the wireless experimenter of service to the public and to the Government."

Delegates from other States indicated that they had been directed to support the principle of federation.

It is appropriate to quote one paragraph from the published report of the convention:

Associated Radio Company
of Australia Limited.
WIRELESS ENGINEERS

Tel. 7457. 51-53 ABECKETT ST., MELBOURNE.
SYDNEY: 39 Hunter Street. PERTH: Barrack Street.
Branches and Agencies in over 200 Towns in every State of the Commonwealth.



We are
3 A R
Broadcasting Station.

Programmes are now Broadcasted every Morning, Afternoon and Evening.
Favourable reports of receptions are constantly coming in from all over the Commonwealth.

Copy of Radiogram received on the 9th inst. from a Steamer en route to England, 2,250 miles from Melbourne.
— Speech: Music, good; Blue Danube, strong.

Associated Radio Company
of Australia Limited.
WIRELESS ENGINEERS

Tel. 7457. 51-53 ABECKETT ST., MELBOURNE
SYDNEY: 39 Hunter Street. PERTH: Barrack Street.
Branches and Agencies in over 200 Towns in every State of the Commonwealth.



RADIO

Manufacturers of Everything Wireless.
Actual Makers of Component Parts
and Complete Sets.
Radio Receiving Sets from £5 to
————— £200 each. —————

Visit our Stall No. 3 and see and hear these sets demonstrated

Figure 8: Two pages from the 1924 Exhibition Program, showing advertisements placed by 3AR. "Sealed sets" were still a reality at the time of the WIA Exhibition! (WIAA)

"...At this junction the Controller of Wireless, (Mr. J. Malone), and a member of the Queensland Institute of Radio Engineers joined the meeting. Mr. Malone congratulated the various branches of the Institute on their decision to federate, and stated that such an action had been desired for a considerable time by the Postmaster General.

He added that in administering the regulations for the control of experimental activities the department desired to accede to the general wishes of experimenters as far as practicable, and to be guided by the experience of those who were working under the regulations. Suggestions for improvements in experimental conditions would be welcomed by the department,

and would receive sympathetic consideration..." (11).

Other items on the agenda included:

1. Proxies
2. Official Organ [Magazine]
3. Operation of experimental stations and use of experimental wave band.
4. Silent Night [Listening only].
5. Regeneration.
6. Honorary Radio Inspectors.
7. Institute finances, liabilities and contributions.

8. General consideration of co-ordination.
 - Aims and objects of the Institute.
 - Policy re membership.
 - Obligations to stand together.
9. Grading of experimenters.

These items were discussed during the two days of the convention and are reported in some detail in The Radio Experimenter which became the official organ of the Federal Council at the convention.

It is interesting to read the report and to attempt to understand some

Q.R.Z.

Something of a "Tone" Poem.
By Toc H.

Who is this bird signed QRZ?
Who never seems to go to bed,
But wears the fones all night instead.
Perhaps the blighter's current fed?

Who is this guy, that having writ
Sarcasm, every word of it,
Thinks that his gags contain some
wit?

No ham! for such 'twould seem unfit.

What kind of egg can this cove be?
Who never seems; at least to me,
To credit decent PDC,
Or knows what's meant by RAC?

What type of insect dares to write
Thin veiled contempt in black and
white,
Behind a pen-name sitting tight,
Afraid, 'twould seem, to face the
light?

Come forth, my friend, let handom
see

The sort of Gargoyle you may be,
And if your fist can thump a key,
I'd like to QSO with thee.

—VK2TH.

Figure 10: QRZ – a poem by VK2TH (From Amateur Radio magazine, August 1934, p.28).

Some explanation of what, to some, may be unfamiliar terms as abbreviations were used to speed up telegraphic (Morse) communications.

QRZ: Who is calling me?

PDC: Pure Direct Current – an indication that the received signal sounds clear and has a clean tone.

RAC: Raw Alternating Current – the signal has a rough or harsh tone - of a "blurting" nature.

Key: A Morse code signalling key.

QSO: Generally used to mean a communication with another station.



Figure 9: Amateurs also shared the broadcast band. They frequently sent photographs of their equipment with QSL cards. This one was sent to VK3HK from ZL3BQ and it shows the turntable and home-made condenser microphone used at ZL3BQ's "broadcast" facility c1930 (WIAA).

of the pressing issues at that time, such as the convention agreeing to recommend to the Postmaster General that the Honorary Radio Inspectors scheme be discontinued. This was mainly because of the workload, due to the rapid increase in the number of receiving sets (and their radiating problems) getting beyond the few inspectors available in each State! (11)

The meeting “set the stage” for many subsequent actions and may well have been a catalyst for the formalising of the Institution of Radio Engineers. According to Murray Tyler in his IREE Monitor article of December 1982, ET Fisk could have been influenced by the news of the apparently unregistered Queensland Institute of Radio Engineers surfacing at that first National Convention. Within three months Fisk had affected the registration of IRE Australia (12).

Later in 1924, the general public also had “a win” when the government introduced a more logical approach to broadcast management which included:

“..... the right to receive any broadcast programme..... and the use of any design of set...” (13).

Some unethical strangle holds had at last been broken!

As mentioned, by mid 1924 there were only 1400 receiving licences for all of Australia! Eight broadcasting stations were operating by March 1925. On long-wave, 1000 to 2000 m, “A” Class stations: 2FC, 3LO and 6WF, (however 3LO had commenced negotiations to lower their wavelength).

The 300 to 500 m band contained “A” class stations: 2BL, 3AR, 5CL and 7ZL. The first “B” class station to operate was 2UE Sydney in January 1925, followed in February by 3UZ Melbourne on 350 m. The re-organisation of broadcasting brought about an immediate increase in receiving licences to about 13,200 – obviously more acceptable to the public than the monopolistic “sealed sets scheme”.

There were still many “pirate listeners” whose “star” aerials (those which came out at night) could be

observed by neighbours. Wireless Inspectors were unable to make nocturnal visits! (14)

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(14) Editorial, Popular Wireless Weekly magazine, Melbourne, March 11th, 1925, p5.

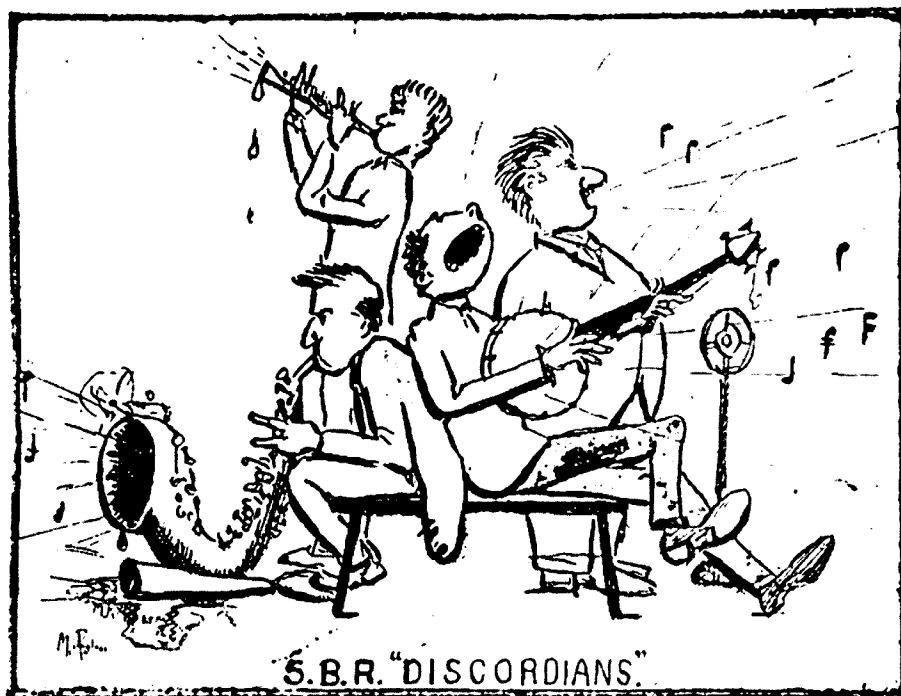


Figure 11: SBR Discordians. SBR was a popular amateur broadcaster – the Blackwood Radio Club, now the Adelaide Hills Amateur Radio Society. This sketch is from about 1927. Courtesy of Lloyd Butler VK5BR and the Adelaide Hills Amateur Radio Society. From AR magazine March 1991, p. 24.

Amateur or Professional?

Blair Bowler VK4BBX

The word amateur is derived from the Latin word *amator*, which means lover, devoted friend, or someone who is in pursuit of an objective. In the original sense, an amateur is someone who does something for the love of it. Amateurs do what they do because they have a passion for it, not because it pays the bills.

But the word amateur often implies something else about quality and expertise. People often think of amateurs as second-rate to those who perform at a professional level. Professionals are simply those people who earn their living in that field, while amateurs do not. There are others happily employed in the industry which is an extension of their amateur interests. However, from the sporting arena to the humble workbench, amateurs throughout the world continue to rewrite history.

For example, Arthur C. Clarke (1917-2008) was an amateur scientist. He remains one of the most celebrated science-fiction writers in the world.

But, he once acknowledged that the most important piece he ever wrote was a short technical article while he was serving as an Officer in the radar division of the Royal Air Force. Born and raised on a farm near Taunton in south western England, Clarke only gained a high school diploma. But in the RAF, he was given the opportunity to work with scientists who were doing cutting-edge work which would ultimately prove crucial to the allied victory in World War II.

Although he published some short science fiction stories in 1945, his article: *Extra - Terrestrial Relays*, published by *Wireless World* in October of that year, was a different matter. He proposed the idea of communication satellites orbiting the Earth to transmit television around the world. The few scientists who read Clarke's article largely dismissed his idea as science fiction. But his technical explanation of how such satellites would work were solid. He correctly calculated the orbit in which they should be placed in order to gain maximum coverage of the

globe. His theory became a reality in April 1965, with the launching of the *Intelstat 1*, the first commercial geostationary communication satellite, marking the true beginning of satellite television.

This geostationary orbit, lying directly above the equator, would become known as the *Clarke Orbit* in honour of the young visionary who first proposed the theory. Clarke won numerous awards for his science-fiction novels and stories. However, his greatest honours, including a special Emmy award in 1981, and NASA's distinguished Public Service Medal in 1995, all applaud the revolutionary idea he conceived in 1945, as an amateur scientist.

Amateurs from all fields of endeavour have risen to fame. They perform at a professional level in the field they love. They simply choose not to make it their way of living. They are, by definition, amateurs. But, nothing about their skill is amateurish.

ar

The WIA Centenary Committee Call for Articles



The WIA Centenary Committee wishes to acknowledge receipt of further historical material forwarded by members and others. This month, the Committee wishes to thank the following:

- From Ian VK2ZIO, who operates the Kurrajong Radio Museum, NSW, audio recordings of Joe Reid VK2JR and Ray Carter VK2HC. Ian also forwarded a CD ROM containing lists of early callsign including a 1912 NSW listing!

- Eric VK5LP for an article about his personal involvement in the one metre (or 288 MHz – really Mc/s) band. Many amateurs cut their teeth in various ways on this band all-be-it with a little help from John Moyle and *Radio and Hobbies* magazine! (Many Old Timers will know exactly what I mean!)
- David VK3XU supplied a copy of part of *Australasian Radio World* which featured an article on AG Hull, Ross Hull's brother. This will be added to the WIA Archive.
- David VK5KC forwarded scans of A5AX QSL cards. A5AX was the call sign of Alf Traeger who was

largely responsible for technical aspects of radio communications for the "The Flying Doctor" service.

Thank you to everyone who has forwarded cuttings, magazines and other material to the institute during this year. It will all contribute to preserving the history of our hobby and radio in Australia.

The committee also welcomes articles on the future of amateur radio: The changes foreseen and even predictions for our future. Many new modes are being adopted by the more progressive amateur, how are these going to set the stage for the future amateur?

ar

100 Years Ago

The first military wireless message

Tim Mills VK2ZTM

Sunday 28 March 2010 was the Centenary of the first military wireless message believed to have been sent in Australia.

The credit for this operation goes to Lieutenant George Taylor. The same George Taylor, who a couple of weeks earlier had chaired the meeting of wireless experimenters from which came the beginning of the WIA.

The military exercise took place near Helensburgh which is on the southern edge of Sydney. Two stations were set up, one of which was at – what is now – Veno Reserve. The object was for the forward station “B” – set up in a cave – to report the movements of an imaginary enemy back to HQ at “A” which was in a tent near Veno Reserve.

Over two days they tried various combinations of spark based equipment. To add to their troubles - it rained. About to pack up - they tried again with the equipment out of the cave and this time success.

The event is commemorated with a monument and plaque in Veno Reserve Heathcote. The plaque gives Mr Taylor the rank of Captain.

The story has been written up at intervals over the years – the latest was in the Engadine District News for 16 March 2010. [Passed on by Barry VK2FP.]



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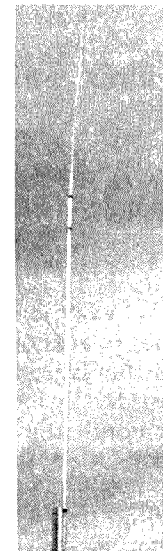
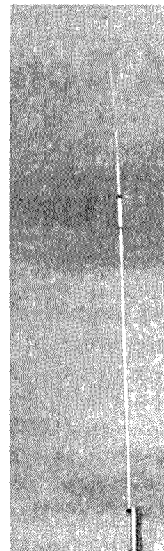
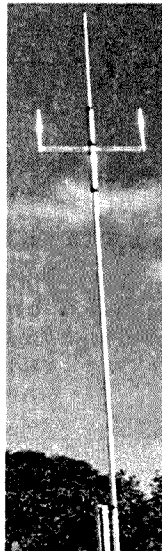
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SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

More experiments with Quad loop antennas and the dangers of 'conventional wisdom'

Felix Scerri VK4FUQ

I rather enjoy proving things wrong, especially so-called examples of 'conventional wisdom'. This article is about one of them in that the widely held belief is that most power line noise tends to be vertically polarised; after all is that not why vertical antennas are so noisy?

Well, maybe so and maybe not. One reason for my general fondness for the Quad loop antenna apart from its general excellence as an antenna is its low noise receive profile. However some interesting experiments in recent months have brought to light a couple of interesting things regarding the nature of noise pickup, at least at this QTH. Traditionally, Quad loops are fed at the bottom, giving horizontal polarisation.

This is the way my diamond Quad loop was originally fed through a 'tuned' balanced line and while it was 'quiet', power line noise would occasionally be quite loud and troublesome. As my wire diamond Quad loop has insulators at all corners, it was a relatively simple matter to physically 'rotate' the loop and shift the feedpoint position and loop polarisation.

This was done, resulting in a 'side' feed position and nominal vertical polarisation and in this position, despite 'conventional wisdom', the overall power line noise level was, on average, two and a half S points less than with bottom feed position and horizontal polarisation. This result has been confirmed by many feedpoint shift comparisons over many months.

This is not to say that vertical polarisation is always noise free, as on very dry and windy days, power line noise is apparent in all feedpoint positions; however side feed and vertical polarisation 'always' gives the lowest power line noise pickup in relative terms at this QTH. There are other factors too involving feedline

balance as I have detailed in earlier articles. This is an area of ongoing investigation. The use of a so called 'hybrid' ATU balun specifically for use with balanced line as a 'tuned' line is recommended – refer Reference 1.

This side feed position looks odd and gives the loop a slightly asymmetrical appearance, but I am sold on the much lower noise pick up in this feed position.

I was also initially concerned about possibly undesirable interaction between the now vertically polarised loop and its supporting pipe mast. Whilst there is some detectable interaction, it does not appear to have any negative practical effects on the antenna. Indeed vertical polarisation appears to be advantageous as the loop's radiation angle now appears to be lower resulting in improved DX performance. So essentially it is a win-win situation!

A knowledgeable friend of mine has told me that much power line noise is actually horizontally polarised despite the often held opposite viewpoint and that certainly appears to be the case at this QTH. Other locations may be different, of course.

One of the really endearing things about loops per se, is that one can do these sorts of interesting experiments, unlike other kinds of simple antennas where things like polarisation tend to remain defined and not easily altered.

So if power line noise is an ongoing 'issue' at your QTH, as it is here, it might be worth investigating the possibilities offered by altered feedpoint position.

Have a try. You might be pleasantly surprised.

Reference 1:

Andrew Roos ZS1AN "A Better Antenna-Tuner Balun" QEX September/October 2005

<http://www.arrl.org/qex/2005/qx9roos.pdf>

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WANSARC VK3AWS Family Day 2010, at Bundoora Park

Mick Ampt VK3CH

In its fifth year, the annual WANSARC ⁽¹⁾ Family Day BBQ get together was held at Bundoora Park, Melbourne on Sunday 15 January. With cloudy weather predicted it was a welcome change from the string of hot weather experienced recently.

As there was lots of gear to set up on my own, and to ensure our planned rotunda was secured by the club, early arrival was the key.

I was outside the park gates at 5.20 am, the ranger opened up at 5.45 am, I drove straight to Rotunda 6 and by 8 am the table of gear, and antennae, were set up and club station VK3AWS was on air on 2 m,

70 cm and 23 cm, with two sets of radios with X7000 tri-band verticals fed via triplexers.

The past year's problem of antennas being toppled over in strong gusts of wind was solved successfully this year by hanging buckets of water on each leg of the surveyor's tripod stands, which really dug the legs into the ground.

This year, the day's events were successfully televised by the writer, using digital television and utilising the experience gained after having completed analogue ATV tests from Bundoora Park some years ago, albeit with mixed results due to wet weather playing havoc with the 23 cm signals.

As portable generators are no longer allowed in the park, an alternate source of 240 volts was used, this being supplied by a 1000 watt inverter fed from the VK3CH van, which was left on idle to cope with an expected high current draw.

But disappointment struck when it was found that the 24 volt switch mode supply feeding the DVB-S ATV transmitter did not like the 'simulated' sine wave output of the inverter and refused to switch on, dragging everything else down with it.

It looked like that was the end of any digital ATV from the park. On air later to Don VK3HDX in Sydney via trusty IRLP through VK3RMH, I was relaying my tales of woe regarding the 24 volt supply's refusal to work. NERG member John Weir VK3XD was listening in and said he had two 12 volt batteries that could be strung together, even offering to deliver them to the park RACV style!

So about an hour later John arrived and the ATV transmitter was on air with battery supplied power. On screen text ID was the WANSARC club call sign VK3AWS.



Photo 1: The ATV and radio equipment set up and ready to go.



Photo 2: At 8.00 am, with antennas erected and ready for use.

Initial reports from stations watching VK3RTV 1 on 446.500 MHz said pictures were dropping in and out, so park signals appeared on the edge, but lowering the 23 cm beam a metre gave perfect results. At 23 cm even a small movement either up, down or to nearby objects can create all sorts of effects.

Once reports of 'glass hard' pictures and sound were given it was decided to leave the beam well alone, only about two metres above the ground! Trying to watch signals from the portable TV was not very reliable; the Rx beam gain was blamed but as good reports came in on the ATV liaison frequency of 147.400 FM, it was decided not to worry too much about our TV not getting pictures.

Later the next day, whilst unpacking the gear, it was found the rear socket lead was loose, so that was probably the culprit all along, a job to sort out for next year! VK3AWS may be the first fixed portable station using a digital DVB-S uplink into the newly commissioned DVB-T digital ATV Melbourne repeater VK3RTV at Mount Dandenong.

WANSARC member Bill VK3KBL, an avid experimenter on ATV, was home and offered to record the proceedings, which he did. A couple of other stations also said they were recording parts of the transmissions. Tony VK3AAZ, a long time ATV station, also said he had a perfect picture once the beam was lowered.



Photo 3: Mark VK3PI, the WANSARC Master Chef.

By midday thirty persons, amateurs, wives, girlfriends and kids were chatting and dining on snags, burgers, salads and cakes in sometimes sunny/ cloudy/rainy weather. The rain did not bother anyone too much; the rotunda just became more crowded!

A good day was had by all with plenty of catching up, and exercise by kids of all ages.

The radio/ATV setup was another handy trial of lessons learnt, and practice for ATV demonstrations planned for the upcoming ARV Centre Victoria RadioFest. Now it is time to go through the notes made and start planning next year's radio set up. Better go and fix that pesky antenna socket on the TV as well...

(1) Western and Northern Suburbs Amateur Radio Club

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Michael Owen VK3KI — President

VK100WIA
PO Box 2042 Bayswater Vic 3153
Australia
nationaloffice@wia.org.au
www.wia.org.au

To qualify for an award certificate contact is required with the Centenary of Organised Amateur Radio in Australia special event station VK100WIA for which a distinctive QSL will be available.

The WIA, through its affiliated radio clubs, will operate this unique callsign from 1 May to 31 October 2010. The callsign will also be used in Australia's capital city, Canberra, where the WIA Annual General Meeting and associated events will be held 28-30 May.

It will be on all amateur bands available to VK radio amateurs including the popular HF bands and the WIA Centenary Award is expected to be well sought after.

The award rules are: Those radio amateurs outside Australia need to achieve 50 points while VK hams require 100 points.

A contact with VK100WIA operated by the WIA or operated by a Club is worth 10 points (only one contact with

VK100WIA operated by the WIA and only one contact with each Club) and there must be a minimum of two contacts with VK100WIA.

Contacting any WIA member between 1st May 2010 and 31 October 2010 is worth five points (Example: working VK100WIA at 10 different Clubs would be eligible for the award. Working 16 WIA members gives 80 points but then two contacts must be made with VK100WIA).

Any mode may be used; cross-mode and cross-band contacts are permitted. Satellites and repeater contacts are permitted for this award. Send AU\$ 5 or 3 IRCs and a list of contacts (QSLs not required) to the Awards Manager WIA Centenary Award, PO Box 2042, BAYSWATER VIC 3153 AUSTRALIA.

Listen around the bands or visit the WIA website www.wia.org.au for frequent updates of the operator club's roster.

XPD: Christopher Bailey's radio experiences

Robin Bailey (ex VK3ZAO)

A Romney Marsh ram nudged his nose on a new wire stretched across our orchard beside the Yarra River at Ivanhoe; the ram never went near the wire again. Our Dalmatian dog soon learnt that the wire was lethal, and crawled under the wire with his tail flattened to the ground.

This was how Christopher Bailey's 1909 hand made spark transmitter ended up in the 1950s, as a very effective

electric fence across his Riverside Road orchard. The spark transmitter, together with numerous other early radio items, had been lying around under our house for years and had been resuscitated for the electric fence.

At my request, Christopher Bailey, my father, who was born in 1896 and died in 1978, wrote his reminiscences of these early days of radio. What follows is an edited version of these reminiscences.

Christopher's Story

As a youth in the early 1900s it was very hard to get information on electricity. There were no popular books or magazines like we have today. It was a great joy when I read an article in the 1905 edition of The Boys Own Paper on how to make a wireless set, and so my entry into radio was born.

The heart of the instrument was the coherer, a glass tube about two inches long and a quarter inch in diameter, loose filled with iron filings and having a metal terminal to close each end. A radio signal after passing through a coil of copper wire, which could be

varied in length by a sliding contact, passed through the coherer and made the filings stick more closely together (cohere), and so let a greater amount of direct current pass. This current going through an electromagnet, gave a tap on the surface of the coherer, breaking the coherence of the filings. This was a very insensitive device, but it worked if not too far from a powerful transmitting station.

Next I used the Marconi Detector, which was a coil of soft iron wire, revolving (by clockwork) through a coil of fine copper wires, this was also insensitive.

Then I used an electrolytic detector, which was a piece of

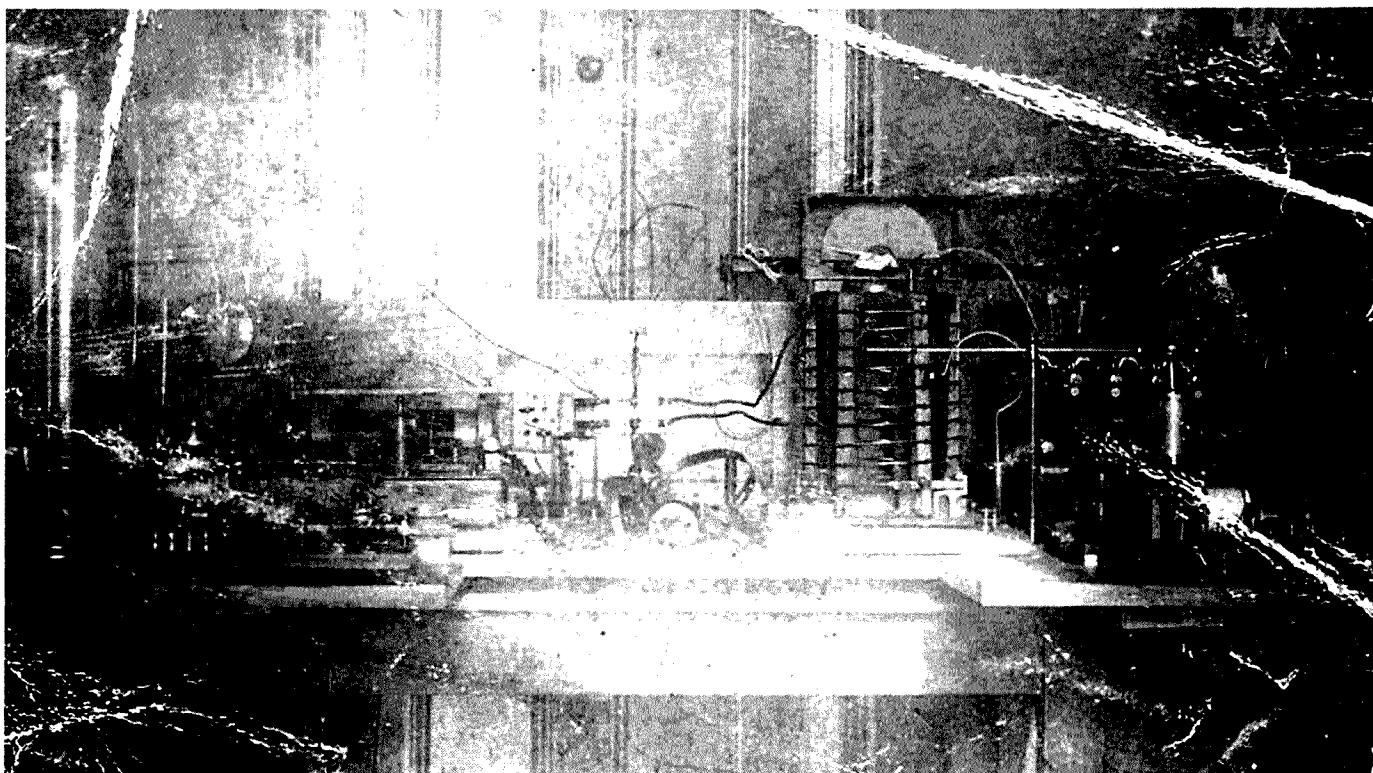


Photo 1: A 1913 spark gap transmitter.



Tr. COMMONWEALTH OF AUSTRALIA.

IN REPLY PLEASE QUOTE
G.11151/12.

POSTMASTER-GENERAL'S DEPARTMENT

Melbourne, 30th July, 1913.

S I R,

I am to acknowledge the receipt of your communication
dated , enclosing the sum of £1/1/-, representing
the first year's licence fee, in connection with your
experimental wireless station.

2. An official receipt for the above-mentioned amount
is forwarded herewith.

Yours faithfully,

Justiceian ...
Secretary

*Call Signal
X.P.D.*

The first year licence money

Mr G. D. Bailey,
"Abbeyleir",
Corrett Avenue,
Melbourn.

Photo 2: The letter advising Christopher Bailey of receipt of the required licence fee, with the allocated callsign noted by hand.

Woolaston wire dipped into a bath of dilute sulphuric acid. Woolaston wire was a fine wire of platinum, encased in a wire of silver, and then drawn out, the silver was dissolved away for an eighth inch, making a fine platinum tip.

Then I used crystal detectors such as galena, with a fine wire cat's whisker. To find the most sensitive part of the galena, I found the front door bell when rung was a good tester, so I had an extension wire to press the bell at the wireless desk.

Transmitting sets were more spectacular; my first a half inch spark coil which gave a vigorous hiss. Later I built a six inch spark coil which made a disturbing crackle, feeding into a helix twelve inches in diameter and fifteen inches high, wound with no. 8 copper wire. Using this spark coil with a Tesla coil I achieved a dramatic 24 inch spark.

For tuning I made a hot wire ammeter with some of my sister's hair coupled to the balance wheel of an old clock, with a pointer on it.

In 1912 I was at Wesley College in Prahran. At school I was like the elephant's child, always answering and asking questions. The science masters could not answer them, so they came to my home, saw that I had a good working radio station, and asked me to install a set - for the school.

The Head Master (Dick Adamson) told me to buy the apparatus I wanted, gave me a room and I registered the first school Wireless station in Australia.

(Editor's note: Peter Wolfenden VK3RV notes that there were two call signs allocated to schools in the 1914 book. One is XJAD, CJ Brown at Church of England Grammar School, Melbourne and the other XJDY, LA Adamson, Wesley College, Melbourne.

These two "clubs" as they are the only two listed other than the Wireless Institute stations in Sydney and Melbourne in 1914 and on the surface, they appear to be the first "club" stations in Australia - besides the Institutes.)

Licensing of radio stations occurred just before the First World War, and I received the call sign XPD. Unfortunately with the war, all transmitting equipment was confiscated. After the war I never returned to Amateur Radio, but actively built many receiving sets.

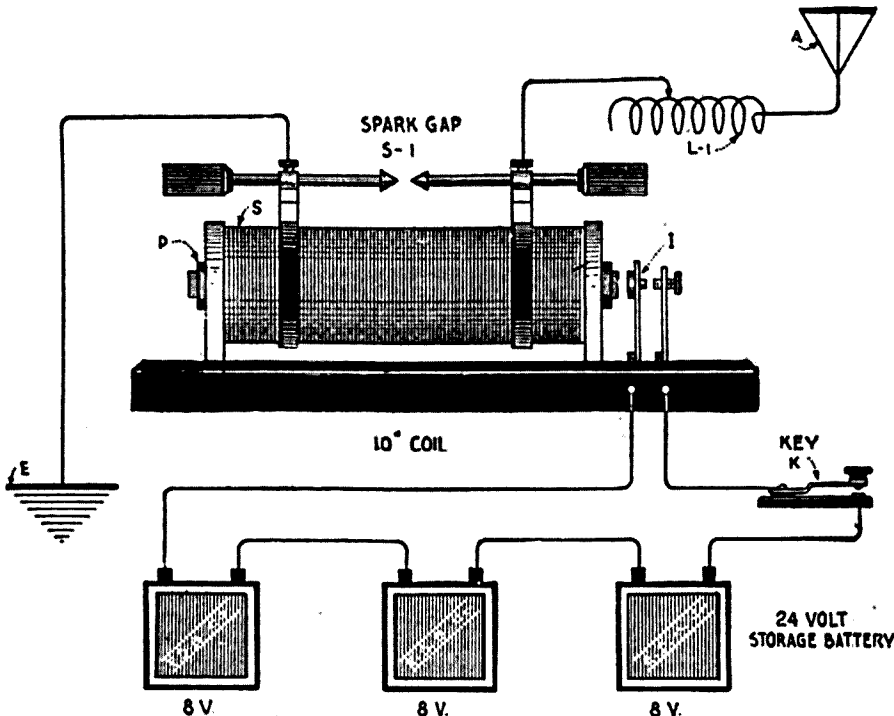


FIG. 12. The circuits of Marconi's early type of wireless telegraph transmitter. The antenna circuit is set into oscillation by an induction coil which may be fed by a storage battery or a d.c. dynamo.

Figure 1: Schematic diagram of the spark gap transmitter.

The NERG 'Gainfully Unemployed Group'

Ernie Walls VK3FM

Some of the more mature members of the North East Radio Group (NERG), a radio club located in the north eastern suburbs of Melbourne, and collectively known as the 'Gainfully Unemployed Group', meet on a rotational basis each month at the home of one of its members for a day of conversation and camaraderie. Membership of this group usually requires that you have dispensed with many of the nasties of life, like work, although anyone who has an interest in amateur radio is very welcome to attend.

The luncheon usually attracts seven or eight members, but as you can see from the accompanying photo, a larger group sometimes assembles.

The luncheon generally runs from 10.00 am until around 3.00 pm, with the group enjoying the hospitality of the chosen host whilst conversational topics can be, and generally are, of any given topic. Rarely does the group fail, in short order, to solve any of the many problems of the world! However, amateur radio topics dominate the conversation, with the group being blessed with active fox hunters, DXers, ragchewers, homebrewers and technical types, with even a couple of black box operators rounding out the membership.

A broad range of nibblies always adorns the table throughout the day, and they are supplemented, generally, with a light

lunch usually consisting of a soup of the month, followed by prepared or make your own sandwiches or a light cooked meal, with tea and coffee as often as you like. It is not uncommon for those partaking of the five hour feast to subsequently forego their evening meal!

In a nutshell, mostly the group just enjoys the company of their radio mates, and a great day is generally enjoyed by all.



From left to right, Steve VK3JSE, Peter VK3DU, Greg VK3VT, Ewen VK3OW, Ian VK3QL, Jim VK3KE, Chris VK3CHR, John VK3XD, Gerhard VK3EWM and George VK3MKK. In front are Dave VK3JMB and Ernie VK3FM, at the January luncheon at the QTH of Ernie VK3FM.

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Duplexers, diplexers and triplexers: what are they?

Ross Pittard VK3CE

These names are very similar and people often get them confused.

A duplexer is a passive filter device which allows us to separate two frequencies in the same frequency band (for example, for use in a repeater).

The photo of a commercial duplexer, refer Photo 7, shows a Polar band reject cavity type often seen at amateur repeater and commercial radio sites. They are normally used to connect a repeater transmitter and receiver to a common antenna.

There are many types of duplexer designs, far beyond the scope of this article and further information on them can be found at the links at the end of this article.

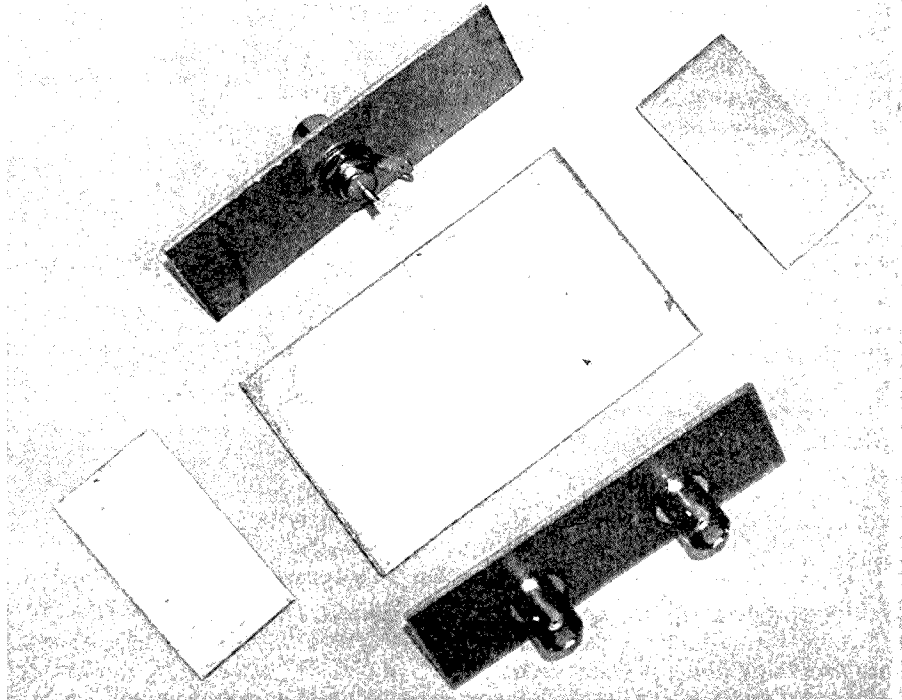


Photo 1: Cut materials pre-assembly.

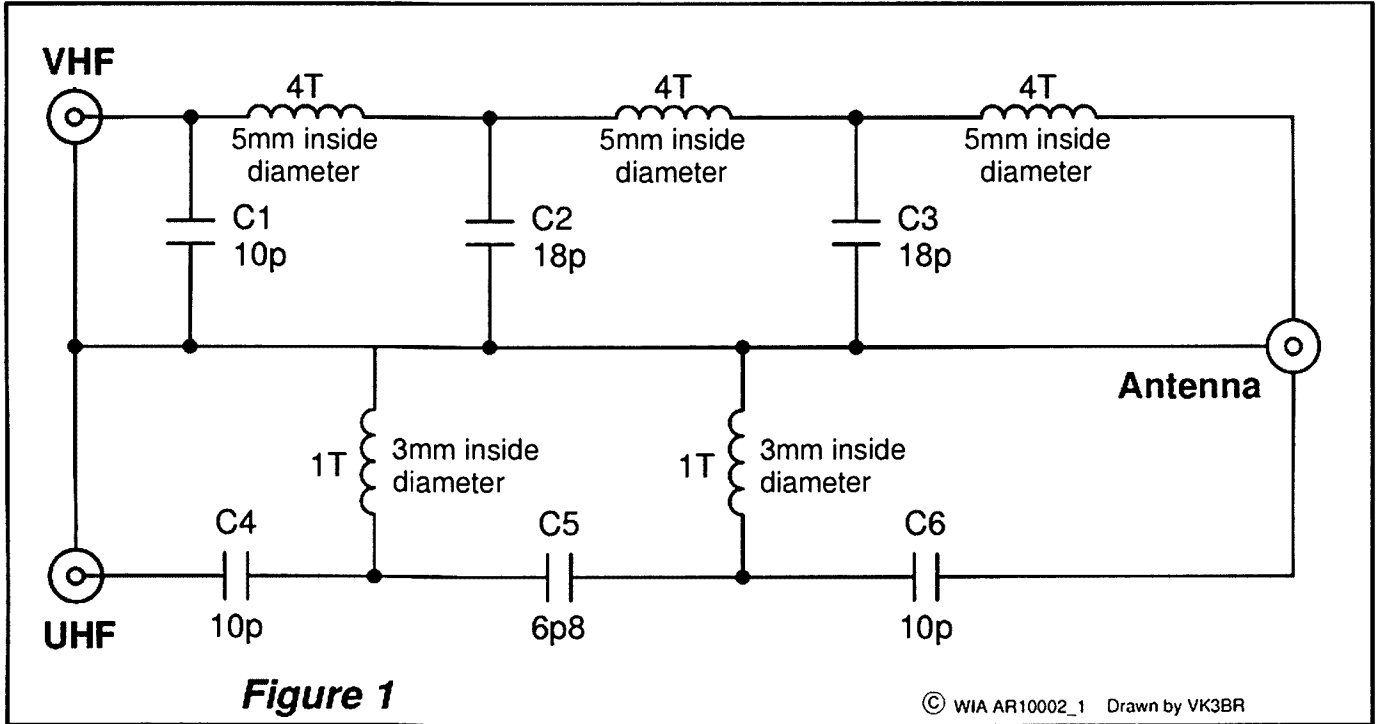


Figure 1

© WIA AR10002_1 Drawn by VK3BR

Figure 1 A typical circuit for a duplexer, essentially a low pass and high pass filter.



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bookings close Mon 24th May

A diplexer is a passive filter device which allows us to separate two frequencies in different bands. Two examples of the use of a diplexer are to combine VHF and UHF TV antennas together to feed your TV and of course to combine or separate amateur antennas and radios.

Diplexers can be made for any number of frequencies but the most common use found in the amateur shack is to combine separate 2 metre and 70 cm antennas into a dual band radio or vice versa. This is useful particularly if a beam is required on one band to perhaps access a distant



Photo 2: Spot soldered box.

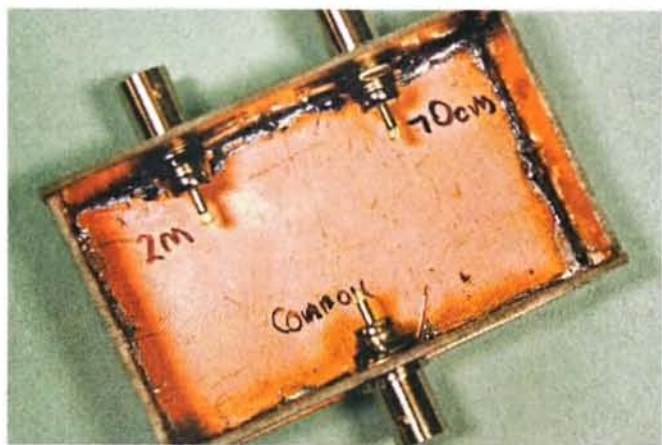


Photo 3: Seams soldered RF tight and connectors marked.

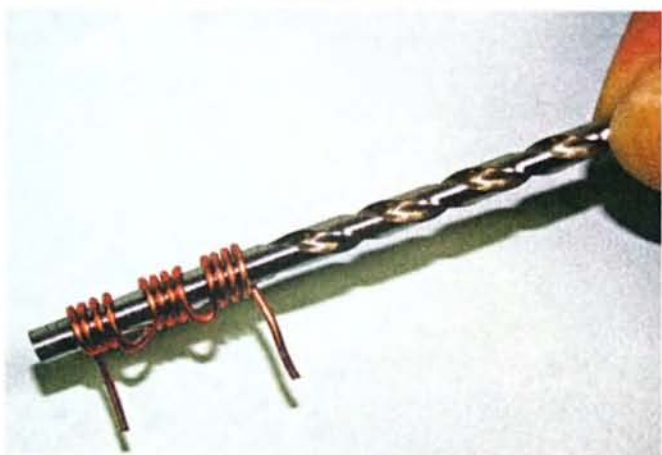


Photo 4: Using the drill bit as a mandrel to wind the wire.

repeater and a vertical on the other band for local work.

The diplexer is essentially a low pass and high pass filter (and a typical circuit is shown in Diagram 1) combined into a small box. These can be purchased commercially but this month I will describe the construction of a 2 metre/70 cm homebrew diplexer.

Another term you may come across is the triplexer, the common example being a 2 m/70 cm/23 cm unit where three antennas can be connected to one radio.

I have included links at the end of the article to a website devoted to a number of design programs for developing RF diplexers and filters for those who would like to further experiment.

There are a plethora of designs on the internet for a homebrew diplexer, all with slightly different values (see the links below).

The one I used came from the Southgate Amateur Radio Club website in the UK, but the design was originally from VKNET, so it has been around the world and back.

I used this design so as to make it as simple as possible using off the shelf silver mica capacitors; some designs employ small foil trimmer capacitors which can limit the power handling capability of the diplexer.

Silver mica capacitors are available from Farnell or ask at the local club meeting for someone with a well stocked junk box to help out.

The diplexer can be built up in a small box made from tin plate, printed circuit board (PCB) or even, dare I say it, a square or rectangular tobacco tin.

The box I used was made from scrap PCB and measures 80 by 50 mm and is about 25 mm high.

1. Cut out the base and ends of the box, the height will be determined by the connectors you want to use. I made my box out of single sided PCB and it has BNC connectors. Refer Photo 1.
2. Spot solder the box together, starting from one corner, keeping everything as square as possible. Refer Photo 2.
3. When you are happy with the box carefully solder along all the seams so it is RF tight.
4. I suggest labelling the three connectors as 2 m / 70 cm and common to avoid confusion when you are assembling the components. Refer Photo 3.
5. For the VHF side wind three groups of four turns of 1.25 mm copper wire on a five mm former. I used a drill bit. Refer Photo 4.
6. Prepare the ends of the wire and fit into the box between the common and 2 m connector.
7. For the UHF side wind two coils each of one turn of 1.25 mm wire on a three mm former.
8. Carefully mount the three four turn coils between the two metre connector and the common, then solder in the three silver mica capacitors. Keep all the lead lengths as short as possible.

9. Solder the three capacitors for the 70 cm side together and connect between the 70 cm connector and the common. Solder the two one-turn coils between caps and the box. Refer Photo 5.

10. I inserted a small piece of scrap PCB between the 2 m/70 cm connectors for further isolation. Refer Photo 6.

11. Double check all soldering.

Now for the smoke test

Terminate both the 2 m and 70 cm ports with a dummy load, or failing that a known good antenna. Put a radio in series with a SWR meter onto the common port. Check SWR on both 2 m and 70 cm, they should both be less than 1.5 to 1.

If the SWR is high try gently squeezing or expanding the coils on the affected side - this will increase or decrease the inductance of the coil. My prototype displayed an SWR of 1:1 on the 2 m side and 1.2:1 on the 70 cm side. Expect to see a small loss of power through the diplexer, this is normal.

When adjustments are completed fit a bottom to the box, made from PCB or tin plate.

That is it for this month, just a quick reminder to send any suggestions for the column to either myself or the Editor. Cheers and enjoy experimenting with diplexers.

Parts list

Copper Wire (Jaycar WW-4024)

6.8 pF Silver mica capacitor (Farnell 126-4867)

18 pF Silver mica capacitor (Farnell 126-4870)

10 pF Silver mica capacitor (Farnell 126-4868)

Connectors to suit

Further Reading

For a more detailed explanation of diplexers have a look at <http://www.rfsolutions.com/duplex.htm>

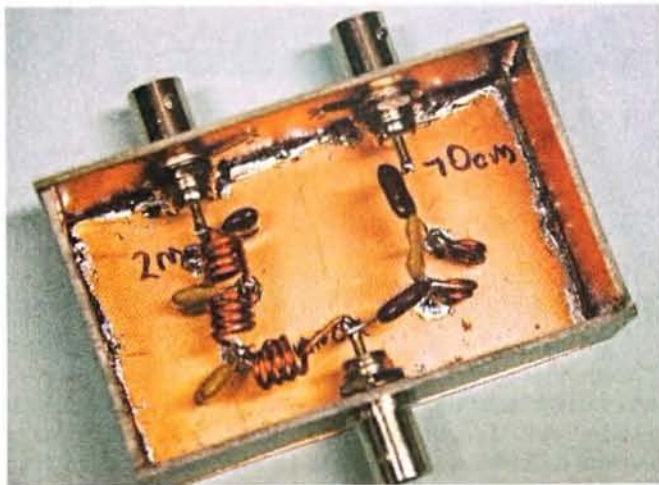


Photo 5: The box with the the wound coils.



Photo 6: Isolation panel inserted and spot soldered coils.



Photo 7: A commercial diplexer.



Photo 8: The finished homebrew diplexer.

Design programmes are available from www.tonnesoftware.com

Ready to go Diplexer Designs
www.southgatearc.org/techtips/diplexer.htm

http://www.the-devil-made-me-do-it.nl/docs/2_70_diplexer.html

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ALARAnotes

Christine Taylor VK5CTY

The WIA Centenary AGM

We are thrilled to know that the first President of ALARA, Norma, now VK2YL, will be talking about ALARA. Formed in 1975 ALARA has played a part in the history of amateur radio in Australia both as licensed amateurs themselves and as the 'support team' for our OMs.

YLS in the John Moyle Memorial National Field Day

Over the weekend of 20/21 March, several ALARA YLs participated in the John Moyle Memorial National Field Day as part of the AHARS presence at Womberoo, near Swan Reach. In the photo, we have Lesley VK5LOL, Jenny VL5FJAY, Tina VK5TMC and Christine VK5CTY.



The ALARA team members at Swan Reach for the JMMNFD: Lesley VK5LOL, Jenny VL5FJAY, Tina VK5TMC and Christine VK5CTY.

They have all been involved in this Field Day as part of AHARS, for a number of years. They pull their weight as operators and also make sure all operators are adequately fed and watered. This year there were 11 or 12 of us representing AHARS.

BYLARA Pearl Anniversary

This year is the 30th anniversary of the founding of the British equivalent of ALARA, BYLARA. Anyone sponsored into BYLARA will have received a beautiful certificate and a photobook of many

I know that face....

Sometimes familiar faces are seen in the most unexpected places.

Sue VK5AYL and her OM Richard invested in property and were asked if the firm could use a picture in their advertisements.



Sue has appeared in "The Australian", "The Bulletin", and a number of magazines like "House and Garden". Her face has appeared in unexpected places.

early and current members. What a nice way to celebrate your birthday. For those in the UK at the right time, there will be a Birthday Bash with cake! Unfortunately as far as we know ALARA will not be represented.

Congratulations to Lesley

Although she has not had her amateur licence for long Lesley, formerly VK5HLS, now VK5LOL, has gained her DXCC.

Her location is a help as she overlooks the city of Adelaide so she has a better than usual 'take-off' over the sea for long path, but it is mostly being prepared to get up at all hours to listen for that signal hidden in the hash, or being patient to wait out the pile-up – though having a YL voice can be a help!

Another successful VK3 luncheon.

This lunch was a BBQ held at the home of Pam VK3NK. The group included some 'oldies' who are regulars and some 'newbies'. Jean VK3VIP has recruited a number of YLs into ALARA since she became State Rep for which she deserves a pat on the back.

As well as a marvellous barbecue, the guests were entertained by Pam playing on a new musical instrument she has just made! We are not prepared to say what the instrument is called because there is a difference of opinion about the name. If and when we find out more we will let you know, with pictures if possible.

Do not forget the ALARA AGM – first Monday night in May. **ar**



The VK3 gathering: L to R Pam VK3NK, Naree, Monica VK3FMOM, Elaine VK3EQY, Michi VK3FMGE, Susan VK3LOV, Michelle VK3FEAT, Jenny VK5ANW and Jean VK3VIP. Front Row: Maree VK3FSAT, Barbara, Pat VK3OZ, Tegan, Margaret VK3FMAB.

Homebrew butterfly capacitors

Eric Cook VK4FAC

The time had come when I had to face reality, at 88 years old climbing up ladders and erecting antennas was becoming a 'pipe-dream'. However the urge to get on air was still strong.

Looking through the ARRL Antenna Book, I was interested in an antenna that could be effective at low level. I found that Chapter 5 deals with loop antennas and page 5-10 caught my attention. All the construction details can be found on page 5-14.

Finding all the bits and pieces was not a problem until I

came to the tuning capacitor. After researching this topic, I found my bank balance would have gone into the red if I purchased it!

How could I overcome this problem? I needed to keep on air. Looking at the required capacitor, a butterfly unit, I decided to try to make one myself, keeping in mind that it does not call for a precision-made unit and is not subjected to prolonged use.

Such a project should be able to be built by anyone with limited tools and equipment. I have the usual tools, the most ambitious being a pedestal-drill.

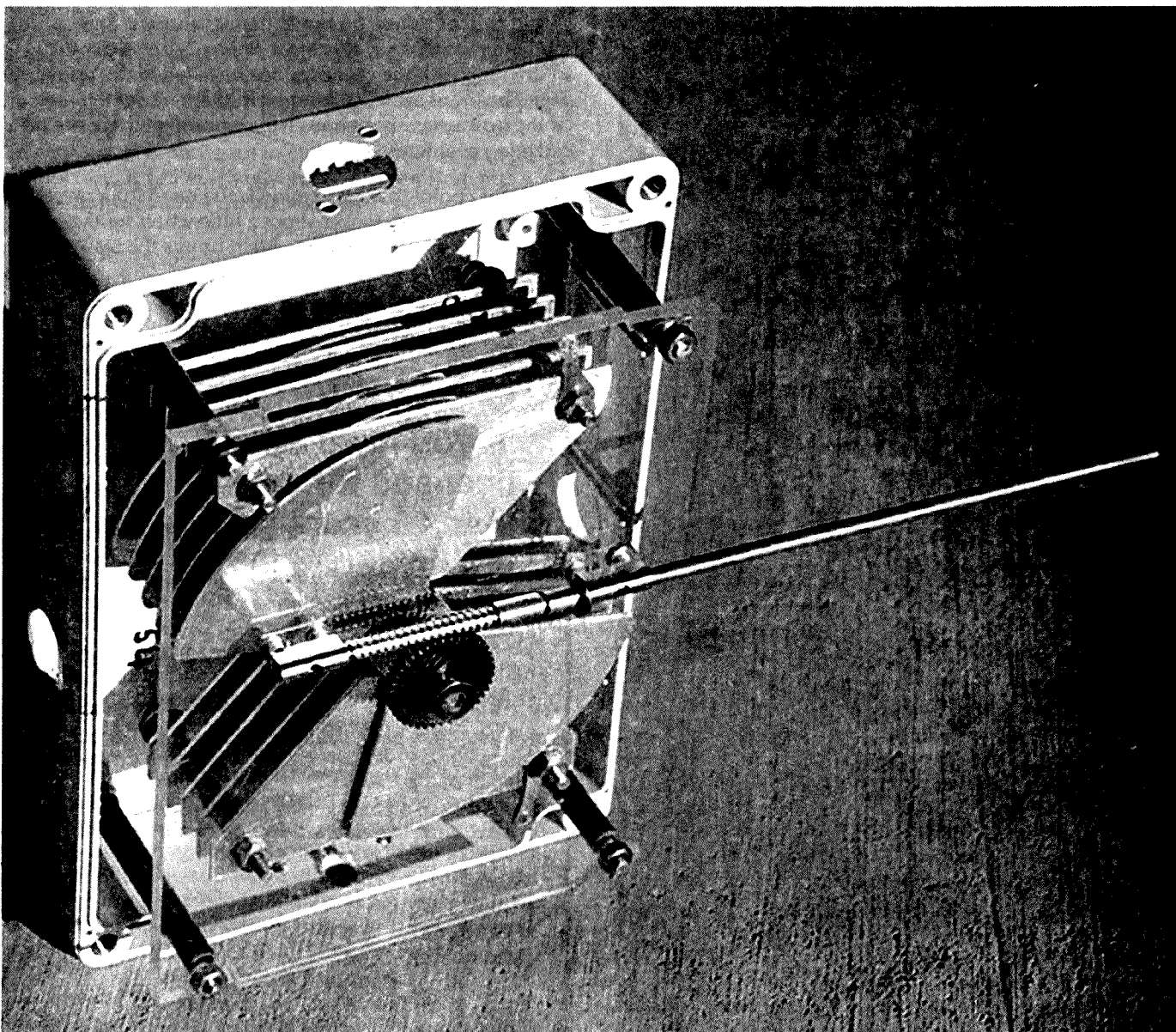


Photo 1: The homemade 40 metre butterfly capacitor.

First, make a template by drawing a square (I use graph paper) with sides of 105 mm for 40 metres and 70 mm for 20 metres. Draw in the diagonals and a circle, followed by an inner square around the centre, 16 mm for 40 metres and 12 mm for 20 metres. Refer to Diagram 1.

These sizes will cover the two bands nicely. You will need five pairs of fixed plates and five butterfly plates.

The spacers are 9 mm long and can be obtained from Jaycar. I had to make my own 'worm gear' using a parallel screw. However I understand they are now a standard stock item at some stores.

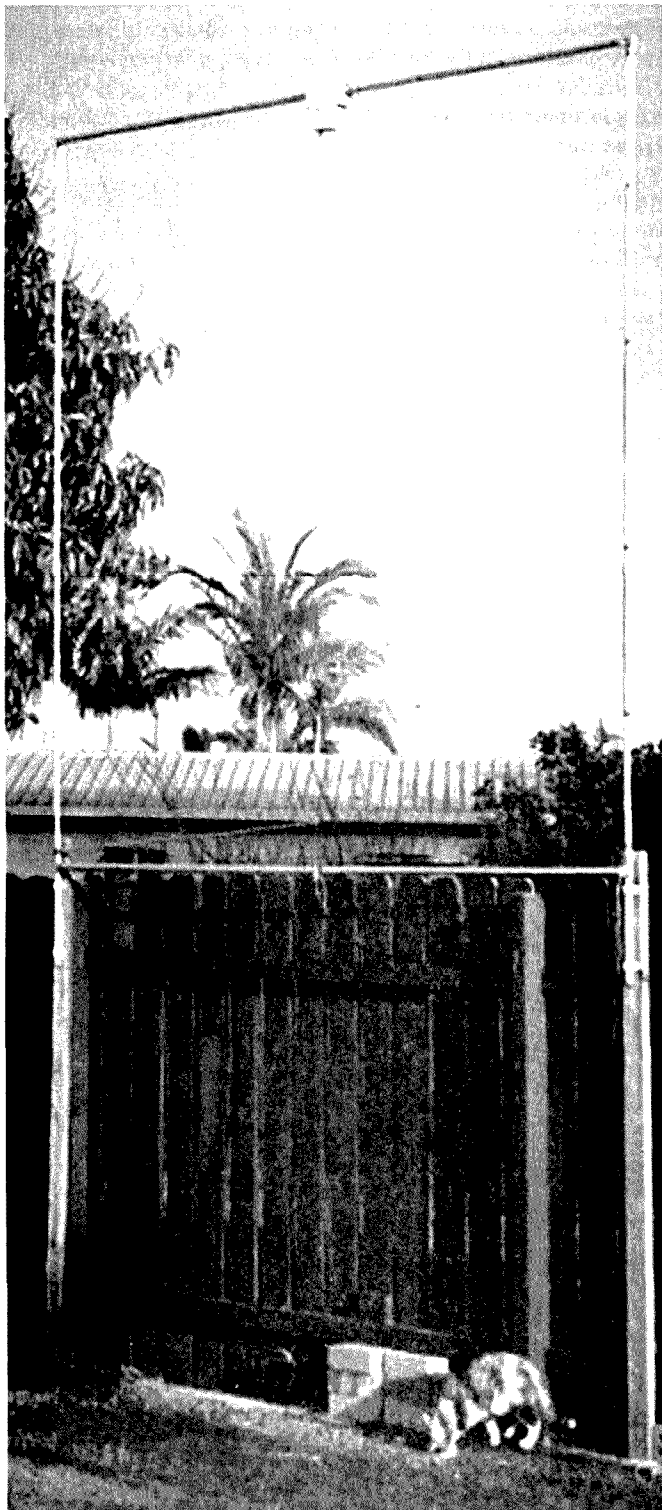


Photo 2: The homemade 40 metre loop.

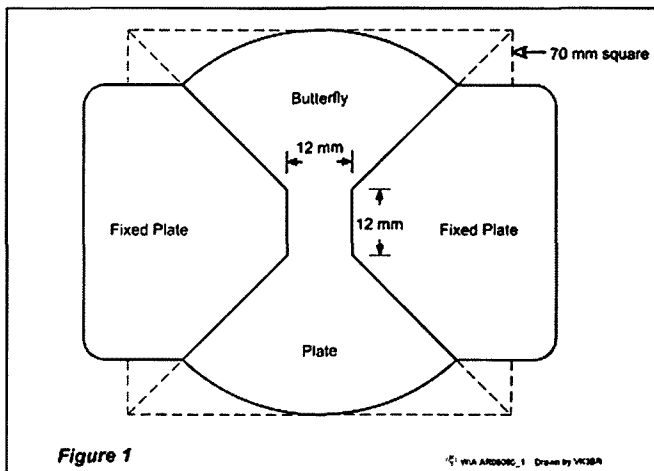


Figure 1

© WA AR2006_1 Drawn by VK3BR

Figure 1: The template for the 20 metre capacitor.

The housing needs to be quite strong. I used sealed ABS boxes. They have stood up to wild weather so far but do need careful attention to seating of the parts, to ensure that the seal is waterproof. Photo 1 shows the 40 metre capacitor, assembled and mounted in its box.

I used copper tubing for the 20 metres antenna and aluminium tubing for 40 metres. Photo 2 shows the 40 metre loop with the capacitor box installed in the upper arm. The loops are now fastened to the fence at the rear of the house; far enough away to ensure that there are no radiation problems.

One other point to keep in mind is the need for a reversing switch; the rotor may over-shoot a little when tuning, and a quick flick on the reversing switch brings the SWR to minimum.

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"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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Mentone VIC 3194

Ron Cook 03 9579 5600
or Bill VK3BR on 03 9584 9512,
or email to raotc@raotc.org.au for an application form.



Ladder line... making your own feedline

Rick Hill VK6XT

Having made my own two wire feedline quite successfully, I thought it would be worth sharing some of the secrets. It is fun putting theory into practice sometimes.

'Ladder line' or 'open wire feeder' is as old as radio itself... pre dating coaxial cable by several decades. The concept of a non-radiating two wire transmission line probably has its roots in open wire trunk lines used in the telephone system back in the first part of the last century. These were referred to as 'twisted pair' or '600 Ω ' lines.

The basic premise of the two wire line is that if everything is balanced in regards to equal currents in each leg of the line, equal capacitance to earth and other nearby conductors...it will efficiently transfer power from the source to a load some distance away. For best efficiency the source impedance, the load impedance and the characteristic impedance of the feedline will all be the same. The characteristic impedance of the feedline is a function of the conductor diameter and the spacing between the conductors. The formula to calculate the impedance is $Z_0 = 276 \log(D/r)$ where D is the distance between the conductors and r is the radius of one wire. Refer Figure 1. In this case we are assuming equal spacing all the way down the line, and that the wires are separated (mostly) by air.

There is another factor that we will need to consider later... it is called V_f or velocity factor. The radio wave will travel slightly slower in a typical line than it will in air, being slowed down by the dielectric constant of insulating material between the two wires, that is, plastic. Most lines exhibit a V_f of about 0.97.

To get on to some practical construction, then. I wanted to build a 400 Ω line to feed my favourite ZS6BKW dipole. Homebrew line generally being less lossy than ribbon in wet weather, stronger, and more stable in windy conditions, I decided to use the same type of insulated wire that I made the antenna out of. The wire, in a tasteful white colour, is PVC insulated 50/0.25 extra heavy duty hook-up wire. Roughly equivalent to 13 AWG, the diameter of the wire bundle is 2.1 mm and the overall diameter 3.9 mm. By rearranging the impedance formula (using the 10 to the power of x function) we can calculate the required spacing.

The formula becomes $D = r \cdot 10^{(Z_0/276)}$, that is radius of one wire, times 10 to the power of 400/276.

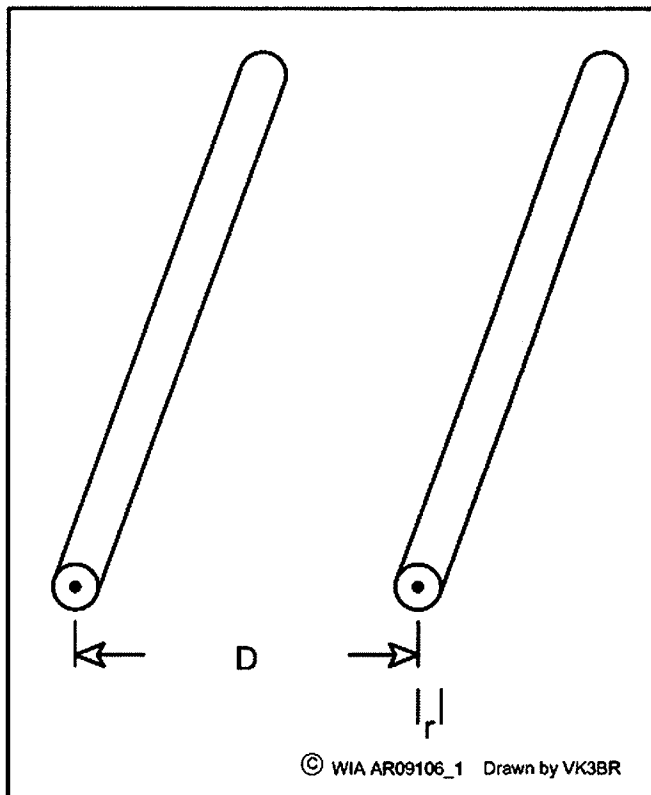


Figure 1: The feedline parameters

Substituting, $1.05 \text{ mm} \times 10^{(1.449)} = 1.05 \times 28.119 = 29.525 \text{ mm}$.

Near enough is plenty good enough here and this equates to a wire spacing of about 30 mm. Next step is to find some suitable lightweight insulating spacers. The reticulation shelves of your hardware store will usually turn up some suitable candidates. However, in this case I used some small, grey coloured Lego© pieces. Using a 4 mm drill bit, make two holes in each piece spaced about 30 mm apart. I stretched out the feedline outdoors and slid on the spacers at 300 mm apart. To keep things in place I brushed on some PVC pipe jointing adhesive and allowed it to dry overnight. Now that I had my 400 Ω feeder, I next had to cut it to the correct length.

The ZS6BKW dipole makes use of another property of a feedline, impedance transformation. A common usage of this property is referred to as a 'quarter wave transformer' or a 'Q section'. An electrical quarter wave length of transmission line (could be coax) can transform a lower impedance to a higher impedance at one frequency. The formula for this is $ZQ = \sqrt{Z_{in} Z_{out}}$ where ZQ is the impedance of the line, in our case = 400 Ω . As we

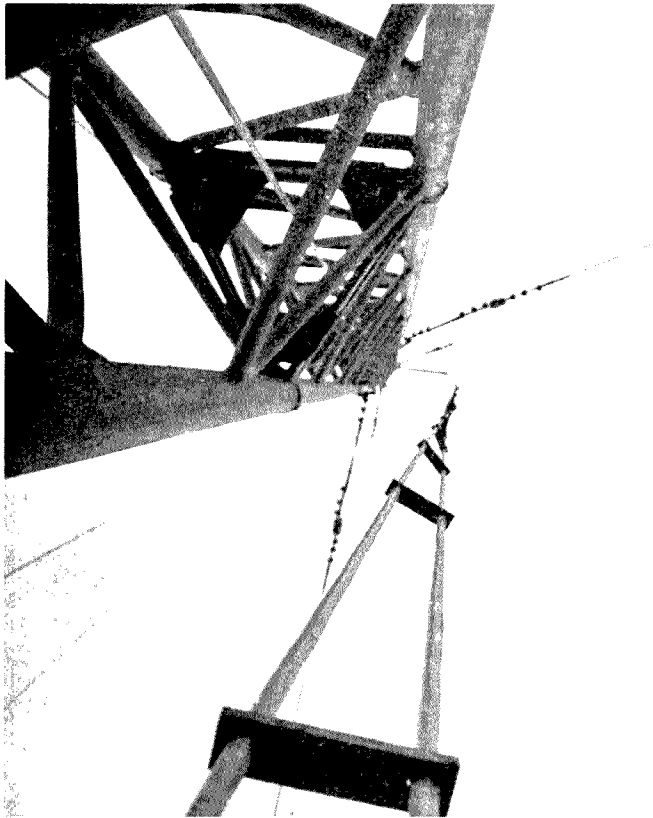


Photo 1: The homebrew ladderline in situ.

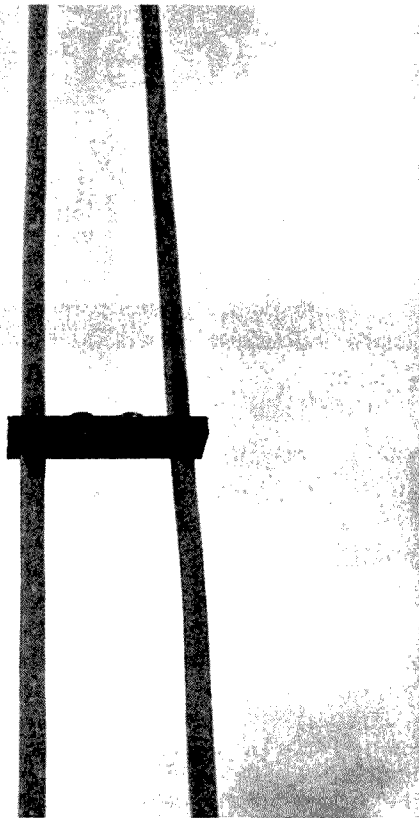


Photo 2: The Lego® spacer.

are interested in feeding our antenna with a 50 Ohm coaxial cable and a balun, Z_{in} will be 50 Ω . Once again by re-arranging the formula we can calculate the output impedance Z_{out} .

$$Z_q = \sqrt{(Z_{in} \times Z_{out})}$$

$$Z_q^2 = Z_{in} \times Z_{out}$$

$$Z_{out} = \frac{Z_q^2}{Z_{in}}$$

$$Z_{out} = \frac{400^2}{50}$$

$$Z_{out} = \frac{160000}{50}$$

$$Z_{out} = 3200 \text{ Ohm}$$

In practice what this means to us is that it is possible to electrically check that our feedline is the correct impedance and the correct length to suit the ZS6BKW by substituting the antenna with a carbon resistor of 3.2 k Ω . It is then a simple matter to check the SWR at the test frequency to verify all is well.

I used a combination of two of 6.8 k Ω , two watt resistors in parallel to do this (near enough to 3.2 k Ω). The electrical length of feedline required for the ZS6BKW to do its impedance matching magic on six bands corresponds to a quarter wavelength on 5635 kHz.

The theoretical length can be calculated using the formula $75/f$ (MHz.)

$$75/5.635 = 13.31 \text{ metres.}$$

As mentioned earlier velocity factor will cause a shortening of the feedline to be necessary. Wire the resistor across the end of your feedline, measure the frequency at which an SWR minimum occurs: it should be less than 1.1:1. By proportion it will be possible to estimate the required length. Trim the feedline and repeat again. The final length will be close to 12.8 metres, and this confirms that the velocity factor of the line is indeed $12.8/13.3 = 0.962$.

The same procedure can be used on other unknown feedlines or to calculate for a G5RV. The G5RV feeder is a quarter wave on 7087.5 kHz. (Technically a half wave length in the middle of the 20 metre band). Note that the test resistor for 300 Ω ribbon is $300^2/50$ or $90000/50 = 1800 \Omega$. It will be noted that for antennae of this type the feedline is never terminated in its characteristic impedance at either end. To attempt this with coax cable results in excessive losses and may result in the cable breaking down at a high voltage node. Using open wire feeder however it is possible to use the antenna on 80 metres, for example, with only marginally increased losses due to the resultant impedance mismatches.

I have found that one of the best baluns to use at the coax to ladderline intersection is the W1JR type. One of these I made, using 10 turns of RG58 wound on an Amidon FT240-61 ferrite toroid, proved to work very well.

Australian Jamboree 2010 – AJ2010

Amateur radio activity 4 – 14 January, 2010

Wal Kelly VK2ZWK



During the first two weeks of 2010, Cataract in NSW was a city of energy-charged fun and excitement where kids really had the summer of their life.

A great part of that fun and excitement was the amateur radio activity being hosted and managed

by the Fishers Ghost Amateur Radio Club (FGARC). A Special Event call sign, V12AJ2010, made a big noise around the country and also the world with over 1400 contacts recorded.

The activity was set up within the mail building and tents and each was an education area in itself, with each patrol rotating around the site.

Amateur radio (AR) was an elective activity for Scouts and the amateur radio activity was included in the Scouts 'passport' for badge awards.

As the Jamboree also coincided with the start of the 100 year celebration of the formation of The Wireless Institute of Australia, FGARC took the opportunity of using the promotional material supplied by the WIA

Cataract Scout Park has its own amateur radio building, radio equipment and antennas. FGARC maintains and upgrades equipment on a voluntary basis for the Scouts. FGARC also provides operators for Scout events.



Photo 2: The amateur radio activities at AJ2010 started off the WIA Centenary celebrations.

Icom were able to loan us, for the Jamboree, a pair of IC-7000 transceivers, power supplies and tuners, plus six IC-80AD hand held radios to supplement FGARC member and Scout equipment.

All club members who attended the Jamboree enjoyed the experience, but the most satisfaction came with seeing the fun and enjoyment we were able to provide to the younger generation by giving them an insight into some areas of amateur radio operation.

Objectives

Our main objective was to provide youth Scouts with the opportunity for 'hands-on' involvement and enjoyment of a wide variety of AR communications.

Reports from visiting Scouts, Scout leaders, and others provided positive feedback of how the Scouts enjoyed their time at the AR activity.

Our secondary objective was to generate an interest for the young Scouts in JOTA and the opportunity of becoming an amateur radio operator themselves. Quite a number of Scouts advised their intention of enquiring about locally



Photo 1: The amateur radio site at AJ2010.

Centenary Convention Weekend of Activities

Canberra 28th - 30th May 2010

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for registered
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Celebrating the Centenary of
Organised Amateur Radio in Australia

available courses when they returned home.

The WIA 'CQ' brochure showing where they could obtain more information was provided to all

Scouts who visited us.

Day Sessions

Of the approximately 10,000 Scouts and 3,000 leaders at the Jamboree, the



Photo 3: VK2HKF demonstrating equipment.



Photo 4: Scouts in awe at the rack of equipment owned by VK2HKF.

AR activity hosted 127 Patrols with a total of 668 Scouts, plus many visitors.

Our peak activity covered four patrols (24 Scouts) per hour over a three hour session.

Lynn VK2FLMK controlled entry, movement between activities, stamping of passports and exit of patrols and visitors. In addition, she provided a short introduction to our activity and the phonetic alphabet.

Karl VK2HKF, with his tent full of radios, computers and lights plus his trailer mounted 'antenna farm' always kept the Scouts in awe.

Luis VK2TAR, Frank VK2FRW, Chris VK2JCN and Ross VK2VVV provided slow scan, RTTY, satellite tracking and QSL identification.

Carl VK2HRC provided IRLP contacts around the world through his hand-held radio. David VK2LOL also assisted with the troops, as did Paul VK2LL. Various operators in the main building chased contacts for the Scouts with stations around Australia.

We were also able to run a DVD, kindly supplied by SRESU, taken at the Elmore Jamboree in 2007.

Competition

We held a daily competition using a QSL Poster supplied by NC DX Foundation which we had enlarged to A1 size and laminated. We randomly selected 20 QSL cards and listed these on an entry form. The Scouts were advised that each country in the world has a specific call sign prefix allocated, e.g. Australia is VK and referred them to the World Amateur Radio Map, on loan from VK2HKF.

Scouts were then asked to look at the poster and using the call sign, find the country, then go to the Radio Amateur World Map to find the CQ Zone, e.g. 5L2MS = Liberia = 34.

They completed the entry form and told us which prize, donated by NCDXF, they would like. The Scout with the most correct entries on a particular day was that day's winner.

We had winners from Troops 1028, 416, 434, 1036, 104, 424, 316, 1005 and 442. Whilst it was difficult to get photos of the prize winners, we did manage to get a snap on the last day



Photo 6: Luis VK2TAR enthralled a patrol.



Photo 8: VK2FRW explaining satellite navigation.

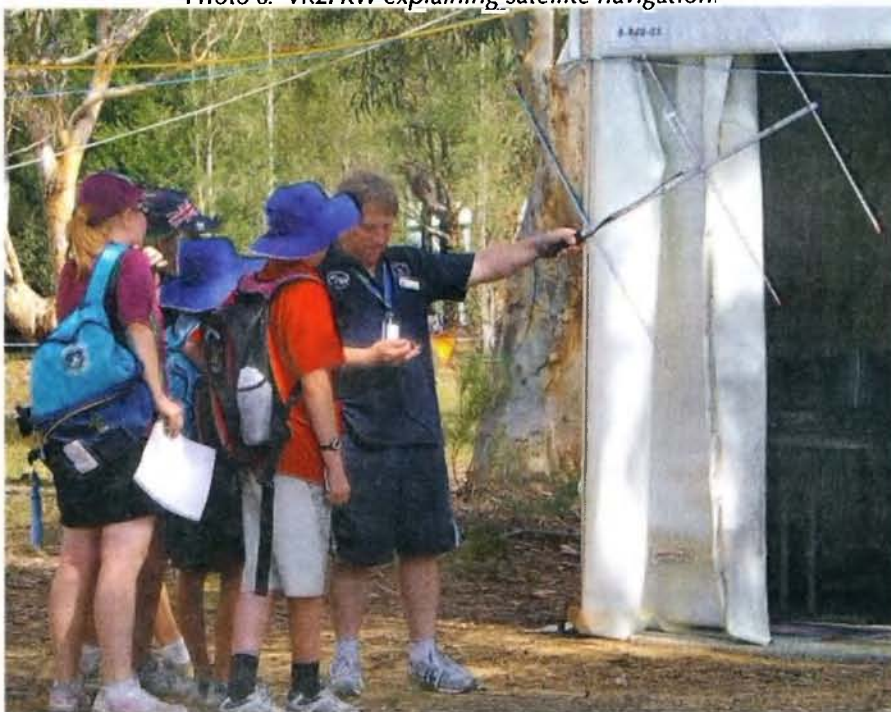


Photo 9: VK2VVV demonstrating satellite navigation.



Photo 10: VK2ZWK with the prize winners from the competition.

when we had four winners all from the same Troop!

Night Sessions

With a curfew limit on the younger Scouts, licensed Scout AR operators undertook night operations, spending extended time working frequency bands that were open.

After dinner, young Scouts Patrick VK5FMPJ, Matthias VK5MEF and Jarrod VK3FEEL chased improving HF band conditions overseas and were well rewarded. It was very satisfying to see them gaining so much enjoyment.

Later on, older Scouts Bob VK6POP, Paul VK6LL, Peter VK3TQ and David VK2LOL got amongst improving band conditions on 20 metres and the inevitable 'dog piles' of stations around the world wanting to contact us.

Future Scout Day

Saturday 9 January saw the addition of some 10,000 future Scouts and visitors at the Park to view activities that the Scouts have been enjoying during the Jamboree and whilst it was 42 deg C, we were able to host some parents and future Scouts.

Acknowledgments

In mid-2009, considering that most of the in-ground feeder lines for our aerials and their rotators terminate within the permanent AR building and its interior was not capable of adequately supporting any more than one or two connections at a time for Scouts, a rebuild of the interior to provide six bays was necessary.

This could not have been achieved in the last six months prior to AJ2010 without the many contributions from FGARC members and businesses to whom we must offer not only our gratitude but the thanks and enjoyment of the Scouts that visited us during the Jamboree.

Dick Smith Foods	\$2000 towards the cost of a rotator for the 40 m Yagi.
BHP Billiton (Illawarra Coal)	\$1500 towards materials cost.
WIA Club Grant	\$500 towards materials cost.
Icom	For supplying additional radio equipment & promotional material.
Bunnings Campbelltown	\$100 towards materials cost.
Lawrence & Hanson	Assistance on materials cost.
Rojone	Donation of coax and fittings.
NCDXF	Donation of poster and prizes.
Ted VK2AU	Organizing donations of timber, insulation and coax fittings.
Ian VK2MCI	Organizing a new hot water unit and installation.
Lynn VK2FLMK	Organizing donations, publicity, grants, carpet tiles, meals, refrigerator, signs, etc.
Craig VK2KDP	Organizing framing gun, nails, insulation, carpet tiles.
Victor VK2KVH	Donating a BBQ.
Bernd VK2IA	Donating and assembling his Cushcraft 40-2CD Yagi.
Pro.sis.tel, Italy	For their pricing assistance and quick delivery of the rotator.
Peter VK2OQ	Designing and building a new s/steel rotator mounting.
Tim Holman, North Rocks Electrical	For loan on two Sundays of the big 'cherry picker' to fix and swap aerials.
Craig VK2KDP and Ted VK2AU	For working up at 21 m heights.
SRESU	For loan of DVDs from 2007 Elmore Jamboree.
Other FGARC members who helped with the working bees.	

In conjunction with revamping the building interior, aerial re-work was necessary as follows:

Continued on page 64

VK3club news

Gippsland Gate Radio & Electronics Club

Amateur Radio: Early Beginnings

Chris Chapman VK3QB

During 2010 the Wireless Institute of Australia (WIA) is celebrating the centenary of the foundation of organised amateur radio in Australia in 1910.

As part of the celebration, in the spirit of celebrating early wireless in Australia, the Gippsland Gate Radio and Electronics Club Inc. (GGREC) will be re-enacting the historically important reception of the first direct press message sent from the United Kingdom to Australia. This was received at an experimental receiving station established at Koo-Wee-Rup, at 5 am on 5 December 1921. It is intended to re-enact the message transmission from the original

location in Caernarfon, Wales, United Kingdom, to the location in Koo-Wee-Rup, Victoria, Australia between 16 and 18 June 2010.

This first message and the many that followed it proved that direct wireless communication between the UK and Australia could be reliable and therefore commercially viable. The reception of these messages also led to the crucial discovery of long path transmissions. Also the effect that the ionosphere had on propagation varied between day and night. These fundamental principles that were discovered in Koo-Wee-Rup are to this day still used by engineers, radio amateurs and listeners, to

predict the best signal paths for radio transmissions around the world. The GGREC will be using the special event call sign VK100WIA for the duration of the re-enactment to further align the activity as part of the WIA celebrations.

Further information about the re-enactment and contact details can be obtained from www.ggrec.org.au/vk100wia or by writing to:

GGREC, P.O. Box 1098 Cranbourne, 3977, Victoria, Australia.

You are invited to visit us at Koo-Wee-Rup during this event. Details will be on the website closer to the event.

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Photo 1: A few of the operating position at the Koo-Wee-Rup station.

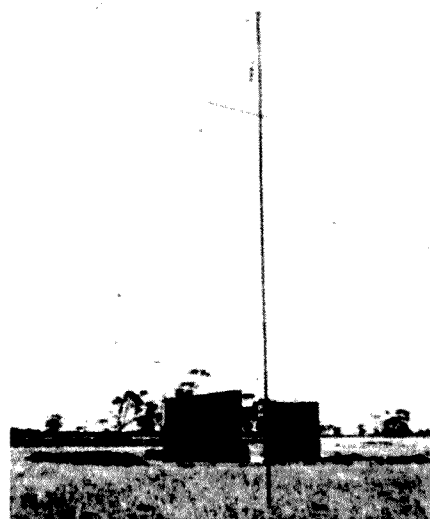


Photo 2: The antenna mast and shack at Koo-Wee-Rup.

Amateur Radio Victoria News

Jim Linton VK3PC

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Annual General Meeting

The AGM will be held on Wednesday 19 May at a new venue - the Ashburton Support Services, 296 High Street, Ashburton (corner of Warner Avenue) Melway 60 E10, at 8 pm.

In line with past practice the Annual Report was issued on the Members Section of the website, hard copies

made available on request or mailed to those members who had not registered and provided their current email address.

The meeting will consider the annual reports, the profit and loss account to 31 December 2009 and the balance sheet at that date. Our Secretary/Treasurer Ross Pittard VK3CE has reported a small surplus for the year, and he notes that provided expenses

are kept under control no increase in member fees are anticipated in the foreseeable future.

Come along to the AGM, a great social occasion with the business part of the meeting being fairly brief and followed by a member forum. It will include discussion about the QSL Bureau, repeaters, the possibility of a general meeting of members during the year and ways to achieve greater

VK3news ARV continued

membership participation in the state-wide organisation.

A feature of the AGM will be the opening of a time-capsule that contains contributions of members from 1985 on the occasion of the WIA's 75th anniversary.

Members may wish to note that the WIA has invited Amateur Radio Victoria (WIA Victoria) to assist it in putting to air the WIA Centenary callsign VK100WIA. This will occur on

17 to 19 May, so please give it support by making a contact to receive the special QSL card and begin to qualify for the WIA Centenary Award.

Foundation class

The next weekend training and assessment session for the Foundation licence will be 22 and 23 May. These weekends have a reputation for providing quality training and are held at the office, 40g Victory Boulevard, Ashburton.

For inquiries or to enrol contact Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

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. **ar**

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

Formal meetings of the Society started at the end of January with an informal barbeque. This evening although a great success was marred by an unfortunate incident. During the holiday recess our club rooms had been broken into. Entry was gained by smashing through the front wooden doors. Fortunately that was the only damage and nothing had been stolen.

The local police were called and they said they already had some "junior" suspects to question regarding the incident. Our resourceful and energetic Wednesday group were able to repair the damaged door.

Alan VK3KTE gave members an insight into working with satellites. This was a two part series which gave prospective satellite users much needed information on how to get started.

Topics covered by Alan included equipment needed, antennas, software etc. Working with satellites is a specialized area of communication which Alan was able to explain in simple easy to understand terminology.

Keith VK3AFI spent two evenings on theory and practice of soldering. Keith once taught this subject at a local TAFE college and has given this series of talks before.

a VHF Powermatch instrument being built by many of our members is still continuing. Members participating in this project were given a kit of parts to construct an RF probe.

This project has been the most ambitious that has been tackled to date. However it is a worthwhile project and members will on completing it have a versatile piece of test equipment.

Another evening was spent preparing for the John Moyle Memorial National Field Day. As with any competition of this nature preplanning is a necessity and the fore-thought did pay off.

Members set up a portable field day station at the Eumerella scout camp. This camp is situated just outside the coastal town of Anglesea on the Great Ocean Road. The camp is right at the cliff tops and is ideal for field day activities, with a quiet location which is ideal for both HF and VHF operation.

Also available is bunkhouse style accommodation which means that caravans and tents can be left at home leaving more space in vehicles for the all important radio equipment.

Visitors to Geelong are welcome to attend our club meetings which are held each Thursday evening at 2000 local time. The address is 237A High St. Belmont at the rear of the Belmont Community Youth Club.



Albert VK3EFO working one of the HF rigs during the John Moyle Memorial National Field Day.

Because of his practical teaching experience we have learnt the correct way to solder. This is most important when working with today's much smaller components, and members have been known to thank Keith for the lessons learnt, and SMD components now get soldered on the correct PCB track instead of sticking to the soldering iron.

The construction of

VK4news

Christopher Comollattie VK4VKR

Email: qtc@wia.org.au

Position vacant

It is time to give someone else in VK4 a go to present a monthly article for the rest of Australia to read.

Interested? If so, contact Peter Freeman editor-armag@wia.org.au

TREC

TREC members took part in the John Moyle Memorial National Field Day event from Innot Hot Springs. Setup was started Friday afternoon and we were on air for the start at 0100 UTC Saturday. A new antenna, along the lines of a "Spider-Beam" was trialled on the day.

The antenna was designed and built by Stu VK4SDD, Gary VK4FD and Dale VK4DMC. It was mounted on Jeff's VK4BOF tower trailer. The design frequency was 14 MHz and it proved to be very successful with excellent reports being received.

Contacts were made with over 500 stations in VK, ZL and other overseas stations. Members enjoyed great meals at the pub and some even relaxed in the hot mineral spas for which Innot Hot Springs are known.

Mike

Help Mike get on his bike: That dashing aero-paramedic, avid DXer

and all round good guy Mike VK4MSA is in training for the Big W Townsville to Cairns Charity Bike Ride.

The ride leaves Townsville on Thursday 29 July and finishes in Cairns on Saturday 31 July, along the way raising funds for and the public profile of The Children's Cancer Institute of Australia. Mike has the entry fee but has to raise at least \$500 for charity before he can participate in the ride – and time is running out! So, can you help out a fellow amateur who is doing something good?

Contact Mike VK4MSA next time you hear him on air or when he is next saving your life in a car wreck and let him know that you can support him in the ride. Find out more at <http://www.everydayhero.com.au/>

FNNQARG

The Far North and North Queensland Amateur Radio Gathering (FNNQARG!) will be from 11 to 14 June at Cardwell Village Beachcomber Motel and Tourist Park. It is a yearly gathering of amateurs and support crews from the Cairns, Atherton Tablelands and Townsville Regions plus lots of places in between and far away. FNNQARG is a friendly, relaxing time with the only energetic event being the traditional FNQ versus NQ

Cricket Match on Sunday morning. The TREC Trivia Challenge is a rip snorter fun event too!

Come along and catch up with that face you have been speaking to for ages across the ether. Ring Reception at the park on 1800 005633 to book your accommodation as soon as possible as the long weekend in June is popular. Accommodation is motel to villa and camping is available.

RADAR

Rockhampton and Districts Amateur Radio Club have their shack at The Heritage Village up and running, a few more touches to the interior yet to be completed and a tower to be erected, an antenna or two more and all will be well. Next issue will include operational days and frequencies for contacts on both HF and VHF.

Clareview

Are you reading this article in your spare time on the May-day Long Weekend? If you are that is because you are missing out on all the fun at Clairview where the rest of us are having fun. Keep an eye open for the next issue for all the details.

Chris VK4VKR

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The Toowoomba and Downs Wireless Group WIA Centenary display

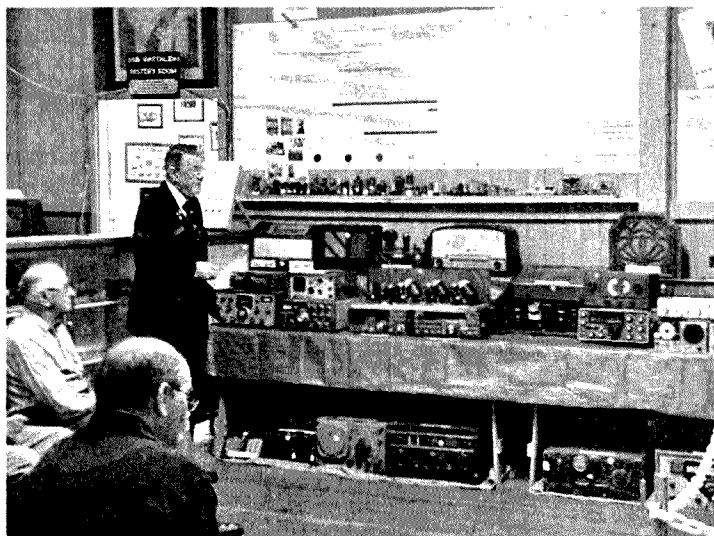
On 11 March 2010, the Toowoomba and Downs Wireless Group opened their WIA Centenary and audio visual display in the Toowoomba Milne Bay Military Museum.

Radios from about 1910 through to the present are on display. As a military museum, amateur and military transceivers are to be seen, with a Time Line, a display of valves from post World War 1 to the end of the valve era.

The audio visual, presented by Matthew Weatherley VK4TMW and produced by John Scanlan VK4VIK, describes amateur radio from the spark gap days of 1913-1922 into the valve era. Mentioned are early pathfinders such as Bill Bright 4AA, later 4WB and VK4OO, who claimed the first telephony (valve) QSO with Melbourne in 1921. In 1922 the first Queensland amateur radio club commenced in Warwick, known as the Kookaburra Pals Club.

The Museum, at the corner of O'Quinn Street and Anzac Avenue, Toowoomba, is open every day from 10.00 am to 4.00 pm, until 30 June.

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Matthew Weatherly VK4TMW and, in the near foreground, Phil Chapman, who drafted the Time Line.

Tim Mills VK2ZTM

vk2notes@arnsw.org.au

March was the big month in VK2 with ARNSW celebrating the Centenary and the formal opening of the new premises at the Dural site.

It has yet to have a formal name but there has been some reference to it as the Centenary Building. The WIA AGM in Canberra at the end of this month continues the celebrations on a national basis.

Next month the Oxley Region ARC will hold their 35th annual field day over the June long weekend in Port Macquarie. It is a Centenary event. Full details elsewhere in this issue. Oxley Region ARC has decommissioned their packet system which was operational at the VK2RPM site. Use had declined and the space was needed for upgrades to the voice system.

The St. George ARS recently refurbished their Mt. Bindo 6650 system which serves the western Blue Mountains region. After 30 years in service, the club is looking to upgrade the equipment. If anyone has a surplus VHF high band repeater unit that will program to 146.650 Mhz, could they contact the St. George Amateur Radio Society. The site relies on solar power.

Westlakes ARC have a mini field day scheduled for Sunday May 30.

The Hunter Radio Group held their AGM in March with the following officer bearers being appointed. Patrons are Norm Stanley VK2BNS and Tony O'Brien VK2BOA. President and Programme Officer Len Daley VK2ZFD. Vice Pres Maurie Jones VK2CD. Secretary / Treasurer is Rodney Prout VK2CN. WICEN Officer Steve Solovieff VK2UD. Repeater Officer Greg Williams VK2HT. Beacon and Education Officer is Grahame O'Brien VK2FA. Contest Co-ordinator Geoff Wrightson VK2SH. Broadcast Committee Maurie VK2CD, Rodney VK2CN, Barry VK2AHE & Michael VK2CMM. Social Secretary Pauline Jones VK2GTB.

The Hunter Radio Group meet on the second Friday evening at NBN TV Studios.

Mid South Coast ARC will be holding their quarterley meeting on the second Saturday morning this month. Check VK2WI News for details.

The Goulburn and Southern Highlands ARS meet on the second Wednesday of the month except January at the Goulburn Soldiers Club, Market St at 8 pm. Their Sunday evening 80 metre net is coming up to 40 years of activity advises Dom VK2YDD the Publicity Officer. The club has repeaters at High Range and Goulburn which are linked. Good general coverage from the Sydney basin to Lake George on the way to Canberra. You can contact Dom at vk2ydd@wia.org.au or on mobile 0430 222 081.

NSW WICEN and the regions have various events in the next few months. Eden Creek Enduro on 15/16 May and again 10/11 July. The annual Nav Shield 3/4 July. VK1 has the Canberra Safari May 8. Waverley ARS will have their annual auction in July, not June as advised last month. Their Scout hall meeting venue has almost constant use and only in school holidays does a slot become available.

The Central Coast ARC has hardly recovered from this years Wyong field day before planning has commenced for 2011 advises Ray VK2HAY. A special thanks to all who put in the hard work to make the day enjoyable for the attendees.

Digital Communications

Co-ordinator

Mathew VK2YAP (from VK2WI Technical committee) advises that Andrew VK2XAG has been appointed Digital Communications Co-ordinator for ARNSW.

One of the first operations will be an experiment on the 70 cm VK2RWI 8600 being set up as a software

defined repeater. It will be based around a Universal Software Radio Peripheral from Ettus Research and custom code using the GNU Radio set of libraries on a Ubuntu Linux machine. VK2WI bulletins will report progress. Contact with Andrew may be made via vk2xag@gmail.com

The March ARNSW Trash & Treasure event at VK2WI Dural was conducted using the facilities in the new premises on the morning of 28 March, as was the Home Brew and Experimenters gathering in the afternoon.

The next T&T event will be the last Sunday this month – the 30th. You can check out major T&T items on offer on the ARNSW web site www.arnsw.org.au Last month was also the AGM of ARNSW, held for the first time at the Dural property.

As reported elsewhere March was an important time for VK2 and ARNSW. VK2WI broadcast personnel had the honour of producing the VK1WIA News for 7 March.

To mark the Centenary day a small gathering was held at the former Hotel Australia site on Thursday 11 March. In a combined operation ARNSW celebrated the Centenary of the formation of themselves and the WIA by opening the new premises at the Dural Site on Sunday 14 March. Over one hundred members and partners attended.

Present on behalf of the WIA was President Michael Owen VK3KI and director Phil Wait VK2ASD/DKN. The Centenary was observed by three 'elders' present who cut a Centenary birthday cake. They were Pierce Healy VK2APQ, Bill Hall VK2XT and David Thompson VK2BDT.

The formal opening of the premises was made by ARNSW President Elizabeth Langley VK2AO. One event during the formal opening was to unlock a 'Time Capsule' which had been created at the 75th anniversary

in 1985. This was done by Michael VK3KI.

In a later issue of these notes there will be a report on the contents. By years end another 'Time Capsule' will be set up for a further period – most likely the next 25 years. This will also be a good time to seek old records and photos of the past one hundred years of VK2 activity. Please check what you have and forward copies to us. Later in the year it will be practical to house them when the Dural premises are set up. More in later issues.

73 Tim VK2ZTM. ar

Centenary Plate and Mug

Tim Mills VK2ZTM

As part of Amateur Radio New South Wales contribution to the Centenary celebrations, a commemorative plate and mug set has been produced. The mugs has a 250 ml capacity. The plate is 20 cm diameter. Both carry the same design – a drawing from a photo of the VK2WI transmitter building and towers.

Around the drawing is "Commemorating the Formation of the Wireless Institute of NSW 1910 – 2010". This was the name used until the 1920s. The plate costs \$25 and the Mug \$10. Packing and postage is determined by destination. They are available at the Dural site and at some field events.

Inquiries can be made via the office telephone and leave a contact message. 02 9651 1490. FAX 02 9651 1661. Write to ARNSW P. O. Box 6044 Dural Delivery Centre NSW 2158.

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Michael VK3KI unlocking a 'Time Capsule' which had been created at the 75th anniversary in 1985, as part of the opening of the new premises at Dural.



Mugs and a plate made to commemorate the centenary of organised amateur radio in Australia.



The VK2WI site looking from the front gate. The new building is to the left.

Neil Penfold centre opens

Welcome to the VK6 Notes this month, and a busy month it was! The NCRG Open Day and WIA 100th Anniversary celebration took place on Sunday 14 March at the Neil Penfold State Amateur Radio Centre in Whiteman Park.

Over 140 people turned up to see Neil open the result of almost five years effort by the 40 odd members. All the work has been carried out by members with no outside input other than some crane hire to raise towers. Hopefully one of the members will put the story into words for a future article in this magazine.

There were several car booters operating in the newly compacted car park, including Bob VK6POP running the WIA stand and Kylea of Hamshack tucked cosily inside the airconditioned meeting hall.

The club was fortunate to receive a donation of a Yaesu FT-897 from Ian VK6LCT and his company Timberden

Plant Hire and a Quansheng handheld was also raffled.

The Yaesu was won by Richard VK6HRC and the handheld by Nathan VK6F...? A third prize of a wrist watch was donated by Hamshack and won by none other than your scribe!

The NCRG President Wayne VK6EH gave an excellent rundown on the club's history and facilities and then Neil VK6NE did the honours and cut the ribbon, declaring the club officially open. A free cool drink and sausage sizzle were provided and much conversation took place for the next few hours. Thanks to one and all for attending.

Neil VK6NE wrote his meanderings on the club email group, commenting on the events of previous weeks and keeping those not otherwise informed what had been going on at the club. He had this to say after the event; apologies Neil for publishing his text!

"Members of the NCRG.

One might start this as if reading a novel. The dawn broke with indications of a beautiful sunny day, with some cloud about and the conditions ideal for the long awaited Official Opening of the Neil Penfold State Amateur Radio Centre.

But nothing could have been truer!

But to me, it was more than just a beautiful day, as I had been given an invitation to make a mark in the history book of amateur radio, namely to cut the Red Ribbon to the entrance to a building and the surroundings, built by members of the Northern Corridor Radio Group.

And what an honour to be given, as anyone who has seen, or will in future see, the culmination of the past four and a half years work by the members, lay in my hands. To be given the opportunity to applaud their initiative, dedication, work and sheer perseverance, sometimes in the



Some of the attendees at the NCRG open day.

face of adversity, was a great honour.

As stated in my address to the 100 plus gathering, 5000 man hours, buildings and all the associated, valued by me at \$150,000, was not attained by handouts, but by blood, sweat and tears.

By cutting the ribbon, the NPSARC became a part of amateur radio history, and it was my privilege to be the person who brought this centre for our great hobby to the attention of amateurs in West Australia, Australia and the World.

Neil VK6NE, member of the Northern Corridor Radio Group Inc."

Thanks Neil, we are honoured to name it after you!

To other matters now, from the VHF Group a report on the SDR project from Luigi VK6YEH.

"With SDR becoming more prevalent, amateurs were starting to face a wide variety of possible construction projects from the simple, such as the SoftRock series, to the complex, such as the TAPR's HPSDR units. With this in mind, the VHF Group decided to sponsor an activity which allowed its members to construct an inexpensive SDR. The units chosen were Tony Parks (KB9YIG) "SoftRock v9.0 Lite+USB Xtall receiver with Si570 and electronically switched BPF kit" and "SoftRock v6.3 RXTX+Xtall transceiver kit with Si570 and RX BPFs."

Members could chose which kits they wished to build and, upon paying a deposit, their kits were added to a bundled shipment, thus saving postage costs. In the end, 14 units were ordered and most have been built. The remainder are awaiting a rainy day, which in this part of the world, has been a long time coming.

Unfortunately, the kits were short of enclosures, connectors and other parts required to ensure a fully operational radio receiver. Rather than simply pass the kit on, Fritz VK6UZ, Merv VK6BMT and Luigi VK6YEH had a separate meeting to list and source the additional components required to give the members a self contained SDR.

On arrival of all the components, Fritz and Merv spent many hours sorting them into individual packets. Fritz went one step further, and soldered all the SMD components

to their respective boards so that members with shaky hands, or poor eyesight, did not have to contend with that aspect of the construction - many thanks Fritz. Merv added his accounting talents to ensure the cost of each unit was kept to a minimum. Luigi produced a scale drawing of all the components and arranged them in the enclosure to ensure all the parts came together properly. From this, a series of drilling templates was produced. Members simply stuck the appropriate template on the box, centre punched and drilled the specified holes. An attempt was made to have the activity night before Christmas; however, due to delivery problems with a part, the units could only be distributed during the November meeting. This gave members a couple of months to build their units, with many of them already completing the exercise by the January 2010 meeting.

At the January meeting, a few members used the evening to continue with assembling their kits. Others, who were yet to commence construction, looked over and asked many questions, such as to which were the best avenues for tackling some of the "hairier" parts of the construction, specifically the winding of the transformers. All in all the activity night was a success with many reports of operating radios now being utilized. It is hoped these units will form the basis for evaluating features and specifications on more advanced SDR radios.

So things are happening at the VHF Group! Why not come along and join

in the activities. I was hoping to have some reports of local group activities in the John Moyle Field Day to bring to you this month but nothing has arrived so far, perhaps next month.

The NCRG has been visited by overseas amateurs a few times lately, two being DS5UCP King and DS5VUP Kim, a husband and wife team who were brought to the club by Mirek VK6DXI while on their travels. They took time out to operate the club station and have some fun. Andrew VK6IA made them all most welcome, showing to all that the club facilities are always available to visiting amateurs should they wish to use them.

Also this month the club was visited by David G3UFO, who has also held the call VK6DJO for many years and has visited the club at three of its past locations. David is an overseas member and was able to use the club station to operate in the Maritime Radio Day contest <http://www.radiomaritimeday.org/>

This is an informal type of contest for ex ships radio officers and ship to shore station operators to exchange reports and their last ship or shore station. David is an ex ships RO and relished the chance to use the club's facilities to have some fun while on a month's holiday to Perth.

Due to the Easter break I am a little late sending this report in so I will close now and again request input from local groups, or this will turn into the NCRG report!



King DS5UCP and Kim DS5VUP, visitors to the NCRG, in the radio shack.

Meet the Voice BBQ

Sponsored by the Sewing Circle Net, *Meet the Voice* took place on 21 March at the Ross Caravan Park over looking the Macquarie River and the beautiful Ross Bridge. Attendance grows every year; 76 people registered this year. Lin VK7AJ won the ATU raffle, thanks to TTS Systems, and Warren VK7FEET won the hand-held.

We welcomed some very special guests: from Switzerland, Hans HB9CNM, Steve aka Dr Dag or VK3DAG and of course there was Dave VK3JKY and Claureen VK3KMB from TTS Systems who are great supporters of the MTV event.

The Sewing Machine award for the most loquacious amateur on the Sewing Circle Net was presented to



Cedric VK7CL accepting the Sewing Machine Award.

Cedric VK7CL. Special recognition awards went to organiser Don VK7AY for his many years of service to the Net and the event and to Justin VK7TW for his many years of service to amateur radio in Tasmania.

The BBQ was fired up and a relaxing afternoon enjoyed by all. Thanks to everyone involved. A short video presentation of the last four years with original harp sound track of the *Meet the Voice* event has been produced and is available on YouTube.com—just search for VK7TW.

Congratulations to Hayden VK7HAY for being awarded the Best Electronics Project (North) and Jarrod VK7RJ for Best Soldering Project (North) as apprentices with the Tasmanian Skills Institute.

Northern Tasmania Amateur Radio Club

NTARC's March meeting was a social BBQ at the beautiful Lilydale Falls and from comments was enjoyed by all. NTARC is renowned in VK7 for its members' collection of caravans and motor-homes all sporting arrays of antennas....HI HI. Tony VK7YBG has re-invigorated interest in the formation of a Northern WICEN group and recently held a BBQ at the Riverside tailrace park to get interested amateurs together. For more info go to: <http://groups.yahoo.com/group/wicennorth>

Cradle Coast Amateur Radio Club (CCARC)

CCARC provided communications support for the Kentish Equine Endurance Riders on 13 March. The

event had 77 riders doing the 80 km ride and about 45 riders doing the 40 km ride. Many thanks to David VK7EX, Steve VK7FXXX, Hamish VK7FHAM, Bob VK7MGW, Ursula VK7FROO, Dick VK7FORF, Keith VK7KW, Mike VK7MH and David VK7DC.

Members are also reminded that there is another 24 hour event coming up at St Helens, starting midnight Friday 21 May, and if you want to be involved contact David VK7DC. The 27 March CCARC meeting saw a demonstration of the Radio Mobile propagation and coverage software application.

Radio and Electronics Association of Southern Tasmania

Firstly congratulations to Rex VK7MO who recently celebrated 50 years of his AOCPL licence. REAST's March presentation was a fascinating talk by Richard VK7RO and his many experiments to optimise antennas for his favourite band (40 m) at the historic Queen's Domain clubrooms. Richard talked about experiments with Beverages, K6STI designs as well as loops including - EWE, Flags or Pennants and K9AY's ideas. Many were modelled with EasyNEC to predict the performance and radiation patterns and then tested in the field. The presentation was recorded and has been added to the ATV library. Thanks Richard.

We have had many visitors to our Wednesday night ATV nights with Canadian amateurs Bob and Judy and Patrick VK2FPJB who is the nephew of Steve VK7OO now residing in VK7. Patrick is being trained up in the operation of our ATV studio, on



The group at the Meet the Voice event.

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2010 WIA Grants scheme

Friday 30 July is the closing date for applications for the WIA Club Grants Scheme for 2010.

Full details of the 2010 rules for the scheme can be obtained from the WIA Web site <http://www.wia.org.au/members/affiliation/about/> together with a template setting out the suggested application headings for an executive summary, identifying how the club seeks to meet the objectives of the scheme and guidance regarding supporting documentation.

WIA President Michael Owen said that the Board was pleased with the results of the 2009 scheme and believed that there was overall support from members for a continuation of the grant scheme. In 2009, there were 17 applications and some 10 projects were given financial support from the scheme. The Board

has decided to vary the rules from those that applied last year:

The Board directs the Grant Committee to recommend applications which focus on projects and activities (to be conducted before 1 April 2011) to attract new amateur radio operators to the hobby, also projects supporting emergency communications and preparedness for emergency communications.

The WIA Board has again this year allocated \$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 a membership including at least 50% WIA members qualify to participate, though the Board has discretion to allow a lesser percentage in special circumstances.

President Michael VK3KI said that the names of the 2010 Grant Committee would be announced shortly. The Committee would recommend to the Board the projects that should be supported and the amount to be allocated to each supported project. "I urge affiliated clubs to participate in this opportunity" Michael said; "however, it is most important that clubs read the rules very carefully". **ar**

VK7news

ya Patrick! Our ATV presentations have had a distinct "Geocaching" theme over the last month with many members being and becoming interested in this hi-tech treasure hunting game and combining it with amateur radio.

I would like to thank Jack Swart VK2TRF for lending the ATV group his DVB-S transmitter for well over 14 months! This transmitter has enabled the group to experiment with digital TV. Thanks a million Jack.

North West Tasmanian Amateur TeleVision Group

Several NWTATVG members assisted with backup communications support for the Rally Tasmania event at the end of February. Thanks to all, especially Bob VK7MGW, Ursula VK7FROO, Dave VK7DC and Lucas VK7FLSB. The SSTV gateway is now under the repeater VK7RTV and is available on simplex 145.625 MHz in the Ulverstone area. For local contact switch FSKID off and switch on FSKID to access the internet gateway.

WICEN Tasmania (South)

Sunday 28 March saw WICEN South providing safety checkpoints for the Southern Tasmania Equine Endurance Riders in the Woodstock area of the Huon Valley. The network consisted of a base and five checkpoints. There were 80 km, 40 km and 20 km courses. This is a great family event with the WICEN crew identified by the tall masts towering above the horse floats!

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Care and Feeding of your Pet Ham

Pet hams are so intelligent they often seem human, but they can be difficult to raise. Only someone with great patience should attempt it. In case you do, here is a guide to the basics.

Living Area: A pet ham needs a private nest area, an entire room where it will not be disturbed. Your pet ham will spend many happy hours alone there with its treasures – boxes, wires, bits of metal, glass, paper, etc. that it will bring home whenever it ventures out. You will want to encourage your pet ham to confine its activity to this room to prevent the entire house from being subjected to noise, clutter and the boring of holes in the walls.

Expenses: Keeping a pet ham is expensive, but, unlike most common pets, a pet ham can be trained to work outside the home for a few hours each day. It may even bring in enough money to offset its expenses.

Feeding: A well-behaved pet ham will eat with the family occasionally, but it will feed more comfortably and securely taking its meals in the nest room. You must be sure your pet ham is well supplied with food and drink during the long periods it spends alone in there, even if it does not beg or whine.

Obedience Training: A pet ham can be trained to perform simple tricks, the easiest and most common being "sit" and "speak". Do not be alarmed if it practices them for hours at a time in the nest room.

Health Problems: The pet ham typically suffers lower back pain and minor throat irritations from too much sitting and speaking, but health maintenance costs tend to be minimal.

Travel: Your ham pet will gladly travel with your family by car or even by air, if allowed to bring along certain familiar items from the nest room. Most pet hams enjoy trips to places where they can meet pet hams from other families.

Breeding: If you plan to breed your pet ham, you should do so as soon as possible after you get it. As a pet ham matures, it becomes increasingly reluctant to engage in activities not associated with its nest room collection.

Sourced from the HAM ATV Mailing list by Justin VK7TW.

VK5RAE Node 6909 repeater upgrade

Peter Horgan VK5BWH

In August 2009 a small group of dedicated hams, Alan VK5AJ, Les VK5KLV, Peter VK5KPR, Mick VK5MIK and Peter VK5BWH along with Bob, Gerry and John, the muscles (sorry, 'support workers') left from Alan's Stirling North QTH to go through the Flinders Ranges to Quorn then out to *Argadells*, the station where Mt Arden is located.

From the homestead to the top of Mt Arden (844 metres) the 4x4 track snakes its way through rocky creeks, very scenic gorges and flat plains with some very steep climbs and descents before you arrive at your destination. The view from the top is magnificent.

There were a number of reasons for this visit. It all started when we were contacted to gauge the support for the installation of an IRLP node in Port Augusta. We discussed this proposal and agreed that we would proceed with this project. It also gave us the opportunity to upgrade the repeater with new cavities, antenna and batteries.

The primary problem with VK5RAE seemed to be voltage drop. As the

site is solar power the problem would arise after a number of days of continuous cloud cover. These occurrences meant either the solar panels or the batteries may have had a problem. A check of the solar panels found that they were OK but some of the wiring connecting the panels needed maintenance be carried out. One extra panel was installed which brought the number to four.

Some battery connecting terminals had corrosion and one six volt solar sun gel cell seemed on the verge of failure so they were replaced with two identical near new six volt cells.

The next job was to recover old antennas and install new antennas on the nine metre Triad tower which meant lowering the centre pole. Quite a simple task, as the centre pole which supports the antenna is hinged at the base and that is where our support workers came into their own.

We installed the new RF Industries Col4, and checked the coax feed and connections - all appeared OK.

After sealing the coax connection and securing coax to centre pole the antenna was raised back into position. Next was to take the recovered RFI antenna and install it on top of the equipment cabinet. This antenna is now in use for the APRS system and a new coax feed had to be brought into the equipment cabinet. Reports received from APRS sysops indicate that the system is working very well.

Inside the equipment housing we installed a new radio and cavities for the APRS system. A swap over set of cavities was also installed as the old ones have been in service for over ten years and need to be retuned, and that was the easiest and simplest solution.

After the final check of all power, coax and transmitters the system was powered up and all appeared to be working fine. We made a few local contacts via the repeater and the reports were very pleasing and it appeared to have a better coverage area. We worked Graham VK5GH on the way back home connecting via IRLP and this was the first time that the system worked without the loss of packets.

We would like to thank Graham VK5GH for all his encouragement and support organizing and transporting various pieces of equipment to Port Augusta and sometimes back to Adelaide. We know that Graham was the front man of a dedicated team working away in the back ground to make this upgrade possible.

Frank VK5KV, who lives in Woomera and travels the Stuart Highway to Port Augusta regularly, says coverage on that trip has improved and is near continuous. He also notes that with a reasonable antenna, VK5RAE is accessible from within Woomera township - about 160 km.

Visit the website at <http://sites.google.com/site/vk5rae/> or connect to Node 6909 for a chat.



Les VK5KLV with beanie, John, one of the helpers, Peter VK5KPR on the ladder, Peter VK5BWH and Alan VK5AJ, in the box, hard at work at the VK5RAE Mt Arden site.

High performance — *in Software Defined Radio and the John Moyle*

High Performance Software Defined Radio (HPSDR)

Two of our members gave us a very interesting talk about High Performance Software Defined Radio (HPSDR). Dean VK5LB and Hans VK5YZ have both built radios to this design and are very keen on them. Dean discussed the construction then Hans gave us a practical demonstration. Both OMs could have filled the whole evening and their enthusiasm was obvious.

The principle of software defined radios is a very active field for experimenters and generates much on line discussion. All round the world people are working to improve or modify the system.

To build a radio like this you do not need a high power computer but you do need to have one you can dedicate to it, including a monitor. The system is made up of a number of modules which you purchase, either already assembled or as a kit to make up your self. Quite a smallish aluminium box can be used to mount it all in so it does not take up a large amount of your shack space.

When you are using the radio you see an enlarged front panel with lots of 'buttons' to push, using the mouse, on your computer screen with a full spectrum display. It is all alive so you can see as a new station comes on air. To hear him you move your cursor onto his 'blip' then you can talk to him or just play with fine tuning, or to see the effect of some of the multitudinous buttons available.

All the usual controls are there plus many more. For each 'button' on the screen you can use the mouse roller to increase or decrease the effect or choose from a drop down menu.

Hans declares that he still has not actually used every 'button'.

Whether other members will be inspired to try software defined radio for themselves or not, everyone found it very interesting to see.

John Moyle

AHARS also participated as usual in the John Moyle Memorial National Field Day at the property near Swan Reach we have used previously. The club is fortunate that when it was sold another club member bought it and wanted it used for the Field Days.

There were up to 13 of us there at one time or another and all the available HF bands were used for almost the entire 24 hours. Thank you to everyone who contacted VK5BAR.

This time, in response to the request from the Contest Manager we are sending our log in electronically so some time was spent by a couple of people feeding in the information as it came to hand.

We had a father, Russell, bring his still-in-primary-school son up for the whole time of the contest and here is a photo of Patrick VK5FMPJ at the rig where he made 20 contacts with Lesley VK5LOL and Jenny VK5FJAY who guided him.

A good weekend with beautiful weather was enjoyed by all. Those of you who were not there missed out. Sorry. **ar**



Patrick VK5FMPJ at the rig where he made 20 contacts, with Lesley VK5LOL and Jenny VK5FJAY who guided him.

Silentkey

Tony Skerrett VK2FMT

Tony Skerrett passed away, aged 63 years of age, on Friday 26 February, 2010.

Tony had been transferred to a Brisbane hospital from his home in Armidale for pain management, and while in hospital he contracted double

pneumonia. With things not looking good he was taken to his brother's residence in Brisbane and with his family present, quietly passed away.

Tony had contracted polio at an early age and had lived the major part of his life on his parent's property at Werris Creek near Tamworth. He was a keen amateur with both satellite and packet stations plus a great HF set up, and attended many Queensland hamfests. When at Werris Creek he used to do the JOTA with groups of scouts and

guides coming to the property over the JOTA weekend. Recently he got about in his electric wheel chair, while at a respite hostel.

Although not on air much these past few years due to his medical problems, Tony still took an interest in the hobby. His funeral service was held at The Armidale School chapel on Wednesday 3 March, 2010.

Submitted by Wayne VK2KWM.

spotlight on **SWLING**

Robin L. Harwood VK7RH

Winter is upon us and propagation has reflected the change of season. I do predict that there will be fewer European stations on the 49 metre broadcasting allocation around our local midday. In years past, signals were easily heard via Antarctica with its distinctive flutter. Sadly there are fewer now utilising this portion of the shortwave spectrum.

That does not mean there will not be signals there. I would not be surprised that some of the remaining, but rapidly disappearing, Latin American domestic broadcasters might be audible.

Radio Sweden will close their external broadcasts via medium and shortwave at the end of October, when the next broadcasting period commences. A web presence will continue. Sweden was one of the pioneers of shortwave broadcasts but their audience over these platforms has significantly declined.

The pesky signals on 7140 from North Korea have gone. The strange thing is that other channels used by the DPRK for external services have also gone silent. Broadcasts in Korean do continue and others have informed me they are hearing some limited foreign language programs from Pyongyang. There is a major clandestine radio war continuing between North and South Korea and

Japan. The North has clandestines on 4120, 4470, 3480 and 6250 variable. The South Koreans are on 6003, 6015, 6518 and 6600. Each side jams the other.

Japan has entered this clandestine war, targeting the North. There are over half a dozen separate programs/stations based in Japan and broadcasting in Japanese, Korean and limited English. The Japanese are demanding the whereabouts of 50 to 60 Japanese nationals kidnapped by North Korea and this is the main focus of the programming. One sender is on 9480 at around 1130.

The future of the former Radio Australia site on the Cox Peninsula in the Northern Territory is unclear. An English based evangelical ministry did not renew their lease and all activity ceased on 31 January.

It seems highly unlikely that the Australian Government will resume operations from there and the site will probably return to its native state very quickly. What will happen to the remaining senders. Will they be packed up and moved elsewhere or sold? Will the curtain arrays be dismantled or left to rot in the humid tropical air? Some equipment, I believe, has been donated by CVC to HCJB Australia at Kununurra.

All India Radio is coming here very easily on the frequency of 15770 with

plenty of Bollywood music. I believe it is aimed for Fiji and Australia. India and China are heavily involved in seeing the DRM+, the HF digital platform, take off. Other international and domestic organisations do not seem too enthusiastic over this mode. Mass production of receivers has not eventuated and there simply is not the audience its proponents were hoping to realise. I understand that New Zealand does use DRM on HF but it is basically a feeder for South Pacific broadcasters.

DRM may be a white elephant.

I noted a signal on 6860 from 2000 to 2200 hours UTC with horrible modulation. It was very difficult to identify, it sounded Arabic. The female announcer was unintelligible, a male announcer was much stronger. It sounded as if the program was recorded in stereo and only one channel was being played. Music was very loud and on the hour identification was obtained. A news broadcast was preceded by a march that is played before the news on Radio Cairo. Certainly an odd channel on which to broadcast to Australasia. You would think they would really care about their modulation and audio but others tell me it is par for the course for Cairo. Is anybody listening?

73 for now de VK7RH.

ar



**Saturday July 10
Sunday July 11**



Last call for papers

Amateurs (and other contributors) are invited to submit titles and outlines for topics to be presented at GippsTech2010.

Presentation slots are (5 – 10 minutes) through to one hour. You will need to justify any longer!!

Potential presenters are welcome to contact the Chair of the Organising Committee, Peter VK3PF (vk3pf@wia.org.au), direct for further information or to suggest a topic. **ar**

This event has a well-recognised reputation as the premier technical conference in VK, with its focus primarily on techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts.

A *Partner's Tour* will be conducted, together with an informal social gathering for dinner on Friday and a Conference Dinner on Saturday.

Anyone who presented at GippsTech2009 and has not yet forwarded their material for the *Proceedings* volume will receive a reminder from VK3PF very soon!

Further details can be found at the Eastern Zone Amateur Radio Club web site at

<http://www.vk3bez.org/>

VHF/UHF An Expanding World

David Smith VK3HZ

vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

There has been some good tropo propagation in the south, lasting for several days due to the slow moving high-pressure cell.

Bob VK3ZRT in Gisborne reports:

A duct opened VK3 (just west of Melbourne) to VK5 around 5.30 am AEDST on both the 22/3 and 23/3 and stayed open until early afternoon.

On the 22nd, a strong duct also VK5 to Sydney and Canberra - a rarer event apparently.

On the 23rd, a duct very strong VK3 to VK5 and to Leigh VK2KRR. Leigh is still S9+10 at 0100 Z. The Adelaide beacon is there but weak at 0100 Z.

Typical signals S9+40 - 2, 70 and 23 all good.

On 23rd, mid-morning, the Albany and Esperance beacons heard, but no one home.

FM repeaters in Adelaide and Canberra also in use for three-way DX, as well as mobiles VK5 and VK1.

Ian VK3AXH in Ballarat also enjoyed the conditions on the 23rd:

The VK5VF 2 m and 70 cm beacons were quite strong at my QTH being S9 and S7 respectively, which is quite unusual.

My initial contact into Adelaide on 2 m was with VK5BC on 144.1 SSB at 5x8. This was quickly followed with VK5AKK at 5x9. We then went to 70 cm where both stations were worked at 5x3/4 and 5x7. Phil VK5AKK suggested we try 1296 MHz which resulted in my first QSOs on that band into Adelaide at 5x4 followed by a contact with VK5PJ at 5x5. Needless to say there was a level of excitement to have contacts on this band having tried for many years without success. This was followed with contacts to VK3LY at Nhill on 2 m, 70 cm and our first 23 cm QSO.

Other stations worked on 2 m were VK5MWH 5x5, VK5BJE 5x9 VK5NZ 5x5 and perhaps the most interesting was VK5KAA using an FT-817 with 5 watts to a vertical antenna at 5x1.

The conditions seemed to be mainly inland and extended from Adelaide to Eastern Victoria and up into NSW where VK2KRR was quite active. VK3DUT in eastern Victoria was heard by VK5BC but did not quite complete. I was able to work VK3DUT at 5x4 which has not been done for some years.

I also managed to work VK2KRR on 2 m, 70 cm and 23 cm along with lots of other stations. The Esperance 2 m beacon was also being heard over a wide area but unfortunately no one at the VK6 end.

2.4 GHz impromptu Field Day

Mike VK3KH stirred up some microwave activity on Easter Monday. A group email and a posting to the VK Logger resulted in seven people eventually appearing on air. Mike reports:

The weather was fine and the view spectacular from the side of Arthur's Seat. I arrived early and set up 2 metres for liaison and my 2.4 GHz transverter and gridpack antenna.

Things started slowly with 2 metre contacts only for the first 45 mins. I had checked the VK3XPD beacon on 2403.530 MHz, which was 5/9, so I knew my receiver was working, but I was not having much joy.

Then Ross VK3MY in Boronia called me on 2403.150 and we worked 5/7 both ways.

Over the next 90 minutes I worked:

- Colin VK5DK (5/1 both ways) at The Bluff near Mt Gambier;
- Alan VK3XPD (5/9 both ways) in Camberwell;
- Rob VK3MQ (5/9 both ways) on Mt Dandenong;
- Tim VK3JTM (5/2 and 5/1) on Corn Hill near Ararat; and
- Barry VK3BJM (4/1 and 5/1) on Mt Franklin.



Tim VK3JTM on Corn Hill near Ararat.



Colin VK5DK and company at The Bluff near Mt Gambier.

All stations were worked on 2 metres also, with VK3TPR and VK5LA/p in the Grampians both calling in on 2 metres.

Barry VK3BJM writes:

My son and I left home perhaps a little earlier than the others, and we were up on Mount Franklin, near Daylesford, and ready to go by about 2140 Z (0740 AEST).

The flora on Mount Franklin has grown rather a lot since I was last up

there. There was a spot halfway up the crater rim road that was in the clear a couple of years ago - but it is not now! We continued up to the fire tower, at which point bits of horizon could be seen through the upper branches of the pinus and eucalyptus.

Signals on the liaison frequency (144.150 MHz) were all very loud, but not quite so on 2403 MHz. I could not hear the VK3XPD beacon, and the first attempt with Michael VK3KH was unsuccessful. Peter VK5PJ popped up

on 144.15, and we exchanged 41 and 51 reports; my 2 m set-up was the halo and 100 W or so, incidentally. About then, Tim VK3JTM and Alan VK3XPD joined us on the liaison frequency; Tim and I then went to 2403.1, whilst Michael and Alan shot off to 2403.15.

Tim and I soon had a contact completed, with signals varying between 52 and 55, with quite a lot of flutter present.

VK5LA/p3 (at the Baroka Lookout in the Grampians) popped up on 144.15, and after a chat on 144.13 I ran my keyer to his 2.4 GHz receiver - sadly, nothing heard; but Andy only had a modified PayTV feed, sans dish, so we were not worried by the lack of a signal.

I then tried with Colin and the VK5DK crew - they were not terribly loud on 2 m, and nothing was heard on 2.4.

I pointed the dish back round to Melbourne, and after a few attempts at listening for keyers, Michael and I completed successfully with 41/51 reports. I heard Alan a couple of times, but did not complete - again, fast QSB was present, but with signals low to start with, readable stuff was in and out of the noise floor. I believe Rob VK3MQ heard me in and out of the noise as well, from his site on Mt Dandenong. Rob ran our path through Radio Mobile, which suggests it was not the easiest at 2.4 GHz!

All in all, a good time was had - this despite the rock thrown up by the cattle truck I was behind as we neared home, which smashed my windscreen! AAMI, pick up the phone!

VK3NX EME Activities

Charlie VK3NX has been busy working the world on the microwave bands via EME during the recent DUBUS EME contest in March. He writes:

It was great to have both moon-passes on the first weekend for the DUBUS contest. Conditions on the 20th were poor for some reason. My echoes were OK but everyone seemed a little down than usual. My moon noise was the same so I figured my receiver was OK. On the 21st, conditions were excellent. Signals



Cameron - Barry VK3BJM's son - on Mt Franklin.

Continued on page 50



WIA Centenary QRP Contest May QRP Contest 2010

Sponsored by the VK QRP Club, the following contest is designed to encourage interest in the use of low-level power to make contacts during the month of May 2010.

All licensed Amateurs are eligible to participate and are encouraged to do so.

The only limitation is that output power must be kept within QRP bounds of five watts for CW contacts and ten watts for Phone.

Object is to work as many stations as possible during the month of May 2010, operating within a three-hour time slot each evening, then to select your best 20 days of the month as your entry to the contest.

Categories: Open and Foundation Licensees.

Bands: 80 and 40 metres

Modes: CW, AM, SSB

Hours of Operation: 1000 – 1300 UTC daily. (During the last hour, E stations are asked to listen particularly for C and W.)

Exchange RS(T) and Serial Number starting at 001 and incrementing by one for each contact.

Scoring: To make scoring as uniform as possible, we shall use the natural groupings of States as follows --- Eastern E (VKs 4,3,2,7); Central C (VKs 8,5); Western W (VK6), External (VKs 9,0); DX (any call area outside VK).

Contacts within each group score one point per QSO;

Contacts between E and C score two points per QSO;

Contacts between E and W score five points per QSO;

Contacts between C and W score two points per QSO;

Contacts from all mainland areas to External score 10 points per QSO.

Contacts from all VK areas to DX score 20 points per QSO.

Logs should show the name, postal address and callsign of the entrant; callsign of station contacted; exchange; best 20 days of logs as selected by entrant.

Send logs to VK3JS, 121 Railway Parade, Seaford, 3198; or by email to vk3js@zoho.com by 2010, Friday 11 June. (Email is preferred.) (NB Do not forget to include your postal address, as you cannot know if you may be a winner!) Certificates will be available to the highest scorers in each State in each Category and Mode for best 20 days.

ar



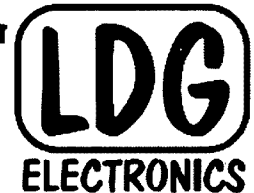
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heard were very loud. At my end I had the same weather for both days with almost clear blue skies so I cannot see why there was such a difference. My echoes seemed much louder on the 21st and I saw my highest moon noise ever on 3.4 GHz - 0.58 dB.

Running a "lonely outpost" on 3.4 GHz from VK, many people's windows to VK are out of the "peak activity times" by several hours. Thankfully, many took the time to come on and work me during my windows. Unfortunately I did not get to operate much into the North America window because of family commitments but on the 22nd, out of the contest period, I was able to be around for my moonrise and work a few stations in NA with excellent conditions as well.

Here is my report of stations worked:

20th - OK1KIR, OK1CA, OH2DG, OZ6OL, G3LTF

21st - DL4MEA, PA0BAT

22nd (out of contest) - WD5AGO, K5GW (CW and SSB), WW2R

Unfortunately I missed (not heard or not complete) OK1DFC, DL1YMK, LX1DB, HB9JAW and VE6TA.

Of particular interest, while trying to pull out a call through the QSB, I sent QRZ several times and was having a lot of difficulty when I finally heard: DDDDD LLLLL 4444 MMMM EEEE AAAA ... This technique has been spoken about before and I thought I would just comment that Gunter's technique of responding in this manner helped immensely and I got his call immediately. I know that this may actually be confusing with some call signs but if each character is repeated enough it becomes self-evident. I am sure that those with callsigns that may be an issue with this method already know who they are and would refrain, but I doubt that there would be many. Gunter and I completed very quickly after this.

VK3UM Program Updates

Doug VK3UM has been at work again, updating his excellent set of programs.

The VK3UM EME Calculator Version 7.02 has been further enhanced with a number of changes. It now also includes a data file for the Arecibo facility for all to wonder - very appropriate given the recent very loud EME signals from there!

The VK3UM EMR Calculator Version 6.44 has had some minor bug fixes.

Finally the VK3UM Planner 2009 has also been updated.

All software is available from:

<http://www.sm2cew.com/> or <http://www.ve1alq.com/downloads/software/vk3um.htm>

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

ar

Wireless or radio

Jim Linton VK3PC

When it was a mere scientific oddity, following on from the demonstration of Hertzian Waves by the German physicist Heinrich Hertz, the main means of rapid communication was the telegraph. So naturally this new wire-less communications medium also used Morse code in what was called wireless telegraphy.

The British are attributed with shortening it simply to 'wireless' which continues in common use today, even more so with the wireless technology in many industrial and consumer product applications.

In this the centenary of organised amateur radio in Australia it is appropriate to reflect on the name Wireless Institute of Australia. It clearly stems from our heritage. In the 1980s there were however some WIA members, including a few in administrative roles, who began to consider whether the image of the Institute was being harmed by the retention of the word 'wireless'.

Several off the top of the head alternative names were suggested,

all now forgotten by the passage of time but even the word 'institute' was being questioned.

So where did the word 'radio' come from?

French inventor and physicist Édouard Branly (http://www.bing.com/reference/semhtml/%C3%89douard_Branly) coined the word radioconductor in 1897.

It was based on the verb radiate or in Latin 'radius' - which means spoke of a wheel, beam or ray of light. He invented the Branly coherer, a widely used detector of wireless signals until replaced by the vacuum tube or valve.

The word 'radio' appeared in the proceedings of the Convention Radiotelegraphique or International Wireless Convention, Berlin, in 1906.

Soon after, in an article by valve inventor Lee De Forest, the US Navy was an early adopter of it and it was commonly used when the first commercial broadcasts began in that country.

In addition, 'radio' had entered a number of Asian and European languages while British Empire countries more often, at least initially, retained the word wireless.

ar

Silentkey

John Harris VK5ASN

Dear Sir,

It is with regret that I have to advise you of the death of long time radio amateur Mr. John Harris VK5ASN.

John had been ill for some time, but always put on a brave face.

His original call sign was VK5FD, but he had to drop out for a number of years, and came back later under the VK5ASN call sign.

John and I worked together on a project last year, and although he was unwell, he worked well and we got on well together.

John died in the Mount Gambier Hospital on 17 March in his 80s. He is survived by his wife Coral and two daughters Marilyn and Julie.

Yours faithfully,

John A Sheard VK5JA.

Digital DX Modes

Rex Moncur VK7MO

2 Metres FSK441

Welcome to Darrell VK2BLS and Mark VK2AMS who have been joining in the weekend Activity Sessions. Also to Col VK4CC who is setting up to use WSJT.

1296 EME JT65c

There is an active group of three VK amateurs on 1296 EME using JT65c most times when the moon is up: Dave VK2JDS, Phil VK4CDI and Rex VK7MO. Skeds can be arranged on the HB9Q logger at <http://hb9q.ch/joomla/index.php> 50 watts and a two to three metre dish is sufficient to work similar stations. Ian VK3AXH is close to being operational so we should soon have a strong VK presence.

Comparison of ROS and Weak Signal Communicator (WSC) with WSJT modes

With the advent of ROS and WSC* it is useful to explore their performance in relation to the WSJT modes of JT65a and WSPR. Figure 1 below compares the various modes in a steady signal test using a signal generator with reference to the noise in the WSJT reference bandwidth of 2.5 kHz.

* WSC is an experimental mode and it is not intended for public release at this stage.

It is seen that both ROS and WSPR have a 3 to 4 dB advantage over JT65a's standard or Kotter-Vardy decoder which is consistent with the fact that they take around twice as long to transmit a typical message of two callsigns and a report. The JT65a Deep Search decoder gains 4 to 5 dB over the Kotter-Vardy decoder by limiting decoding to a restricted set of callsigns in the same way that prior knowledge of a callsign using traditional modes produces an advantage.

WSC was written by David VK3HZ for optical communications. The 3.8 mHz version uses 3.8 mHz bins and was used by Rex VK7MO and Joe VK7JG to cross Bass Strait using cloudbounce in 474 THz. This version gains over 20 dB compared to WSJT's

Kotter-Vardy decoder but takes some 20 minutes to send two callsigns. While it has not been tested, it is likely that a 100 mHz version could be useful for VHF tropo-scatter and would allow two callsigns to be transferred in less than a minute and gain around 4 dB over WSJT's Deep Search Decoder. It is also possible to use WSC in a Deep Search mode to gain a further 3 to 4 dB. One of the reasons for WSC's performance is that it does not, like all other modes, spend around half the time sending information to synchronise with the time and frequency of the transmitter but instead relies on precise time and frequency deriving from GPS. The use of 100 mHz bins at 144 MHz requires a stability of better than one part in 10 to the 10th which would

require high quality double oven GPS disciplined oscillators at both ends. It also requires the energy due to propagation to be constrained to within 100 mHz which is generally the case for 144 MHz troposcatter. The mode is unlikely to be useful on EME due to libration spreading which can be several hundred mHz on two metres and the need to accurately correct for Doppler shift.

Another way of comparing the various modes is to take account of the actual information content and the time taken to transfer this information and compare this to the Shannon limit. Figure 2 shows the Shannon limit for each mode and how close to this limit each mode gets when achieving 90% error free decoding.

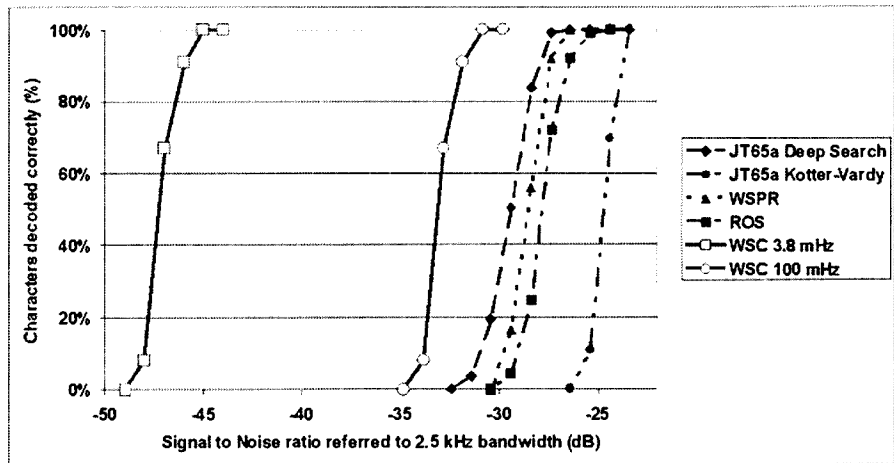


Figure 1: Performance of Various Weak Signal modes.

Mode	Bin-width (Hz)	Time to send Message (seconds)	Information content bits	Shannon Limit (dB)	Sensitivity at 90% correct decoding (dB)	Close to Shannon Limit (dB)
JT65a Kotter-Vardy	2.9	48	72	-33.8	-24.2	9.6
JT65b Deep Search	2.9	48	14	-40.9	-28.3	12.6
ROS	1	90*	94	-35.4	-27.0	8.4
WSPR	1.5	110	50	-39.0	-27.7	11.3
WSC 3.8 mHz	0.0038	1200	56	-48.9	-46.4	2.5
WSC 100 mHz	0.1	48	56	-34.9	-32.4	2.5

Figure 2: Shows how close the various modes get to the Shannon limit. * Assumes that no stop frame is required.

DXnews & views

John Bazley VK4OQ

E-Mail: john.bazley@bigpond.com

The upcoming 3C0C Annobon Island expedition that was scheduled for late April or early May has been postponed. Recently the group was informed by the Government of Equatorial Guinea that runway repairs on Annobon will mean there will be no flights in or out for maybe two or three months. Consequently, the operation is being delayed pending completion of this work. The planners say flying is the only practical way to go. The team does not consider reaching the island by ship, because it is "difficult, slow and without regularity". So it is just a case of waiting for some more definite information. To keep track of what is happening, you can get up to date news from www.3c0c-annobon.com

The dates for the E4X Palestine DXpedition have now been announced, 28 May to 6 June. The team of EA5RM, EA5FX, EA7KW, F6ENC, IN3ZNR, EA2RY, EA7AJR, F5CWU, F9IE and UT7CR will be active on all bands from 6 metres to 160 metres with three stations always active. QSLs will be handled by EA5RM.

Chris VK3FY has obtained permission from the Philippines to operate from Spratly for three-weeks in January, 2011. They will be on Pagasa Island AS-051 with the call DX0DX. Chris wants to add some good CW and phone operators to join him. If you are interested please contact him at vk3fy@iprimus.com.au

After 16 months of planning, K3LP and YT1AD are cancelling their plans for an expedition to T31 Central Kiribati. They had planned on having six stations on HF and two on satellites and VHF/UHF with a goal of 100,000 QSOs, using their 2006 N8S Swains Island operation as a model. They decided to cancel when they saw the announcement of the upcoming T31X operation planned for this June, four months earlier than their planned trip. David and Hrane will be looking for a different location for a future trip. Hrane says the cancellation is causing them to forfeit their \$40,000 cash deposit for the boat

to Canton Island.

Details of the T31X, taken from their Web site is:

Ukrainian DXpeditioners Team (UDXT) is very glad to present our new project – PACIFIC ODYSSEY 2010.

UDXT members, namely: Sergey UX0HX, Team Leader, Oleg RK3FA, Alex UT5UY, Yuriy UT1HF, Oleg US7UX, Leo UR3HR and Yuriy Grushevskiy SWL will be active on all bands, all modes as:

5W0OX Samoa (IOTA OC – 097) 18 May to 19 May 2010;

T31X Central Kiribati (IOTA OC – 043) 22 May to 1 June 2010;

ZK3X Tokelau (IOTA OC – 048) 2nd June to 6th June 2010;

The main mission of this DXpedition is activating T31 Central Kiribati, Kanton Island, Phoenix Islands Group. This DXCC entity is ranked #7 in EU and #19 in World's Most Wanted List. The next goal is activating ZK3 Tokelau Islands, which is ranked #29 in EU and #35 in World's Most Wanted List. For more information please visit DXpedition WEB site: <http://www.uz1hz.com/pacificodyssey.html>

If you remember, last year there was quite a lot of talk about possible new entities in the Dutch Antilles in 2010. Well, W8GEX and his co-leader, AA4NN have announced that they intend operating from St. Eustatius this coming Autumn in anticipation of the dissolution of the Netherland's Antilles. Their plans call for a 10-day operation with a international crew of at least four stations operating continuously while they are there.

A permanent beacon has been active from the Russian Antarctic station Bellinghausen on King George Island, South Shetlands, since 8 March with the callsign R1ANF. The beacon consists of an IC-706, AT-180 antenna tuner, a switching power supply, a PROCOM HF-5000 vertical antenna and a GPS synchronized controller. The beacon is working on 14101.0 kHz and transmits the following

message every full minute: "VVV R1ANF ANTBEAP R1ANF AR" (carrier signal reduced in a similar manner to the NCDXF beacons, starting with 100 watts).

Another beacon is ready to be installed at Novolazarevskaya Station and will be active on the same frequency using the callsign R1AND. They are part of the Antarctic Beacon Project (ANTBEAP) to explore wave propagation in the Antarctic region. Reports would be appreciated and should be sent to Dominik DL5EBE.

Larry VQ9LA plans to depart the Chagos Islands in December of this year. Effective 15 April 2010, his new QSL route is via N0QM, Larry Arneson, 705 Rhodes Ave, Grandview, MO 64030, USA. QSL cards sent to his FPO Box will get through to Larry until the end of this year. Larry is hoping to get all the mail going in the right direction before he heads home.

Nicola I0SNY reports he will be active as BY1DX/I0SNY from Beijing between 25 April and 16 May. He will focus on 40 and 17 metres. QSL via I0SNY (direct only).

Reid N0RC says he will be active in spare time as either OX3RC or OX3/N0RC from Thule, Greenland (NA-018) again from May 1 to 27. He is going to Thule with NASA's Operation Ice Bridge. QSL via home call.

Neil V73NS (WD8CRT) will be going QRT from Kwajalein (OC-028), Marshall Islands in late March. His next work assignment will take him to Afghanistan, starting around late April or early May. Note that the new QSL route for V73NS is now via W3HNK.

Laci HA0NAR reports an online log search is now available for his African DXpeditions (6W/HA0NAR, 6W/HA0NAR/P (AF-078) and J5NAR) at: http://cqafrika.net/en/radio/online_log/index.html He is waiting for his QSL cards to be printed. Laci expects QSL cards via the bureau or direct. His direct policy is an SAE (self addressed envelope) a new IRC or at least two US dollars to cover postage.

All others will go via the bureau.

ZS8M on Marion Island is set for the end of April. Operator Pierre ZS1HF says "Sorry, no CW." He will do SSB and digital modes. Pierre is being sent to the island for a year to work as a radio and (other) electronics technician. He is currently busy with "technical and team training", including maintenance of weather monitoring gear, the hydrogen electricity generator, fire fighting, cooking and first aid. His ship from Cape Town bound for Marion departed on April 8. It is about a six-day voyage. Unloading and scientific work is expected to take four weeks. His operating should then commence.

Daniel DL5YWM will be in Peru between 20 March and 15 May. He plans to operate in his free time as OA4/DL5YWM from Lima; side trips to different call areas are possible, as

well a "last minute" operation from an island.

Phil F4EGS is heading back to Chad for a two month work assignment beginning April 10. At the moment he does not know if he will use his old TT8BK, as he did the last four times he was there.

Look for him on 7 through 28 MHz on SSB and CW and some RTTY in his spare time. He will be running an FT-850 into an R7 vertical. QSL via F4EGS either direct (QRZ.Com) or via the REF QSL bureau.

Good luck in the pile-ups until next month.

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/trial.htm



Rob GM3YTS operating during the recent S79GM trip.

2010 Ross Hull Memorial VHF-UHF Contest Results

Contest manager: John Martin VK3KM

Activity in this year's contest was again far less than hoped for. After the 2009 test run of a scoring system based on Maidenhead locators, the comments received indicated that the scoring system should revert to the traditional distance-based scoring, so as to allow the scores to fully reflect achievement in making DX contacts. The change was made for this year's contest, but unfortunately it did not lead to increased activity.

The other change made this year was to relax the scoring restrictions on 6 metres, by doubling the band

multiplier and removing the scoring cap on sporadic E contacts. This brought about some increase in 6 metre activity, but it did not flow through and stimulate more activity on the higher bands. The aim of the scoring system has been to keep the scoring potential of all bands approximately equal, but at present they are quite unequal. The 6 metre scoring will be reviewed, especially as the solar cycle develops, but the most desirable fix for the scoring inequality would be an upsurge of contest activity on 2 metres and higher bands.

How to achieve this is still not clear. It is not difficult – one whole month in which to make DX contacts, but the scoring is based on up to seven contest days. Many entrants have achieved excellent scores while operating for less than seven days.

Congratulations to this year's winners, Ted Thrift VK2ARA and Rex Moncur VK7MO. Also noteworthy is the top scoring entrant on 2 metres, Stephen Hayman ZL1TPH, and Gavin Brain VK3HY for achieving the top scores on 432 and 1296 MHz.

Call	Name	50 MHz	144 MHz	432 MHz	1296 MHz	TOTAL
Section A: All Bands						
VK2ARA	Ted Thrift	2638	108	85	-	2831
VK3HY	Gavin Brain	646	252	310	256	1258
VK2AH	Brian Farrar	796	126	65	-	987
ZL1TPH	Stephen Hayman	-	300	-	208	508
VK2TG	Robert Demkiw	254	147	85	-	486
VK6ADI	Barrie Burns	289	129	-	-	418
VK5FMPJ	Patrick Morgan	6	-	-	6	
Section B: Digital modes, All Bands						
VK7MO	Rex Moncur	-	530	-	-	530
VK5APN	Wayne Pearson	-	525	-	-	525
VK3HY	Gavin Brain	-	432	-	-	432
VK1WJ	Waldis Jirgens	-	165	-	-	165

AMSAT

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Using SatPC32 under Linux

This month I present notes of experimenting with using the popular Windows satellite tracking program SatPC32 under the Linux operating system. The end result is not a perfect implementation but is quite usable. Also the AMSAT-VK information section has been updated with the new repeaters in VK7.

SatPC32 is written by Erich Eichmann DK1TB who has kindly donated it to AMSAT. All proceeds from the sale of SatPC32 support AMSAT. Briefly, SatPC32 can graphically display up to 12 satellites simultaneously, adjust modes and frequencies for most popular radios in use with satellites and work with many antenna controllers.

This article concentrates on installing SatPC32 under Linux and an example implementation that I have currently running. I will begin with a description of the example hardware and software. The computer is a Toshiba Satellite (how apt) M100 laptop with a 1.7 GHz processor and 2 GB of RAM. It does not have any built-in serial or printer ports so it uses USB adaptors to communicate with the radio(s) and antenna controller. The USB to RS-232 serial adaptors are Prolific PL2303 types. I am not advocating Prolific adaptors over other brands, they are just what I have at hand. Linux supports many brands of USB hardware, often using a generic driver. The current version of SatPC32 is 12.8a. The full version of SatPC32 can be downloaded from Erich's website [1]. The unregistered version is fully functional except that you have to enter your latitude and longitude each time you use it. I purchased a registration from AMSAT-NA and they sent a CD. The Linux distribution used for this example is Debian version 5.0 and uses the default Gnome window manager. Debian can be found at www.debian.org and is the basis of Ubuntu and

various other Linux distributions. The information given in this article should be applicable to many other Linux and Un*x operating systems.

Windows programs cannot directly run under Linux. To fix this problem an intermediary program is used called WINE [2]. WINE liaises between Windows programs and the Linux operating system. It is an implementation of the Windows Application Programming Interface (API). It can be configured as any 16 or 32 bit version of Windows. Many Windows programs run fluently under WINE, some do not run at all and others run with varying degrees of success. SatPC32 falls into the latter category but the problems are minor. WINE is open source and is often included in popular Linux distributions. The version used in this example defaults to mimicking Windows XP, but this can be altered using the WINE configuration tool.

Installation

For this example, the user's name is David and his home directory is at /home/David. WINE is installed to /home/David/.wine. WINE sets up two directories; /dosdevices contains links to hardware devices and /drive_c is the equivalent of Window's C:\ directory. Linux uses the '/' to separate directories instead of '\'.

Once you have the SatPC32 files, either from the CD or unzipped from the download, go to the directory they are in and type at the prompt wine setup.exe. WINE will put the program files in /home/David/.wine/drive_c/Program Files/SatPC32 and the data files depending on the WINE settings for the version of Windows in use. SatPC32 version 12.7 and above place the data files in different locations according to the version of Windows used. For Windows Vista the data files are in .wine/drive_c/Program Data. For Windows98/ME,

the data files are in .wine/drive_c/My Documents. For Windows XP the data files are in .wine/drive_c/windows/profiles/David/Application Data/SatPC32. These are not necessarily the same under all versions of WINE and Linux, so some searching may be needed.

If WINE is setup properly it will put an icon on the desktop and a set of menu entries. For the Gnome window manager the menu entries will be at Applications->Wine->Programs->SatPC32.

When running SatPC32 for the first time you may see on the graphic display that some of the numbers are in the wrong places. One cause of this is that SatPC32 cannot find the fonts it needs. The original setup of WINE on my laptop has a selection of fonts in the /usr/share/wine/fonts directory but was empty in the .wine/drive_c/windows/Fonts directory. A simple method is to copy the fonts from a PC running Windows (c:\WINDOWS\Fonts) into both fonts directories.

This improved the graphic display, especially the bottom lines with the current satellite's position readout. Refer to Figure 1. The main graphical display shows AO-07 getting closer to my QTH. The countdown window to the right shows the times and maximum elevation for the twelve satellites I have selected. The SatEl window upper right should show the full server window for the SatEl rotator driver – more on this later.

Setting up COM ports for WINE.

On a 'standard' PC the serial ports are designated COM1 and COM2 under Windows. Linux treats everything as files and I/O ports are no exception. The port equivalents under Linux are COM1 is /dev/ttyS0, COM2 is /dev/ttyS1. WINE does not configure these automatically so you need to

add some symbolic links. From the console go to the `./wine/dosdevices` directory (from the command prompt type `cd /home/David/wine/dosdevices`). The syntax for adding symbolic links is `ln -s /dev/<device> comX` where `<device>` is the Linux port filename and `comX` is the Windows comport you want to link it to (X is a value between 1 and 15). For example to put `/dev/ttyS0` to `COM1`, type at the prompt `ln -s /dev/ttyS0 com1`. To use USB serial adaptors the filenames are `/dev/ttyUSBx` where x is the number of the adaptor (starting at zero). Other versions of Un*x may use different filenames. One quirk of this is that you can setup any hardware port to any COM value. For the example laptop with two USB-RS-232 adaptors the following links were setup in the `./wine/dosdevices` directory:

```
ln -s /dev/ttyUSB0 com1
```

```
ln -s /dev/ttyUSB1 com2
```

Printer ports are setup in a similar way. LPT1 under Linux is usually designated `/dev/lp0` or `/dev/usb/lp0` for USB adaptors. However I have not had any success in getting SatPC32 to work successfully with

either a motherboard printer port or a USB to printer adaptor. If you are using a printer port interface such as the FODtrack, you may be out of luck. Rotator controllers using serial ports are fine.

The serial ports can be tested before connecting the radio(s) or antenna controllers. I used a NULL modem cable with just the TxD, RxD and GND pins connected [2]. One

end is connected to the USB serial adaptor, the other to another PC (or the same PC and another serial port) running a serial terminal program (e.g. Hyperterm for Windows or GTKTerm for Linux). To test the radio setup I selected a Kenwood TS-790 since it has a fixed baud rate of 4800 and the commands sent to it are readable ASCII. Pressing the 'C-' button to start the CAT (Computer Aided Transceiver) control

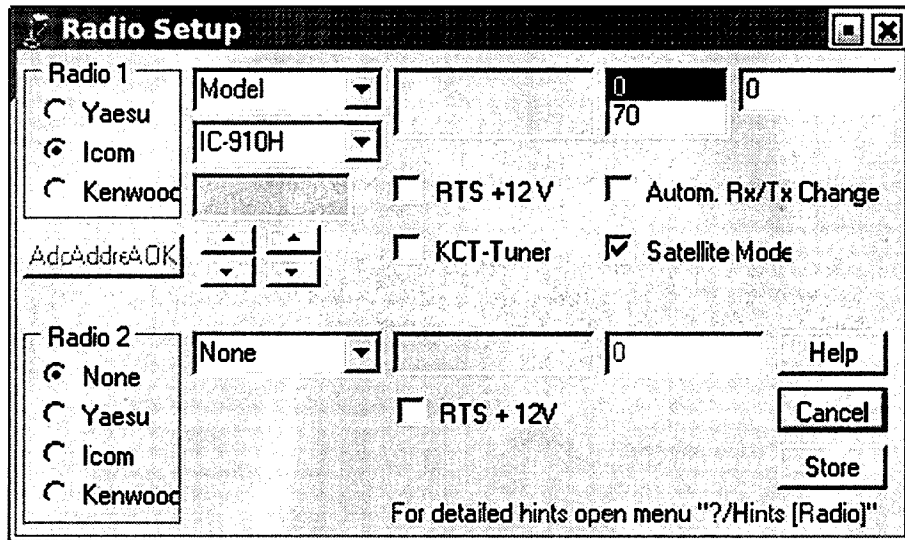


Figure 2: Radio Setup window under Linux.



AMSAT-VK

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About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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, 91.5 Hz CTCSS tone access

In South Australia

VK5TRM, Loxton on 147.125 MHz

VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

should send some configuration commands to your terminal. If you want to try a Yaesu radio then make sure your serial terminal software can display hexadecimal characters or it looks a mess. Setting up the radios is covered in the excellent documentation supplied with SatPC32. The only problem encountered in this example was the text missing for the comport and CAT delay. This can be seen by scrolling

your mouse over the blank space (see Figure 2 previous page).

Setting up rotators

The ARS, Hallorotor, WinrotorXP, Winrotor32, FODtrack, RifPC and IF100 interfaces all use the printer port and will not be described here. The Egis, SABREtrack, SatEl, WOLMD, Prosisel and Yaesu GS-232 (and clones using the SDX driver)

rotator controllers use a serial interface and have been tested with the Null modem method described above. SatPC32 uses separate driver programs for the rotators. Unfortunately they do not appear on the screen as they would under Windows, see Figure 1.

Figure 3 shows a typical Windows rotator server and its configuration window underneath. Since you cannot get to the Setup button to start the configuration window it presents a bit of a problem. The method I have used is to manually edit the parameter file for the rotator in use. These can be found in the data directory. Using the SatEl rotator as an example, the files are found in the /Application Data/SatPC32/SatEl directory. SatElParam.SQF has the parameters. The first number is the serial port used for the rotator. The second number is the baud rate. RotServPos.SQF just holds the X/Y position of the window and is not important here. The other rotator serial port parameter files are similar but may have extra parameters.

Other programs in the suite
SatPC32 has several other programs

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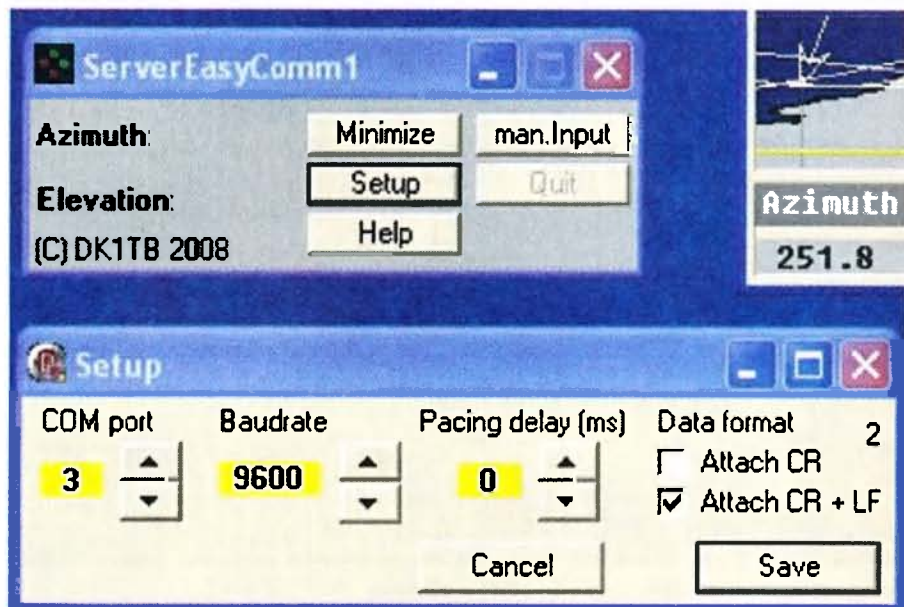


Figure 3: Easycomm rotator server window under Windows XP.

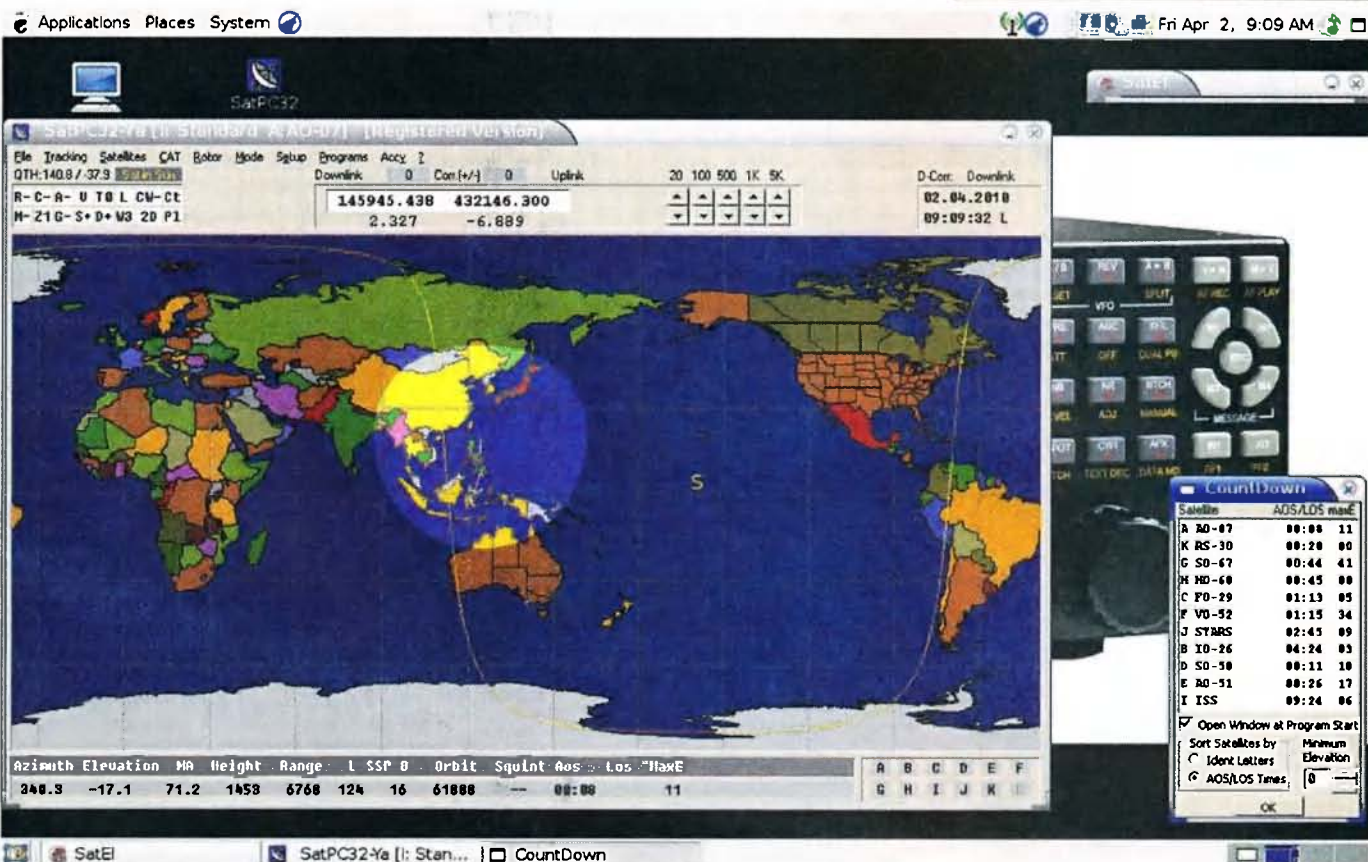


Figure 1: SatPC32 on Gnome desktop.



AMSAT-UK

one of the education sessions and FUNcube was also featured in a presentation on the UK National Cubesat project.

During the five days over 1000 people attended the event and the concept behind FUNcube was well received.

There will be more demonstrations of FUNcube at the AMSAT-UK International Space Colloquium to be held in Guildford from July 31 to August 1.

AMSAT-UK publishes a colour A4 newsletter, OSCAR News, which is full of Amateur Satellite information. Join online at

https://secure.amsat.org.uk/subs_form/

FUNcube: <http://www.FUNcube.org.uk/>

AMSAT-UK: <http://www.uk.amsat.org/>
Ustream Server: <http://www.ustream.tv/channel/uksc-2010>

FUNcube at UKSC 2010

The United Kingdom Space Conference was held from March 24-28 in Godalming Surrey. This premier event always attracts a stellar cast of speakers and this year was no exception. The launch of the UK Space Agency in the same week added to the excitement. Many of the presentations are available for view from the Ustream server.

AMSAT-UK attended to explain their exciting plans for the FUNcube satellite. As well as the Amateur Radio SSB/CW transponder FUNcube will

provide an in-orbit tool for science education outreach and hands-on training in space and all the STEM subjects (Science Technology Engineering & Mathematics). The telemetry system is designed for easy reception by school pupils using extremely simple hand held VHF receive equipment connected to a PC soundcard or USB port.

The satellite contains a materials science experiment and pupils will be able to receive the results direct from space and compare them with similar reference experiments in the classroom.

The FUNcube stand at the conference included a mock-up of the new satellite and a demonstration of the telemetry. FUNcube is expected to be launched in early 2011.

Michael Castle G1ZVN gave a short introduction on FUNcube during



AMSAT Australia continued

included. I have not spent as much time with these but here is a brief summary of each. They all appear to work properly under Linux except for any changes found below.

SatPC32ISS is a special version of SatPC32 that is tailored for transponders using one band. This includes the International Space Station and PCSAT (NO-44). It appears to run under Linux as well as SatPC32.

SuM is a simple tracking program that will point your antennas at the Sun or the Moon. It works with the same rotator setup in SatPC32. Use the quit button to end the program rather than the close window button on the title bar so that the rotator server is closed properly.

SumListen lists times, azimuth and

elevation positions of either the Sun or Moon. I have not tried the print option. You have to setup your latitude and longitude.

WinAOS generates lists of upcoming satellite passes for a selected group of satellites. Ideal if you want a paper copy of pass predictions to take on a trip without taking the computer with you.

WinListen32 generates lists of upcoming passes for a single satellite but between two ground stations.

Wisat32 tracks satellites the same as SatPC32 except it does not have the graphic display and it has restrictions on the types of radios it can control.

The DDE programming examples using Delphi and Visual BASIC to display message strings from SatPC32 may not automatically update.

Clicking the Open Link button will update the message.

Final Pass

Presented here is how I got SatPC32 running under Linux on my laptop. While it is not perfect, it is quite usable. I have successfully used it to control my FT-817 and rotator to receive plenty of satellites. It can be trialled for free. Apart from the fonts, printer ports and configuration windows, I have one desktop PC that changes all the screen colours on the graphics display after ten seconds. As they say on the Internet, YMMV (your mileage may vary).

References

- [1] <http://www.dk1tb.de/indexeng.htm>
- [2] <http://www.winehq.org>
- [3] http://en.wikipedia.org/wiki/Null_modem

Contests

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CONTEST CALENDAR

May	All	WIA Centenary QRPContest	CW/SSB/AM
	1-2	ARI Italian Contest	CW/SSB/RTTY
	8	Trans Tasman 80 m	SSB
	8-9	Alessandro Volta DX Contest	RTTY
	8-9	CQ-M International DX Contest	CW/SSB
	15-16	King of Spain	CW
	22-23	EU PSK DX Contest	PSK
	22-23	Baltic Contest	CW/SSB
	29-30	CQWW WPX Contest	CW
June	5-6	SEANET Contest	CW/SSB
	12-13	VK Shires	CW/SSB
	12	Trans Tasman 160 m	SSB
	19-20	Winter VHF/UHF Field Day	CW
	19-20	All Asia DX Contest	CW
	26-27	King of Spain	SSB
	26-27	Ukrainian DX DIGI Contest	PSK/RTTY

I am writing this a couple of hours after finishing the WPX SSB contest, so if you find any random characters in this article, then obviously I have fallen asleep and my head has crashed onto the keyboard.

I operated the maximum allowed 36 of 48 hours and that translated to around 8 hours sleep in total over those two evenings. Fortunately there was an opening to somewhere

all the time to help keep me awake. I was tempted to take a break after 15 m closed to USA at 0100 UTC on the second day, but there was now propagation to North America on 20 m and could I raise any new Asia/Oceania contacts on 15 m/20 m?

But a few CQs on 10 m raised a little JA pile up to get me through. By 0500 UTC I was REALLY sleepy but then 20 m exploded on the long path to

Europe and I plodded away until my next scheduled rest at 1500 UTC.

With just 100 W and an average system, I spent most of my time search and pouncing, but still ended up with 614 QSOs and I had a lot of fun. The 10 m opening to Europe on the Sunday night was fun and when a TY Benin station called me during my CQ run I almost fell off the chair!!!

2010 VK/trans-Tasman Contests

Rules

The Contests are open only to all VK and ZL operators.

The Contests shall be in 6 X 1 hour stages (best 5 hours to count) and stations can only be reworked after the commencement of each hour. However, stations worked during the 5 minutes before the hour, cannot be reworked until 5 minutes after the hour.

I hope to get on the air at some stage for this to give out the much needed VK8 multiplier for this event.

Exchange – Sequential numbers commencing at 001 shall be given and received for all contacts made during

the Contest. (Use of RST numerals is NOT required).

QSY rule – It is not in the spirit of the Contest to “park” on a frequency.

While this will not be policed, 20 minutes is considered to be the maximum time between QSYs, and 10 kHz the minimum frequency shift.

I operated in this contest from VK5 last year and I noticed some stations that always stayed on the same frequency. I know one VK1 stayed on one frequency and never moved. I remember this because I could easily get the VK1 multiplier by going to the same frequency every hour.

Date – 80 m SSB on Saturday May 8

and 160 m SSB on Saturday June 12.

Time – 0800-1400 UTC.

Frequencies – 80 m on 3535 to 3620 kHz and 3640 to 3670 kHz. 160 m on 1835 to 1875 kHz.

Power – maximum power allowed is 100 W for all non-QRP entries.

Categories – 80 m Phone, 80 m QRP Phone, 80 m Foundation Phone, 80 m Phone Multi. 160 m Phone, 160 m QRP Phone, 160 m Phone Multi.

Scoring – The scoring system is quite involved because it compensates for geographical location. So it is best to visit www.wia.org.au/members/contests/trans-tasman/ to obtain a full run down of the rules.

The 2010 Australian Shires Contest

Starts: 06.00 UTC Saturday, June 12, 2010

Ends: 06.00 UTC Sunday, June 13, 2010

Contest Period: 24 hours for all stations, all categories.

Objectives: The objectives of this contest are for amateurs around the world to contact as many VK shires as possible in the contest period. i.e. VK amateurs are to work the world including VK, whilst the rest of the world can only work VK.

Bands: 80 metres 3.500 - 3.700 MHz, 40 metres 7.000 - 7.250 MHz, 20 metres 14.000 - 14.300 MHz, 15 metres 21.000 - 21.350 MHz, 10 metres 28.000 - 28.600 MHz. Please note there is no 75 m DX window permitted for VK stations which means the rest of the world can operate above 3.700 MHz. i.e. split operation.

Modes: SSB and CW only.

Categories:

1. VK Single – OP All Band Rover: Single operator(s) must do all contest related things by themselves.
2. VK Multi – Two All Band Rover: Is 2 or more operators with maximum of two transmitted signals at any one time. This category MUST USE Software CONTEST LOGGERS. All operators must be fully listed when the log is submitted.
3. VK Single Op All Band..... same conditions as number 1 above
4. VK Multi – Two All Band.... same conditions as number 2 above
5. VK Single Op Foundation: Is a VK Foundation licensee who must do all contest related things by themselves.
6. DX Single Op—All Band..... Is a single op who must do all contest related things by themselves.

For all categories: Transmitters and receivers for a fixed station must be located within a 500 metre diameter circle or within the property limits of the station licensee's address, whichever is greater. If you are a member of a multi op team you can not partake in the contest as an individual in any way. Please note that you are permitted to have up to two transmitted signals going simultaneously. All contest operation

must be within operator's licence restrictions and conditions, e.g. power output, bands used, etc. Single OP stations are only permitted one transmitted signal at a time. No operator is permitted to use more than one call sign for the entirety of the contest.

A Rover station is a VK station who goes either portable or mobile for the entire contest. Please note that all portable equipment can not be set up prior to the Friday preceding the contest and no earlier than at 0001 UTC. The Rover who moves into a new SHIRE may count the same MULTIPLIER more than once per band as long as the Rover is in a new SHIRE location. Such change in location must be clearly indicated in the log. i.e. A Rover station becomes a new QSO to the stations working them when that STATION changes SHIRE locator. Please note that in all categories below you may change band and mode as often as you like. You may also work the same station multiple consecutive bands/modes one behind the other: e.g. work VK4FW on 20 m SSB then QSY to 15 m CW then QSY to 80 m CW then QSY to 40 m SSB etc.

Exchange: All VK operators to exchange callsign, RST followed by the VK shire abbreviation as per the official list provided: e.g. VK4FW 59BU4 or 599BU4. Stations outside VK to exchange callsign, RST followed by CQ ZONE e.g. ZL1AMO 5932 or 59932.

Multippliers: The multiplier is each VK shire worked per band and mode as above as well as each CQ Zone worked per band and mode: NB. VARIATION FOR ROVER STATIONS. ROVERS CAN REWORK FROM MULTIPLE LOCATIONS.

Scoring: One (1) point per QSO. Multiply total QSO points times total number of multipliers worked (i.e. If you worked 33 on 80 m, 43 on 40 m, 16 on 20 m, 21 on 15 m and 5 on 10 m that would be a total of 118).

Example 1: VK4FW works stations as follows:

600 QSOs x 1 point = 600 points

118 VK shires worked + 35 CQ zones worked = 153

600 x 153 = 91,800

VK4FW final score is 91,800.

Awards: VK Stations: Certificates suitable for framing will be awarded to the top scoring stations in each category as well as place getters depending on entries received. A minimum of 50 QSOs must be made to be eligible to receive a certificate.

Stations Outside VK: Certificates suitable for framing will be awarded to the top scoring stations in each category as well as place getters depending on entries received for each continent.

**** Please note** we hope to be able to award a minimum of four certificates per category.

The various categories have been sponsored for the next three years by the following operators (until 2011). We thank them very much.

- VK Single Op – kindly donated by Phil Smeaton VK4KW
- VK Multi Two – kindly donated by Laurie Porter VK4VCC
- VK Single Op Foundation – kindly donated by Nick Hacko VK2DX
- VK Single Op Rover – kindly donated by John Ferrington VK6HZ
- VK Multi Two Rover – kindly donated by Trent Sampson VK4TI
- DX Single Op – as below:
 - o North America – kindly donated by Craig Edwards VK8PDX
 - o South America – kindly donated by Dave Clifford VK4NDX
 - o Asia – kindly donated by Diane VK4KYL and Bill Main VK4ZD
 - o Europe – kindly donated by Andrew Munson VK4HAM
 - o Africa – kindly donated by Tony Hambling VK3VTH
 - o Oceania – kindly donated by Robert Duck VK2VRD

The VK5NJ Trophy: Will be awarded to the station who makes the highest number of CW QSOs during the

contest no matter what category they are in. Please note this has nothing to do with actual points and multipliers, it is strictly the actual number of CW QSOs made.

Most Valued Contester(s): The administration will award this trophy to the person(s) that they feel has done the very best they could for the betterment of the contest. This may be in the form of a club activation of a remote shire for example or a person travelling to the most shires - ultimately it will be to those who the administration feels did the best to add value to a particular year's contest.

Miscellaneous: An operator may sign only one callsign during the contest. This means that an operator cannot generate QSOs by first signing his callsign, then signing his daughter's callsign, even though both callsigns are assigned to the same location. If in fact a fixed VK station is located on the border of more than one VK

shire, they must choose only one VK shire from which to operate.

Utilising the various internet DX clusters etc is permitted however ANY FORM OF SOLICITED OR SELF SPOTTING INCLUDING CLUB MEMBERS SPOTTING CLUB OPERATIONS WILL RESULT IN NIL RESULT OF THE LOG. ANY use by an entrant of any non-amateur means including, but not limited to, telephones, email, Internet, Instant Messenger, chat rooms, VOIP, or the use of packet to SOLICIT, ARRANGE, or CONFIRM any contacts during the contest is unsportsmanlike and the entry is subject to disqualification. Aeronautical mobile or maritime mobile contacts do not count. UTC is the required logging time.

Log Submissions: Log entries must be submitted by 1 September, 2010 to be eligible for awards. Submit your electronic log in the Cabrillo format created by all major logging

programs. Send via e-mail attachment to contest@vkshires.info

Subject line: Callsign [used in the contest] only. SINGLE OP stations may submit a paper log, only if they make less than 100 QSOs.

VK entrants are reminded to be sure their log indicates their VK shire location. If you go portable or mobile the log must clearly define where you changed location. Click on the "VK SHIRES Web Form" link on the contest website at www.vkshires.info Computer-generated logs must be e-submitted. Callsigns of electronic logs received are posted and updated regularly on the website.

Any queries or enquiries please email vkshires@vkshires.info The Oceania Amateur Radio DX Group Incorporated is very pleased to be able to be associated with this contest by providing the official web site www.vkshires.info

Winter VHF-UHF Field Day Contest

Contest manager: John Martin VK3KM

There has been one major rule change for the next Field Day: the introduction of a separate section for rover stations. This new section will allow portable and rover stations to compete against other stations that have similar scoring potential.

The rover section will apply to all stations that operate from more than two grids, or change location more than twice. This allows stations in the regular Portable sections to change location once, and return to the original grid square, without being required to enter the Rover section.

Dates: Saturday and Sunday 19 and 20 June 2010

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.

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.

F: Rover station, 24 hours.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours, and nominate which 8 hour period they wish to claim for scoring purposes.

Entering more than one section: If a portable station operates for more than 8 hours, it may enter both the 24 hour and 8 hour sections. If the winner of a 24 hour portable section has also entered the corresponding 8 hour section, his log will be excluded from the 8 hour section.

If a portable or rover station spends part of the contest period operating from his home station, he may also enter the home station section.

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: Portable stations with more than two operators must enter Section C or D. Operators of stations in Section C or

D may not make contest exchanges using callsigns other than the club or group callsign.

Rover stations: The Rover section is for all portable or mobile stations that operate from more than two locator squares or change location more than twice.

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. Portable 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 either 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 4 digit 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 callsigns of all operators; postal address; station location and Maidenhead locator; the section(s) entered; the scoring table; and a signed declaration that the contest manager's decision will be accepted as final.

Please use the following format for your scoring table. In this example the operator has operated from one locator and worked four locators on each band: (See Table below)

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 Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, MDB, PDF, or any Open Document format. Logs must be received by Monday, 5 July 2010. Early logs would be appreciated. The Field Day website also includes a sample cover sheet, including a scoring table.

Field Day Web Site: <http://www.wia.org.au/members/contests/vhfuhf/>

This site includes the rules for the next Field Day, rules and results of all past VHF-UHF Field Days, cover sheets and scoring tables, and other information.

Special 2010 Field Day Cumulative Certificate

Do you intend to participate in all three VHF-UHF Field Days in the coming year?

Here is an extra incentive for you. Special certificates will be awarded in December 2010 to the entrants who have participated in all three 2010 Field Days.

The certificates will be based on callsign, so to be eligible you must operate under the same callsign each time.

Microwave Challenge – January 2011

The Summer Field Day for 2011 will cover all bands as usual. But it will also include a "Microwave Challenge", with special certificates to be awarded to the participants on microwave bands. So if you have been planning to add microwave gear to your station, now is the time to start preparing!

Worked All Europe DX Contest 2009 – how the VKs went

Congratulations to Steve VK3TDX for achieving the Triple Crown in topping Australian scores in all three contests in 2009.

SSB SOAB HP

VK3TDX #1 in Australia and #2 in Oceania with 24,310 points

SSB SOAB LP

VK8PDX #1 in Australia and #7 in Oceania with 1,530 points

RTTY SOAB HP

VK3TDX #1 in Australia and #2 in Oceania with 400,384 points

RTTY SOAB LP

VK7AD #1 in Australia and #4 in Oceania with 12,285 points

VK8PDX #2 in Australia and #5 in Oceania with 10,379 points

CW SOAB HP

VK3TDX #1 in Australia and #2 in Oceania with 85,432 points

VK6HZ #2 in Australia and #5 in Oceania with 96 points

CW SOAB LP VK4TT #1 in Australia and #4 in Oceania with 630 points

VK2PN #2 in Australia and #5 in Oceania with 414 points

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

**2010 Ross Hull Memorial
VHF-UHF Contest Results
are on page 53**

Hamadsclassifieds

free to members

FOR SALE - VIC

Yaesu HF transceiver, FT-107M, plus FV-107 external VFO. Both items in very good condition. \$300 or offer. Local pick-up only. Phone Terry VK3YJ, 03 9315 0186.

FOR SALE - NSW

HyGain 14AVQ HF vertical, negotiable; Ringo Ranger 2 metre vertical, negotiable; MDS down-converter, \$5; N and SO 239 switches, filters, SWR bridges, magnetic bases and mobile whips, negotiable; Digital satellite RXs, UEC DSD660, \$150; Nokia 9500S with DVB2000 S/W, \$150; Xanadu DSR, \$50; Zenith DTH300-S, \$5; 2xPace DGT400's, \$5 each. Analogue satellite RX, Pace IRD50, \$5.

Contact Roger VK2DNX, vk2dnx@hotmail.com or phone 02 9546 1927.

Package 1: 2.4 metre solid ACESAT dish on polar mount, Chaparral CoRotor 2 C/Ku feed, Norsat Gold 15K C band LNB, Gardiner .7 dB Ku LNB, 24" actuator, Chaparral MC115 RX (dish controller), Inclined Orbit Tracker, \$300.

Package 2: 2.4 metre mesh dish on polar mount, Chaparral C band polarator feed, Norsat Gold 15K C band LNB, 24" actuator, Winersat WR920 RX dish (dish controller), \$240.

Contact Roger VK2DNX, vk2dnx@hotmail.com or phone 02 9546 1927.

Satellite parts, various - Supertrack dish controller, \$50; Dynalink C band LNBF 'one cable solution', \$15; California amp C band LNBF 25K, \$30; Chaparral model C Ku LNB, 9.75/10.75 GHz LO's, \$40; ACESAT twin Ku LNBF's, \$25 each; California amp Ku LNBF, \$15; Sharp Ku LNBF's, \$15 each; DX antenna DSA527N Ku LNBF, \$5; 2xDX antenna DSA527D Ku LNBF's, \$5 each; 1.7 GHz LNA's, \$10 each; Zinwell SAB-09C coax relays, \$15 each; 4xIrdeto CAM's, not CI, various ages and S/W, \$30 each; AWA RL 1500C RX tuned to 1.691 MHz, \$20; many other miscellaneous satellite parts.

Contact Roger VK2DNX, vk2dnx@hotmail.com or phone 02 9546 1927.

Icom IC-706MkIIIG, SN 016339, HF, 6 m, 2 m and 70 cm TX (160 m to 70 cm), output power 100 watts on HF and 6 metres, 50 watts on 2 metres and 20 watts on 23 cm. DSP and IF passband tuning, providing superior interference rejection. Noise blanker, speech compressor, SWR graph function, simple band scope, 107 memories with alpha numeric name capability, and much more. The radio has been thoroughly tested and is in VG condition with mike, original box, manual, DC leads and connectors. \$900.00 ONO.

Neil VK2NL, QTHR. Phone 02 9894 5678 or mobile 0418 243 880, or neil.cornish@bigpond.com

WANTED - NSW

Yaesu FT-102 transceiver, any condition, cash or swap for a Yaesu FT-900 in excellent condition. SMS 0488 771 480, phone 02 4422 9445 or email robertilbury@gmail.com
Thanks for reading, Robert VK2LOZ.

FOR SALE - QLD

Icom IC-746 Pro HF/6 M/70 cm TX, SN 0025110, like new with manual, hand mike and Icom desk mike IC-MS6, SN 17216, \$1500. 30 amp peak PS, SN 230553, with man. \$130. External SDC DSP audio filter and speaker in a case, \$100.

Yaesu FL-2000Z, 400 watt linear, SN102279 with manual, full output, \$650.

Emtron EAT 2000 cross needle 2 KW tuner, \$350. MFJ 267, 2 KW, cross needle, dummy load / SWR and output RMS and PEP, \$180.

MFJ 269 antenna analyser with manual, HF/VHF/UHF, \$370.

Revex W750, 200 W SWR meter, HF to UHF, \$100.

Alinco 435T 70 cm 50 watt FM TX with manual. Never used, new condition, \$220.

Gold Star 60 MHz dual channel CRO with manual. Has time delay features. SN90100561, \$250.

1 kW 240/240 isolation transformer, \$50.

Hustler 5-BTV vertical, 80 to 10 metres, fair condition, \$200.

Comet GP15 vertical antenna, 2 m/70 cm, 8 dbi gain, \$100.

Approximately 20 metres Heliac cable terminated with gold C connectors, \$120.

Four only eight metre steel and aluminium antenna poles, to suit a dipole or loop antenna, \$75. Peter VK4PO, QTHR Phone 07 3390 1129 or 0417 785 677.

Mobile One Australia Hamtenna, Models M20-1 and M40-1, both as new, for the simple reason that I purchased them to go west, and never got to use them. \$20.00 each, plus postage.

Harry VK4EL, phone 07 5445 2647 or email glenviewinfo@optusnet.com.au

FOR SALE - SA

VK5JST antenna analyser kits are available. Refer article AR, December, 2009. Build yourself an extremely useful item for your shack, and improve your antenna efficiency. For more details see www.scarc.org.au, email kits@scarc.org.au or contact SCARC, Box 333, Morphett Vale. SA. 5162.

Want a fairly simple project for your club or would you just like to build a kit project for yourself? The Repeater Over Timer could be just the thing. It lets you know when you have been talking for long enough on the repeater. See November 2009 issue of AR. The Elizabeth Amateur Radio Club has kits available for this device, which uses only one IC and a handful of minor components. It is switched on by the transmitter's RF output and draws no current when not active.

Kits are available from the EARC for \$35.00 plus \$6.00 P+P. See www.earc.org.au or phone the club on 08 7123 4080.

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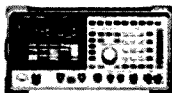
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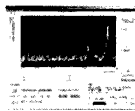
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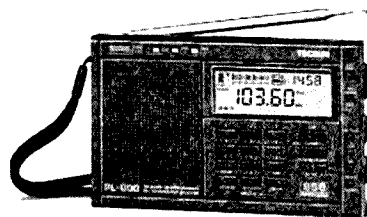
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Advisory Committees

Chairman of the regional committee is in bold.

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Alan Baker VK8AB
Trevor Wardrope VK8TJW
Wayne Cockburn VK8ZAA

AJ2010 *Continued from page 34*

The 20 metre Yagi, mounting and damaged feeders fixed, the 10 metre Yagi was replaced with the FGARC tri-band Yagi.

The 15 metre Yagi was replaced with the 40M Yagi.

Rotators were adjusted for alignment.

Tree branches were cut to allow the 80/40 metre Delta to be fixed for 80 metres and an 80 metre dipole erected.

A five-band vertical was installed on the building roof with a feeder into Bay A, intended primarily for 30 metre use.

For the Jamboree, additional operators were provided from the following clubs and FGARC wishes to extend their thanks for co-operation and assistance given so willingly.

- Blue Mountains Amateur Radio Club.
- Illawarra Amateur Radio Society.
- Liverpool & District Amateur Radio Club.
- Hornsby & District Amateur Radio Club.
- Peel Amateur Radio Group (WA).

At the conclusion of the Jamboree, a presentation was made by the Deputy Director Activities 22nd Australian Jamboree AJ2010 Bryan Davison to

FGARC in recognition of their efforts.

Thanks to VK2LOL and VK2FLMK for photographs.



Photo 14: Members of FGARC, BMARC, IARS, LADARC and PARG at the end of AJ2010. L-R VK2TG, VK2AU, VK2JCN, VK6LL, VK2HKF, VK2MCI, VK2HRC, VK2VVV, VK2TAR, VK2ZZWK and VK2FRW.

Continued facing page

Three generations of amateur radio operators



(Notes and photos kindly supplied by David VK2LOL)

Saturday 9 January 2010 at the Australian Jamboree saw many visitors to Cataract Scout Park and the day was made 'special' for Emma VK2FEMM (Jamboree Troop 322) when her mum, Gai VK2FGAI, and Grandfather, Les VK2APE, visited the Park.

Emma had a goal to get her licence before the Jamboree and worked hard to obtain her licence in August 2009. Gai studied for and obtained her licence at the same time to support Emma. Emma's other main interest is acting.

Les VK2APE (Les also holds VK2LPL) first became interested in amateur radio through contact with an amateur that lived around the corner when he was at primary school in Dubbo. In 1973, Les moved from Dubbo to Newcastle, did a radio course at technical school and achieved his licence. Whilst

driving to and from work, he would sound out number plates of other cars for practice.

He has a cap with a 2 m/70 cm antenna mounted in the crown which he uses with his handheld when walking, but only at night. Les also has a Fiji amateur licence (3D2LP) and travels there when required to renew that licence.

During the 1989 Newcastle earthquake, Les was working in an office in Charlestown. He cleared all staff from the building and then provided WICEN communications from the amateur radio set on his motorcycle parked in the street. Les has been a member of the Ulysses Club since 1989.

During the Jamboree, Emma had a QSO (from her troop camp) with Les (at home) via an IRLP node at the Jamboree.



Photo 11: Ted VK2AU took refuge from the 42° heat by providing his own style of sunshade.



Photo 15: VK2ZWK being presented with a recognition plaque by Bryan Davidson, Deputy Director Activities, 22nd Australian Jamboree.

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Amateur Radio

Volume 78
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Our cover this month

David VK5DCW at Birkenhead on Adelaide's Port River, near his salt water 'ground plane'. The shot is looking across the river to the lighthouse at the South Australian Maritime Museum in Port Adelaide. The light used to mark the river entrance some distance to the north.

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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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

If back issues are unavailable, 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

Peter Freeman VK3PF

Time flies

Where has the last month gone? It seems like only yesterday that I was tapping out the Editorial for the May issue, and I am already late in preparing the next one!

As usual during the part of the year with actual face to face teaching, work has been its very busy self. The imminent end of semester means that there are examination papers to prepare, assignments to mark, and next semester's material to prepare. As soon as all of those tasks are completed, there are exam papers to mark followed by results to collate. Such is modern academia, plus "they" expect us to prepare grant applications, do research and prepare learned papers for publication.

At the same time, I have been involved in the organisation of this year's GippsTech event, including the preparation of the material for the printed Proceedings volume from last year's event. More time at the keyboard, transforming material into a standard format (when supplied as requested) or deciding whether to bother such a transformation or simply to print the material as supplied – both options take time.

On top of those tasks, some silly person said that he would present at the WIA AGM..... oh well, there are a few nights left before I must hit the road to Canberra!

Contribute to your magazine

We have had many excellent articles submitted relating to the history of amateur radio in Australia, as regularly recognised by the Centenary Committee in this magazine. We also have a good stock of technical and general articles for the next few months. The downside is that authors may wait some months until their article appears in print. Do not panic – in all likelihood it will appear in due course. We have updated our processing procedures in an attempt to keep authors in the loop, so that they know when an article moves from one stage of our process to the next.

The one shortage that we have is in high quality, well composed high resolution photographs suitable for the magazine cover. It is preferable that such photos come with a story, so that the cover has a link to an article inside the magazine.

One of the tasks on the "to do" list for PubCom is to update our guidelines to authors, but the existing guidelines give a good outline of the needs of the production team. Feel free to submit photographs at smaller size (but make them at least 500 kB please), but do please set your digital camera to capture the image at the highest resolution possible. If you only shoot the image at 100 kB, there is no way to improve resolution. If you shoot the image at 3 MB (or even better, 10 MB), for example, you can save the file at the original resolution, then save it to a new file name at lower resolution for distribution.

If we think that the image would be better served (for the magazine) at higher resolution, we can ask you to send it to us. You never know – it may be cover material.

The entire *Amateur Radio* team welcomes your contributions. Of course, this includes material for each of our regular columns, club news items and state summaries. Where the news item is short, send it direct to the regular contributor. If you think that the item might make a short separate story, then send it in to the normal address for material for publication – see the left hand column on page one for details. I know that David VK3HZ and his team always find it difficult to find "news" during the winter months, when propagation in the southern parts is not as spectacular as during the summer months. The team is still interested in hearing about your activities – send in the reports and give them the task of decide if the news is worthy of inclusion. If your news does not make the grade, do not be put off – send in more news. You might make the grade next month.

Cheers, Peter VK3PF

ar



**Michael Owen
VK3KI**

The Digital Dividend and the 6 metre band

The Department of Broadband, Communications and the Digital Economy describes the 'digital dividend' as the radiofrequency spectrum freed-up as a result of the switchover from analogue to digital television transmission.

One of the questions that we are asked most is what is happening with the 6 metre band following the closure of the Channel 0 television transmitters as a part of that switch-over.

The short answer is, I don't know.

But I do know what should happen.

Here is the text of a letter that I wrote on 11 May 2010 to Mr Chris Chapman, the Chairman and Chief Executive Officer of the Australian Communications and Media Authority:

"Dear Mr. Chapman

The WIA appreciates that to date the primary focus of the so called 'digital dividend', arising from the switchover to digital only television, has been the spectrum around 700 MHz.

The Wireless Institute of Australia, representing the amateur services in Australia, brings to your attention a consequence of the closure of television Channel 0, also resulting from the switchover to digital only television.

Article 5 of the Radio Regulations of the International Telecommunications Union allocates the band 50 – 54 MHz to the Amateur Service in Regions 2 and 3 subject to a number of footnotes, including footnote 168 which provides:

'Additional allocation: in Australia, China and the Dem. People's Rep. of Korea, the band 50 – 54 MHz is also allocated to the broadcasting service on a primary basis.'

In Region 1 there is an amateur secondary allocation in the band 50-52 MHz in the CEPT European Common Allocation Table.

To accommodate Channel 0, in Australia the band 50 - 52 MHz is allocated to broadcasting primary, with amateur secondary, subject to footnote AUS23, which provides:

'In the band 50 - 52 MHz, stations of the amateur service shall not cause harmful interference to stations of the broadcasting (television) service. Amateur operations in this band shall be subject to special conditions.'

Australian Radiofrequency Spectrum Plan (ARSP).

The band 50 - 54 MHz is of particular interest to the amateur service. Tropospheric scatter and sky-wave propagation (principally sporadic-E and occasional F-layer propagation at sunspot maxima) are used for longer distances, as well as auroral propagation at the higher latitudes. Meteor scatter has been used for Morse code and voice communications primarily during meteor showers. Newer computer-based techniques make meteor scatter a routine propagation mode for distances up to 2000 km.

Amateur advanced stations, amateur repeater stations and amateur beacon stations in New South Wales, Victoria, Queensland and the Australian Capital Territory are subject to various restrictions, including power and geographic restrictions in the band 50 - 52 MHz. In essence, such stations cannot operate within 120 kilometres from a Channel 0 main station, 60 kilometres of a television Channel 0 translator station and 60

kilometres of a television translator station that has inputs on television channel - see sections 15, 36 and 43 of the Radiocommunications Licence Conditions (Amateur Licence) Determination No.1 of 1997 (the Amateur LCD).

Details of VHF television channel 0 stations are set out in Schedule 7 to the Amateur LCD.

The WIA requests that on the closure of the Channel 0 transmitters the allocation of broadcasting primary in the band 50 – 52 MHz be deleted and that the band be allocated amateur primary and that the ARSP be amended accordingly, with footnote AUS23 also being deleted.

Currently only amateur advanced stations are permitted to operate on the 50 - 54 MHz band, with amateur standard stations permitted to operate on the band 52 - 54 MHz. If the amateur service was to be allocated the band 50 - 52 MHz on a primary basis, the WIA would have no objection to amateur standard stations operating on the whole of the 50 - 54 MHz band.

It will also be necessary to amend the Amateur LCD. In particular Part 1 of Schedule 2 (Permitted frequencies and emission modes (amateur advanced stations)) will require amendment to reflect any changes to the ARSP

Sections 15, 36 and 43 and Schedule 7 will become redundant.

Currently the Amateur LCD is under review, and given the incredible difficulty the Authority has had in finding resource to deal with such matters, it is suggested that the necessary amendments be formulated as part of the present review and incorporated in a schedule, to take effect when ACMA has published an appropriate notice in the Gazette.

No doubt Australia will seek to withdraw from footnote 168 at the next appropriate WRC.

As this is a matter of general interest, I will assume that you have no objection to its publication unless you advise me otherwise."

In short, we say that with the closure of television Channel 0 the band 50 - 52 MHz in Australia should revert to the ITU Region 3 allocation of 50 - 54 MHz amateur exclusive.

The letter also illustrates the complex framework of subordinate legislation that surrounds even the most obvious changes to the regulation of the radiofrequency spectrum in this country.

I suspect that to date, as is said in the letter, the focus of the government's investigations has been on the spectrum around 700 MHz, but we believe that it is now appropriate to draw attention to this important part of the amateur services family of frequencies.

ar

WIA to purchase property

On 10 May 2010 the Wireless Institute of Australia executed a contract to purchase the premises it is presently renting at Unit 20, 11 – 13 Havelock Road, Bayswater.

The WIA has been renting the premises, part of an industrial estate, since October 2008. A warehouse with offices, it offers adequate space for the things that need to be stored – books for the bookshop, merchandise and the like, as well as valuable items such as the QSL collection.

Use of the premises for 18 months has satisfied the Directors that they meet the WIA's needs.

The Directors are considering calling the premises Andersson House, in honour of Henry Andersson VK8HA.

Henry was an Honorary Life Member of the WIA, the first national WIA Intruder Watch Coordinator, and ran the VK8 QSL Bureau for 38 years. He passed away on 6 October 2004. His will left his house and land at Humpty Doo, near Darwin, to the WIA. That generous bequest provided much of the funds necessary to acquire the premises at Bayswater.

Settlement will occur before 30 June.

VK100WIA on the Air

WIA President, Michael Owen VK3KI launched the WIA's special event callsign VK100WIA on 14 May 2010. The first contact was at 1024 AEST with WIA Secretary Geoff Atkinson VK3TL followed by Geoff Parker VK2ZC at 1028. Signal reports exchanged were 5 by 5 both ways.

The commemorative callsign for the Centenary of the foundation of the WIA in 1910 will be activated by WIA for the rest of May, including a station at the WIA Centenary Convention at Canberra from 26 to 31 May. From 1 June VK100WIA will be operated by a different WIA affiliated club every three days until the end of October.

Listen for VK100WIA on the amateurs bands or check the online logging system on the WIA website www.wia.org.au

The rules for the WIA Centenary Award are also on the WIA website.

A Gift

The other day a WIA member visited the office at Bayswater. He said he wanted to donate to the WIA and left \$500. He said he believed in what we are doing, but wanted to remain anonymous.

Michael Owen VK3KI WIA President said: "It is very hard to convey how much an act such as this lifts the heart of those who spend much time trying to make the WIA an organisation that properly represents the amateur service in our country and also provides a service for its members and is recognised by amateurs for doing that.

All I can say is, simply, thank you."

ACMA releases its paper "The Way Ahead – decisions and implementation options for the 400MHz band"

On Friday 30 April, the Australian Communications and Media Authority (ACMA) released its third discussion paper on the re-planning arrangements for the 400 MHz spectrum.

The WIA had provided detailed submissions regarding the 70 cm amateur band, and is a member of the Radiocommunications Consultative Committee 400 MHz working group, where industry provided advice to the ACMA on important issues.

The release of the paper coincided with the annual ACMA Radcoms 2010 Conference in Melbourne on 5 and 6 May 2010 where the preliminary outcomes were discussed. The WIA was represented by WIA Director Peter Young VK3MV.

ACMA confirmed that the segment between 430 to 440 MHz is out of scope for the purposes of the re-planning exercise. Within this band the amateur service is a secondary user to Defence: this will continue into the future.

In the spectrum segment 420 to 430 MHz, the amateur service has already been excluded in Melbourne, Perth and Sydney to allow use by government users. These exclusions will be extended to the rest of Australia over the coming years.

The 440–450 MHz band, which was out of scope in the previous Proposals paper, is now within the scope of this paper, as an option to assist in the transition to a 10 MHz duplex frequency split in the 450–470 MHz band. It seems that use of this spectrum may be temporary and once the re-arrangements are completed this segment will return to the existing arrangements.

The WIA will continue to participate in the ongoing ACMA consultations in respect of this part of the spectrum.

WIA at the Dayton Hamvention

This year's Hamvention theme was 'Amateur Radio Clubs Worldwide: The Lifeline' recognising the major contribution amateur radio clubs all over the world have made.

The weekend saw 18,000 amateurs from all parts of the world descend on Dayton this year including 15 VKs from VK2, VK3, VK4, VK5, VK7 and VK8.

In recognition of the WIA Centenary year WIA Director Chris Platt VK5CP, assisted by WIA Director Peter Young VK3MV, made a presentation at the Contesting Forum on the WIA's history and contesting in Australia featuring the involvement of clubs in field day activities.

EmComms information registrations reach two hundred

The WIA has received over 200 registrations for information on the WIA Emergency Communications Operator training.

There have been two "train the trainer" courses, with a third being organised shortly. 16 trainers, one or two from every state, have been trained and will be ready to deliver the Certificate 2 training.

The WIA is hopeful that the EmComm operator training will commence towards the end of June and progressively rolled out over the remainder of the year. A training application form will be placed on the WIA website for these training courses.

Part 5

Distance defeated, identity established

An arena of wonder

Peter Wolfenden VK3RV

We complete the five part history of early Australian amateur radio.

12 Conclusion

About twelve months before the first National Convention a number of Australian experimenters successfully received messages from the USA on short-wave. Barely six months after the convention, phone communication was established between Max Howden A3BQ in Melbourne and EJ Simmonds G2OD in the United Kingdom. Later Charles Maclurcan A2CM and Jack Davis A2DS in Sydney also worked G2OD on 85 metres (1).



Photo 1: Max Howden A3BQ. WIAA.

This was also the time that New Zealander Frank Bell Z4AA, on a back-blocks Otago sheep station, had his famous hour and a quarter, 19,000 km two-way contact with Cecil Goyder G2SZ at the Mill Hill School in London (2, 3).

There is little doubt that this was an exciting time when a whole new set of 'rules' had to be put into place because, once again, the experimenters were, as in the words of George Taylor, chairman of the first meeting of the Institute of Wireless Telegraphy: "... like explorers of a strange country, where every step was a discovery ..." (4).

For the next 15 years, national conventions of the WIA were held in all capital cities in rotation and experimenters had exciting, fruitful and exasperating times until World War Two broke out when once again they had to close down their stations for the duration of that war (1).

It is also appropriate to briefly record that a deal of instability occurred within the experimenter's ranks between 1927 and 1937. An alternative society, initially known as

the Queensland Radio Transmitters League, was established in 1927. It later changed name to the Australian Radio Transmitters League (ARTL), still with headquarters in Queensland.

Spreading to most states and strengthened by issues relating to 'commercial interests', particularly in NSW, it brought considerable pressures to bear on the WIA which was the official, locally and internationally recognised Australian amateur's representative.

The majority of amateurs in Tasmania, South Australia and Victoria stood by the WIA (ARTLs were also established there) and following six months of negotiations during 1929, most state ARTLs merged with the WIA. The WA ARTL re-joined in 1932.

In NSW, a further organisation, the Amateur Radio Association was established and became affiliated

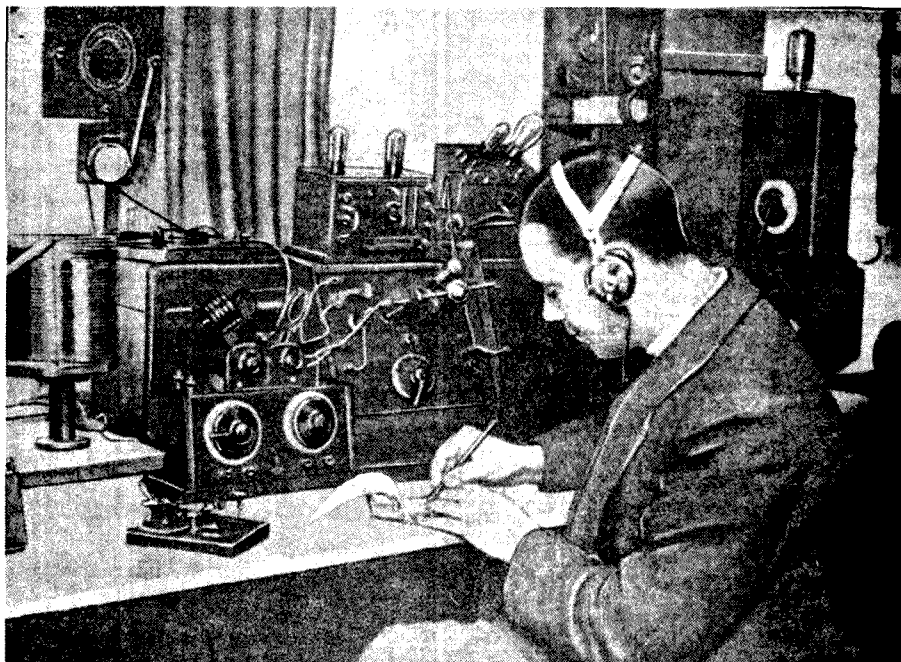


Photo 2: E.J. Simmonds G2OD. WIAA.

with the WIA in 1934. It was in effect a de facto WIA NSW Division (5). This situation remained until the IRE allowed the legal re-forming of the Wireless Institute (in NSW) during 1937.

Much of the instability during the decade was largely brought about by the apparent by-passing and/or misunderstandings of representation for the amateur transmitting members and the substantial growth in receiving only members, often coupled with the 'commercial interests' of some members (6, 7, 8).

Problems also occurred in Tasmania during 1925 when the Hobart Radio Experimenters Club separated from the Institute in a rather spectacular manner involving a black eye! (9)

As a 'living organisation', the WIA in all of its manifestations over the years, has undergone many changes to reflect the issues of the times and interests of its members. Representing all amateur experimenters to the authorities was one of the initial aims of our forebears and it is still the pinnacle issue for the WIA today.

Deregulation has brought about additional responsibilities which our first office bearers, even in their wildest dreams, would have never thought possible.

Over time, the emphasis of our

hobby has also undergone changes together with everything else in society, at both national and international levels - and that is healthy; but there is little doubt that the need for local and international representation is just as important today as it was 100 years ago.

Consequently, Australian radio amateurs can rightly celebrate the establishment of the Wireless Institute of Australia, their representative organisation, which came into existence as the Institute of Wireless Telegraphy of Australia, in Sydney, 100 years ago - the oldest group of such like minded people in the world.

And in the words of Major Leo Feenaghty VK4LJ, past secretary of the ARTL and later editor of QTC, the official journal of the WIA during 1930-31, "The letters WIA in our mind stand not only for 'Wireless Institute of Australia' but also and essentially for -

'Wholeheartedly and Intensely Amateur'! (10)

In days of old,
when hams were bold
and sideband not invented.

Words were passed
by pounding brass,
and all were quite contented!

With acknowledgement, and apol-

ogies, to someone from long ago!]

Contented for a while only, because at the Second Annual Convention of the WIA held in Perth, in August 1925, Esperanto was adopted as the Official International Language for 'phone' communications, problems with interference from Government stations was discussed and of the 1235 experimenters in Australia only 90 were licensed to transmit! There was much work to do!

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Photo 3: (VK)5JH c1927. WIAA

Arena of Wonder

Summary of our Early History

Prior to the Wireless Telegraphy Act of 1905 there was no real regulatory control of the radio spectrum.

Initially, the government was reluctant to license 'private experimenters' or anyone else for that matter as revenue from the wired telegraph system was considerable and the infant Wireless Telegraphy was initially considered to be of little use.

Experimenters were often considered to be a hindrance by the government and its agencies; the only potentially worthwhile use of wireless telegraphy was for communicating with ships at sea. Thankfully, this attitude did change later.

Many adherents could see the potential of wireless in all of its forms.

The need for organisations to represent the experimenters, and for that matter, potential commercial users, was apparent from the beginning of licensed operation in 1905 but because of increasing official activity, was essential by 1910!

Just before WW1, the interest in wireless was growing rapidly and a degree of logical control by the authorities was developing although often lagging demand.

WW1 caused the closure of all experimental stations in August 1914 and consequently, societies and clubs became largely redundant because transmission and reception was disallowed and many club members enlisted in the services.

Following WWI, the Navy was reluctant to relinquish control of the radio spectrum which generated much angst amongst experimenters and potential commercial users alike.

Significant advances in technology took place during WWI and many could now see an even greater potential for wireless and perhaps the ability to make money from it.

Divisions between part-time and 'professional' experimenters and those who were already working in the 'wireless business' caused factions to develop and temporarily blurred goals for the future.

It appears that there was much back-room discussion between movers and shakers with regard to just what or who the various Clubs/Institutes represented.

The dust finally appeared to settle at about the time that the sealed sets scheme was abolished and open or normal broadcasting began with the establishment of class A (National) and B (Commercial) broadcasting stations.

The May 1924 Federation meeting in Melbourne cleared much of the air as far as a nation-wide organisation representing the experimenters was concerned, and it also appears to be the time that the regulating authorities and the government were at last fully in control of the wireless genie!

The NSW Institute was very influential in the early days because of its structure and some of the individuals involved with it; but there

were also divisions within because of perceived conflicting interests. It was not until the truly professional organisation, the IRE relinquished its interest in the Wireless Institute during 1937 that all parties were apparently satisfied.

There is little doubt that two strong wireless groups emerged from that meeting in 1910 at the Australia Hotel in Sydney. The group representing the professionals – The Institution of Radio Engineers and that representing the experimenters, the Wireless Institute of Australia!

100 years on, the experimenters, now known as radio amateurs, can legitimately celebrate the establishment of their representative organisation – the oldest such group in the world!

Acknowledgements

Directors of Wireless Institute of Australia for access to the Institute's Archive.

Chris Long VK3AML for access to his private document archive and guidance in preparing this article.

Prahran Mechanics' Institute for



Photo 4: "Makers of Radio History - Transmitting and receiving apparatus that has created short wave records." Wireless Exhibition at Melbourne Town Hall May 1925. Popular Radio Weekly, 27 May, 1925.

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access to their Argus and Age microfilm archive.

Thanks to Jennifer Wardrop VK5ANW, Past President of the VK5 Division of the WIA for provision of historical information on the South Australian Division.

Acknowledgement is also given to David VK3ADW, Pam VK3NK, Graeme VK3NE, Christine VK5CTY, John VK3IC/VK5DM, Jim VK3PC, Richard VK7RO and Justin VK7TW, all of whom assisted in the preparation of this history

Lastly and importantly, thank you to the many amateurs who, over the years, have been forward thinking enough to conserve material for the WIA Archive, much of which is now of great historical significance to the amateurs of Australia, the WIA and technical researchers generally.

All monetary conversions have been done using the Reserve Bank of Australia's on line calculator.

Comments from the author

Primary sources of information dealing with the early days of wireless activity in this country are relatively scarce, particularly those relating to the commencement of private or amateur radio experimentation.

We are lucky, and lucky is the correct word here, that Dr. Deane Blackman VK3TX discovered the minutes of the first experimenter's meetings held in Melbourne during 1911. These were found in a 'shack' originally belonging to his uncle, HH Blackman XOE. The fortuitous find is now located in the Australian Academy of Science in Canberra with photocopies held in the WIA Archive, Melbourne.

Another significant work was done some years ago by Marlene Austin VK5QO, who scoured South Australian Division's Minutes and published *The First Sixty Years of the WIA - S.A. Division 1919-1980*. A copy of this is also held in the WIA Archive.

Reports in daily newspapers become the next best reference. Whilst journalists at that time seldom had a good grasp on the technical aspects of the 'new science', they at least reported (rarely journalised as they do today) on what they observed! So in that respect, I believe that early newspapers can be reasonably reliable sources of information on our subject - especially if details can be confirmed from another independent observer or newspaper. The risk in all of this is of course that we merely continue to propagate folk-lore based on what we want to believe!

The establishment of the WIA Archives in Melbourne has given us a 'last minute opportunity' to rescue small segments of the jigsaw puzzle and when combining these individual documents, (licences, official notices from the Navy Office or PMG Department) with newspaper articles and other writers' published works, we are in a position to more accurately arrive at a reasoned conclusion about our early days. But there is still much more work to be done before an accurate account of the history of amateur radio in Australia can be made!

The sources used for this series could help others wishing to further research aspects of our early history. Not all of the references are held in the WIA Archive. The complete Bibliography will be available for download from the

Cover Story

Gone fishing – for DX

A mobile alternative to the Squid Pole

David Crail VK5DWL

Squid poles in varying configurations have become very popular as car mounted portable antennas, returning very good results, but driving with a nine metre pole fully extended can present a few problems.

An alternative, also from your local tackle shop, is to use a surf fishing rod to make a truly mobile antenna, and still get very good results. I recently made a 3.6 metre helical whip, using a fishing rod, and in the short time I have been using it, the results have far exceeded my expectations.

Being faced with the blights of suburbia, living on a small block of land which restricts the size and type of antenna I can use, and with lots of QRM thrown in for good measure, going mobile seemed to be a good alternative. I could at least get away from the QRM. I was running a FT-897 (now a FT-857) barefoot into a four metre whip made from parts of a Buddipole antenna system (two accessory arms, plus a long, 2.9 metre telescopic whip), and using a SG-237 Smartuner to match the antenna, for my mobile station. My mobile station runs off two 26 AH gel cell batteries in parallel, which are not yet connected to the car's charging system so time mobile is restricted.

This setup allowed me to work all HF bands, with lots of good DX, but it had two major drawbacks. One is that even with the antenna mounted on a tow bar bracket, it was 10 cm over the maximum legal height of 4.3 metres for the road, and the other being that the Buddipole antenna parts, while excellent portable antennas, and returning exceptional results mobile, were feeling the affects of 12 months of mobile abuse. The telescopic whip was starting to become a little wobbly at the joints, like me, and shortening it a little to bring it down to legal height made it difficult to tune, so I had to look for an alternative.

I had been looking at various inexpensive options including making a slightly shorter antenna with a top hat to increase its electrical height, but constructing one sturdy enough for mobile use was problematic. I was looking to have an antenna with a natural resonance on 20 metres, yet could be tuned on all other HF bands with the SG-237.

I had a two piece 3.6 metre carbon fibre fishing rod which had been gathering dust in my shed for the past 15 years, so I figured that it would make a good base to experiment with. Measurements showed the

height above ground after mounting it would be 4.06 metres, which would be under the maximum legal road height. Now it was time to stop throwing ideas around in my head, and start putting them into practice.

Putting It All Together

I stripped all the runners and reel mount off the rod, and cut the wooden stock off at the base of the carbon fibre blank with a hacksaw, leaving a wooden plug in the end of the rod. This allowed me to drill an 11.5 mm hole in it, just the right size to allow a 12.7 mm (½ inch) stud to be



Photo 1: A close up of the antenna mount, showing the end to the tag soldered on to the copper washer.



Photo 2: The join in the wire where the rod joins, utilising the bullet connector, allowing the antenna to come apart in two pieces.

tightly screwed in. The 12.7 mm size was chosen as I am using Mobile One mounting hardware (base and spring) which has the standard hardware store variety 12.7 mm thread. Well done Mobile One.

I bought a length of 12.7 mm brass all-thread from the hardware store, and screwed it into the hole I drilled in the base of the rod. I marked the all-thread at the base of the rod, and then removed it. With a piece of copper strip left over from my base station earth, I fashioned a large washer, with a tag for soldering the antenna wire to. I drilled an 11.5 mm hole in the middle, and then screwed it onto the all-thread up to the mark I made. The washer was secured to it by soldering it in place. After putting a liberal amount of super strength Araldite in the hole in the wooden plug, I screwed the all-thread back in, right up to, and hard against the copper washer. I then cut the all-thread with a hacksaw, leaving about 25 mm sticking out from the bottom of the rod. This stud screws into the mounting spring.

I had previously purchased a roll of domestic grade (a very patriotic Ozzy green and gold) earth wire for

the purpose of experimenting with wire antennas, so I cut off 5.2 metres, the length chosen only because that linear length would put me pretty well in the ball park of the 20 metre band. I soldered one end to the tag on the copper washer (see Photo 1), and coiled it evenly along the whole length of the fishing rod, temporarily securing it at the top with a cable tie. It worked out to be roughly 65 mm per turn. After testing, I cut the wire where the two halves of the rod joined, and put a bullet connector (see Photo 2) on each end, to allow the antenna to come apart in two pieces. I also Araldited the wire to each end of the rod sections, to permanently secure them in place, but it is advisable to leave that as the very last thing you do, after all the testing is done, and you are happy with the results. Once this glue is set, you will have a real job removing the wire afterwards, if you need to make adjustments.

On Air Testing

Now it was time to put it to the test. It was near midnight on Friday, 2nd October, the night before the 2009 Oceania contest. After mounting it on the car, which is parked on the

street in front of my house, I fired up the FT-857 and went through the HF bands, tuning up on five watts, to check the SWR. The SG-237 had no trouble finding a 1:1 match on all bands, as expected. This auto coupler is that good it will virtually tune a paper clip. What followed was a totally unexpected bonus. I thought I would see if it would tune on 160 metres. The SG-237 manual suggested it would not, but nothing ventured, nothing gained. After a lot of clattering of relays, and the SWR meter at full scale, it finally found a 1:1 match. If that was not enough, I was also able to tune 6 metres as well.

Now for some on air tests! At that hour of the night, the only English speaking activity I found was on 80 metres with the Australia Wide Night Owls and Insomniacs Net, so after tuning, I turned up the power to 100 watts, and put out a call, and VK2TEZ responded, and 57s were copied both ways. I did not have time for a lot of radio the next day, but managed a good contact with ZS1SR on the ANZA Net, plus a few VKs on 20 and 40 metres, with a 57, a 58, and three 59s received from the interstaters, and a 59+20 from a local ham.

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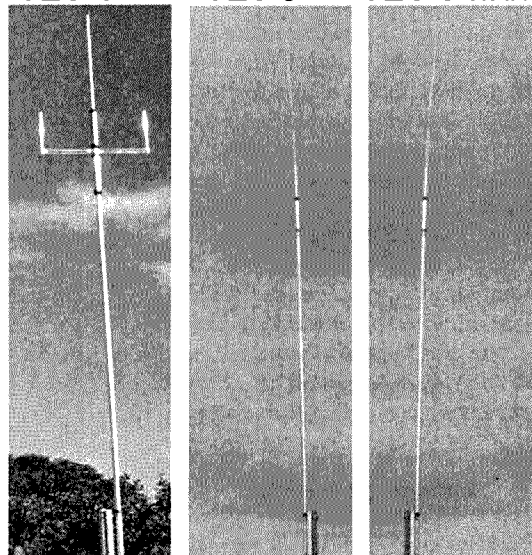
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FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1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

Sunday morning, I was able to work 160 metres for the first time, and listened to the WIA news bulletin on that band, and joined in the net that followed. After church that evening, my plan was to go to St Kilda, on the coast just north of Adelaide. The town has St Vincent Gulf on the west, large salt water evaporation lakes on its east, and mangroves to the north and south, so being virtually surrounded by salt water, it makes (in theory) a good spot for some DX. Before I got out of the church car park though, I fired up the rig, and had a quick tune around on 20 metres to see who was on. There was a Russian club station (RK0LWP) coming in at a 57, so I quickly checked to see if all was clear around the antenna, then put out a call. The response was immediate, with a 55 returned. This was followed shortly after with an each way exchange of 58s with JA7NVF. Two good DX QSOs, and I had not even left the car park, and no salt water for kilometres.

When I arrived at St Kilda, I worked two stations in California on 40 metres, another two JAs on 20 metres, plus one on 17 metres, and then China and Brunei on 20 metres before calling it a night, as the battery was getting low. The worst signal report I received being a 55 from one of the Californian stations. After working the last JA, I was called by VK6MG, who was listening on the side, and who wanted to know what I was running for mobile.

In the first month, with the limited time I get to spend on the air mobile (determined largely by limited battery life, and juggling other commitments), I have clocked up 54 DX QSOs, spanning all seven

In the first month, with the limited time I get to spend on the air mobile I have clocked up 54 DX QSOs, spanning all seven continents. These have been on 40, 20, 17, 15 and 10 metres, the first time I have worked DX on 10 and anything at all on 17. Not bad for the first month's fishing.

continents. These have been on 40, 20, 17, 15 and 10 metres, the first time I have worked DX on 10 and anything at all on 17. Not bad for the first month's fishing. I have also been able to work all bands so far with the exception of 30 metres, only because of lack of activity on that band, from 160 through to 6 metres. Even had a couple of DX QSOs while mobile in motion, one with ZL1TBA on 40 metres with 57 both ways and the other with KH6QR on 20 metres with a 57 sent and a 55 returned. Each

way signal reports for both of these were identical to when I worked them from home with my FT-897 into a G5RV. Driving while operating the radio is something I prefer not to do though, as I like to keep my attention on the road while driving. I am the wrong gender for multitasking.

Tuning is a breeze. Just a short one to two second whistle into

the microphone and it is done. 80 metres through to 6 metres tunes almost instantly, but 160 metres can be a little temperamental at times, depending on the surrounds.

Directly feeding the antenna from the rig with coax showed an SWR reading of 3:1 at the bottom end of the 20 metre band, and 2:1 to the top end. At the bottom end of 17 metres, the SWR was 4:1. Without an antenna analyzer, I can only estimate that it is resonant somewhere around 15 MHz.

Sound Advice

A word of caution, however, to anyone contemplating making one. This antenna is high. Read clearance signs before going under bridges, into undercover car parks, or into your local service station to fill up. Even though it is under the maximum

legal height for the road, and will safely clear power lines, it can be a real fluro buster.

It also pays to have a small cord loosely looped around the antenna (see Photo 2) and tied off either in the boot, or to your roof rack. This is to stop the antenna swaying back too far, which can not only be a little disconcerting to other motorists, but if you have to stop suddenly, the antenna will not swing forward, and hit the back of your car. I am not speaking through personal experience, but on sound advice given by a fellow ham with many years of experience mobile.

The antenna has survived the occasional encounter with low trees, and has come away completely unscathed. I am not sure about the trees, though.

Summary

I will not say this is the perfect antenna, as all HF mobile antennas are a compromise, but it has shown itself to be a very good performing all-bander. There are still a number of things I can do to improve performance, and they will happen in due time, but what I have here is a good foundation to build on.

I must give credit where credit is due though. The antenna is only a part of a system. The car, radio, tuner, antenna all contribute to the performance of a mobile station, but the real magic with this station lies in that little box between the antenna and the radio, the SG-237 Smarttuner, manufactured by SGC in the USA. I cannot speak too highly of it. Whether the antenna will work as well with other tuners, I know not. As the antenna itself costs very little to make, all you can do is give it a try. You will never know, unless you give it a go.

Going mobile, you can expect to get stomped on in a pile up, but as with fishing, patience and persistence eventually pays off. There are times though, where I have managed to bust through a pile up, and the feeling is like hooking that big one that did not get away.

Tight lines and good DXing from David VKSDWC/mobile.

Testing your antenna

Ted Thrift VK2ARA and Ross Pittard VK3CE

After collecting all the test gear we discussed in last November's *AR* magazine it is about time we find out what one does with it, if and when you have a fault.

This month Ted Thrift VK2ARA, the WIA Club Coordinator and an Assessor has provided an article on tracking down problems in your antenna system. Faults are not always easy to locate and Ted goes through the testing in a logical manner. I suggest all Foundation licensees keep this article as a handy reference.

Testing your antenna

So you can no longer hear anything and you think your antenna system is faulty. It is very likely that it is, or at least some part of it is faulty.

To repair the fault, we first have to find it. To do this we have to treat your antenna system in exactly the same way as fault finding inside a radio. After all, it is an electrical circuit and if not all correct, it will not work in the way that you expect.

Parts of the antenna system

- The support poles and ropes.
- The antenna insulators.
- The wire elements.
- The feed point or balun.
- The transmission line.
- The entry point to the shack.
- The patch cable to the radio.
- Any one or more of the above can be the cause of your problem.

Thoughts about the antenna

- Is it a balanced half wave dipole?
- Is it an OCF dipole?
- Is it a multi-band antenna, for example, a G5RV?
- What band is it designed for?

Thoughts about the radio

- Has it a built in antenna tuner?
- Do you use an add-on antenna tuner?
- Can you transmit a carrier signal on any band?

- Can you adjust the power level of the carrier?

Before we start testing

If your radio has a built in "auto-tuner" has it by now been set to "attempt" to match your antenna system, *faults and all*. You may have also tried other bands to see if you can get "something" to work.

To find the fault we must test the system on the primary band for which it was designed.

Keep this in mind when you start testing.

Test equipment

In addition to your radio, you will need at least the following items.

- A suitable PWR/SWR meter.
- A suitable 50 ohm dummy load.
- At least one tested 50 ohm patch cable.

Your first test

This is to ensure that both your radio and your test equipment are working correctly.

- Remove the antenna coax and connect your test patch cable.
- Connect the other end of the patch cable to your PWR/SWR meter.
- Connect your dummy load to the PWR/SWR meter.
- Set the power range on the meter to a high scale, to prevent overload.
- Set the radio to the band and engage the auto tuner to tune to the 50 ohm dummy load.
- Set your radio to CW, AM or FM.
- Adjust output power to minimum.
- Press (PTT) and adjust output power to (say) five to ten watts.
- Check that the power indication

in the radio and the PWR/SWR meter are similar.

You have now set a benchmark with known output into a 50 ohm load. *This is an important step*. Do not change any settings on your radio until all tests completed and the faults fixed.

Your second test

Here is where we start to eliminate possible causes of your problems. It is likely that you have some kind of socket or bulkhead fitting where your antenna coax enters the shack. From there you have a patch cable to your radio. We test this next.

- Remove the test patch cable from the radio to the PWR/SWR meter.
- Connect your normal patch cable from the radio to the PWR/SWR meter.
- Press (PTT) and observe the power reading. It should be exactly the same as step 8, above. If not, your patch cable is faulty or not suitable.

Test and fix

First, a continuity check of inner and outer. Then insulation check, inner to outer. Check that the pins on each PL259 plug are correctly soldered and fit firmly in SO239 sockets. Look for markings on the jacket of the cable to ensure that it is a 50 ohm cable. *If you find a fault and fix it, retest steps 1-3 above.*

Your third test

Here is another elimination step. It is very common to have bulkhead fittings that are also lightning arrestors. These are not totally fool proof and can fail due to a hit or moisture. We do need to test this fitting.

Disconnect the coax to the antenna. Using your "now tested OK" patch

cable, DC test the fitting.

Connect the patch cable to the fitting.

Test insulation inner to outer with a high scale setting. If it is also lightning protection, test inner to earth (should be O/C) then test outer to earth (should be S/C or very low resistance).

The easiest way to test continuity of the fitting is to connect your 50 ohm dummy load to the outside of the fitting. Look for 50 ohms inner to outer.

Using two (2) patch cables and the PWR/SWR meter test through to the dummy load on the outside of the fitting.

Power should be the same as when you tested your patch lead.

SWR must be about 1.1:1 or the fitting is faulty to RF.

Before the fourth test - when are we going to test the antenna?

Very soon but since it does not work we need to have a look and see. We have to lower the antenna and in the process, inspect and ensure that:

- On the insulators at each end, there is no possibility of contact between the antenna wire and the supporting wire/ropes.
- If there are any joins in either wire element, they are well crimped or soldered.
- At the centre insulator, there is no possibility of contact between the element wires.
- At the balun or coax connection the element connections are soldered or firmly connected.
- *If it is a centre fed dipole it should be a 1:1 balun.*
- *If it is an OCF dipole, it should be a 4:1 or 6:1 balun.*
- Cut away the waterproofing around the coax termination and inspect for water damage. If green or corroded it will need to be cleaned if not replaced.

Your fourth test

Now we are going to carefully test the main antenna coax cable, AND its connectors. First some DC tests, then we can RF test.

With the coax disconnected from the antenna AND wall fitting (or radio), test continuity overall of the inner, then outer. Insulation test inner to outer on highest available scale.

- Connect the 50 ohm dummy load to the antenna end of the main coax. Measure inner to outer from the radio end and you should see close to 50 ohms.
- Reconnect the fitting or radio end of the main coax and you should now have connected in sequence; radio, patch lead, PWR/SWR meter, patch lead, bulkhead/wall fitting, main coax and dummy load.
- Press (PTT) and note power reading, it should be very close to your preset five or ten watts. Check SWR, it should be close to 1.1:1. *Be very wary of seeing no reflected power at all. This could mean that the coax is so lossy that reflected power is unreadable. One more test will prove this.*
- Relocate the PWR/SWR meter from the shack to the antenna end of your main coax but put it where it can be seen. The sequence is now; radio, patch cable bulkhead/wall fitting, main coax, PWR/SWR meter, dummy load.
- Press (PTT) and note power reading, *it should be at least 75% of your preset five or ten watts, much less and I would replace the coax.*
- Check SWR and it should be close to 1.1:1.

If you do replace the main coax, repeat all of steps 1 to 7. above.

We are nearly there. Re-apply the waterproofing to the connection of coax to balun, or at least some temporary tape. (If it now works you will get so busy you will forget to finish it all). Pull your antenna back up into position, taking care not to put ANY stress on the coax cable. We are going to test the SWR on the main band, without the help of the tuner in the radio.

The Final Test

Initially we are going to test without the tuner engaged, so we can see how close the antenna is on the main band that it was designed for. It is only on this band that we can make any adjustments to the length of the wire elements. Before we start adjusting we need to know which direction to go, so we will test high middle and low on the band.

Remember that we are now going to be testing "On Air" so we need

to consider others and ask if the frequency is in use.

- Connect the PWR/SWR meter between the radio and the wall fitting.
- Assuming that the main band is 40 metres, tune the radio to, say, 7250 kHz and find a quiet spot.
- Check/ask if the frequency is in use, if not announce 'VK2xxxx' testing.
- Set carrier power to minimum.
- Set SWR meter calibrate to near maximum and increase power to "JUST ENOUGH" to be able to fully calibrate. Set to Rev/Ref power and note (write down) the reading.
- Tune the radio to, say, 7100 kHz and find a quiet spot.
- Check/ask if the frequency is in use, if not announce 'VK2xxx' testing.
- Set carrier power to minimum.
- Set SWR meter calibrate to near maximum and increase power to "JUST ENOUGH" to be able to fully calibrate. Set to Rev/Ref power and note (write down) the reading.
- Tune the radio to, say, 7040 kHz and find a quiet spot.
- Check/ask if the frequency is in use, if not announce VK2xxxx testing.
- Set carrier power to minimum.
- Set SWR meter calibrate to near maximum and increase power to "JUST ENOUGH" to be able to fully calibrate. Set to Rev/Ref power and note (write down) the reading.
- Compare the three SWR readings and decide if the antenna is long or short, or if no adjustment is required. Note that if all SWR readings are better than 1.5:1, very little will be gained by adjusting the length.

It is now time to let the radio and auto tuner do their thing.

Take the PWR/SWR meter out of circuit as the auto tuner will now be adjusting to something other than 50 ohms. Engage the auto tuner and let it set up on a nominal SSB frequency. Set output power to about 75-80%, then tune around.

If the band will cooperate, **put out a call and have fun.**

ar

A 40 metre shunt fed mast antenna

John Sutcliffe VK3TCT

The need

Each day I am on 7.060 MHz (40 metres) to several stations around eastern Australia, which may be located variously in southern Queensland, NSW, ACT, Victoria and Tasmania. Conditions in the past eighteen months have made communications from Mildura to both Queensland and Tasmania difficult at times. I had noted vertical antennas often seemed to perform better under trying conditions and had formed this opinion from listening to mobile rigs, and also from my own travels to the Apple Isle.

A lower radiation angle was often a great help and sometimes the difference was marked; now this is not always the case and with my Kenwood TS-2000 I can swap antennas rapidly by just pushing two buttons as the Kenwood has provision for two HF transceive antennas. I normally check conditions on both antennas each day and run with the best, either my vertical or my broadband dipole, and sometimes I even swap antennas between stations.

I set up a test with a temporary vertical and found, at times, there was a great improvement and figured I could modify my 10 metre steel mast to operate as a vertical, and probably cheaply, which further appealed to me.

Research

Firstly I do not believe in re-inventing the wheel so I went looking in different sources for a practical method and below are some of the more interesting I examined:

- A low-band antenna that is almost free (Reference 1).
- The NT6Z antenna system (Reference 2).

- Full-size antennas, a gamma feed system (Reference 3).
- Vertical antennas are effective for 3.5 and 7 MHz work (Reference 4).

Most examples were not what I was looking for; the closest was reference four but it was lacking in detail - as described, 'the tap would have to be found by experiment' and no dimensions for the shunt, and so on. Clearly I would need to experiment to find the solution myself.

Experimentation

The first thing I needed to do was some preparation and I had done most of this with the temporary vertical.

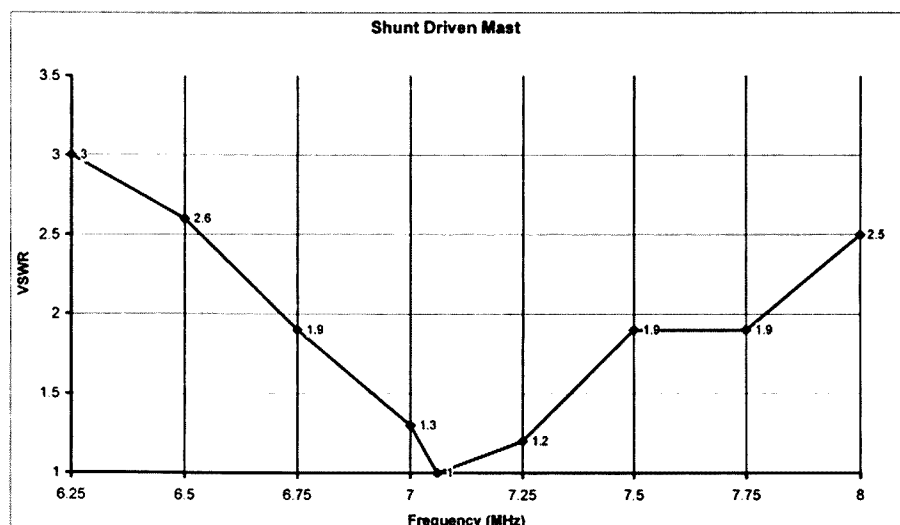
- First, the mast needs to be grounded at the base and I used an 1800 mm (6 foot) copper dropper adjacent to the mast and connected to a common point near the mast bottom.
- Second, I attached four lateral wires 10 metres (33 feet) long to the mast ground point as a counterpoise.
- Thirdly, all coaxial cables running up the outside of the mast need the shields connected to the mast at both the top and the bottom.

- And last, the guy wires need to be insulated from the mast, and you need to break up the length of long guys with insulator(s).

My mast is about 10 metres long and would lend itself well to a 40 metre quarter wave vertical. My first effort at a shunt was poor as the shunt was not long enough and I could not get the VSWR below 8.5 to 1. However I did tune the mast up with my MFJ 989C tuner and have a QSO with the VK3AJK group, and they reported good signals even though feeder losses would have been high.

I lengthened the shunt to four metres and connected the shunt to the mast 560 mm from the top and tested the VSWR again; this was a bit over four to one, and encouraging. I then added some capacitance to the feed by stripping off the covering and shield from 1.3 metres of RG213 coax.

I removed the lower bolt holding the 12 mm aluminium shunt to its support, and connected one end of the coax inner to the UHF connector centre and began feeding the RG213 inner up the shunt. The results were spectacular. As I watched on my MFJ analyzer, VSWR dropped to 1.0 to 1 at 7.060 MHz. There could not have been a better result and the VSWR I



Graph 1: Graph of the SWR curve across the 40 metre band.

plotted is shown in Graph 1.

As can be seen from Graph 1 the antenna is usable over the entire 40 metre band, and using the formula $L = 234/f$ (MHz) the antenna mast computes to 10 metres (33.1 feet) long electrically.

Duplicating my results

Parts Required

4 metres 12 mm aluminium or other tube.

2 x irrigation risers, 25 x 600 mm (Available from hardware stores).

1 x earth rod 1400-1800 mm.

5/32" Bolts & Nuts (M4 also suitable).

1 x UHF Socket (PL259).

1 x Bracket for UHF socket.

2 metres of RG213 Coax.

Wire for radials (40 metres) – scrap is OK.

Material for brackets - 1 used hoop iron.

Assembly

- Cut black high density irrigation risers in two and drill a parallel hole at each end 25 mm from each end. I used 5/32" bolts.
- Drill three holes in the four metre shunt tube; for spacing I used one metre between support posts with about 0.5 metre over hang at both the bottom and top. The

bottom support post will not be bolted to the tube as the RG213 inner conductor will need to be fed up through the bottom - so do not drill the bottom hole.

- Screw the three support posts to the tube with bolts and nuts. The whole assembly can then be fitted to the mast temporarily with tie wire, with the bottom of the tube level with the earth connection. See Diagram 1.
- A brace can be made by using cord or plastic tube between any two posts to stop the whole unit sagging. I used 300 lb strain fishing line. Brace can be seen centre of Photo 1.
- Wire or clamp the lower post to the shunt tube. I used a nylon tie. Fit the UHF connector to the bracket and mount to lower support post - position was not critical.
- Strip protective covering and shield from RG213 coax and feed 1.20 metres up the 12 mm tube, from the bottom, and connect the other end to the centre of the UHF connector; this is the capacitive coupling.
- Connect a wire from the shunt to the mast 560 mm (22 inches) from the top of the shunt tube; ensure a good connection to both mast and shunt tube.
- Connect a wire from the ground connection on the mast to the UHF (PL259) socket base.

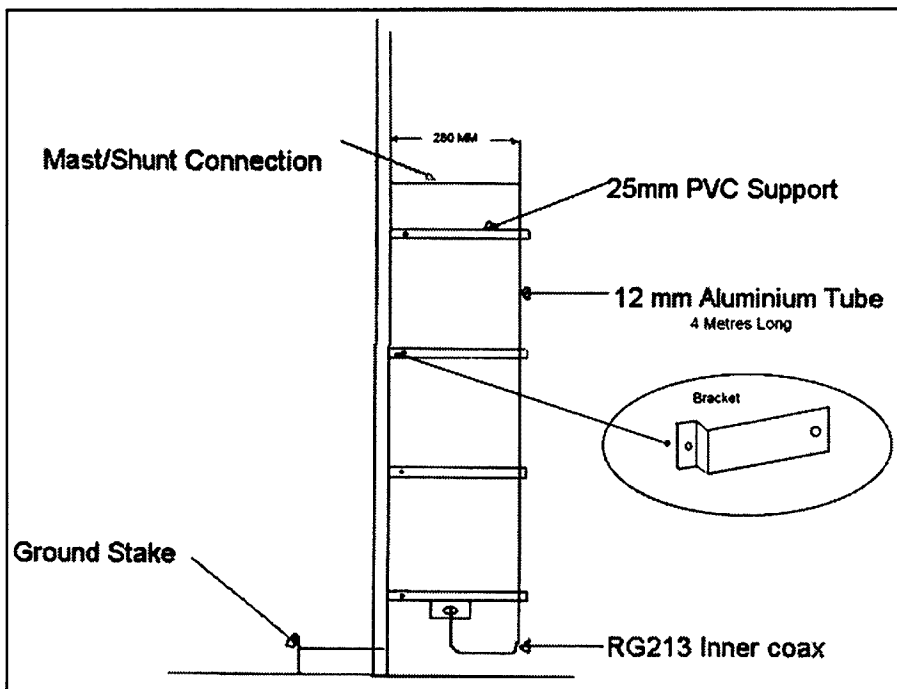


Diagram 1: A diagram of the mast showing work done on the shunt.

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Now more on counterpoise wires. Radial wires are most important as they make a grounded quarter wave vertical antenna work as a half wave antenna; without them performance may be poor. The radial wires, in my case, are on top of the ground as they are in a low traffic area. If need be slots can be cut in the ground with a whipper snipper and the wires pushed into the slots, for example, over lawn.

Testing the antenna

Check assembly and ensure the system is reasonably rigid, and correct if necessary.

Connect an antenna analyzer to the UHF connector and check VSWR; the VSWR should be one to one at the electrical length of the mast; with

a ten metre (approximate.) mast, somewhere around 40 metres. If you have no analyzer you will need to use a power meter and your transmitter. Switch your transmitter to AM mode and test on low power until you find the lowest point of VSWR within the forty metre band; this test should also give you an indication of the mast length.

With no analyzer or power meter you will need to test the antenna with your transmitter VSWR test. Read the appropriate manual for your transmitter. Remember the natural frequency for your mast antenna is related to the mast length and if this falls outside of an amateur band you will not find this as the transmitter will not transmit outside the bands. Your transmitter should give you some indication of the VSWR in the

forty metre band and if the VSWR is abnormally high (for instance 10-1), re-check your installation.

Either way you will need a tuner to touch up the tuning, assuming your mast is about 10 metres long. Once satisfied, and having completed adjustments, make some brackets and secure the shunt posts to the mast. The brackets will depend on your type of mast. My brackets can be seen at the centre right hand side of Photo 1. My shunt assembly is quite rigid. Silicone the shunt tube and all connections to keep water out; do not forget the top hole on the shunt. I left the bottom hole unsealed.

Remember if your mast is less than ten metres and resonating too high in frequency, the mast could be extended cheaply by adding a whip to the top, suitably connected to the mast of course. You can use the formula $L=234/f$ (MHZ) to calculate the amount needed to be added to your mast.

Conclusion

A very good vertical antenna can be made using shunt coupling (gamma match) without coupling coils for the 40 metre band, providing the mast is about 10 metres long.

As said previously the resonant frequency of the system will depend on the length of the mast and the bandwidth will depend on whether other equipment is mounted on the mast; a beam will increase the bandwidth. In practice a tuner will be needed to just touch the antenna tuning up as the operator will probably not be operating right on resonance.

Construction is not difficult, and most of the parts will be found lying around so construction will be cheap. The antenna should achieve a VSWR of 1.0 to 1 on resonance. Good DX

References

www.qsl.net/w9kb/webdoc9.htm

<http://earthsignals.com/n6tz/>

ARRL Handbook 2004, page 20.19

The ARRL Antenna Book 1960, Chapter 8, page 204

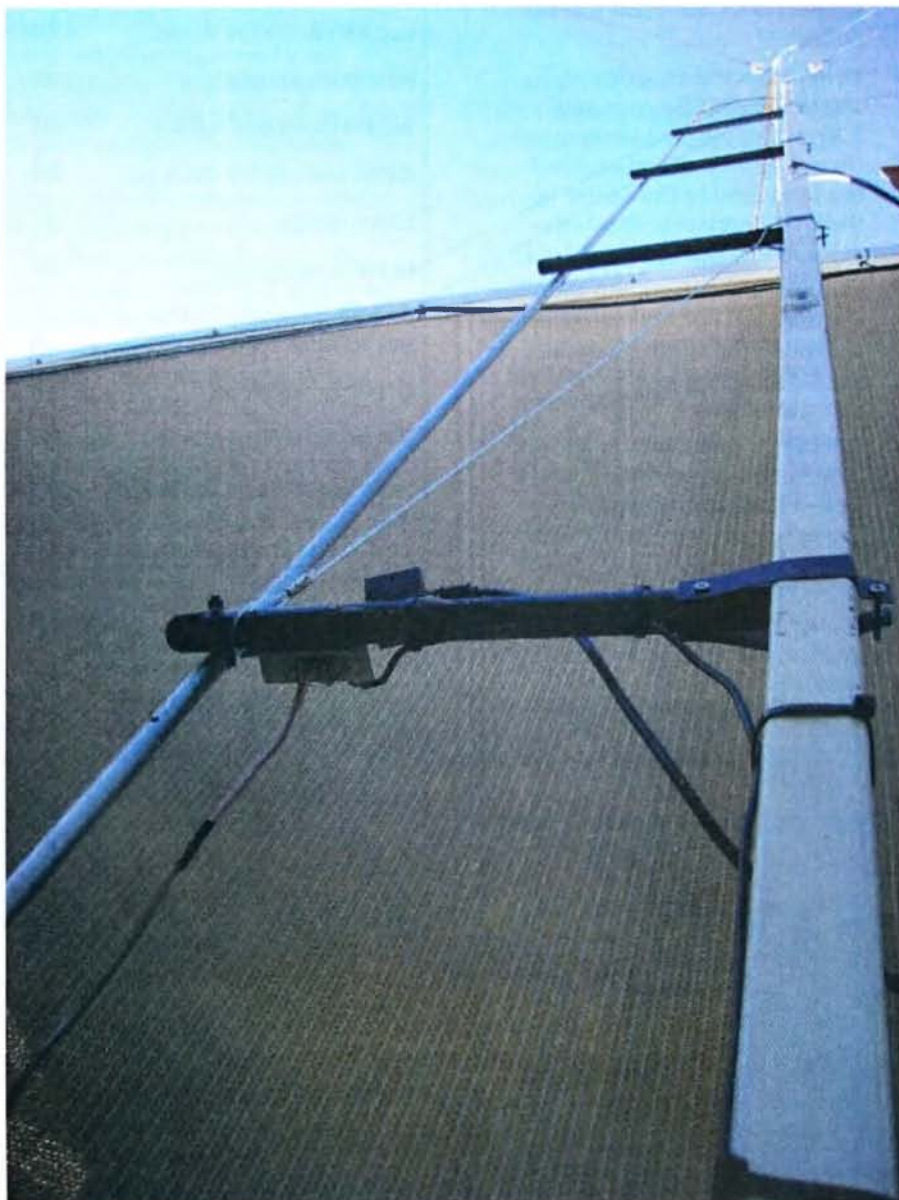


Photo 1: A view of the tower, with the brace in the centre of the photo.

National Field Day

Saturday 23 October 2010



The Wireless Institute of Australia

National Field Day

On Saturday 23 October 2010, amateur radio enthusiasts from all over Australia will be showcasing amateur radio in prominent locations throughout their local area.

This activity, new to Australia, will be a good opportunity to break out your field day equipment, demonstrate emergency preparedness, but most importantly engage the public. Most in the general public would give our hobby a second thought, if they knew more about it. This is the opportunity to showcase our capabilities.

Has your club got the capacity to run your station on solar or wind power for the day? Can you borrow some space in the local shopping centre car park? Does the local sports complex run hot on Saturday? Does the date align with a local community festival or school fete? The opportunities are endless. Are you up to the challenge?

The Foundation licence and a revamped WIA have done much to bolster our numbers, but it is time that we make a concerted effort to better publicise amateur radio and all of its benefits. This is your club's opportunity to recruit not only new applicants for your training courses, but also some new club members.

We need to re-introduce the general public to amateur radio, let them know a little of what it is about, without scaring them with too much technical jargon. Our public face will be on display, as well as our professionalism. The common appearance of Club, WIA or special National Field Day branded clothing all helps with the presentation. Excellent operating procedures and tolerance will be on display.

The event is not intended to be a traditional contest, with isolated groups of operators sitting on remote hilltops. We wish to generate as much positive public exposure (and traffic on the bands) as possible. Local repeaters can play an important part in keeping something happening.

The safety of the operators and general public must be high on our priority list during station set-up, operation and close down. Cabling bird's nests should be well hidden, electrical safety must be beyond question.

Remember your audience, for young people, sound and visual activity is important. IRLP, EchoLink, Slow Scan TV, ATV, colour and movement will appeal to the younger audience. HF may be interesting, but the noise should not dominate the activity. Radio direction finding is very popular, if you have the room to safely run it. Get people involved without being intimidating.

Over the next 10 years, most of the Baby Boomers will officially retire. They will be looking for new hobbies and challenging activities to keep their minds active. Add the following generation, Gen Xs who are now facing empty nests with a few spare dollars and a spare room at home. What an opportunity for amateur radio.

Whilst our WIA Centenary Year will be interesting for some and may provide some initial attraction, our display should equally show the future. Are you up to the challenge?

Frequencies

Recommended Calling Frequencies will be advised and will be in accordance with current WIA Band plans.

Modes

Clubs are invited to demonstrate technologies including SSB, Morse code, various digital techniques (D-STAR, SSTV, RTTY, PSK31 and WinLink), IRLP, APRS EchoLink and even amateur radio satellite.

Please email your enquiries or expression of interest to nfd@wia.org.au

73 de Paul VK5PH, Fred VK3DAC, Gerard VK5ZQ.

National Field Day Background

In America, each year during the fourth weekend of June over thirty thousand amateur radio operators participate in an American Radio Relay League run Field Day that has grown to be their largest on-the-air event. This public demonstration of their abilities combines promotion, education, skills enhancement and emergency preparedness practice.

So important is this weekend that it plays a major part of a recruitment program where over 30,000 new amateurs join the hobby each year. Given the population ratio of the USA to Australia we should attempt to introduce 2,000 new amateur radio operators to the hobby per year and days like this will help to achieve this goal.

Setting up in these public venues gives added public relations value – their friends and neighbours can see and experience the fun and public service capability that their "amateur radio" neighbours bring to the community.

The Field Day is part educational event, part operating event, part public relations event – and ALL about FUN! Are you up to the Challenge?

A budget antenna tuner and SWR meter

Rod Russell-Brown VK1ACE

Being of the 'thrifty' school of radio operators, I hate to part with hard-earned cash to pay for commercial gear that I can build myself. I needed an antenna tuner unit (ATU) and so the way forward was obvious – build it!

This is an ATU that will be of interest particularly to our Foundation licence members. An ATU is a device that will match complex impedances in antenna systems to a regular non-reactive 50 Ω load for connection to your transceiver. It is relatively easy to build and will match a wide range of antennas.

My motivation for building this project was so I could have a portable, but versatile unit to use in holiday situations. A rented holiday

home or camping site has meant slinging up a random length of wire into a tree to get on air. Needless to say, the odds of a neat match to my transceiver have been zero. The ATU solves that problem.

The unit described is a standard T match for unbalanced antenna systems. It is a straightforward design and further details can be found in the ARRL Handbook. I have included a few refinements such as a dummy load, SWR bridge and switchable input and output circuits.

The design can be adapted to your own preferences. I found the SWR bridge, in particular, to be very helpful as it limited the amount of gear to carry when going portable.

The Circuit

See Figure 1: The T-match antenna tuner, below.

You will notice that the inductor to earth is not a roller inductor. These are fine if you can get hold of them but they are expensive to purchase

new. Personally, I prefer a switched arrangement as shown, for the reason that it is much faster to change the band of operation. It is true that a roller inductor gives a wider range of inductance than a switch but, in practice, a well-chosen switched arrangement will give plenty of flexibility with various antennas.

The SWR bridge is not the 'Monimatch' style popular in inexpensive CB SWR meters. These have the annoying habit of being frequency dependent, very sensitive at higher frequencies and require more power to drive them at lower frequencies.

The bridge used here is sensitive for QRP work and is not frequency dependent. That means it can be used for power measurements if desired. The circuit featured is courtesy of Drew Diamond VK3XU and can be found in one of his excellent construction books (1). I found this circuit easy to replicate. (Photo 1: The SWR bridge)

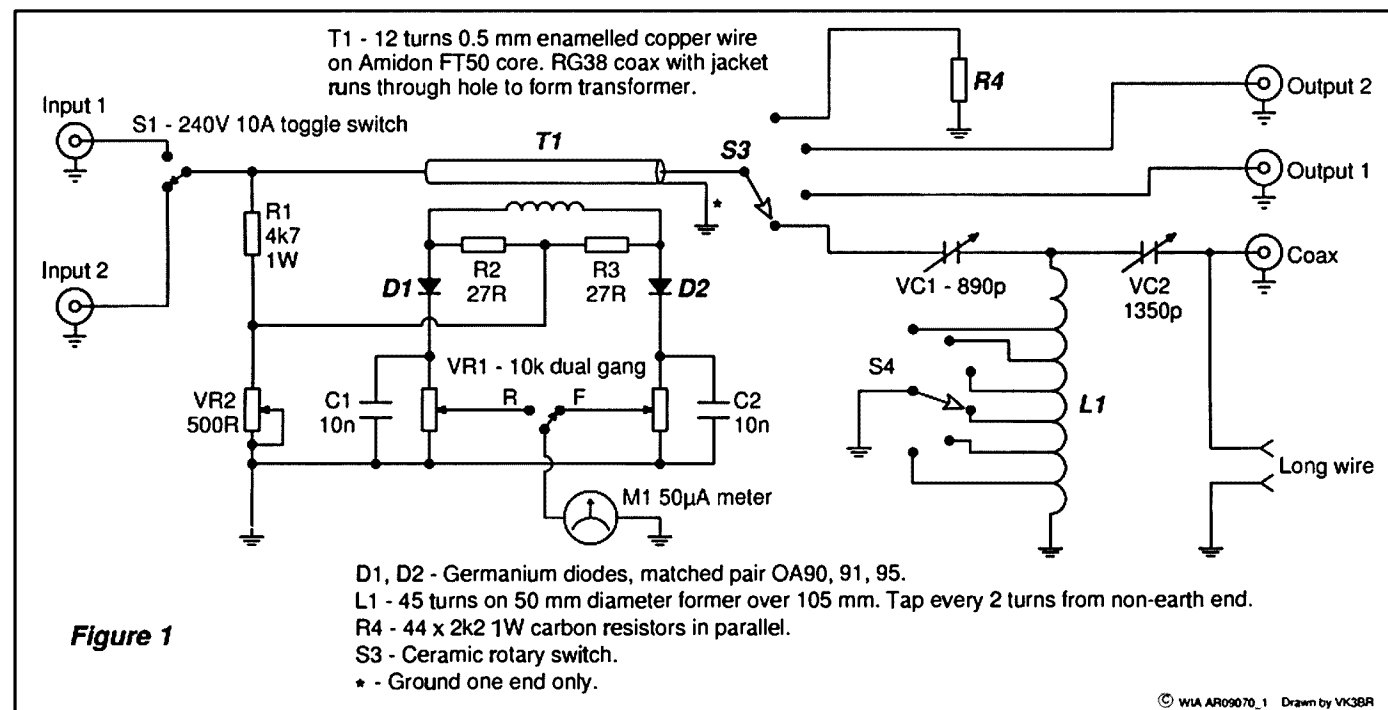


Figure 1

Figure 1: The T-match antenna tuner

© WIA AR09070_1 Drawn by VK3BR

A dummy load was added for convenience when travelling. The dummy load simply consists of 44 identical 2.2 k resistors in parallel, sandwiched between two pieces of printed circuit board.

Switching for input and output circuits gives greater flexibility to the circuit but can be eliminated if not required.

Construction

The variable capacitors were scrounged from old valve radios and the values shown are for the ones I used (gangs wired in parallel). I have had no problems with arc-over on the air-spaced capacitors I used. If you do, just reduce your power output.

The variable capacitor values are non-critical and any dual or triple gang variables of around 800 pF total should do the trick. Parallel the gangs to give you a higher capacitance. In this circuit you will need to insulate variable capacitors from the chassis.

I did this by first mounting the two capacitors on a piece of scrap Perspex ensuring that the screws securing the capacitors were counter sunk so that they could not touch the metal chassis. The Perspex unit containing the capacitors can then be bolted in place.

As I wanted to run this unit at up to 100 watts, I needed to insulate the spindles of the capacitors. The shafts of the old broadcast radio capacitors I used were 9.5 mm (3/8 inch) and I wanted to use a standard 6.3 mm (1/4 inch) shaft to enable ordinary knobs to be used.

I joined them using PVC tubing as shown in Photo 2. Note that the extension spindle needed to be packed out with a scrap of PVC tube at one end. Both ends were then secured

in place using 8-12 mm hose-clamps. No twisting in the PVC tubing was evident.

I used a bush arrangement on the front panel to ensure smooth operation of the capacitors. The bush was fabricated from a discarded potentiometer. If you only plan on QRP operation (5 watts or less), the size of components can be reduced

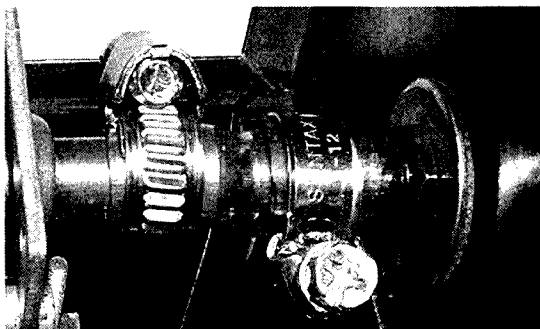


Photo 2: Spindle arrangement

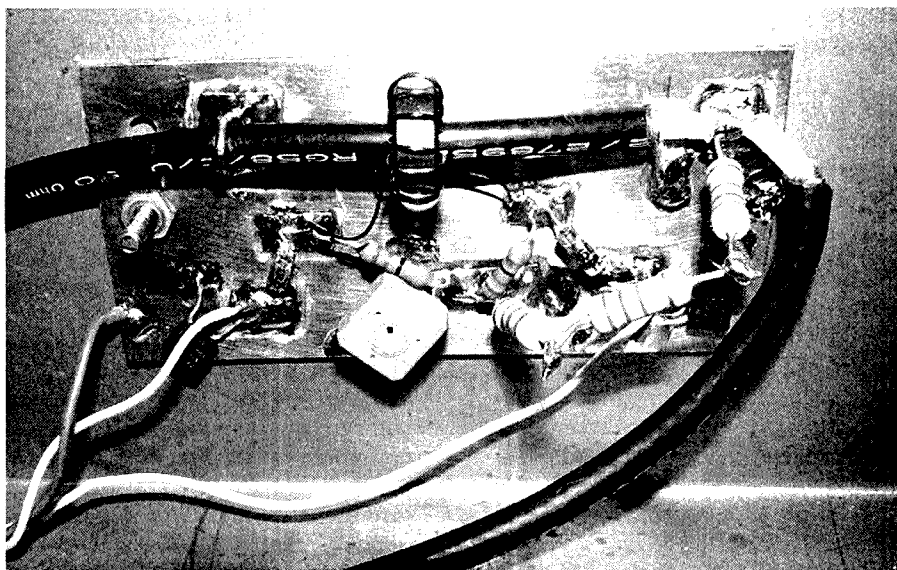


Photo 1: The SWR bridge

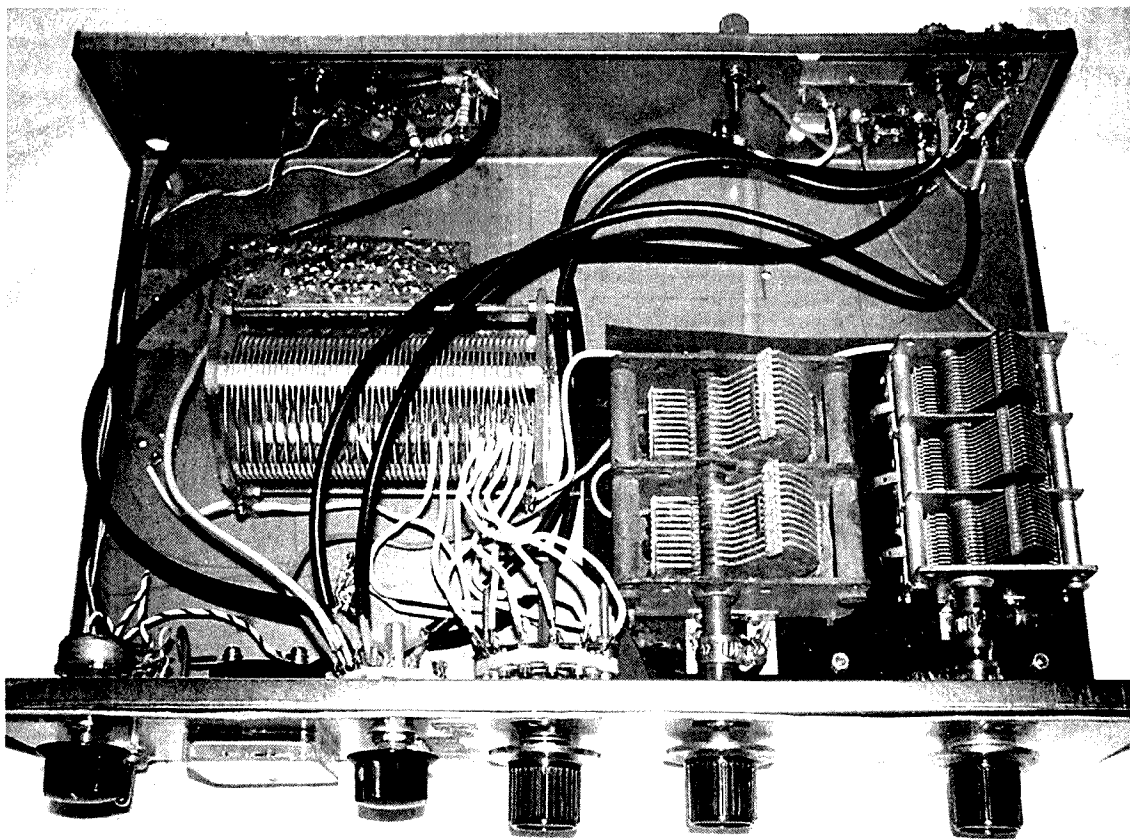


Photo 3: Inside the box

drastically. An inductor wound on a T-68 2 toroid and two cheap plastic variable capacitors could be used with good results.

The dummy load, as mentioned, consists of 44, 2.2 k, one watt carbon resistors wired in parallel resulting in a 50 Ω load.

Do not be tempted to use the 5 watt wire wound resistors as they will cause problems due to their internal inductance.

Take two pieces of single-sided, plain printed circuit board (PCB) 100 mm by 40 mm and draw up four evenly spaced columns along their length (about 10 mm apart). Place the two pieces of PCB face to face copper side out. Clamp them in place and drill through both pieces of board 44 evenly spaced holes (8 mm apart between resistors). Then, place the resistors into the holes of one piece of board (copper side out) and solder the resistors in place. Carefully manoeuvre the remaining resistor legs into your second piece of printed circuit board. This can be a bit tricky with 44 resistors on the one board but be patient and you will find you will get all the tails through. Solder the other side and then test with a multi-meter - it should read 50 Ω . I have used this dummy load at 100 watts without incident but naturally it is only rated at 44 watts. Just keep higher-power testing to short bursts.

I managed to put this together with bits from my junk box. If your junk box is limited, get on the phone to some local amateurs and you may be

surprised at what you can scrounge or purchase cheaply.

I happened to have an old 44 μ H inductor that worked well but had more inductance than was required for 80 m -10 m operation. An inductor of about 28 μ H will be adequate. If you do not have one you can wind your own but that is beyond the scope of this article. See the reference at the end of the article for details on how to wind one yourself (2).

Create an inductor of about 28 turns, 50 mm diameter, 55 mm length, and then solder on the connections about every two turns from the NON-earthly end. You will need to experiment with the exact placement of the taps depending on the value of your capacitors. The ceramic rotary switch can be purchased or again scrounged from friends.

The SWR bridge PCB was etched using an engraving tool. Alternatively, you can use 'Ugly-Method' (soldering components directly onto a plain piece of PCB). Another favourite way is to draw a pattern directly onto a plain piece of PCB with a Dalo pen and then etch it with Ferric Chloride (or Ammonium Persulphate).

What about the actual SWR meter itself? If you have a meter from a defunct SWR meter or ATU you can use that as is. If you cannot source a calibrated meter, then you can re-calibrate a new meter. How do you calibrate the meter? That will probably be the trickiest part of the project. If you only plan on making comparative SWR

measurements, you do not need to calibrate it; simply adjust the tuner for a null in the 'Reverse' position. With the meter half way up the scale, you are at about a 3 to 1 SWR.

If you want to calibrate your meter for PEP power readings, the simplest way is to borrow a power meter

from a friend, place the two meters in series into a dummy load and use the meter you borrowed to calibrate the new one. I make no claims of amazing accuracy but it will be within the ballpark for amateur use. I did not bother to use switched power arrangements on the front panel of the prototype.

If you want a more professional looking meter movement as per Photo 4 then you can create a new scale on any meter, as follows. The process is a little tedious but I felt worth the effort.

First, ensure the SWR section of the tuner is working properly by using another meter in series with your new meter. Then, take a series of measurements on the new meter at every ten watts or so and carefully record the displayed current on your new meter for later reference.

Next, remove the clear viewing panel from the meter you wish to modify, then unscrew the metal plate that has the scale printed on it. Be careful not to bend the needle or get any rubbish into the meter movement. Remember the movement has a magnet in it that loves to attract metal filings!

Once removed, take the meter scale plate and scan it onto a computer. Once scanned, take the image and create a new scale with a drawing program. You will use the measurements that you took before disassembling the meter.

Print the new scale and glue it onto the meter face being careful to position it correctly. Now reassemble the meter and install it in the tuner.

Calibration

The SWR bridge needs to be 'nulled'. This is done by switching the antenna output to the dummy load position (having first established that it is 50 Ω). Adjust the 500 Ω trim pot to about mid travel.

Then apply a couple of watts of CW at about 14 MHz into the bridge. Start with zero carrier then increase input power until you get a deflection on the SWR meter. Move the Forward/Reverse switch to the opposite position. One position will read high and the other low. Switch to the position that has the highest reading and increase sensitivity control (the

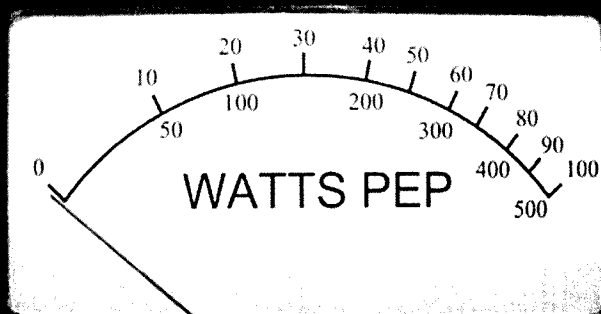


Photo 4: A re-scaled meter

dual gang pot) until you have a full-scale reading.

Then switch back to the other position and adjust the 500 Ω trim pot for a null reading. If it does not null, check your wiring. Make sure that you have only earthed one side of the coax braid.

A Simpler Alternative

According to the books, the T circuit (CLC) can match a very wide range of antenna impedances. If you only want to match long wires, another alternative is to use an L match (LC). While it is apparently not as versatile as the T match, it has the advantage that it only requires L and C, that is, one less capacitor and you do not need to insulate the capacitor from the chassis. I have regularly used the L match with a length of wire around 40 metres and it works very well so you can take your pick of the circuit you use. See Figure 2: The simpler L-match tuner for long wire antennas

Operation

Tune the unit for maximum noise by adjusting the inductor and the two capacitors. A little experimentation will be needed depending on the type of antenna you are using.

Once you have a 'rough match' by ear, fire up your rig to CW with one or two watts and adjust the three controls until you get a match. I was able to use the unit to match a long wire on 80 m-10 m with ease.

So there you have it! If you do not have an ATU, why do not you give this circuit a try? You will find it easy to build and straightforward to operate. You can tailor it to your own needs and be able to boast that you built it yourself!

References

1 Drew Diamond, Radio Projects for the Amateur, Volume 2, Published by Drew Diamond, 2001, page 93. This is an excellent resource and is available from the WIA.

2 Ibid, page 49.

Parts List		
VR1	1	10 k dual gang linear
C1, C2	2	10 nF mono or ceramic
T1	1	12 turns, 0.5 mm enamelled copper wire
VC1	1	890 pF air-spaced variable capacitor
VC2	1	1350 pF air-spaced variable capacitor
R2, R3	2	27 ohm
R1	1	4k7 ohm 1 W
L1	1	44 uH used but 28 pH is suitable
R4	1	50 ohm which consists of 44 x 22 k, 1 W carbon resistors
VR2	1	500 ohm linear
M1	1	50 uA meter
S3, S4	2	Ceramic rotary switch with suitable switch positions
D1, D2	2	Germanium OA91 or similar
Sockets 1-5	5	SO239
Sockets 6-7 for long wire	2	Binding posts
S1, S2	2	SPDT 240 V 10 A

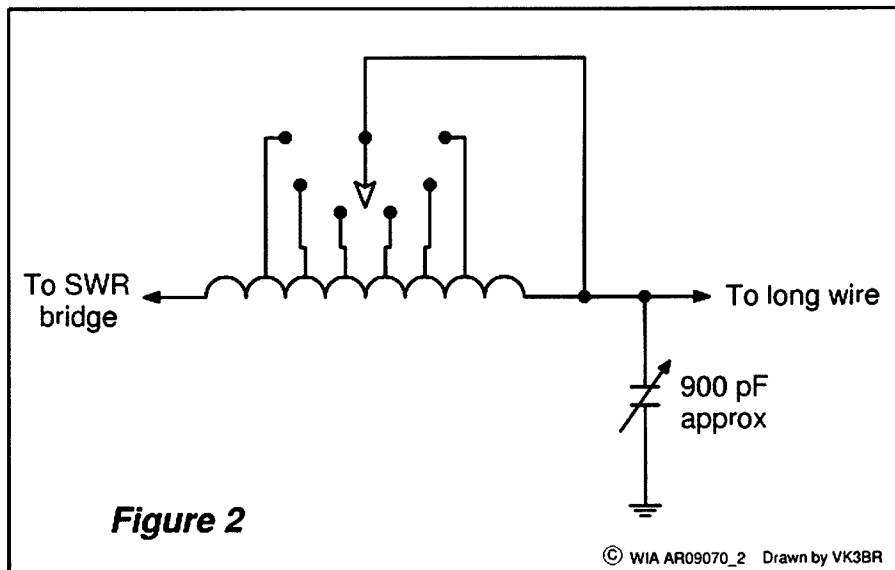


Figure 2: The simpler L-match tuner for long wire antennas

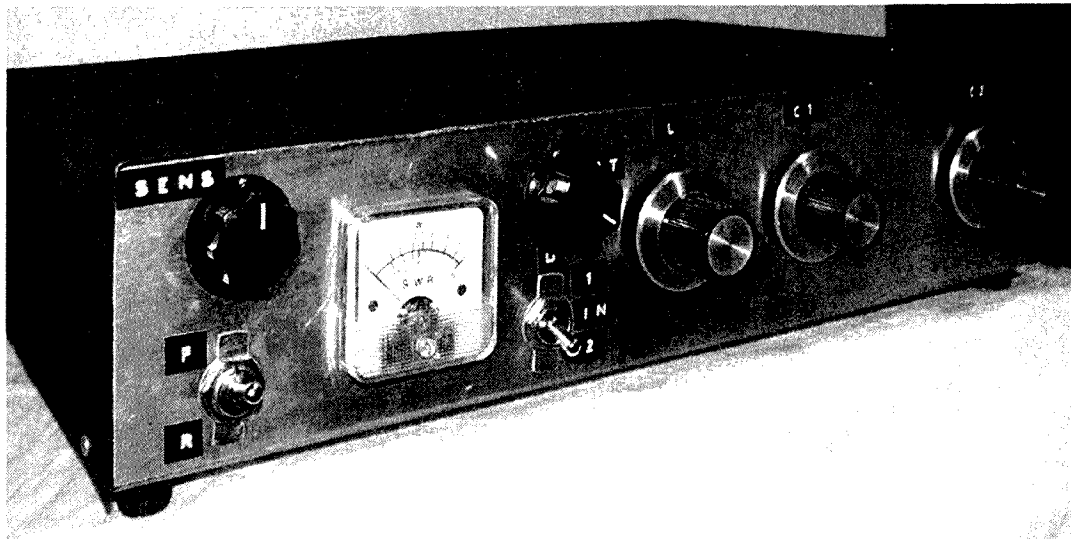


Photo 5: The completed unit



Radioactive

Scout Amateur Radio Award



The RadioActive amateur radio award - for Australian scouts

Bob Bristow VK6POP

JOTA-JOTI Coordinator, Scouts Australia

I have been involved for a few years now in encouraging Scouts to look at amateur radio and to gain a Foundation License in order to experience the hobby in more depth.

The reality is that young people whose parents are not into amateur radio tend not to get on air much if at all for a variety of reasons.

To help address this, I developed, with the help of a few people around the country, the RadioActive Award.

The RadioActive Award will operate for the entire month of July 2010, and is open to Australian Scouts (youth members) and Leaders who hold an amateur radio licence.

This award provides an opportunity for Scouts with an amateur radio licence to practice and develop their on-air skills, and to get to know other radio scouts and develop networks.

The award will be presented to Scouts who can demonstrate, by providing logs, that they have contacted a good number of Scouts in several Australian callsign areas (States/Territories).

The award, a certificate, is in three levels – Gold, Silver and Bronze, according to the scores achieved.

The weekend of 9-11 July will be set aside for a QSO-athon where Scouts are encouraged to operate for all or a good part of the weekend.

The QSO-athon makes it possible to increase the score. The longer

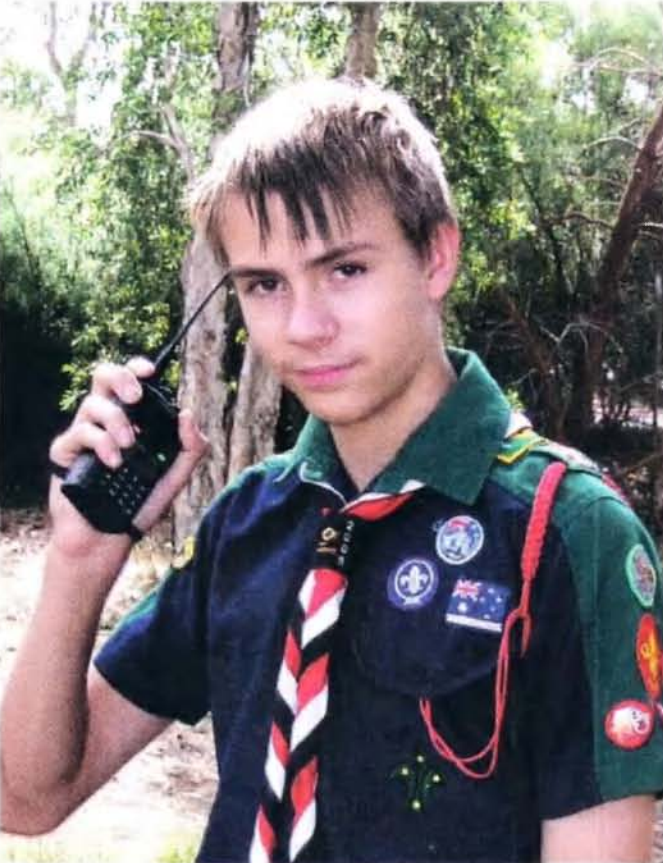
someone is on air, the more points can be earned.

All voice modes can be used, including EchoLink (both through radio and computer) and IRLP. Any band allowable by the operator's licence can be used; however it is advisable as much as possible to operate on the bands that Foundation Licence holders can use.

Information about how to participate, and of course the rules, can be found at <http://radioactive.scouts.org.au>

The circular image above is the RadioActive circle logo

RadioActive is a WIA Supported Centenary Activity.



Brock Harper VK6FBKH, one of our newest amateurs, tries his 'look' for the RadioActive Award. Brock passed his assessment on 11 April, with the callsign issued early May.



Mason Harper VK6FMAS---, also one of our newest amateurs, tries his 'look' for the RadioActive Award. Mason passed his assessment on 11 April, with the callsign issued early May.

The WIA Centenary Committee Call for Articles



The WIA Centenary Committee wishes to acknowledge receipt of further historical material forwarded by members and others.

Interesting and valuable material is still being received and the committee wishes to thank the following:

- Brian Kirkby, grandson of Edward Hope Kirkby, a significant player in the establishment and first years of Shaws Wireless Works in Sydney. This is a major contribution to our Centenary celebrations.
- Tim VK2ZTM has sent photo copies of newspaper articles

about George Taylor, the man who called the first meeting of experimenters in Sydney.

- Ron VK4EMF forwarded a CD ROM containing scanned information on Marcus Brims XQA, a very early experimenter in Queensland.
- Graham VK2XJ for a copy of The Australian Home Beautiful, Local Receiver magazine article, published in November 1926.
- From Leith VK2EA information about Thomas Wilmot 2ZO in 1924 and earlier XCL, including a letter to the local newspaper about his activities.

- Valda VK3DVT has sent an article about the Subiaco Radio Society and Bert Congdon VK6BC, who was secretary of the Society from its inception in May 1923 to May 1948 - 25 years!

Thank you to all who have forwarded cuttings, magazines and other material to the Institute during this year. It will all contribute to preserving the history of our hobby and radio in Australia.

The committee also welcomes articles on the future of amateur radio: the changes foreseen and even predictions for our future.

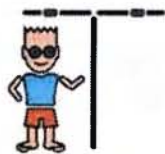


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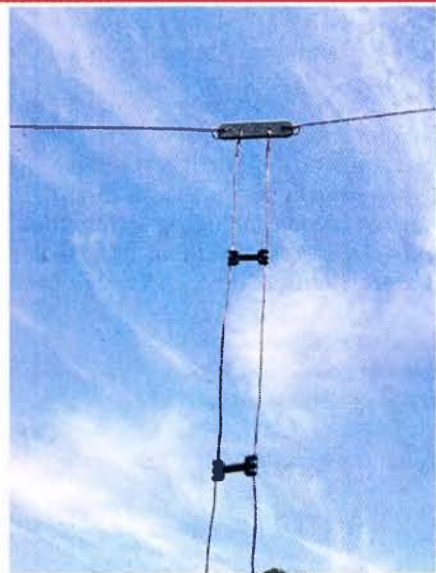
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Book Review:

Antennas for VHF and above

by Ian Poole G3YWX

Published by RSGB 2008

Peter Freeman VK3PF

In this book, Ian Poole gives an excellent coverage of topics relevant to antennas on the VHF and UHF bands and an overview of antennas for the microwave bands. This new book is strongly based on the early text "VHF/UHF antennas" by the same author.

He commences with an introduction to the basic concepts, from the fundamentals of electromagnetic waves and the concepts of polarisation, moving through the basis of antenna operation, feed impedance, directivity, gain, and radiation angle. He concludes this introduction with a brief outline of considerations of stacking and baying.

Chapter 2 looks at feeders, discussing characteristic impedance, standing waves, velocity factor, feeder loss, types of feeder (including waveguide) and balanced versus unbalanced feeders. He then moves on to briefly consider matching the feeder to the antenna and power dividers. The chapter concludes with an overview of some of the standard coaxial cable specifications, connectors and how to terminate a cable with a connector.

Having set the fundamental background, Poole then moves on to discuss the operation of the dipole antenna and some of its variants. The basic operation of a half wavelength dipole is described, together with a brief outline of how the radiation pattern changes when the dipole is lengthened to be multiples of a half-wave.

The folded dipole is then introduced. The next section discusses the length of a dipole, explaining the effect of the thickness of the antenna wire or tube on the resonant length of

the antenna. The chapter continues with some examples of dipoles for specific frequencies and some dipole derivatives: the crossed dipole (or turnstile) antenna, the horizontally polarised Omni-V dual dipole stack, the Halo and Mini-Halo antennas. The chapter concludes with the description of a phased array of dipoles for the 23 cm band.

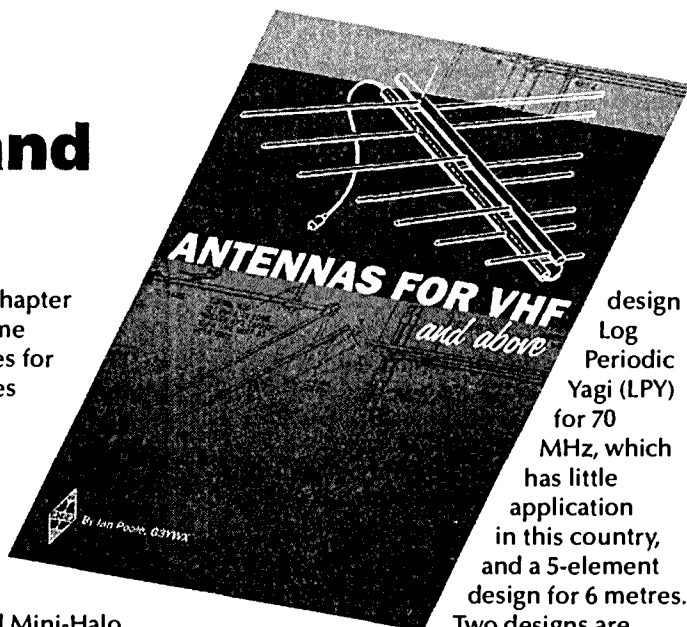
The fourth chapter considers the Yagi. The fundamental features and characteristics of the Yagi-Uda array are outlined prior to moving on to feed impedance and a very brief section on stacking.

Three designs are then described: a 3-element Yagi for 6 metres well suited to portable operations and a 5-element design for 70 cm. It is interesting to note that he does not present a design for the 2-metre band in this chapter.

The next chapter continues in a similar vein, outlining the principles of the cubical quad antenna before moving on to describe a 3-element quad for 2 metres and a 2-element design for 6 metres.

Chapter 6 considers vertical antennas, starting from the simple quarter wave vertical. Poole then describes five-eighths wavelength verticals, the collinear antenna, J antennas and a twin band vertical for 2 metres and 70 cm. The chapter concludes with a brief description of a rubber duck antenna and an outline of some considerations for the car mounting of vertical antennas.

The chapter on wideband antennas examines the discone and log periodic arrays. After describing the principles applying to both types of antenna, several amateur band designs are presented in this chapter, all by G3FDW. There is an 8-element



design Log Periodic Yagi (LPY) for 70 MHz, which has little application in this country, and a 5-element design for 6 metres. Two designs are presented for 144

MHz – one of 7-elements and a longer 10-element design. The chapter concludes with a multi-band LPY designed to cover 50 to 70 MHz.

Chapter 8 is totally new to this book, compared to the earlier book. It provides an outline of parabolic reflector and horn antennas, both commonly used on the microwave bands. After introducing the parabolic reflector, Poole describes the operation of the Cassegrain feed system and offset-fed reflectors. He then moves on to describe horn antennas, useful both as moderate gain antennas in their own right and as feed horns for parabolic reflectors.

Chapter 9 discusses basic antenna measurements. Standing wave ratio meters, the dip meter and noise bridges are described, as is their practical use.

The final chapter considers practical aspects of using the antenna. Choice of location, antenna height, mounting of antenna systems within roof spaces and chimney mounting are discussed prior to towers and masts, the choice of materials, wind loading, and antenna stacking. The chapter concludes with a consideration of avoiding interference and safety issues.

An area in which one would question the claims made in the book relates to Chapter 5, where Poole claims "What is true is that it [the cubical quad] offers a gain of about 2 dB over a Yagi of a similar length."

And then some further comments. Before his death, LB Cebik W4RNL published a detailed consideration of the performance of quad beams at VHF (In Pursuit of Better VHF Quad Beams: A Work in Progress, available on the Cebik web site). The results of Cebik's work raise many questions. He pointed out that larger diameter elements were needed at VHF to achieve close to the expected gain for a quad beam, and that Yagis are generally easier to build, together with many well performing, readily reproducible designs being available. Those considering embarking on construction of a quad beam on VHF might consider finding and reading the Cebik article prior to committing energy and materials to the task.

Overall, this 132 page book provides

a wealth of information regarding antenna systems for the VHF and UHF bands. Whilst some might consider that coverage of some aspects is limited, each chapter has a list of references and further reading. Some of the material presented has previously appeared in other RSGB publications, especially the now out of print VHF/UHF Manual. This book would be a worthy addition to the bookshelf of any amateur beginning to explore the VHF and UHF bands. As well as giving easy to read introductions to each antenna family examined, several designs are presented that should be easy to build at a fraction of the cost of a commercially made equivalent.

The book is available from the WIA Bookshop.

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2010 WIA Grants Scheme

Friday 30 July is the closing date for applications for the WIA Club Grants Scheme for 2010.

Full details of the 2010 rules for the scheme can be obtained from the WIA Web site <http://www.wia.org.au/members/affiliation/about/> together with a template setting out the suggested application headings for an executive summary, identifying how the club seeks to meet the objectives of the scheme and guidance regarding supporting documentation.

WIA President Michael Owen said that the Board was pleased with the results of the 2009 scheme and believed that there was overall support from members for a continuation of the grant scheme. In 2009, there were 17 applications and some 10 projects were given financial support from the scheme. The Board has decided to vary the rules from those that applied last year:

The Board directs the Grant Committee to recommend applications which focus on projects and activities (to be conducted before 1 April 2011) to attract new amateur radio operators to the hobby, also projects supporting emergency

communications and preparedness for emergency communications.

The WIA Board has again this year allocated \$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 a membership including at least 50% WIA members qualify to participate, though the Board has discretion to allow a lesser percentage in special circumstances.

President Michael VK3KI said that the names of the 2010 Grant Committee would be announced shortly. The Committee would recommend to the Board the projects that should be supported and the amount to be allocated to each supported project. "I urge affiliated clubs to participate in this opportunity" Michael said; "however, it is most important that clubs read the rules very carefully".

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<http://www.wia.org.au/members/affiliation/about/>

Amateur Radio Specialist

Look forward to hearing from you

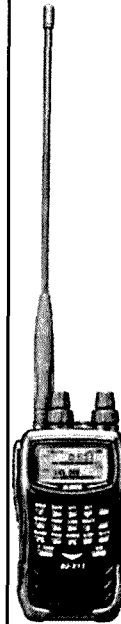


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Jammed up at an memorable JMMNFD

VK3XPD team report, JMMNFD – 20/21 March, 2010

Alan Devlin VK3XPD

To say that our 2010 JMMNFD was “eventful” is an understatement indeed!!

Since the JMFD is traditionally a “distance based” event, the VK3XPD team of Michael VK3KH, Peter VK3TPR and myself Alan VK3XPD had investigated several higher vantage points in Gippsland to try to achieve greater distances and to significantly better our contest score.

After due consideration and checking with locals, we decided to operate from Mt Tassie, a lovely high hill of circa 600 metres, south of Traralgon, with almost 360 degrees of panoramic views. We arrived at midday on Saturday to beautiful sunny skies and a light breeze. We proceeded to set up our six hour station. Our intent was to operate across three of the three hour windows in order to benefit from the multiple stations over these three periods.

The first thing you notice about Mt Tassie are the multiple large towers erected on the two high points which form the Mt Tassie summit. On the northern most towers, the very high density of RF gear is amazing and the effects of the RF being radiated were to become very evident as we operated later in the day.

We erected our newly acquired gazebo to provide shade. We had learnt this valuable lesson from our VK9NA DXpedition to Norfolk Island. Then progressively we erected our three six metre masts with our six metre, two metre and 70 cm yagis and finally the microwave dish for 23 cm through to 10 GHz. All radios and all the transverters were then powered up, the latter to ensure immediate frequency accuracy and stability.

Commencing at around 1530 AEDST, we discovered our first drama. On two metres, we were hearing but we could not be heard... even with the 180 watt, two metre Tokyo Hy-Power PA. After some investigating we found the connecting cable from the FT-817 to the PA was faulty. After replacing

this cable and completing a few quick fire QSOs on these lower bands, it became evident that we had a very high RF noise floor. The intermods were affecting two metres causing severe “de-sense” which was clearly worse in certain directions. The 23 cm, 70 cm and six metre bands were less affected.

The general propagation was rather average, but... we advanced up the spectrum to 2.4 GHz chasing a few microwave QSOs. On 2403.1 MHz we found a mass of WiFi birdies, pops and chirps all over the spectrum. This despite my having fitted a very narrow 3.5 MHz bandpass filter after the VK9NA expedition, where we had encountered similar interference. The “de-sense” was so bad that even trying to work a couple of “local” stations, Ralph VK3WRE and Rod VK3BQJ was very difficult. The receive signals from Rod were being blotted out totally. After a frequency move up the spectrum, we completed a contact, with some difficulty.

This WiFi issue is another good reason why ALL microwavers should consider migrating down to a small two MHz allocation we have at 2300-2302 MHz. We just need consensus and then we ALL re crystal our rigs!

As the daylight hours passed we managed a few longer distance QSOs to VK7, VK2 and western VK3. The log was looking good with a few nice QSOs but then more drama. Our transverters were starting to “FM”, indicating low supply volts. Sure enough we found that two of the four 100 AH batteries were unexpectedly low volts after a very short operating time. Fortunately, Michael had brought along a few extras and we were back on air again for another few hours.

Then the Sun set and the wind came up. Even though we “rugged up”, it was bitterly cold and it was difficult to maintain our antenna and dish pointing. So, as the Sun had long gone and after several unsuccessful microwave shots, we decided to head for home. We started packing our gear. Ralph VK3WRE and then Ken

VK3FKRK and his daughter dropped by. So as we chatted, we continued packing, albeit not as tidy as originally done prior to leaving home.

At 2130 AEDST, it was time to leave the hill via the access road, a rather weather-beaten, poorly maintained rocky track back down to the Highway. Michael left first while I had a last look around to ensure nothing was left behind. On arrival at the road junction with the bitumen road back to Traralgon we encountered Michael with his hazard lights on. Naturally, I assumed he was waiting for us to travel home in convoy.

We were confronted with Michael's Commodore with not one but two flat tyres on the passenger side. A rock or a washaway had broken the tyre seals and both tyres immediately went flat. With only one spare, we had to call the RACV out for tray transport back to Traralgon. Finally at 2315 AEDST, the Commodore was loaded and we were on our way again. The “not so squeezey” TV advertisement was very appropriate: three in a Toyota Landcruiser Tray cabin was indeed a bit cramped.

We then discussed getting Michael home to Mt Eliza. It was agreed that we go via Cranbourne where Michael had a business vehicle garaged. Arriving at about 0130 AEDST it was a simple case of Michael accessing the vehicle and then driving home.

Another disaster... driving away, Peter VK3TPR and I both saw Michael throwing his hands in the air in disgust. The key had broken off in the lock. Being so late and with no other options available, Peter suggested we head for his QTH where he would lend Michael a car to get home.... but not before we drove via Dandenong Railway station on the off chance there may be a taxi there.

No such luck, so we then drove direct to Peter's QTH in Glen Waverley where we said our “goodnights”, and thanks for a lovely day...

I finally arrived home at 0230 AEDST after a memorable JMMNFD 2010.

VOA Greenvale off air: CVC/RA in limbo: winter in Brazil via Antactica?

VOA Greenvale to close

I have been informed that America's International Broadcasting Board of Governors, which oversees the VOA, Radio Liberty/Radio Free Europe, Radio Marti, Radio Farda and Radio Free Asia, are definitely closing down the senders at Greenvale, North Carolina.

This will probably happen at the end of October, when organisations usually make their seasonal frequency changes. The Greenvale facility will be the last base of senders for the IBB within the continental USA.

I believe contractors will take over the offshore senders, relaying programming from Washington, Prague or Miami.

CVC/RA

I have not had any recent updates on the fate of the former CVC senders in Darwin. One report said one of the senders was to be relocated to another CVC base either in Africa or Chile.

It is also unlikely that RA will indeed broadcast to Africa or the Middle East. The DRM plans are similar to those of Radio New Zealand and be a feeder to rebroadcasting outlets in the South Pacific and Asia.

Conditions

Conditions have also been up and down. On some days propagation is extremely poor but can unexpectedly pick up in several hours, even in 20 minutes. It is increasingly apparent that fewer stations are using shortwave, judging by the gaps in broadcasting allocations. Often the absence of major players can reveal smaller domestic outlets not normally heard. One of these is Hanoi on 9635 with a relay of their domestic First Network in Vietnamese. I have heard the morning gymnastic sessions shortly after signing on at 2150 and again in our local evening hours with talks and music. The external service of Hanoi called the "Voice of Vietnam" can be heard on 9840 or 12040 in English and other languages from 1000 and is never exactly on channel.

Myanmar is also shifting about of late. Several channels in the 49 metre band have been heard but recently they have been shifting about there as well. They seem to have made a silly decision to use 6035, which is occupied by the Yunnan PBS in China and Bhutan, both of whom have been there for quite a while.

I have seen reports that Yunnan, which is easily heard on 6937, just outside 40 metres, will be shifting from there as from 1 May.

In April another major earthquake struck China at Qinghai, pretty close to Tibet. There were several thousand people killed and numerous people were made homeless. A small station there was heard on 6190 and other stations

did shift to allow programs to be heard. Similar to the Szechuan earthquake of 2008, a National Day of Remembrance was held and all networks carried simultaneous programming, even the Firedrake jamming senders.

Poland also came into the spotlight following an air crash in Smolensk, Russia.

The President of Poland, along with many government high-ups were on their way to the commemoration of a massacre at Katyn Woods in 1940. Sadly all aboard were killed and the whole nation was shocked. The Polish external service was pressed into service to relay news and coverage of the funeral services.

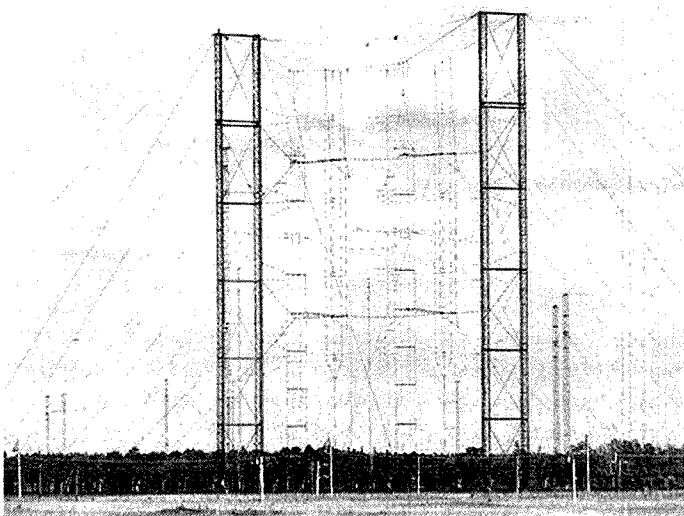
Many of the world's leaders were intending to attend but another major natural event in Iceland caused severe disruption to the world air travel routes. Huge clouds of dust spewed forth from a volcano and jet aircraft could not fly the busy Atlantic skyways and even shut down all European airports for six days. The aero channels covering the North Atlantic fell silent because there were very few aircraft airborne.

Winter in Brazil?

It is going to be very interesting observing the midwinter propagation on the lower frequencies around 0200 UTC, which is our local midday. Previously European stations were easily heard coming over Antarctica with the distinctive flutter.

Now, with most of these senders now silent, there should be a window of opportunity to perhaps hear the many Brazilian stations operating on shortwave. Brazil is rarely heard here in Tasmania and even though I obtained my DXCC several decades back, I barely managed to contact this large South American nation.

That is all for now. Do not forget you can email me at vk7rh@wia.org.au



No, That's an antenna...! VOA at Greenvale NC. Photo W4KTL

Keith Bainbridge VK6RK

vk6rk@wia.org.au

Welcome again to VK6 Notes.

A couple of months ago I sought help in finding the collection of CW / telegraph keys belonging to the late Dave Couch VK6WT. I received many leads; mostly they became a dead end, but I finally got the right one! I entered into negotiations with the family and was successful in recovering almost 150 items of telegraph equipment. In that collection there are 138 keys and other items associated with telegraphy, including field handsets and an Aldiss lamp for Morse signalling.

Now begins the long process of restoration to allow them to go on display, along with some 20 other keys so far donated, at the Neil Penfold State Amateur Radio Centre in Whiteman Park.

A prime location has been chosen for the display at the club house and a

cabinet will have been procured by the time this article is in print. It is proposed to display approximately 70 of these keys (well, you can only fit so many into the display cabinet!) and then rotate the display on a six monthly basis.

Once the display is up and running the grandchildren and great-grand children of VK6WT will be invited to a BBQ morning to have a look at them and the club's other facilities. The family also donated an old Yaesu FT-101 and an FT-201, with associated bits and pieces, that Neil VK6NE is putting on display in his Vintage Radio Exhibition upstairs at the Centre. We will then open the display to visitors, who can attend on any Sunday morning or on club meeting nights.

There are also a further 12 keys from the collection on display at the RAAF Museum in Bullcreek, and I hope to visit soon and add them to the

photographic collection. I have taken at least two pictures of every key and eventually these pictures, along with an additional one or two taken after restoration, will be on the new NCRG website: www.info.ncrg

Thanks to all those who took the trouble to contact me and suggest the location of the missing collection, it was most appreciated, and I have a warm fuzzy feeling knowing they did not end up in a skip!

The ABC Collectors program on Friday 23 April showed the magnificent collection of telegraph equipment belonging to Ron McMullen, who, though not an amateur, is passionate about his keys. I recommend you download it if you missed it, and I would love to see his collection housed over here in Perth.

I have not received any input at all so far this month from any other groups



GGREC HAMFEST

Saturday 17th July 2010

Gippsland Gate Radio & Electronics Club Hamfest at our LARGE venue, the CRANBOURNE PUBLIC HALL, located at the corner of Clarendon St. and High St. Melway 133 K4. See our web page at <http://ggrec.org.au/hamfest>



40 tables of new and used Electrical, Electronic and Amateur Radio equipment.

- Everything is under cover.
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- Doors open to sellers at 8.30am & buyers at 10am.
- Buyers can gain entry for \$6.00.
- Sellers will pay \$20.00 per table, which includes entry.
- Proceeds from the sale will go to Gippsland Gate Radio & Electronics Club's ongoing promotion of Amateur Radio.

Persons wishing to reserve a table position must contact Chris Chapman now on 0429 187 593 or email hamfest@ggrec.org.au Book early, positions are limited!

in WA, despite many requests, and I feel guilty writing so much about the NCRG but this is all I have. It is not intentional for this column to become 'NCRG Notes' but if information is not sent, I will use what I have available.

April also saw the commissioning of the new 70 cm repeater at Whiteman Park to replace the old VK6RNS that was feeling very sad. A radical new repeater controller was suggested by one of the club's overseas members David G3UFO.

He floated an idea that the new software from G4KLX, called 'pc repeater controller' be tried and to back up his suggestions, promptly built the Vellerman Interface, acquiring a pair of Kenwood TK-880 radios and a spare as well, donating an Asus EePC to run the whole thing and a duplexer to finish it off.

Bits and pieces were posted from the UK as they were completed and all arrived one week before David

himself landed in Perth to oversee the commissioning (Well, he and his wife were actually coming over here anyway to visit relatives and friends!).

David set everything up at my QTH and discovered the duplexer was somewhat lacking so James VK6FJA re-aligned a spare the club had and the repeater was on air running seven watts on test. The power was later upped to 45 watts and as I write this, it has been operational for over 10 days. In the next few weeks it will be relocated to Whiteman Park.

The main reason for the repeater is to replace the NCRG natter frequency on 146.425 with better coverage around the northern suburbs. So again by the time this reaches print the club members will have their own repeater for chatting day and night. Obviously this is not an exclusive repeater! Others are welcome to use it and the frequency is 439.925 MHz.

David, who is also VK6DJO, spent a lot of time and effort getting this

together for the club and we thanked him with the Vibroplex Vibrokeyer Morse key that he has been long desiring! I suggest other repeater builders look at this software as it makes expensive repeater controller hardware redundant.

The 2010 Hamfest will soon be upon us. The usual venue at Ashfield has once again been booked for Sunday 1 August. Those of you who want to book places, arrange displays, or whatever, should be contacting the Hamfest Coordinator on the address on the NCRG Website www.info.ncrg

Hopefully we will have the usual excellent turn out and perhaps a special display will be organised along the lines of previous ones such as the Tesla Display, or the Morsecodeans. More details will follow in next month's column.

Finally for this month my usual plea for input to the column. If you don't tell me I cannot inform others! 73.

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Part of the NCRG key collection.

Geelong Amateur Radio Club The GARC

Tony Collis VK3JGC

New call signs allocated

Two more club members have recently passed the Foundation licence exam: Jarrod Douglas now holds the call VK3FJDD and Chris Murphy the call sign VK3FCPM.

The GARC AGM

President Dallas VK3DJ reflected on the achievements during the previous year; in particular how club members had accepted operational roles in support of the club and followed through with commitment.

The Club's Public Officer, Nick VK3TK took the chair and declared all positions vacant. Nick thanked all the outgoing Office Bearers for their dedication and hard work and made special mention of the achievements under the leadership of Dallas VK3DJ.

Nominations were called for the position of President, Secretary, Treasurer, Public Officer and calls for nominations for the remaining vacant positions. The Office Bearers for 2010/2011 were elected as follows:

- President Dallas VK3DJ
- Secretary Tony VK3JGC
- Treasurer Andre VK3FASW
- Public Officer Nick VK3TY
- Committee Members Gary VK3FWGR and Kevin VK3FKEV

Geelong Heritage Festival 2010

An Amateur Radio Exhibition and Demonstration was held at Osborne House Geelong to celebrate the Centenary of the City of Geelong Proclamation in 1910.



Setting up the Equipment Saturday Morning.

The other operational roles remain as per last year with the exception of the Training Officer, Owen VK3OWZ who, due to other commitments, had to relinquish his role to Peter VK3KP to be assisted by Peter VK3ZAV, Lou VK3ALB and John VK3ZPO.

Ray Cowling Award

As is the Club's custom, the last order of business at the AGM is to decide who will receive the Ray Cowling award. This award is given to the club member deemed to have contributed the greatest amount to amateur radio and the promotion of the Geelong Amateur Radio Club in the year.

This year the award was presented to Vanessa VK3FUNY



Vanessa VK3FUNY

This was, as last year, a joint effort by both the radio clubs in Geelong, the GRES and the GARC, at the Geelong Regional Museum off Swinburne Street, Geelong.

IRLP Node



Nick VK3TY

Nick VK3TY, in addition to his Public Officer role, has also set up the IRLP node (6572) on 145.475 MHz, albeit on low power and operating in simplex mode. The Tait T500 node transceiver has been stable over the last month but the replacement Motorola M120 is ready to be commissioned.

The new radio will operate on 145.475 MHz. A secondary channel is currently set up for VK3RGL (not VK3RGC): its repeater operations will include 2-hour periods on VK3RGL from approximately 8:00 pm on Wednesday evenings. This will allow final shake-down of IRLP node and repeater configurations. Once VK3RGC site issues are resolved, the IRLP will be switched on permanently.

Members from both clubs operated from 80 m to 10 m and on 2 m and 70 cm. In the latter two cases the major contact throughput was using IRLP facilities into the USA and Canada.



Barry VK3MBW Operating on the HF bands.

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Oxley Region ARC

Over the long weekend this month the *Oxley Region ARC* will be conducting their 35th annual Field Day on Saturday 12 and Sunday 13 at the regular venue – the Sea Scout Hall in Buller Street, Port Macquarie. During Saturday there will be a range of fox hunting events and a dinner in the evening at the East Port Bowling Club.

On Sunday the activity will centre at the hall with field events, traders, disposals, displays, BBQ lunch, free tea, coffee and biscuits. The weekend has been given the status of a WIA Centenary event. More details in VK2WI News sessions, the Oxley web site www.orarc.org or P. O. Box 712 Port Macquarie 2444. Weekly nets on VK2RPM 6700 at 0830 Sunday and 1930 Wednesday.

Waverley ARS

This month will be the AGM for the *Waverley ARS* who have their club rooms at Rose Bay in the eastern suburbs of Sydney. Their annual auction will be next month on Saturday 10 July. Besides their Project afternoon on the first Saturday they often have working bees on a Tuesday. You should check via the Paddington repeater 7025 before attending. Their weekly net Monday is on the Paddington repeater 7025 at 2000. Check the web site vk2bv.org or ring Simon VK2UA on 02 9328 7141 for further information.

Hornsby & District ARC

The *Hornsby & District ARC* had their AGM last month. This month Bob VK2ZRM will show his home brew solid state linear for HF. They meet at the Mt Colah Community Centre in Pierre Close, Mt. Colah. They operated VK2IMD for Marconi Day in April, logging some 150 contacts. If you worked them send your QSL card to P. O. Box 362 Hornsby 1630 to receive a special card in return. HADARC regularly conduct assessments. Bookings essential. Visit www.hadarc.org.au Various weekly

nets. Repeaters Monday at 2000, 80 metres Wednesday at 2000 and 40 metres 0900 Friday.

Blue Mountains ARC

The *Blue Mountains ARC* held their AGM last month. They meet on the first Friday evening at the VRA Building, Simeon Rd. Orchard Hills. They will conduct Winterfest towards the end of winter.

Mid South Coast ARC

The *Mid South Coast ARC* held their quarterly meeting in May at the regular venue of the CWA Hall in Wason Street, Milton. The next meeting on Saturday 14 August. Their 6700 repeater now requires a 123 Hz tone for access. There is a weekly net on Wednesday at 1930 on 3617 kHz and at 2030 on their repeater 6700.

Sydney North WICEN

Sydney North WICEN held their AGM last month at the VK2WI site. NSW WICEN is seeking a Publicity Officer; duties include the news report to VK2WI. Next month has a range of activities across VK2, including The Bushwalkers Nav Shield on 3 and 4 July, Eden Creek Horse Enduro 10 and 11 July. Also the Blue Range Rally in the ACT on 10 July. Southern Mountains Rally on 31 July. Details at www.nsw.wicen.org.au or the Duty Operator 0408 397 217.

St. George ARS

St. George ARS in Sydney's south held the annual Bill Shakespeare Memorial Auction last month. Their monthly meeting is the first Wednesday evening at 1st Kyle Scout Hall, Donnelly Park, Kyle Parade, Connells Point. Their weekly net on Thursday at 2000 on VK2RLE 6800 changes to a slow scan TV operation at about 2030. Goulburn and Southern Highlands ARC net Sunday at 2030 on 3615 kHz.

Orange and District ARC

Members of the *Orange and District ARC* have been visiting a local

primary school weekly for an hour of basic radio and electronic talk to the students. They also provide construction projects and so far the students have made a crystal set and a Morse key. Ross VK2ER says there is a lot of interest which could result in some students taking up the hobby. Why not check out your local school to see if there is a similar interest?

Amateur Radio New South Wales

Amateur Radio New South Wales held their AGM on 17 April at the Dural property. The 26 members in attendance quickly got through the business. There were 10 candidates for the nine committee positions. 520 ballots had been sent out and 183 were returned. Those successful [in alphabetical order] were Mark Blackmore VK2XOF, Michael Corbin VK2YC, Brian Kelly VK2WBK, Beth Langley VK2AO, Mathew Magee VK2YAP, Tim Mills VK2ZTM, Norm Partridge VK2TOP, Terry Ryeland VK2UX and Peter Zielinski VK2PJZ. Unsuccessful was Bob Yorston VK2CAN. Peter VK2EMU and Kevin VK2CKD were reappointed as returning officers. A new Auditor has been appointed. The incoming committee is in caretaker role until all members attend a meeting to determine the office bearers.

Aub Topp VK2AXT who was the Librarian while ARNSW was located at Parramatta reluctantly had to retire from the position of both Librarian and Museum Curator. The meeting moved a vote of thanks to Aub and he was presented with a Centenary Plate and Mug. The library arrived from storage in several hundred boxes and is being restored to the shelves over the next few weeks. There will be a call for expressions of interest for those wishing to be the Librarians. The meeting concluded with a general discussion on the role of ARNSW now facilities have again become available. The new building is the "The Centenary Building".

A planning survey was included with the ballot papers to help with

planning ARNSW operations. The results are still being compiled. Work is underway on a new web site for ARNSW. A Trash and Treasure was conducted at the end of last month. The next is Sunday 25 July.

The VK2WI 3699 kHz automatic Morse transmission commenced operation in 1985 as a project of HADARC before its transfer to the Dural site some years ago. The 2 metre Morse transmission commenced in the mid 70s. Currently it is not operational from the Dural site.

The Time Capsule is revealing a lot about what happened during the 75th anniversary. The contents are still being catalogued. One of the items in the capsule was AR magazine for January 1985 with an article about the IREE which is the professional body of Radio and Electronics Engineers. Both the IREE and the WIA can trace their origins back to the 11 March 1910 meeting. In the 1920s and the 1930s there was considerable activity as Radio developed, much of it in VK2. Most of those who made up the WIA in the 1920s were professional people who felt that the WIA was more for the experimenter. They sought to

develop a body more attuned to their needs and in doing so sought to wind up the WIA NSW Division. It appears that the IREE came into existence on 15 March 1932. Its name was registered in August 1924. The IREE article reports that later in 1932 moves occurred to wind up the WIA. Apparently there were many delays and nothing happened, then finally a meeting convened on 2 June 1937 restored the WIA NSW Division to its former and intended role for the Radio Amateur.

Our Centenary is bringing out information about our past. It is the time when anyone with historic material should make it – or a copy - available to the

Centenary Committee. The more material available the more accurate become the records.
73, Tim VK2ZTM. ar

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a \$5.00 joining fee plus \$8.00 for one year or \$15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to

RAOTC,
PO Box 107
Mentone VIC 3194

Ron Cook 03 9579 5600

or Bill VK3BR on 03 9584 9512,

or email to raotc@raotc.org.au for an application form.



South East Radio Group Convention 2010

Saturday 12 and Sunday 13 June, 2010, at the Margaret Street, Mount Gambier scout hall.

Yes this June, on Saturday 12th and Sunday 13th June, 2010 the South East Radio Group is having their annual convention and the Australian Fox Hunting Championships.

Doors open to the Margret Street scout hall at 12:00 on Saturday.

The first event of the Fox Hunt championship starts at 11:00 on Saturday.

There is also a home brew contest with great prizes.

New and preloved equipment for sale

Food, hot and cold drinks

Commercial displays

Home brew contest

Lucky door prizes

Come along and see SERG celebrating the WIA Centenary with the callsign VK100WIA.

For more information, or to book a table, contact Wayne VK5ZX on (08)87254335 or 0407 718908.

Or you can see us on the web at

VK4news

Christopher Comollattie VK4VKR

Email: qtc@wia.org.au

CHARC

Central Highlands AGM. The date for the famous and popular Central Highlands Amateur Radio Club AGM at Camp Fairbairn near Emerald has been announced. CHARC Secretary Gordon VK4KAL has advised that the AGM will be on from 4 pm Friday 17 to midday Sunday 19 September 2010. Find out more by contacting Gordon on vk4kal@wia.org.au

RADAR

Rockhampton and Districts Amateur Radio Club have been busy with the shack project. Jeff VK4NJB, Mike VK4LMB, Ray VK4HOT, Bob VK4HRT and Doug VK4DUG now have it ready for operation. The official open day callsign will be VK4CHV on 25 July 2010. You may hear them operating on the 40 m band or even 6 m if it is open. The IRLP node number is 6973.

FNNQARG

The Far North and North Queensland Amateur Radio Gathering (FNNQARG!) will be happening

AM and CW FOR ANZAC Day

On behalf of the Tablelands Radio Group

For a guy who is still endeavouring to get his merit badge for boiling water when the Tableland Radio Group go on their many radio camping trips and for a guy who thinks you open a can of baked beans by madly yelling Banzai! and smashing it viciously, straight down the centre, with a mean looking machete and then scraping up the remnants for the pan, Mike Patterson VK4MIK has the occasional good idea. Occasionally – just occasionally – they are brilliant.

Such was the case with his AM and CW for ANZAC Day, the concept of which was born after a particularly long session of deep and meaningful think tank sessions for Group activities and a conversation in passing with WW II Coastwatcher, Lionel Veale and his matter of fact discussions about operating his

over 11 to 14 June at Cardwell Village Beachcomber Motel and Tourist Park. It is a yearly gathering of amateurs and support crews from the Cairns, Atherton Tablelands and Townsville Regions plus lots of places in between and far away. FNNQARG will be a friendly, relaxing time with Sunday being the traditional cricket match. The TREC Trivia challenge is a rip snorter fun event too. Come along and catch up with that face you have been speaking to for ages across the ether. It is advisable to ring Reception at the park on 1800 005 633 to book your accommodation as soon as possible, as the long weekend in June is a popular time. A wide mix of accommodation from Motel to Villa to Camping is available.

Ipswich and District Radio Club

Ipswich and District Radio Club has come up with an idea for the WIA Centenary Celebrations. in the form of a special coin (See article on P35) which has the WIA logo on one side

transceiver, an ATR4A, during military operations.

Reminiscing, Mike realised how we have become accustomed to using the SSB, FM and Digital modes as a matter of course, with plenty of power available and ionospheric prediction data until it's coming out of our ears. Life with these modes has generally been good and in most part, reliable. Of course, military forces and commercial agencies now use online or satellite high speed data transfer which has made AM and CW quite obsolete.

Mike realised that this was not always the case, and that there would be many reading this article today who remember the trials and tribulations associated with the passing of radio traffic when AM (amplitude



and Ipswich club on the other. (See article on P35)

Mike VK4QS, the president of the club, is also proud to display his station setup (above). The transmitter is an AWA ATS-1 1 kW, ex OTC Coast Radio Service. The receivers are Collins R290A and the black units are a Collins HF-80 station.

Send in a picture as Mike has done and show us your station equipment.

Until next time, 73 Chris VK4VKR

J R (Ross) Anderson VK4AQ

modulation) and CW were the only two modes of communication available to us - either as servicemen and women, commercial radio operators or as amateurs.

AM, using its customary wide band width was far more prone to interference and certainly not in the same league as SSB when it came to distance and clarity of reception. Headphones were almost always needed with AM when it came to the reception of formal traffic by military forces and other instrumentalities charged with the passing of official traffic. Conditions were certainly good when you could receipt for a message in its entirety, first up, without having to get at least one repetition from the transmitting station.

Mike got to thinking about servicemen and women and how their use of CW was the norm, usually under arduous conditions, for many wartime operators. CW was fairly reliable and communication on the low power outputs of the rigs of the day was possible most of the time but always with difficulty. One must remember too, that Ionospheric Prediction Charts were unheard of in those days and operators had to rely

solely on experience for making long haul contacts. Morse, unfortunately, could not compete with the speed of traffic handling introduced by the newer radio teletype and landline teleprinter networks were established.

With these thoughts flashing through his mind Mike set about seeing if we couldn't pay tribute to servicemen and women communicators who used these modes during periods of hostilities in the last 100 years. His original thoughts were fairly much confined to having national operators and clubs use either AM or CW on their regular Nets on ANZAC Day and see how it went.

After considerable personal time, effort and hundreds of emails and telephone calls, Mike had organised a variety of stations and authorities who were keen to become involved in the activity. They included:

- Terry Murphy VK3UP organising HMAS Castlemaine VK3RAN
- Larry Teakle VK5HBG, Whyalla ARC, and HMAS Whyalla
- Colin and Anne Whale with HMAS Diamantina VK4RAN
- Nick Watling VK4YT from Mareeba Warbirds (using the organising group's call VK4GHL).

- The Townsville Amateur Radio Club, operating from their club rooms which just happened to be a World War II command bunker set into Castle Hill.

- The Tableland Radio and Electronics Club VK4WAT, operating from the Rocky Creek war memorial park and the Atherton War Cemetery.

- Maurie Camp, operating his

A510 Army man pack and Type 3 Mark II Tx/Rx.

- Amateur colleagues in New Zealand were made aware of the activity through NZART HQ.

Brian Kemp VK4BB, Michael Owen VK3KI and Ewan McLeod VK4ERM gave Mike all manner of support from the onset and actively encouraged him every step of the way. Through the WIA and Brian in particular, every club and group in Australia was aware of the activity.

It was about this time that the Radio News from Southgate ARC gave a world wide overview of the event and we learnt that Turkish Amateurs were going to be operating from the Canakkale/Dardanelle area where our ANZAC forces fought during WW II. Contact was made and they were also happy to have us involved in an activity that linked into their national event as well. Bill Lochridge VK4WL from the Tablelands Radio Group did manage a PSK contact with the Turkish Group in the lead up to Anzac Day which was a wonderful QSO for all concerned.

In the final days before ANZAC Day Mike was informed that amateurs from the UK and US also hoped to participate, so what had been a germ of an idea a couple of months prior had certainly grown legs and was gathering quite a momentum.

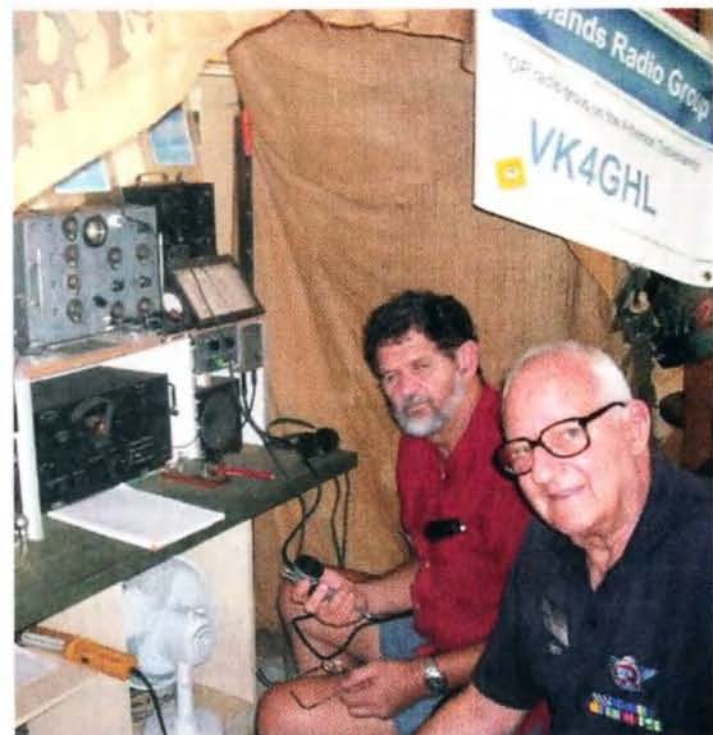
It is hard to judge just how successful the day eventually turned out to be, given that the activities were generally local and on an ad-hoc basis.

Judging by the contacts made on the Atherton Tablelands and from around the Townsville region, the results could be classed as good. Hopefully, reports from all States in AR – both written and pictorial - will give a fuller account of the success of the day.

The organising body, the Tablelands Radio Group, operating from the aerodrome at Mareeba Warbirds and using restored WW II radio equipment, had a mixed bag of results but were heartened by the overall response they did have. Conditions in the latter part of the afternoon deteriorated quite badly much to the disappointment of many. The equipment used was beautifully and painstakingly restored over many hours by Nick Watling DFC OAM



Tom Sawers VK4AOG, 92 years young, operating CW at Mareeba Warbirds on ANZAC Day. Tom went through the war years as an engineer with 460 Squadron, RAAF, at Middle Wallop, UK.




Mike Patterson VK4MIK, the instigator of the AM and CW on ANZAC Day Activity on the left and Nick Watling DFC OAM VK4YT, the guy who restored the WW II equipment for Mareeba Warbirds on his right.

VK4YT and Chris Gill VK4YCG and TRG is very thankful for their very generous support together with that of Mareeba Warbirds owner Mr Mike Spaulding.


After the event Mike expressed his heartfelt thanks to everyone who had participated in the AM and CW on ANZAC DAY Activity and said he was confident that it would become a regular annual event in the Australian Amateur Radio Calendar in future years.

The use of AM and CW should certainly have kept one thing in everyone's mind on the day!

Lest We Forget




AM and CW on ANZAC Day
*An Initiative of the
 Tablelands Radio Group (TRG)
 Atherton, Queensland, Australia*



VK4GHL

TO RADIO	CONFIRMING OUR QSO						
	DAY	MONTH	YEAR	UTC	MHz	RST	MODE



ANZAC DAY

2010

*Please QSL to: Mike (Banjo) Patterson
 PO Box 170
 Yungaburra Qld 4884
 Australia*

Ipswich and District Radio Club

Centenary Wireless Institute of Australia 1910 ~ 2010 Commemorative Coin

Mike Charteris VK4QS

On 1, 2 and 3 July 2010 it will be the honour of the Ipswich and District Radio Club to be the first radio club in Queensland to hold and operate under the centenary call sign VK100WIA.

To contribute to the celebrations, we have a special item to commemorate this once in a lifetime event. This is a specially made centenary commemorative coin with a WIA 100 Years logo on one side and the Ipswich and District logo on the other side.

This will be available from the Ipswich and District Radio Club website from July 2010. The cost will be approximately \$10.00 per coin plus postage. There will be a limited number available during the rest of the year of the Centenary celebrations, so do not miss out.

This is not a money making exercise for our Club, but an opportunity to remember your personal involvement in the WIA Centenary Celebrations for many years to come.

On Thursday 1, Friday 2 and Saturday 3 July, the days allocated for our Club to use the VK100WIA call, we will be operating 24 hours a day for the maximum coverage of HF and other bands. We will have BBQs during the course of operations. All stations making contact with our Club can if they choose purchase one or as many as they wish of the Commemorative Coins. The commemorative coin will be available for sale through our website. So not only will you

receive the commemorative QSL card, but also the chance to purchase something very special indeed to celebrate the Centenary of the WIA.

Should the short wave radio community confirm our transmissions, it would be a nice collectable for their station as well.

If your club would like to undertake something of a similar, if not the same concept, the details of the coin manufacturer are provided. To do something similar creates the momentum for other amateurs and short wave radio listeners to get involved in this celebration.

It would be great to be able to collect one of these commemorative coins from every club in Australia, or those that decided to go with the coin idea.

The details of where to get your own Club's Centenary of the WIA coin underway is as follows:

Contact Paul at wundurra1@bigpond.com.au (mention Ipswich radio Club and our article in AR Magazine) Or go to his website at www.wundurramedalmounting.com.au

Or contact Mike ipswichdistrictradioclub@webnode.com.au

So good luck to you one and all, we look forward to working you during the time we have the honour of using VK100WIA for the WIA Centenary Celebrations.

Cheers, Mike VK4QS.



Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The April meeting was a member's Buy and Sell and generated its usual interest and exchange of goods and money.

As has become usual, at the end of the meeting we have a mini-auction of some items from the deceased estates we have been handling. The larger, more expensive items are dealt

with by tender. A list of the items is sent out to members. They have the opportunity to put a price on the things they want and the item goes to the highest bidder, as long as the offer is realistic.

We are fortunate to have a couple of people prepared to spend the time to organise these tenders and to run the auction. We are also lucky to have somewhere to store the equipment so we can remove it en masse for the widow.

This is an unfortunate part of any hobby but one we are happy to manage it as a service for our members.

Congratulations to our youngest member Patrick VK5FMPJ, who has been racking up good scores in recent VK contests.

The regular meetings of AHARS are held in the Belair Community Hall at 7.30 pm on the third Thursday of each month.

Doug Tamblyn VK5GA life member RRC

Andrew Williss VK5LA

At a recent meeting of the Riverland Radio Club, Doug Tamblyn VK5GA was made a life member, and presented with a life membership plaque in recognition for his tireless work as secretary, since the formation of the club, at its inaugural meeting, on 21 May 1989, at the home of John Ruston, ex VK5ARK.

Doug was first licensed in November 1981 as VK5PDT upgrading to VK5GA in March 1992.

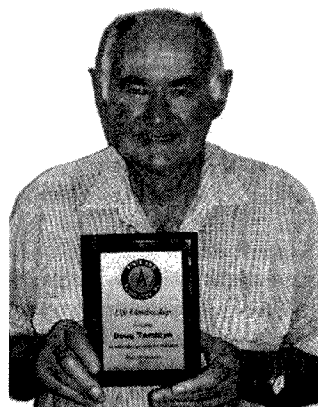
Over the years Doug has been active on HF, enjoying many contacts worldwide, including SSTV.

He particularly enjoys the six metre band, having recently made some nice contacts into Asia, using 10 watts from his

Kenwood TS-680 and Yagi.

The Riverland Radio Club membership felt Doug was a worthy recipient of the award and enjoyed presenting the plaque to Doug as a gesture of their appreciation for his commitment to the smooth running of the club.

Doug has recently celebrated his 80th birthday, and is still an active member of the club. He is also regularly heard on the air, keeping skeds with his local, interstate and overseas (propagation permitting) Ham Radio friends.



Doug VK5GA

OTY

DOUG VK5GA

I am delighted that the Riverland Radio Club has recognised the achievements of their Secretary and Treasurer, Doug VK5GA: he has earned the accolade by the Club – awarded Life Membership. I would like to add my congratulations.

I have been to Australia six times and visited several radio clubs mainly in SA (my brother lives in Adelaide). The hospitality I have received from all of the clubs is a credit to the radio amateurs of Australia.

Each club has one or two members who can be recognised as the driving force that keeps the club going year after year. I do not think the Riverland members will mind me saying that

Doug is the driving force behind their club. He has been the Secretary and Treasurer for most of the time since the club was founded (1989) and has guided it through the many changes over the last few years.

The first time we met was to discuss and compare the new licence and examination regulations in Australia and the UK during which it became evident that amateur radio in the Riverland would struggle to exist without the catalyst of a club to provide instruction and examination facilities.

I live in Cumbria which is remote by UK standards so comparison with the Riverland is appropriate. In this part of Cumbria we have two clubs Workington ARC and Furness ARS both of which run courses for Foundation, Intermediate and Full licenses. Without these clubs

amateur radio in the area would cease to exist. It is through dedication and hard work over 20+ years by Doug that amateur radio continues in the Riverland area of SA.

The founding and running of the Riverland Club is only part of the reason Doug's achievement should be recognised it is Doug the individual, the dedicated amateur, the friendly host to visitors, the helpful "Elmer" and much more that the club members recognise.

Again, a nicer guy you will never meet and I would like to record my support of the Riverland ARC decision to show their appreciation for Doug's dedication.

Regards

Norm(an) G7MRL, also M0CRM and former VK5ATJ.



Reporting for duty

This month I present a series of reports on various satellites in orbit and on the ground.

AO-7 solar panel report

During March 2009 AO-7's 70 cm beacon came to life sending RTTY telemetry. As reported in the April 2009 issue of *AR*, the telemetry was within specifications and showed AO-7 as being in good shape.

James A. DeYoung N8OQ collated telemetry collected from amateurs worldwide (notably Alan ZL2BX) and used this to determine how AO-7's solar panels had deteriorated over the past 35 years. James gave a presentation during the 2009 AMSAT-NA symposium but only a brief summary is contained in the proceedings.

The full article was published in the January/February 2010 issue of the AMSAT journal. He describes the solar panels, AO-7's orbit and its environment, the predicted degradation of the solar panels and how well the telemetry values confer with the predictions. AO-7's solar panels were donated by NASA as spares from their Orbiting Geophysical Observatory series during the 1960s. The high quality of design and construction has contributed to their longevity.

The solar cells degrade due to radiation exposure and AO-7 orbits at the lower edge of the inner Van Allen radiation belt. The solar panels are covered with a 0.15mm sheet of glass coated to reflect red light and protect against collisions with dust and debris. James suggests that over the years this glass has discoloured, contributing to the lower power output.

In summary, AO-7's solar panels have degraded less than predicted. Overall the maximum power output has dropped 33% from 4.6 Watts per facet at launch to 3.05 Watts (AO-7 has 8

facets, of which 3 or 4 are illuminated at any time). The predicted current output was 533 mA but the telemetry gave an average of 562 mA, 11% higher. James suggests that AO-7's panels will provide enough power for many years to come.

In 2018 the predicted power output will be 36% less than at launch. The good news is that during the next five years AO-7 will be spending most of the time in full sunlight with short eclipse periods. This month the eclipse period will be about 3 weeks long. The next period of lowest sunlight levels will be around 2018.

VO-52 report

Mani VU2WMY of the ISRO Satellite Centre in Bangalore emailed via the AMSAT mailing list to all users of HAMSAT VO-52 for their opinions on the satellite.

The HAMSAT project team are compiling a "Comprehensive Performance & Utilization Report" and would like user's comments. They would especially welcome comparisons between HAMSAT and other linear satellites (AO-7, FO-29 etc.). HAMSAT celebrated five years in orbit on 4th May 2010. It has been fully operational during this time giving excellent service.

I did a tally of contacts made over the past five years. VO-52 has been my most used linear transponder. This is not surprising as AO-7 is not as easy to use and FO-29 has had eclipse troubles recently. You can email Mani at wmy@isac.gov.in.

SO-67 progress

By the time you read this, SO-67 may be back in use for amateur radio operators. SA-AMSAT reported on their website that during the past six months SumbandilaSat has been successful in achieving its primary imaging mission. Despite losing the use of two reaction wheels and one

of the imager control boards they are still able to take images. One image of Dubai's man made islands is on the SA-AMSAT website. The reaction wheels loss means SumbandilaSat now tumbles 'head-over-heels' and different techniques must be used to compensate when taking images.

The damaged imager control board handled the green, xanthophyl (yellow light reflected by foliage) and blue spectral bands. Now images can only be taken using red, red-edge and infra-red light. The vibrating string, communication and VLF experiments are continuing.

SA-AMSAT also announced that they will build a cubesat. The proposed payload is a transponder with a 30 kHz bandwidth, telemetry beacon and science projects. Nothing is finalised so we have to see what the South African amateurs come up with.

The full report and news of the SO-67 transponder use can be seen at the SA-AMSAT website at www.amsatsa.org.za and other photos at <http://sumbandilamission.blogspot.com/>

Cubesat workshop

California Polytechnic University held their annual cubesat workshop during 21st to 23rd April. The workshop was primarily for the builders of cubesats and covered a wide range of subjects.

Many videos of presentations were posted on the internet. After viewing most of the available presentations I noted these trends. Cubesats are being taken seriously by industry, government and even the military. They will not be just for universities and amateurs.

There are high performance cubesats being developed. Just think of how much processing power and other technology is found in a modern mobile phone, then apply that to a small satellite.

On the radio side the trend is for

higher frequencies and larger ground station antennas to maximise the amount of data from the satellite. The cubesats will need to accurately control where they point their antennas using reaction wheels. There will be cubesats with thrusters (single and multiple) for manoeuvring and changing orbit. More cubesats will have deployable solar panels to increase the power available.

The missions will move from experiments and testing hardware to proper long term managed operations. The payloads will become more flexible in the number of operations they can do or there will be multiple payloads on the one satellite.

Different proposed missions were presented including QB50 (where 50 cubesats will be launched from the one rocket to study Earths upper atmosphere) and a lunar orbiter/lander (with Mars a theoretical possibility).

The videos can be seen at <http://www.ustream.tv/channel/CubeSatWorkshop/v3>. The lunar project is at www.cubesatlab.org

All this and more in just one to three 10 cm cubes.

Flat-sats

Two amateur satellites currently under construction have made it to the 'flat-sat' stage with photos and videos on the Internet.

A flat-sat is where the various sections of the satellite are laid out on a workbench with easy access for testing. They have photos of a series of modules interconnected together with power supplies, oscilloscopes, spectrum analysers and laptops hanging off of them.

The KiwiSAT website shows their flat-sat setup as at the end of 2009. Most of the flight hardware has been proven except for the main computer (IHU). The hardware problems have been sorted but much work needs to be done with the software. Photos and descriptions of each module can be found at <http://www.kiwisat.org/status.html>.

The AMSAT-UK FunCube project team had a meeting during 10/11 April. While the full set of PCBs and modules weren't available, some of

the satellite's hardware was tested. The command, control and telemetry board, the electronic power supply board and a 10.7 MHz IF board were tested together.

With an external 10.7 to 145 MHz upconverter they were able to get the satellite to send telemetry, receive it at 145 MHz and decode the telemetry to a laptop.

Software and hardware problems were identified for further work. Photos and videos are available at http://funcube.org.uk/WP3/?page_id=91 'I2C' refers to the method used to send data between parts of the satellite.

Final Pass

Cubesats have come a long way since the launch of CO-55 and CO-57 in 2003. Their future looks bright with interesting missions in the near future.

It's good to see that KiwiSAT is nearing completion and will soon be starting the launch campaign. Next month's issue will have the latest six-monthly review of operational OSCARS.



AMSAT-VK

AMSAT Co-ordinator

Paul Paradigm VK2TXT
email coordinator@amsat-vk.org

Group Moderator

Judy Williams VK2TJU
email secretary@amsat-vk.org

Website

www.amsat-vk.org

Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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, 91.5 Hz CTCSS tone access

In South Australia

VK5TRM, Loxton on 147.125 MHz

VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, EchoLink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124

VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

Margaret Blight VK3FMAB

Turning a new leaf

This is my first column as Publicity Officer. While I am flattered that people have faith in my ability to carry out the job efficiently, I suspect I may have been selected by a few friends while my back was turned briefly. So I can only do my best and look forward to receiving news from all of you so we can continue to provide an interesting and informative column.

Since obtaining my amateur radio licence in 2007, I have had the opportunity to meet many engaging and enthusiastic women operators through ALARA. There are many opportunities to connect up with like-minded people via the weekly ALARA broadcast on a Monday night, through the regular luncheons and attendance at the various Radio Club Sales where one can often see an ALARA Table. We also look forward to the National and International MEETS where opportunities exist to meet face to face with interstate and overseas women operators.

This year Australia will be very well represented at the YL International MEET in Munich. Our current President and the co-ordinator of the MEET in Adelaide in 2012, Tina VK5TMC and her OM Robert VK5ZHW, will be attending along with Gwen VK3DYL who has attended a number of previous YL International MEETS. Dot VK3DB, the editor of the ALARA Newsletter with her OM John VK2ZOI, and Christine VK5CTY will also be present.

Watch this space! One or several reports will appear in this magazine after the MEET.

ALARA local news

VK2—Dot VK2DB

Michelle VK2FMYL has suggested a get-together in July to honour the ALARA birthday. Dot VK2DB has sent out invitations and is receiving positive replies. Various ideas have been mooted as to the location,

possibly a picnic in a park or a bring-a-plate affair in a hall somewhere. OMs and harmonics will be welcome. Further news after the event.

VK3—Margaret VK3FMAB

I am a member of the Eastern and Mountain District Radio Club. The basis for our local ALARA group commenced after a few YLs met upon completing their Foundation Licence Course. Our first luncheon was held in a coffee shop in the local shopping centre in July 2007. Since then the numbers have grown to include members from other VK3 clubs, both suburban and country. We now meet on a bi-monthly basis with some locations in the city area and others closer to the country members.

Initially the country people often drove to Melbourne with their OMs for company, word soon spread and local OMs managed to accompany their YLs and take the opportunity to meet up with other male operators in a social way. The answer to this was to arrange separate tables so each party could enjoy the conversational topics. It is certainly true that the male conversations tended to be far more technical than the female ones but not necessarily as interesting. Overall the luncheons have been voted a great success.

VK4—Pam VK4PTO

Pam VK4PTO of the Gold Coast group arranged the March luncheon at the Boardwalk Tavern, Hope Island. Six ALARA members and their OMs attended. It was lovely to have our newest VK4 members Sue VK4ST and Nicola Hill join us. We sat outside on the deck overlooking the boat harbour, ate fine food, and later enjoyed the live music. An enjoyable time was had by all.

VK6

Congratulations to Bev VK6DE who recently received her 30 year membership certificate from ALARA.

ALARA AGM

There was a good roll call for the AGM held on 3 May 2010. 17 stations participated. Reception on the night was varied.

The Chairperson Tina VK5TMC conducted the meeting.

Committee elections:

Office Bearers elected for the forthcoming year were as follows:

Tina VK5TMC remains President, Senior Vice-President is Lesley VK5LOL.

Junior Vice-President is Shirley VK5YL. The Secretary is Susan VK7LUV, who also holds the position of Librarian. Treasurer/Membership Secretary/Souvenir Custodian is Margaret VK4AOE and the Assistant Treasurer/Membership Secretary is VK4GH Katherine. Minute Secretary is Jenny VK5ANW/port3. There is a new Publicity Officer Margaret VK3FMAB. The Sponsorship Secretary is Maria VK5BMT, Contest Manager is Lesley VK5LOL, and Awards Custodian is Kathy VK3XBA. Dot VK2DB remains the Editor and Sue VK5AYL is Historian. The Public Officer is Robyn VK3WX.

State representatives

VK7 has a new representative - Shirley VK7HSC. The position of VK4 representative is still to be filled. All other state representatives remain the same.

Constitutional review

This year ALARA will be reviewing the existing constitution. President Tina asks that anyone interested in becoming part of a sub-committee to undertake this task should contact her on vk5tmc@bigpond.com.

Continued overleaf

ALARA - 35 this year

As July is ALARA's birthday, there will be special luncheons held to celebrate the event. For further information about attendance at the ALARA lunches contact your local state representative via the email address given in the newsletter. You will be made most welcome.

At present I understand VK5 hold luncheons on the second Friday of the month at noon. The location is the City Museum cafeteria. VK6 has a monthly luncheon on a Thursday. VK3 members meet at various locations on a bi-monthly basis, normally on a Saturday as more people are able to attend on this day. VK2 do not hold monthly luncheons as they live far apart and many work or study but they do manage to meet up for lunch on a casual basis.

Please let me know if any other groups have formed so we can cover them in later columns.

WIA Centenary

The WIA Centenary AGM took place this year at Ridges Lakeside Hotel, Canberra from 28 - 30 May 2010.

A number of ALARA members were present including Jenny VK5ANW/3, Meg VK5YG, Marilyn VK3DMS, JennyVK5FJA and Myrna VK5YW.

A PowerPoint presentation on ALARA was shown in the foyer outside the meeting room for the interest of participants.

This year one of the presenters was Norma O'Hare VK2YL. Norma's presentation was "The early years of ALARA - Ladies in amateur radio". Norma related how a small group of



young ladies encouraged each other to participate in amateur radio which further encouraged others to take an interest.

From this activity, during July 1975, LARA - The Ladies Amateur Radio Association was born in Victoria. A national organisation LARA (Australia)

ALARA travellers

Margaret Loft and her OM George VK3AGM travelled to Indonesia



for a son's wedding. She sent back a brief outline of the experience:

"We left Australia on 25/2/10 and flew via Singapore to Jakarta, on the island of

Java. We spent four days in Jakarta, mainly sightseeing. We then flew to Yogyakarta, also on Java, a 45 minute trip by plane, or eight hours by train..

The bride and groom wore traditional Western wedding outfits but other family members wore traditional Javanese outfits including George and me. There would have been 300-400 people at the catered evening wedding People selected their own food and sat wherever they chose.

We also did a tour of Fort Canning also known as The Battle Box, which was the headquarters of the Malaya Command in WW2. It is an underground bombproof bunker of some 20 or so rooms, set up as a museum



That's Margaret and her OM in centre of the group

and animated enactment of the lead up to the surrender of Singapore.

Margaret VK3FMAB and her OM Andrew VK3BFA cruised to New Zealand in February and enjoyed the experience of sea travel, good meals and service on board plus the opportunity to see something of the country itself. Life on board was wonderfully relaxing. There were activities and entertainment when you wished to participate or one could simply rest in the cabin or on the balcony watching the view. A very peaceful experience. The meals were superb and it took some control not to overdo it. I am not sure we were successful there.

We had some great experiences in New Zealand; especially noteworthy was a visit to Waimangu Volcanic Valley and a ride on the Taieri Gorge Railway from Dunedin. We sailed into the Fjordland National Park and cruised for hours amongst the magnificent scenery.

came into existence in December 1976 and was re-named as ALARA in June 1978.

Other earlier women amateur operators will be mentioned along with an outline of current activities and changes in licensing rules and examination styles which have assisted the growth of female participation (Information from WIA website).

Urgent request to all ALARA members

Each July the cover of AR has an ALARA theme. If you have a great ALARA photo please let the Editor of AR, Peter VK3PF know on editor-armag@wia.org.au and discuss getting it to him. If we use your shot we will give you a framed copy of the cover. We need to have the photo by about the 8th of June, so do it **today** please

ALARA at the Midland ARC Expo

New net is one outcome

Jean Fisher VK3VIP

The ladies of ALARA participated in the three day expo in Bendigo hosted by the Midland Amateur Radio Club at the old fire station.

Jean VK3VIP (VK3 ALARA representative) and Margaret VK3FMAB travelled to Bendigo from Melbourne for a five day break and to run an information stall at the expo.

A great time was had and a number of new members signed up.

It was also decided that the ladies would start a net using the Mount Macedon repeater VK3RMM on a Tuesday evening at 7pm and we would like to extend an invitation to all YL's to join us as VK3RMM has a very wide coverage—it will allow both country and metropolitan stations to participate.



Margaret VK3FMAB working the stall.



The Old fire station on a lovely Easter day.



Jean VK3VIP and Monica (VK3FMON) represent ALARA.



Mark VK3FGMF admires the radios of yesteryear.



Bendigo's Sun Loong who emerges each Easter

VHF/UHF An Expanding World

David Smith VK3HZ

vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

It is the season for some good inland tropo conditions via the slow-moving high-pressure cells. Phil VK5AKK, who is always a very good signal from his QTH in the Adelaide Hills, reports on his activities:

I had some good contacts in the last month, the best being tropo into Sydney on 21/3 at 2130 working VK2IDM and VK2IJM both 5x2 on 144.200. The last 2 m tropo into Sydney was back in the days of VK2ZAB.

The morning of 14/4 looked promising with easterly indicators looking good and I was having a day off. First worked was VK2EMA 5x2 then VK3II 5x7 on 144.100. About half an hour

later, I heard a weak VK1 working VK3. After a logger request for VK1 to beam west I worked VK1BG and VK1CJ (945 km) and then VK2FABV - all 5x1 on 144.200. Next was VK3KH 5x5, VK3XQ 5x3, VK3ZRT 5x2 and VK3DUT (875 km) at 5x1 on 144.100. Into the new (Zulu) day, I worked VK1ZQR 4x1 on 144.200 at 0020 Z.

Listening on the Mt William 2 m repeater later, I could hear another signal underneath. After finally getting the repeater to ident, I worked VK1KRF mobile on Mt Ginini (920 km) using my Diamond white stick omni antenna. I worked VK3II again 5x2 on 144.100 then rested after a hard morning's work!

Later in the month, on the evening of 28/4, the VK6REP beacon was heard at Phil's QTH. Unfortunately, no contacts resulted.

Then, on the morning of 29/4, Phil

again worked through VK1RGI Mt Ginini - this time to VK2CMO. Later in the day, he again worked VK2FABV (5x2).

VK9NA Planning

It looks like the VK9NA team will be heading out to Norfolk Island again in the first two weeks of January 2011. Expectations are high following the good results from the last trip. If last year is any indicator, stations along the east coast will have a good chance to work them on VHF/UHF and Microwave bands.

So dust off the equipment and make sure it is in good operating condition so as not to miss out on this rare opportunity. Alan VK3XPD has assured me that he has booked excellent tropo conditions for the entire period!

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

Digital DX Modes

2 metres FSK441

Welcome to John VK4TJ who is operational on 2 metres with FSK441. John's home location is obstructed to the south but by going portable to the top of a nearby hill he worked into Hobart.

1296 MHz QRP EME ON JT65C

With the large 25 metre Dutch dish PI9CAM at Dwingeloo operational on 18 April, the opportunity was taken to work them QRP on 1296 MHz. Dave VK2JDS (4.6 metre dish), Phil VK4CDI (3.7 metres) and Rex VK7MO (2.3 metres) all worked them on one watt both ways.

The following week Rex used a program produced by Glen VK1XX which automatically corrects for Doppler to improve system performance and worked PI9CAM at 0.5 watts or QRPP.

Improving JT65C performance with Doppler Correction

Figure 1 below, which was produced with a signal generator and the transceiver adjusted with Glen's

program to simulate Doppler, shows the impact of Doppler on JT65c performance. At 1296 MHz, the change of Doppler can reach 12 Hz/min which means there is the

Rex Moncur VK7MO

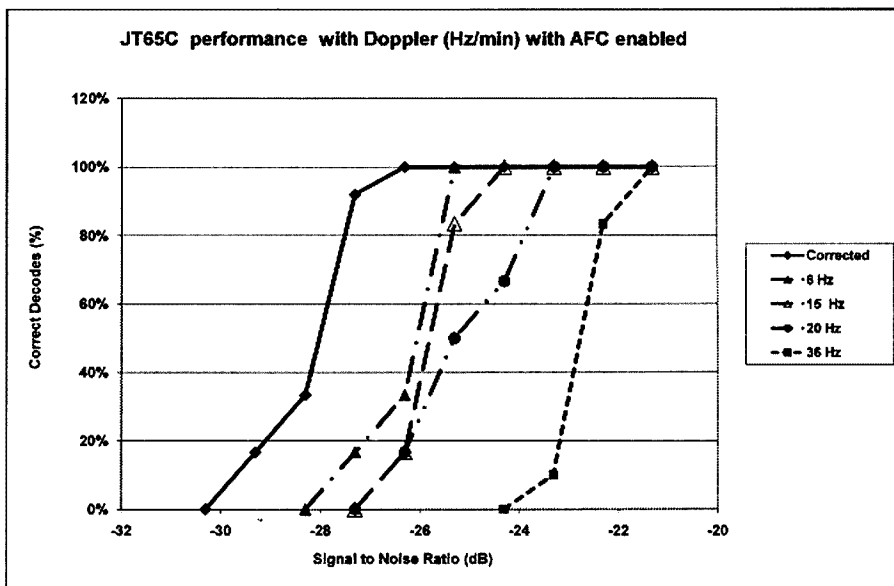


Figure 1: The performance of JT65c with rate of change of Doppler in Hz/min

potential to improve JT65C system performance by 3 or 4 dB by using Doppler correction.

Comparison of ROS and JT65

A series of tests have been undertaken by Jim VK3II (2 metres tropo-scatter), Dave VK2JDS (1296 MHz EME) and Ian VK3AXH (144 MHz EME) with Rex VK7MO. The conclusions from these tests are:

- ROS gives comparable weak signal performance to JT65a on 144 MHz tropo-scatter but takes longer to complete a QSO.
- ROS is 4 to 8 dB worse than JT65b for 144 MHz EME.
- ROS is not useful for 1296 MHz EME. While it can be made to work, by using Glen VK1XX's Doppler correction program to directly control the transceiver frequency via a hardware CI-V interface, the performance is still at least 7 to 11 dB worse than JT65c.
- Operational features of JT65 such as time sequencing and short-hand messages give it a significant advantage over ROS in completing a marginal QSO.

A source of misunderstanding is that ROS reports decoding down to -35 and -36 dB, but this is on a different scale to the JT65 reports and 9 dB should be added to ROS signal reports to make them comparable to JT65 reports.

10 GHz Aircraft Scatter using JT65C

Dave VK3HZ and Rex VK7MO have conducted initial tests of aircraft scatter on 10 GHz between Mt Wellington near Hobart and Sunbury north of Melbourne over a 624 km path.

The path was chosen so that the direction of propagation lined up as closely as possible with the Melbourne to Hobart flight path so as to minimise Doppler variation and maximise the possibility of diffractive scattering (generally called aircraft enhancement or AE) as applies at VHF. The equipment comprised GPS-locked transverters and transceivers to minimise frequency drift, 45 and 65 cm dishes with 8 and 10 watts output. The initial tests were encouraging in that four or five decodes were

received from each of two aircraft over ten minutes at the Mt Wellington end (see Decode Table below) although no decodes were received at the Sunbury end.

Inspection of the JTSpec waterfall trace showed that the signal generally came in bursts of a few seconds somewhat like meteor scatter. This could well be due to specular reflection from parts of the aircraft rather than diffractive scattering that supports AE at VHF. It is also noted that all of the decodes above required the Deep Search decoder (0 in the second last column) despite that fact that reported signal levels were -22 and -23 dB which would normally decode on the WSJT Koetter-Vardy decoder. It is likely this is a result of the fact that the signals tend to come in short bursts and insufficient bits are received for the

023500	0	-33	3.6	-3	21						
023700	1	-27	2.8	11	4 *	VK7MO	VK3HZ	QF22	0	10	
023900	2	-24	2.8	8	5 *	VK7MO	VK3HZ	QF22	0	8	
024100	1	-22	2.9	8	5 *	VK7MO	VK3HZ	QF22	0	10	
024300	0	-23	3.7	5	5 *						
024500	0	-27	2.6	62	21 *	VK7MO	VK3HZ	QF22	0	10	
024700	0	-33	5.5	-482	3						
024900	0	-33	-0.8	-83	28						
025100	0	-33	-1.7	-436	26						
025300	0	-33	5.3	-479	12						
025500	0	-33	-0.8	-207	31						
025700	0	-33	2.7	-277	4						
025900	2	-28	2.5	24	4 *	VK7MO	VK3HZ	QF22	?	0	3
030100	3	-22	2.7	19	4 *	VK7MO	VK3HZ	QF22	0	10	
030300	2	-23	2.8	11	4 *	VK7MO	VK3HZ	QF22	0	10	
030500	2	-25	2.7	46	4 *	VK7MO	VK3HZ	QF22	0	10	
030700	1	-25	2.7	48	6 *	VK7MO	VK3HZ	QF22	0	10	
030900	2	-26	2.7	43	4 *						

Decode Table

Koetter-Vardy decoder.

More details of these tests including pictures showing the signal bursts on the waterfall are available on the web at: http://www.vk3hz.net/aep/AEP_on_10GHz.pdf

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

The Magic Band – 6 m DX

Brian Cleland VK5BC.

(Owing to a production oversight, last month's 6 m notes did not appear in the magazine. Both months are included here.)

March showed marked improvement in TEP conditions particularly from VK4 to JA with almost daily openings as well as contacts into China and Korea. Some of the significant reports received follow.

On March 5 Wade VK4WM Harvey Bay reported working over a 21 minute period beginning at 0520 UTC JR2HCB, JI1CUL, JH7XRZ, JA1RJU, JF3RDG, JA7IC, JH7UPW, JA2JXH, JR1UBR, JR0EQQ, JA9SJI, and JL1VFZ. Then on 6 March Wade reported working 49 JA stations most at 5/9+ over a 1 hour period beginning 0500 UTC.

11 March proved to be an interesting day with again a good TEP from Japan

to VK4 (Townsville to Brisbane) with many VK4s working JAs. This opening was interesting in that it extended down from JA to FK8 and ZL2. Mark ZL2WHO in Palmerston North worked several JAs up to S7 and Pascal FK8IA in Noumea was reported by JR2HCB. Among the many JAs that Kevin VK4BKP in Mackay worked, Kevin worked DS2KGJ in South Korea and John VK4FNQ in Charters Towers worked Willem DU7/PA0HIP. Also on the same day Victor E51CG in Rorotonga reported hearing the KH6HI beacon.

On 12 March things were quiet down south but again VK4s worked JAs and

finally on 13 March the band opened to VK5 between 0530 UTC to 0800 UTC with several contacts being completed between VK5 and JA. Brian VK5BC reported working 17 JAs with Garry VK5ZK and Peter VK5PJ also working several JA stations. There were also a few contacts from JA into VK2, 3 and 7 completed with JR6EXN reporting contacts with VK3OT, VK3VG, VK3DUT, VK5ZK, VK5PJ, VK5ZW, VK3AMK, VK3OE, VK3FZ, VK3BDL, VK3AAU, VK4ZJB, VK4AHW, VK7AC, VK4DDC, VK4WNT, VK4FI and VK5BC.

16 March was a quite day but late in the afternoon both the VK6RBU and VK6RPH beacons were audible in VK5 and the VK5RBV in VK6. Contacts then followed between the VK6s OX, JJ, ADI and AKT, and VK5s ZK, BC and AYD at Cooper Pedy. A little later Steve VK3OT near Hamilton also worked several VK6s. Around the same time Victor E51CG was hearing the KH6 beacons and worked Fred KH6Y.

17 March again saw a good opening from most areas of VK4 to JA. Gary VK4ABW near Townsville worked several JAs as well as DS4, 5 and 7 stations. Garry also worked Willem DU7/PA0HIP. Also same day an 'E' opening from northern VK4 with Gordon VK5KAA working John VK4FNQ and Brian VK5BC working VK4ABW, busy day for Gary.

20 March saw Ray VK4BLK at Yeppoon work several JAs and a little later John VK4FNQ working several.

On 22 March, another opening to VK4, this time David VK5AYD at Cooper Pedy was in the action working JA3EGE. That evening Willem DU7/PA0HIP worked several stations in the Brisbane area including Adam VK4CP, another new one for Adam.

On 30 March, Harvey VK4AHW and Wayne VK4WNT from the Hervey Bay area worked many JAs.

From the Tablelands in far northern Queensland Dale VK4SIX reports that he and John VK4TL worked JA, DU7, VR2, BA4 and BX4 during the month.

Also on many evenings throughout the month the stations in northern VK including Mark VK8MS in Darwin and Gary VK4ABW Townsville area have been working DU7/PA0HIP and other northern stations in Japan and Korea.

A message from Willem DU7/PA0HIP summarising his summer season.

First I have to get something off my chest - When propagation happens, I noticed many times that many people are calling that cannot even hear me, many times ruining QSOs with people that CAN. The frustration is not only on the VK/ZL side, but certainly also at my end. It ruined QSOs with ZL2TPY, ZL1RS and ZL3AAU. I thought that only Europeans were like that (you should hear the mess when something special shows up on 6 m in EU, hi). It really is a shame....I can understand their eagerness to get a "new one", but in this way they only ruin their own chances. (and mine). A kW linear (my own PA0 linear) has been shipped to me and will hopefully arrive soon. Also I am planning to build a better antenna. So maybe next season the ZL/VKs will have a better copy of my signals and problems like that will belong to the past.....let us hope so.

Having said that; below is a summary of my VK/ZL summer season contacts.

13 Dec 2009: 1 worked VK6KXW (first VK6), and we tested during the next few weeks. It turned out that on most days (12 out of 14 days) I could detect his signals (keyer), like a pipeline.

15 Dec 2009: 0440 - 0800 UTC, spotty openings to VK3, 5 and 7. I worked 7 stations (including VK5BC/P, new grid!!) (3x VK3, 1x VK7 and 3x VK5)

17 Dec 2009: 0815 - 1030 good conditions to VK2, 3, 5 and 7, but not much activity from VK. I worked 1x VK2, 8x VK3, 7x VK5 and 3x VK7. Could have worked many more.

18 Dec 2009: short opening 0500 - 0545 UTC to VK3 (2x) and VK5 (2x), signals were very strong though (S8-9).

22 Dec 2009: 0520 - 0715 UTC very spotty opening to VK6, worked VK6JJ, KXW, JJ (SSB), ZKO, and heard VK6RO who faded out before completing QSO.

I had heard ZL3NW before very weakly but on 25 Jan 2010 it finally happened:

25 Jan 2010: 0420 - 0740 on/off conditions to ZL1, 2, 3 (worked ZL3NW (539/539 at 0426 UTC) for new one (amazingly good signals, 7721 km), QSOs with ZL1RS, ZL2TPY and ZL3AAU were ruined by weak VK2, 3 stations, who were heard both in ZL and by me (calling me).

Also conditions to VK2, 3, 4 and 5, I worked with 9 x VK2, 4 x VK3, 1 x VK4 (EK), 5 x VK5 (signals were not very strong but activity was good).

29 Jan 2010: 0630 - 0735 UTC weak opening to ZL3 and VK7, Heard ZL3NW (Rod had bad line noise, so no QSO), ZL3TY and ZL3AAU, but no QSOs. Did manage to work VK7AC, but was only VK heard here.

6 Feb 2010: around 0916 UTC strong propagation to VK8 (recon, must have been Spread F or so) Worked VK8RR and VK8MS, both 59++ on SSB.

Well Brian that is it. For me, this season was much better than last year's (only 2 openings): Now have worked 31 grids in VK (1 in ZL).

Thanks Willem, it is great that there is a station in the Philippines which spends considerable time looking for contacts into VK/ZL and hopefully all operators are appreciative of your efforts and call at the appropriate time.

Received a very interesting message from Stuie VK8NSB in Darwin, Stuie writes:

Two years ago I decided to venture onto 6 m and put a quarter-wave vertical up around November 8 ready for what the 6 m Guys were calling the Magic Band time of the year.

I was already aware of the VK LOGGER on the Internet, using it for HF and had seen the 6 m page but had never ventured onto it thinking it was for Advanced operators only. I actually thought I would be ignored or told to leave if I went on the page because I was a Standard operator.

I decided to jump on the 6 m page and was amazed to find the 6 m guys were quite willing to help out with answers to my questions and willing to have QSOs with me on 52.100 SSB or split because of the Advanced guys antenna's cut for the bottom part of the 6 m band (50-51) only.

In the Xmas season of 2008, I worked 23 VKs and 2 ZLs on 6 m. When the band closed off in Feb/Mar 2008, I did not bother with it for most of 2009 and found that the Magic Band was very poor over Xmas 2009. I just happened to come upon a 3 element Yagi for 6 m on VKHAM classifieds and started working on putting it up on one of the towers I have here, finally getting it up around the end of January 2010.

One evening on the DXcluster, I saw Mark's (VK8MS) callsign spotted by JA and thought wow, 6 m is open so I rushed up to 6 m to listen and could

hear the JA quite clearly on the Yagi. I talked with Mark later that night and he explained about TEP, I had never heard of it before but was interested in learning more about this TEP.

Over the next two weeks I was lucky to have worked KH2, VR2, JA, DU and BV on both SSB and CW on 52100 and some QSOs using split 50 – 52. Both Mark VK8MS and John VK8JM helped me with some of the QSOs, asking the operators to go split for myself so that I could make the QSO.

I have noticed that on the VK LOGGER that there does not seem to be too many VK Standard operators active on 6 m. Why not? For the guys down in VK 1 to 7, 6 m looks fun with openings all around Australia, and as well as some good international DX openings.

With only 100 W and a 3 element Yagi I have had some great evenings on 6 m over the last couple of weeks thanks to TEP. I would say to those Standard operators out there give 6 m a go, it is easy to put up a vertical, dipole or even a beam for this band as it does not need massive space to do so.

Get on VK LOGGER and say g'day to the guys. They will not bite and you might find you actually enjoy this Magic Band. I had always said that 6 m was not really for me as I was a HF DXer and I was not going to get too serious about it, but over the last couple of weeks I have actually enjoyed this truly Magic Band.

Give it a go; yes as a standard operator you might be limited to the frequencies you can use on 6 m but you will be amazed how many guys will work you split or even come up on 52.100 to say g'day. I now keep my eyes on the 6 m chatter in VK LOGGER and the 6 m spots on the clusters I monitor.

Take it easy and catch you on 6 m from Darwin. De Stuie VK8NSB

Great to hear you are enjoying some great conditions on 6 m Stuie. I am sure it will only get better in the next couple of years as the sunspot cycle improves and of course it is always great to work VK8 stations from any where in VK. Also good that many stations are keeping an ear out for the standard licensees above 52 MHz.

(And on to this month ...)

After many good TEP openings in March the band quietened down in April with only a few TEP openings and the odd 'E' contact. Indicators from the China, Japan etc were heard in VK on several occasions in April but few contacts were reported, most from northern VK4 to JA.

On 2 April, the VK4RHT Atherton beacon was reported from Japan and Lloyd VK4FP worked JR2HCB. The Atherton beacon was again reported from Japan on 5 April along with the VK8VF Darwin Beacon. On this occasion Gary VK4ABW Townsville worked JR2HCB and John VK4TL Tolga worked JO3UGX. Norm VK3DUT. VK4SSB/2 heard the FK8 beacon.

On 5 April, John VK4FNQ Charters Towers reported hearing both the KH6HI and KH6HME Hawaii beacons between 0300 and 0400 UTC. John also heard both these beacons again on 6 and 8 April but despite calling no contacts eventuated.

6 April saw some local 'Es' with David VK4ZDP Innisfail work Wade VK4WM and Wayne VK4WTN both in the Hervey Bay as well as Denis VK4ACE Brisbane and short skip to Brian VK4EK Sapphire. A little later in the day Brian VK4EK worked JA6AZU.

With the help of some 'E' extension on 7 April, Norm VK3DUT worked JJ6WZS and Garry VK5ZK worked JE6AZU. Around the time of the contacts Garry was hearing the Alice Springs VK8RAS beacon and worked John VK4FNQ.

The morning of 8 April, the band opened VK5 to northern VK4 with John VK4FNQ working Brian VK5BC and later in the afternoon a weak TEP opening Brian VK4EK worked JA1RJU.

9 April was interesting in that during the afternoon, multiple 49.750 MHz TV carriers from the China area were up to S9+ in southern VK4, VK3 and VK5. The JA2IGY beacon was also heard in VK5 but unfortunately no contacts were reported. At the time these signals were being heard the Atherton VK4RHT and Townsville VK4RTL beacons were audible in VK5 and Russell VK4BEG worked VK5ZK and VK5BC. Meanwhile a little further north Wade VK4WM Hervey Bay reported working 10 x JAs and Brian VK4EK Sapphire also working several JAs.

Garry VK5ZK had good day on 10 April working JG3GNU, JA5FFJ, JF1LXO and JM1IGJ all on CW while several northern VK4s including Ray VK4BLK Yeppoon, Gary VK4ABW Townsville and John VK4FNQ Charters Towers were in the action on both 10 and 11 working several JAs on both days.

Not much action then until 17 April when a good opening late in the afternoon from VK5 to northern VK2 and VK4 occurred. Brian VK5BC worked VK2BTS, VK4s QM and VN. John VK4FNQ worked Mark VK8MS in Darwin.

Some good 'Es' again on 20 April. David VK3AUU worked several VK4s including FIL, CRC, DD EK, WM and WTN. Ron VK4DD worked Joe VK7JG, Garry VK5ZK and VK3s ALZ, AUU and OW and FZ while Brian VK4EK and Andy VK6OX heard the Alice Springs beacon. Garry VK5ZK also worked Wayne VK2XN. Later in the day a good TEP opening to Japan with Wade VK4WM working 11 x JAs and Brian VK4EK also working several JAs.

22 April - good opening from JA to northern VK4. During this John VK4FNQ, Dale VK4SIX worked Li BA4SI Wujiang City, China. Adam VK4CP Brisbane also reported hearing Li.

24 April, VK4ZFC in Cairns worked several JAs.

On 25 April a good opening from ZL to VK with Bob ZL1RS working several VK2 and VK4 stations and Peter VK5PJ.

Stuie VK8NSB Darwin reports that on 27 April at 0129 UTC working Hide JR6EXN SSB 5/9 both ways and that TEP conditions were very strong to Darwin but only Hide on the band.

Good early morning opening on 28 April from VK4 (Brisbane/Hervey Bay area) to VK5 with several contacts taking place and Brad VK2QO worked John VK4FNQ.

If you are up early, Brad VK2QO coordinates meteor scatter contacts on 50.200 MHz from 2100 - 2200 UTC every morning. Several stations participate in this form of propagation with many good contacts completed on most days. Watch VK LOGGER to see the activity.

Please send any 6 m information to Brian VK5BC at briancland@bigpond.com

DXnews & Views

John Bazley VK4OQ

E-Mail: john.bazley@bigpond.com

Recently Carl N4AA queried in his weekly Newsletter, "how many 'old timers' have given any thought to what will happen to all the QSLs that they have collected over the years. How would they be dealt with by the family on the Amateur becoming a Silent Key?" In truth I think the majority would say that they have done nothing about that aspect, and in all probability they would be 'binned'. I know that there are several people interested in collecting old QSLs, but are they really interested in receiving 1000s starting from over 60 years ago up to current receipts. It would be interesting to receive some feedback on this issue, which I will gladly pass along to Carl.

So from QSLs to DX.

Great news from The Microlite Penguins DXpedition team who will be activating the South Orkney Islands (DXCC VP8/O, IOTA AN-008) from 27 January to 8 February 2011. Safe and reliable Antarctic transportation has been secured by the experienced RV Braveheart, and activity will be on all HF bands 160 m-10 m using SSB, CW and RTTY.

Operators will be K9ZO, ND2T, 9V1YC, K0IR, N1DG, N0AX, W3WL, N6MZ, I8NHJ, N4GRN, WB9Z, W7EW and VE3EJ. This will be the team's fourth time activating an entity in the Antarctic region and fifth DXpedition overall. You may recognize most of the call signs from the group's past operations, but we have also added several new members to the team, all of whom have been on DXpeditions to some of the world's rarest entities.

Those who have enjoyed our operations over the last eight years may recall that our methods and philosophy are somewhat different from other DXpeditions. Though our overall goal is still to provide a new DXCC entity on as many bands and modes as possible, we also strive to increase the fun factor by focusing on operational simplicity and radio skill.

In the past we kept the Microlite Penguins DXpeditions non-commercial and confined the financial burden to ourselves and a single sponsor, the NCDXF. But today, with the astronomical cost of Antarctic travel and a budget approaching US\$300,000, this single-sponsor approach is no longer a reality. To make this DXpedition happen, we must break our tradition and ask for support of the entire amateur radio community. All financial support, no matter what the amount will be welcome. We have even set up a website where DXers, clubs and foundations can donate online: <http://www.vp8o.com>

It is the support and encouragement of the DX community that will make this exciting Antarctic adventure a success.

Interestingly The South Orkney Islands are located at roughly the same latitude south as the Orkney Islands are north (60°S versus 59°N), although it is not known if this was behind the naming of the islands.

The Seychelles is certainly seeing a lot of activity this year. First from the GM team and then in May from RA9LR. If you missed both of these you can work Manuel Marques CT1BWW when he operates from the Seychelles National Park, with the callsign S79BWW from July 19 to 31. It will count for the WFF, World Flora and Fauna, award. S79bww@clix.pt

At the time of going to press Mike KM9D and Jan KF4TUG are currently moored off Malakal Island (OC-009), Palau. Mike recently obtained the call

T88CF. There are no other details yet of their operating plans.

SV1GRM, SV1HER and CT1GFK will be active as CQ8SV from Corvo Island (EU-089), Azores on 20-27 July, and IOTA Contest included. QSL via SV1GRM.

Paul K9OT and Peg KB9LIE (hamradio.pripfarms.com) will be active as FP/ homecall from Miquelon Island (NA-032) on July 5 to 14, including two single-operator entries in the IARU HF Championship. They will operate CW and SSB 80-10 metres with possibility of 160 m and 6 m if conditions are good. QSL via home calls, direct or bureau, and LOTW.

Pierre Tromp ZS1HF has been on Marion Island since early April and has now began activity as ZS8M. He has an IC-7200 and IC-7000 for rigs, along with an FL-7000 amplifier. At the moment he has dipoles for antennas. For the moment he will be favouring activity on SSB on 40, 20, 17 and 20 metres, although he plans to begin activity on the digital modes shortly. MM0NDX says Pierre may be erecting new antennas shortly - but due to the weather on Marion Island they will be very basic. QSL cards go via ZS1X, P.O Box 1481, Worcester, 6850, South Africa. See photo.



This is the base at Marion Island (ZS8) where a team of 10 to 15 men work for a year. Thanks to John W7KCN for the photo.

Three Japanese operators have announced their plans for a DXpedition to Wallis and Futuna followed by a short relaxed operation from Fiji afterwards. Mine JA2NQG/JE1CTM, Yuji JH2BNL, and Shige JI2UAY will be QRV from Wallis Island (OC-054) starting the afternoon of July 14 and leaving on the afternoon of July 21. They will be staying at the Hotel L'Albatros in Mata-Utu (same QTH as FW5X). Plans are to have three stations as follows:

1) IC-7000 plus Thamway DXV500L (500 W on 160-40; 300 W on 30-20), 14 metre high vertical with top-load wires on 160 and 80, wire vertical on 40, SPI-RO D-314 WARC band dipole in sloping dipole or vertical configuration.

2) FT-897 plus IC-2KL, 10 metre high vertical with a top-load wire on 75-40, 3 element beam on 20-15-10.

3) IC-736 and 2 element beam on 10.

In order to avoid mutual interference (due to minimum antenna separation) only one station will be active at all times. They may have to limit their power output to 250 watts due to local regulations. Activity is expected on 1.8 through 28 MHz on CW, SSB, RTTY and they are hoping to try FM. QSL cards are expected to go via their home calls.

Once again Gregg VE3ZZ will be active from VY2TT's super station on Prince Edward Island (NA-029) from July 21 to 26. During the IOTA Contest (24-25 July) he will operate as VY2X, and outside the contest as VE3ZZ/VY2. QSL both calls via VE3ZZ, direct or bureau.

"Moj" DU9/PA3GZU will be active between 11 July and 7 August, "holiday style". He will be mainly on 20 metres but will also plan some activity on 40, 15 and 10 metres, depending on the conditions. He will be on SSB, BPSK31 and CW. Moj prefers you QSL via the bureau to his home call, but will also accept direct requests.

VK6AHR, "The Hills Amateur Radio Group", will be on for the IOTA Contest July 24 to 25 from Rottneest Island, OC-164. Operating will be VK6FDX, VK6TWO and VK6ZMS, on all HF bands. QSL bureau or direct to VK6AHR.

Bob W5UQ, San K5YY and Bill W5SJ are teaming up for an operation from Placencia, Belize between July 12 and 19, including the CQ WW VHF Contest. They will be operating as V31UQ, V31YY and V31SJ. San says he will be specifically looking for Europe and Asia.

Signing OZ/home call, DL4AMK, DK1AW, DJ2AS, DL3ARK, DL2AMT and DL1AZZ plan to be on Aro Island, EU-172, August 21 to 28. They will be on 80-10, SSB, CW, RTTY and PSK with at least three stations and 600 watts.

ON3CO, ON5ANN, ON5OO, ON5RA, ON7BT, ON7EQ, ON7LX and ON7TK will operate CW and SSB from the Chausey Islands (EU-039) from July 23 to 26. They will concentrate on taking part in the IOTA Contest as TM7T, but they will be active also before and after the IOTA event as F/homecall. QSL TM7T via ON7EQ, direct or via the bureau.

A large group of operators from the Radio Amateur Society of Crete will be active as J49A from Gavdos Island (EU-187) from July 24 to 26, IOTA Contest included. QSL via SV9GPV.

QSL 5R8AL: Phil Whitchurch G3SWH reports he has been appointed as the QSL manager for Alain 5R8AL. "The logs for 5R8AL's historic operations from 1975 to early 2010 are on paper and have not been uploaded to the ARRL's Log Book of the World", Phil says. "On-going logs will be available to me in an electronic format and will be uploaded as they become available". Details on G3SWH's QSLing policy, as well as an on-line bureau card request form, can be found at g3swh.org.uk

Good luck in the pile-ups until next month.

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/trial.htm

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The premier technical conference in VK

Saturday July 10
Sunday July 11

This event has a well-recognised reputation, with its focus primarily on techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts.

A *Partner's Tour* will be conducted, together with an informal social gathering for dinner on Friday and a Conference Dinner on Saturday.

GippsTech 2010 will be happening on the weekend of 10 and 11 July 2010, at Monash University Gippsland Campus, Churchill in Victoria, about 170 km east of Melbourne.

Details of the presentations offered to date, together with maps, an outline of accommodation options and a downloadable registration form are available from the Eastern Zone Amateur Radio Club website: <http://www.vk3bez.org/>

If you require directions, some help on the day or feel like a general rag chew whilst driving in with other amateurs, feel free to use VK3RLV 146.800 - or as a back up if you can not activate VK3RLV, call on VK3RWG 147.225 +. The club call sign VK3BEZ will be activated both days of the conference.

Accommodation options and a downloadable registration form are available on

www.vk3bez.org/

Justin Giles-Clark VK7TW

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

Radio and Electronics Association of Southern Tasmania

REAST's April presentation was a tour of the Hobart ABC TV and Radio Studios. Attendees had a complete technical tour of the radio and TV facilities. Technical Manager Jim Parish and Damien Styles VK7HDS went through every aspect of what it takes to broadcast radio and TV.



ABC Radio Hobart Tour – Radio Master Control

It was amazing! A photo montage video of this tour has been created and this has been placed into the ATV Experimenter's video library. A big thank you goes to Jim and Damien for their time and expertise in showing the group through the ABC facility.

WICEN Tasmania (South)

April 10 saw an impressive display of WICEN equipment at the WICEN capability day at the REAST Clubrooms. Equipment included a fully equipped 12 m, winch up, trailer mounted tower and Roger VK7ARN's fully equipped trailer with an array of radios and computers displaying APRS and position data. Gary VK7JGD displayed his impressive

portable HF and VHF operating position and car stabilised tower and the WICEN tent housed an array of the portable radio equipment cases that WICEN use each containing a complete radio set. Thanks to all involved and especially Chris VK7FCDW – master chef on the day!



Masts, computers and radios galore – the modern WICEN setup!

VK7 Repeater News

Damien VK7HDS lets us know that there is a new 70 cm repeater now on North Bruny Island in the South of VK7. VK7RDS transmits on 439.750 MHz and receives on 434.750 MHz. No tone is required; it has a four minute timeout with an identifier every six minutes. Roger VK7ARN reminds us about the VK7RAD-1 APRS digipeater which is located on the Queen's Domain, Hobart and a big thank you to all who maintain and support this digipeater especially Scott VK7HSE who runs the APRS IGate in Southern VK7.

Northern Tasmania Amateur Radio Club

NTARC members gathered for the monthly meeting on April 14. Tony VK7YBG described what the newly re-invigorated WICEN North team has been up to in Northern Tasmania and what opportunities lay ahead for WICEN in the coming year. There has been proliferation of SignaLink USB sound cards in NTARC and this has led to the May presentation topic covering amateur digital mode and activity on the amateur bands. More about this in next month's AR.

Cradle Coast Amateur Radio Club (CCARC)

Erratum for the April edition of AR; the CCARC committee members for 2010 were incorrect. The correct committee for 2010 are: President David VK7EX, Vice-President Steven VK7FXXX, Secretary David VK7DC, Treasurer Dick VK7FORF and Committee person Eric VK7FEJE.

North West Tasmanian Amateur TeleVision Group

Thanks to David VK7DC for creating propagation maps for NWATVG's VK7RTV 2 and 6 metre repeaters. These are available on the clubs website: <http://www2.vk7ax.id.au/atvgroup/propagation.html> There are now eQSO chat rooms available for NWATVG members. At the time of publishing there were two rooms – '101English' and 'ATV & SSTV' with the 101 English room connected to the VK7RTV 2 m repeater. For more information on this new internet based mode take a look at: <http://www.eqso.org>

JMMNFD report

Field Day on the hop on the Nullarbor

John Howlett VK6ZN and operator Mei

I was travelling from Perth across the Nullarbor with Mei, a travel companion from VP2, Hong Kong, when I mentioned the JMMNFD and to my surprise she was very interested in amateur radio.

We drove down a track, and as luck had it found a disused power pole. Using my fishing rod I cast a line over the arm of the pole, Mei measured off some galvanised fence wire, a balun was attached and we had an OFC dipole up and running.

The generator was checked before leaving Perth but now failed to start! Fuel and spark were there but no action. A careful look at the gasket between the carburettor and the intake showed slight damage, a new gasket was made from a piece of cardboard and the generator fired up first time.

Mei practiced using VKCL software and we were ready for the contest start next morning. We took turns operating all Saturday and into early Sunday morning, then had a sleep. With about three hours left in the contest the generator again failed to start, so we decided that Mei would operate on reduced power to conserve the batteries, while I fixed the generator problem.

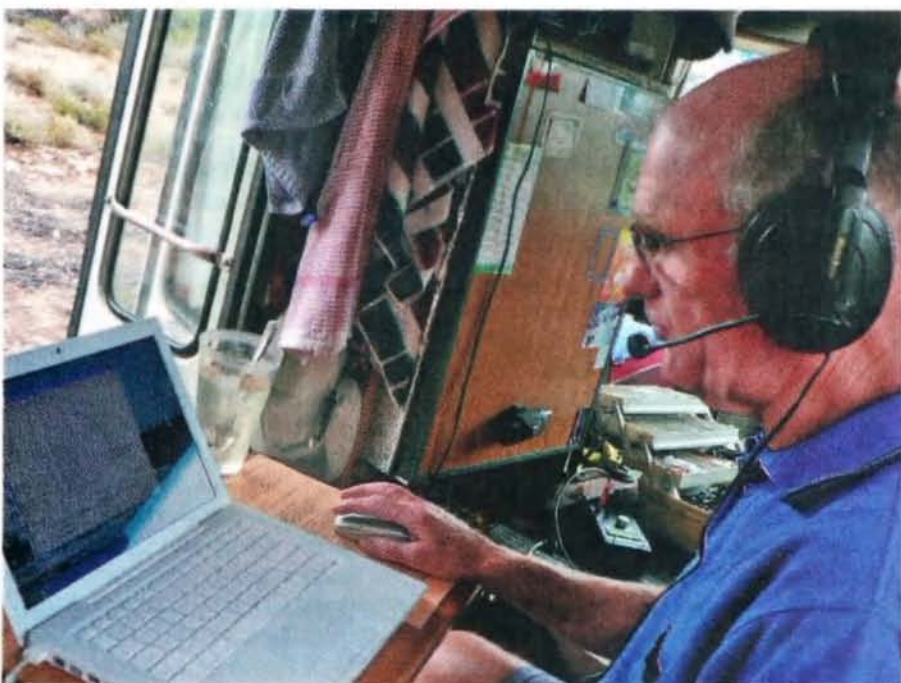
With some daylight the solar panels started charging the batteries. This time the starting problem was an oiled up plug, the oil mixture was wrong and it took a while to get the fuel sorted out; and we were now running short of fuel.

During the last two hours Mei made many contacts which made up for a thin Saturday evening when propagation for us was poor on 80 metres.

We wish to thank the many operators who showed Mei patience and understanding as she had difficulty listening to SSB. "Are there any more contests" Mei asked, so the next week end we worked the CQ WPX,



Mei filling the generator.



John VK6ZN entering contact details into the VKCL logging software.

Mei learnt Morse in two days and will get a licence when she returns home.

It was a fun and rewarding JMMNFD which we shall not forget.

The equipment used was an Icom IC-7400, 100 watts, and an off centre fed dipole.

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Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

June	5-6	SEANET Contest	CW/SSB
	12-13	VK Shires	CW/SSB
	12	Trans Tasman 160 m	SSB
	19-20	Winter VHF/UHF Field Day	CW
	19-20	All Asia DX Contest	CW
	26-27	King of Spain	SSB
	26-27	Ukrainian DX DIGI Contest	PSK/RTTY
July	3-4	DL-DX RTTY Contest	RTTY/PSK
	10-11	IARU HF World Championships	SSB/CW
	24-25	IOTA Contest	SSB/CW

The second year of the Australian VK Shires Contest is on our door step. The first one was lots of fun and many VK operators were lighting up 40 m and 80 m at night, although there was not much activity during the day on 20 m or 15 m.

Hopefully that will change this year and probably more overseas participants

IARU HF World Championships

Object: To contact as many other amateurs, especially IARU member society HQ stations, around the world as possible using the 160, 80, 40, 20, 15 and 10 metre bands.

Date and Contest Period: The second full weekend of July, beginning 1200 UTC Saturday and ending 1200 UTC Sunday (July 10-11, 2010). Both Single and Multi operator stations may operate the entire 24-hour period.

Entry Category: Single Operator

Phone only – High, Low and QRP power levels

CW only – High, Low, and QRP Power levels

Mixed mode – High, Low and QRP Power levels

One person performs all operating and logging functions. Use of spotting nets, packet, or multi-channel decoders (such as CW Skimmer) is not permitted. Single-operator stations that use spotting nets, packet or multi-channel decoders will be reclassified to the Multi-operator, Single Transmitter category. All operators must observe the amateur radio regulations of their country at all times. Single operator stations are allowed only one transmitted signal at any given time.

Entry Category: Multi Operator,

will learn about this fun event. In early July it is the 2010 IARU HF World Championships, it is like an Olympic year as this coincides with the World Radio Team Championship in Russia.

On the Friday night I will have to pull out the old 2002 Finland WRTC DVD to get me in the mood.... Sad I know. I am really looking forward to this event as I

was holidaying in Townsville at the time and could not really participate.

Hopefully some of my new antenna would have arrived and be fully operational too. For a full explanation of the World Radio Team Championship and how it fits into the IARU HF World Championships contest, please visit www.wrtc2010.ru

Single Transmitter, Mixed Mode only.

A station must remain on a band and mode for at least 10 minutes before changing bands or modes. Only one transmitted signal is allowed at any given time. You are not allowed a second radio that works only multipliers. All operators must observe the amateur radio regulations of their country at all times. Violation of the band change rules will reclassify the entry as a checklog.

IARU Member Society HQ Station

A HQ station may have only one transmitted signal per band mode (160 CW, 160 Phone, 80 CW, 80 Phone, 40 CW, 40 Phone, 20 CW, 20 Phone, 15

CW, 15 Phone, 10 CW, 10 Phone) at the same time. All stations involved in an HQ operation must be in a single ITU zone. Only one HQ station call sign per member society per frequency band is permitted. All operators must observe the amateur radio regulations of their country at all times.

Contest Exchange: ARU member society HQ stations send signal report and official IARU member society abbreviation. IARU International Secretariat club station NU1AW counts as a HQ station. Members of the IARU Administrative Council and the three IARU regional Executive committees send "AC," "R1," "R2," and "R3" as appropriate. All others send signal report and ITU zone.

Valid Contact: The same station may

be worked once per mode per band for QSO credit. Mixed-mode entries may work a station once per mode per band. A station may only be worked for credit in the portion of the band that is generally accepted for the mode used. On any band, a station may be worked once on Phone (in the Phone segment) and once on CW (in the CW segment). Cross mode, cross band and repeater contacts are not valid QSOs. Where contest-preferred segments are incorporated into regional band plans, participants must observe them. Use of self-spotting techniques on packet or other mediums are inconsistent with the spirit and intent of these rules.

Points: Contacts within your own ITU zone, as well as QSOs with any IARU-member society HQ station or IARU official (counting as the special multiplier), count one point each. Contacts with a station in the same ITU zone, but on a different continent, count one point. Contacts within your continent (but different ITU zone) count three points. Contacts with a different continent and IARU zone count five points.

Multippliers: The total number of ITU zones plus IARU member society HQ stations worked on each band (not mode). IARU officials represent a maximum of four multipliers per band (AC, R1, R2 and R3). IARU member society HQ stations and officials do not count for zone multipliers. To qualify as the special multiplier, Administrative Council and Regional Executive Committee stations must only be operated by the individual station licensee as single operator entry.

Scoring: The total number of QSO points times the total number of multipliers worked.

Awards: A certificate will be awarded to the high scoring entry in each category in each ITU zone, each DXCC country and each ARRL Section. A certificate will be awarded to the high scoring IARU member society HQ station. Achievement level awards will be issued to those making at least 250 QSOs or having a multiplier total of 75 or more. Additional awards may be made at the discretion of each country's IARU member society.

For more information please visit www.iaru.org/contest.html

Islands on the 'Air (IOTA) Contest 2010 - Provisional rules

Objective: to promote contacts between stations in qualifying IOTA island groups and the rest of the world and to encourage expeditions to IOTA islands.

Date/Time: 1200 UTC Saturday 24 July to 1200 UTC Sunday 25 July 2010

Bands/Modes 3.5, 7, 14, 21 and 28MHz, CW and SSB. IARU band plans must be observed, with CW contacts being made only in the recognised CW ends of the bands (see RSGB Yearbook and similar sources, for recognised IARU band plans). Contest-preferred segments must be observed, no operation to take place on 3500-3510, 3560 - 3600, 3650 - 3700, 14060 - 14125 and 14300 - 14350 kHz.

Categories

All entrants must operate within the limits of their chosen category when performing any activity that could impact their submitted score. All equipment (transmitters, receivers and antennas) plus all operators must be located within a 500 m diameter circle or within the property limits of the station licensee's address, whichever is the greater.

Locations:

Island (Any station operating from a qualifying island, as listed in the IOTA Directory. Island stations must ensure beforehand that the island from which they are operating is a valid qualifying island for IOTA. Any questions about the IOTA programme and island validity should be addressed to the IOTA Manager (see RSGB IOTA Web site).

World (any station not on a qualifying island).

Operators:

Single operator QSO alerting assistance of any kind (this includes, but is not limited to, packet, local or remote Skimmer and/or Skimmer-like technology, Internet) places the entrant in the Single-operator Assisted category.

Single-operator Assisted One person. One signal at any one time. QSO alerting assistance is allowed (this includes, but is not limited to, packet,

local or remote Skimmer and/or Skimmer-like technology, Internet). Self-spotting or asking to be spotted is not allowed.

Multi-Operator (24-hour Mixed Mode only. Multi-ops are restricted to a maximum of two transceivers, the second station to be used to find and call other stations only if the station is a new multiplier. It must not be used to solicit other contacts, e.g. by calling "CQ" or "QRZ". Any non-multiplier QSOs made accidentally on the second station must be logged, but will be scored as zero points. QSO alerting assistance is allowed (this includes, but is not limited to, packet, local or remote Skimmer and/or Skimmer-like technology, Internet). Self-spotting or asking to be spotted is not allowed. Multi-operator entrants should include a full list of operators with their entry).

Mode: CW, SSB or Mixed-mode (multi-operator entries must be Mixed Mode).

Operating Time: 24 hours or 12 hours (Multi-operator entries must be 24 hours, In the 12-hour categories, operation need not be for one continuous 12-hour period but, once operation has commenced, off periods must be a minimum of 60 minutes.).

Power:

High-power (maximum, as permitted by the station licence but, in any case no more than 1500 watts output).

Low power (maximum 100 watts output).

QRP (maximum 5 watts output).

Exchange: Send RS(T) and serial number starting from 001, plus IOTA reference number if applicable (island stations MUST include the IOTA reference as part of their exchange). Do not use separate numbering systems for CW and SSB. Stations may be contacted on both CW and SSB on each band. Multi-operator entrants may find it convenient to allocate separate blocks of serial numbers for the run and multiplier stations, but do ensure if possible that there is no duplication of serial numbers.

Scoring: All entrants can work anyone, island or non-island. Contacts with non-island stations count 3 points. Contacts with IOTA islands count 15 points except that, if you are on

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John Moyle Memorial National Field Day 2010 Results

This year's entries came from every Australian mainland call area, as well as from Tasmania and New Zealand. The total number of logs submitted was 122.

This was only a minimal decrease from 123 logs received last year. It was good to see several ZL stations take part this year, but only one submitted a log. Well done to all who took part.

24 Hour Portable Operation – Multiple Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Place /Award
VK3CNE	Multi	Phone	All	609	3398	1 /*
VK2WG	Multi	Phone	All	569	2348	2 /*
VK4WIS	Multi	Phone	All	593	2124	3 /*
VK3ANR	Multi	Phone	All	357	2044	4 /*
VK2HZ	Multi	Phone	All	470	1906	5 /*
VK2MA	Multi	Phone	All	451	1891	6 /*
VK3III	Multi	Phone	All	72	1428	7 /*
VK6ARG	Multi	Phone	All	177	465	8 /*
VK6AHR	Multi	Phone	All	168	342	9 /*
VK4WSS	Multi	Phone	All	42	182	10 /*
VK3FRC	Multi	Phone	VHF	255	3268	1 /*
VK2EH	Multi	Phone	VHF	147	2860	2 /*
VK3LY	Multi	Phone	VHF	114	2680	3 /*
VK4WIE	Multi	Phone	VHF	136	348	4 /*
VK4RC	Multi	Phone	VHF	35	125	5 /*
VK3ER	Multi	All	All	724	6176	1 /**
VK2SRC	Multi	All	All	848	3545	2 /*
VK2BV	Multi	All	All	589	1628	3 /*
VK2AWA	Multi	All	HF	1689	4904	1 /*
VK4IZ	Multi	All	HF	1357	3118	2 /*
VK2MB	Multi	All	HF	93	192	3 /*
VK2AWX	Multi	Phone	HF	587	1174	1 /*
VK2AOJ	Multi	Phone	HF	576	1152	2 /*
VK5LZ	Multi	Phone	HF	522	1042	3 /*
VK4WAT	Multi	Phone	HF	470	940	4 /*
VK2AZD	Multi	Phone	HF	463	926	5 /*
VK5BAR	Multi	Phone	HF	393	770	6 /*
VK6ZN	Multi	Phone	HF	158	316	7 /*
VK8DA	Multi	Phone	HF	130	260	8 /*

IOTA Rules continued

an island, contacts with your own IOTA reference count 3 points. The multiplier is the total of different IOTA references contacted on each band on CW, plus the total of different IOTA references contacted on each band on SSB. Multi-op stations may not work members of their own group for multiplier credit.

Total Score - The score is the total of QSO points on all bands added together, multiplied by the total of multipliers.

Awards: Certificates will be awarded to leading stations in each category and section, and in each continent, according to number of entries. A large number of Awards and Trophies is now available, and new sponsors are always welcome. Please see the full list on the RSGB HFCC Web site.

For more information visit www.rsgbcc.org/hfi/iota.shtml

ar

Six Hour Portable Operation – Multiple Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Place /Award
VK3AWS	Multi	Phone	All	335	1471	1 /*
VK5SR	Multi	Phone	All	214	1342	2 /*
VK4ZY	Multi	Phone	All	112	375	3 /*
VK4BAR	Multi	Phone	All	43	159	4 /*
VK2SF	Multi	Phone	HF	85	170	1 /*
VK1VIC	Multi	Phone	HF	59	118	2 /*
VK3ACZ	Multi	Phone	HF	11	22	3 /*
VK4CHB	Multi	All	HF	127	246	1 /*
VK3XPD	Multi	All	VHF	72	1077	1 /*

/* Certificate Awarded ** President's Cup /* Participation Certificate

24 Hour Portable Operation – Single Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK4OE	Single	Phone	All	132	1320	1 /*
VK3VCL	Single	Phone	All	144	1068	2 /*
VK3OW	Single	Phone	All	107	284	3 /*
VK4KKD	Single	Phone	All	97	273	4 /*
VK3VIL	Single	Phone	All	34	175	5 /*
VK5ZT	Single	Phone	VHF	154	1485	1 /*
VK5FANA	Single	Phone	VHF	141	1428	2 /*
VK3JTM	Single	Phone	VHF	75	1300	3 /*
VK4GH	Single	Phone	HF	489	978	1 /*
VK2HBG	Single	Phone	HF	452	904	2 /*
VK5UV	Single	Phone	HF	219	438	3 /*
VK2CZ	Single	Phone	HF	83	164	4 /*
VK5DG	Single	Phone	HF	60	120	5 /*
VK3ZPF	Single	Phone	HF	58	116	6 /*

Six Hour Portable Operation – Single Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK2IO	Single	Phone	VHF	81	428	1 /*
VK2MER	Single	Phone	VHF	40	295	2 /*
VK5FMJF	Single	Phone	VHF	43	206	3 /*
VK2AMS	Single	Phone	VHF	24	123	4 /*
VK4JAZ	Single	Phone	VHF	12	32	5 /*
VK2AYD	Single	CW	VHF	6	24	1 /*
VK5AGZ	Single	Phone	All	121	884	1 /*
VK3IL	Single	Phone	All	84	437	2 /*
VK3FUNK	Single	Phone	All	100	393	3 /*
VK4ADC	Single	Phone	All	110	382	4 /*
VK3VTH	Single	Phone	All	83	162	5 /*
VK6KTV	Single	Phone	All	64	146	6 /*
VK7JGD	Single	Phone	HF	113	226	1 /*
ZL2AYZ	Single	Phone	HF	98	196	2 /*
VK3YE	Single	Phone	HF	50	100	3 /*
VK6KMS	Single	Phone	HF	47	94	4 /*
VK2MJB	Single	Phone	HF	20	40	5 /*
VK2DRB	Single	Phone	HF	17	34	6 /*
VK2JNA	Single	Phone	HF	15	30	7 /*
VK5FNET	Single	Phone	HF	9	15	8 /*
VK2AWJ	Single	Phone	HF	7	14	9 /*

/* Certificate Awarded ** President's Cup /* Participation Certificate

Home Station – 6 Hour

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK2MCI	Home	0	0	163	238	1 st
VK3AFK	Home	0	0	100	155	2 nd
VK2VTH	Home	0	0	93	136	3 rd
VK2LTB	Home	0	0	56	85	4
VK3DMK	Home	0	0	49	82	5
VK4JRO	Home	0	0	47	80	6
VK4DGU	Home	0	0	44	76	7
VK3NBV	Home	0	0	44	71	8
VK6CG	Home	0	0	36	62	9
VK2IRP	Home	0	0	28	46	10
VK4CC	Home	0	0	20	38	11
VK6WJ	Home	0	0	20	36	12
VK2DCR	Home	0	0	18	26	13
VK6DXI	Home	0	0	1	4	14

I have included all of the results received. If any are missing, they are completely lost, my apologies to anyone so affected.

There were some 23,573 contacts, amounting to some 80,087 points claimed, a 14% increase over 2009. This was pretty heavy contesting, but unfortunately just 122 logs.

The number of stations who went to the considerable trouble of going portable and then not bothering to submit a log as an entry, is still a disappointment. Some multiple operator stations got very big scores this time and perhaps it 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?

Activity was on all bands permitted under the rules. There was very noticeably increased activity on HF, and the frequencies in use followed the low sunspot cycle. This is still at the bottom of the cycle and conditions did not improve much this year, with only 160m, 40m and 15m showing significant increase and 80m & 10m a decrease.

In the higher UHF and Microwave bands there was much less activity than 2008, but around the same as 2009. Maybe it follows a weather cycle, rather than the solar cycle?

The scoring in the UHF and also VHF range was around the same as for last year, but both were down on 2008 levels.

This year saw an increase in Portable Station operation, and a significant decrease in Home Station operation. Perhaps more contestants went portable to take advantage of the kinder weather? Additionally and clearly here were some portable station operators who did not bother to submit a log and are strongly encouraged to do so next year.

The scoring on VHF was revised in 2009 and it reduced the difference between scores produced on VHF and the scores on HF. However the effort required getting a high score on HF, out weighs the comparative effort on VHF. However, this is the nature of contesting.

All of the portable stations that went to the effort to send in a log got a certificate. The WIA believes that people who made the effort to set up a portable station and operate should be acknowledged. In line with last year, the Foundation License logs who did not achieve a place, were instead awarded a Participation Certificate for encouragement.

Only Six Foundation Licensed operators submitted a log, although there were many more stations than this logged during the contest. All logs submitted by foundation operators were awarded a certificate.

All electronic logs submitted this year, were fully readable.

Next year, club stations will only be eligible to submit an entry, if their log is submitted electronically.

This year, the rules stated that EXCEL is the preferred submission format.

All logs submitted in an electronic form this year, were fully readable.

Home Station – 24 Hour

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK2LAW	Home	0	0	733	994	1 st
VK5LSB	Home	0	0	476	663	2 nd
VK7FWAY	Home	0	0	448	657	3 rd
VK2AFY	Home	0	0	513	551	4 th
VK1HW	Home	0	0	399	538	5 th
VK3HBA	Home	0	0	311	449	6
VK4HO	Home	0	0	264	435	7
VK5MWH	Home	0	0	276	396	8
VK2FAJA	Home	0	0	229	373	9 th
VK4MIT	Home	0	0	232	352	10
VK3KIS	Home	0	0	148	251	11
VK3XH	Home	0	0	151	248	12
VK1LW	Home	0	0	140	237	13
VK4HEC	Home	0	0	127	213	14
VK2BGL	Home	0	0	126	210	15
VK2BXT	Home	0	0	122	210	16
VK4ATH	Home	0	0	157	167	17
VK5KBJ	Home	0	0	76	122	18
VK4CCR	Home	0	0	77	121	19
VK5PX	Home	0	0	76	121	20
VK5FD	Home	0	0	75	119	21
VK3DIP	Home	0	0	54	103	22
VK2YJS	Home	0	0	49	83	23
VK2BLW	Home	0	0	37	65	24
VK3EI	Home	0	0	38	64	25
VK2NR	Home	0	0	36	62	26
VK4PJC	Home	0	0	40	59	27
VK5HSE	Home	0	0	30	58	28
VK6QM	Home	0	0	29	55	29
VK4BAY	Home	0	0	41	50	30
VK2ZC	Home	0	0	28	47	31
VK5EMI	Home	0	0	22	36	32
VK5KDK	Home	0	0	21	36	33
VK3IFM	Home	0	0	19	30	34
VK5NY	Home	0	0	13	23	35

This is a synopsis of the very extensive report prepared by Denis Johnstone (VK4AE/VK3ZUX) Contest Manager. Space precludes the insertion of the full report in Ar but those who are intent on contesting this event next year should go to the full report posted in the WIA website to be better prepared.

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Contact Bill VK2ATP, 02 9971 7151, mobile 0417 257 692, or email: karinpeters@westnet.com.au

WANTED - NSW

Circuit/schematic diagram for a HEATH VTVM, model number IM -13. Any other information on this piece of equipment would be appreciated. Many thanks.

David VK2IX QTHR, phone 02 4751 6124.

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WANTED - SA

Operator's manual, or any information for the Eddystone 990R VHF receiver, 30-220 MH, 1970s vintage. A Copy will be OK, and I will reimburse cost, including mail.

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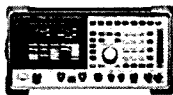
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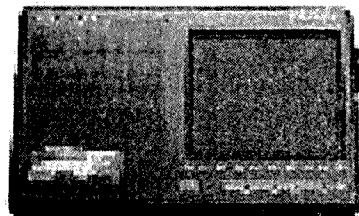
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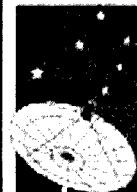
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A limited issue amateur radio operating award is available to celebrate the 100th year of the Wireless Institute of Australia (WIA), the world's oldest national radio society.

To qualify for an award contact is required with the Centenary of Organised Amateur Radio in Australia special event station VK100WIA. A distinctive QSL will be available.

The WIA, through its affiliated radio clubs, will operate this unique callsign from 1 May to 31 October 2010. The callsign will also be used Canberra, where the WIA Annual General Meeting and associated events will be held 28-30 May.

It will be on all amateur bands available to VK radio amateurs including the popular HF bands and the WIA Centenary Award is expected to be well sought after.

The award rules are: Those radio amateurs outside Australia need to achieve 50 points while VK hams require 100 points.

A contact with VK100WIA operated by the WIA or operated by a Club is worth 10 points (only one contact with VK100WIA operated by the WIA and only one contact with each Club) and there must be a minimum of two contacts with VK100WIA.

Contacting any WIA member between 1st May 2010 and 31 October 2010 is worth five points (Example: working



VK100WIA at 10 different Clubs would be eligible for the award. Working 16 WIA members gives 80 points but then two contacts must be made with VK100WIA).

Any mode may be used; cross-mode and cross-band contacts are permitted. Satellites and repeater contacts are permitted for this award. Send AU\$ 5 or 3 IRCs and a list of contacts (QSLs not required) to the Awards Manager WIA Centenary Award, PO Box 2042, BAYSWATER VIC 3153 AUSTRALIA.

Listen around the bands or visit the WIA website www.wia.org.au for frequent updates of the operator club's roster.



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All shirts and jackets are available in the following sizes: Small, Medium, Large, X-Large, XX-Large, XXX-Large.

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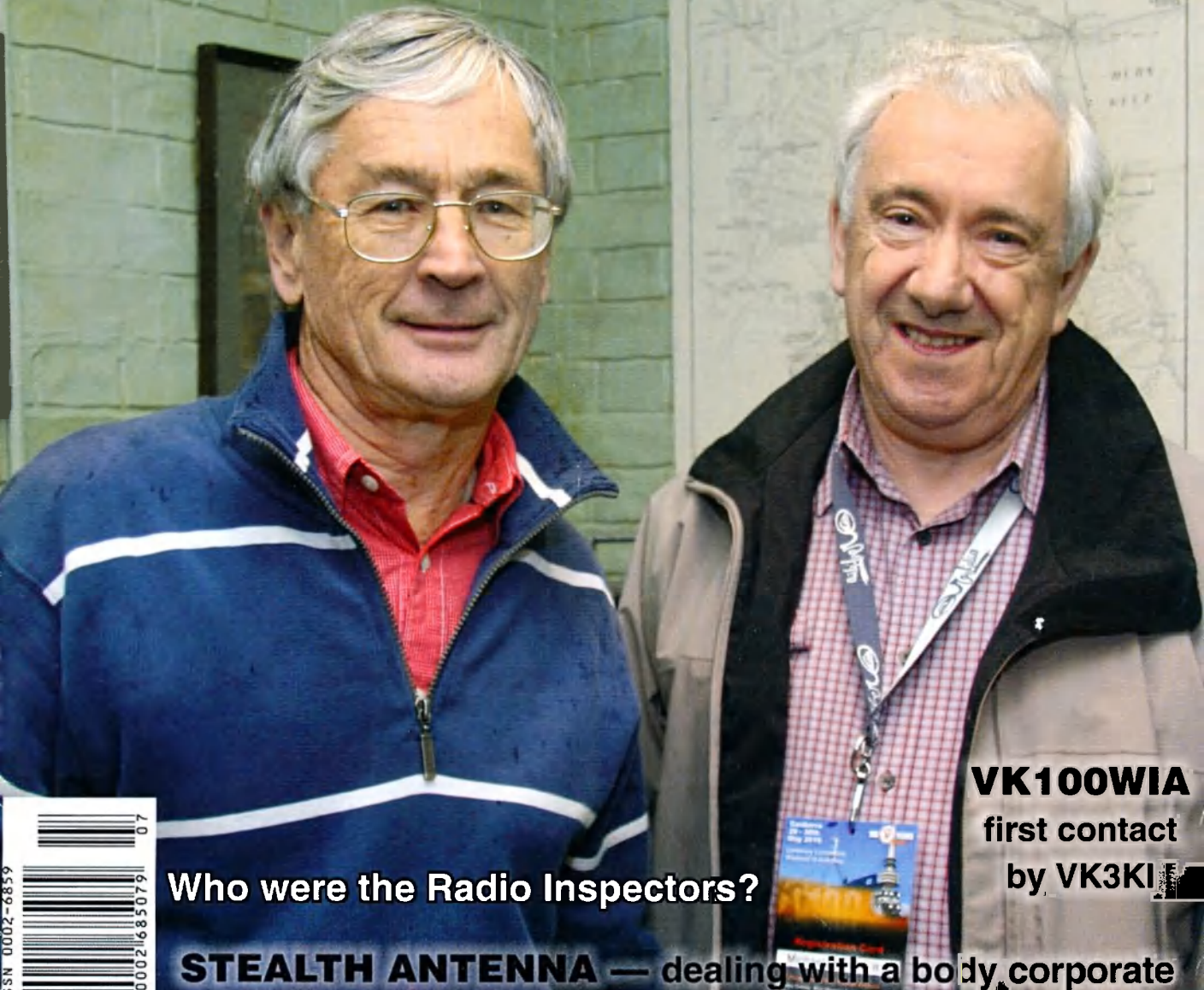
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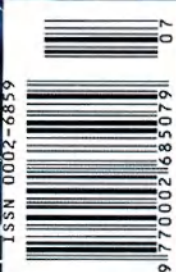


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Centenary Year AGM and Convention

Canberra 28-30 May

Our cover:

Centenary Patron Dick Smith VK2DIK and WIA President Michael Owen VK3KI at Bowlyie.

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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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Photostat copies

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

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 oldest National Radio Society,
founded 1910.

Representing

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Member of the

International Amateur Radio Union

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Editorial

Peter Freeman VK3PF

AGM weekend of activities

As many have experienced over the past few years, the WIA Annual General Meeting weekend of activities was once again an action packed program with plenty to take in.

The weekend formally kicked off with a tour of the communications side of the Black Mountain tower, followed by dinner at the Alto Restaurant.

Saturday morning commenced with brief formal AGM proceedings followed by the informal Open Forum. At the commencement of the Open Forum, many WIA awards were announced, with several recipients being very surprised! Whilst our President attempted to move quickly through the many reports to be considered, some lively discussion occurred at times. After lunch, we had presentations which reflected upon various aspects of radio communications to date, with the focus upon amateur radio activities with VK over the last 100 years.

For many, the highlight of the weekend was the Centenary Dinner, which included a live ARISS contact involving local secondary school students. With representatives from a number of sister amateur radio societies and the IARU, the ACMA, key industry players involved in the amateur market, and of course many WIA members and family members, around 200 watched and listened with interest as the students passed their questions to the ISS and listened to the replies from astronaut Tracy KF5DBF on board the ISS.

In addition, there were many presentations made during the evening, with the international representatives formally recognising the centenary of the foundation of organised amateur radio in Australia.

One particularly significant presentation was that of Marilyn VK3DMS, who passed her large, award winning, philatelic collection with its communications theme on to the WIA.

The activities planned for Sunday morning were a washout – literally. Whilst we had been spending all of Saturday inside the meeting venue, the Canberra weather had been bleak

– cold and wet. The activities planned for a local park on Sunday morning were therefore cancelled, and the live broadcast of the weekend's news broadcast conducted from within the meeting venue, utilising the radio equipment loaned to the WIA by Icom Australia for the VK100WIA station.

Later on Sunday morning, most attending the AGM made their way about 30 minutes north of Canberra, to the property of Dick Smith VK2DIK, the Centenary Patron, near Gundaroo. The decidedly damp and dreary weather conditions did not stop all from enjoying themselves. After lunch, attendees started their trip home.

It was terrific to catch up with many people over the weekend, but given the packed program, many of the eyeball contacts were far too brief.

But you will be able to read accounts of many of the activities from the weekend in this issue of AR. With one hundred years behind us, this issue features the AGM weekend of activities as its primary theme.

My personal trip home involved a small detour towards Sydney to visit a friend in the southern highlands for the night. The real trip home commenced late on Monday morning, following a detailed review of progress on my host's next antenna project. A long drive followed before returning to the usual work tasks, after an enjoyable long weekend.

June and July activities

Since returning home much of my spare time has been spent on preparations for GippsTech 2010, to occur over the weekend of 10 and 11 July. The printed Proceedings document had been sent to the printer prior to the AGM weekend, but I still needed to organise the electronic (colour) version, which was finally finished (I hope) over the Queen's Birthday weekend (even though I had to work today – the "holiday" Monday in several states).

I look forward to catching up with all attending GippsTech, and perhaps a few others at the Gippsland Gate ARC hamfest the following weekend.

Remember – keep your ears alert for an opportunity to work the VK100WIA station and to work towards the Centenary Award. And plan for the RD and ALARA Contests and the ILLW event in August.
Cheers, Peter VK3PF

ar

On-air behaviour (again)

WIA comment



Michael Owen
VK3KI

A News item in this issue tells of the fact that the ACMA has cancelled the licence of an amateur. This was a late item for my report to the Open Forum, and it has attracted quite a bit of discussion.

I think it is worthwhile setting out the WIA's position in relation to the general issue of on-air behaviour in the light of that action and the discussion.

A matter that did attract comment was the fact that the ACMA did not identify the amateur whose licence was cancelled.

It is important to recall that the cancellation of an amateur licence, that is, an apparatus licence, is an administrative act, reviewable by the Administrative Appeals Tribunal. It is not a criminal prosecution in open court.

Indeed, the decision to grant an apparatus licence, or more likely, the decision not to grant an apparatus licence, is a decision that is also subject to review.

The ACMA takes the view that as it is an administrative decision it should, as a Commonwealth agency, respect the privacy of the individual concerned and therefore should not disclose the identity of the individual.

The WIA is of the opinion that even if the identity of the person whose licence has been cancelled is not disclosed, the fact of the cancellation should be given full publicity. Many amateurs have complained of the on air behaviour of a few. Indeed, some have been very critical of the WIA for allowing such behaviour to continue.

Not only does the WIA believe that the fact of the cancellation should be publicised, it believes that the nature of the conduct leading to the cancellation should likewise be publicised.

In the May 2006 "Comment" I discussed the general issue of on

air behaviour. I made a number of points. I looked at a 1978 "Amateur Operators Handbook" which defined "prohibited traffic" as including:

"news of or on behalf of, or for the benefit or information of, any industrial, commercial, political, social or religious organisation or any-one other than the operator or the person with whom he is in communication."

I pointed out that such a prohibition did not exist specifically today.

If someone makes a comment on a political matter, that is not of itself unlawful today.

I also pointed out that what may have been profane, obscene, indecent or otherwise objectionable in 1978 may not be today.

Of course, the licensee must use an amateur station "solely for the purposes" defined in the Amateur LCD. That is an obligation that some seem to overlook.

But generally speaking, it is easier to turn to another frequency than worry too much about such comments.

However, there is behaviour that should not be ignored.

In the Comment of May 2006, I expressed the WIA then position as follows:

"In the end, if the regulator is failing to act when presented with clear and unambiguous evidence of wrong doing, the WIA will request the regulator to act against those clearly in breach of the law."

Causing deliberate interference is wrongdoing that should be acted against.

I have expressed a concern to the ACMA that such conduct against an amateur station, if ignored, could encourage the offender to cause interference to something more interesting, for example to a safety service, such as an air traffic control

station, or an emergency service organisation.

In short, there is some behaviour which may be unacceptable but is not unlawful and which we cannot expect the ACMA to devote resources to policing.

But there is other behaviour against which we can expect the ACMA to act.

I pointed out then, and I point out again, that the WIA is not a law enforcement agency.

Why cannot someone whose licence is cancelled simply apply for another licence?

The answer is to be found in section 100 (5) of the Radiocommunications Act 1992, which is:

(5) In deciding whether to issue an apparatus licence, the ACMA may also have regard to whether, in the 2 years before the application, the applicant has been the holder of an apparatus licence that has been cancelled otherwise than under section 153H.

Not that the decision to issue an apparatus licence is still a decision for the ACMA, but note the guidance given by the sub-section.

It was suggested at the Open Forum that the cancellation of an apparatus licence would not deter some people, but that they would just continue to transmit without a licence.

Let me refer to section 46 of the Radiocommunications Act which provides that if a person operates a "radiocommunications device" otherwise than as authorised by licence, then "if the radiocommunications device is a radiocommunications transmitter" the penalty, if the offender is an

continued foot of next page

ACMA cancels amateur licence

The Australian Communications and Media Authority has cancelled an amateur station licence following an investigation that uncovered continuing breaches by the licensee.

Under the Radiocommunications Act 1992, the ACMA can suspend or cancel an amateur licence if the licensee contravenes a condition of the licence. In this case, crucial information was provided by other radio amateurs that alerted the ACMA to the ongoing non-compliance and assisted the investigation. The breaches included causing interference to other stations, failing to use a call sign and transmitting an unmodulated carrier.

The ACMA made the decision to cancel the amateur licence when other compliance and enforcement measures had failed. The ACMA reported that every effort had been made to assist, encourage and educate the licensee to understand the importance of compliance with licence conditions.

Despite repeated warnings, the ACMA found that non-compliance continued over an extended period of time.

The WIA has welcomed the action taken by the ACMA. "While it is extremely unusual for amateurs to ignore their obligation to comply with the law, the fact is that there have been instances of extreme behaviour that requires enforcement action. This action by the ACMA should remind us all that it will act when necessary" said WIA President, Michael Owen VK3KI.

WIA now owns its premises

Settlement of the purchase by the WIA of 20/11 Havelock Road,

Bayswater took place on Tuesday 8 June 2010. When announcing purgase plans, the Directors were considering calling the premises Andersson House, in honour of Henry Andersson VK8HA. Henry was an Honorary Life Member of the WIA, the first national WIA Intruder Watch Coordinator, and ran the VK8 QSL Bureau for 38 years.

Henry Andersson passed away on 6 October 2004. He left his property at Humpty Doo, near Darwin, to the WIA. That generous bequest provided much of the funds which bought the Bayswater premises

The name was supported at the WIA's Open Forum following the AGM at Canberra, the Directors ratified it, and a plaque is being obtained.

A member is able to provide a photograph of Henry. The WIA will shortly be publishing this and photographs of its new premises.

New D-STAR repeater for Canberra

Icom Australia has donated a new D-STAR repeater to the WIA for installation in the Canberra area.

This is to celebrate 100 Years of the WIA. The gift was announced by Takashi Aoki, Manager of Icom Australia, at the official WIA Centenary dinner.

The Canberra Region Amateur Radio Club will be the WIA D-STAR Club responsible for the installation and operation of repeater on behalf of the WIA. The repeater will be operational on 2 metres and have the callsign of VK1RWN.

IARU Region 3 Directors meet

The IARU Region 3 Directors held their AGM in the three days before the WIA Weekend in Canberra on 28, 29 and 30 May 2010.

WIA President Michael Owen VK3KI is also Chairman of the Directors. The other Directors are Peter Lake ZL2AZ, Shizuo Endo JE1MUI, Prof. Joong-Guen. Rhee HL1AQQ and Gopal Madhavan VU2GMN.

Panyot Danev LZ1US Executive Committee Member from IARU Region 1 and Timothy Ellam VE6SH IARU President also attended. All participated in the WIA Weekend.

Major matters considered included the next Asia-Pacific Telecommunity (APT) Preparatory Meeting for WRC 2012, the relationship with the APT and the IARU Monitoring System.

VK3KCD Regional VP of ROAR

Peter Lowe VK3KCD has recently become Regional Vice President of the Australia, New Zealand and Oceania (ANZO) region of ROAR.

The International Fellowship of Rotarians of Amateur Radio (ROAR) is one of Rotary's oldest international fellowships. It has members from many countries, the largest numbers being in the USA, Japan, and the UK.

There are a number of active members in Australia and New Zealand and its main activity revolves around weekly nets, primarily the ANZO Europe net on 14 MHz.

ROAR usually has a presence at the annual Rotary International Convention which was last held in Birmingham UK and a station was operated under the call of GB2RI.

Any amateurs who are also Rotarians or past Rotarians are welcome to join and further information may be obtained from the ROAR web site at www.ifroar.org Peter Lowe may be contacted at vk3kcd@bigpond.com **ar**

continued from previous page

individual, is imprisonment for two years. In short, it is a serious criminal offence.

It could hardly be clearer that an offence is committed by someone continuing to transmit whose licence to transmit has been cancelled.

I cannot speak for the ACMA. But

I would find it inconceivable that a regulator that has enforcement powers (and obligations) would turn a blind eye to anyone silly enough to thumb their noses at it in that way.

The WIA's position is this: it supports the ACMA acting against those individuals, whether radio amateurs or not, whose conduct is such that it is clearly unacceptable, for example knowingly causing deliberate

interference to radiocommunications. The WIA encourages amateurs to bring such conduct to the attention of the ACMA, particularly with appropriate details and recordings of such behaviour.

Equally, we must distinguish behaviour that is merely bad manners, and the best way to avoid that is to turn to another frequency. **ar**

We were there too

Early YLs

Before The War

In this Centenary year of the Wireless Institute of Australia we should remember that, although they were few in number, there were YL amateurs.

We are fortunate to have, within the amateur history a number of early callbooks, including one compiled by John Moyle, editor of "Wireless Weekly" which became "Radio and Hobbies" and eventually "Electronics Australia".

The John Moyle callbook for 1938 lists 13 YLs, each with the title of Miss or Mrs in front of their name. Most of these ladies we do know something about but for a few, their names are all we have. The list of names, as supplied by Rod VK3TJ from that callbook are:

- 1 VK2GA Mrs F.V. McKenzie
- 2 VK2YG Miss L.N. Litchfield
- 3 VK3HM Mrs E.L.Hutchings
- 4 VK3HQ Miss M.L.Hutchings
- 5 VK3YL Miss M.A.Marshall
- 6 VK4JH Mrs I.J.L.Humphry
- 7 VK4LO Mrs V.E.Nolan
- 8 VK4YL Miss F.M.MacKenzie
- 9 VK5YL Miss B.A.Geisel
- 10 VK6JC Miss J.C.Chinery
- 11 VK6MH Mrs M.L.Hill
- 12 VK6YL Miss R.V.Longley
- 13 VK7YL Miss J.T.Crowder

Many of these names and callsigns are missing from the 1947 callbook, although a few appear in later years, sometimes under their married names, because during the War years other interests had taken the place of amateur radio.

ALARA has gathered as much of the history of early YLs as possible but we have no information about VK2YG or VK6JC. These are the stories we have.

Florence McKenzie (nee Wallace) VK2GA (or VK2FV) has been mentioned in AR many times over the years because ALARA has

adopted her as a model for us all and after whom we have named our most important trophy, but there may be people who have not heard of her.



Photo 1: Violet Florence McKenzie nee Wallace, VK2FV/VK2GA.

Florence was a fully qualified electrical engineer, wiring houses and generally installing some of the earliest electrical equipment. In fact, when the first electric stove was manufactured, and Florence realised there were no recipe books for electric stoves, she wrote one. She also kept her very first electric stove, even though she subsequently had much more modern ones.

She got her amateur licence in 1921 and passed her exam in 1925 (this was the way it was done in those days) and was given the callsign VK2GA. Her interest in amateur radio was triggered by the men who used to frequent her electrical shop in Royal Arcade in Sydney. They used to ask for things like condensers, and wire to wind coils and later electronic valves. By taking an interest in the purpose to which these items were to be put,

*Christine Taylor VK5CTY
(from the ALARA collection)*

Florence came to know about radio.

Always it was Morse code that fascinated Florence, and she found learning the code very easy when she sat for the exam. It was teaching the Code for which "Mrs Mac" came to be known by thousands of men and women.

When Mr Chamberlain came back from Europe with his famous "Peace in our Time" paper in his hand, Florence realised that war was imminent. She set up a Morse Code Training school in a loft near her shop and started teaching. She foresaw the need for radio communications in the event of a War and that there would not be enough skilled people to fill the need.

The school became known as the Women's Emergency Signalling Corps because of the emphasis on women, but it also taught thousands of men who wanted a skill to offer the Services. Later service men and women from all over the world came to Mrs Mac's school.

But it was the women operators for whom Mrs Mac fought a political battle. She saw that if there were women in the services, who were skilled in communication, it would free the men to fight. The Army and the Navy already had women in their ranks but the Air Force was exclusively for men until Mrs Mac persuaded the then Prime Minister, Billy Hughes, of the wisdom of her idea. And so the WRAAF service was born, in 1942.

There are many stories of how the students were helped to 'hear' the pattern of the code letters and how the better students became the teachers of the new ones, and how much fun everyone had as they learned. The school continued after the war for a number of years, with pilots from the major airlines around

the world as students. No fee was ever charged. Florence Wallace was also the first YL member of the WIA (NSW Div), she was a founder of the "Wireless Weekly", and her story was told in a play "Electro Diva" performed in 1995 in the Napier St Theatre in South Melbourne (photo 2 and 3).

Mrs Mac was awarded the OBE for her services. The two Hutchings YLs Elizabeth VK3HM and Marjorie VK3HQ were part of a real radio family, with mother, a son VK3HL, and a daughter all with licences. It was the son, Allan who first got mother and sister interested as he had them listen to the music and the voices from the other side of the world, coming out of his crystal set.

Elizabeth was licensed in 1927 and Marjorie in 1930.



Photo 2: The poster promoting the play *Electro Diva*.



Photo 3: Carole Parker played Ms Mac in "Electro Diva".

Elizabeth's special claim to fame is that she Worked All Continents (WAC) on Christmas Eve 1929. She then waited up till she could work England as well. This was all with a Morse key, of course. This WAC was reported in the *Listener In* in 1930.

The family home "Bryn Avon" at Callawadda in Victoria was host to many amateur gatherings before the War, so is remembered by many amateurs of the day.

Elizabeth became an SK very suddenly in 1942 and Marjorie did not take up her licence after the War but Allen continued



Photo 4: Elizabeth VK3HM.



Photo 5: The QSL card of Marjorie Hutchings VK3HQ.

operating until into the 1950s. when he and his wife Lilla had the pleasure of visiting and meeting some of the 'voices' with whom they had become friends over the years while in the UK.

Austine VK3YL gained her amateur licence in 1930. Her interest was 'sparked' by the gift of a crystal set to while away the hours while she was recovering from a tonsillectomy. She became so interested she built her own crystal set and eventually her own transmitting and receiving equipment. In fact this rig was on show in one of the Melbourne Exhibitions.

Before the War Austine used the key, as did all the amateurs, and during WWII Austine taught Morse code through the



Photo 6: Austine VK3YL Circa late 30's.

WIA. She actually joined the RAAF Wireless Reserve in 1934, the first woman to do so, and served with the RAAF before the WRAAF was formed, she was 3D6 of section VMC4.

Austine used telephony on AM and SSB, after the War using war surplus equipment but eventually brought some modern transceivers.

During her long amateur radio career, Austine gained her DXCC, was the first WAC YL, and was the third WAZ YL. She was a member of RSGB and YLRL as well as WIA and was very supportive of ALARA from its inception.

Dorothy VK4DH (not in the 1938 callbook) was the first YL licensed in VK4. She sat for the exam in November 1929 and was given her licence and callsign in 1930. There was an article about her in "Wireless Weekly" for April 1931.

Ida VK4JH was the second Queensland YL. She was licensed in 1933, but no more is known about either of these ladies. VK4LO, listed in the 1938 callbook is completely unknown to ALARA

Madeline VK4YL got her licence in about 1933 when she was only 12 years old. The "Teleradio" magazine for July 1935 describes Madeline as the youngest radio amateur in the British Empire. Her father was VK4GK. He no doubt encouraged her in her studies but he could not sit for the exam for her.

Madeline was very proficient at Morse code and using this mode she won at least four awards in the BERU Contest, 13th in the Junior section in 1935, 7th in that section the next year, then 14th and 6th in the following years when she was in the Senior section. An amazing achievement, at whatever age!

She also sought and made contact with many rare DX stations, who were no doubt astonished if they realised how very young she was.



Photo 7: Austine VK3YL with one of her many trophies.

Like all amateurs, Madeline had to close her station down at the beginning of the War. By the end of the six years she had developed other interests, which she, no doubt pursues with as much enthusiasm as she once gave to amateur radio.

Betty VK5YL passed her exams in 1936. She was a country girl, living in Murray Bridge, who built her own gear. She also had it exhibited in the Exhibition in South Australia. She was the first YL in VK5 to gain her amateur licence. She also gained her commercial operator's certificate. Her certificates were on display in the Telecom Museum in Adelaide till this was dismantled in the 70s.

Betty operated mostly on the 40 and 80 metre bands with only the occasional venture into the 20 metre band. As she changed her equipment she changed the information on

Miss Betty Geisel, Murray Bridge, South Australia

VK5YL

Hello. VK5.BG... was glad to
meet u on... 7. mc ..25.6:38.....
Ur sigs were RST..899 ~.
Rig here... 33.101... 6.25.51...
Input 25. watts fm DC mains
230 volts.

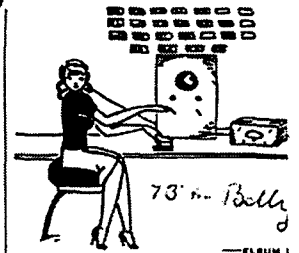


Photo 11: The QSL card of Betty Geisel VK5YL.

her QSL cards.

She even made her own batteries by extracting the carbon rods and de-polariser from dry cells and mounting them in a solution of sal-ammoniac or common salt in Marmite jars. Betty did not take up her amateur licence after the war but worked for a number of years as a technical sales assistant at Gerard and Goodmans -THE electronic and electrical store in Adelaide well into the 70s.

She trained as a school teacher after that and lost interest in amateur radio.

Miss J.C. CHINERY VK6JC we know nothing about, but the other early VK6 YLs are well known.

Mary (known as Bobby) VK6MH lived in Wiluna, so she has a mine head on her QSL card. She passed her AOCPI in August 1936. Her certificate was numbered 1976, so there were not very many amateurs, at that time.

Her OM was also licensed, he was VK6AH. She was a member of the WIA and joined ALARA when it was formed. She would have used only CW before the War but a QSL card from 1947 gives only a RS report, not a RST report, indicating that she was using telephony by then.

Vicki VK6YL was first licensed in 1936. She has the honour of beating Walter Lindrum at billiards, by 31 points (with over 750 points to help her!!). She was a member of the WIA and edited some of the early WIA Bulletins.

During the War she was among the first WRAAFs once the service was started. She happened to be in headquarters in Melbourne, receiving signals from Darwin, when it was bombed. The message was:

"Hold it! I'm just ducking under the table. The Japs are

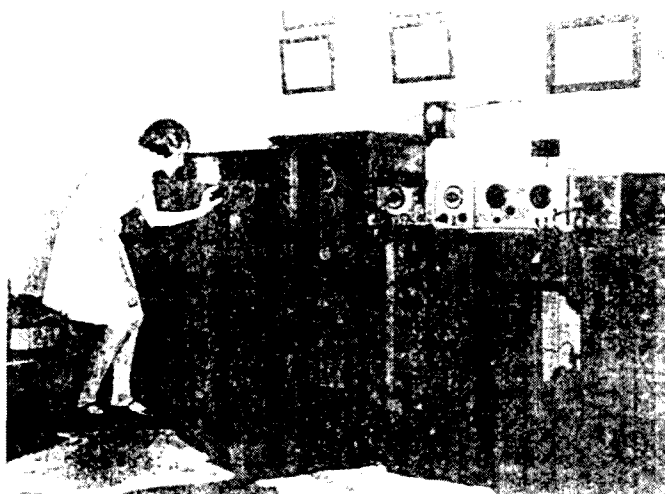


Photo 10: Madeline with her 'rig'.



Photo 12: Vicki Page.
VK6YL.

bombing us!" (the punctuation may not have been sent quite like that but the message was no doubt accurate!)

Back in Perth, Vicki taught Morse code to Air Training Corps cadets.

After the war other interests occupied Vicki, so she did not continue in amateur radio.

Joy VK7YL was training to be a school teacher when she sat for her amateur exam in 1936 and passed with flying colours. She was encouraged by her father.

Joy passed her examination in 1936, one of eight students, the others all men, and one of only two to pass that day.

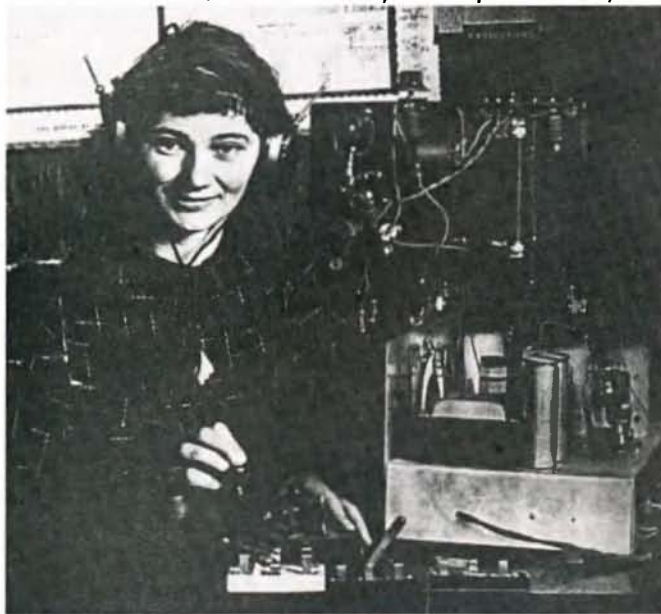


Photo 13: Joy VK7YL.

She had her father help to build her a 'shack' as the rest of the family 'couldn't stand the noise'.

She made many contacts across Australia and the world, and spoke many times with Madeline VK4YL. She was very interested in a contact one night with an American amateur who described how he and a couple of other amateurs had provided communications to people in a town isolated when a dam broke. This was no doubt the fore-runner to the emergency networks of today.

Joy said the Wireless Institute members were of enormous help to her in those early days.

Joy took up her amateur licence after the war and was active for over 40 years.

On the door of the room in her house, from which she has now moved to a retirement village, she still had a sign with her callsign on it.

In 2008, Joy gave a welcoming speech to the members of ALARA, at the ALARAMEET in Ulverstone. The recording was made on her 93rd birthday as she was packing up to move into the village.

Mavis VK3KS sat for her amateur exam in 1939 and continued to be active for 70 years (see July AR 2009). She became interested through Ivor VK3XB whom she met as a country school teacher at Lallat North, and Mavis' parents boarded the new teacher, as they had been doing for years. Ivor set up a battery operated rig in his room and strung a vee-beam from some trees. Mavis was hooked!

Ivor and Mavis married after the war and the double radio shack was born.

After joining YLRL in 1950 and participating in a number of their Contests, Mavis won first place for DX YLs on CW in the 1958 YL/OM Contest.

Over the years, after many late nights Mavis has won



Photo 8: Mavis Stafford VK3KS.

several gold and silver cups and over a hundred certificates, as well as DXCC, WAZ, WAS DXCC and others.

Mavis was one of the founding members of LARA, later ALARA, and, with Ivor, wrote the history from 1975 to 1990.

She was recognised in 2009 by the WIA for holding her licence for 70 years.

ar

Photo 9: Some of Mavis' trophies.



Highly successful special callsign VK100WIA

The VK100WIA callsign was launched as part of the WIA Centenary Celebrations by the WIA President Michael Owen VK3KI on Friday 14 May. The first contact was with Geoff Atkinson VK3TL on 40 m SSB with signals five by five both ways.

The WIA was rostered for the month of May, resulting in it being put to air by Directors Bob Bristow VK6POP and Chris Platt VK5CP, WIA Centenary Committee Member Jim Linton VK3PC, David McAulay VK3EW, and also on behalf of the WIA – Amateur Radio Victoria and Amateur Radio New South Wales.

The conclusion of the WIA period occurred during the WIA Centenary Convention in Canberra 26-31 May, with members of the Canberra Region Amateur Radio Club operating from the Rydges Lakeside Hotel.

While at the microphone during Amateur Radio Victoria's turn during the WIA period, David VK3EW had two interesting contacts which he spoke about at that organisation's annual general meeting.

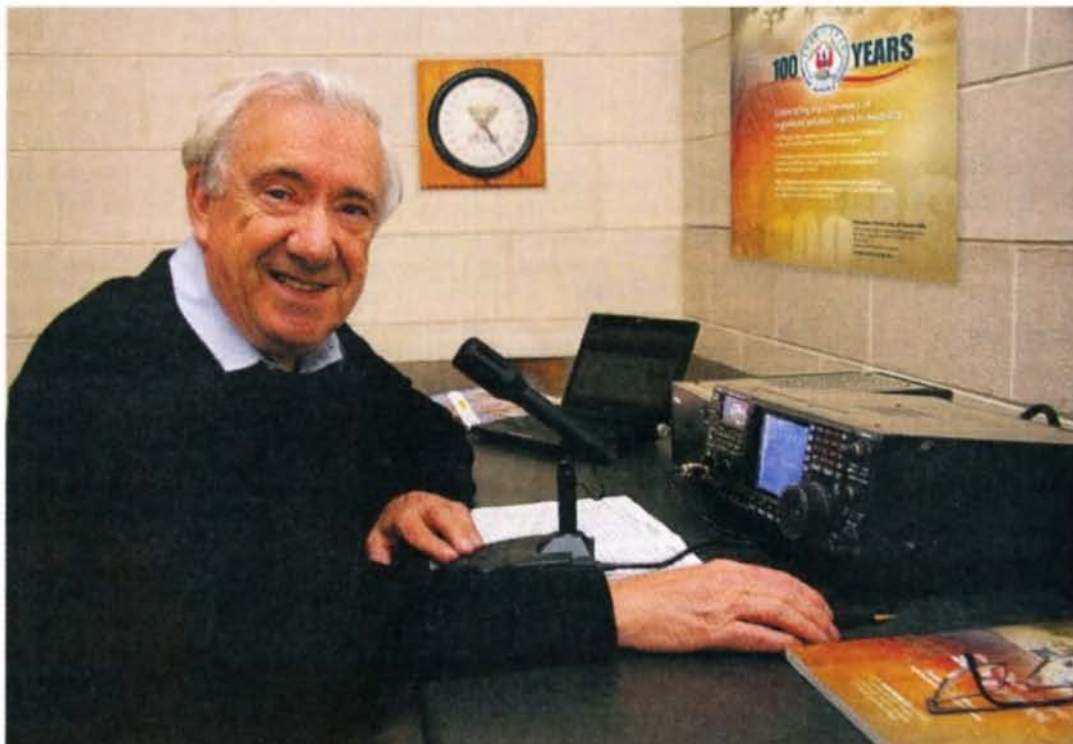
The first was a ZL station who had previously worked VK call areas 1-9, and on finding a station with a VK100 prefix, wanted to know "Where do the numbers end?"

However David said he will never forget the call from Franck Alcidi VK8FNCY on 40 m. Quickly sensing that this was a relatively new radio amateur, the veteran operator asked him "How long have you had the callsign?"

Frank VK8FNCY replied he had just got it and VK100WIA was his very first contact. He had heard David operating the special call the previous night, adding "I didn't call then because you sounded too busy".

Then during the month of June a total of 10 WIA affiliated clubs were on the VK100WIA operating roster. They pushed up the QSO tally which was expected 4,000 by the end of June or during early July.

ar



Michael VK3KI, WIA President, making the first contacts with VK100WIA.

From day one to 100 years on



Franck VK8FNCY neatly and serendipitously intertwined his personal amateur radio history with WIA Centenary celebrations.

His first ever contact with his brand new call sign was to David VK3EW at the VK100WIA microphone.

Franck runs an Icom IC-718 for HF and an Icom IC-208H for 2 m/70 cm. Both have a Manson 23A (SPA-8230) power supply. Antennas are 8.5 m Tet-Emtron Tev-1vertical for HF connected to an LDG Z-100Plus autotuner with a X-50N ACS 1.7 m vertical for 2 m/70 cm.

Who were the Radio Inspectors?

What did they do?

Rob Gurr VK5RG

On the hundredth anniversary of the Wireless Institute of Australia, members and amateurs generally may reflect on their association with the Radio Inspectors, employed by, in turn, the Postmaster General's Department, Post and Telecommunications Department, Department of Communications, Spectrum Management Agency and now the Australian Communications and Media Authority.

First contact with these authorities was made to obtain the internationally recognised Amateur Operators Certificate of Proficiency, then later to secure a licence with callsign, to authorise the establishment and operation of an amateur radio station.

A later contact may have been made when an upgrade in qualification was desired, or a visit was made by an inspector, to inspect the amateur station.

Some amateurs may have encountered these Inspectors prior to all the above situations – they may have met them in court following detection of their station being operated without an appropriate licence.

Inspectors were, however, mainly involved with marine, broadcasting, land mobile, outpost radio, spectrum monitoring, frequency allocation, equipment standards, and radio frequency interference (RFI) detection and elimination areas.

Interference investigation to broadcasting and radio communications services was a major activity.

Legislation

The International Telecommunication Union was formed as the International Telegraph Union in 1865, refer note 1, to address world standards on wireless telegraphy usage throughout the world. Later, the Titanic disaster forced a closer look at radio frequency management world-wide, with frequencies being set aside for marine distress as well as bands for radio experimenters.

A World Administrative Radio Conference (WARC) was held in Germany in 1903, with only a few significant countries attending, to address the monopoly the British Government had given the Marconi Company, over the use of radio spectrum, and undertook to establish a more worldly plan.

The 'Radio Regulations' ensuing from these conferences were subsequently incorporated, as necessary, into the Australian legislation, the 'Wireless Telegraphy Act'.

During the years prior to World War 2, the specific spectrum needs of amateurs were addressed at subsequent WARC's by representatives of the various countries. In post war years, amateurs were permitted to attend these conferences, in company with their country's delegation. The attendance of the Wireless Institute of Australia and the International Amateur Radio Union, at these conferences, proved of great value to the Conferences, and to their respective countries.

Progressively these international regulations were formalised in the Australian 'Wireless Telegraphy Act', and the later 'Radio Communications Act'.

Perhaps the most significant radio frequency management issue facing amateurs in Australia was the reinstatement of amateur licences after World War 2.

When hostilities commenced, all transmitting equipment was surrendered to the PMG's Department and sealed. Refer note 2.

After the cessation of hostilities, the Government made no initial effort to restore Australian amateur station licences, even though other countries were allowing such activity. The Wireless Institute of Australia made representation to the PMG on behalf of all amateurs, to commence the issue of licences.

After successful liaison, licences were again issued, with caution, allowing new amateurs to use only 50 watts DC input to the final amplifier of a transmitter, on successfully completing a 2 ½ hour theory paper (prose answers), and a 14 words per minute Morse code test. The licence would restrict the licensee to using Morse code only for six months. On completion of this period, he would be required to pass a further Morse test at 18 words per minute, build a modulator, and make on the air test transmissions. When these requirements were complete, he would be able to operate on voice, with a DC input of 100 watts!

The transition was made even more onerous, as the 'on air' tests had to be conducted with a member of the 'Amateur Advisory Committee'. The members of this committee were other amateurs, from the WIA and from the amateur fraternity at large, some of whom may have been less technically competent than the applicant amateur. This committee over the years unofficially became a pseudo regulatory authority, reporting directly to amateurs on their personal operating habits, with members in direct confrontation with amateur licensees. It became obvious that the responsibility to police the regulations under the Wireless Telegraphy Act rested wholly with the PMG's Department. Following claims

of bias from some alleged offenders, and a reluctance of amateurs to serve, the Committee was disbanded in all states in 1978.

Amateur radio licensing conditions continued to evolve during the post-war years, with very few privileges being released by the licensing authorities, except where backed by international conferences. Locally, very few privileges were given without successful representation by the WIA.

One particularly daunting area was the initial authorisation of amateur television repeaters. Some other Government agencies, associated with television broadcasting, found it difficult to believe that the ability to produce a 'compliant' transmission was within the ability of the amateur licensees. Some of the technical presentations in the applications had been prepared by amateurs engaged in the television industry, who were amazed that such difficulties were being exposed. The applicant's pressure on the Department paid off, and today we have excellent conditions for the continuation of television experimenting in Australia.

Today, we (amateurs) have relative freedom from the need to follow international standards, particularly in the digital/data modes, provided the transmission is within the allocated bands, it is at the correct power level and it does not cause interference to other radio-communication services. Experimental modes of emission are permitted, and are being developed almost daily throughout the world.

With the introduction of the Limited licence, the Novice licence, and the Foundation licence, further waves of amateur growth evolved, making it the popular hobby it is today. The now redundant need for Morse code skills, the availability of low operating voltage equipment, and the delegation of examination and licensing functions to the WIA, has made it possible for a wider section of the public to enjoy this most respected hobby.

Amateur station inspections

For some years the Department maintained the policy of inspecting amateur stations every year. This provided useful statistics on the ratio of stations licensed, to those capable of operating. Perhaps this

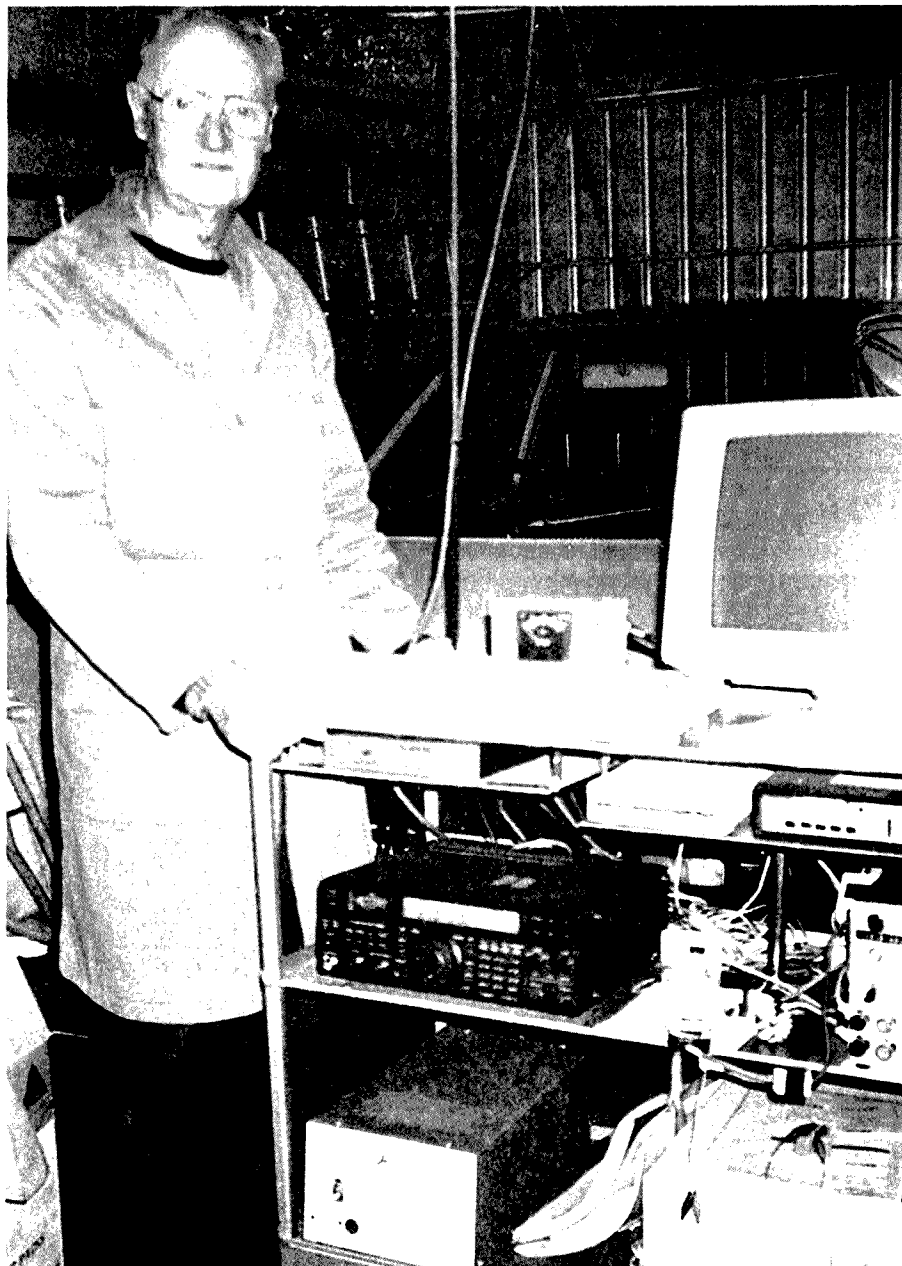
may have been valuable information to an emergency service, the WIA or industry; however as inspections of stations became necessary in investigating complaints of interference to radio and television reception, yearly visits were abandoned. Another reason that could place a radio inspector on your doorstep was a complaint of interference from another radio communications service. Spurious signals, including harmonics and parasitic oscillations have been the cause of this from time to time. Complaints from aviation and defence services would warrant a complete inspection.

At one stage amateur stations were

required to hold, at their stations various items, including copies of the latest operators 'Handbook', heterodyne frequency meter, absorption frequency meter, and signal monitor. The station licence had to be displayed with the equipment.

Power Measurement

Power measurement had its own difficulties. The method in earlier editions of 'The Amateur Operators Handbook' required a measurement of the DC input to the anode of the final amplifier, and the absence of a combination of components that would allow inputs greater than the permitted



Radio inspector Rob Gurr VK5RG in retirement in his own radio shack, circa 2001.

level. The licensee was required under this rule to provide test points to facilitate such measurements, sometimes compromising the safety of the installation. A power output measurement, including recognised techniques for measuring SSB transmitters, was satisfactorily addressed in the 1978 'Handbook', following liaison with the WIA. Radio inspectors, when measuring output power, were now able to use the same test equipment they used when testing commercial stations.

One unfortunate amateur operator, during a routine inspection, was found on one occasion to be using 200 watts DC input to the final amplifier of his transmitter. He was given a week to correct the power level to the allowable 100 watts.

During the week he replaced his high voltage transformer, selling the larger one to fund the replacement, acceptable, model. At the time, no amateur was permitted to use a *combination* of components that had powers in excess of 100 watts.

Coincident with the licensee complying with the conditions of his licence, an announcement was made that following negotiations with the WIA, the PMG Department had altered the legal power *output* to be

now 120 watts, for CW transmitters, and removing the necessity for avoiding a component combination that would exceed this level.

The news of this change was received, direct from the WIA, by the licensee but after he had sold the transformer.

When the inspector returned a few days later for a re-inspection, he found the licensee was somewhat irate. He had heard from the WIA of the new rule, and found the inspector was not aware of the relaxation.

A case of the speed of amateur communications in contrast with that of the Public Service!

Frequency checks

One earlier requirement was for amateurs to hold at their station a method of measuring their operating frequency. It was later recognised it was of no concern to the Department what frequency they used, providing it was within the allocated band. Crystal calibrators and other home developed techniques were found to be satisfactory.

Safety Inspections

From time to time, safety aspects of concern to inspectors were pointed out to licensees (often from an experienced perspective, as many radio inspectors were also licensed electricians and familiar with the SAA Wiring Rules and Power Authority 'Conditions of Supply'). Any dispute was resolved by calling in an electrical inspector from the power authority; in one or two cases corrective modifications were required to the household wiring. An expensive penalty applied for non-compliance.

One inspector, during a routine amateur station visit, had cause to record a safety breach when he found a station established in a rear shed with a bare dirt floor, and exposed high voltage power supply easily accessible to family and visitors. The owner of the

station was a high level manager in a Government research establishment in an adjacent town.

When the Radio Inspector, some years later, sought a position in the same research establishment, to his surprise, one of the interview committee was the licensee that he had earlier put off the air on safety grounds. The inspector failed to obtain the position. No explanation was ever received!

The introduction of low voltage commercially manufactured transmitters for the amateur bands reduced the need for intimate inspection of the safety of such installations.

Monitoring stations

Monitoring stations were established in all capital cities, at District Radio Inspector offices and mobile in caravans from time to time. Apart from the checking of frequency accuracy, out of band operation, and the like, observations were made in a search for clear channels that may be allocated to applicants for future licences. Procedural matters such as prolonged conversations without identification, rebroadcast of other stations, or even bad language, were brought to the attention of licensees. Third party traffic at one stage was prohibited, as it was considered a financial loss to the major providers of the day, however deregulation in the telecommunications industry gradually allowed this facility to be authorised. It is interesting to note that after years of lobbying for this facility, few amateurs engage in this convenience, as the internet facilitates much more convenient messages to third parties.

A short period of monitoring concern occurred in 1975, when CB radio was authorised in the 27 MHz band, whilst it was still an amateur band. Confrontation between amateurs and CB operators was evident, and only solved by withdrawal of the band from amateur use. The confrontations were unfortunate; however a number of CB operators obtained some knowledge of the amateur service and eventually obtained an amateur licence, becoming good friends with those they had previously offended.

Out of band amateur transmissions were rarely encountered, due

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a \$5.00 joining fee plus \$8.00 for one year or \$15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to

RAOTC,

PO Box 107

Mentone VIC 3194

Ron Cook 03 9579 5600

or Bill VK3BR on 03 9584 9512,

email raotc@raotc.org.au for an application form.



to the useful and efficient intercommunication on other frequencies, between these stations.

Radio-communications, television and broadcast interference

With the introduction of sound, and later television, broadcasting in Australia, the Government (PMG) set up a wireless and television licence regime. Wireless licence inspectors held records of licensees in each street, suburb and town and found it easy to locate unlicensed receivers, obtaining many prosecutions and subsequent financial penalties. To some this was the most dreaded arm of the PMG broadcasting machine.

The radio inspectors were a general help to the listener/viewer experiencing reception difficulties, often contributing to solving domestic social problems, as well as technical solutions to interference and other difficulties.

In 1975 the Postmaster General's Department was split into three new entities: Telecommunications Commission (Telecom), Postal Commission (Postal) and a new Public Service Department of Posts and Telecommunications, shortly afterwards renamed the Department of Communications (DoC). At this stage, and associated with the deregulation in telecommunication, the issue of receiving licences was discontinued, presumably recouped from the television and broadcast stations.

Interference

The investigation of broadcast and television reception problems was continued by radio inspectors of the new Department of Communications. Interference to these services would be caused by many sources.... power lines, domestic appliances, faulty street lights, neighbour's TV sets and many others. A number of complaints however proved to be faulty receivers. Convincing a complainant that the inspector was not going to 'get' the next door neighbour for him was a part of the job!

The inspectors had extensive expertise in locating and suppressing the sources of interference. They were able to negotiate with power line authorities and electronic service organisations to assist these persons to understand and

cure the interference. Often, with the owner's permission, filters, traps, and other devices would be attached to equipment as a means of demonstration and later installation.

Interference from amateur stations was not a great problem. It was a simple matter of loaning a Departmental receiver to the complainant for a short while and arranging tests with the amateur. Sometimes the inspector became a field psychologist in obtaining a reasonably friendly result, given the complainant was so strongly convinced his source of problems was the structure he could see over the back fence. Sometimes new friendships grew out of the situation.

Some amateurs had, at times, excessive harmonic output. It was necessary to restrict on-air operation on specific frequencies until harmonic levels were reduced, a situation most amateurs would have picked up, particularly when they interfered with their family receivers!

Marine inspections

For many years, PMG/DOC radio inspectors, acting on behalf of the Department of Transport (or whatever name was current) conducted regular inspections of all high seas cargo and passenger vessels, for compliance with the Australian Navigation Act and the International Convention for Safety of Life at Sea, as well as relevant British, International Telecommunications Union, and other similar legislation.

On the Australian coast, the inspectors made inspections quarterly, and annually. A 'Survey' of the total radio facilities was conducted, upon which the Department of Transport would issue a further 'Safety Certificate' valid for the next 12 months. Without this certificate, the Customs Branch would not 'clear' a vessel for departure to another port.

This annual 'Survey' took considerable time, requiring not only equipment specification measurements, but a complete stock-take of all spare parts for transmitting and receiving equipment, antennas, batteries, lifeboat equipment and so on. A check to ensure all documents and handbooks were up to date, was also carried out.

This Marine activity took on a special importance during World War 2, when all radio receivers owned by the general crew were tested for local oscillator radiation. Enemy submarines and raiders would be able to hear such radiation at a reasonable distance and identify the location of the ship or fleet.

There were also a number of receivers from that period using the tuned radio frequency technique, where the regenerative detector was sometimes the source of high level radiation.

Where did the Radio Inspectors come from?

Inspectors were recruited from many different organisations. Whilst some were trained within the Department, with internal and institutional qualifications, the majority were from other organisations, where they had been communications engineers, technical officers, draftsmen, marine radio operators, broadcast engineers, police and defence force members. A considerable number were experienced in Antarctic and aeronautical communications and had expertise which was most helpful in dealing with the problems associated with service to a broad range of spectrum users.

Amateur radio was a hobby with many inspectors, most being members of their local radio clubs, and some were executive members of the Wireless Institute of Australia.

Where did they go?

There are now fewer of them. Some are left in Brisbane, Canberra and Melbourne, equipped with portable test equipment, to search out problems Australia-wide. There are none in Adelaide and Perth.

The chance of encountering a radio inspector, be it in a helpful or investigatory way, is now somewhat reduced. While they existed, it was believed they served amateur radio and the Wireless Institute of Australia in a most efficient and friendly manner.

Note 1: 'From Semaphore to Satellite' ITU Geneva 1965.

Note 2: 'A History of Radio in South Australia 1897-1977' J F Ross 1978.



The Blue Mountains Amateur Radio Club invite you to

Winterfest 2010 Sunday 22nd August

What is Winterfest?

An opportunity to pick up a bargain - new or preloved - and a chance to learn a few new things about amateur radio.

An annual fundraising event to support the Blue Mountains Amateur Radio Club.

Where?

18 Simeon Road, Orchard Hills, right near the M4.

Who will be there?

Action Communications, Amateur Radio Transceiver Centre, Vertex Standard Australia, AMSAT, ARNSW Homebrewers, a flea market, BMARC shop, demonstrations

How much does it cost?

Entry to Winterfest is \$5. Children 12 years old and under accompanied by an adult enter free.

Food

Sausage and steak sizzle, soft drinks, and free tea and coffee.

Prize draw

Several prize draws will take place, including a Yaesu FT-290R radio kindly donated by Vertex Standard Australia (<http://www.vxstd.com.au/>). Check our website for up to date information.

How can I find out more?

Check out the Winterfest website at <http://www.bmarc.org>

To book a table visit our website or email us at winterfest2010@bmarc.org



Albury Wodonga Amateur Radio Club

Riverina Field Day

on

Sunday, 25 July, 2010

at

1st Lavington Scout Hall, Mutsch Street, Lavington,

commencing at 10 am.

There will be door prizes, and a raffle.

Entry is \$5.00.

ATRC from Sydney, and distributors for Yaesu, Icom and Kenwood, will be attending with their latest equipment. There will be antennas, connectors, cable, and much, much more.

Hot food will be available, with tea and coffee free.

Contact Stafford VK2AST for further information - vk2ast@wia.org.au

Unit living is creating innovative 'stealth' antennas

A hidden 40 metre X beam and other unusual antennas

When the QTH is a unit in a group of nine, where the people who make the body corporate regulations have strange ideas about not polluting the skyline, the amateur operator has to think outside the square.

Ron Holmes VK5VH

My 'Shack in a Briefcase' antenna arose out of this situation some years ago (see AR July 2002). One version of this one metre whip still sits on the filing cabinet in the corner of the shack, tuned on 40 metres. It continues to surprise many contacts when I switch to it from a full half-wave antenna and the signal only drops an S point or two.

Admittedly the half-wave is an end fed wire lying on the tiles, but it has served me well over the years on various bands and is quite invisible. I call it the Roofwire (see AR April 2001).

Wanting to improve on the Roofwire, I realised that I could arrange some wires in the small back yard and over the rear portion of the roof so that they could not be seen from the front.

My first try was a 40 metre loop about 3.5 metres high which was not much better than the Roofwire. I cut this halfway along each side to make a two element beam of the VK2ABQ variety.

There was some improvement over the roof-wire in a NE direction but nothing special. I then thought of making it into an X beam. This is sometimes called 'the poor man's beam' because it has no boom and not as much gain as a normal Yagi.

I had successfully experimented with it many years ago on 20 metres. Of course a beam needs to be rotatable which is no great problem on 20 metres but rather more so on 40, particularly when no tower is permissible. But there are other ways to rotate an antenna, especially an X beam.

The antenna

The sketch of the antenna, and the close up photo of the control box, which is reachable from ground level, give the whole game away. Refer Figure 1 and Photo 1. Supports on the fence line are 45 by 35 mm pine, three metres long, painted to match the fence. They are mounted on the fence 30 cm above ground at the back and 90 cm at the front to lift the elements above the roof line.

They form a square approximately 11 metres each way. Any 'tails' are tied to another support by nylon fishing line or wrapped round the pole out of human reach. I used 45 kg fishing line threaded through a piece of Perspex screwed to the top of each support as pulleys to raise and lower the ends of the elements while trimming.

The Control Box

The on-roof support is PVC pipe about one metre long and 75 mm diameter. It looks like the vent seen on many houses. Inner ends of the four 1/4 wave elements go down inside the pipe, out near the bottom, then through the tiles, and down the brick wall to the control box.

Since the N support is in a peach tree, all is invisible from the front. The coax feedline runs along the ground and round the corner to the shack window. These inner ends of the four quarter-wave elements are connected to simple plugs, refer Photo 1. The four sockets in the little box have the coax connected to the two bottom ones and a 300 pF capacitor across the two top ones.

A Rotatable Dipole

For a start, you have a rotatable dipole with six different positions. Just plug in the two elements you wish to feed to the two bottom sockets and leave the other two hanging.

Two straight dipoles at right-angles to each other would normally be enough but there are four more possibilities using bent dipoles. There could be a thought that a balun after the coax might be advisable. However, since 'balun' means *balanced* to *unbalanced*, its purpose

is to adjust a balanced load to an unbalanced feed.

When two wires run just above roof level and another over a metal clothes-line, the dipoles are not a balanced load. I found that the SWR may be improved by swapping connections to different sides of the coax.

If You Make It

If you make something like this under restricted conditions like mine, remember that you cannot just cut some wire to the 'correct' length for the frequency and string them up. When on a roof or close to metal structures their length at the correct resonant point will vary greatly from the norm.

The best idea is to cut them a metre or so longer than the correct length and then trim them until a dip meter at the centre shows roughly the right frequency. At least, that is how I did it.

The transceiver was then used to make final adjustments to the SWR by checking at top and bottom ends of the band. If the SWR is best at the bottom end and worst at the top you need to cut a bit off. If the other way round you need to add a bit on. I always try to make my antennas operate without an ATU if possible.

An X Beam

To use the antenna as an X beam choose the direction you want to work, feed the two 'back legs' by plugging them into the two bottom sockets then plug the two 'front legs'

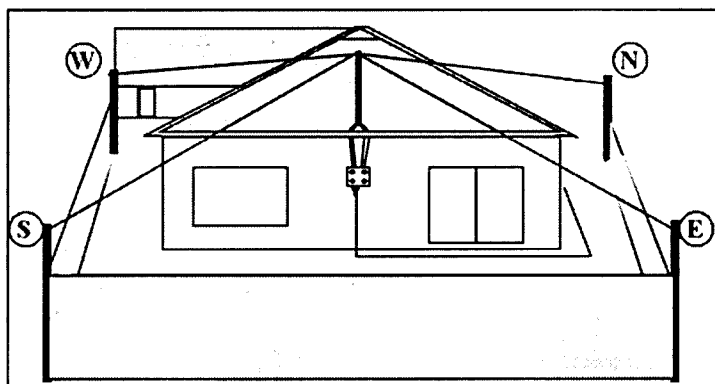


Figure 1: General view of set-up from back of QTH unit.

into the two top sockets. The capacitor reduces the inductance of this front dipole, that is, 'shortens' it, to make it work as a director.

Normally I feed the legs pointing south and west and shorten the legs pointing north and east. This gives me good results into all the eastern states, especially VK4. However the beam is very broad and works down to VK7.

On air tests

With the way 40 metre QSB operates these days, on air tests are difficult, especially if you need a couple of minutes to go outside and change plugs around. So I have a straight change-over switch from the Roofwire to the X beam.

The Roofwire runs along the apex of the roof so bisects the N and W legs of the beam. Thus it radiates in the same direction as the beam when the beam is set up as above. Using the quick change-over switch I get consistent reports from VK 2, VK3 and VK4 that the X beam signal is two to three S points up on the Roofwire. The audio is always clearer.

Other Possibilities

Now I know this antenna as described is not for everyone. If you have a metal roof on your unit you will probably do better to have a vertical with the roof as your ground-plane. But I would

like to find someone prepared to try it in a normal size back yard with no 'invisible' restrictions.

With a ten metre high pole at the middle and five metre high points at the corners, plus some kind of remote switching at the top, you would avoid the disadvantage of having the highest current section of your antenna not radiating.

Admittedly Les Moxon in '*HF Antennas for all Locations*', page 82, suggests that the middle section of an X beam is 'relatively ineffective', so perhaps I am not losing as much as I think by having a couple of metres of the four wires going down the tube together. In fact it could even be an advantage in providing coupling between the radiator and director?

On 80 metres

Everyone knows that you can't use a 40 metre dipole on 80 metres unless you feed it with balanced line and tuned feeders or a four to one balun. I discovered by accident that with my very simple home-brew ATU I can get a completely flat SWR on my X Beam.

Normally I use the Roofwire on 80 by end-feeding it against ground via the ATU as it is a 1/4 wavelength on that frequency. You may have noted that I can switch directly between the Roof-wire and the X beam. Recently I thought I was tuning the Roofwire

but the switch was to the X beam!

I now feed the N and W legs against the S and E legs and on my two regular 80 metre nets am getting the best results ever! Possibly the fact that it is fed with 24 metres of coax, which is an electrical halfwave on 80, has something to do with it?

Cut and Try

I should admit here that I am strictly a cut and try merchant as far as antennas are concerned. I do not know the maths, and cannot understand half the explanations in the books about how they work.

I know that if I had been more knowledgeable I would probably never have considered building a one metre long antenna and expect it to work on 80 metres. It does, although not quite as effectively as on the ten other bands to which it can be tuned. (That is mainly because of the high noise level on 80 metres).

Nor would I have thought it worthwhile to make an X beam only four metres or less off the ground, which works exceedingly well! My philosophy is if you do the best you can with what you have available, it is surprising sometimes how it turns out.

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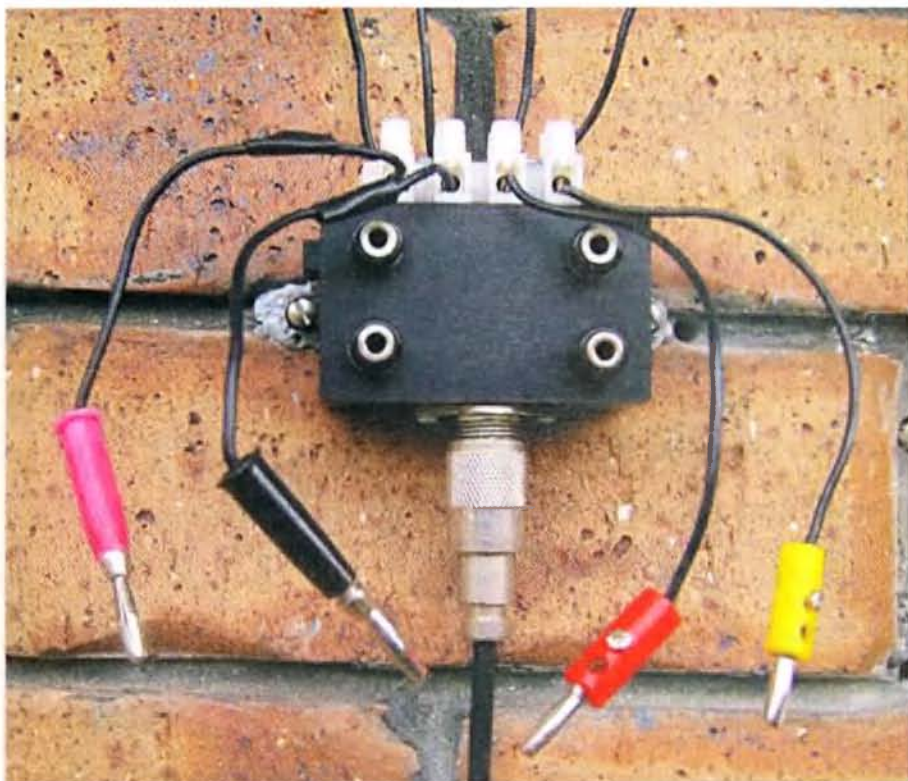


Photo 1: The X beam antenna control box.

Vertex Standard (Australia) Pty Ltd

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GippsTech
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10th and 11th July 2010

**Gippsland Gate Radio
& Electronics Club
Hamfest**

Saturday, 17th July 2010

**Albury Wodonga
Amateur Radio Club
Riverina Field Day**

Sunday, 25th July 2010

YAESU
Amateur Radio Division of Vertex Standard
Vertex Standard (Australia) Pty. Ltd.

35 great years of ALARA

Greetings to all. This edition of the magazine has a particular focus on women in radio. As you recall July is the 35th birthday of ALARA and many of us are looking forward to meeting up with other members at special lunches to celebrate the event. Do enquire from your state committee if you are not sure of the arrangements.

I will also remind you of the ALARA Contest which will be held later this year. Watch out for details in the Newsletter.

A blast from the past

The ALARA column printed in the October 1985 edition of *Amateur Radio* states that "27th July was the day chosen by YLs in four states to meet in celebration of the 10th anniversary of our Association. In VK5, 15 ladies met for lunch in Adelaide. The VK4 lunch in Redcliffe included 15 ladies, six men and several members of the Redcliffe Radio Club who dropped in to say hello." News of the functions

held in other states was printed in the November edition. "1985 is ALARA's 10th birthday year and there have been get-togethers to celebrate the occasion in VK2, VK3, VK4, VK5 and VK6. Nineteen members attended the VK3 festivities. They all enjoyed themselves so much that they plan to repeat the performance annually."

Let us hope we can continue the enthusiasm and do even better this year.

The early years of ALARA – Women in radio

Norma O'Hare VK2YL was a speaker at the WIA Centenary AGM in Canberra in May 2010. Her presentation covered the background to the formation of the women's amateur radio operators group now known as ALARA. She pointed out that while ALARA has been in existence for 35 years, women have been involved in amateur radio for years prior to the formation of ALARA.

In outlining some of the history, attention was drawn to such notable



Mavis Stafford VK3KS.

operators as Florence McKenzie. The first YL member of the WIA in NSW, Florence was a qualified electrical engineer who gained her licence in 1922. Her interest in Morse code led to her setting up a Morse Code Training School where she taught thousands of men and women.

Other YLs listed in the early Call Books included a mother and daughter, Elizabeth VK3HM licensed in 1927 and Marjorie VK3HQ licensed in 1930. Austine VK3YL also gained her amateur licence in 1930, her love of Morse code led to her teaching it through the WIA. During the Second World War she worked with the RAAF in the Wireless Reserve, the first woman to do so. Austine eventually became one of the inaugural members of ALARA.

Another respected foundation and still active ALARA member is Mavis VK3KS who gained her licence in 1939. She is well known internationally having gained numerous DX and contest awards. In 1983 Mavis was made an honorary life member of ALARA and in 2009 there was a special celebration held by ALARA members to honour her 70 years as a licensed radio operator.

Some other earlier listed YLs were Dorothy VK4DH licensed in 1929, plus Ida VK4JH and Madeline VK4YL who



Norma O'Hare VK2YL with her girls.

HISTORY OF THE
AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION
by Mavis Stafford VK3KS

The Beginnings

It was in 1975 that the idea of an organisation to promote and extend the interest of women in amateur radio was conceived by Norma Boyle, VK3AYL. In June of that year, Norma, whose previous experience at radio gatherings had too often been one of finding herself the odd one out (the YL with the Amateur Radio Licence), had informal discussions with other women who were either licensed amateurs themselves or were the wives or acquaintances of amateurs.

Aims of the proposed organisation as first envisaged by Norma crystallised as follows:

- (1) To encourage women to become interested in amateur radio, by making amateur radio a social hobby for the whole family.
- (2) It was to be a club for women interested in joining in radio activities, either on their own or with their husbands or friends.

Foxhunts and car rallies were high on the list of projected family activities.

It appears that the title, "Ladies' Amateur Radio Association", was very early decided upon.

Norma now set about communicating the aims to the small group of licensed lady operators of the day, and to the wives and female friends of many OMs. Many letters, accompanied by questionnaires, were penned and posted at Norma's expense. A rousing call to all Australian YL operators was published as a letter above the names of Norma Boyle, Rhonda de Stefano, Irene Robinson and Jenny Roper in the Correspondence column of August 1975 "Amateur Radio" magazine. The Victorian Sunday morning WIA Broadcasts also carried details of the proposal. Notes were sent to other Divisions, and through the agency of Myrna, VK5YW, publicity was given on the VK5 Broadcast.

Ladies were invited to check into two proposed nets, one on VHF and the other on 80 metres, and the first nets, on 146.0 Mhz and 3.650 Mhz, were held on the evening of Monday, 21st July, 1975. Those checking in on 80 metres on this momentous occasion were: Norma Boyle, VK3AYL, acting as control, Myrna Harnie VK5YW, Mavis Stafford VK3KS, Lorraine Earl VK5LH, Heather Pike VK2HD, Linda Luther VK4VV, Joan Poulter YF of VK3RA, Judy Gellert, daughter of VK3ALJ, VK7FB representing Anne his XYL VK7LY, and VK6WL. The name of the YL present at the latter station is not recorded. On the VHF net were Norma VK3AYL, Rhonda de Stefano VK3ZYL, Irene Robinson YF of VK3YER, and Jenny Roper YF of VK3YFF.

An early newsletter.

both gained their call signs in 1933. Madeline at the age of 12 years became the youngest radio amateur in the British Empire at the time.

The first licensed YL in South Australia was Betty VK5YL who was licensed in 1936 and also gained her Commercial Operator's Certificate.

Vicki, a telegrapher during the War, became VK6YL in 1936. Bobby VK6MH and Joy VK7YL were also licensed in 1936. Joy VK7YL welcomed ALARA members to the ALARAMEET held in 2008 in Ulverstone, Tasmania on her 93rd birthday.

After the War years a number of women operators could be heard on the airwaves and more became licensed in the 50s and 60s. Their reasons for entering the hobby were many and varied, from a fascination with electronics to a desire to maintain communication with distant family members. Yet others enjoyed the challenge of contesting, chasing DX or communicating with friends.

Norma recalled a Western Suburbs Radio Club picnic she attended where she met up with another female operator

Rhonda VK3ZYL. They discussed the possibility of forming a group to encourage women to participate in amateur radio.

Together with a small group of interested women operators they contacted all the known licensed YLs in Australia and sent news items to WIA broadcasts, published letters in AR magazine and started nets on 2 metres in Melbourne and also on 80 m.

The first 80 m net was held on 21 July 1975. The response was an overwhelming success, with YLs both licensed and some acting as second operators calling in from Victoria, South Australia, NSW, Queensland and Tasmania.

Myrna VK5YW soon became net controller as her signal could be heard all over Australia. On 26 July, 1975, the first person-to-person meeting was held at an operator's home in Reservoir. Norma VK2YL was elected President and the name LARA – Ladies Amateur Radio Association was decided upon.

A number of publicity events to radio clubs and hamfests as well as other activities were planned. Subsequent meetings in 1975 were held in the WIA Victorian Division Rooms in Fitzroy. It was then decided to make these meetings more informal and incorporate a social activity where male partners could also participate. This was what made LARA different.

Initially LARA was basically a Victorian group with coordinators in the other states. A national group was proposed with nominated office bearers; however, affiliation with the WIA had to occur on a state basis as, at the time, groups could not join the WIA on a federal level.

In June 1978, a motion was made by Mavis VK3BIR to change the group's name to ALARA – Australian Ladies Amateur Radio Association. With this name a national organization was emerging and the first ALARA net took place on 12 June 1978.



Early LARA logo suggestions.

At the final 'in person meeting' held on 3 October 1981, a new constitution was discussed and a committee elected to govern the national body. Geraldine VK2NQ1 flew to Melbourne to be at this historic meeting where she was elected President of ALARA. Meetings were now to be conducted solely on air. The Constitution was agreed upon on the 1982 birthday net where 22 women members reported in. ALARA became officially affiliated with the WIA in 1985 and in 1995 became an incorporated body.

The first LARA newsletter was published in March 1976. Dot VK2DB has been editor for 20 years producing a high quality computerised newsletter. The ALARA Award came into being in 1979. The first certificates were beautifully designed by Heather VK3AZU with Gothic lettering and displaying each State's wildflower. As colour printing was costly, she personally hand painted each award. The award has since been reprinted but is still based on the original design. The ALARA badge symbol finally emerged after the name change with the final shape of Australia with the attached boomerang being agreed upon.

All members are now united by the quarterly newsletter, the Monday night 80 m net, the annual Contest, the ALARA Award, Birthday and other social luncheons and the ALARAMEET. The first MEET was proposed and organized by Marilyn VK3DMS and was held in Mildura in 1984. Since this time ALARAMEETS

Travelling tales

Jenny Wardrop VK5ANW.

From 6 to 21 May 2010, Jenny VK5ANW and Peter VK3RV along with Pam VK3NK and Graeme VK3NE were part of a group of 30 members of the Cinema and Theatre Historical Society (CATHS) who toured the North Island of New Zealand. The group travelled in three mini buses, and all three drivers were licensed amateurs which made for easier co-ordination of the buses! (There were six amateurs in the group).

One of the 'unofficial highlights' of the trip was catching up with Jenny's WARO sponsor, Cathy ZL2ADK and her OM Brian ZL2ADL; also Ngaire ZL2UJT and her OM Graeme ZL2APV. Cathy and Brian have attended several ALARA Meets, including Brisbane, Mildura and Ulverstone and Ngaire also attended the Mildura Meet.


On Wednesday 12 May, all met for dinner in Palmerston North and spent a great, but all too short, evening together. They all hope to meet again in Adelaide in 2012 at the International YL Meet.

In Auckland, Jenny heard Rosemary ZL1RO and Alison ZL1TXQ on the local repeater and had a contact with them. Both have attended ALARA Meets in the past. Afterwards, a quick phone call was made to Celia ZL1ALK as it had not been possible to catch up with her in person.

So what started out as a tour of Cinemas and Theatres, ended with several YL contacts being made and friendships renewed.



Ngaire ZL2UJT, Cathy ZL2ADK, Jenny VK5ANW, Pam VK3NK.



ALARA AWARD

The Australian Ladies' Amateur Radio Association Inc.
is pleased to certify that

Pamela Benner VK4FABB
has submitted satisfactory evidence of having conducted two-way communications with members of ALARA in accordance with the rules of the awards committee.


K. Blaylock VK3XBA
Awards Custodian..


Marilyn Byrne VK3DMS
President


Golden Wattle Australia


Award number N301


Date of Issue: 25 January 2007


 Bluet VK1 Australia Capital Territory


 Warrah VK2 New South Wales


 Pink Heath VK3 Victoria

 Cool Swan Orchid VK4 Queensland

 Sturt's Desert Pea VK5 South Australia

 Kangaroo Paw VK6 Western Australia

 Samaritan Blue Gum VK7 Tasmania

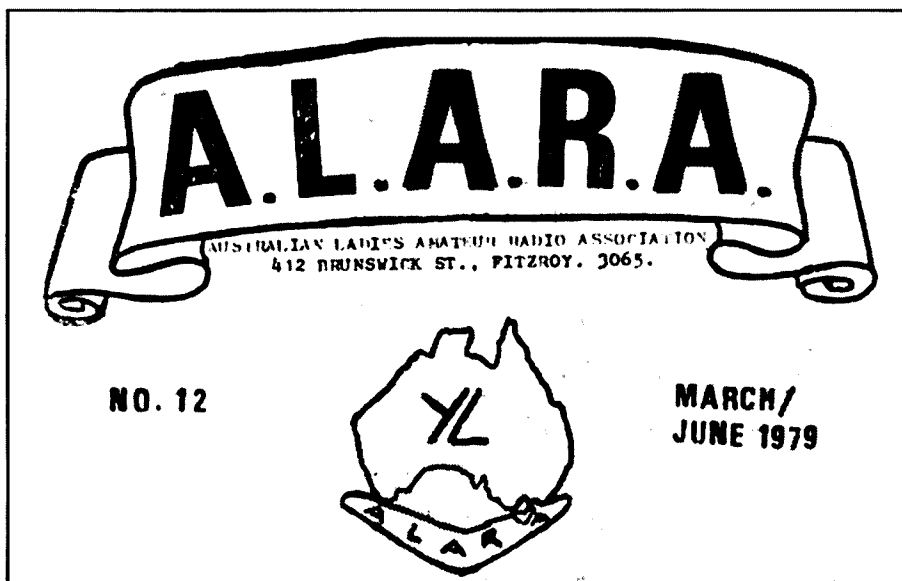
 Sturt's Desert Pea VK8 Northern Territory

have been held every three years across all states of Australia. These are great opportunities for all members to meet including a number of YLs coming from overseas. They also provide for both men and women to participate in events together.

Since its simple beginnings as a club for women interested in participating in radio activities, ALARA has continued to grow. Right from the start LARA was accepted internationally with a number of DX ladies joining. The first official overseas members were Pearl ZL2QY and Dianna G4EZI. International membership has continued to be high and Australia will host the 2012 International YL Meet in South Australia.

From those early days some 35 years ago, when the idea was suggested that more YL participation should be encouraged in amateur radio activities, a sophisticated worldwide organization has emerged. ALARA members are regularly represented at most field days, conventions and hamfests and can be easily recognized by their yellow and black banner. Since the introduction of the Foundation Licence, many women, particularly a number of young girls, are now learning electrical theory, safety skills and communication techniques to gain their amateur radio licences. This not only allows them to enter a wonderful hobby but gives them knowledge which will be useful to them throughout their lives. The future of women in amateur radio seems assured.

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An early newsletter header.

The First State of ALARA

Christine Taylor VK5CTY

There has been a VKnYL in each State almost since the beginning of YL licensees.

Denise held the callsign VK1YL for a short time in the early 1950s but was rarely active except to contact her OM David. She later became VK5YL.

The first serious VK1YL was a Sue who was licensed while at school. Her father had been a radio op during WW II so she had grown up with radio. She held her licence for a number of years and had many contacts. VK1YL was a desirable callsign to have in your log! The licence lapsed when she took up medical studies. She is listed in 1977. Marion, a Canberra scientist, is now VK1YL.

We have only a name for the first VK2YL, as a Miss L N Litchfield, listed in the 1938 Callbook. The callsign is currently held by Norma, who was the first President of ALARA in 1975 when she held the callsign VK3ALY.

The first VK3YL was Austine who gained her licence, listed in 1938. She won awards for her home built equipment in a number of competitions. Austine held her licence for over 40 years and was an early member of ALARA. The current holder of VK3YL is in Sydney.

The first VK4YL was Madeline McKenzie, (see story page 5) who gained her licence as a 12 year old. She won a number of prestigious

awards in the British Empire Radio Union contests before the war. She allowed her licence to lapse when her equipment was confiscated at the beginning of the war and she never resumed the hobby. She was about in 1984. There is a current holder.

There have been three VK5YLs. Betty obtained her licence as an 18-year-old before the war and was later employed as a technician in one of Adelaide's leading electronic stores. She did not take up her amateur licence after the war.

The second VK5YL was Denise, who was for a short time VK1YL when the call was allotted to her while she was in Canberra. After she and her family had spent a couple of years in the US they returned to VK5, the home state of Denise and her OM. Denise held her callsign till she became an SK. The following text is part of the obituary Meg VK5YG wrote for AR:

"Denise the first VK1YL then VK5YL, and an early member of the Australian Ladies' Amateur Radio Association 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 for her hobby. In her pre-licence days she learnt Morse code so that when her husband David VK5RN was overseas, she could receive messages from him."

Denise was an early member of ALARA and helped many aspiring amateurs to pass their CW exams.

The current holder of VK5YL is Shirley, a very enthusiastic amateur and an active member of ALARA.

The first VK6YL was Vicky who got her licence before the war and took it up again after. She was a well-known and respected amateur in her active years. She gave ALARA her encouragement when it began in 1975. The callsign is held by Gill these days. Gill has been active in ALARA but is not so active nowadays.

Like Austine, Betty and Vicky, Joy, the holder of VK7YL, obtained her licence under her maiden name and changed it when she married. Joy was active for a short time before the war and continued to be active afterwards. Joy spoke to the ALARAMEET in Tasmania two years ago by video. She is no longer active but has retained her callsign and her amateur friends.

ar

The WIA held its Centenary Year Annual General Meeting and Convention in Canberra over the weekend of May 28-30. The action packed weekend saw the AGM wrapped up, the first contacts from VK100WIA, an open forum which discussed many matters, an ARISS contact, tours of the Black Mountain Tower, formal dinners, informal conviviality, awards awarded, a life membership endowed, a guided tour of the fabulous property of our Centenary patron Dick Smith VK2DIK and to top it all off, the Army literally dropped out of the sky unexpectedly to add to the excitement.

Annual General Meeting/Open Forum

The statutory Annual General Meeting was attended by 152 WIA members and commenced just after 9 am on Saturday, 29 May, 2010, at Rydges Lakeside Hotel, Canberra.

As is the tradition, one minute of silence was observed for the 97 amateurs who became Silent Keys in the previous year, 55 of whom were WIA members.

Then the Annual Financial Statements, Directors Report and Independent Audit Report for the previous financial year were adopted.

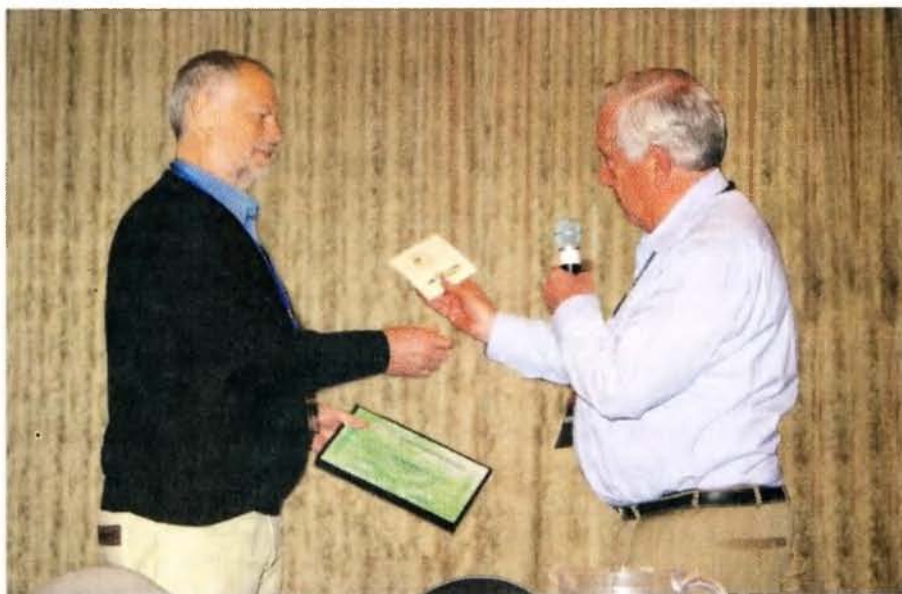
The Chairman, Michael Owen VK3KI announced the previously published result of the call for nominations of Director.

An additional item of business was put by the Chairman, namely the approval of the WIA Board's nomination of Fred Swainston VK3DAC as an Honorary Life Member. The nomination was approved unanimously and the formal meeting was closed.

The Open Forum was then begun and a number of awards were presented (see the separate panel for details of the awards).

Then IARU President Timothy Ellam VE6SH presented a brief report on amateur radio, its challenges globally and in Region 2. Executive Committee Member from IARU Region 1, Panyot Danev LZ1US reported on Region 1, and IARU Region 3 Director Shizuo Endo gave a report on Region 3.

The Open Forum, introduced in 2005, separates the statutory Annual



Fred Swainston VK3DAC (l) receiving congratulations on his Life Membership from WIA President Michel Owen VK3KI.

General Meeting from a much more informal discussion of all aspects of the WIA, based on reports from the many people responsible for different activities, as well as a completely up to date report from the Directors.

An innovation this year was the posting of the book of reports to everyone who had registered to attend the AGM/Open Forum. This was to enable everyone to read the reports in advance, and to avoid the sometimes long presentations that have occurred in the past.

This year the Chairman identified the major point of each report, and any issues raised in the report.

The President's report was supplemented by a report on the action taken by the ACMA to cancel an amateur licence, announced

only the day before the AGM.

That caused quite some discussion, with a number of members questioning why the identity of the radio amateur could not be disclosed. The President explained that as cancellation was an administrative action, not a prosecution in open court, the ACMA believed that the privacy legislation required them not to disclose that information.

Many members spoke briefly on many topics as the reports highlighted the work of those responsible for awards, the bookshop, BPL, club liaison, contests (though, sadly, a number of important contest managers did not submit reports), ITU representation, repeaters, the WIA webmaster, ARISS ARDF, emergency communication, the broadcasts and publications.

Many constructive suggestions were made, and many also acknowledged the contribution of those who had submitted reports.

The afternoon program

The afternoon was devoted to a program examining the history of wireless and the WIA, with a variety of presenters, who had devoted significant time to researching their topics and used a variety of presentation methods.

The program was brought together and introduced by Peter Wolfenden VK3RV.

The Centenary Dinner

In the evening, over 200 people attended the WIA Centenary dinner.

Features of the dinner were the ARISS contact with the students from Trinity Christian School, the address by the Chairman of the ACMA, Chris Chapman, and the talk by Dick Smith VK3DIK (each of these is the subject of a separate story).

During the evening, Takashi Aoki VK3NON, Manager of ICOM Australia made a presentation to Peter Westerhof VK1NPW, the Canberra Region Amateur Radio Club President of a new D-STAR Repeater for Canberra, to be owned by the WIA and operated by the club as a D-STAR club.

Mr Aoki also presented the WIA with a plaque from Tokuzo Inoue JA3FA, the founder of ICOM.

A number of presentations were made. While not directly represented, the Radio Society of Great Britain, through IARU President Tim Ellam VE6SH, presented a magnificent tray. In his letter, RSGB General Manager Peter Kirby G0TWW extended the congratulations of the President Board and members of the Society, and went on to say, "This wonderful achievement would not have been reached without the outstanding commitment of the many thousands of volunteers who have worked tirelessly for the WIA over the past 100 years. They are to be congratulated."

Other gifts were presented by NZART President Roy Symon ZL2KH, Keigo Komuro JA1KAB and Isamu Kobayashi JA0AD on behalf of JARL, Jay Bellows K0QB, International Affairs Vice President on behalf of the ARRL, Gopal Madhavan VU2GMN President of the Amateur Radio Society of India, ARSI, Region 3 Director Professor Joong-Guen. Rhee HL1AQQ on behalf of KARL, Panyot Danev LZ1US Executive Committee Member on behalf of IARU Region 1, the Directors of IARU Region 3 and the IARU represented by President, Timothy Ellam VE6SH.

A number of other societies had sent their best wishes and these appear on the WIA website.

A further presentation was made to the WIA. Marilyn Syme VK3DMS has for many years put together a thematic collection of stamps related to telecommunications, and she presented that collection to the WIA.

Marilyn said the collection, which had won a gold award at a major stamp show, will now be in the care of the WIA for future generations to enjoy.

The WIA President, in accepting the gift, said that it was a very moving gesture, and promised that the collection would be looked after with great care.

It is proposed that an article providing more detail about the collection will appear in a future edition of *Amateur Radio* magazine.



Marilyn VK3DMS.

In his closing comments the WIA President Michael VK3KI said that the theme that had emerged for him from the history of wireless in this country is that the reasons for the existence of the WIA today are as relevant as 100 years ago, although from being the voice of the experimenter, it has become the voice of the amateur service.

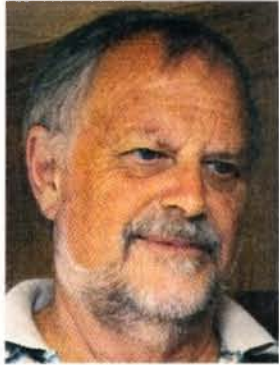


Takashi Aoki, Icom; Robert Hare, Icom; Michael Owen VK3KI and Peter Westerhof VK1NPW.

Awards announced at WIA AGM & Open Forum

New Honorary Life Member

Since 2005 Fred Swainston VK3DAC has made an enormous and enduring contribution through the development and roll out of the new assessment based system enabling individuals to qualify for amateur certificates of proficiency and licences.



At the WIA's AGM on 29 May, WIA President Michael Owen VK3KI announced that the Board would nominate Fred VK3DAC as an Honorary Life Member.

Fred had acted as the WIA's Registered Training Organisation, the WIA's examination system that includes training of assessors for the required nationally recognised qualification and accreditation.

Michael VK3KI said the Board recognised the extent of this voluntary contribution and his independence that gave the system credibility. The nomination was approved unanimously and with applause.

A humble and surprised Fred VK3DAC spoke briefly after being presented his Life Membership certificate and badge.

G A Taylor Medallion

The G A Taylor Medallion was awarded to Ron Fisher VK3OM in recognition of a half a century of voluntary service to the Wireless Institute of Australia mainly associated with the WIA journal *Amateur Radio* magazine.

The Medallion is conferred by the Board irregularly and rarely, in acknowledgment of exceptional voluntary service to the WIA.



Ron Fisher VK3OM left, receiving the GA Taylor medallion from David Wardlaw VK3ADW. Ron was not able to be present at the WIA AGM and David agreed to pass on the medallion on behalf of the WIA.

The first of Ron's dozens of articles appeared in the September 1955 issue of the magazine. Three more of his contributions were published before he joined the *Amateur Radio* Publications Committee in 1960.

From then, until his resignation in 2009, he remained a member of the Publications Committee, an unbroken service to the WIA's magazine of nearly 50 years, considerably more than anyone else.

Rarely missing an issue, Ron wrote the 'Commercial Kinks' column for *Amateur Radio* from 1972 through to 1981. He also wrote innumerable comprehensive 'Equipment Reviews' from 1973 until 2010. He wrote many other columns and articles.

Ron worked one day a week as a volunteer in the Federal Office from 1988 to 1996, including keying-in an index of *Amateur Radio* from 1968 to 1996.

Ron was the technician and co-presenter, in conjunction with Bill Roper VK3BR, of the 'Federal Tapes' segment of Federal WIA news which appeared in the WIA Divisions' weekly broadcasts for 17 years from 1972 until 1989.

Chris Jones Award

WIA President Michael Owen VK3KI announced that the Board had decided to present the Chris Jones Award to Robert Broomhead VK3DN.

The Chris Jones Award is inscribed "The Chris Jones Award honours the memory of a man who was dedicated to the advancement of amateur radio and whose unflinching commitment and vision led to a new Wireless Institute of Australia ... It is awarded to radio amateurs who have made an exceptional contribution to amateur radio and



Robert Broomhead VK3DN being presented with the Chris Jones Award by WIA President Michael Owen VK3KI.

the Wireless Institute of Australia."

Robert VK3DN had served as a WIA director from November 2004 until December 2009, and was responsible for the new corporate look of the Institute through printed materials and the website. He also managed the WIA AGM Member Open Forum weekends since Parkes in 2007.

The announcement was greeted with applause.

In presenting Robert with the Award, the President said that he knew that the award would have a special meaning for Robert, as he had much to do with Chris Jones VK2ZDD-SK.

Other important awards

The Higginbotham Award

presented to Peter Wolfenden VK3RV, in recognition of his outstanding contribution to amateur radio and the WIA in developing a history of wireless in Australia for publication in the WIA Centenary year.

Saturday Afternoon

The Saturday afternoon program took an historical bent as befits a Centenary convention.

Peter Wolfenden VK3RV, the organiser, set the scene. Deane Blackman VK3TX looked at 1914, Peter Freeman VK3PF charted VHF, UHF & Microwave bands in Australia, and Phil Wait VK2ASD (centre photo)



The Ron Wilkinson Achievement Award

went to Adam Maurer VK4CP for the development of the VK Logger, an interactive online forum that covers general topics, band specific discussion for HF, VHF, UHF and Microwave, special modes and propagation observations.

Publications Committee awards

The "Amateur Radio" Technical Award

for the best technical article published in *Amateur Radio* in 2009 was presented to Dale Hughes VK1DSH for his article "A phasing type transceiver for 144 MHz, parts 1 and 2" published in August and September 2009.

The Al Shawsmith Award

for the best non-technical article published in *Amateur Radio* in 2009 was awarded to Rex Moncur VK7MO and Justin Giles-Clark VK7TW for

highlighted some radio amateurs who have changed history.

Drew Diamond VK3XU examined experimental methods in home construction, and Tony Hutchison VK5ZAI discussed amateur radio & manned space flight, then and now.

Norma Boyle VK2YL outlined the early years of ALARA - Ladies in amateur radio (see earlier article).



their article "Echoes of Apollo – EME on three milliwatts" published in August 2009.

President's Commendations

Fishers Ghost Amateur Radio Club in recognition of its contribution to amateur radio by its participation in the 22nd Australian Scout Jamboree in Sydney 2010.

Karl Hennig VK6XW for his contribution of many years as WIA Intruder Watch Coordinator and as an International Monitoring System Observer.

John Kirk VK4TJ for his contribution as an International Monitoring System Observer for many years.

Ham College in Perth for its service in providing teaching and assessment facilities for amateur radio in Western Australia.

Dennis Muldownie VK6KAD for providing rebroadcasts of the WIA News and compiling and presenting news from Western Australia. **ar**

Then Graham Kemp VK4BB passionately (left photo) postulated that radio 'Always has been – Always will be, The Cat's Whisker'

Peter Wolfenden VK3RV screened some historical amateur radio films.

Justin Giles-Clark VK7TW (right photo) returned the group to the present by speaking on modern communication technologies. **ar**



ACMA praises WIA on its Centenary

Australian Communications and Media Authority Chairman Chris Chapman has given strong recognition to the 100 years of service provided by the Wireless Institute of Australia to the amateur radio community.

Speaking at the WIA Centenary Dinner, Mr Chapman commented that it was not often anyone gets to talk at a centenary celebration, let alone one covering almost the entire history of the use of the radio frequency spectrum in Australia.

Adding a personal element, he spoke with pride that his great grandfather, Sir Austin Chapman, a member of Australia's first government in 1901, was the Postmaster General 1905-07.

Mr Chapman said, "From its fledgling origins 100 years ago, where a few inquisitive and talented individuals experimented with the transmission of wireless signals over a few hundred yards ... amateur radio has truly spread its spectrum wings and has been at the cutting edge."

"An amateur with an Advanced Licence is authorised to access approximately 23 GHz of spectrum across 24 separate spectrum bands, ranging from 136 kHz up to 250 GHz, some of which I understand might be presently difficult and expensive, if not even impossible.

"Nevertheless this degree of access probably arises from a worldwide long-standing acceptance that the amateur community may be relied on, to not only use the spectrum responsibly, but also be involved in the development of new ways to use the spectrum," he said.

"It is really pleasing to note that the amateur use of the spectrum is just not confined to serious development projects and the investigation of technical issues, there seems to be some fun too, foxhunts, direction finding contests and the like."

He acknowledged that there was a wide variety of amateur radio activities including the transmitting

of television signals, bouncing signals off the moon and communication with those travelling in space.

A self-confessed non-technical person, Mr Chapman commented, "a hundred years ago much of the equipment used was necessarily built by the experimenters themselves."

"Now, looking at some of the photographs on the WIA website and the recent editions of *Amateur Radio* touching on much of the WIA's 100 year history, some of it looked downright dangerous."

While many of today's radio amateurs still build their own equipment, equally very sophisticated and safe equipment is readily available.

He referred to "an ongoing transformation program" for the ACMA which aims to have the radio administration in Australia be more "flexible, agile and adaptive so as to effectively address a communications environment of constant change".

"The ACMA had a role in helping maintain the nation's economic competitiveness, truly making communications, including amateur communications, work in Australia's public and national interest."

Mr Chapman said, "Making amateur communications work well, involves having a good working relationship with its stakeholders; in the case of the amateurs, mostly through excellent representation by the WIA."

He referred to the changes made at the World Radiocommunication Conference in 2003 that included an end to the mandatory Morse code requirement for amateur licences, and the Australian Communications Authority's review of the amateur service regulation. That was followed by a new amateur certification and licensing arrangement.

Mr Chapman said, "The success of those new arrangements is a testimony to the significant ongoing contribution of the WIA."

"Initially this contribution included

the shaping of the nature of the new entry level Foundation Licence, developing syllabi for the three qualification levels, and providing input to the extensive revision of the legislative instruments that regulate amateur operation."

"In an on-going sense, the WIA's professional approach to its activities has consolidated the gains made by the introduction of the new licensing arrangements."

In addition to the WIA's long held roles of training and examination of candidates, under a ground-breaking Deed of Agreement with the ACMA, the WIA now manages the issue of amateur certificates of proficiency, and the issue of callsigns, on behalf of the ACMA.

There are 15,000 amateurs authorised in Australia, he noted, adding "And that this number is steadily increasing, is I suspect mostly due to the indefatigable efforts of the WIA." Mr Chapman said, "I also know that the WIA activities don't stop there."



Australian Communications and Media Authority Chairman, Chris Chapman.

Through its magazine *Amateur Radio*, its regular broadcasts and information, and its affiliated clubs, "the WIA continues to encourage interest in the pleasures and sciences of radio communications".

"Now all this just does not happen. It takes an enormous effort by large groups of people. Volunteers in clubs across the country who run training courses and conduct the examinations, volunteers who put the broadcasts together and contribute to the magazine, and volunteers who, through JOTA, assist scouts and guides to experience the wonder of amateur radio."

"Additionally I know many amateurs provide communications' expertise to the community in times of emergency, through WICEN".

"Grassroot Australians, one to the other - reflective of the finest manifestations of the concept of 'citizen'," said the ACMA Chairman to the WIA Centenary dinner attended by 200 people including international guests representing the IARU and overseas national radio societies.

Mr Chapman said, "As the voice of amateur radio in Australia, the WIA's contribution does not stop with making representations to the ACMA. The WIA also represents Australian amateurs to the International Amateur Radio Union, and joins with the ACMA to make representation on the international stage. In particular at the World Radio-communications Conferences".

"So, that is, I have to say, quite some CV [curriculum vitae] the WIA has built up."

The ACMA Chairman was one of a

number of ACMA representatives attending the dinner. "On behalf of my colleagues within the ACMA, let me extend our congratulations to the WIA on its achievements over the past 100 years of service to the amateur community in Australia."

"The ACMA looks forward to working with the WIA to make amateur radio in Australia all it can be," said Mr Chapman.

In conclusion, he said the ACMA will watch with interest as the amateur community heeds the recently published caution by the WIA President Michael Owen VK3KI, who stated that the internet could not be treated as a competitor to amateur radio, but can be part of it. **ar**

Jim Linton VK3PC

A look right inside Black Mountain tower

A highlight of the WIA Centenary Convention was a special 'behind the Scenes' tour of the communications tower built 30 years ago that stands 195.2 m above the 812 m summit of Black Mountain, Canberra.

The striking landmark in the nation's capital has 430,000 visitors per year. On Friday 28 May a rare opportunity to have a guided tour of its inner workings was part of the WIA's weekend program.

The 150 WIA members and partners were broken into four groups

to explore the non-public areas of the tower with the assistance of expert and knowledgeable Telstra guides.

The tours began with a short film of the construction of what was quite an engineering achievement for its time.

Introducing each viewing, Robert Broomhead VK3DN made particular note that the Telstra Tower was celebrating its 30th anniversary in the same month as the WIA Centenary celebrations, adding to the significance of the tour.

The tower has a number of levels dedicated to television and radio broadcasting, two-way radio services, mobile phone communications, paging, microwave and fibre-optic communications.

The powerful broadcast transmitters had distinctive 'plumbing'; large copper tubing that formed coaxial

feedlines to carry signals from each transmitter into combining and filtering hardware to feed the tower's antennas.

The tower is a node in the inter-capital broadband network. Its importance includes the capacity to carry up to five simultaneous interstate television relays as well as national regional relays from Sydney and Melbourne, and originating signals from Canberra.

It has a public observation desk affording a 360 degree panoramic view of Canberra's skyline and the surrounding area. After the tour it was off to the tower's five star Alto Tower Restaurant, Canberra's only revolving restaurant, that rotates at a rate of once every 83 minutes.

At night, external LED flood lighting has it changing colours.

The WIA thanks Telstra, managing agents Raine and Horne and engineers Paul Elliot and Charlie Syms for making the tours possible.



ar Telstra's Paul Elliot describes a feature of the tower's coverage.

Tower photo courtesy Wikimedia Foundation.

A true blue character - the WIA Centenary Patron

Dick Smith VK2DIK

Jim Linton VK3PC

Making a unique contribution to the WIA Centenary celebrations was Dick Smith VK2DIK, aviator, adventurer and entrepreneur. In a speech at the WIA Centenary Dinner, he enthralled the audience while giving an insight into his life and exploits.

Born Richard Harold Smith in 1944 in the Sydney suburb of Roseville, early exposure to amateur radio resulted in it being an integral part of his being.

He lived opposite his grandfather, Harold Cazneau a famous pictorial photographer, where Dick's Uncle, Harold Cazneau (Jnr) lived before being killed at 21 at Tobruk, in 1941.

Dick explained that about ten years after Uncle Harold's death he was permitted to occasionally explore his uncle's old radio room, which inspired him to later build a crystal set at the age of eight or nine.

Being unable to afford headphones he recalled using a dynamic microphone instead and heard bagpipes. Dick's parents doubted it, but the reception was confirmed by his sister Barbara.

As a young boy with a speech impediment, the other students would laugh at him, leading to an inferiority complex, and he left school at 15 but shortly returned to get his Leaving Certificate.

A crucial career move in 1962 was to join Weston Radio, a company selling and installing two-way radio sets in taxis and the like. Later he heard workmates talking about a new radio on the market involving Findlay Communications, owned by Maurie Findlay, a former Weston Radio employee but now a competitor.

Dick knew of Findlay through his writings in *Radio and Hobbies* magazine; Findlay had been the author of the design of that very first crystal set built by the young Smith. As a 17-year old he telephoned Findlay, talked himself into a job and the pair became lifelong friends.

Another key mentor was Tony Balthasar VK2IH (SK), a shareholder in Findlay Communications, an avid radio amateur and Rover Scout adviser at the 1st East Roseville troop of which Dick was a member.

At the age of 22 he returned from an overseas holiday and went back to Weston Radio as a salesman. Upon learning that the company would no longer repair radios for Manly cabs, Dick saw the chance to get into that business.

Borrowing \$6,000 from Tony Balthasar he started Dick Smith Electronics, selling and repairing two-way and car radios. The business at Gore Hill thrived for three years.

Dick reckoned he could do better at customer service than Sydney component wholesalers George Brown and began selling components. He set up at 10 Atchison Street, St Leonards in 1972, two doors from the WIA New South Wales Division headquarters.

Dick and his wife Pip were puzzled by the unexpected departure of staff and found that \$50,000 in stock was missing. A salutatory and costly business experience.

While winding up the enterprise, including selling at the counter, he realised that there was money to be made out of components if it was done better. That led to the introduction of self-serve selling.

Dick told of his first Dick Smith Electronics catalogue that went on sale for 50c, and turned a bigger profit than selling electronics. Then he opened the first self-serve electronics centre.

"I would go to open the door on Saturday morning and lined up there would be 50 to 60 people waiting to



get in," said Dick. The company then rode the CB radio boom.

Travelling to Hong Kong and Japan he initially imported Icom radios and then had a long association with Yaesu selling its products and setting up the Dick Smith Electronics amateur radio department.

Dick found that having no money for advertising was just another challenge, and came up with zany publicity ideas.

The first was a petrol powered pogo stick he saw in *Popular Mechanics*. He rang a newspaper and said, "I'm going to import 20,000 so housewives could use them to do their shopping at the supermarket on my pogo stick."

Dick then planned to tow an iceberg from Antarctica. "I originally thought I was going to tow a real iceberg up from Antarctica, cut it up into ice-cubes ... sell them for 10c each and make a million dollars an iceberg."

Those ice-cubes would be so much better than those made from Sydney water. Not at all feasible: yet the media kept asking when it was going to happen.

So in 1978, in one of the top April Fool's Day jokes of all time, he towed a giant fake iceberg into Sydney harbour, with Dick's 160 employees phoning radio stations and the *Sydney Morning Herald* en masse from 5 am to report seeing what looked like an iceberg.

Dick said, "The publicity was enormous and it cost (only) \$1,200. The business expanded, we ended up with 50 shops, 500 staff— and I didn't like it anymore and wanted to go adventuring."

Dick Smith Electronics was sold to Woolworths, whose directors asked how Dick was going to celebrate the sale of his company. He responded he was going to jump a double-decker bus over 16 motorbikes.

There was silence and their jaws dropped in disbelief, they probably thought he was going to kill himself. The sale announcement was delayed until after the 'dangerous' stunt, that

had Dick as a conductor on the bus driven by adventurer Hans Tholstrup.

"It was going so fast I could not jump up before it reached the launch ramp. It was such a fantastic ride until it hit the ground," said Dick of the jump.

That was Dick's humorous jibe at dare-devil Evel Knievel who had visited Australia in 1979 and jumped his motorcycle over 16 buses.

In concluding his speech, Dick said he was honoured to be involved with the Wireless Institute of Australia, a wonderful organisation, 100 years old.

"I don't get on air very often. But in each of my aircraft (9) I have synthesised radio transceivers and occasionally come up on 14.146 MHz."

Dick generously made available his Bowlyie Flying Club at Gundaroo for the WIA Centenary BBQ on Sunday 30 May (see separate story).

In 1983 Smith published a book *The*

Earth Beneath Me which described his around-the-world helicopter flight. At the end of the speech an audience member asked: "What's your next adventure?" Dick dismissed it, saying he was too old for such things.

Although not mentioned, it was on the solo helicopter trip that Dick decided he would be a philanthropist supporting worthy causes.

Dick is currently taking a lead in the debate about our nation's population growth, saying he is concerned that government has it headed for 36 million people by 2050, without a plan to show how it could be sustainable.

The WIA Centenary Patron: He founded Dick Smith Electronics, the Australian Geographic and Dick Smith Foods. He was the 1986 Australian of the Year, named as an Australian Living Treasure in 1997 and made an Officer of the Order of Australia in 1999 for service to the aviation industry. **ar**

Sundee arvo barbie at Dick and Pip's Place

Jim Linton VK3PC

The final day of the WIA Centenary Convention, Sunday 30 May at Dick Smith's Bowlyie Flying Club located at Gundaroo (north of Canberra) promised to be something special. It far exceeded the expectations of most, including our international guests.

Not only did it provide plenty to see, explore and learn, but the hosts Dick and Pip Smith gave of themselves in the style of traditional country friendliness you would expect from Aussies.

The Bowlyie Flying Club is a privately owned aviation museum that contains carefully restored aviation-related memorabilia and display of historic radio equipment. A dream turned into reality for Dick Smith.

Not an actual flying club but a re-creation of what it could have been like back in the 1930s. Period furniture, replica tobacco smoke stains on the ceiling, aircraft design carpet, a bar and behind it a four bed dormitory for pilots needing a rest.

An interesting radio room is set up like that of his Uncle Harold, a radio enthusiast who was killed in World War II. It contains old equipment, books and a display of radio valves that once was a feature piece of a Sydney repair shop.

Next to that is an old workshop and hangar that contains a restored Westland Widgeon - only two of these aircraft dating back to the late 1920s remain, with the other held in a

museum. Also in the hangar making its presence loudly obvious is a German street organ that plays marching tunes using a pianola-type paper roll, all adding to the atmosphere.

Dick clearly has a fascination with early Australian aviators and immortalises many of them with the Bowlyie Flying Club President's board of honour.

Concludes on page 56 and



The Bowlyie Flying Club, pilots lounge, bar and radio room at front, hangar at back. The main landing strip runs away to the right in the foreground.

NASA and ISS crew send centenary greetings

Jim Linton VK3PC



Astronaut Tracy Caldwell-Dyson KF5DBF (right) spoke from space to the WIA Centenary Dinner, just prior to receiving questions from ten students from the Trinity Christian School.

Tracy KF5DBF, the Flight Engineer on her first mission said, "On behalf of the International Space Station crew and NASA, I extend our warm congratulations to the Wireless Institute of Australia on reaching 100 years."

"The WIA began in 1910 at a time when we could not communicate around the world using radio. About a decade later radio amateurs had developed worldwide radio communications."

The room was silent as the Year 12 students stood in readiness for their part in the first Amateur Radio on the International Space Station (ARISS) program school contact in the ACT.

The contact used a telebridge ON4ISS in Belgium (operator Philippe Van Houte, ON5PV). ARISS Asia-Pacific Coordinator, Tony Hutchison VK5ZAI, was at the controls in Canberra.

It was heard by the 200 people at the dinner including international guests, ACMA Chairman Chris Chapman, and Dick Smith VK2DIK.

Tracy KF5DBF concluded her speech by noting, "Among the many other contributions of radio amateurs over the years includes space communications. The first amateur satellite was launched in 1961 just four years after Sputnik 1."

"There are advanced and ambitious plans by AMSAT to send amateur satellites into the orbits of Venus and Mars. All very interesting indeed."

The student session then began; William Shaw, asked: "When you are in space, are you 'above' the law? If a legal issue arose which nation's law would apply?" Tracy did not foresee that there would be a legal problem on the space station and added that there were controls.

Another student, Elizabeth Shen, asked

about living in space with zero gravity, its effects on the body and whether there were changes to the normal blood pressure and pulse rate.

Tracy's response was that the crew are constantly monitored, and there are effects, rehabilitation on return to earth can take up to three months.

In other questions by students, the topics of sleeping in an environment with 16 sunrises and sunsets a day, space walking – Tracy was to have that experience soon – and the potential for collision with solid matter in space were addressed.

After the ARISS contact Elizabeth Shen and William Shaw said they were both extremely impressed by the efforts made by astronauts to qualify and fly in space, giving them encouragement to strive in their chosen careers.

Elizabeth, aged 17, added: "The opportunity to speak to someone on the space station was one of the best experiences in my life." William, aged 18, said "It was really cool to be able to talk to someone who is in a completely different situation – with the zero gravity and whatnot".

Trinity Christian School Principal, Carl Palmer VK2TP/VK1TP was justifiably very proud of his students. WIA President Michael Owen VK3KI presented each with a participation certificate. WIA Centenary Patron Dick Smith VK2DIK joined the group.

All were very impressed with the way the young people conducted themselves. The ARISS contact made the news on Canberra radio stations and a detailed story appeared in the *Sunday Canberra Times*. **ar**



Fresh from speaking through space, courtesy of amateur radio to a 'notable' person, the students from Trinity get to mingle with another notable.

Meanwhile, not in the convention room

An XYL's report on the WIA Centenary Anniversary celebrations

Marilyn Williams VK2JJW (XYL)

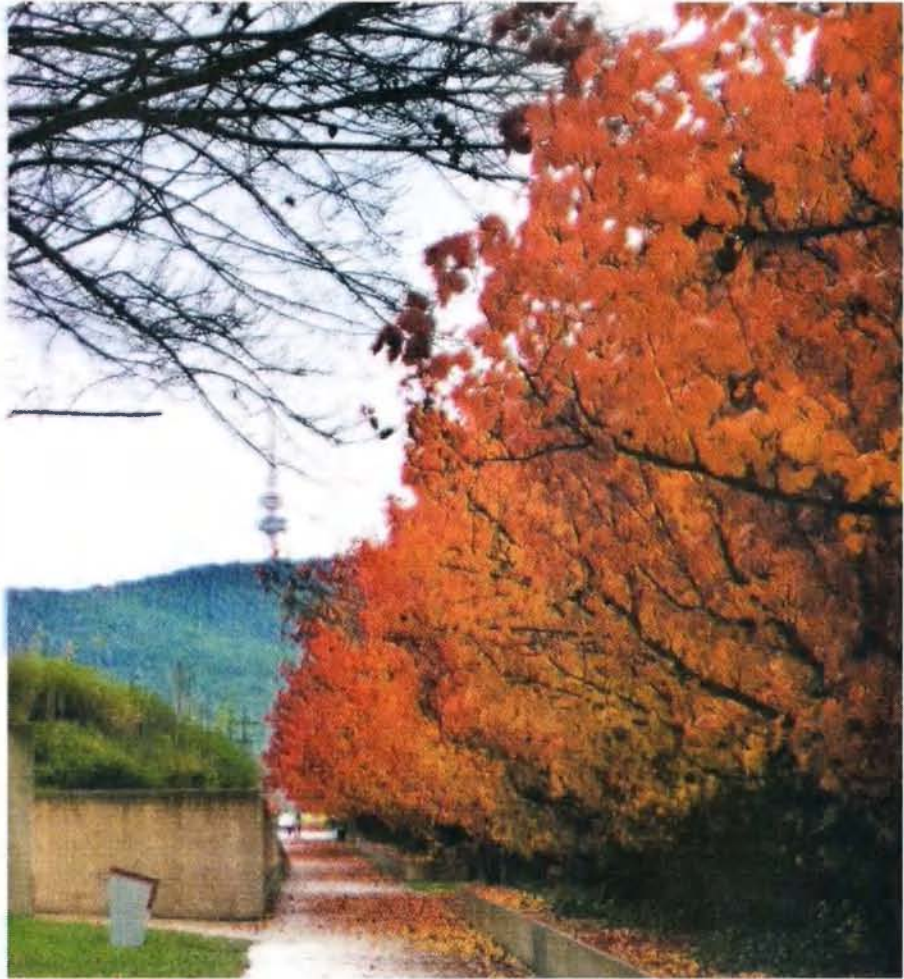
A drizzly grey morning greeted us on Saturday 29 May as a group of 41 departed the Lakeside Hotel, Canberra for the XYL and Partners Day tour. It had taken the 100th Anniversary celebrations of the WIA, members from all over Australia and guests from New Zealand, Korea, Japan and the USA to bring rain.

Our outdoor corridors of power were resplendent with autumn colour, particularly the rows of Manchurian Pear trees lining Lake Burley Griffin. Just one species in the 50 million trees that have been planted on the treeless plain that has become our national capital.

Our tour leader, a native of Canberra, regaled us with history and stories that brought life and purpose to what is often described as a city without soul. We wiped the misty glass to peer through the rain splattered windows and view the points of interest.

The fog on Mt Ainslie cleared enough for us to clamber out and take a photo or two. As the rain began again there was no sign of bluebells, daisies

Parliament House from the steps of the War memorial.



Manchurian Pear trees with the Telstra Tower in the background.



or reptiles. With the sugar gliders and ring tailed possums tucked away in the hollows of the scribbly gums we went on to the Australian War Memorial.

We were given just one hour in this iconic and important building and so, under instruction, we headed into the enormous Anzac Hall at the rear of the complex, arriving just in time for the 10 am screening of 'G for George'. This remarkable addition places the visitor at the centre of a 1943 aerial night raid over Berlin with the Lancaster bomber at the forefront and a fighter plane with it in its sight. Lights, anti-aircraft fire, backed by a huge concave screen showing sepia film of men engaged in aerial combat.

About five minutes later, on the floor below, I grabbed a stool for a front row position to watch 'Over the front: The Great War in the air' produced by old plane buff and world famous director Peter Jackson - I'm told in exchange for some aeroplane parts. Using a combination of old and re-created footage the display clearly demonstrates the craziness of air fighting, the youth of the participants and the scariness of war.

I found a new exhibition for the current war in Afghanistan. With a nephew stationed there it's hard to ignore. The paintings looked like photos! A very different war.

So much to see, so little time but one other realistic display worthy of mention - and I don't know how I found it - is the helicopter landing in the jungles of Vietnam. They were so young, so brave in an unpopular war.

Back on the bus we were taken past the CBD retail centre, Captain Cook Memorial Fountain (the jet is currently limited to two hours a day), Magna Carta Place, the Mint, the High Court, Old Parliament House, the Treasury, a number of Embassies and High Commissions including the American Embassy where Barack Obama will stay in June and the Greek Embassy with its unkempt gardens (the gardeners were sacked).

At the National Art Gallery I had never seen the Portrait Gallery so I headed over there first. It has approximately 400 portraits of people who have shaped our nation. Having recently moved to Lake Macquarie, I

was intrigued to see Robert Menzies painted by William Dobell, who had lived and worked 'just down the road'. The portrait that particularly caught my eye was Bill Leak's *Don Bradman*. But with time running short I was determined to get a photo of the Manchurian Pear Trees and the call to achieve that far exceeded the special Hans Heysen exhibition at the National Art Gallery. And I was so glad I did. They were magnificent.

Lunch was at the Botanic Garden Cafe and oh how I would have loved a fine day to wander its paths. The entrance across the bridge allowed a real rainforest experience with a pair of brightly coloured parrots feeding in the gully of tree ferns and stone paths and stairways inviting you down. Although service at the cafe was prompt, there was just ten minutes of our one hour stop to enjoy some of the 99,000 plants.

But the seat of Government beckoned and on a day devoid of politicians, public servants and press, we were able freely to roam some of the 4000 odd rooms, view some of the 2700 clocks, walk some of the 20 kilometres of walkways. There's parts of the Buckingham Palace Gates destroyed during the Blitz, one of the four Magna Carta's (1297 Charter) in the World, fantastic portraits of past Prime Ministers and paintings of the opening of Parliament House from the Tom Roberts to the more recent 1988 opening of new Parliament House with Queen Elizabeth II presiding. And didn't we have fun identifying the attendees! After a guided tour of the two Houses we returned to the bus feeling fully indoctrinated.

Our final stop of the now rapidly darkening day was at the Canberra Yacht Club on Lotus Bay. The fully enclosed cruise boat was warm, with large windows allowing us to view the Capital from yet another perspective. As we passed various landmarks the Captain's information reiterated and confirmed that of the bus driver.

Over eight hours had transpired since we had left the WIA members and their day of meetings and activities. Meticulous planning meant that the participants emerged at precisely the same time as the bus pulled up in front of the Lakeside Hotel.

ar

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Into the second half of the year – where did the first half go?

This month the Waverley ARS have their annual auction on Saturday the 10th at the Rose Bay club rooms in Vickery Ave. On Sunday 25 July the Albury Wodonga ARC will conduct the Riverina Field Day. In August the Blue Mountains ARC will be holding Winterfest on Sunday 22. The BMARC has a net on 3543 kHz at 2000 hours Tuesday. HADARC have an exam session planned for the end of this month Best contact via the web site www.hadarc.org.au

In 2011 the next Central Coast ARC Field Day will be on Sunday 27 February. The club has been able to freeze the entry fee for the past 12 years, an increase will be considered for next year. The racecourse will have a new point of entry next year and a paved car park. If you have any ideas to contribute please contact the club requests Ray VK2HAY.

For the rest 2010 the ARNSW Trash & Treasure events are on the last Sunday of odd months: 25 July, 26 September and 28 November. A mini field day is planned for November.

NSW WICEN this month will be busy with the Bushwalkers' Wilderness Rescue Service's Nav Shield on the 3 and 4 July; the Blue Range Rally

in the ACT on the 10 July; the Eden Creek Horse Enduro on 10-11 July; the Southern Mountains Rally on 31 July. Check out their web site www.nsw.wicen.org.au or send an email to operations@nsw.wicen.org.au or telephone 0408 397 217.

The Blue Mountains ARC held their AGM in May. The committee for this year has Gunter VK2JAP as President and Carl VK2HRC as Vice President. Richard VK2WAY is Secretary and John VK2VJA is Treasurer and Committee Alf VK2YAC, Kevin VK2ERP and Felicity VK2GRR. Other positions are Tony VK2HO with repeaters, Historian and Education with Daniel VK2DC; HF Net with Dennis VK2RM and the Web with Andrew VK2XPT. They still seek a Publicity Officer. The Club thanked Tim VK2XTT for his four years as President. The Club meets at 18 Simeon Road, Orchard Hills on the first Friday evening. This is the site of the Winterfest field day in August.

ARNSW have announced their committee for this year. President and education is Terry VK2UX, Senior Vice President Mathew VK2YAP with NTAC and Broadcast Officer and Junior Vice President Beth VK2AO with newsletter production. Norm VK2TOP is Secretary and Membership and Treasurer is Brian VK2WBK. Mark VK2XOF has Trash & Treasure,

Deceased Estates and is VK2WI station engineer. Tim VK2ZTM has Publicity and Dural property. Peter VK2PJZ coordinates web operation and Michael VK2YC is a committee member.

ARNSW can provide licence assessments on the bi-monthly Trash & Treasure days at the Dural site. Enquiries to the office phone 02 9651 1490. Postal ARNSW P. O. Box 6044 Dural Delivery Centre NSW 2158.

In support of the Radioactive Amateur Radio Award for Scouts, Fishers Ghost Amateur Radio Club advises it will be on hand at Cataract Scout Park on 10/11 July to assist licensed Scouts to aim for this Award.

If any licensed Scout or Scout Group has not made arrangements to book into Cataract Scout Park for this weekend and licensed Scouts or Leaders wish to avail themselves of the assistance of FGARC, then please notify Wal Kelly at vk2zwk@wia.org.au or by telephoning 02 4626 8423 by Thursday evening 8 July, so security arrangements can be made.

FGARC will run Foundation licence classes in August to help Scouts/ Leaders get Foundation licences or upgrade in time for JOTA in October.

73 Tim VK2ZTM.

ar

VK3news

Lifting the lid on ARV's time-capsule Jim Linton VK3PC

The Victorian time-capsule created during the WIA-75 celebrations in 1985 was opened in the Wireless Institute of Australia's centenary year.

WIA President Michael Owen VK3KI (pictured right) did the honours after Amateur Radio Victoria President, Jim Linton VK3PC explained how WIA members were invited to contribute to the time-capsule.

Items of memorabilia and many personal letters, some autobiographic in nature, plus photos, were submitted by members in 1985.

The time-capsule enclosure was a Yaesu transceiver cardboard packing

box and marked "Bail Electronics", the Australian agent for that brand at the time. For the past quarter of a century it served its purpose well in protecting the contents.

At the Amateur Radio Victoria AGM on 19 May, those attending gathered in anticipation as Michael VK3KI lifted the lid to reveal a trove of printed material and sealed envelopes from WIA members including those who are now silent keys.

Jim VK3PC said he and relatively new radio amateur Tony Hambling VK3VTH



Jim Linton VK3PC and WIA President Michael Owen examining the contents of the time capsule 25 years on.

will carefully examine each item in the time-capsule and compile an inventory that will be published. ar

Paul Beales VK4XPB

Email: qtc@wia.org.au

BARC's new repeater, RADAR's new home, CHARC's famous AGM

Due to Chris VK4VKR wanting to devote more time to personal and business activities, he has allowed a new face to present QTC. Welcome aboard Paul.

Bundaberg Amateur Radio Club

The Bundaberg Amateur Radio Club has commissioned a new Repeater (VK4RBR, 439.775) at Mt Watalgan, 43 km NNW of Bundaberg.

Also known as Double Sloping Hummock, it is situated in the Littabella National Park with an elevation of approximately 400 m.

Early signal reports have been favourable from as far south as Childers and the Club is hoping for good coverage to the north.

Equipment consists of an Icom IC-FR600 Repeater and Arcom RC210 Controller with an RFI Col12 6 dB omnidirectional antenna mounted near the top of an existing tower owned by a Club member.

Linking is planned to join up with the Club's other facilities at Mt. Goonanamen and Bundaberg City, which it is hoped will cover the increased size of the Club's WICEN commitment following Council amalgamations.

The Bundaberg Regional Council, recognizing the work of the local WICEN, assisted with funding towards the Project via a Community Grant.

For the opening there was an afternoon tea party on the Mountain attended by the Mayor, Cr Lorraine Pyefinch, several Councillors and around 20 Club Members who wasted no time convincing all present that the money was well spent. There may have also been some 'ear bending' on the great deeds of the Club and WICEN.



(l-r) Rusty VK4JM, Repeater (VK4RBR, 439.775) and Cr Lorraine Pyefinch.

RADAR - The Village Report

A measure of a club's success is attendance at meetings. Still, high numbers should not allow complacency, especially in amateur radio clubs at this time.

Invariably the majority of current members of radio clubs, consist of the purists from the 'homebrew' days and 'reformed' CBers from the 70s. Consequently, it is common to find members' average age in the high 50s or more.

As a result, Rockhampton and District Amateur Radio Club (RADAR) with usually about 40 at monthly meetings, decided to look for ways to recruit new and younger members, also acknowledging the use of the Foundation class entry, while promoting the hobby.

As previously reported in AR, RADAR was offered use of a building at Rockhampton Regional Council's Heritage Village as an operating base and highly visible public display facility specialising in vintage radio equipment.

The Rockhampton Heritage Village conducts, amongst other activities, monthly markets, numerous visits from schools and other associations and display days. It hosts approximately 48,000 visitors every year.

Since September 2009, under the management of Jeff Brett VK4NJB, the RADAR Club has transformed their site from what was basically a dusty storage area, remote from the public, to a fully working radio display centre, complete with air-conditioned, fully operating radio shack, available as an interactive unit for the public (under instruction) and for use by club members for broadcasting and contest.

The callsign VK4CHV (Capricorn Heritage Village) has been specifically allocated for the site.

The club acknowledges input from a large number of members, particularly Mike Buchanan VK4LMB, Doug Kraatz VK4DUG, Ray Dobinson VK4HOT and Bob Copeland VK4HRC. Mike, who has spent many hours on site, has probably surprised himself with the standard of construction he is capable of producing; a great job.

While the heritage theme is paramount and many valve rigs and other "pre-transistor" equipment are on display, other



A view of the inside of the shed, all nicely coming together.

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- | | | |
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Jeff VK4NJB shows visiting teachers the displays.

installations include several wire and vertical antennas and plans are in line for a larger tower, with beam. After all, Yagi-Uda arrays have been around since 1926.

The public, school and other groups have visited the display and attended Heritage Village events already but RADAR's official opening is on 25 July, coinciding with the Emergency Services Open Day at the Village site.

RADAR's HF ops on the day will centre on 7.080 MHz and 14.210 MHz and local VHF repeater frequency, 146.700 MHz.

The club will be displaying a portable field station, indicating the ability of amateur operators to provide support in emergency situations.

We are hoping to hear as many contacts as possible on the day to promote interest in our hobby. Please note it in your diary and give us a call.

Les Unwin VK4VIL, Publicity Coordinator, RADAR

CHARC

The famous Central Highlands Amateur Radio Club AGM will be held at the picturesque Camp Fairbairn near Emerald. The AGM is so popular, it runs from 1600 Friday 17 to midday Sunday 19 September, only interrupted by social gatherings, sausage sizzles, drinks, monster auction with mystery prizes. Not forgetting Gavin's big breakfast.

More details available from Gordon, vk4kal@wia.org.au

Gladstone Amateur Radio Club VK4RGA

A small but hardy band of members attended the Club's Amy's Peak Site at the Kroombit Tops National Park on the weekend of May 28-29. Reports of sighting a Snowman have proven false, although overnight temperatures were somewhat daunting for the intrepid crew.

A post wet-season clean up and weed control as well as some maintenance to the tower guy points was carried out.

VK4RGA is the primary regional site for the coastal Capricorn area with 2 m (146.900 also linked to VK4RBU Bundaberg), 6 m (53.725) and APRS.

Unfortunately, the Club's IRLP Node (438.075) suffered terminal failure late last year. Much effort has been put into its restoration with disappointing results.

New equipment is being sourced and, hopefully we will hear it back on air soon.

Thanks to Mark, VK4XMC.

That is it for this month. 73 de VK4XPB.

The WIA Centenary Committee Call for Articles



Historical material relating to the WIA and general communications history in Australia has been received by the Centenary Committee which thanks the following:

- Tom VK4ABA for a DVD and documents relating to Queensland Pioneers of Radio and Television, 1920 – 1940. Much relates to Tom Elliott and Dr. Val. McDowell (4CM) and their television experiments and broadcasts.
- Christopher VK2EJ has sent a scan of his grandfather's Experimental Receiving Licence for a crystal receiver. It was issued by Jim Malone and dated 1923.
- Margaret, XYL of John VK2HY, forwarded a recent clipping from the *Engadine District News* relating to the first Military Wireless communication from Heathcote's

Veno Reserve, NSW on 28th March 1910. Lieutenant George Taylor, founder of the WIA, organised the wireless telegraphy demonstration which also involved, Walter Hannam and Edward Kirkby.

- Neil VK6NE has forwarded material relating to activities in WA including a 1925 Amateur Operator's Certificate of Proficiency in Radio-Telegraphy for Walter Coxon 6AG, a leading light in radio in Perth.

Thank you to all who have forwarded cuttings, magazines and other material to the institute during this year. It will all contribute to preserving the history of our hobby and radio generally in Australia. The committee also welcomes articles on the future of amateur radio.

ar

A limited issue operating award is available to celebrate the 100th year of the Wireless Institute of Australia (WIA), the world's oldest national radio society.

To qualify for an award contact is required with the Centenary of Organised Amateur Radio in Australia special event station VK100WIA. A distinctive QSL will be available.

The WIA, through its affiliated radio clubs, will operate this unique call sign from 1 May to 31 October 2010. The call sign was used in Canberra, at the WIA Annual General Meeting and associated events on 28-30 May.

It will be on all amateur bands available to VK radio amateurs including the popular HF bands.

The award rules are: Those radio amateurs outside Australia need to

WIA Centenary Award

achieve 50 points while VK hams require 100 points.

A contact with VK100WIA operated by the WIA or a Club is worth 10 points (only one contact with VK100WIA operated by the WIA and only one contact with each Club) and there must be a minimum of two contacts with VK100WIA.

Contacting any WIA member between 1st May 2010 and 31 October 2010 is worth five points (Example: working VK100WIA at 10 different Clubs would be eligible for the award. Working 16 WIA members gives 80 points but then two contacts must be made with VK100WIA).

Any mode may be used; cross-mode and cross-band contacts are permitted. Satellites and repeater



contacts are permitted. Send AU\$5 or 3 IRCs and a list of contacts (QSLs not required) to the Awards Manager WIA Centenary Award, PO Box 2042, BAYSWATER VIC 3153 AUSTRALIA.

Listen around the bands or visit the WIA website www.wia.org.au for frequent updates of the operator club's roster.

ar

WAVERLEY AMATEUR RADIO SOCIETY

Auction of Radio and Electronic Equipment. Saturday, 10th July 2010

at

The Scout Hall, Vickery Avenue, ROSE BAY, NSW 2029

All are welcome to attend this annual event to buy or sell. Entry is only \$2 and there is plenty of free parking nearby. The club is adjacent to Lyne Park and Sydney Harbour. Doors open at 8:30 am and the auction commences at 10:30. Full details, including pictures of some of the items to be sold, can be found on the club's web site at www.vk2bv.org.

Contact: SIMON VK2UA. Email: vk2bv-info@vk2bv.org



RAS Show preparation, *Morsecodeans*, repeater news, WICEN rallysport, ILLW and NCRG Hamfest

Conditions on HF have been pretty poor but, and it is a big but, at last I have had a response with input from other WA groups and clubs!

RAS Show September—call for support

The appeal for support for a combined display at this year's Perth Royal Show was answered by several groups and the event has been tied in with the allocation of the WIA 100 year centenary call sign activity. The VK100WIA call sign is currently allocated as follows:

WARG: Sun 26, Mon 27, Tue 28
September and VHF Group: Wed 29,
Thu 30 September, Fri 1 October.

The plan is to have a link between the Perth Showgrounds and Wireless Hill where they will have transceivers operating remotely for the full six days. The Royal Agricultural Society (RAS) has granted access to the rooftop of the main building to put up any antennas/equipment.

RAS are very supportive of our presence to educate the public on amateur radio in this the centenary year. Wireless Hill will be celebrating its 100th Anniversary in 2012 so this will be a lead-up event and supported by the Wireless Hill 100 Year Committee and Melville Council.

Display ideas will involve presentations/activities at both the Showgrounds and Wireless Hill. Please consider ideas which could be suitable, that is, displays/activities for this event, and the possibility of offering equipment and/or time that week. It is also planned to have WICEN and Scouts/Jota involved.

There is a tremendous problem with RF interference in the showgrounds as was found out by the WIA many years ago so hopefully the link to Wireless Hill will reduce that possible problem. The above information came from Heath VK6TWO who is co-ordinating the event.

Also at the Royal Show there will be the *Morsecodeans Society of WA*. For several years now they have participated with a fully operational telegraph system.

They average 300 telegrams a day each day of the show and for a gold coin donation they will send a telegraph message by CW, while you watch. The message is 'read' and then mailed to anyone you request. I'm sure many of us remember the Best Man reading out the greetings telegrams at our weddings! This is a remarkable achievement on their part considering the average age of members is well over 75 years.

The NCRG is working in collaboration with the *Morsecodeans Society* on an exciting new project, so watch this space for future developments!

New 'group' interchange

Heath has brought to my attention a new Google group for Western Australian amateurs. The WAHAMS group can be found at <http://groups.google.com.au/group/wahams> All clubs/ groups are encouraged to input their information and activities to the site where I will be able to pick it up and include it in the column each month. Thanks Heath.

HARG

The Hills Amateur Radio Group are planning to install a digipeater at their clubrooms in Lesmurdie. With an altitude of about 260 metres ASL the new digipeater will enhance coverage around the Perth Hills and south eastern suburbs.

A number of members already have APRS equipment with many more planning to start experimenting. The group also plans to interface a weather station into the system. VK6AHR-3 should be on air shortly.

HARG will be using the WIA centenary call sign VK100WIA over the weekend 31 July to 1 August. You will find them on the 80, 40, 20, 15 and

10 metre bands where they hope to work you. Thanks to Martin VK6ZMS for that information.

Southern Electronics Group

The next input came from Rob VK6LD on behalf of the Southern Electronics Group.

"Hello all, a site visit was made today (Saturday, 1 May, 2010) to the Mt Barker repeater site for a working bee to replace the 2 metre voice repeater antenna damaged in storms in February, and other maintenance jobs. Attendees were Kerry VK6NHI, Bevan VK6BL, Bevan VK6BCW and Rob VK6LD.

"Bevan VK6BCW climbed the 45.5 metre tower and spent several hours aloft to replace the dual band colinear antenna, tidy up the cables and remove some redundant antennas. He was supported by the ground crew (NHI, BL and LD) who also worked on the coax feeders in the hut and checked the APRS gear over with test equipment.

"From tests so far, the voice repeater coverage is now noticeably improved. There is further work to do to the APRS system in the near future. Thanks to Bevan, Kerry and Bevan for all the work today! Any further coverage reports will be much appreciated."

That's good news Rob, it's a popular repeater with travellers on their way to Albany and the south.

WARG

The WA Repeater Group has also sent an update to their activities. WARG has made some significant upgrades to the Tic Hill repeater site with a number of working bees taking place. Next to go in is some anti-vandal remote access cameras and WiFi equipment, as well as some new antenna work.

Cateby repeater site is scheduled for a substantial overhaul with new batteries, DC distribution panel, solar panels, regulators, guy-wires, repeaters, and WIA news-link radios. All WARG repeater sites will be

working towards standardisation of interfacing, repeaters and controllers.

WA WICEN

WA WICEN has been very active in providing support to the local WA car rallies, providing SOS (Safety On Stage) communications for each of the events.

Per minute, each vehicle progressing through each stage is tracked using 'ripple calls' to ensure that any 'problems' on the track are addressed ASAP. Most months see a rally event of some kind so manning assistance is always greatly appreciated.

Anyone interested in taking part in WICEN activities should contact Jim VK6JP at jimmaree@people.net.au to attend our monthly general meeting. It's good to see WICEN with a full diary of events in which to participate.

ILLW, Rottnest and Guilderton

An upcoming event is the Annual Lighthouse on the Air contest.

The Lighthouse weekend is on 21/22 August and there is talk about activating Rottnest Island for either the IOTA or Lighthouse weekend. IOTA can be specified to RSGB for approval. IOTA info at www.rsgbiota.org/ and Lighthouse Weekend at <http://illw.net>

It is expected that we will do a recon to assess accommodation and location, with the idea of leasing a unit or two for the weekend. Any amateurs interested in the activation should contact Heath VK6TWO at vk3two@gmail.com.

ILLW will also see the activation of Guilderton Lighthouse at the Moore River mouth, north of Yanchep. Keep an ear out.

Northern Corridor Radio Group

Sunday 1 August will see the annual Northern Corridor Radio Group Hamfest take place at the usual location, the Cyril Jackson Recreational Centre in Ashfield. It will start at 9.00 am and there will be the usual traders with a few new additions promised this year. Yaesu, Icom, Terlin/Outbacker and others will be represented and there are already some very attractive prizes to be won in the raffle.

This is Western Australia's premier event on the amateur radio calendar so don't miss out! The usual high standard of food will be on offer in the canteen during the day with the delightful XYLs serving it up for you.

This year Jacques VK6KDX will be organising a serious Homebrew contest so we would appreciate a good input from the WA amateur fraternity and we promise there will be an excellent prize available for the winner on the day.

So get building, it doesn't have to be a transmitter or receiver, it can be an antenna, ATU, or anything else that is radio related. A feature display is planned and hopefully it will provide amusement to all visitors.

The usual Bring and Buy stall will be run by the NCRG. This seems to be diminishing in popularity over the years. Bear in mind, we only charge a small fee to handle the sale for you and it's a lot easier than having a table just for one or two items.

Tables won't cost you a cent, but every person manning the tables will have to pay the \$5 admission fee. Even NCRG members have to pay! Table bookings are essential and further information is available at the NCRG website, which has changed, due to targeting by some malicious person, to <http://ncrg.info>

The Hamfest Co-ordinator is Richard VK6BEC and his contact email is ncrg_hamfest@hotmail.com. We hope to see you all there and to meet new and old friends on the day. Please say hello to me, I'm the idiot on the microphone annoying you all day about buying raffle tickets and visiting the food department!

That's about it for this month, thanks to the various groups for their input and please keep it coming as it makes writing this column a lot easier!

The photo input was a bit lacking this month so can I remind you all that any picture for inclusion needs to be at least two megapixel quality. Hopefully there will be some black marks on the sun to keep us all interested over the next month.

73 all from Keith VK6RK

ar

OTYletters

ACMA Frequency Audit Table

Sir, Unless I missed an announcement in AR, I would have thought that some enthusiasm might have prevailed or obvious subsequent to a read of the ACMA Frequency Audit Table dated March 2010: i.e. the possibility of a secondary allocation in the amateur service in the 415 - 526.5 kHz section of the spectrum.

Appendix D to the 5 year spectrum outlook 2010 to 2014 is a demand analysis and indicative work program for the next five years. The WRC-11 Agenda item 1.23 will consider a secondary allocation in part of the band. I would have thought that there might be some definitive comment from the management either supporting or rejecting the proposal, but like I said, I may have missed it. Maybe the President could address the issue?

The same document from ACMA in referring to the 45 - 52 MHz section as a result of desertion by analogue television, suggests that the band may be available for non broadcasting applications. This may be a contradiction though as the comment goes on to suggest that the introduction of digital broadcasting is a possibility. I do not see any reference to a WRC agenda item relating to specific use so perhaps the situation is so fluid that the amateur service may yet get a handle on the jug.

Regards Sincerely, Pete D Williams VK3IZ

SilentKey

Bob Milne VK3FO

Robertson Charles C. Milne came to Ham Radio through the Disabled Radio Amateurs Club, VK3ZZ and eventually became club president. He had been a driver of trains including the legendary R Class steam locomotives. An injury had intermittently confined Bob to a wheelchair and the condition persisted throughout his life.

Undaunted he studied and became VK3EL and later VK3FO. Operating from St Leonards in later years he was an enthusiastic DX and CW operator on HF and on VHF 2 metres. Bob drove with hand controls for some years and also experimented with hydrogen induction and various modifications. He traveled overseas a number of times, wheelchair notwithstanding. He was a regular on Skype and other computer modes. Bob passed away Thursday April 29, at age 73 after a short illness leaving Imelda, his extended family and his pet dogs.

Submitted by Ray VK3EL and Ted VK3XT

VK7news

Justin Giles-Clark VK7TW

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

Congratulations to Thomas Karpiniec VK7NML and Andrew Welch VK7AL for making the University of Tasmania Dean's Roll of Honour for 2009.

Targa Tasmania has come and gone. A big thank you to all involved including Aaron Sweeney, Damien Almond, Andrew Cooper, Nathan Oddie, Keith Rhodes, Garry Rusden, Steve Barrett and VK7s MGW, FROO, TPE, HGO, ZLM, ZRO, ARN, DG, JGD and ZCR (apologies to anyone I have missed). This year the only non-Targa channels used were Forestry channels at Rosebery and Mt. Arrowsmith on the West Coast.

Northern Tasmania Amateur Radio Club

NTARC's May meeting saw a large audience for Phil VK7JJ's presentation on digital transmission modes.

Thanks also to Greg VK7YAD for being the remote responding station for the digital mode link demo. Thanks also to the many CCARC members who made the trip.

Peter VK7KPC also demonstrated mobile PSK31, thanks Peter. Congratulations to John VK7XX who has built up a DXCC tally of 247 countries with 168 confirmed and all via LOTW and eQSL confirmation.

Cradle Coast Amateur Radio Club (CCARC)

The well-attended CCARC May 29 meeting was an antenna construction session resulting in a 2 m end fed dipole for portable or base use. Thanks to David VK7DC and Bill VK7MX for their help. Details are on the project page of the website: <http://www.my-x15.net/ccarc/projects.html>

North West Tasmanian Amateur TeleVision Group

Tony VK7AX reports a 100% renewal rate of club membership with membership currently standing at 35 for 2010. Tony also thanks Jim VK7JH for conducting the WIA National News and Regional News Relays in Ulverstone over May 2010.

WICEN Tasmania (South)

On May 21-22 members of WICEN South and WICEN groups from CCARC and NTARC gathered at St Helens to provide checkpoint communications for 40, 80 and 160 km equine endurance rides.

The course of 12 checkpoints took between 18 and 23 hours to complete. Roger VK7ARN reported minus 3.9 degrees overnight! Thanks to all involved: http://tas.wicen.org.au/Photo_pages/sthelens1005.html

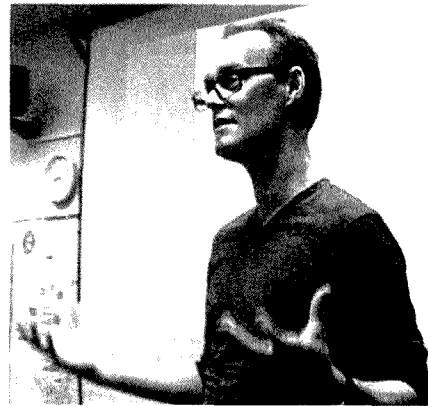
Radio and Electronics Association of Southern Tasmania

Congratulations and welcome to Roger Cripps VK7FRJB who recently passed his Foundation licence assessment. We look forward to hearing Roger on the air shortly.

Warren VK7FEET/VK0 sends greetings from sub-Antarctic Macquarie Island where he is assisting with the pest eradication program. Warren has made contact with Denis ZL4DB and is hoping to operate from the island if conditions and equipment permit.

The 5 May REAST presentation was the screening of the 1997 VK0IR Heard Island DXpedition Presentation by James Brookes 9V1YC and saw a great roll-up in the afternoon and evening sessions. This has led to subsequent screenings of the 1983 DXpedition to Heard Island at ATV Nights. Our ATV presentations are extending with the use of a 1250 MHz outside broadcast "OB" being beamed back into the ATV studio for mixing and re-transmission. Thanks to Patrick, now VK7FPJB, who has configured our studio PC for titling and video streaming.

Our June 2 presentation continued with the Antarctic theme and was given by Dr Graham Denyer VK7JN who is currently working at the Australian Antarctic Division as one of a team of Division Doctors. Graham wintered at Davis base in 2005/06 as the Doctor and had many medical and radio tales to tell. Thanks Graham.



Dr Graham Denyer VK7JN spoke on Antarctic medicine and amateur radio.

Ted Carter VK7EC – SK

Edwin Gilbert Carter was born in Victoria on 3 December, 1927. His father moved the family to Launceston to set up a dental practice. Ted's later studies included chemistry; this led to a career path in nursing which he pursued for many years. In 1954 Ted married June, also a nurse, later nurse educator.

Ted's love for radio started with building his first crystal set at age nine. While married he was licensed as a radio amateur and became a very proficient CW operator. So far as I know, he never used a microphone!

During his early years of operation Ted and June used to sometimes host meetings of the, then, Northern Zone of WIA Tasmanian Division (now NTARC) at their home at Legana.

Ted became a lecturer in chemistry at the northern campus of the University of Tasmania, until his official retirement in 1982, but continued on a part-time basis for another five years.

In 1995 they moved to Trevallyn where he found short wave performance to be inferior to his previous abode so restricted his radio interests to short wave listening. During this time they spent every winter in VK4. Ted always took his SWL gear with him. He regularly sent reports to overseas broadcasters.

Following the death of their daughter Shirley-Ann in 2002, Ted's health fell into decline and he spent his last few months in a nursing home fighting a courageous battle with cancer until 15 January, 2010. He is survived by his June. Vale Ted, a truly silent key.

Submitted by Peter Dowde VK7PD.

National Field Day
Saturday 23 October 2010



National Field Day

On Saturday 23 October 2010, amateur radio enthusiasts from all over Australia will be showcasing amateur radio in prominent locations throughout their local area.

This activity, new to Australia, will be a good opportunity to break out your field day equipment, demonstrate emergency preparedness, but most importantly engage the public.

Introduce the general public to amateur radio, let them know a little of what it is about, without too much technical jargon. Our public face will be on display, as well as our professionalism. The common appearance of Club, WIA or special National Field Day branded clothing all helps with the presentation.

The event is not a traditional contest, with isolated groups of operators sitting on remote hilltops. We wish to generate as much positive public exposure (and traffic on the bands) as possible.

For young people, sound and visual activity is important. IRLP, EchoLink, Slow Scan TV, ATV, will appeal to the younger audience. HF may be interesting, but watch the noise. Radio direction finding is very popular, if you have the room.

Over the next 10 years, most of the Baby Boomers will officially retire. They will be looking for new hobbies and challenging activities to keep their minds active. Add the following generation, Gen Xs who are now facing empty nests with a few spare dollars and a spare room at home. What an opportunity.

Frequencies

Recommended Calling Frequencies will be advised and will accord with current WIA Band plans.

Modes

Clubs are invited to demonstrate technologies including SSB, Morse code, various digital techniques (D-STAR, SSTV, RTTY, PSK31 and WinLink), IRLP, APRS EchoLink and even amateur radio satellite.

Please email your enquiries or expression of interest to

nfd@wia.org.au

73 de Paul VK5PH, Fred VK3DAC,
Gerard VK5ZQ.

ar

The Field Day is part educational event, part operating event, part public relations event – and ALL about FUN!

Are you and your club up to the Challenge?

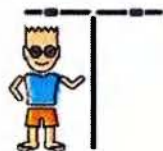


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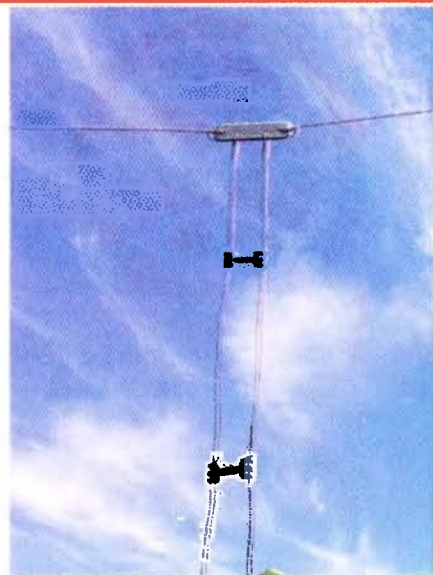
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Six-monthly review of operational OSCARs

Here is an updated review of the operational OSCARs and other satellites using amateur satellite service bands. All satellites listed here have been heard during April-May 2010 by myself except for NO-44, SO-67 and RS-22. Reports of NO-44 have been made on DK3WN's satellite blog page and SO-67 has not had its transponder turned on during this time.

Satellites revised since the last review in January: AO-7, FO-29, GO-32, AO-51, HO-68, RS-15, RS-22 CASTOR, and Swisscube. Satellite added is NEGAI.

A failed satellite since last review is Ugatusat. Also POLLUX and Dragonsat re-entered during March 2010.

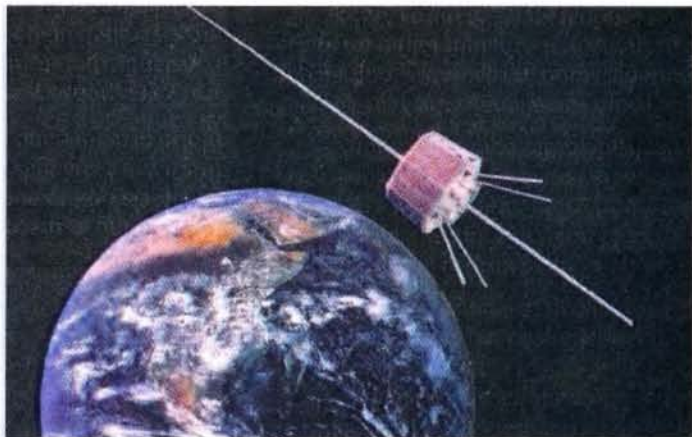
The names of the satellites are given as OSCAR number, full name and (NASA catalogue number). Modes are represented by frequency bands: A=10 m, V=2 m, U=70 cm, L=23 cm, S=13 cm in order of uplink/downlink.

Linear transponders use CW and SSB. With the exception of AO-7's V/A transponder, all linear transponders are 'inverting' types and use LSB for the uplink and USB on the downlink. For AO-7 mode V/A, use USB for both links. Most of the activity is in the middle of the passband.

Foundation licensees are permitted to transmit SSB/CW and FM voice to any of the satellites in the 10 m, 2 m and 70 cm bands as well as receive all the satellites. Foundation licensees are not permitted to use 23 cm uplinks (e.g. AO-51 and

CO-67) or AO-51's 13 cm downlink (e.g. mode V/S). See the AMSAT column in September 2009 AR for more details.

Telemetry decoding programs for several satellites are available from Mike Rupprecht's website at <http://www.dk3wn.info/software.shtml>



Oscar 7 in space circa 1984 (impression courtesy Stray Internet Images)



AMSAT Co-ordinator

Paul Paradigm VK2TXT
email coordinator@amsat-vk.org

Group Moderator

Judy Williams VK2TJU
email secretary@amsat-vk.org

Website

www.amsat-vk.org

Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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, 91.5 Hz CTCSS tone access

In South Australia

VK5TRM, Loxton on 147.125 MHz

VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124

VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

AO-7 AMSAT OSCAR 7 (7530)

Launched: 15/11/1974

Status: Operational only when it is in sunlight. It may be in any mode. During non-eclipse periods it will alternate between modes V/A and U/V every 24 hours. Beacons are not always on. AO-7 had an eclipse period during June. Usually it resets to mode U/V when it comes out of the Earth's shadow.

Mode: V/A (old mode 'A'), linear, non-inverting.

Uplink: 145.850-145.950 MHz, Downlink: 29.400-29.500 MHz

Beacon: 29.502 MHz CW. Occasionally the 435.106 MHz CW or RTTY beacon may be on.

Mode: U/V (old mode 'B'), linear, inverting.

Uplink: 432.125-432.175 MHz, Downlink: 145.975-145.925 MHz

Beacon: 145.972 MHz CW at 10 or 20 wpm, intermittent operation.

Check the online log for current status at <http://www.planetemily.com/ao7/main.php>

UO-11 UOSAT-2 (14781)

Launched: 1/3/1984

Status: Intermittent. UO-11's 145.826 MHz beacon came back to life late 2009 after being silent for 18 months and will only work when in full sunlight. You may hear its distinctive signal while monitoring the frequency for other satellites such as ISS, NO-44 and CASTOR.

Beacon: 145.826 MHz FM 1k2 AFSK

<http://www.g3cw.co.uk/oscar11.htm>

IO-26 ITAMSAT (22826)

Launched: 26/09/1993

Status: Semi-operational. IO-26 is in Master Boot Loader (MBL) mode. It transmits continuous BPSK carrier with the occasional telemetry packet.

Mode: -U 1k2 BPSK

Beacon: 435.790 MHz (Note: this has shifted from the original published frequency)

<http://www.amsat.dk/oz7sat/tlm/view.php?sat=io26>

FO-29 FUJI-OSCAR 29 JAS-2 (24278)

Launched: 17/8/1996

Status: Semi-operational as linear transponder.

Most activity is around 435.850 MHz. The BBS and digipeater have not been in use since 2003. FO-29 is back in operation after a period of long eclipses.

Mode: V/U linear, inverting.

Uplink: 145.900-146.000 MHz, Downlink: 435.900-435.800 MHz

Beacon: 435.795 MHz CW telemetry.

<http://www.ne.jp/asahi/hamradio/je9pel/index.htm>



GO-32 Gurwin TechSat-1B (25397)

Launched: 10/7/1998

Status: Intermittent. Since the on-board computer crash on 30/3/2009, GO-32 has been sending intermittent telemetry. GO-32 has often been operating in 'emergency mode' with a 1k2 signal on 435.325 MHz.

Mode: V/U for APRS, 9k6 FSK

Uplink: 145.930 MHz, Downlink: 435.225 MHz

Mode: V/U for PacSat BBS, 9k6 FSK

Uplinks: 145.850 MHz, 145.890 MHz, 145.930 MHz, Downlink: 435.225 MHz

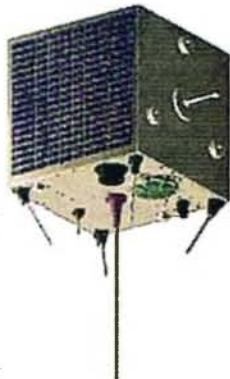
Mode L/U for PacSat BBS 9k6 FSK

Uplinks: 1269.700 MHz, 1269.800 MHz, 1269.900 MHz, Downlink: 435.225 MHz

BBS callsign: 4XTECH-12

Beacon callsign: 4XTECH-11

<http://www.amsat.org/amsat-new/satellites/satInfo.php?satID=14&retURL=/satellites/status.php>



NO-44 PCSAT (26931)

Launched: 30/9/2001

Status: Operational only in full sunlight. One solar panel and the batteries are not functioning.

Mode: V/V 1k2 AFSK packet digipeater

Uplink: 145.827 MHz, Downlink 145.827 MHz

<http://pcsat.aprs.org>

SO-50 SAUDISAT-1C (27607)

Launched: 20/12/2002

Status: Operational. SO-50 has a sensitive receiver and a transmit power of only 250mW.

Mode: V/U FM voice with 67 Hz CTCSS tone

Uplink: 145.850 MHz, Downlink 436.795 MHz (but may switch to 436.800MHz).

To switch the transmitter on you need to send a few seconds of 74.4 Hz CTCSS tone. 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 a 67 Hz CTCSS tone to access the transponder.

3) Sending the 74.4 Hz tone again within the 10 minute window will reset the timer.

AO-51 AMSAT-OSCAR-51 ECHO (28375)

Launched: 29/6/2004

Status:

Operational

Mode: AO-51 is a versatile satellite that can be configured to operate in many modes, often two at a time.

It can use FM and SSB voice, 9k6 and 38k4 FSK packet as a BBS or digipeater. It has 3 transmitters (two on 70 cm and one on 13 cm), four 2 m receivers and a wideband receiver that has been used on 10 m and 23 cm. Other common frequencies used are 2 m uplink on 145.880 MHz and the S-band downlink on 2401.200 MHz. Recent testing has been made to re-introduce the 67 Hz CTCSS tone for FM voice uplinks. AO-51 will be back in full sunlight at the end of August. The control team have asked to refrain from using AO-51 when it is not in sunlight.

The control team issues a monthly bulletin on modes and frequencies AO-51 will be using.

Default voice mode: V/U FM voice

Uplink: 145.920 MHz 67Hz CTCSS may be needed, Downlink 435.300 MHz

Default digital mode: L/U 9k6 FSK

Uplink: 1268.700 MHz, Downlink: 435.150 MHz

Beacon: 435.150 MHz 9k6 FSK

<http://www.amsat.org/amsat-new/echo/CTNews.php>



VO-52 HAMSAT (28650)

Launched: 5/5/2005

Status:

Operational.

VO-52 has two linear transponders that use nearly the same passbands. The Indian transponder is normally in use. Most activity is around 145.900 MHz.

Mode: U/V linear inverting.

Indian transponder:

Uplink: 435.220-435.280 MHz, Downlink 145.930-145.870 MHz

Beacon: 145.936 MHz continuous carrier

Dutch transponder:

Uplink: 435.225-435.275 MHz, Downlink 145.925-145.875 MHz

Beacon: 145.860 MHz CW 12 wpm preset



message

<http://www.amsat.in/hamsat.htm>

Note: FM operation on VO-52 is permitted for QRP/handheld. In India, SSB gear is not very common and the operations team have suggested that FM operators can use this bird. If you are planning to work FM, please use another part of the passband e.g. 145.920 MHz. It would be best to arrange a sked in advance, as VO-52 is rarely used in FM mode over VK/ZL. Excessive uplink power will cause the beacon to FM.

The following are mainly Cubesats. Reception reports are often well received and can result in a QSL card for your efforts. See websites for details.

CO-55 CUTE-1 (27844)

Launched: 30/6/2003

Status: Operational. From the first cubesat launch CO-55 continues to send CW telemetry.

Mode: -U CW telemetry

Beacon: 436.8375 MHz

http://lss.mes.titech.ac.jp/ssp/cubesat/index_e.html

CO-57 Xi-IV (27848)

Launched: 30/6/2003

Status: Operational. From the first cubesat launch, CO-57 continues to send CW telemetry. It also has an on-board camera. Pictures of the Earth can be found on the website below.

Mode: -U CW telemetry

Beacon: 436.8475 MHz

<http://www.space.t.u-tokyo.ac.jp/gs/en/index.aspx>

CO-58 Xi-V (28895)

Launched: 27/10/2005

Status: Operational. CO-58 has an on-board camera. Pictures of the Earth can be found on the website below.

Mode: -U CW telemetry

Beacon: 437.465 MHz

<http://www.space.t.u-tokyo.ac.jp/gs/en/index.aspx>

DO-64 Delfi-C3 (32789)

Launched: 28/4/2008

Status: Semi-operational. The linear transponder has failed. The control team switched DO-64 back to science mode on 29/1/2009. Often by the time it has reached VK/ZL the transmitter has stopped, so it will be heard here occasionally. If they change it to basic mode then the telemetry will be heard over VK/ZL on most passes. The telemetry can be demodulated and decoded using software from the Delfi website.

Mode: -V 1k2 BPSK telemetry

Beacon: 145.870 MHz (primary) or 145.930 MHz (secondary)

<http://www.delfic3.nl/index.php>

CO-65 CUTE-1.7+APDII (32785)

Launched: 28/4/2008

Status: Operational. The CW beacon is

on. The mode L/U APRS digipeater has been activated during weekends using 9k6 GMSK modulation. Reports from Japanese operators have proven the digipeater works. Unproto via JQ1YTC.

Mode: -U 437.275 MHz CW telemetry.

Mode: L/U 9k6 GMSK

Uplink 1267.603 MHz, Downlink 437.475 MHz

http://lss.mes.titech.ac.jp/ssp/cute1.7/index_e.html

CO-66 SEEDS II (32791)

Launched: 28/4/2008

Status: Operational. CO-66 is a cubesat that transmits CW telemetry, packet telemetry and a pre-recorded message of voice and SSTV. Sometimes all three can be heard during a pass over VK/ZL as it changes modes. At 450 mW output, CO-66 has the strongest signal of the cubesats.

Mode: -U CW telemetry, 1k2 AFSK packet and FM DigitaLker/SSTV

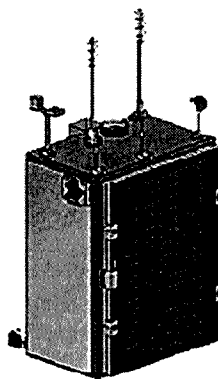
Beacon: 437.385 MHz

http://cubesat.aero.cst.nihon-u.ac.jp/english/main_e.html

SO-67 SumbandilaSat (35870)

Launched: 17/9/2009

Status: Operational but transponder times are set by command stations. SO-67 will not be available for every pass. Its high powered transmitter



(5 watts) is easily heard. There is a 3 second tail after each transmission, so pause before transmitting to the satellite. Keep your overs brief as there is also a cut-out timer. For best results set your radio to narrow FM or turn down the mic gain if your transmitter allows.

Mode: V/U FM voice

Uplink: 145.875 MHz with 233.6Hz CTCSS, Downlink 435.345 MHz

Beacon: 435.345 MHz FM recorded message <http://sumbandilamission.blogspot.com>

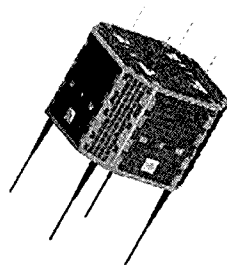
HO-68 XW-1 CAMSAT (36122)

Launched: 15/12/2009

Status:

Operational but may still be under commission. The CW beacon is on continuously and the transponders have been activated for some passes.

An operations schedule is posted on the CAMSAT website (look for times over



'Oceania').

Mode: V/U FM voice

Uplink: 145.825 MHz 67.0Hz CTCSS, Downlink 435.675 MHz

Mode: V/U linear (inverting)

Uplink: 145.925 – 145.975 MHz, Downlink: 435.765 – 435.715 MHz

Mode: V/U PacSat BBS

Uplink: 145.825 MHz 1k2 AFSK packet, Downlink: 435.675 MHz 1k2 AFSK packet

Beacon: 435.790 MHz CW

<http://www.camsat.cn>

RS-series satellites

RS-15 RADIO ROSTO (23439)

Launched: 26/12/1994

Status: intermittent. The beacon only comes on when satellite is in sunlight, and is not on every pass.

Mode: -A on/off carrier of 2 to 20 seconds

Beacon: 29.352 MHz

RS-22 MOZHAYETS-4 (27939)

Launched: 27/9/2003

Status: Semi-operational. RS-22 sends CW telemetry in a format similar to previous RS-series satellites. During late 2009 RS-22 became intermittent and the CW beacon was silent during some passes. The last time I heard it was in February 2010. These passes may be used for high speed DOKA transmissions over the control stations.

Mode: -U CW telemetry

Beacon: 435.352 MHz

http://www.dk3wn.info/sat/afu/sat_rs22.shtml

RS-30 YUBILEINY (32953)

Launched: 23/5/2008

Status: Operational. Only the CW beacon has been heard over VK/ZL. Other transmission types are heard when it is in range of the control stations in Russia. It has been heard by AO-51 users when they share the same footprint.

Mode: -U CW telemetry

Beacon: 435.315 MHz (primary), 435.215 MHz (secondary)

http://www.dk3wn.info/sat/afu/sat_rs30.shtml

Other satellites using amateur frequencies.

ISS (25544)

Launched: 20/11/1998

Status: Operational. The International Space Station has an amateur radio station that operates in many modes. Ultimately it depends on the manned crew's activities. Voice, digital, and SSTV modes are used. Sometimes experimental modes are tried; one example was a 23 cm FM repeater uplink on 1269.650 MHz.

Mode: U/V crossband FM repeater.

Uplink: 437.800 MHz FM, Downlink 145.800 MHz

Mode: V/V Digital / APRS 1k2 AFSK FM

Uplink: 145.825 MHz, Downlink: 145.825 MHz

Mode: V/V FM Voice, SSTV

Uplink: (Region 1) 145.200 MHz, (Region 2/3) 144.490 MHz, Downlink: 145.800 MHz

All images courtesy of AMSAT unless otherwise indicated

<http://www.issfanclub.com/>
<http://www.rac.ca/ariss/>

COMPASS-1 (32787)

Launched: 28/4/2008

Status: Operational. Compass-1 has a chirpy CW telemetry beacon that is normally sent every 3 minutes. If battery voltage is low it will send every 8 minutes. COMPASS-1 can be commanded by any amateur to send telemetry on demand using DTMF codes, though the satellite may not give a response each time. Every command will give a confirmation beep on 437.275 MHz.

**35## - request a test beacon CW

**36## - request a test packet 1k2 AFSK FM (UI-Frame)

**60## - request a housekeeping frame in 1k2 AFSK FM (KISS frame)

Mode: V/U DTMF command, 1k2 AFSK

Command: 145.980 MHz, Downlink 437.405 MHz

Beacon: 437.250 MHz CW telemetry
<http://www.cubesat.de>

STARS (33498)

Launched: 23/1/2009

Status: Operational. STARS is two satellites tethered together.

Both 'Mother' and 'Daughter' have CW and 1k2 AFSK packet telemetry on 70 cm. The CW beacon of 'Mother' is on continuously, but 'Daughter' is weaker and intermittent.

Mode: -/U FM 1k2 AFSK

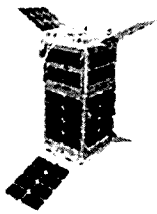
Mother 437.485 MHz, Daughter 437.465 MHz

Mode: -/U CW

Beacon: Mother 437.305 MHz,

Daughter: 437.273 MHz

<http://stars1.eng.kagawa-u.ac.jp/english/index.html>



PRISM (33493)

Launched: 23/1/2009

Status:

Operational.

Following from

the success of

CO-57 and CO-58,

the University

of Tokyo built

PRISM to carry

a larger camera with a telephoto lens.

The packet downlink may be only

available over the command stations

in Japan, though the CW beacon is on

world-wide. PRISM also has an uplink

channel but frequency and modulation

details have not been published yet.

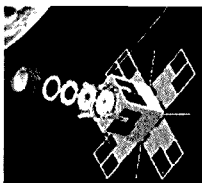
Mode: -/U 1k2 AFSK or 9k6 GMSK

Downlink: 437.425 MHz

Mode -/U CW

Beacon: 437.250 MHz

<http://www.space.t.u-tokyo.ac.jp/prism/main-e.html>



KKS-1 (33499)

Launched: 23/1/2009

Status: Operational. KKS-1 transmits a series of messages on its CW beacon. Its mission is to demonstrate a laser ignition thruster and reaction wheels.

Mode: -/U CW message.

Beacon: 437.385 MHz

<http://www.kouku-k.ac.jp/~kks-1/kks-gs-top-e.htm>

CASTOR (35694)

Launched: 15/7/2009

Status: Operational. CASTOR is a being used to study the Earth's upper atmosphere. It transmits a weak 1k2 AFSK packet signal. CASTOR is used to reflect lasers to determine its exact position and measure the drag induced by the density of the Earth's upper atmosphere.

Mode: -/V 1k2 AFSK

Beacon: 145.825 MHz

<https://goby.nrl.navy.mil/ANDE/Castor.html>

SWISSCUBE (35932)

Launched: 23/7/2009

Status: Operational. Swisscube transmits CW telemetry with frames every 30 seconds. The tone quality of the transmitter is poor. Decoding software is available at their website.

Mode: -/U CW

Beacon: 437.505 MHz

<http://swisscube.epfl.ch>

ITUpSAT (35935)

Launched: 23/9/2009

Status: Operational. This Turkish cubesat transmits a frame of CW every three minutes giving its name and callsign.

Mode: -/U CW

Beacon: 437.325 MHz

NEGAI (36575)

Launched: 20/5/10

Status: Operational. NEGAI is a cubesat launched with JAXA's Venus orbiter but put into a low Earth orbit. Its mission is to test a Field Programmable Gate Array device. Negai is in a very low orbit and should decay in less than a year.

Mode: -/U CW

Beacon: 437.305 MHz

<http://kuro.t.soka.ac.jp/main.html> (in Japanese)

Final pass

It is good to have FO-29 back in operation but GO-32 may be on the way out. Recent reports suggest that FO-29 may not be fully recharging and shutting off under heavy usage. AO-51's batteries have weakened to the point where they may not keep the transmitters turned on during eclipse periods. The next eclipse period starts around January 2011 and after that AO-51 may only be operational when in sunlight.

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Bob Arnold VK3ZBB SK

On Friday 14 May 2010, the AMSAT community lost a pioneer member.

Bob Arnold VK3ZBB passed away quietly leaving a profound gap in many people's lives. Bob's contribution to the art of satellite communication was immense.

He wrote the AMSAT column for AR magazine in the early days when information gathering was difficult and just about everything had to be gleaned from on-air experience. The PC and Internet had not yet invaded our lives. I well remember Chas Robinson and Graham Ratcliff reading out EQXs and keps on noisy HF bands before home computers became common.

The all important numbers came from Bob who had contacts in high places. He wrote software for his early model Sinclair computer when programs were stored on tape. It enabled him to decode the picture information from the earliest University of Surrey satellites. He treasured those pictures, glued together from strips of heat sensitive thermal printing paper and posted on his shack wall.

Bob is credited with being the first Australian amateur to make contact with the Russians on the MIR Space Station – if not the first in the world.

My original contact with Bob was when our school radio club ventured into satellite comms. He offered us advice, practical help and equipment willingly. Later when I became involved with the UoSat digital birds Bob was always there with timely advice.

He was modest by nature yet it was around Bob that people clustered at what became regular monthly luncheons for the Melbourne satellite group. Those ranks are thinning now and Bob's passing will be a reminder to those of us left of the early days of the birds and how much sheer fun we had when everything was being newly discovered.

To paraphrase Bernard de Chartres, "We should always remember that today we see so far because we stand on the shoulders of giants like Bob Arnold."

Thank you Bob for the grand fellowship around the lunch table and the friendship both on and off air and of course on the birds.

Bill Magnusson VK3JT

A simple, effective RF speech processor

Chas Gnaccarini VK3PY

Single sideband (SSB) speech modulation is characterised by a waveform which has a very high peak-to-average amplitude ratio. That is to say, the modulation envelope contains frequent, short-duration transient peaks of high power while the main "body" of the envelope contains relatively low power.

The amplifier stages following the filter must operate within their linear range to avoid envelope distortion and consequent "splatter". Consequently, while instantaneous envelope peaks might drive the output stage to full rated power, the average transmitter output will be relatively low.

Typically, a speech modulated 100 W PEP SSB transmitter may only deliver 5-10 W of average power output, depending on one's voice characteristics.

Several speech processing schemes have been devised to increase the

average power content of SSB speech waveforms. They include audio compression, audio clipping, RF compression (ALC) and RF envelope clipping.

Of these, RF envelope clipping is generally acknowledged to be the most effective. Its most usual implementation in amateur band transceivers also makes it the most complicated and expensive approach.

This is because the audio waveform from the microphone is first modulated to a double-sideband envelope which is then amplitude-limited (clipped), passed through a narrow filter to remove the resulting harmonics, then demodulated back to audio. The resulting waveform then continues along the normal SSB modulation path.

So the modulation and filtering process is performed twice, for no other reason than to allow the processor to be readily switched in or out as desired.

Transceivers such as the old Yaesu FT-101E, FT-101Z and FT-107 series are examples which employ this technique. The speech processors in these rigs are among the best in the business.

It occurred to me that an RF clipping scheme need not be as complicated...

Most other SSB rigs, if fitted with speech processing at all, employ the rather less effective technique of audio compression. With a few exceptions, most VHF and UHF multi-mode rigs employ no speech processing at all.

It occurred to me that an RF clipping scheme need not be as complicated as described above.

Most of the circuitry required is already present in our SSB transmitters, which are nearly all based on the "filter method" of SSB modulation. The DSB modulator and SSB filter are already in place.

All that is needed is the addition of a clipper circuit. The latter is surprisingly cheap and easy to fit, at least in principle, if not always in practice, providing a point can be found along the transmit IF path prior to the filter, where the signal amplitude is of the order of a few hundred millivolts peak-to-peak.

The clipper simply consists of a pair of 1N4148 diodes cross-connected across the signal path at a point just prior to the filter, together with a 1 nF disc-ceramic capacitor as a DC block, as shown in Figure 1.

This is how I went about adding RF speech clipping to two of my two metre SSB transceivers. It may be taken as representative of how it may be done in other transceivers.

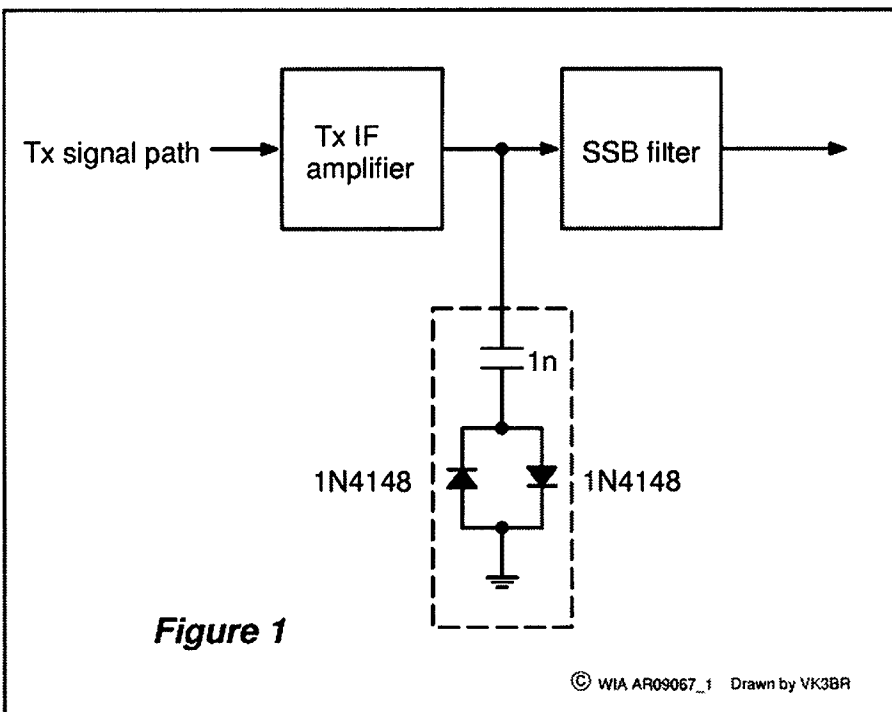


Figure 1

© WIA AR09067_1 Drawn by VK3BR

Figure 1: The components shown within the dashed lines form the envelope clipper circuit.

The Yaesu FT-290R (Mk 1)

I have often received reports of rather "thin" sounding SSB modulation from my FT-290R. I have noted the same on transmissions from other FT-290Rs.

A measurement of the modulation envelope at the collector of the TX IF amplifier prior to the filter (Q1009 in the Yaesu circuit diagram) showed that while the modulation transients exceeded 4 Vpp, the main body of the envelope reached no more than about 1 Vpp.

It was simple to add the clipper circuit from the collector of Q1009 to ground. These diodes limit the envelope amplitude to about 1.4 Vpp, representing about 9 dB of clipping.

Procedure:

Commence by opening the rig and removing the battery cradle to gain access to the underside of the main circuit board.

Before proceeding further, I suggest replacing capacitor C2001. This is a 1 μ F electrolytic capacitor in the SSB microphone amplifier circuit. It is likely to have become leaky (electrically speaking). This upsets the bias of Q2001 giving rise to distorted transmit audio on SSB. It has no effect on FM.

I replaced it with a 1 μ F ceramic capacitor which is more reliable than an electrolytic.

The diodes and capacitor may now be

fitted. Figure 2 shows the placement of these parts.

After fitting the clipper components, the microphone gain may need to be adjusted, depending on where it was initially set. An on-air test is a simple, if somewhat subjective way to do this.

Do not be tempted to increase the mike gain too far as background noise and the sound of breathing may become objectionably loud.

This completes the modification, and the rig may be re-assembled. Note that operation on FM is not affected as the FM signal path is entirely separate from the SSB path.

It is worth mentioning that since modifying my FT-290R I have consistently received unsolicited, complimentary reports of clear, crisp and "punchy" SSB transmission. I now use it as the IF rig for my 1296 MHz system.



Figure 2: Shows the placement of the diodes and capacitor on the FT-290R (Mk 1) main circuit board.



The Kenwood TR-751A

The TR-751A is a great rig, but it too responds well to the addition of the RF clipper. Like the FT-290R (Mk 1), it is very easily done. Here is how:

Procedure:

Disconnect DC power and remove the bottom cover from the rig, being careful not to stretch the loudspeaker wires. Unplug the loudspeaker wires from the circuit board.

Locate the balanced modulator, IC-4 on the RX unit. Pin 7 of this IC is its output. It is the end pin closest to the front panel of the rig.

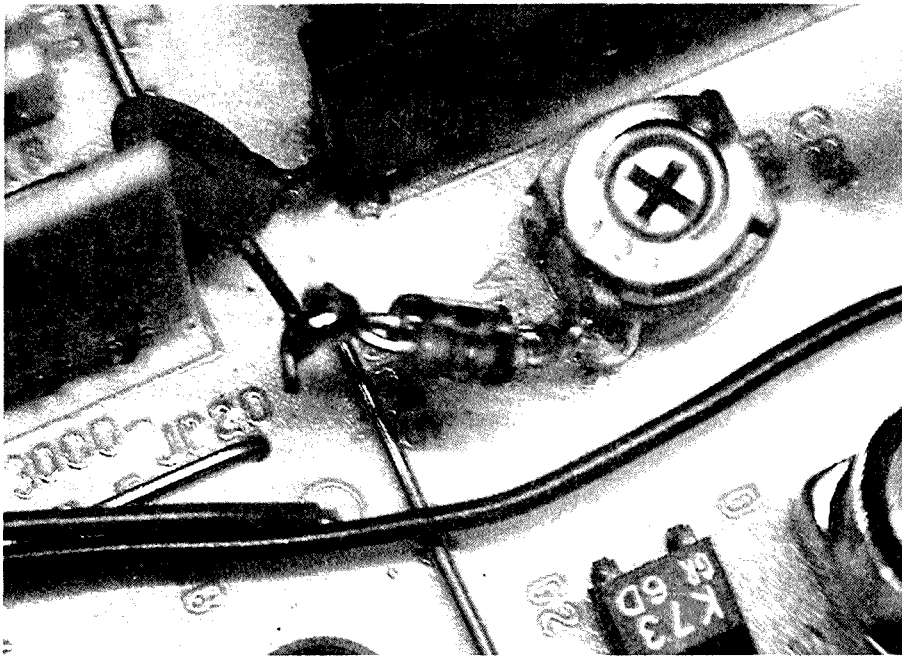


Figure 3: IC4 with the clipper components in place on the TR-751A circuit board.

The body of the modulation envelope at this point is about 1.2 Vpp with transients exceeding 3.5 Vpp. Adding the clipper at this point provides about 8 dB of clipping.

Prepare a 1 nF disc ceramic capacitor with one lead cut to a length of about 8 mm. Bend the end of this lead into a hook about 2 mm long.

Carefully move the black wire that runs past IC-4 temporarily out of the way. Hook the capacitor's lead around pin 7 of IC-4 and solder it, being careful not to short it to the adjacent pin.

Solder the diodes to the ground connection which may be made to the earth end of VR9, nearby.

I found it helps to scratch off some of the plating from this pin of the trimpot to effect a quick solder joint. Do not disturb the setting of VR9 as it is the carrier balance control.

Finally, cut the other end of the capacitor to length and solder it to the other end of the diodes. Figure 3 shows IC4 with the clipper components in place.

Now power up the radio and perform an on-air test. It may be necessary to adjust the microphone gain. Again, do not be tempted to overdo it. As a guide, in my rig the mike gain is set at about 25% up from zero. Re-assemble the rig on completion of the work.

Some Considerations

Diode Selection

Fortuitously, both rigs described in this article produced a transmit IF envelope of around 1.2 Vpp at the SSB filter input.

The obvious choice of diode was the 1N4148/1N914, being a silicon diode with a nominal 0.6 V forward conduction voltage. Cross-connected, these diodes clip the envelope at about ± 0.7 V.

Other rigs may produce a significantly lower signal voltage, in which case a pair of hot-carrier or germanium diodes might be a better choice. Especially with the latter, it is worth hand-selecting diodes with closely matched forward conduction voltages.

Audio Frequency Response

Speech processing tends to boost the bass response of the transmitted signal. If you find it excessive, experiment with a small value capacitor in series with the microphone element to roll off the low frequencies. I did not find this necessary in either rig.

Mobile Operation

Employing a speech processor may not be a good idea if you intend operating SSB mobile, or in other noisy environments. By its very nature it will boost the background noise. At the very least, err on the conservative side when adjusting the mike gain.

PA Dissipation

RF clipping significantly boosts the average RF output of an SSB transmitter. It follows that its PA dissipation will increase accordingly.

Adequate cooling should be provided. Multi-mode rigs like those described are rated for continuous-carrier (FM) operation anyway, so this ought not to be a problem. However, the dissipation of external PAs may need to be considered. So will the DC supply capability.

EMR Exposure

It might surprise you to see this topic mentioned in this context.

However, our EMR exposure limits are based on *un-processed* SSB. If your station operates at high EIRP, using RF clipping could push it well beyond the limit.

Six dB of clipping increases your average EIRP by a factor of four times over unprocessed SSB. It is easier than you think for a high-powered VHF or UHF station to exceed the EMR exposure limits.

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Plan now to light up your life

International Lighthouse Lightship Weekend

Organised and controlled solely by the
Ayr Amateur Radio Group, Scotland.

This year's event
21-22 August 2010

Purpose: To promote public awareness of lighthouses and lightships and their need for preservation and restoration, to promote amateur radio and to foster International goodwill.

Get all the details you need from the official web site, maintained by Kevin VK2CE at:
<http://www.illw.net>

So far there are 35 VK Lighthouses registered for this year's event.

Let's get at least 50 on the air.

After all there are 350 to choose from.

2010 WIA Grants Scheme

**Friday 30 July is the closing date
for applications for the WIA Club Grants Scheme
for 2010.**

Full details of the 2010 rules for the scheme can be obtained from the WIA Web site <http://www.wia.org.au/members/affiliation/about/> together with a template setting out the suggested application headings for an executive summary, identifying how the club seeks to meet the objectives of the scheme and guidance regarding supporting documentation.

The Board directs the Grant Committee to recommend applications which focus on projects and activities (to be conducted before 1 April 2011) to attract new amateur radio operators to the hobby, also projects supporting emergency

communications and preparedness for emergency communications.

The WIA Board has again this year allocated \$6,000 for distribution to qualifying Affiliated Clubs.

Affiliated Clubs with a membership including at least 50% WIA members qualify to participate, though the Board has discretion to allow a lesser percentage in special circumstances.

"I urge affiliated clubs to participate in this opportunity" Michael VK3KI said; "however, it is most important that clubs read the rules very carefully".

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<http://www.wia.org.au/members/affiliation/about/>



EVENTS

**GippTech
2010**

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**WARS Auction
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VHF/UHF An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Digital DX Modes

Rex Moncur VK7MO

WSJT8

A new version of WSJT called WSJT8 is about to become available for testing and evaluation. It will have new modes for meteor scatter, ionscatter on six metres, EME and HF QRP and promises improved performance in all of these areas. Both the EME mode and the HF QRP mode should have potential for weak signal VHF/UHF tropo-scatter.

10 GHz Rain Scatter using JT4F

Colin VK5DK and Russel VK3ZQB have been successful in working from their home stations over a 140 km path using JT65c on tropo-scatter and have also noted strong signals due to rain scatter. The rain scatter signals are typically spread over almost 100 Hz and are too wide for JT65c. To overcome the spreading they have conducted tests with JT4F and been successful in decoding signals as shown in Figure 1.

JT4F uses four tones spaced 160 Hz apart. At the bottom of the waterfall display in Figure 1 one can see the four tones via tropo-scatter and as one moves up the waterfall one can see the tones at a higher frequency which are spread due to Doppler on the signal scattered from the rain. As the rain

scatter signal builds up and drops in frequency, the tropo-scatter signal fades presumably because it cannot get through the rain. In this case only two decodes were successful but Colin advises they have had generally good results on rain scatter with JT4F.

10 GHz Aircraft Scatter using JT65C

Rex VK7MO and Dave VK3HZ have now completed a 624 km QSO between Mt Wellington near Hobart and Sunbury north of Melbourne using JT65c and aircraft scatter. Best signals were -16 dB on the WSJT scale and signals were decoded for around 14 minutes on each aircraft pass. A detailed report of the results on this work is at: [http://www.vk3hz.net/aep/AEP_on_10GHz_part_2.pdf](http://www.vk3hz.net/aep/www.vk3hz.net/aep/AEP_on_10GHz_part_2.pdf)

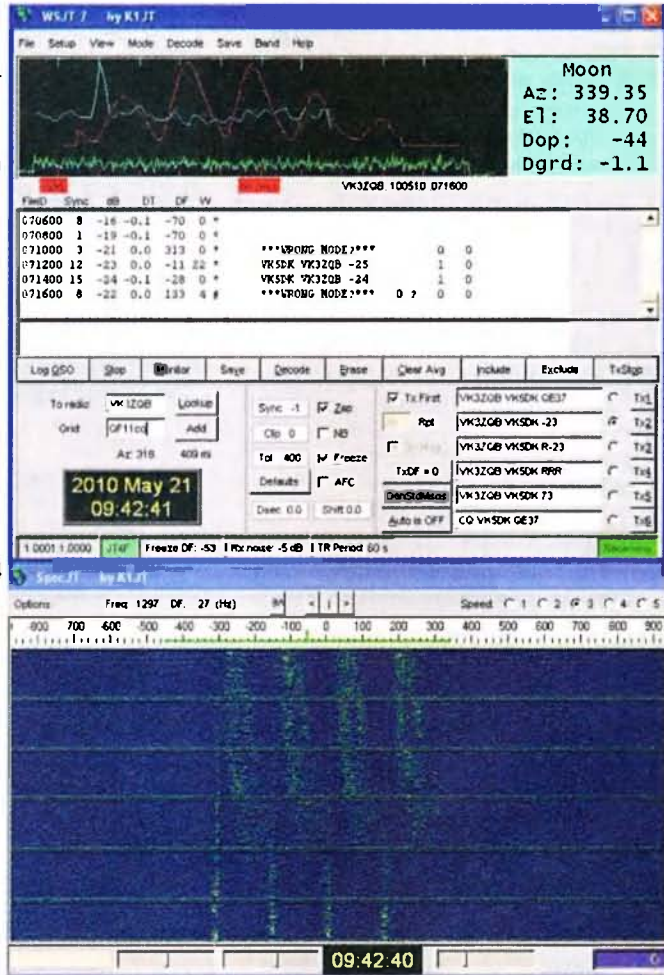


Figure 1: Waterfall shows rain scatter.

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

The Magic Band – 6 m DX

Brian Cleland VK5BC

Very little to report for May, the only significant openings being E's on the 24/25th. Other than these there were only a few short E openings with one or two quick contacts completed mainly from VK4. Meteor contacts continued to be completed most mornings with the Eta Aquarids meteor showers producing some good burns in early May.

Brad VK2QO, who coordinates the meteor scatter contacts each morning, reports the following:

Didn't the Eta Aquarids produce same good burns at the beginning of May.

Also good to see so many take part in that shower.

Contacts were completed with the following on the mornings of:

2nd: 2142 Z Brian VK4EK 5/7, 2226 Z Joe VK7JG 5/7.

3rd: 2208 Z Joe VK7JG 5/9, 2228 Z Brian VK5BC 5/5, 2228 Z Garry VK5ZK 5/5.

4th: 2203 Z Brian VK5BC 5/7, 2208 Z Brian VK5BC 5/5.

5th: 2153 Z Norm VK3DUT 5/5.

6th: 2053 Z Scott VK4CZ 5/7, 2100 Z Scott VK4CZ 5/9, 2124 Z Glenn VK7AB 5/7, 2126 Z Norm VK3DUT 5/7, 2128 Z

Glenn VK7AB 5/9+, 2145 Z David VK3AUA 5/7 and at 2146 Z Peter VK5PJ 5/3.

7th: 2123 Z Scott VK4CZ 5/7, 2250 Z Brian VK5BC 5/7.

28th: 2128 Z Frank VK7DX 5/1.

29th: 2203 Z Glenn VK7AB 5/9.

17 contacts were made in that class 1 shower and 2 with random meteors at the end of May.

The next class 1 shower is the Southern Delta Aquarids from 21 July to 23 August with the peak around 30 July.

And do not forget there are still many random meteors falling every day.

Good 'E' opening on 24 May between ZL and VK with Bob ZL1RS working several VK2, 3 and 4s as well as hearing the VK5RBV beacon.

Further E's on the 25th with Kerry ZL2TPY and Rod ZL3NW working several VK2, 3 and 4s. Band also opened from VK4 to VK3 and 7 with Brian VK4QB and Brian VK4EK working several stations.

I apologise for the lack of information and content in this month's notes but I was fortunate enough to be on holidays in Hawaii during two weeks of May.

Whilst there I went to breakfast one morning with a group of KH6 hams. Unfortunately could not get much interest in 6 m from them, but thanks to Bill KH6OO I was able to visit the Battleship Missouri in Pearl Harbor and operate KH6BB from the Battleship.

Conditions were not prevailing to VK but I was able to work several mainland USA stations on 20 m. I was however able to work some VK5s via IRLP from the Battleship.

I made a few contacts on various Hawaiian repeaters with my handheld. Of interest is that you find the repeaters are not every 25 kHz but will be on 146.880 or 146.760 etc. It was a challenge to get my handheld to tune in 5 kHz steps without the manual.

I also visited the QTH of Bill KH6OO, Bill and his wife have a one bedroom Condo about 20 floors up overlooking Honolulu and he has his rig (IC-7800) setup in the bedroom.

Of interest is his antenna, a magnetic loop made out of 51 mm (2 inch)



Photo 1: Yours truly (with hat) operating KH6BB on 20 m with Ned KH7JJ logging.

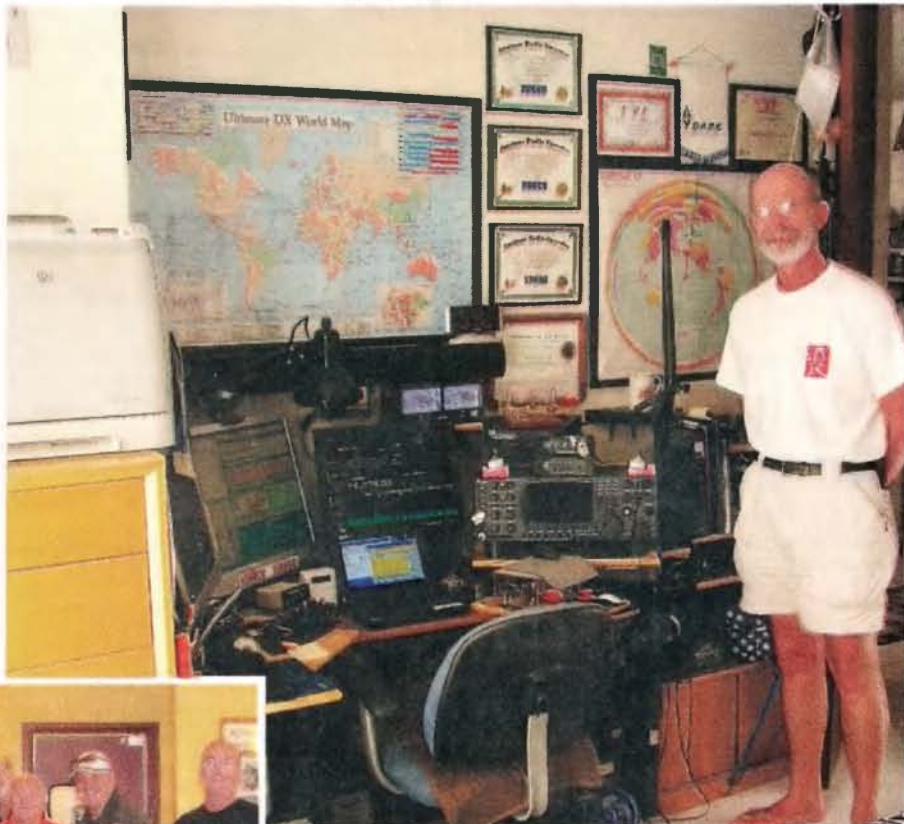


Photo 3: Bill's bedroom shack.

diameter copper pipe mounted on a basketball hoop support base on the balcony.

I had worked Bill on 10 m a few weeks before visiting Hawaii and was very surprised to see the antenna Bill was using. Bill uses it on several HF bands and claims great success and I can certainly vouch for his signal on 10 m.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com



Photo 2: Breakfast with the KH6CO club group; spot the Aussie with the white cap.

Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

July	3-4	DL-DX RTTY Contest	RTTY/PSK
	10-11	IARU HF World Championships	SSB/CW
	24-25	IOTA Contest	SSB/CW
August	7-8	10-10 International Summer Contest	SSB
	14-15	Remembrance Day Contest	CW/SSB
	14-15	Worked All Europe	CW

Conditions have taken a bit of a dive after the promising improvement at WPX SSB, which seems a long time ago.

Unfortunately for the second year in a row I'll miss the IARU HF World Championships. I'll be in the process of moving so the VK4KKD trailer tower will be in the flat pack position and all the radio gear will be in boxes.

I'll be on the air by early August after tearing down VK8PDX in late June. I'll be working in Townsville, hopefully more DX friendly than Alice Springs. My antennas will be looking forward to being a LOT closer to water paths for DX rather than the Red Centre. It's a pretty quiet time on the contest front, there are plenty of smaller events around but things

really heat up again around August/September, so apart from IARU & IOTA, I shouldn't miss too much.

IARU HF World Championships: July 10-11

The rules for this were in last month's issue and can be found at www.iaru.org/contest.html. Remember that this coincides with the World Radio Team Championship, so keep up to date with all the happenings at www.wrtc2010.ru

Islands on the Air (IOTA) Contest 2010 July 24-25

The rules for this contest were in last month's issue, latest is on www.rsgbcc.org/hf/iota.shtml

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Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

Peter VK3ZAV took the GARC to see the big boys play radio, on a scale several orders of magnitude greater than we are permitted both in power and antenna tower height.

Some 25 km east of Geelong, at Murradoc hill in the centre of the Bellarine Peninsula is a 123 metre tower, and a brick building that houses four FM broadcasting transmitters, and a 175 kVA standby diesel generator and other facilities.

The main FM transmitting antenna, located at the mast top, is six panels of crossed dipoles (circular polarisation) on each of two of the four sides. This antenna directs the signal over a 180 degree sector from Lorne on the south west coast, north west to Geelong, and around to Werribee in the north east; but not towards Melbourne and its suburbs to the east.

There are two commercial transmitters, K-Rock 95.5 MHz, Bay FM 94.7 MHz, and two community transmitters, the Pulse 93.9 MHz and Rhema FM 96.3 the Christian station; at the site all feeding into the one aerial array.

The antenna is in two bays, upper and lower, and the full gain, some 10 dB, is achieved when equal power and phase is being fed to each bay; three at 5 kW output, giving 55 kW effective radiated power each, because of the antenna gain.

Coupling to the antennas is done with two separate feed cables, a fault on one bay can be dealt with by feeding the total power into one bay only, which results in a drop of gain and signal of 3 dB.



Peter VK3ZAV

The dual feeder means the cable length to each bay differs by the height of one bay, about 10 metres, so an extra length of cable is used inside the building to equalise those lengths, and keep the phase equal too.

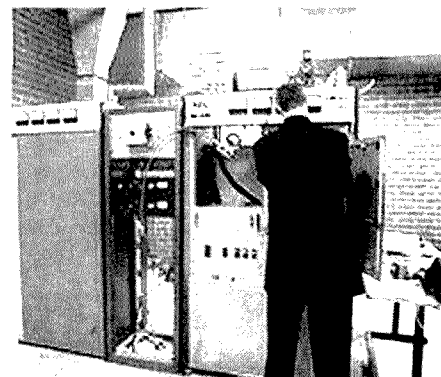
Feeding four transmitters into one antenna is complex, any one transmitter's output power must not enter any of the others, as intermodulation would result in the sum and difference frequencies spreading across the FM spectrum.

The connecting cable for the high power FM transmitters is a rigid 3 1/8 inch air spaced copper tube cable inside the building, and up the tower are semi flexible Heliac, gas pressurised to keep out moisture.

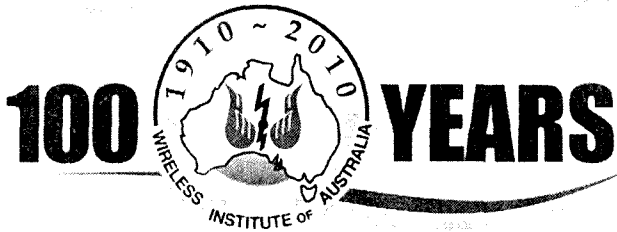
The programs for transmission come via microwave links, using a few of the other antennas on the tower, all additional antennas lower down the tower are used by other services.

The trip was an awesome experience and the GARC expresses its thanks to John

Sandles, the engineer in charge of this station (and about 27 others), for taking the time out to show us around.



ar Part of the control room at Murradoc Hill.



Centenary Merchandise

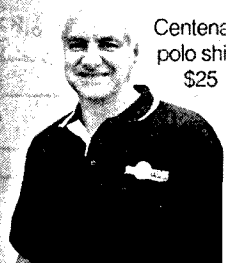
Celebrate the Centenary in style

To help members celebrate the WIA Centenary, a range of 'limited edition' Centenary merchandise is now available for online purchase via the Centenary Merchandise section of the WIA website.

The merchandise below sports the WIA 100 Years Centenary logo and is being expanded to include many other commemorative items and memorabilia. Members are encouraged to keep an eye on the WIA website for all the latest products. Visit www.wia.org.au and click the Centenary logo on the right hand side of the home page.

All shirts and jackets are available in the following sizes: Small, Medium, Large, X-Large, XX-Large, XXX-Large.

Please note: all prices below are WIA member prices and are inclusive of GST, delivery charges are calculated with your online order.



Centenary polo shirt: \$25



Centenary tie/ jacket pin: \$8



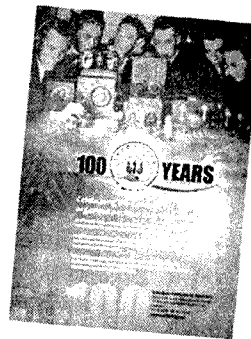
Centenary logo sew on patch: \$8



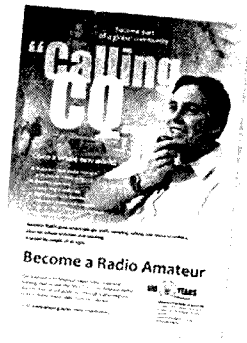
Centenary bucket hat: \$12



Centenary cap: \$12



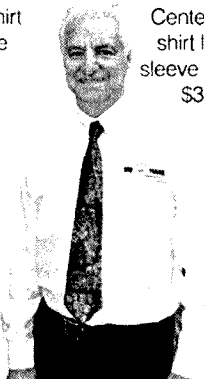
WIA Centenary poster A1 size: \$10



WIA Calling CQ poster A1 size: \$10



Centenary shirt short sleeve black: \$32



Centenary shirt long sleeve white: \$33



Centenary shirt long sleeve black: \$33



Centenary fleecy vest: \$35



Centenary ranch jacket: \$94

DXNews&Views

John Bazley VK4OQ
john.bazley@bigpond.com

Island gone? Motor gone, Macca gear gone

R1MV – Malyj Vysotskij Island

Will this be deleted from the ARRL DXCC list? This could be the first deleted DXCC Entity since the DXCC 2000 rules went into effect at 2359 Z on 31 March 1998.

The Russian Prime Minister, Vladimir Putin, recently met the Finnish Prime Minister Matti Vanhanen in Lappeenranta, in Finland. One subject of their meeting was a new lease of the Saimaa Canal and the surrounding area. The original 50 year lease was agreed in September 1962, which eventually gave Amateur Radio operators the DXCC Entity of Malyj Vysotskij Island (M.V. Island) in the late 1980s.

The new agreement, which takes place in 2013, no longer includes the lease of Malyj Vystosky Island (Ravansaari as the Finns call it). Thus there is a change to the original condition in which MV Island was added to the DXCC list. The first operation from M.V. Island, 4J1FS, took place in July 1988.

Under the new agreement, in 2013, MV Island would no longer meet the original criteria for the DXCC list. Therefore MV Island would need to be deleted from the DXCC list.

DX Summit

It has been announced by Radio Arcala that it is now possible to specify the detailed information that you require from the Cluster, after you have registered at www.dxsummit.fi. Please note that there is a new discussion forum at the above address seeking new application ideas - this forum is monitored by the software folks of Radio Arcala.

T31UR and T31X:

The Pacific Odyssey team left Apia (Samoa) later than planned and, after a bureaucratic hiccup, was expected to reach Kanton Island around May 25. However, when they were just 120 nautical miles away from Kanton, the vessel's engine failed and the

captain decided to sail back to Apia (a 8/10-day voyage). "This decision was determined by the fact that the entry to the Kanton's cove without engines would be impossible", the team says, "and the repair of the engine at sea is also impossible". Their main concern is to reach Apia safely ("200 litres of fresh water left" and still 450 nautical miles to go as at May 28th). (safely arrived —ed).

It has just been announced (June 3) that the Ukrainian Pacific Odyssey DXpeditioners have now departed Tokelau (ZK3X) and are heading for Apia, Samoa. Upon their arrival at Samoa they plan to search for a new ship so that they can try again for Kanton Island (T31).

VKØM – Macquarie Island:

from Paul Ormandy, ZL4PW

"I can now announce (at the beginning of May) that my mate Denis ZL4DB is off to Macquarie Island for three months.

Denis is not an experienced DXer but hopes to get to the Macca DX-shack every now and then and make some SSB QSOs. I will be his QSL manager and initially will help him manage callers until he gets the swing of his logging program and equipment.

Denis will e-mail me and we will set a sked which I will post, possibly at short notice. Denis will be primarily involved in pest eradication on the island. There is a sizeable team of helicopter pilots and crew from NZ joining the Aussie Antarctic Division and the Aussie equivalent of DOC.

Daylight hours will be short though the lack of howling winds during this three month period means it is an optimum time for bait drops to curb the rabbit and rat population. Must be very, very tough rabbits and rats! Cheers, Paul Ormandy, ZL4PW".

Early in June the following was announced by Paul! "Denis is now at Macca Base on the island and says the amateur gear thought to be there is

gone. All that remains is a 2 m rig.

He says "I was so disappointed when I got up to the ham hut. There are insulators going through the wall but no wires attached. Paul ZL4PW says on future assignments "We will make sure he is well equipped." Denis' stay on Macquarie ends in late August." So it looks as though there is a possibility of further activity from there in the future.

DXing about

Jan DJ8NK and Paul F6EXV have done a great job, as guest operators of Christian TL0A putting the Central African Republic (CAR), on RTTY (Jan) and CW (Paul). They have had about 12,000 QSOs. All QSL cards must go to TL0A's QRZ.com address as Jan and Paul will not be able to confirm any QSOs. Christian will be departing CAR in July of this year but will be active on RTTY before he leaves. His next stop may be Niger, 5U, in September.

FT5 - Crozet and Kerguelen: Daily DX is reporting that Gildas TU5KG has been assigned calls for both islands: FT5WQ for Crozet and FT5XT for Kerguelen. You may recall that Gildas has been to both areas aboard a fishing boat in the last few years. You might keep an open ear for these call signs as we do not get much advance notice of when he will be on these islands. He leaves for a three month trip in June.

Lionel F5PSL (ex TJ3SL) reports he is now on the Indian Ocean island of Mayotte and will be QRV as FH8ND until August 15. Expect little activity until the end of June. He has an FT-897 running 80 watts into a dipole and plans to be QRV on 3.5 through 50 MHz on SSB. QSL cards should go to F1OKV (not F5PSL) either via the bureau or direct.

Sergey UT1EO will be active as D2QR from Lunda Norte province of Angola until 22 April 2011. He plans

Continued foot of facing page

Dead air, hot spots, Oki Tedi and midwinter propagation

It is that time again. Here I am in front of my computer and wondering about what to write. Shortwave is definitely in decline, especially in the broadcasting area.

The primary targets are areas where there is poor to no Internet connectivity, such as Africa, the Middle East and some parts of Asia. Broadcasters are really reluctant to use shortwave now because the mass audience seems to have dissipated. However, Africa will continue to be their focus because the Internet is virtually a non-event across the continent.

Another factor is the disappearance of mass produced receivers equipped with the HF range. I know China is continuing to manufacture some models with HF but these are so poor in quality and only able to receive Chinese stations, either on shortwave or via domestic relays.

I realise that other HF spectrum users are still active but the continuing low level in sunspot numbers is not helping their usage of the spectrum. Digital modes have also taken over

from existing analogue systems and have made it difficult to readily identify stations and/or locations, yet interesting catches still pop up.

As you may recall there was trouble recently in Thailand and again there were some broadcasters forced to rely on shortwave when the authorities switched off domestic relays of some International broadcasters. I noted CRI from Beijing in Thai on a variety of channels at the height of the crisis in Bangkok.

Tensions also escalated on the Korean Peninsula with a massive spike in jamming from both sides. To top it off, tension has also escalated in the Middle East between Israel and the rest of the Middle East. Jerusalem ceased their external broadcasts about two years back although the Israeli Defence Forces Radio is heard on 6973 USB. This is a relay of their domestic networks and can be heard around 2000, primarily in Hebrew yet with plenty of contemporary western music.

A new station in Papua-Nuigini has

been heard on shortwave from near the borders of Indonesian West Papua or Irian Jaya. It is operated by the Oki Tedi Copper mine and is a community station and independent of the National Broadcasting Corporation (NBC) in Port Moresby. It is on two channels: 3915 and 5960 plus some FM outlets. It calls itself Radio Fly River and is in local indigenous dialects and English. I believe that the NBC wants to leave shortwave for FM very soon, so listen out on the 90 metre tropical allocation between 3.1 and 3.4 MHz during our local evening hours for the remaining provincial outlets. The major National program left shortwave some years ago.

It is midwinter here and although our autumn was very mild, it has still been cold. I have not had a chance to check out the midwinter propagation on the lower frequencies as in previous years but I have seen reports that the local midday phenomenon is still there, despite the absence of some European regulars.

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DXNews&Views continued

to operate all modes on 40-10 metres. QSL via RW6HS.

Carlos CT1END reminds everyone that the CT3 prefix is no longer being assigned to the Madeira Islands. The new prefixes are CQ3, CQ9, CR3, CR9, CS9 and CT9.

XU7ATM in Cambodia plans to be active August 10-17 on all HF bands, mainly RTTY but also SSB. Laurent will have a tribander up 22 metres and wires and a FT-897 100 watt radio. QSL via F8ATM, direct or bureau. He will upload to LoTW when possible if he can find an Internet cafe near his QTH. www.qrz.com/db/XU7ATM

6V7W is the callsign eventually issued to the Spanish team for their 24 to 31 July activity from Senegal. They will

operate SSB, CW and RTTY on 160-6 metres with three stations. QSL via EA5KA. Further information can be found at www.6v7w.dxciting.com

A group of YL operators will be active as GB2SLH from Sumburgh Head Lighthouse on Shetland Island (EU-012) between 14 and 27 August. Main activity will take place during the International Lighthouse/Lightship Weekend on 21 to 22 August. QSL via M5YLO. They have a website at www.radioclubs.net/gb2slh/

IT9ABY, IT9WKU, IT9ZRU, IW9HJT and possibly IT9BLB will be active as 9H3Y from Malta (EU-023) from 24 to 31 July. They will operate on all bands SSB, CW and RTTY and will participate in the IOTA Contest. QSL via IT9ABY, direct or bureau.

Tony IK8VRH will be working in Kenya from May 2010 until April 2012. Requested callsign is 5Z4RH (to be approved by the Communications Commission of Kenya). Information on a new amateur radio shack for rent at a tourist resort in Malindi will be available in late June.

Good luck in the pile-ups until next month.

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/trial.htm

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WANTED - VIC

For restoration of a Pye Overland base station, type FM739A, and information at all. A manual with a circuit would be gold.
Contact Clem Jarvis VK3CYD, Box 285 Newborough. Vic. 3825, phone 03 5126 2064 or clem@dcsi.net.au

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Satellite Package 1: 2.4 metre solid ACESAT dish on polar mount, Chaparral CoRotor II C/Ku feed, Norsat Gold 15 K C band LNB, Gardiner 0.7 dB Ku LNB, 24" actuator, Chaparral MC115 RX (dish controller), Inclined orbit tracker, \$330.

Satellite Package 2: 2.4 metre mesh dish on polar mount, Chaparral C Band Polarator feed, Norsat Gold 15 K C band LNB, 24" actuator, Winersat WR920 RX (dish controller), \$240.
Digital satellite RXs: UEC DSD660, \$120; Nokia 9500S with DVB2000 S/W, \$120; Xanadu DSR, \$40; Zenith DTH300-S, \$5; 2 x Pace DGT400's, \$5 ea.

Other Satellite parts: Supertrack dish controller, \$40; Dynalink C Band LNBF 'One cable solution', \$15; California amp C band LNBF 25 K, \$30; Chaparral Model C Ku LNB, 9.75/10.75 GHz LO's, \$20; ACESAT Twin Ku LNBF's, \$25 ea; California amp Ku LNBF, \$10; Sharp Ku LNBF's, \$15 ea; DX Antenna DSA527N Ku LNBF, \$5; 2 x DX Antenna DSA527D Ku LNBF's, \$5 ea; Zinwell SAB-09C coax relays, \$15 ea; 4 x Irdeto CAM's, not CI, various ages and S/W, \$20 ea; many other miscellaneous satellite parts.
Contact Roger VK2DNX, phone 02 9546 1927 or vk2dnx@hotmail.com

WANTED - NSW

Carbon elements for the standard size Scope soldering iron.
Neville Chivers VK2YO, QTHR or phone 02 6674 2095.

FOR SALE - QLD

Yaesu FL-2100Z linear, S/N 2N130279, has full woo watt output. In good condition, with handbook, \$550, excluding freight.
Peter VK4PO, phone 07 3390 1129 or 0417 785 677, or vk4po@bigpond.com.au

WANTED - QLD

Kantronics Paket Communicator 3, in good working order, or similar model Paket modem.
Contact Tom VK4TY on 07 3396 5944 or 0428 159 164, or tyapp@ozemail.com.au

FOR SALE - WA

Free to a good home - old issues of AR magazine.
Contact Bill VK6LT, email vk6lt@hotmail.com

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Contact Trevor VK6ZTJ, on email tam.elec@optusnet.com.au

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- Submit by **email (MUCH 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.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
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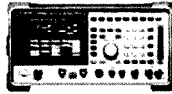
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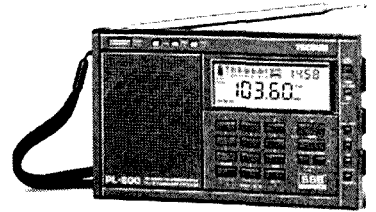
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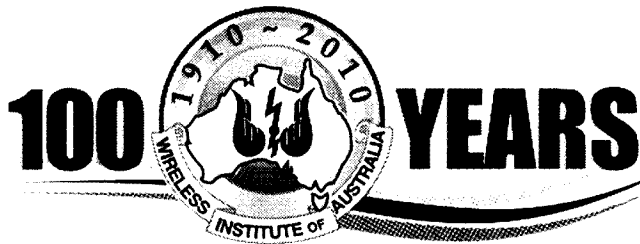
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Sundee arvo at Dick and Pip's

from page 28

In one of three speeches of the afternoon he explained what happened to *The Kookaburra* that crashed, killing pilots Keith Anderson and Bob Hitchcock. They had set out to look for their mates Charles Kingsford-Smith and Charles Ulm, missing in the famous *Southern Cross*.

Smithy and Ulm were safe and had landed in a remote area due to a shortage of fuel. Dick found wreckage, a Westland Widgeon, in 1978. The sister aircraft is fully restored and takes pride of place at Gundaroo.

The Bowylie Flying Club has a long sealed runway and all are welcome to land, usually by way of an advanced phone call to the property manager.

As Dick was speaking in the clubhouse the sound of a helicopter was heard, it got louder and turned out to be four choppers landing.

He politely excused himself to personally meet the unexpected arrivals. Who was the more surprised? Dick or the helicopter crews on being

greeted by a famous aviator?

At first there were thoughts that this was a well planned stunt organised by our host. Not so: Army Major Andrew Middleton, 173 Aviation Squadron, explained how bad weather had forced them to interrupt a training flight from Sydney to Adelaide.

In time for the Yaesu sponsored BBQ lunch, the army crew mixed with the crowd and were soon delighted to hear Dick's talk about his landing on a container ship in the middle of the Pacific Ocean, on his around-the-world solo helicopter flight.

Throughout the afternoon Dick was very personable, spending time to talk to anyone who wanted a chat or pose for a photograph.

Another attraction at the property is a two-foot gauge railway laid out in a figure-8 formation over 2 km, with either a 1904 German built steam engine originally used for mining in Kalgoorlie, or a small diesel loco, hauling a carriage with

leather seats and a bar. The track is through a pine forest and around the homestead.

The rain did not dampen spirits, there was a real social atmosphere in the huge BBQ pavilion, and under the veranda of the club house.

There was an opportunity to talk to old friends, some who had not met for decades. Others were readily introducing themselves after recognising someone from the name on their registration tag then engaging in an eye-ball QSO.

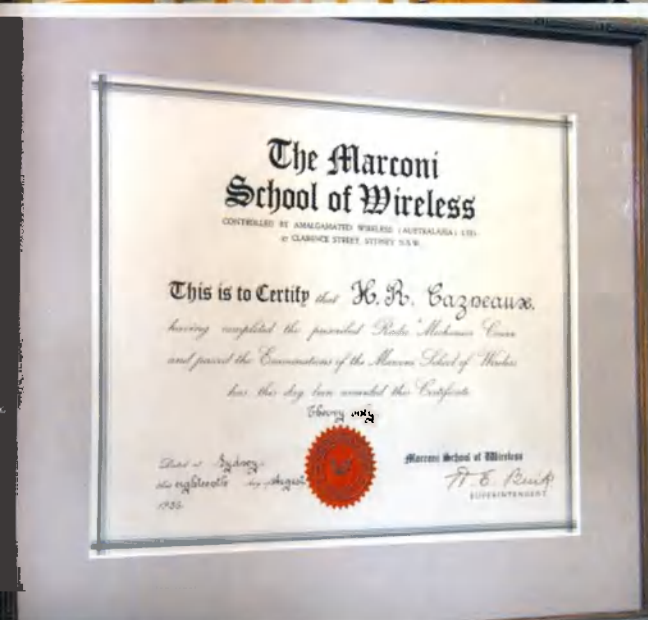
Our WIA Centenary Patron has moved from the time of larrikin stunts that promoted his business, and aviation adventures, but these will be long remembered.

The modern-day Dick Smith, aged in his mid-60s, is now engaged in other pursuits contributing in various ways to Australian life – a legend who will not retire into obscurity. **ar**

Facing page: some shots of the afternoon



Photos anti-clockwise from above:
 'Dick's Toy Shed', the car gives scale.
 The WIA group inside the hangar listening as Dick
 VK2DIK describes his adventures. The pilot's lounge,
 decor Circa 1930. The radio collection, of which a
 few pieces were familiar to some older members.



Clockwise from above:
 The Marconi Certificate of Uncle Harold, part of the amateur radio
 background that started VK2DIK down an interesting radio path.
 The carpark at Bowylie with a fairly usual mix of vehicles.
 The Army pilots and crew who literally 'just dropped in' posing
 with another civilian helicopter pilot of some aviation fame.

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Amateur Radio

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August 2010
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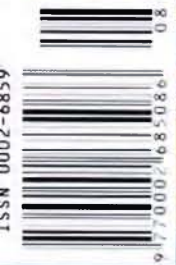
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Amateur Radio

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Our Cover

The well set up antenna farm at Cape Nelson Lighthouse near Portland during the International Lighthouse Lightship Weekend in 2009.

Story on page 34. Photo by Glenn Alford VK3ILH.

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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Photostat copies

If back issues are unavailable, 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

Peter Freeman VK3PF

One busy month

Since writing the last Editorial, things have been hectic at the VK3PF QTH. Not the least of which has been a physical translocation! Yes, I have moved (more correctly, I am still moving...). Functionally, this means that I have extremely limited amateur communications capabilities at present. I am restricted to local FM contacts on 2 m and 70 cm bands for the moment, at least until I have some time to get better antennas erected. The new home is a bigger house on a bigger block, located right on the edge of Churchill. My neighbour to the north is a 20 hectare paddock which is part of a dairy farm.

Some of the local club members have been extremely helpful – last Saturday afternoon saw four of them arrive at the old location. In short order we had a stack of boxes loaded into a van and all of the external antennas dismantled and most loaded onto roof racks and moved to the new location. There is still a lot to be moved – 20 years of accumulated goodies (I can use that some time soon...., but still the items are awaiting attention!) to move. Then there is the Nally tower to lower. Once all is moved, I will need to plan carefully how to reassemble a station at the new address. Of course, under the regulations in force in Victoria, I will need to apply for a building permit to erect the Nally (and perhaps its "partner", currently in storage at a friend's home).

As if the formalities of finalisation of the house purchase and move were not enough, there have been examination papers to mark, a new semester requiring lots of preparation and GippsTech 2010 to coordinate and chair. One other task that needed attention was to organise this issue of *AR*.

August – what are your plans?

The month of August is potentially a busy one, depending upon your location. Ham fests are occurring in some locations. On a national scale, there are three key events.

The Remembrance Day Contest is

a key national event, with the very detailed rules appearing in this issue. The key aim of this event is to commemorate the lives of amateurs who died during World War II and to promote friendly on-air participation.

Another event promoting friendly on-air participation is the International Lighthouse/Lightship Weekend – not a contest, it has its emphasis on participation.

There are sure to be other events occurring during the month, including more Clubs activating the VK100WIA special callsign. Do not forget to work as many Clubs as possible, together with WIA members, so that you can qualify for the WIA Centenary Award. Even if you do not qualify for the award, working the callsign will result in receipt of the special QSL card, provided you have made the appropriate arrangements with the Inwards QSL bureau.

The other key local event in August for all Australian amateurs is the ALARA Contest. For all the OMs out there, the goal is to work as many YL operators as possible. You can find the rules in this month's Contest column.

Plan ahead...

September will bring the Westlakes Cup (details also in the Contest column). October has two major events.

You should already be well into planning your participation in the annual Jamboree On The Air event. As this event is aimed at involving younger members of society, through the Guide and Scout movements, modern day regulations require that appropriate paperwork must be completed to ensure the safety of all. NOW is the time to make sure that all arrangements are well progressed and formalities close to completion.

One week after JOTA sees the first National Field Day, with its focus on establishing stations in the field, but at locations which will expose OUR hobby to the broader community. The rules for this event will be published shortly, but are still to be finalised as we go to press. Check the WIA website for further details – I hope that we will have more to report on this event next month.

Cheers, Peter VK3PF

ar



Michael Owen
VK3KI

“... an event that promotes amateur radio in its community”

In the October 2009 issue of *Amateur Radio*, under the heading “Launching the WIA Centenary - A special call to radio clubs” I said this:

“Clubs are asked to plan now how they are going to celebrate the centenary. The WIA hopes that each club (or perhaps a group of clubs) will conduct an event that promotes amateur radio in its community, and also celebrate the event for their members and perhaps others in the local community.

These events may be part of an activity they already conduct, perhaps an annual hamfest. The use of the VK100WIA callsign may be in association with these events, or may be quite separate.”

That phrase, “an event that promotes amateur radio in its community” has now been repeated many times.

Happily, many clubs or groups of individuals have used the Centenary as the catalyst for activities promoting amateur radio.

Each of the clubs using the WIA special callsign VK100WIA has been given a Media Kit, with a generic release to be adapted to meet local requirements, ‘backgrounders’ on amateur radio, the Centenary and the WIA and advice on how to use the kit.

Of course, anyone else wanting a copy of the kit has only to ask.

Let me mention a couple of examples I know of how this has all worked.

At the recent Caboolture Show David Brownsey VK4AFA and Mic Lohse VK4CRC set up a display that included a 1910 diathermy unit claimed to cure all diseases known to mankind and some not yet identified, a replica spark gap transmitter built by Al Shawsmith VK4SS, as well as a modern amateur transceiver, an active lap-top computer display of amateur satellites, plus the WIA’s ‘Calling CQ’ and ‘WIA Centenary’ posters – with two knowledgeable radio amateurs on hand to answer questions.

The Oxley Region Amateur Radio

Club decided to make its 35th Annual Field Day weekend at the Sea Scout Hall in Port Macquarie on 12 and 13 June 2010 the focus of its efforts to promote amateur radio in its community.

The club, using the Media Kit attracted two television items, three radio items including a 12 minute discussion on the ABC State Wide program heard throughout New South Wales as well as two newspaper articles promoting amateur radio and the Field Day.

Several people attracted by the publicity visited the Sea Scout Hall. The Oxley Region Amateur Radio Club will be conducting a training/assessment weekend in the near future, and as a result of the publicity it is expected that the participants will include several people who otherwise would not have made contact with the club.

The Orange District Radio Club has been successful in obtaining local media publicity in the lead-up to three days of operating VK100WIA from Sunday 4 July 2010 with interviews on the local ABC, FM and AM radio stations.

A highlight was a story on Prime TV News.

In Hobart Justin Giles-Clark VK7TW of the Radio and Electronics Association of Southern Tasmania (REAST) did an in-studio 18 minute interview on ABC radio with presenter Chris Wisbey on a program heard throughout Tasmania.

Ten days before that, Justin was on the ABC Local in Hobart on the breakfast program with a five minute chat that attracted visitors to the REAST’s VK100WIA display station.

And those are only some of the examples on which we could draw.

It is clear that many clubs have already responded to the challenge.

On Saturday 23 October 2010 the new WIA National Field day will provide yet another and different way for amateur radio to promote itself to the public, and perhaps a way for

clubs that have yet to do anything to become involved in a way that is attractive to their members.

The National Field Day is described by the three amateurs who proposed and are now driving the project (Paul Hoffmann VK5PH, Fred Swainston VK3DAC and Gerard Rankin VK5ZQV) as follows:

“The Foundation Licence and a revamped WIA have done much to bolster our numbers, but it is time that we make a concerted effort to better publicise amateur radio and all of its benefits. ... We need to re-introduce the general public to amateur radio, let them know a little of what it is about, without scaring them with too much technical jargon. Our public face will be on display, as well as our professionalism. ... The event is not intended to be a traditional contest, with isolated groups of operators sitting on remote hilltops. We wish to generate as much positive public exposure (and traffic on the bands) as possible.”

In the rules (to be announced shortly) credit will be given for such things as site selection in an appropriate public place, the extent to which information is provided to the public, media publicity achieved as well as for contacts.

In all of this is the need to ensure that people who are attracted by publicity or what they see are approached, made welcome, provided with information and, so far as possible, followed up.

If people are attracted by what we are doing and then walk away not talking to anyone and not seeing what it is all about, one may just as well not have bothered at all.

Amateur radio in ACMA newsletter

ACMASphere is the ACMA's monthly newsletter, covering its activities in the fields of broadcasting, the internet, radiocommunications and telecommunications.

Page 16 of issue 53, June 2010 is devoted to amateur radio, primarily an article "Working with the amateur community to ensure spectrum integrity" but with a box highlighting the WIA centenary and quoting the ACMA Chairman Chris Chapman's address at the WIA dinner.

The main article discusses the recent cancellation of an amateur licence, previously reported by the WIA.

VK100WIA takes a step back in time

A very successful time was had by the Sunraysia Radio Club at the tri-annual Junction Rally where the Murray and Darling rivers meet at Wentworth. Vintage tractors and steam engines popped and chugged, while paddleboats cruised the rivers with organisers recording more than 3,000 visitors at the event.

VK100WIA was put on air and the sounds of the rally could be heard in the background during many of the QSOs made by operators from the Sunraysia Radio Group, with President Garry VK3KYF declaring it a great effort by all involved. Hundreds of people learnt about the Centenary of organised amateur radio in Australia and viewed a display of vintage radio items.

Good publicity included coverage in the Independent Star online newspaper and a mention on a local TV news sessions.

Another great WIA Supported Centenary Activity

Three Adelaide WIA members have secured a display space at a major public event. Adrian Snell VK5ZSN, Paul Hoffman VK5PH and Paul Schulz VK5FPAW have announced a new activity - *The Amateur Radio display at Science Alive! 2010*, August 7 and 8, Goyder Pavilion, Adelaide Showgrounds, Wayville. The event had 30,000 visitors last year.

The WIA Centenary Committee has endorsed the amateur radio presence

at *Science Alive!* as the latest WIA Supported Centenary Activity.

In addition to *Science Alive!* the trio will mount a display on Friday August 6, at a High School Careers Day.

Prominent SARL Council member visits WIA office.

Hans van de Groenendaal ZS6AKV is a member of the South African Radio League Council, the SARL, with responsibility for Regulatory Affairs and Marketing and is also executive Chairman of the South African Amateur Radio Development Trust (SAARDT) and IARU Amateur Satellite Advisor. Hans recently visited the WIA office to meet with President Michael Owen VK3KI, Director Peter Young VK3MV, Manager Mal Brooks VK3FDSL and Secretary Geoff Atkinson VK3AFA.

SAARDT looks at various technologies and activities that drive amateur radio. SAARDT is dedicated to the development of amateur radio in South Africa with a special interest in the youth. The organisation is funded by donations and supports the SARL and SA AMSAT.

Sweet oranges and apples

The Orange District Radio Club has been highly successful in obtaining local media publicity for its involvement in the Centenary of Organised Amateur Radio in Australia. Club President Robert Alford VK2ZRJ advises that in the lead-up to three days of operating VK100WIA from Sunday the 4th of July, the club was interviewed on the local ABC, FM and AM radio stations.

A highlight was a great story on Prime TV News that obviously picked up a number of prompts from the WIA Media Kit and gave the Orange District Radio Club great publicity.

VK7TW Radio Star

The Radio and Electronics Association of Southern Tasmania (REAST) has done extremely well with two separate interviews on ABC radio. Justin Giles-Clark VK7TW did an 18 minute in-studio interview with presenter Chris Wisbey on a program heard throughout Tasmania.

Ten days earlier Justin was on the ABC Local in Hobart breakfast

program for a five minute chat that attracted a number of visitors to the REAST VK100WIA display station.

WIA 600 metre CW beacon on air

With the recent granting of Scientific Licences to the WIA in the 505 to 515 kHz band, Drew Diamond VK3XU is now running a CW beacon on 507 kHz transmitting the call sign AX2VKW on Saturday and Sunday afternoons from approximately 1200 to 2100 EST hours (0200 to 1100 UTC).

This beacon has already been heard in Melbourne at -68 dBm (S9) with a stable level from day to night transition. Drew would appreciate reception reports.

First WIA Centenary Award issued

First to qualify for the WIA Centenary Award is John Fisher VK3DQ who was presented with his certificate by the WIA President, Michael Owen VK3KI. The award claim by VK3DQ had three contacts with VK100WIA, one with the WIA during May, then with the Wagga and Midland Amateur Radio Clubs in June, plus 14 WIA members to tally up the required 100 points.

VK100WIA QSL cards

As a result of the tremendous interest generated by the VK100WIA operations the WIA has received a number of enquiries regarding the distribution of QSL cards.

The WIA has elected to respond to each and every contact worked under the VK100WIA callsign by printing a unique QSL card. The cards for stations in Australia are sent to the Inwards QSL Bureau in each State and Territory for distribution.

WIA members who are not registered with their local QSL Bureau and who want to receive their VK100WIA QSL card should register now.

Those members who are registered with the Bureau will receive their VK100WIA cards through the normal distribution channels.

The undistributed cards will remain available for collection from the bureau managers in accordance with the procedures of those managers.

All amateurs are urged to read the QSL information on the WIA website.

PIC Morse keyer using the PIC16F628A

Peter Wathen VK3EPW

This is a simple little weekend project that turned out to take just a little longer in reality.

I have used microprocessors in my home brew transceivers but I used the Z80, a good processor with a lot of instructions and flexibility. I learned assembly language programming of the Z80 in my apprenticeship and know it well. I wanted a change a while ago and made a few little projects up using the 80C31/32 micro controllers, including my external Morse keyer, still a little dated and a lot less exceptional than the Z80, as it uses less control circuitry making it slightly easier to implement for smaller projects.

PIC micro controllers have been around for a while now and I had been a little sick of hearing about them. I figured these should be my next challenge and as luck would have it not much of a challenge at that. A visit to the Microchip website found the MPLAB IDE software freely available; finally a manufacturer who wants to help people use their product, good stuff. MPLAB IDE is a Microchip development software package, and it has an assembler program in it that can be set up for most of the PIC micro controllers. (www.microchip.com and in the search box do a search for 'MPLAB IDE download', it should get you to the page where the download is available).

Many programmers are available for PICs. RS components sell some, Jaycar have one ready built and they also sell a kit that supports many different PICs. Circuits are available on the web of course. I chose the Jaycar kit because I want to play around with the different PICs later. The kit of course did not work but it had a great little test procedure in the instructions and with that procedure and the programming specifications

for the 16F628A I was able to work out the design flaws. With not much more than a few component changes I ended up with a great little programmer that is now working 100 percent with the 16F628A.

Jaycar kit KC5467 'DSPIC30F/PIC Serial Programmer' modifications

For anyone who is also building the kit and having problems, I will include the changes I made:

- IC2 in the kit is a 74LS04. I changed this to a 74HC04, as the HC series has much better output levels and they tend to be closer to 5 volts and 0 volts.
- D3, which connected the output of the IC2f to the PGD (program data line) is removed and replaced with a 1k0 resistor. This provides a load for when the PIC is being read.
- The 2k2 pull up resistor that is attached to the PGD and the anode of D3 is changed to a 10k resistor. This means in program

mode a 0 from the IC2f gate will put 0.5 V on the PIC.

- Where the PGD line goes directly to pin 8 of the serial connector (CON2) I cut the track and inserted a 470 Ohm resistor. This is just for added protection to both the PIC and the 74HC04.
- Finally the kit has PGD and PGC lines shown with a 39 Ohm resistor and a 22 pF capacitor for high frequency filtering but when I was researching on the web (WinPic programmer FAQs), I found that the original modification suggested a 100 Ohm resistor and 47 pF capacitors. I only had 150 Ohm resistors on hand so I replaced the 39 Ohm resistors with them and replaced the 22pF capacitors with some surface mount 47pF 1206 capacitors.

The most amazing part of the kit circuit was that a 74LS04 output was connected to the bi-directional (input/output) PGD pin of the PIC through a 1N4007 diode and a 39 ohm

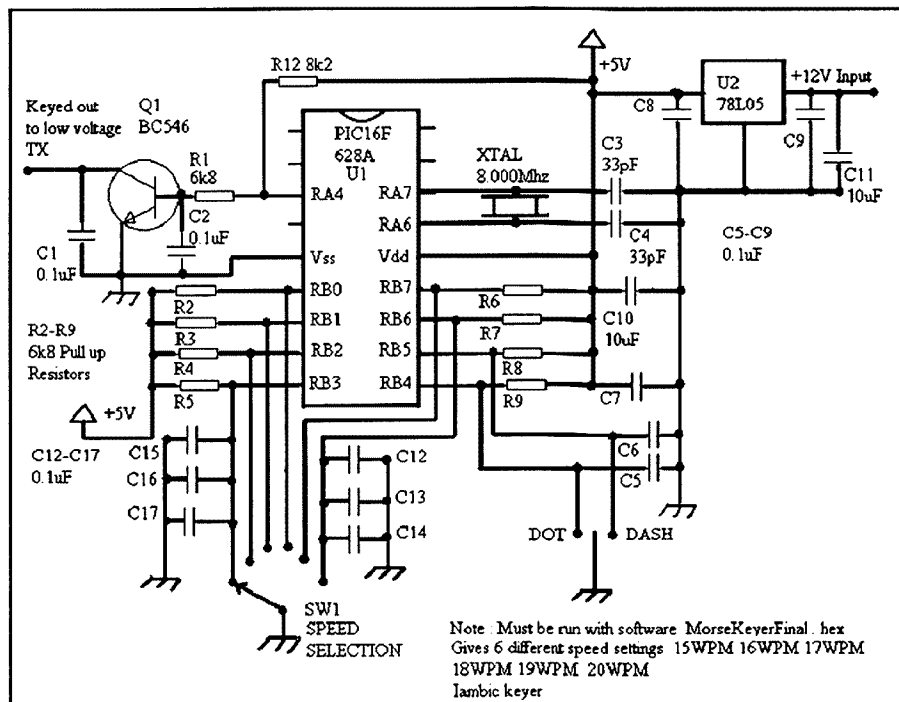


Figure 1: The circuit diagram of the PIC16F628A Morse keyer.

resistor; any wonder I could not seem to read the contents of the PIC with the original circuit. All is now fixed and working properly. I wrote those changes on a circuit and handed them to a young shop assistant at Jaycar, explaining all the reasons for the modifications and asked him to pass them on to their kit department. Hopefully they will get there.

Software and more programmers

The kit uses WINPIC freeware from DL4YHF (<http://www.qsl.net/dl4yh/f/winpipr.html>) or do a Google search for Winpic. On his FAQs there are some circuits for much simpler PIC programmers which should be able to program this part. I have not tried those circuits but they look very cheap and easy to construct, so if you feel adventurous it could be a very low cost solution for this project.

Back to the project

Once I got that lot sorted out I got back to the Morse keyer. I chose the 16F628A because it is cheap and available. RS Components have them on their web site, Jaycar sell them, as do Farnell, certainly at the time of writing. I used the DIP18 package - I used a socket. The data sheet is available from the Microchip web site and it is quite large but when you are looking at using a micro controller

like this one where many pins have two or three separate functions it is a must. I was caught by several traps in this IC.

My prototype was going to have four selectable speeds using RA0-RA3 pins as the inputs for the switch, from a rotary switch. That was my first mistake; in the data sheet it says 'When selected as comparator input, these pins will read '0's. I must be blind but I could not find the way to switch the comparator inputs so RA0-RA3 just did not work for me. I then decided that RB0, RB1, RB2, RB3, RB6 and RB7 would be OK and would let me have six selectable speeds. I have those pins tied to +5 V in the circuit; the software looks for the pin to be at 0 to select a speed. Note that the pins are tested in order so if more than one pin is at 0 then the first one tested will be the one to set the speed. I used a single pole six position switch to select the speed.

The next trick this IC had for me was the output bit; I selected RA4 to drive the base of a transistor. The software looked good but on test nothing was coming out of RA4. Looking at the data sheet revealed that RA4 just happened to be an open drain output, hence the added 8k2 pull up resistor you can see in the photo. RB4 and RB5 were selected as the inputs

for the paddle, again 0 equals active.

I have included the full assembly file for the keyer; if you follow the tutorial from the MPLAB IDE software you should get the idea. Select PIC16F628A as your device and then use Project Wizard. Enter the assembly code exactly as it is written. When you perform the build all operation, which hopefully comes up with the message 'build succeeded' then you should have created a hex file which can now be used by the WinPic software to be sent to your programmer. It is that easy. (The assembly file will be available for download from the AR page for this issue on the WIA website. Ed.)

Now for the program

I have a lot of notes next to the programming which should make it pretty clear how the software is working but the short list is here. Refer also to Reference 1, below.

First set up the control registers and set the value in the LASTCHR register, this is the memory of the last character sent, and it is used for the iambic function. That is, whatever character was sent last when both keys are squeezed together the next character will be the opposite. The program loop now starts. The first part is to check what speed bit is selected and set the necessary value in the WPM and TWPM registers. The WPM is the fixed copy of the selected speed value and the TWPM is the temporary copy which is altered as countdown is done. Once the speed has been set then the loop moves on to check if a paddle or both paddles are down; if neither are down then the loop goes back to the speed setting and repeats. When a paddle is down, depending on which one is down the program jumps to the DOT or DASH routines.

The routines are similar, first they put a value in the LASTCHR register, then they set RA4 to 5 volts driving the base of the output transistor. The timer 0 register is set to 5 and the timer 0 overflow flag is cleared. Note that the prescaler has been set to divide by 8 and assigned to timer 0. Timer 0 will now increment from 5 to 255 then the overflow flag will be set. With an 8 MHz clock this should equal 1 ms. The WPM and TWPM registers have the count needed

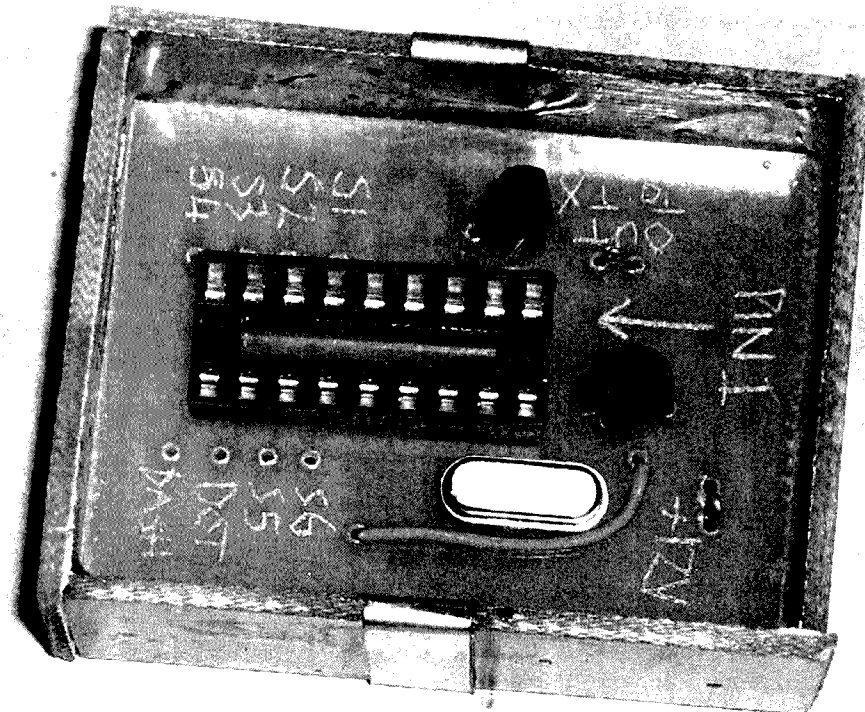


Photo 1: Some of the construction detail of the PIC Morse keyer – the socket for the DIP 18 package.

for this loop to be repeated for the correct speed setting. In DASH three of these timing loops are performed, that is, three dot periods, and in the DOT routine one loop is performed. The RA4 output is then set back to 0 and one more DOT loop is performed before returning to the start of the main loop. Easy.

The reason for the project was to get rid of my external keyer and make a very small keyer that would fit inside both of my current home brew transceivers. I built two of the circuits and they are now in their respective transceivers, working happily, and with no more leads hanging out the back of the transceivers. I also found the joy of using Flash (EE memory) micro controllers.

A few quick notes on the design and construction

The design uses a BC546 transistor to do the TX switching. I did this because both of my transceivers use a digital input for CW keying, 5 volts with a 470 ohm pull up resistor. If you are going to use this for an older transceiver with valves in the finals use the transistor to key a fast relay and use the contacts for the keying. If you want you could use a much higher voltage, medium power transistor but that is up to you.

The circuits that I made were on a small PC board made with a Dalo Pen, a PCB marking pen. I used the PCB box type construction and in the photos you can see tin straps (from a Milo tin) on each side of the PCB; these are earth straps soldered to the inside PCB earth and they are used so that when all is wired up and tested a tin shield can be soldered over both top and bottom. From a Milo tin, of course!

The location of the software for the keyer program is noted under Reference 1, below.

Reference 1

Files used by MPLAB IDE software in ASM format (readable in MS Notepad) are available as File 1 on the WIA website under reference AR09072.

Files used by MPLAB IDE software in HEX format (readable in MS Notepad) are available as File 2 on the WIA website under reference AR09072.

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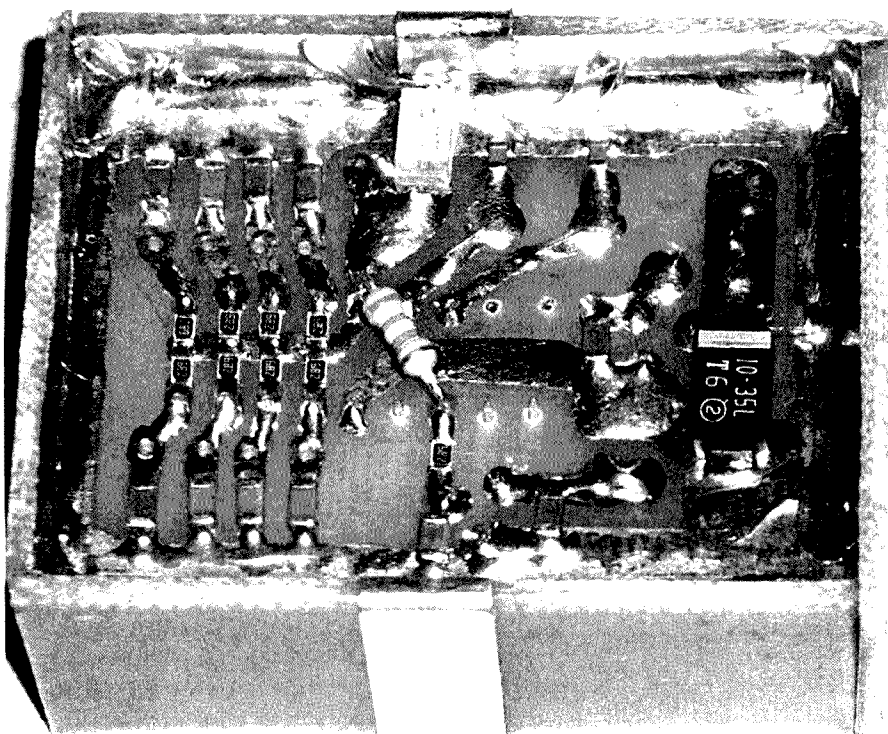


Photo 2: Further construction detail of the PIC Morse keyer – the 'other side' of the DIP 18 package showing component placement.

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Going mobile

Ross Pittard VK3CE

vk3ce@amateurradio.com.au

The first truly mobile two-way radio was developed in Australia in 1923 by Senior Constable Frederick Downie of the Victoria Police.

The Victoria Police were the first in the world to use wireless communication in cars, putting an end to the inefficient status reports via public telephone boxes which had been used until that time. The first sets took up the entire back seat of the patrol car (1). It was always a challenge going radio mobile with the large valve operated radios and accompanying power supplies.

Fortunately these days it is relatively easy to operate mobile with the large number of compact rigs available on the market. There are, however, a few basic points needed to be observed

to obtain maximum performance when setting up your mobile station.

Try if at all possible to keep your antenna cable out of the engine compartment to reduce the pickup of interference from the ignition system. Always use good quality coax cable in the car as it must withstand continuous vibration, and use a cable with a multi strand centre conductor and a good quality shield. Usually the cheaper coax has less copper which means poor outer braid coverage.

I run a separate cable directly from the radio to the vehicle battery and fuse it at both ends. If the vehicle battery is in the engine compartment I find it a good idea to use a piece of RG8/213 as my power lead. I use the inner as the positive and the outer shield of the coax as the negative and this helps with reducing interference pick up from the engine bay.

When operating HF mobile ground the exhaust pipe at the back of the vehicle, this reduces interference from the engine as the exhaust makes a good antenna, as it is suspended from the car by rubber shock mounts. The best way to achieve this is to use a piece of earth braid and strap between the exhaust and a suitable point on the vehicle chassis. Check to make sure the engine is also connected to the chassis by a good braid; remember that the engine sits on rubber mounts too!

Earth braid with lugs can usually be purchased new from Repco or Autobarn, second hand from a motor wrecker or you can make your own by stripping the

inner from a piece of RG8/213 and flattening the outer braid.

A popular mounting place for HF antennas on sedans is the tow bar on the rear of the vehicle; the problem with modern tow bars is the tongue is usually removable; these can be used provided another good braid is bonded between the removable tongue and the chassis.

Modern cars seem to have smaller cable harnesses running around the



Photo 1: Two commercial dual band antennas.

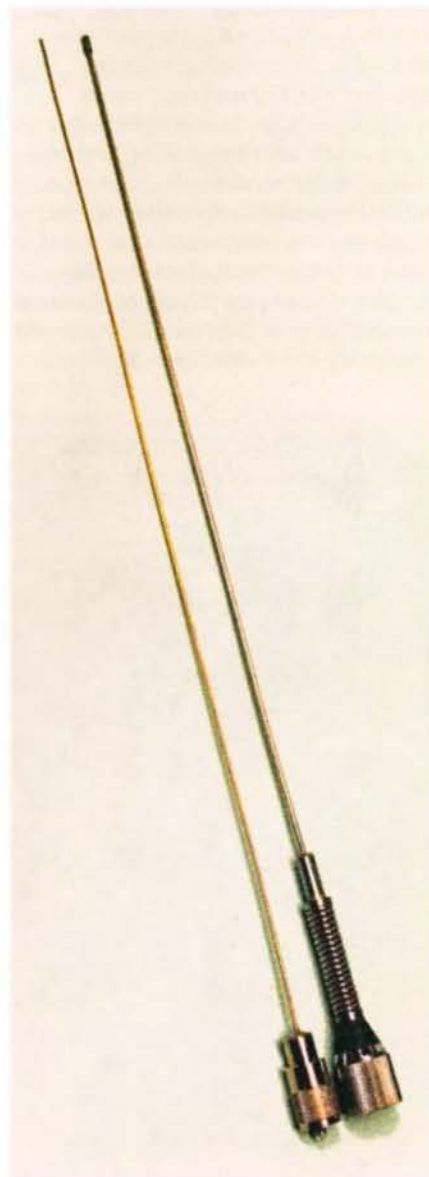


Photo 2: Homebrew 2 metre mobile antenna beside a commercial model.

interior due mainly to the advent of microprocessors that do most of the vehicle housekeeping. I have found fewer problems in these cars than some of the older models although it is always possible to get a birdie out of a microprocessor. One example of this was a fearsome interference on the 80 metre band coming from my Garmin dash-mounted GPS; no amount of fiddling cured it, so when I work 80 metres the Garmin gets switched off. The later windscreen mounted models do not appear to be as much of a problem.

Before dismantling dashboards or removing seats to run the cables to your new installation, it is good policy to disconnect the battery cable as modern cars have airbags mounted in the dash and various sensors hidden in the doors and seats to set off side impact airbags. I always consult the workshop manual or perhaps ask the local dealer of the location of the sensors and bags. When your installation is complete, reconnect the battery and see what happens; there is usually a boot sequence that modern computer controlled cars go through when power is reapplied

to the system. The first time you transmit, particularly on HF, try standing outside the car as it is not unknown for a large dose of RF to set off the air bags!

VHF/UHF Antennas

All the major antenna manufacturers have a range of mobile antennas either as mono, dual or tri band. Mounting has been simplified over the years and most commercial antennas now use a PL259 plug end. This also makes it very simple to build your own and mount it in a PL259 plug. The one shown is a quarter wave 2 metre antenna made from bronze brazing rod soldered into a PL259 and then sealed with silicon. The rod should be 480 mm from the top of connector to the tip. This makes a simple but effective 2 metre mobile antenna for mobile use or just as a spare to keep in the boot for emergencies. I purchased my 1.6 mm bronze welding rods from BOC Industrial Gas.

HF Antennas

All mobile antennas for the HF bands employ some form of loading to increase their electrical length and they can be broadly placed into three categories: single band, multi band tapped and multi band auto tune. An important point to remember with all HF loaded antennas is the need

for some form of ATU if you wish to operate across the entire band.

The most common is the single band helical whip which many will remember from CB days. This style of antenna can be purchased ready-made on any amateur band. Some dealers will supply a set of whips to cover all amateur bands, usually at a discount to single sales. It is possible to make helical antennas and there is an excellent site (2) which has a number of programs devoted to the design of loading coils. The late G4FGQ produced a large number of programs to enable amateurs to design and experiment with all types of loaded antennas. I recommend these programs to anyone interested in HF antenna design.

There are a number of locally built multi band antennas available, including the Outbacker (4) and the Bushcomm range (5). A popular amateur-made antenna is the FAMPARC (3) tapped antenna; it sells for around \$100 and the guys from



Photo 3: Close up of the homebrew base on the antenna shown in Photo 2.



Photo 4: The FAMPARC HF whip shown mounted on a vehicle.



Photo 5: A Codan base unit and its whip lying beside a FAMPARC HF whip to show relative size. Note the earth braid on the Codan base; the pavers are 30 cm square.

FAMPARC can be found at most swap meets in Victoria. The whip comes in two models 80/40/20/15/10 or 80/40/30/20/17/15/12/10. I understand they also cater for other frequencies, but for any further information contact the club.

The major drawback with the two types of HF antennas already discussed is that when changing bands you have to stop the car and either change the whip, or the tap on the antenna. For those of us who enjoy a more sedentary style of motoring there is a solution, the screwdriver or auto tune antenna. These antennas have a large base coil with a small motor that drives a contact up and down the coil to get the best tuning point. Early homebrew amateur models used a battery operated screwdriver motor to drive the tap and thus came its name. As they are continuously adjustable an ATU is not necessary; when changing frequency all that is done is run the motor up or down for maximum noise on receive and the antenna should be tuned.

There are a number of major antenna manufacturers that market a screwdriver antenna as well as amateur models and plenty of designs on the net to build your own. Maurie VK2CD (6) has been selling an amateur built screwdriver antenna for some time and those of you who attend the Wyong Field Day will no doubt remember having seen Maurie demonstrating his wares. A popular commercial brand sold in Australia is the High Sierra range (7); there are a number of control boxes that will interface between the High Sierra range and common rigs to make changing bands as easy as possible.

A locally made product is, of course, the Codan 9350 auto tune antenna;

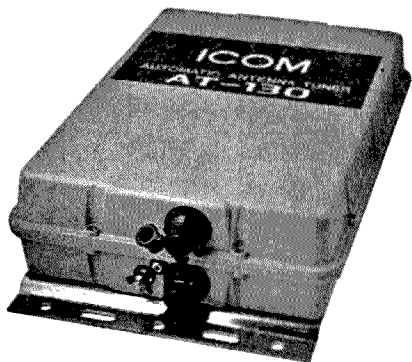


Photo 6: The Icom AT-130 automatic antenna tuning unit.

while expensive new, these are increasingly becoming available on eBay and some four wheel drive sites second hand. Beware of the earlier Codan 8558, as these are quite old and parts are increasingly difficult to obtain. The main difference between the Codan and amateur screwdriver antennas is the Codan incorporates built in electronics to monitor and tune the aerial for best SWR for the frequency you are currently using. If you own a radio from the IC-706 family, there is a simple interface to the Icom ATU plug on the rear of the rig.

A slightly different approach is the Barrett auto tune antenna; while it looks similar in appearance to the Codan, internally it uses lumped inductance and capacitance to tune the whip instead of the motor driven coil. These are similar in price to the Codan new and are also becoming available on the second hand four wheel drive market.

An alternative to the screwdriver is to use a base loaded ATU such as the Icom AT-130 or the SG-237 (8). Both of these ATUs will tune a whip or wire antenna but when feeding a whip will have to be mounted as close as possible to the antenna and fed with a short piece of wire. This is because the impedance at this point is very high and is unsuitable for a coax feed. This setup will work quite well and enables band changing from the rig.

I hope this has given you some ideas for your mobile installation; that's it for this month, happy motoring.

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Haldane, Robert. (1995) *The People's Force, A history of the Victoria Police*. Melbourne University Press. ISBN 0-522-84674-2 1995

[http://www.zerobeat.net/G4FGQ/page3.html#\\$S301%22](http://www.zerobeat.net/G4FGQ/page3.html#$S301%22)

<http://www.qls.net/vk3fr/>

http://www.outbacker.com.au/mobile_vehicle-77.php

<http://www.bushcomm.com/index.php/products/whips>

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<http://www.andrewscom.com.au/site-section-01.htm>

<http://www.qls.net/oe3mzc/sgc237.html>

OTY

Who were the RIs

Sir,

I read with interest the article by Rob Gurr VK5RG (Who were the Radio Inspectors? What did they do? - AR July 2010).

I developed an interest in radio in my early teens in Adelaide, and after discovering 160 m AM, had the intention of getting my ticket one day. After leaving school in the early 1970s my focus was on tertiary studies, and I strayed into the 27 MHz arena.

I purchased a pair of handhelds (and even licensed them), and experienced the fun and games on 27.240 MHz. Being somewhat naive I guess, I wrote to the PMG Radio Branch enquiring what licence covered what I was hearing.

A few days later Rob along with Alan Jordan arrived at the front door of my parent's house. Rob asked to see the handhelds (which I had fortunately not modified), and explained the 27.240 MHz situation.

I indicated my interest in amateur radio and showed them a couple of converted broadcast radios, one on 160 m, the other a SW set to which I had added a BFO, and a bunch of QSLs.

We talked about amateur radio for a while, then when leaving Rob told me to leave the transmitting experiments until I had my ticket, and wished me well with the studies.

That refocused my attention, and I later got my ticket.

Thanks for the nudge, Rob.

Damien VK3RX

vk3rx@wia.org.au

Do you have something to say about amateur radio.

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A basic trap for young players

Richard Cortis VK2XRC

A couple of years ago my wife and I bought a second hand campervan with the intent of driving to Perth, doing some sight-seeing and then driving back to Sydney. Obviously, amateur radio had to be a part of this adventure. Because of the vast distances and relatively few major towns, VHF was not a viable option. We had to have a good HF system.

Time was limited for preparation so I attached a piece of galvanized pipe on the bull-bar with hose clamps and erected the Outbacker antenna on top of the piece of pipe. This system worked adequately for the trip across to Perth and some travelling around in Western Australia. However, the problem was that I like to listen around on forty metres and log in on the travellers' nets on 21.185 MHz and on 14.116 MHz, which meant changing frequency. With the Outbacker, one has to stop, change the lead plug position and then retune the stub. Although I got quite good at it, my wife soon tired of having to stop just so I could play radios. Accordingly, some other system had to be developed.

I attempted to overcome the tuning problem by reducing the stopping time to simply changing the lead position and then using a manual tuner in the cabin to affect a better tune. This system did not work very well at all and was soon abandoned. The next step was to purchase and install a SG237 auto tuner which was installed near the top of the pipe, just below the antenna mount. This was far more convenient, but for some reason or other did not seem to work very well. In particular, there were difficulties in obtaining and maintaining a satisfactory tune. I removed the Outbacker and installed a 2.7 metre stainless steel whip and again, there were continuing problems of the tuner hunting or being unable to find a satisfactory tune. The output of the auto tuner was connected to the base of the whip, above the support spring, using a piece of insulated copper wire. The SO239 connector on the bottom of the plastic antenna mount was left unused.

as well as the bull-bar to the chassis, as some sort of attempt to ensure that I had a satisfactory ground system from the tuner. However, the tuning problems persisted. I tried a manual tuner but the metal whip waving in the wind caused major changes in tune. I guess this is why the auto tuner kept hunting for a better tune from time to time.

I moved the auto tuner off the antenna mast because it was obscuring portion of the view from the driver's seat and may have been seen as a bit of a hazard to pedestrians. I mounted the tuner on the plastic grille behind the

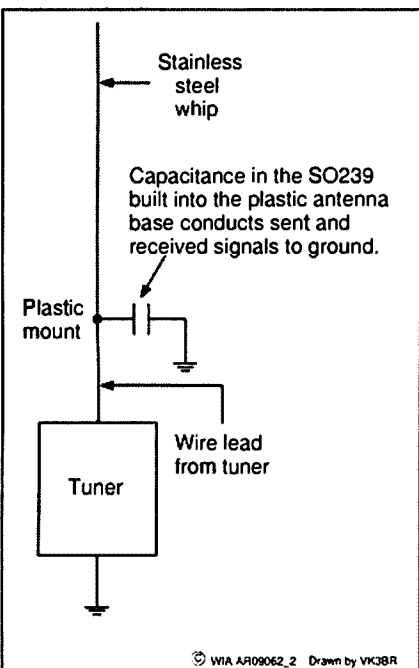


Figure 1: Indicative diagram of antenna mounting containing a capacitive trap to short circuit signals to ground.

To investigate, I did a whole lot of things. I used several different HF rigs to see if there was a problem with the original rig. However, all replacement rigs seemed to be subject to the same tuning problem. I then took the auto tuner off the campervan and tried it out on the boat where it tuned perfectly. I tried it on a dipole strung up to a tree where it tuned beautifully. Accordingly, there appeared to be no problem with the rig or the tuner so I came back to looking at the antenna installation.

Experience with HF antennas on sailing yachts led me to suspect that I may have a ground problem. Accordingly, I set about bonding the antenna base to the vehicle chassis,



Photo 1: Stainless steel whip with auto tuner and flying lead. This arrangement performed poorly.

bull-bar and fed the antenna with a piece of wire from the tuner to the plastic antenna base with the

SO239. I installed heavy grounding cables from the tuner to the chassis and the vehicle body. It seemed to

work a little better but I could not tune forty metres and eighty metres had never been a possibility. The signal output was very poor and the radio appeared deaf. I had the radio checked for receive sensitivity and it appeared satisfactory. There had to be something very basic and very wrong, and so close to the end of my nose that I could not see it.

Then one day I was fiddling around doing some maintenance and it occurred to me that the heavy plastic antenna base with the SO239 connector may act as a capacitor. Particularly, I had gone to significant effort to ensure the outside of the SO239 connector was well connected to ground. In comic books and cartoons, there are pictures of people with light bulbs above their heads flashing on and off when they have a bright idea. I felt a bit like this when I realized that the heavy plastic antenna base for the whip antenna may be acting as a capacitor with the capacitor providing an RF path from the antenna to ground. Hence not much energy got radiated and the antenna system was as deaf as a post. Was this antenna base a real trap for young players? Literally.

I immediately removed the stainless steel whip antenna from the plastic base on the pipe on the bull-bar and connected the wire from the antenna tuner direct to the base of the stainless steel whip. I tied the whole lot to a piece of wood leaning against the bull-bar and then fired up the HF. It tuned immediately on forty metres, twenty metres, then fifteen metres and then eighty metres. Instant tuning with the auto tuner just like it was supposed to happen.

The moral of this story is that there are traps for young players in attempting to use seemingly convenient and appropriate hardware for simple tasks. I have now eliminated the plastic antenna base containing the SO239 and have semi-permanently attached the lead wire from the tuner to the base of the stainless steel whip antenna, all neatly tied to a piece of wood, tied up with electric ties and wrapped with insulation tape. The piece of wood is jammed into the top of the pipe on the bull-bar. There is a five centimetre gap between the bottom of the antenna and the top of the pipe which should reduce



Photo 2: The original antenna installation with the Outbacker which, fed with coax, worked satisfactorily.

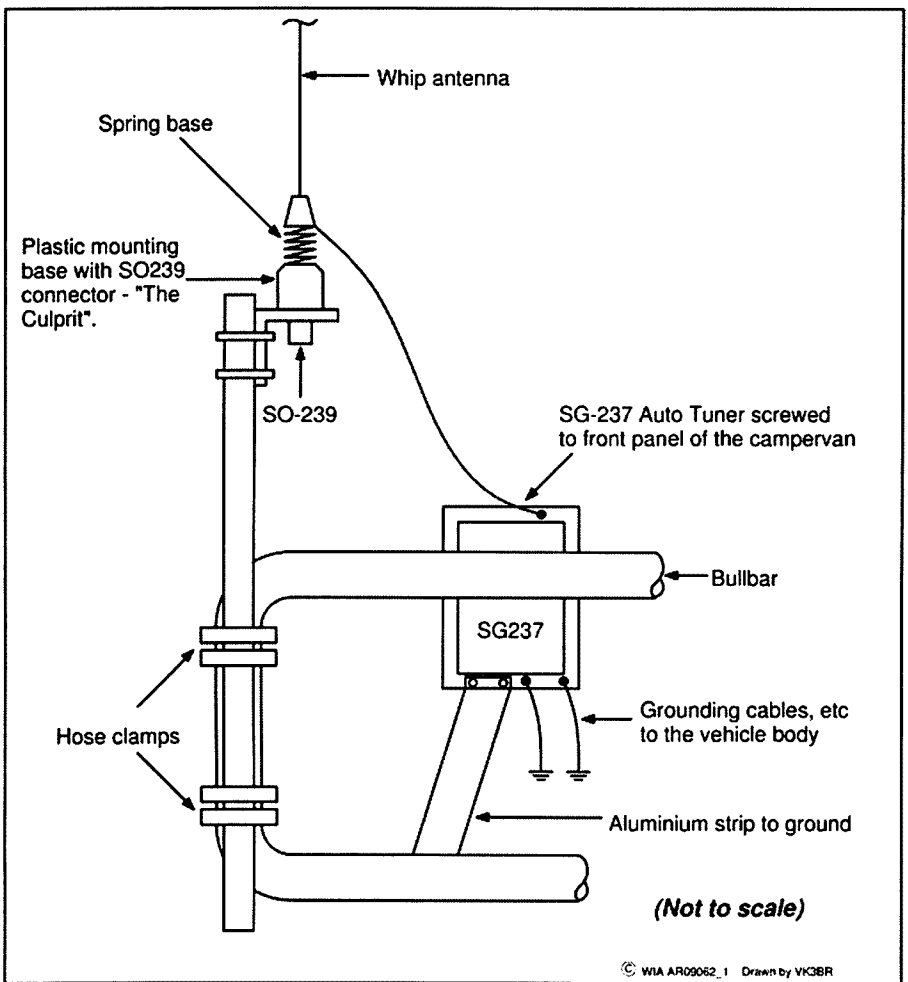


Figure 2: Electrical schematic of the 'trap for young players' antenna.

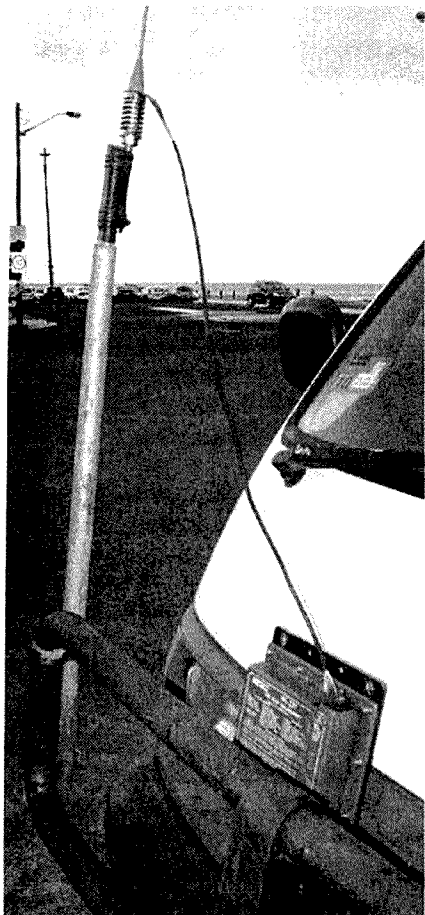


Photo 3: The finished and working antenna system on the campervan.

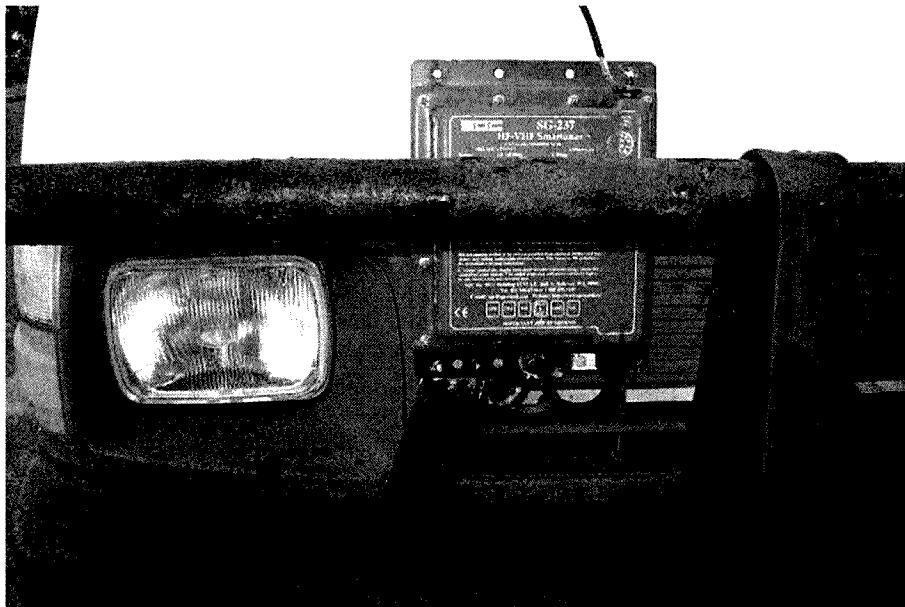


Photo 4: The auto tuner installation on the front of the campervan. Note the heavy aluminium grounding strap to the vehicle body.

capacitance. The wretched thing now works perfectly. Why did it take me so long? Well, it was that trap for young players where I used the convenient and seemingly appropriate hardware not realising that it contained a nasty RF path to ground.

On our next trip away, I expect to be able to be heard on the travellers'

nets without the need for several repeats of name, call sign, current location and destination. My thanks go to the very patient operators of the travellers' nets who have taken time and effort to communicate with me despite my dreadful signals. It will be better in the future.

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Silentkey

Arthur William Stowar VK2AS

27 June, 1920 - 17 July, 2009

Born in Sydney, the eldest child of English immigrant parents, Arthur sailed aged 10 with his family back to England to escape the Depression in Australia. His father, a builder, was offered immediate work, the family remaining there for three years. Then, believing all was OK in Australia, they returned only to find that work was still unobtainable. Times were very tough.

Aged 16, Arthur became interested in ham radio, left school and became an indentured apprentice electrician. In 1938 he obtained his Amateur Operator's Certificate and had his first radio contact - the start of his lifelong passion. Between 1938 and 1948 he kept an immaculate logbook and on 25 March, 1948 earned membership of the Wireless Institute of Australia's DX Century Club; he had 127 confirmed country contacts. On 10 November, 1948 he also earned membership of

the American Radio Relay League DX Century Club and in 1949 received Award No 17 from the Radio Amateur Journal for having two-way radio contact in each of the 40 zones on the official CQDX zone map of the world.

World War 2 had intervened, with Arthur posted for three years as Signals Officer with the Papuan Infantry battalion. On 5 June, 1943 he became a Lieutenant with that battalion, receiving the nickname 'Captain Moonlight' for his skills in leading his troop at night out of the jungle back to camp.

As Signals Officer he was the first to give the 'all clear' to advance at the start of the New Guinea campaign. He suffered two bouts of malaria but on leave found his future wife Heather McLachlan, marrying at Grafton Presbyterian Church on 22 July, 1944.

On discharge they settled in Sydney. Always keenly pursuing his hobby, by 1962 he had 300 confirmed 'country' contacts. Later, space research

fascinated him and he followed satellites, downloading reams of positioning data and in 1991 received recognition from NASA for his contribution to the SAREX project, the Shuttle Amateur Radio Experiment.

He was heartbroken selling his cherished Collins gear in 2004 when it became clear he would have to move to the RSL Retirement Village at Narrabeen. There, for the very first time, he admitted to having, as a youth, skipped many technical college classes to make contact with other hams.

Amateur radio was his lifelong obsession around which everything had to revolve. He was indeed fortunate to be able to do that.

Arthur began ham life as VK2ACX, later becoming VK2AS.

Submitted by his son John Stowar, with assistance from Chris Zvirblis VK2HX.

David B Lyddieth VK1DL - SK

David was born on 5 July, 1944, at Summer Hill in Sydney, the fourth of six children. In early life he suffered with rheumatic fever and allergies, requiring long periods of confinement. Boredom was the enemy, and his parents gave him a Meccano set to occupy his time and mind. This surely was the beginning of David's fascination with things mechanical, radios and, later, computers.

In 1961 David completed his radio and

television servicing certificate with the Marconi School of Wireless, did his apprenticeship with Amalgamated Wireless Australia Limited, and obtained both his First Class Commercial Broadcast and Amateur Radio certificates in 1963.

David's career was busy and varied, and included some time in the Maritime service, as a technician at 2UW in Sydney, and later in Canberra with the Department of Defence where he was involved with the design and set-up of radar installations on ships. Through all of this, he still managed to operate

his amateur station often, where he was particularly proficient with Morse code.

Although not in good health for many years, the result of a car accident injury, he nevertheless was active in several outdoor activities and his sudden death on 4 May, 2010, at 65, was a great shock.

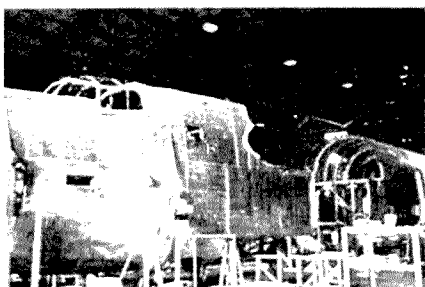
David leaves behind his second wife Kay, and children Emma and Simon.

He is fondly remembered.

Created from information provided by his loving wife Kay Lyddieth.

OTY

B-24M Liberator



Dear Sir,

I have read in the current issue of your magazine an article on an ex RAAF member restoring some old service radios.

We are based at Werribee rebuilding a B-24M Liberator aircraft which had extensive radio and radar systems and antennas installed when manufactured. These were removed on disposal of the aircraft.

My reason for this message is to ask if

you know of any of your members who may have knowledge or information on the installation of the above equipment which could help us with the rebuild of our aircraft.

Yours Truly,

David Millard.

davidmillard@primusononline.com.au

The Melbourne digital ATV repeater VK3RTV Mt Dandenong

Peter Cossins VK3BFG

The initial licence for the Melbourne Amateur Television Repeater VK3RTV was issued by the Postal and Telecommunications Department on 5 September 1978 and the 'Mark 2' version of the repeater was turned on at Olinda on Mount Dandenong on 4 May 1979.

A number of changes have occurred over the years including Black and White to Colour, moving the output from 50 cm down to 70 cm, replacement of antennas, a new controller, an onsite DVD player and changing/adding the input frequencies of 1250 and 1283 MHz and 10.41 GHz.

ATV activity in the eighties and early nineties was very high in Melbourne with more than 40 stations active. Over recent times, activity had been reduced to a few enthusiasts.

I had been following developments in DATV (Digital Amateur Television) in Europe and thought that a change to digital would provide an impetus for increases in activity. It was also in the spirit of amateur radio to experiment with emerging technologies.

SR Systems in Germany run by Stefan Riemann DG6FAC, had PCBs available 'at a reduced price' for amateur operators that could be assembled to form the basis of a digital television system. Stefan has been a leader in this area and you can find references to his work dating back 10 years or so.

Reading around the DATV literature available, I found that amateurs had favoured DVB-S. This is the satellite standard and can be sustained in smaller bandwidths than analogue TV. It is also more robust from a communications point of view. A satellite receiver specifically connected to an appropriate antenna was required to receive this mode. A receive down converter would be required if we used the current 70 cm allocation.

Mount Dandenong is a good RF location with a null only in one direction. ATV signals can be received 30 – 40 kilometres away and further. I decided that DVB-T would be the way to go as this can be received on normal set top boxes (with manual tuning) that many people may already have. These were dirt cheap now

anyway and the purchase of a set top box also can serve as a receiver for commercial television.

What we would need is an MPEG Encoder and DVB-T Modulator and to build some linear amplifiers. On further investigation and dialogue with Stefan, I found out that we could fit two 5.5 Mbit television digital channels into the current 7 MHz 70 cm ATV allocation. This would require an additional MUX PCB and another MPEG Encoder.

Now to calculate the burning question how much would this cost and also what other equipment would be needed to be assembled and/or built. On estimations and quotations, it was found that this would require a significant amount of funds, well out of the range of passing a hat around for donations amongst Melbourne ATV operators.

I decided to write a submission to Amateur Radio Victoria in an attempt to gain financial support. The response from AR Victoria was positive, but they indicated that a number of projects in progress had

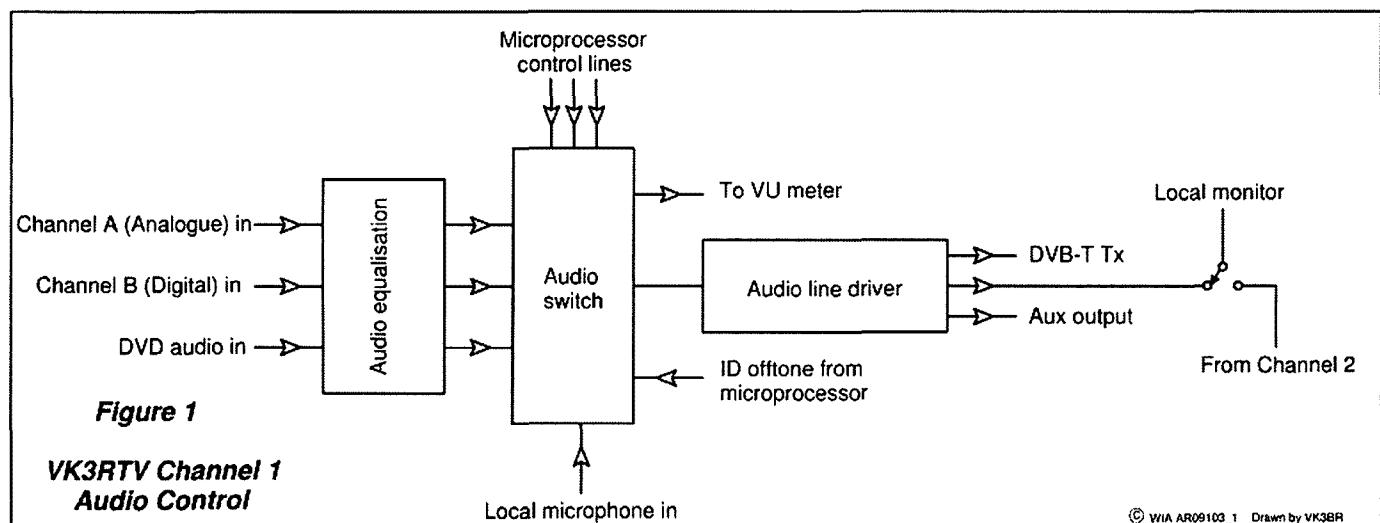


Figure 1: Block diagram – video.



Photo 1: The VK3RTV repeater site.

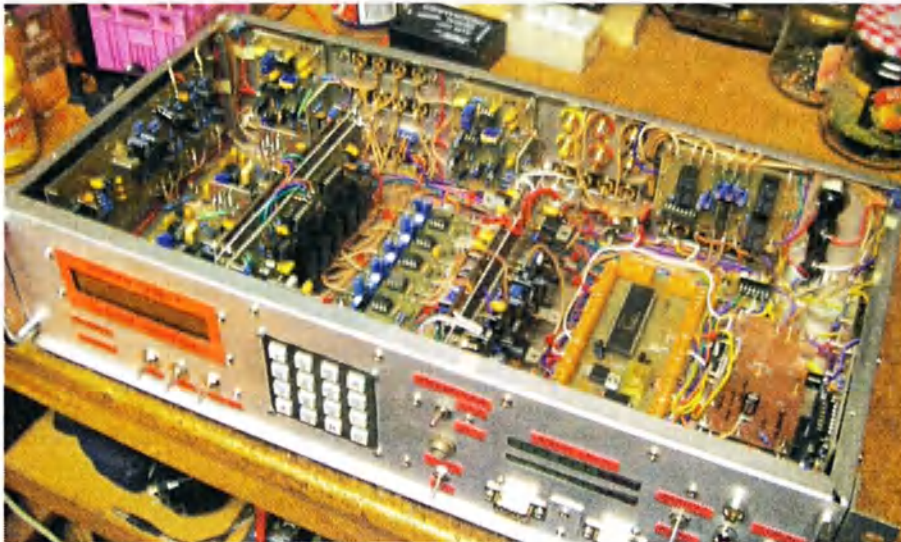


Photo 2: Controller.



Photo 3: DVB-T exciter.

priority and needed to be completed, but support was indicated for the proposals for some time in the future.

In late 2008, AR Victoria saw its way clear to fund the project. At the same time, innovative projects were being sought by the Wireless Institute of Australia and a submission was duly written. The result was again positive and we now had sufficient funds to proceed.

As we had to simultaneously control two channels a new controller needed to be built.

Naming the channels, VK3RTV1 and VK3RTV2, a decision had to be made regarding management of the two channel sound that was available. Initially we decided to implement LH channel (mono) sound only.

I also wanted the control system to be in one rack mounted box; this turned out to be quite a challenge to fit everything in and also retain a level of serviceability. The video and sound mixing boards were mounted back to back vertically and then the system grew like topsy in a sort of planned way, but some of the existing boards could be integrated and there is a bit of functional duplication in the final unit.

I used relays for switching the video yes I could have used electronic switches but I had a large supply of DPDT 12 V relays and a scarce supply of electronic switches which are sometimes difficult to source.

This type of switching had been used for the last 30 years in VK3RTV with a high degree of reliability so a 'no cost' electromechanical solution was adopted. The final video line driver is slightly compensated to counteract the lack of bandwidth of the output video from the satellite receiver. One of the outputs from each line driver is connected to a local video monitor and there is also a local audio monitor, switched by the same hardware.

The audio system uses CMOS electronic switching and Op Amp mixing and includes a local microphone amplifier, a bandpass filter to convert ID and tone square waves from the microcontrollers to sinusoidal, a drive to VU meters and an output amplifier.

Two Picaxe 40X microprocessors were used as the software is delightfully easy to use and they have flash ROM that can be burned via a RS232 port.

Dual DTMF encoders and decoders were installed, the encoders to allow local touch tone control. Each video input has a VDA (Video Distribution Amplifier), one port of which goes to the sync detectors for analogue and in the case of the internal colour bar generator and external DVD player, to VK3RTV1 and also VK3RTV2. Instead of using LED indicators, system status information is provided by a LCD display on the front panel.

Other switching includes local monitor and local microphone and also Darlington output drives for switching external relays for future higher power linear amplifiers.

Apart from the video and audio outputs for VK3RTV1 and VK3RTV2, there are two further outputs for extensions of facility in the future.

The modulator can be switched on and off via a RS232 port, but runs only at 115.2 kBaud. As this is not possible from a Picaxe, an additional Atmel AVR microprocessor was added. This is controlled by the Picaxes, and sends the required codes to the modulator at 115.2 K Baud. It also provides the drives for the Darlington output circuits.

The philosophy of the inputs was to have one analogue and one digital

(DVB-S) for each output channel.

VK3RTV1 has 1250 Analogue or 1255 MHz DVB-S and VK3RTV2 has 10.41 GHz Analogue or 1278 MHz DVB-S.

The MPEG encoders, multiplexer and modulator were all installed in a rack mounted case including a small linear amplifier to raise the power level enough to drive a FET module PA. The power supply is over voltage protected and the linear amplifier relay switched by the controller.

Robert Broomhead VK3DN came up with an excellent 12 V 46 A power supply all in a case including fans that



Photo 5: Linear amplifier. produce a copious flow of air over the system. An added bonus was that



Photo 4: The 46 amp power supply.

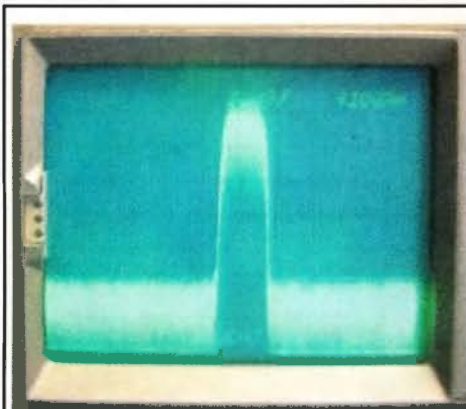


Photo 6: Good DVB-S Spectrum from Home TX.

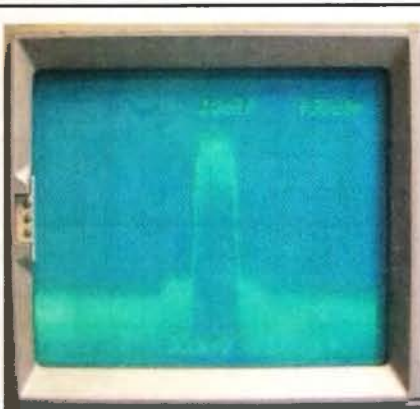


Photo 7: Less clean spectrum – although still OK..



Photo 8 The output spectrum is now poor, clearly quite dirty..

"The pictures above show how the bandwidth rapidly increases with increase of drive.

This effect is extremely non-linear and the growth occurs at an alarmingly fast rate after a certain point has been reached. Similar effects can be seen with overdriven SSB, but with DATV this occurs very much earlier. The result is that the PA's have to be run in Class A and also driven lightly. This produces a highly inefficient RF system.

As the bandwidth of the system is 7 MHz and the centre frequency is 446.5 MHz, care must be taken to ensure that the spectrum is clean enough and does not infringe with significant out of band signals."

they have remote control function which can be facilitated by the system microprocessor.

A RA60H4047M1 60 Watt FET Module was purchased from RF Parts in California and mounted in an enclosed heatsink and fan assembly. Digital television requires extremely linear RF amplifiers and hence it was necessary to bias the module close to Class A. This is an extremely inefficient mode with a maximum efficiency of 50%. The actual efficiency obtained for digital television was about 14% !!

I decided that this amplifier would be power supply switched using the nice big units provided by Robert Broomhead. This gives the PA time to cool down when the repeater is not in use. The output power at the moment is about 10 watts and good signal reports have been received from all over Melbourne.

The pictures on previous page show how the bandwidth rapidly increases with increase of drive. This effect is extremely non-linear and the growth

occurs at an alarmingly fast rate after a certain point has been reached. Similar effects can be seen with overdriven SSB, but with DATV this occurs very much earlier. The result is that the PA's have to be run in Class A and also driven lightly. This produces a highly inefficient RF system. As the bandwidth of the system is 7 MHz and the centre frequency is 446.5 MHz, care must be taken to ensure that the spectrum is clean enough and does not infringe with significant out of band signals.

User Touch Tones can be sent via the sound subcarrier to bring up test colour bar and tone, and also information programs on a DVD player.

Signal reports can be called for 1250 MHz analogue and both the digital inputs. In the case of the analogue receiver, the AGC line is read by an A/D Converter in the Picaxe Microcontroller and an appropriate track selected on a DVD Player announcing the signal report received.

There are four possible tracks, S5, S4, S3 and S2 and less. This corresponds to the 5 point British Amateur TV Club's reporting regime for TV. S5 is noise free through to S1 which is very noisy. The announcer is my daughter Shani Cossins.

In the case of the digital receivers the OSD (On Screen Display) is activated and the internal signal strength and quality report selected.

The digital receivers and also the DVD player are indirectly controlled by a serial port from the Picaxes which send ASCII Characters to a small Atmel 8051 microcontroller. This dedicated controller then emulates the appropriate IR Codes and acts as a remote controlled 'Remote'. The code waveforms from each receiver Remote and DVD player were measured on a Tektronics digital oscilloscope and duplicated.

After some discussion and debate, it has been decided to implement stereo sound. This is already available for the digital modes, it is only a matter of patching the RH Channel

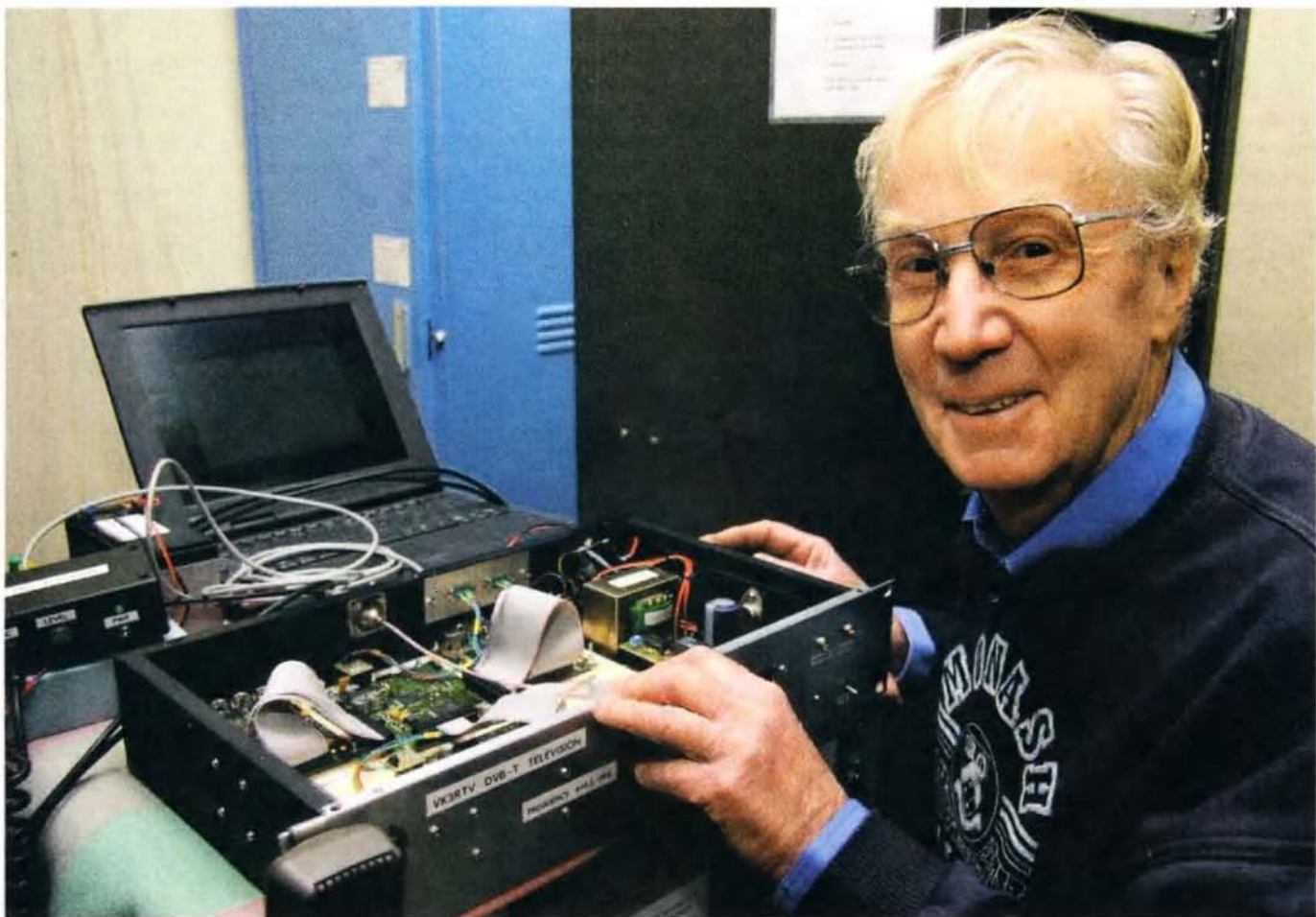


Photo 9: The author with the 70 cm digital transmitter.

Photo by Robert Broomhead VK#DN

from the receiver to transmitter. In the case of 1250 MHz analogue, the receiver will be programmed with sound subcarriers on 6 MHz and 6.5 MHz. Most of the available analogue ATV transmitters have dual sound capability or can be easily modified to achieve it. Mono sound will operate via the LH Channel with a subcarrier frequency of 6 MHz.

With an analogue input to the system, the results are extremely good with an improved output S/N compared to the previous all analogue system.

With a DVB-S input it is even better with virtually no added noise. The quality of the transmission is fairly close to the quality of the originating video!!!

Thanks to AR Victoria, the Wireless Institute of Australia, and also the members of the Melbourne ATV community whose donations of money and equipment over the years have kept VK3RTV on air. Phil Gardner VK3GMZ deserves a special mention for all his work in support.

Thanks also to Richard Carden VK4XLR, for his advice behind the scenes during the project (Richard has been running DVB-T and DVB-S in Queensland for some time).

With the excellent quality now available it is hoped that ATV Operators will continue to develop appropriate programs of interest for transmission. Lower level licensees may be encouraged to upgrade and experiment in this fascinating component of our hobby. **ar**

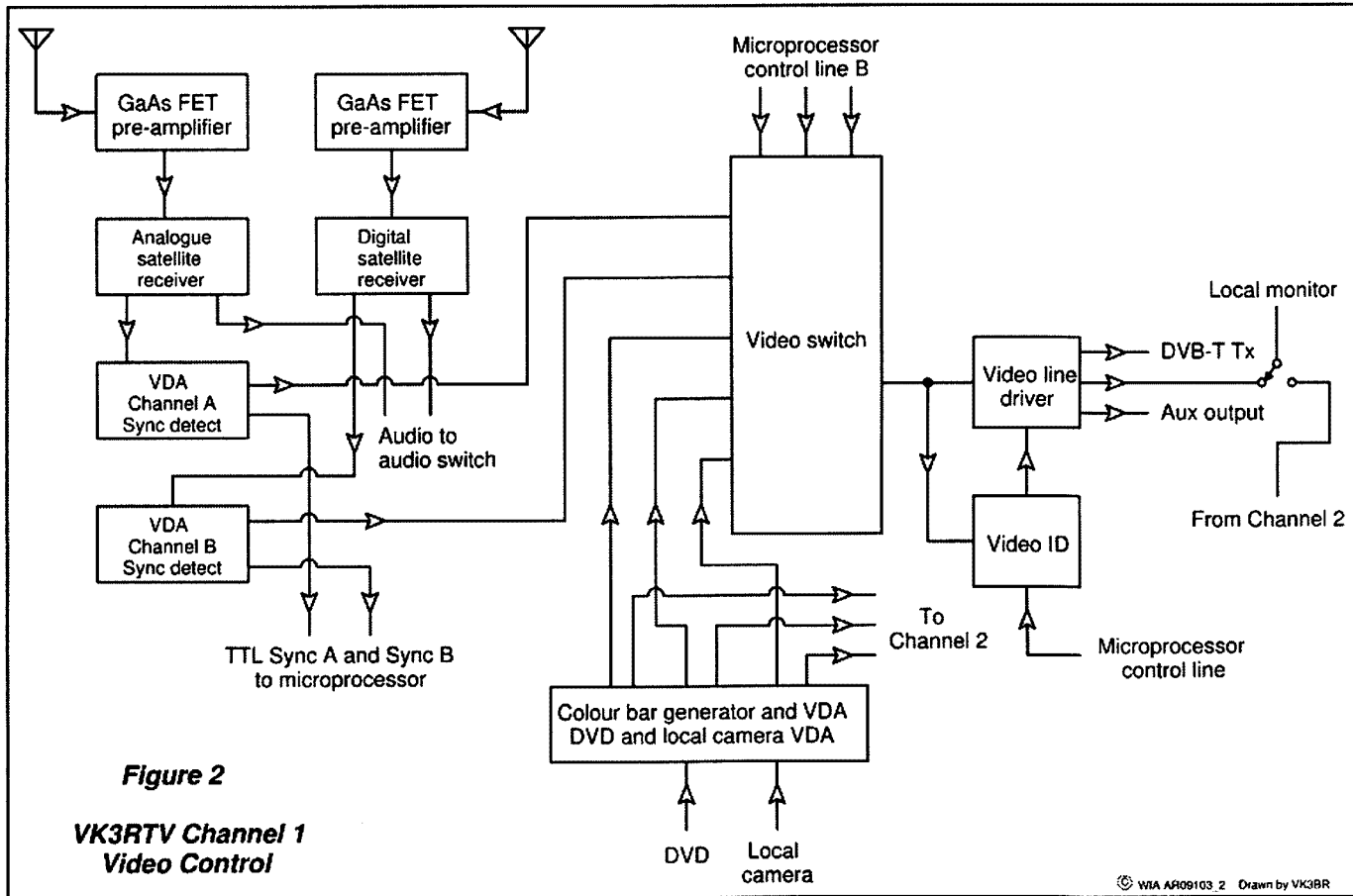


Figure 2: VK3RTV. Channel 1 Video Control.

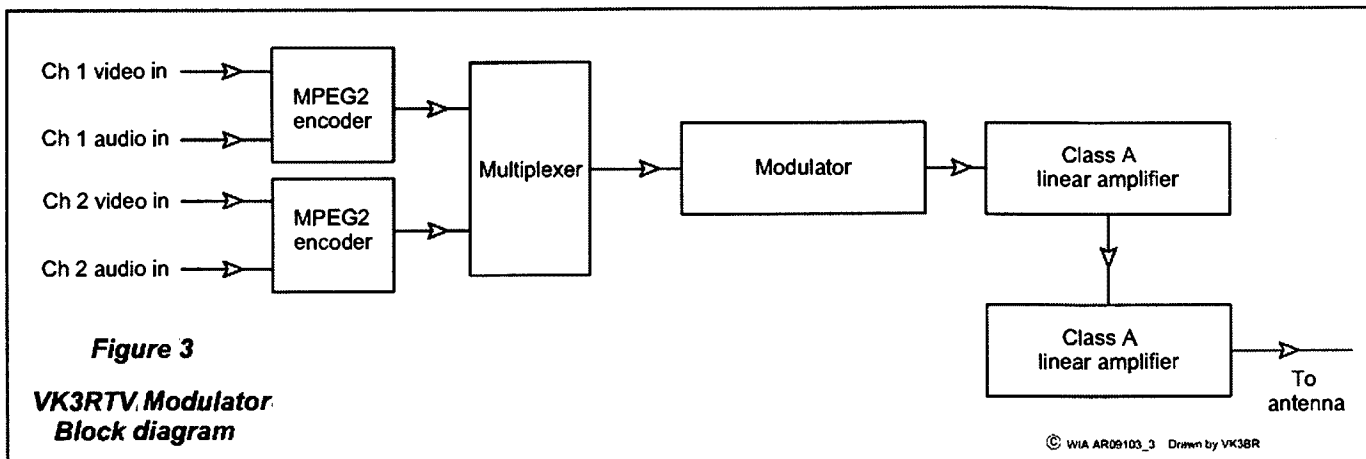


Figure 3: VK3RTV Modulator Block Diagram.

The Targa Wrest Point 2010 rally

Roger Nichols VK7ARN

WICEN in southern Tasmania has a long association with motor sport, especially Targa Tasmania and, in earlier years, the Australian Rally championship heat under its various sponsor related guises.

Tasmania's loss of the championship heat was also sadly missed by WICEN. The differences between the two events, from WICEN's perspective, was that Targa involved radio and repeater deployment and operation using Targa owned equipment, whereas the championship task was to design, establish and operate a whole system.

Rallies normally have at least three radio networks – Stage, Command and Results. WICEN's role on Targa Tasmania involved Stage nets. On the championship event it had been Command or Results. WICEN's interest in Targa dwindled.

Discussion with Targa's Communications manager, Ron Brown VK7ZRO, led to Ron having a think about something with a technical challenge for WICEN to get its teeth into.

Ron is well known for at least two of his attributes, both associated with his head. The first is that lots of it is visible. The second, of more importance, is that Ron does a fair bit of thinking, usually with interesting outcomes.

In 2009, a new event was introduced - Targa Wrest Point - a sort of mini Targa, run only in the south of the State over two days versus the five days of Targa Tasmania.

The first event in 2009 suffered some problems which were designed out for 2010. One of the changes was the use of one stretch of road four times, twice in each direction. This road leads from Geeveston in the

Huon Valley to the Tahune Airwalk, a spectacular tree top height walk way in the deep and winding Huon River valley.

The stages' Starts/Finishes were almost at the Airwalk, a very difficult location for radio communications. The Airwalk visitor station has satellite phone communications for voice and data but this was only available for the rally in case of dire emergency. The challenge for Ron was getting reliable communications between there and Rally Command at Wrest Point Casino, back in Hobart.

The solution? Come up with an outline plan and call in WICEN Tasmania (South) to develop and implement it: thereby fixing two problems at the same time, communications and WICEN's dwindling interest.

Ron had found a good, high location in 2009. A new logging road to an elevation of 555 metres ended at a nice level platform with astounding outlooks in the requisite directions.

This gave a good start but still did not

provide communications directly to the stages' starts and finishes, nor over a 300 metre range of hills 53 kilometres distant and on to Rally Command at sea level, a further three kilometres away. This gave a total path from the stages to Command of 63 kilometres.

Solutions

Command - Voice

UHF to a UHF/VHF cross band repeater located across the river from the rally stage terminus.

VHF to a repeater at the high point.

VHF to a VHF/UHF cross band repeater located on the hill above Wrest Point Casino in Hobart.

UHF to the Casino.

Results

Data (files containing each stage's start and finish data)

Runner with USB dongle from Start/Finish to,

Packet Station located across the river to,

Packet station located at the high point,



Photo 1: The Arve 34C link with, from left to right, Roger VK7ARN, Peter VK7TPE and Garry VK7JGD.



Photo 2: The Arve 34C Stage Net station (foreground) and Command Net VHF repeater station.



Photo 3: The Arve 34C packet to internet station.

Transfer to Telstra NextG wireless broadband,
Email to Results at the Casino.

Resulting from field surveys, four WICEN locations were established. The first being in a picnic area at the start of the Airwalk walking track and UHF handheld accessible from where the action was, at the stage termini. This was physically accessed via a bridge over the Huon River, normally open only to pedestrian traffic.

Two stations were set up here. A Kenwood TM-D71A with UHF folded dipole and a commercial vertical dipole on a six metre mast provided the cross band repeater for Command voice communications. The packet service was covered with a netbook PC, a Kenwood TM-D710A with built in TNC and a Diamond X50 antenna on a five metre mast. Power was from a portable generator and power supply. The YAPP file transfer facility of WinPack AGWPE drove the packet. An initial file corruption problem was overcome by a PACLEN adjustment and from then on all ran sweetly.

The next link was on the hill top, known as Arve 34C, the name of the logging coupe. A Honda 1 kVA inverter generator powered this site. Here was a VHF repeater for Command voice communications (Tx Phillips FM815, Rx Phillips PRM80), six metre mast and six element Yagi, aimed towards Hobart, and another Kenwood TM-D710A with Diamond X50 at six metres as the second packet station.

A notebook PC received the files which were then attached to emails despatched to Results in Rally Command at Wrest Point casino. Connection to the Telstra NextG network was achieved via a Telstra wireless link service and a Phil VK7JJ designed eight element Yagi (www.perite.com/vk7jj/NextGYagi.htm). WICEN also established the Stage Net 80 MHz repeater at this location.

The next link in the Command net was at Mt Nelson above Hobart.

An Icom IC-2720 in cross-band mode with a eight element UHF beam and VHF vertical dipole at six metres was intended. Initial problems led to trials on another IC-2720 with a car roof top dual band antenna. This was adequate

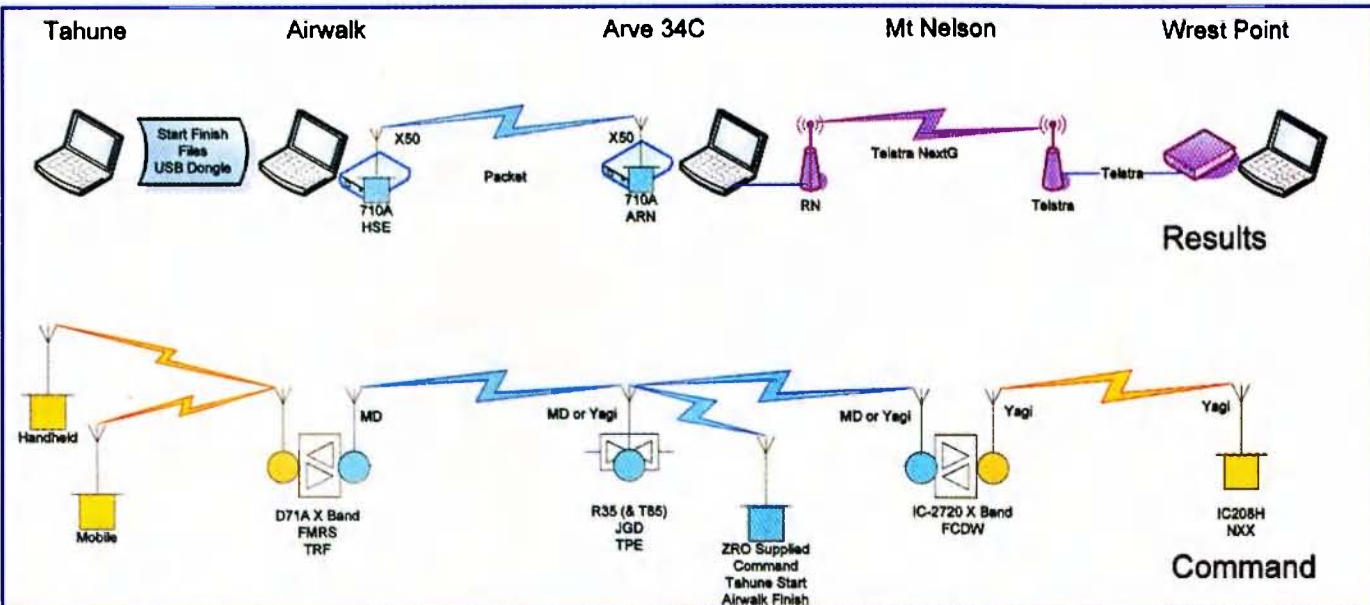


Figure 1: The network schematic.

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- Automatic type identification of Bipolar Junction Transistors (BJTs), Darlington, MOSFETs, JFETs, triacs, thyristors, LEDs, diodes & diode networks
- Automatic pinout identification
- Gain and leakage current measurement for BJTs
- Silicon and germanium detection for BJTs
- Forward voltage and test current
- Dimensions: 100(W) x 71(H) x 27(D)mm

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and stayed in use for the duration. The system terminus in Wrest Point Casino is almost RF impenetrable, so a tripod mounted six element Yagi at the front door was connected by Heliac to an Icom IC-208H in the room being used as rally Command centre.

The south east amateur repeater network provided good liaison channels via VK7RTC on UHF and the VK7RBI, RHT, RAD linked system on VHF. Mobile phones were also used. The Airwalk location could not access any of these repeaters, so any liaison traffic was passed via the Arve 34C station.

The task was completed successfully, despite a few early pre rally start hiccups. A lesson learned was although each of the sections was tested prior to the event and worked successfully, linking throughout caused new issues to arise which needed to be fixed on the run. Logistics precluded a full system test on site. In future we will test the paths on site, but also establish a facsimile of the full system across a 'paddock' to indicate any trouble points.

Amateurs on the event

Tahune Airwalk

Command - Michael VK7FMRS

Packet - Scott VK7HSE

Arve 34C

Command - Gary VK7JGD

Packet and NextG - Roger VK7ARN and tele-tech harmonic Richard

Stage Net - Peter VK7TPE

Mt Nelson

Command - Chris VK7FCDW and Kerry

Wrest Point Casino

Command - Stu VK7NXX

Stage Nets

Dale VK7DG, Clayton VK7ZCR, Bob VK7FRKL and Scott VK7FSCO

'004' and '006'

Ron VK7ZRO, Leon VK7ZLM, Rod VK7TRF, James VK7FJLC and Gavin VK7HGO



Photo 4: The Mt Nelson link, just above Hobart, with Chris VK7FCDW and Kerry in control although not in the photo.

GGREC Re-enactment at Koo Wee Rup.

The group photo of ALARA members shows from left Susan VK3LOV, Pat VK3OZ, Margaret VK3FMAB, Micheline VK3FMGE and Naree.



Norma O'Hare VK2YL, her husband Frank VK2AKG, together with daughters Lorraine VK2FICQ and Michelle VK2FMYL attended the WIA Centenary Convention. This is a photo of her family with Dick Smith.



Frank VK2AKG, Lorraine VK2FICQ, Norma VK2YL, Michelle, VK2FMYL, Dick VK2DIK, Robyn, Mark VK2ZQD.

(Robyn is Mark's wife, and Mark is Frank's brother)

WIA Centenary Weekend

A number of ALARA members attended the WIA Centenary Conference held in Canberra over the weekend of 28-30th May, 2010. Marilyn VK3DMS was present together with Jenny VK5ANW, Colleen Giles-Clark, Jenny VK5FJAY, Meg VK5YG, Nancy VK2PNG, Heidi VK3FHID, Myrna VK5YW, Lia VK3LPH and Norma VK2YL together with her two operator daughters, Michelle VK2FMYL and Lorraine VK2FICQ.

The following is an outline of impressions of the event from some of the participating ALARA members.

The event was held at Rydges Lakeside Hotel which was an ideal venue for the meetings and Celebration Dinner. Everybody arrived during the Friday and later all gathered at the Black Mountain Tower that evening for a viewing of the communications equipment. People were split into three groups to undertake the tour which was a great introduction to the event. This was followed by dinner in the Tower's revolving restaurant. People were warned not to place their bags on the revolving window sills for fear they might lose them. The last tour group was a little delayed in returning for dinner but everyone used this period to catch up with old friends and meet with newcomers.

After breakfast on Saturday some of us attended the AGM and forum while others joined the tour around Canberra, which they thoroughly enjoyed despite the day being rather bleak and a little wet. For those of us attending the forum, the generous luncheon and afternoon tea gave us a great chance to catch up with others such as one of our newer members Heidi VK3FHID and her OM.

Please Note:

From Bev VK6DE

Re: Corrections to the VK6 Lunch details. The lunch is held on the last Wednesday of the month at the Bayswater Hotel. Anyone wishing to attend should please contact Poppy VK6YF on 08 62784339 for further details.

Other Snippets:

News from Norma VK2YL. While in Canberra with her two daughters for the WIA Conference, they were able to visit the mint and purchase a number of rolls of the new Girl Guide \$1 coins which they have brought back to issue to their Guides as keepsakes. These coins are now in circulation. All this plus radio activities!

Norma also informed us that NSW ALARA is planning their first birthday party this year. Well, congratulations! Do please let us know how things fare. We look forward to hearing all about it.

Shirley VK5YL has heard that Tina VK5TC and Christine VK5CTY are both safe and well having avoided floods and other hazards on their way to the YL International Meet in Munich. We hope to be able to bring you all the news upon their return.

July is the ALARA birthday month. 35 years on from the beginnings when a few women operators sought to meet other females with the same interests. So much has happened in the intervening years and the organisation continues to grow.

The YL International Meet in Munich

The afternoon presentations were excellent and very interesting. Norma VK2YL, ALARA's founder, gave a wonderful talk and power point presentation, ably assisted by her daughters Michelle and Lorraine who are themselves operators. She highlighted our 35 years from the beginnings of the group then known as LARA right through to the current day, with words of encouragement to ensure the hobby continues in the hands of new and younger members. The presentation was very well received.

All together there were eleven presentations each running for approximately 20 minutes. A variety of formats was used, such as anecdotes, film, power point projections etc. so the audience was never bored. The afternoon's programme was ably co-ordinated by Peter Wolfenden VK3RV who is a great source of information relating to the history of people and their contributions to the development of our hobby in Australia.

Two YL Contests To Add To Your List.

The first is a DX-pedition to Greenland between 16th and 20th September this year. The six YLs intend to be on the radio round the clock to try to give as many amateurs as possible the opportunity of working them on SSB and CW.

If you are interested in rather rare DX this could be your chance. Have a go, please they will be thrilled to make contact with VK calls.

QSL Manager Inger Lundin LA8FOA
AT Plantagevej 9, DK-2680 Solroed
Strand Denmark

The second Contest, sponsored by France, is the UFT-YL-CW Contest. This will run for two periods. On 19th November from 1900-2100 UTC on 80 metres which will be difficult for VK amateurs but 20th November between 0800 and 1000 UTC on 40 metres (7010 – 7030Mhz) may be possible.

There will be multipliers for DX countries and they will welcome SWLs who record a complete QSO.

Logs to be sent to Evelyne Terrail
F5RPB at Quartier Syt Jean 26340
SALLANS France

Thirty YLs from around the world met on 18 June for the YL International Meet. Connie DF8MN was our hostess and the program of activities she had arranged was very interesting.

We saw much of the Munich that draws tourists every year and we could see why.

The weather was not kind. It was summer in Munich but there were some days when the winter temperatures in VK5 and VK2 were higher than that in Munich.

VK5 and VK2 are important as for this International Meet there were three YLs and two OMs from Australia attending. At many of the recent International Meets, Gwen VK3DYL has been the only representative from VK-land. Unfortunately, at the last minute Gwen had health programs that prevented her travelling but Tina VK5TMC, currently President of ALARA, and Dot VK2DB, our very good, long time editor of the ALARA Newsletter were both in Munich with their OMs, Robert VK5ZHW and John VK2ZOI, and Christine VK5CTY represented the land downunder.

There were three couples from the US, Lois WB3EFQ current President of YLRL, and Anne WB1ARU, immediate Past President, and Rose-Marie KB4RM, the Sponsorship secretary, and their OMs along with Suzanne VE7IM represented North America.

There were two YLs from Japan, Mio JR3MVF and Ton JR6XIX and her OM Dom, and Sarla VU2SWS from India, all three of whom have attended a

A RECENT YL SK

Christine VK5CTY.

Maxie DJ4YL, known to most of the VK5 YLs and to a number of other amateurs all over Australia, became an SK in June.

Maxie had been an amateur for many years and was active at one time on the CW bands, but mostly she was an assistant to her OM Heine who was a white stick operator.

Together they made friends with amateurs in many countries but especially in Australia.

After Heine became an SK Maxie and

number of earlier YL Internationals, and all well known in the DX world.

Some of the German YLs who made up the total are also well known in DX circles and have attended other International YL Meets, such as Christa DJ1TE and Gertrud DK8LQ. But for some it was the first such gathering.

To conclude our formal meeting we had a very interesting talk about the experiences in Antarctica by someone who had wintered over several times and spent some shorter periods there.

The time-lapse photos of auroras and seeing a different section of Antarctica from the Australian bases were particularly interesting.

At the formal meeting Tina, co-ordinator for the next YL International, in Adelaide in 2012, spoke and stirred up quite a lot of interest.

As a group the attendees in Munich also went to the very large and very well-known Hamfest held every year in Friedrickshaven. Tina made her presentation again which was very well received. It would seem that many YLs would like to have an excuse to come to Australia.

Personally I was astonished at how many German YLs spoke to me because they had met me ten years ago at the YL International Meet in Hamilton in ZL-land, as well as a number whom I have met at the other International Meets I have attended.

International YLs are just as friendly a group as amateurs are all over the world. We have a great hobby.

her sister travelled to Australia, every couple of years, visiting some of the amateurs they had met through CW and seeing much of the country, particularly the more natural places.

Unfortunately Maxie developed cancer several years ago and succumbed to it while I was in her home town of Munich at the YL International Meet. We did not see each other but we both knew we wished to do so if it was possible.

Maxie was not involved in the YL International world but was supported by a number of Munich amateur friends.

I thank you for your long-distance friendship, Maxie.

Club Notes

Ingham

Felix VK4FUQ would like to advise of the "Afternoon Net" in the North/Far North Queensland Region operating daily from 4:00 pm local.

Many and varied subjects are discussed with a main emphasis on technical and radio issues.

It runs for around 30 minutes and is usually heard on 7.098 (+/-) during summer months and 3.573 (+/-) during winter.

All local, as well as travelling amateurs are welcome to join in the chat.

CHARC

A final reminder of the Central Highlands ARC's AGM to be held at Lake Fairbairn, near Emerald from 4:00 pm Friday 17 to midday Sunday 19 September.

More details available from Gordon at vk4kal@wia.org.au

Gladstone

By the time of printing, the Gladstone ARC IRLP Node (6246) will be back on air after a total failure of the hardware. Thanks to Michael, VK4FMCF and the Team.

Travellers in the Region are welcome to "call home" and also join Club Nets at 5:30 pm local on 146.625 Sundays and 53.725 Tuesdays.

The club is submitting a repeater licence application for the site at Lady Larcom, NW of Gladstone. The application will be for 439.800 MHz, instead of the 438.675 currently being used for testing (91.5 Hz CTCSS).

It has been a very quiet month in Queensland, as evidenced by the lack of information submitted.

Hopefully this will improve now that we are in the "Dry" and the evenings are getting longer

Paul VK4XPB

From Queensland's Port City

Members of the Tableland Radio Group (TRG) have developed a liking for camping and visiting various places in FNQ for sightseeing, social get togethers and, of course, operating amateur radio gear.

Mike VK4MIK had a month off from his "salt mine" and Group members decided on a busier than usual schedule of trips as these are usually organised around his work roster.

Radio operations concentrated on the ability to operate CW, SSB and Digital modes from each site whilst overcoming any constraints. Portability and easy set-up were other important considerations. Equipment comprised the FT-817, IC-703, FT-100 and FT-897D plus tuners, batteries, solar panels and antennae. Antennae included an Inverted Vee and 12 m aluminium pole, a long wire, and some smaller verticals.

Accommodation normally comprised three man tents with annex from which radio ops took place. Eskys with block ice gave about a three to four day refrigeration limit which suited camp needs quite well.

The first trip was to the Gulf Country, with Bill VK4WL, where the first night we set up at the Forsyth (pop. 76) Caravan Park. A visit to the quite excellent Georgetown mining museum was made on the way. The Forsyth van park was good and the proprietors were very amenable to us putting up an antenna and, indeed, were curious and interested about who we talked to. The local Pub put on a nice meal and the locals were friendly and keen to learn what we were doing.

We packed up and headed west to the old gold mining town of Croydon. It was a long, rough drive but chatter on 2 metres helped make the miles fly by. The caravan park at Croydon was good and, once again, friendly proprietors and no problems putting up an antenna. We encountered a young lass who was very curious about our gear so, after getting the consent of her parents, we put her on air which she enjoyed immensely. We had a good look around the town and were pleasantly surprised by the community

pride in the heritage buildings and history of the area. Some locals pointed us to the Visitor Information Centre and Chris Weirman, the local historian. It was pleasant operating from our tents which were shaded by the trees carrying our long wire antenna. Good take away meals were provided by the local café and pub.

Regular 'eastern' Nets we normally worked from our home QTHs were noisy at the time but this was less and less a problem the further west we moved and we always managed a good copy and received similar reports in return. Two days were spent at Croydon before the long haul back to the Atherton Tablelands.

A couple of days later Pat VK4MUJ, Dave VK4FUY, Bill VK4WL and Mike VK4MIK headed south, into the ranges between Townsville and Ingham to the small township of Paluma, altitude 1900 feet, where we had a B and B and a cottage for a few days. We set up in the carport of the cottage and ran the long wire up into the trees while the verticals were set up on tripods. After a quick tune up we put out a call and immediately made contact with Matt AI0L in Northern Colorado USA. All systems working FB!!

We had a lot of fun working the various nets, walking local trails and going to coastal lookouts. We also searched for evidence of the World War II RADAR station and came across a couple of very old solid concrete Quonset huts and cement bases possibly of the tower. One has to be cautious in this area as there are quite a few old mine shafts and several people have disappeared over the years. Dave and Pat had been involved in SES search in one such incident some years prior. Mike had a couple of other reasons for going there. Firstly, his uncle had helped building the road to Paluma during the 1930s Depression and, he had served on HMAS PALUMA in 1972-73 and wished to present a photo of that hard working little hydrographic vessel to the community historical society.

Operating from Paluma was a somewhat chilly experience at night

but it was great to have the nice clear sky and the accompaniment of the many birds and wildlife from the nearby jungle. We all enjoyed the friendly atmosphere and the nice feeling of this old village.

Our next trip was the annual pilgrimage to the QTH of John VK4FNQ, Cheryl VK4FRYL and Bluey (the cattle dog), widely known as Majestic Towers, near Charters Towers. John is well known for his operations on the higher bands and his shack quickly has one drooling with envy. His antenna farm is even more magnificent!

Ross VK4AQ and XYL Bev together with Keith VK4BKS and XYL Barb joined us for this venture. This site saw the long wire and inverted Vee antennas in operation. We made contact with VK100WIA, operator Brian VK2AVO, who had a lot of noise at his QTH so a fellow amateur did a relay we had Brian 5-9 but he had us at best 4-4 due to the noise. We kept our scheds on our regular nets and managed contacts into Korea (IOTA 148 expedition), California, New Zealand, and Tenerife. We talked much about our favourite hobby while bush cooking in the camp oven proved popular each evening.

Swimming in the Burdekin River was a chilly experience but it certainly cleared away the cobwebs. Bluey paid us a visit a couple of times a day to ensure all was well and to sneak in a few 'unofficial' snacks! Keith had designed a vertical using a squid pole which operated extremely well in the portable situation. Plans are already in hand for next year's excursion out to 'the Towers' and these wonderful hosts.

Home to mow the lawn and off again to the next location at Mount Fox, SW of Ingham and once again high in the mountains, Bill VK4WL came along on this one. It has a nice 'compact' road leading up the range but the views were breathtaking.

Mount Fox is also home to another famous FNQ amateur, Rob VK4ARQ and XYL Carolyn who live on some glorious acreage. Camping at the Cricket Club was superb and there were plenty of high trees which lend themselves to good inverted Vee and long wire positioning.

Our first contact was with Greg VK2GJC at Uladulla who gave us a sig report of 57. We worked many VKs as well as Oleg 5W0OX/MM in West Samoa, Mike WB6JXJ in California and

Ted KD0JJO/P DV7 in the Philippines.

It was quite cool and Bill WL was concerned about the effects of frostbite on parts of his anatomy!! The hot showers at the Cricket Club were a God-send, thanks to Rob's foresight in stoking the donkey boiler up for us beforehand.

Mt Fox was the site of Australia's last volcanic eruption and the black outcrop is still visible and can be climbed readily. Rob was a great source of local knowledge and history which is always interesting and entertaining in his outgoing demeanour.

Finally, Bill VK4WL and Mike VK4MIK went up to Cape York Peninsula to the small town of Laura where services to the pastoral industry and the Lakefield National Park fishing fraternity are legend. Laura has an interesting history linked to the Palmer River gold rush days and once had a train which ran between Laura and Cooktown. We were domiciled in the Caravan Park once again where there were no objections to our antennas. It was interesting as our long wire was orientated to the east and we managed to make a contact into the Caribbean with Hascal 8P6GU in Barbados, who could not believe our operational set up, as he was using an FT-1000 300 watts and a triband antenna. Dave VZ1C in Antigua gave us a 56 report. We managed to do a bit of sightseeing around the town which has some good relics of the past. At Laura an interesting aspect of operating is the quite poor soil conductivity which necessitates a better than usual earth for efficient operation. Ray VK4TFT brought this to our attention a couple of years ago so we were well prepared.

All in all we were able to ensure that Mike had an interesting holiday with a lot of 'radio active' friends involved and a lot of country visited. We achieved our aim of operating the three modes from each location while managing to achieve some positive DX using a modest set up. Portable operation provides the chance to experiment with varied antenna arrangements.

Upcoming activities for the Group include a Christmas in July at Lake Tinaroo and the Lighthouse Weekend in Cooktown for our sixth year running. Individual camping trips to the Gulf district are also coming together.

VK5news

Adelaide Hills Amateur Radio Society

John Elliott VK5EMI
President, AHARS

Our June meeting was a Safety Information Evening. We had a St John trainer talk on the basics of First Aid and training (thanks to Peter Jackson); Tower Safety was presented by Paul VK5PH, who outlined the dangers of operating at altitude without the proper training and harnesses; fuses and safety switches were covered by Lyle VK5WL; and general discussions about electrical safety (with some horrifying dangerous lead and plug combinations displayed); Tag and Test by Graham VK5ZFF, and finally a video of a young cameraman who – unaware of how close to death he had just come – continued to take photos of an accident that missed him by inches.

The major points relating to safety include: training, attitude, and planning the job. Do not rely just on your "commonsense" – it might not be quite enough!

Our July meeting is a presentation by David VK5KC on the 2010 WIA AGM activities, and a talk by Phil Storr on the Historical Radio Society of Australia.

Our mid-year luncheon is on Sunday July 18, at Fresh Choice, Diagonal Road, Sturt. Please confirm your attendance with the Secretary, David Clegg (davidclegg@internode.on.net) or myself (dellio2@bigpond.net.au).

August will be a brainstorming session on the future directions of AHARS; and Restoring an AR7 WWII receiver, by Rob Gurr VK5RG.

The next major event coming up is our 2010 SYMPOSIUM. This will be on Sunday September 19, at the Belair Community Centre. Presenters are welcome – please contact either David or myself. Guest of Honour will be Drew Diamond VK3XU, who will talk on Innovative Home Brew Ideas, and his work on the LF band. More details later.

Welcome back to Christine, VK5CTY, who has just returned from yet another tour of Europe! Sounds like she enjoyed herself again, too!

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Congratulation to Barry McCann VK7TBM OAM. The Queen's Birthday honours list had a Medal of the Order of Australia for Barry for services to Maritime Communications. Barry started as a radio technician with 7HT in Hobart and along with Les Collins in 1975 established a radio network for pleasure craft which started with 14 boats and today has over 1200 boats registered.

The Tasmanian Smallcraft Marine Radio Group (TSMRG) has grown into Coast Radio Hobart when it took responsibility for the Tasmanian section of the National High Frequency Radio Network that monitors marine HF and VHF distress frequencies. Congratulations to Barry McCann OAM.

Northern Tasmania Amateur Radio Club

Wednesday 9 June was the NTARC BBQ at the Mt Barrow Interpretation Centre. From all reports it was a great show with 10 people and four dogs enjoying the night. It ended up with a cool calm night with a good fire to keep everyone warm. One highlight reported was Peter VK7KPC's XYL Kay's famous jelly cakes along with plenty of food! Some stayed overnight and woke to a bright and clear morning that was white and crunchy underfoot!

Congratulations to NTARC Treasurer Ann, VK7FYBG and Tony VK7YBG on the safe arrival of their second child, Samuel. Sister Tabatha has apparently been telling everyone how much she was looking forward to having a brother....
HIHI

Do not forget the last Monday of the month is the informal coffee morning at Lilydale – hosted by David VK7YUM and Norma in their Café at Lilydale.

Cradle Coast Amateur Radio Club (CCARC)

The June 26 meeting was a presentation by Vernon VK7VF on the HP8924C test set and the RF tools software package. The 8924C is actually a CDMA mobile phone test set however it also covers FM and SSB modes up to 1GHz.

Please note that use of Slow Scan TV on repeaters was also discussed at this meeting and members endorsed the use of this mode on the Lonah repeater VK7RNW (146.750 MHz) where an amateur's licence permits. The conditions of use are available from the CCARC website at: <http://www.my-x15.net/ccarc/sstv.html>

North West Tasmanian Amateur TeleVision Group

The Club now has two eQSO chat rooms available. The rooms can be found under the callsign VK7AX and are called "101English" (linked to the VK7RTV 2 m Repeater) and "ATV & SSTV" Chat. Interested? Take a look at the eQSO webpage at: <http://eqso.org/> for more information and registration details.

Radio and Electronics Association of Southern Tasmania

It was great to hear from Warren VK7FEET on his adventure in the sub-Antarctic to help with the Macquarie Island pest eradication program as a communications officer. Warren was not the only radio amateur down there. Matthew VK5FLIP and Denis ZL4DB were also there. 2 m contacts were made on the island. We heard about Warren's fascinating trip at a recent ATV Experimenter's Group night. Over 22 to 24 June 2010 (UTC), REAST activated the Centenary callsign VK100WIA from the historic REAST clubrooms. Over the three days, nine operators made 415 contacts from all around the world using CW, PSK31, SSB and FM modes. Three stations connected to three different types of HF antennas along with logging computers gave many foundation licensees some HF operating experience using different setups. Contact highlights were Palmer base, Antarctica on the Palmer Base, Russia, Costa Rica, Durban/South Africa, Japan, Spain and many others along with every state in VK. On Thursday morning the author was interviewed by Michael Veitch on 936 local Breakfast program and then later on Chris Wisbey's Weekend program.

A great big thank you to all those amateurs who helped the author with the activation including: VK7TBM, VK7RO, VK7FEET, VK7JGD, VK7ZGK, VK7FRRT, VK7FPJB and VK7HGO.



Some of the operators at the REAST Activation of VK100WIA.

South East Radio Group (SERG)

Tallyho at Mt Gambier

Andrew McKinnis VK5KET

The Australian Fox Hunting Championships, run in Mount Gambier over the June long weekend by SERG, were very successful. And Bevin, a 40 year competitor, was there again!



Two 'hounds' on the hunt in the Valley Lakes area in Mount Gambier.

NUMBERS were a little up on last year which is good to see and for some that could not make it, others popped up. We hope they can all come back next year.

The events over the weekend were very competitive but it was nice to see the friendly rivalry and the loaning of equipment between teams.

There was a little bit of mischief with attempts to lead other teams astray but it was all in good fun. Feedback from the competitors was good with the only complaint being that some events were not challenging enough. We will take that all on board and welcome feedback from any of the competitors at any time.

A new method of recording scores was tried and was a great success.



Bevin VK5TV checking out his equipment.

Marta VK3FTZL hunting near Umpherston Sink Hole in Mount Gambier.

It took the pressure off the foxes and there were no issues for the competitors either. They were very accepting of the changes. Similar changes to the Sniffer hunts were also well received and made it easy for the scorer to tally after the event.

This year was kind of special as it was the 40th year that VK5TV Bevin has competed. SERG was very proud to be able to present Bevin with a certificate of achievement and appreciation for all the years of competing in the Championship.

Stories of Bevin's past glories were recalled and some of us who were not there are still trying to picture the generator running on a trailer behind the car to power the equipment

while Fox Hunting. We are already planning his 50th year speech. Special thanks to his wife Barbara who has supported him in all these events.

The techno kids' equipment is getting better and more sophisticated and so on the VHF/UHF stuff they are finding the fox quicker every year. We will have to find ways to make it more challenging. HF frequencies provide more of a challenge and a lot of fun was had on 80 m and 10 m.

Victorian team VK3BLN took out the honours this year, with VK3FAST and VK3BLI in second and third. All up there were eight teams for the weekend but some did not compete in all the events.

SERG would like to thank all the competitors and the SERG members who gave up their time to play fox. It made for an interesting and somewhat entertaining weekend.

We sincerely hope you all enjoyed yourself and return again next year for the 47th Australian Fox Hunting Championship.

ar



Some of the hunters lined up for the start.



Suzanne VK3FSZI still looking for that missing fox.



Group Photo on Saturday 12 June prior to first sniffer hunt.

VK6news

Keith Bainbridge VK6RK

vk6rk@wia.org.au

Welcome once again to the latest edition of VK6 Notes. This month's ramblings will have arrived in your mail box a few days after the state's premier amateur radio event: *Hamfest 2010*. Hopefully most of you will have made the exodus to Ashfield and picked up a bargain or three. There were many excellent prizes in the raffle this year so perhaps you were one of the lucky ones? I will give a full rundown on the event in next month's column, with some pictures! Now for the input from around the state for this month. We will start with one of the most remote areas in WA, radiowise that is; Tom Price.

VK6 has a Top Town – literally. It is a place called Tom Price and it is 747 metres above sea level. Overlooking Tom Price is a mountain called Mount Nameless. From its top you can overlook the town, and the Tom Price pit, which is one of the earliest iron ore mines in the Pilbara. Tom Price was a hot bed of amateur (and CB) activity in the 70s and the early 80s. Sadly it faded away. But now it is back, and there are plans to establish a two metre repeater there. It will have an antenna 1100 metres above sea level. The repeater will identify as VK6RTP, and the frequency will be 146.625 MHz if the licence is accepted. There are plans to link it via IRLP/EchoLink. Once established it will be the highest repeater in VK6. Well, it is almost impossible to build one at a higher elevation in VK6!

The setup is simple, two Simoco SRM9000 radios (commercial radios) set for 20 watts output into a 6 dB vertical antenna and a NHRC-4 repeater controller/ID unit. When funding permits it will also have IRLP. This has come together with the help of Steve VK6HV and Mike VK6BHY who were able to help out with the filters and the NHRC-4 controller, and Craig VK6FLAM for the motivation, vertical antenna and delivering the filters. Without these guys it would be just an idea in my head. 73 de Jono Bucktrout VK6NDT.

Thanks Jono and I certainly look forward to using the repeater when next in town.

The Peel Group in Mandurah sent me this report of their activities in the John Moyle NMFD, and updated their information. Somehow it never made it in time for last month's column so it is here this month!

Peel Amateur Radio Group (PARG) - Western Australia, VK6COM and VK6ARG. Who is PARG? You may have heard us on the air during the last three John Moyle MNFD contests. In the three years that we have participated we have done rather well for being in the sparsely populated 'West' coming in 9th and 8th respectively in the 24 Hour Portable Operation, Multiple Operator section.

PARG was formed in 1982 to bring amateur radio users and electronic enthusiasts together. PARG encompasses the areas from Kwinana through to Waroona in the South, incorporating the cities of Rockingham and Mandurah. We are a small and friendly club and slowly

growing with approximately 25 members.

Please feel free to come along to any of our monthly meetings if visiting the Mandurah area. We welcome everyone along. Our meetings are on the second Monday of every month, 19:30 at SES HQ, 95 Park Rd, Mandurah.

PARG have just acquired a new Mobile Communications Trailer, with the help of Lotteries West, which we used in the 2010 John Moyle. This was a great asset with our newly installed mobile tower. We are proudly supported by SES Mandurah, Mayday, Alcoa Pinjarra and, of course, Lotteries West.

If you would like to know more about PARG please head to our temporary website <http://www.wia.org.au/clubs/vk6/PeelAmateurRadioGroup/index.php>

Thanks for the update Michelle VK6MLW.

The Northern Corridor Radio Group Inc (NCRG) held their AGM on Tuesday 22 June and this resulted



PARG Lottery West sponsored trailer.

in a new committee being formed. Just for the record the Secretary John VK6JX decided to continue his excellent work for another year, however Wayne VK6EH decided that two years as President was enough for any man and we thank him for his sterling efforts in progressing the clubs activities and profile. There was certain reluctance among members to put their hand up for Wayne's job and in the end a sucker, sorry a replacement was found in the shape of yours truly. This is my third spell in the job so perhaps it may actually be 'third time lucky'?

Tony VK6AJL accepted the Treasurer's post and the remainder of the committee was pretty much as it had been last year. Hopefully we can all do the club justice over the next twelve months. Two NCRG members are representing Oceania in the WRTC contest in Moscow in July. Kevin VK6LW and Bernd VK6AA will have competed along with approximately 100 other amateurs, each representing different areas of the world in this major radio sport event. The other Oceania pairing from Hawaii unfortunately had

to withdraw, so Bernd and Kevin are carrying our hopes. They have worked tirelessly over the past twelve months to achieve their high scores in many contests to qualify them for this honour. Over half the teams competing this time are using Elecraft K3 radios, just like in our club shack! I will report more on the activities of WRTC when the results become available.

A few VK6 members made the pilgrimage to Canberra for the 100 year WIA celebrations and Bob Penno VK6PO sent me this thankyou note.

Congratulations and many thanks to those people who worked so hard and diligently to provide such a wonderful weekend of activities befitting the 100 year anniversary of the Wireless Institute of Australia AGM. It was our pleasure and a privilege to share, along with the other one hundred and fifty or so other VK amateurs, as well as our distinguished overseas visitors. Special thanks go to the sponsors ICOM Australia, Yaesu through their local representative, Dick and Pip Smith for their contribution on a

wet Sunday and a particular thanks to the VK1 amateurs, and others, who helped with the transportation of interstate and overseas visitors between venues. A weekend to remember!

Thanks Bob, maybe one day soon we will be able to host the AGM in WA?

In closing this month I would like to start a new segment in the column 'Show us your Shack'. If you would like your shack featured in this column in future months just send me a photo, of at least three megapixel quality, and a short rundown on your shack and antennas and I will endeavour to get one shack a month at least printed in the column. I will start it off next month, so please send in your photos.

Hopefully many of you will have said 'Hello' at Hamfest, so until next month.

73 de Keith VK6RK
vk6rk@wia.org.au

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Shepparton & District Amateur Radio Club

Hamfest 2010

on

Sunday, 12 September, 2010

at

St Augustines Hall, Orr Street, Shepparton.

Vic Roads Directory Map 273, reference M8

First class catering - Entry ticket includes a door prize raffle.

Entry only \$5.00.

Doors open: Traders at 8.00 am - Public at 10.00 am.

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Table bookings: Les VK3TEX at lestatar@bigpond.com

Toby VK3PNF at vk3pnf@bigpond.com

Successful Mid North Coast Field Day

In June the **Oxley Region ARC** held their 35th annual Field Day. It was a great success although attendance was down on the previous year. Those who did attend enjoyed good weather and all the usual field day activities over the two days. The Club made full use of the WIA Media Kit for promoting the weekend. The results included three radio interviews, two with the ABC. The first was a five minute spot in the local breakfast program and the other was twenty minutes in the Statewide afternoon program. The third was live from the Field Day on the commercial Super Radio Network on the Sunday morning. National WIA President Michael Owen VK3KI attended and provided the last two interviews. There were two articles in the local newspapers, the Port Macquarie News and the Port Macquarie Independent. There were two TV news reports, on the regional NBN and Prime networks. The publicity did attract some additional visitors to the Field Day, including a few prospective Foundation licence candidates.

Following on from this success with the Media Kit, it is recommended all affiliated clubs and groups check out the material available from the WIA Centenary Committee. The Media Release template simply requires that you fill in the blank spaces with your details, follow the instructions and seek publicity for that next event and your club. The kit includes all the necessary supporting documentation.

WIA President Michael VK3KI brought with him a sample of the Centenary Merchandise and spent most of the time signing up some new members and discussing WIA matters with attendees. A most beneficial weekend for all involved. The field day at Port Macquarie was a WIA Supported Centenary Activity.

Next year's Oxley Region Field Day will be on the Saturday and Sunday of the June 2011 Queen's Birthday holiday weekend at the Tacking Point Surf Club at Port Macquarie. This change in venue has been brought

about by next year's Wintersun Festival being held in the central business area of Port Macquarie at this time. As this is a very large event which is expected to draw many visitors, it is suggested that intending 2011 Field Day attendees should arrange any accommodation required in Port Macquarie well in advance.

Upcoming Field Days

Field days this month include the **Summerland ARC SARCfest** at the club rooms at Richmond Hill on Sunday the 8th. On Sunday the 22nd, the **Blue Mountains ARC** will be holding their Winterfest at their current meeting place, the VRA building in Simeon Road, Orchard Hills (near Penrith). Into next year the **Mid North Coast ARC**, which has a new committee in place, and has advised that the annual EXPO is scheduled for Sunday 30 January at the usual venue. The following month (February) is the **Central Coast ARC** event at the Wyong racecourse. There is some indication that the date will be last Sunday but confirmation is still to be received.

Old Australian Callbooks

Ian VK2ZIO from the **Kurrajong Radio Museum** is trying to build up a full set of the annual callbooks. He is missing most of the period from 1950 to 1970. Anyone with copies from this period who would like to donate these to the Museum should contact Ian by email at vk2zio@yahoo.com.au Telephone 02 4573 0601 or post or visit the museum at 842 Bells Line of Road, Kurrajong Hills 2758.

A landmark to disappear

The former Channel 7 TV complex at Epping Sydney has long been closed and recently the dismantling has begun. The extensive satellite antenna farm is no more. The site had a tall tower to carry the steerable microwave dish for the OB operations. This tower at Christmas time provided the support for strings of coloured lights in the form of a giant Christmas tree. The site of many acres is to become housing.

VK2 Clubs are encouraged to make use of the **VK2WI** news sessions to

advise their activities. This provides a wide audience. News should be emailed to news@arnsw.org.au Upon receipt you receive an acknowledgement email. The **Orange and District ARC** meet on the first Friday evening in the Air Training Corps building in Warrendine Street Orange. The **Waverley ARS** besides the first Saturday afternoon and third Wednesday evening have a working bee on Tuesday – all day – you are invited to attend but call first on their repeater – Paddington – to ensure someone is there. The **Oxley Region ARC** has a working bee on Wednesday mornings. Check details on their 6700 repeater. The **Home Brew and Experimenters Group** of ARNSW has a net on the third Tuesday evening, first on Sydney repeater 7000 at 1930 followed at 2000 by the net moving to 80 metres on 3686.4 kHz. **Blue Mountains ARC** has a Tuesday evening net on 3543 kHz at 2000 hours.

NSW WICEN will be providing communications to the 30th Shahzada Horse Enduro in the week 23 to 27 August. Then with the 'Trek for Timor' on the weekend 18 and 19 September.

ARNSW has the next Trash & Treasure at the end of September – the 26th – Donations and Deceased Estates are always welcome. We do however have to be a bit choosy and not accept computer based items or those of a domestic entertainment nature, there is little interest in these. Also electrical equipment in general is not wanted as these items have to be inspected and tagged unless they are rendered inoperative and intended as spare parts. This still leaves amateur and disposal equipment and components for construction and these eagerly find a new home. Leave any messages on the office phone 02 9651 1490. Major items being offered can be viewed on the ARNSW web site www.arnsw.org.au under Disposals.

VK3 QSL Bureau

For many years the QSL Bureau has been well publicised and full details are in our website. Yet in just one week last month there was a flood of inquiries about this service.

The sole reason was the special call sign VK100WIA taking to the airwaves in May to celebrate the Centenary of Organised Amateur Radio in Australia.

The WIA Centenary Committee sensibly automatically QSLed all contacts via the Bureau. An email news item by ARV reminded VK3 radio amateurs that to get their Centenary memento VK100WIA QSL card required registration with the Bureau.

That drew 20 inquiries at the VK3 QSL Bureau. Most were new registrations elicited by the free WIA membership service, plus a few wanting to confirm or modify their details.

VK3WI is all set for ILLW

The International Lighthouse and Lightship Weekend continues to gain

popularity around the world and appears to be headed for a record number of registrations this year.

The friendly non-contest event is run by Scotland's Ayr Radio Group GM0AYR and Kevin Mulcahy VK2CE who runs the illw.net website and others who are fully dedicated to ensuring its ongoing success.

The 11th ILLW is on the weekend of 22 and 23 August. Amateur Radio Victoria VK3WI will be activating the Williamstown Lighthouse and Timeball Tower on both days.

Our Events Coordinator, Terry Murphy VK3UP (vk3up@amateurradio.com.au) invites visitors to the site and particularly Foundation licensees who want to experience and be involved with this event.

An interesting trend in VK this year is the number of lighthouses that will be put on air for the very first time. And there are plenty of lighthouses still available if anyone wants to go portable from one of them.

Visit the illw.net website not only to see the list of already registered lighthouses to contact on air, but if you're able to join the weekend use the online registration facility.

Membership inquiries

To join and support the statewide 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 18-19 September at Ashburton.

If you know someone who could be interested in becoming a radio amateur, or need more information then contact Barry Robinson VK3PV on 0428 516 001 or foundation@amateurradio.com.au

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ILLW 2009

A weekend to explore

Glenn Alford VK3ILH

International Lighthouse/Lightship Weekend is a great opportunity to get out of the city and explore some remote areas of our coast. The coastal towns also normally offer loads of history, given their early development. These towns were in some cases the only link to Europe, transit and logistic points to the old world.

Portland was one such town; it was Victoria's first permanent European settlement back in 1834. The heritage and early architecture has in most part been retained. It is a delightful town somewhat sheltered from Bass Strait by Point Danger. There is a lot to see and do here, including great coastal walks to enjoy.

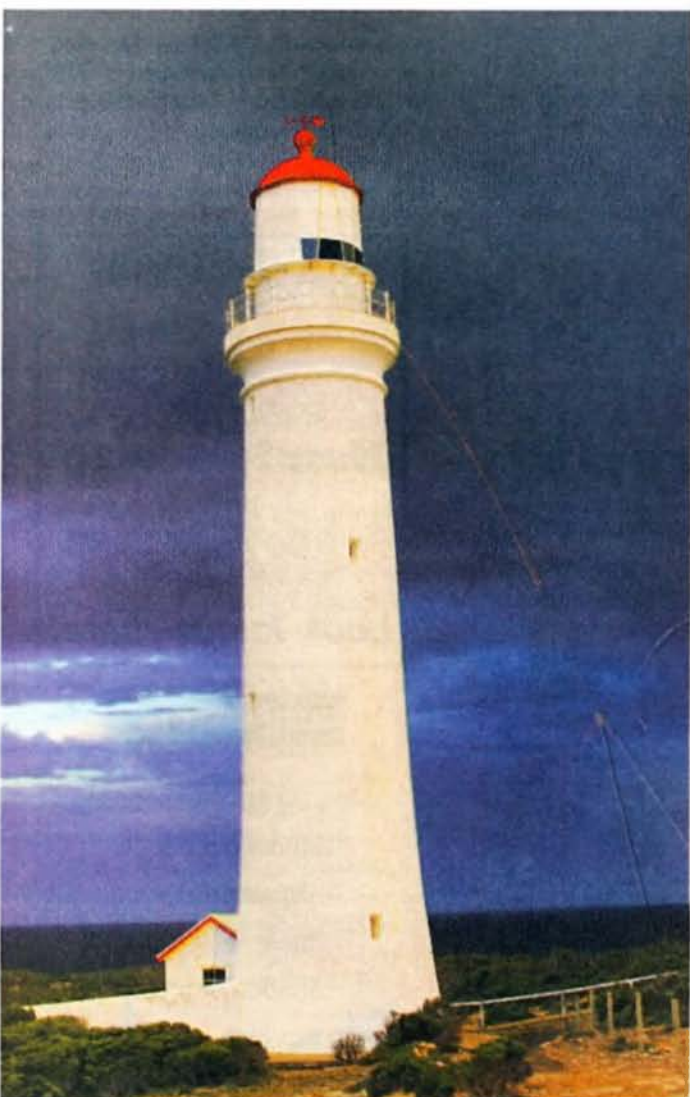
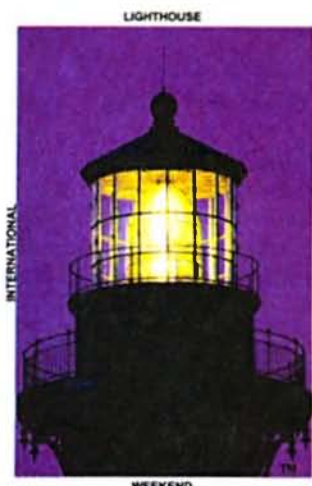
stone wall connects the lighthouse back to the old storeroom and stables, now converted into a great cafe, which is highly recommended. The wall was constructed to give the lighthouse staff shelter from the elements and is still in use today. The site now offers accommodation in two fully restored lighthouse keeper's cottages, completed in September 2009.

I established my station in the Flag Room, with commanding views of Bass Strait. There were plenty of locations for the Cushcraft R5 vertical, and wire antennas. Power was sourced from inside the base of the lighthouse. Given the size of the site, the lighthouse was shared with some other amateurs, Trevor Close and Ian Mason. They established themselves by the cottages under renovation, but came well prepared and equipped: almost like a military field operation complete the field headquarters and accommodation in the caravan, along with an impressive array of antennas. A serious set up.

Both stations operated well, with little signs of interference. Noise levels at the lighthouse delightfully low, ideal for working those weaker stations – another benefit of working these weekends away from the city. I worked about 60 DX stations, including South Africa, Europe, Canada, United States, and New Zealand, along with many VKs.

What was also terrific was the interest from the public, with lots of local visitors, now exposed to the hobby. Most were amazed at the number of contacts and the locations around the world, using such old technology. "What, no internet connection?" It was great exposure for the hobby.

Spending sometime here made one



The Cape Nelson lighthouse acting as an antenna support.

Aside from the pretty historic township, I am here for the lighthouse. Cape Nelson lighthouse is located 13 kilometres south of the town, really a city. Along a very rugged stretch of coast, constructed in 1884 from bluestone and painted traditional white, the lighthouse stands at 246 feet (75 metres) tall. The lighthouse was named after Lieutenant James Grant's ship, the Lady Nelson.

At the base of the light is the generator building, and towards the coast the historic Flag Room, storage of flags for communication with passing ships, well before radio. A large

very aware of the sheer beauty of this rugged coastline, and surrounding area: the dominant lighthouse with its light beam reaching seaward, the explosion of colours of the setting sun. It is a photographer's delight, nature at its best. Always bring the camera on these weekends. It was truly a satisfying weekend.

Now I need to start thinking and planning this year's International Lighthouse Weekend, 21 and 22 August. This year it will not compete with the RD contest, so I would expect it to be a little bit different. The ILLW is not a contest, but a great event shared by amateurs around the world, and a tribute to lighthouse keepers assigned to history.

Participating in this great weekend is easy: select a location, and register the site on www.illw.net You can also find more details about the weekend on the web site. You may even think about sharing a site, if it is already registered. Information on Portland can be found on www.visitvictoria.com and lighthouse information at www.lighthouse.com.au

Enjoy...

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Editor's Note

As this issue of AR goes to press, there were 52 VK lighthouses listed as planned to be 'on air' on 21-22 August.

VK leads the world in entries so far this year, but there are still plenty of sites to go around. The table indicates possibilities, perhaps near you.

As you can see from Glenn's story it doesn't all have to be done by 'roughing it', although some lights are camping or day visiting only.

For more details go to <http://illw.net>

State	Planned to be on air	Lighthouses in State*
VK2	16	37
VK3	11	23
VK4	10	30
VK5	4	25
VK6	5	28
VK7	6	25
VK8	0	5

*Source: Lighthouses of Australia Inc website



The author operating in a relaxed style in the Flag Room.



An outside view of the Flag Room, complete with a well prepared promotional poster.



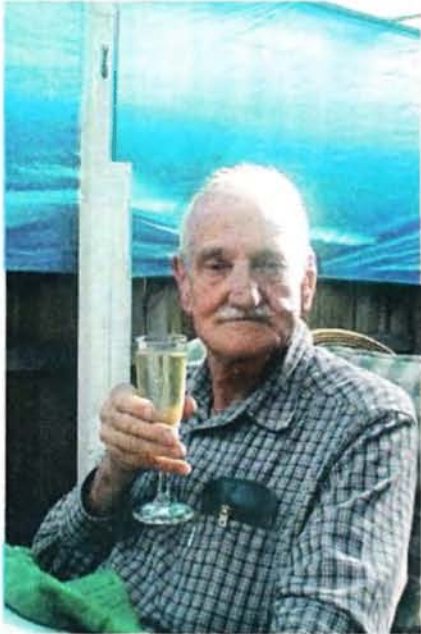
A view of the comfortable accommodation available on site at Cape Nelson.

Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

Is there a Ham Radio gene?

Andre VK3AVZ gave a talk, around a power point presentation, of the amateur radio activities of his parents VQ2VZ and VQ2WZ, grandparents and numerous family members on the African continent during the period 1958 to 1963.



VQ2VZ licenced in 1956



VQ2WZ Licenced in November 1958.

The telecommunications law in Rhodesia in the 1950s was that:

If the primary station holder was "Technically qualified", the spouse

could get a licence to operate the station provided they passed the Morse test and then had to operate for the first 12 months only on CW.

VQ2VZ also sent telegrams via CW to Belgium post offices for the families of people stranded in the Belgium Congo during rebellion in 1961, on behalf of the Post Office, due to their overloading.

Amongst the numerous certificates acquired, Susan VQ2WZ came 2nd in the World CQWW all band phone contest in 1960, 3rd in 1961, 2nd in 1962 and 1st in 1963. The equipment used was a Labgear 300 transmitter, built from a kit, and an HRO 5T receiver; the latter of which Andre still has.

On the basis of her third placing in the 1961 CQWW contest, Susan was invited to the Women's Ham Radio Convention in New York where she made a speech to an audience of some 5,000 ladies.

Northern Rhodesia gained Independence from Great Britain in 1964. It then became very difficult for Andre's parents to run an amateur radio station after that, due to local politics and military issues; although both obtained their Zambian call signs 9J2VZ and 9J2WZ.

In 1980 Andre's parents moved from Zambia to South Africa where they were informed that their Zambian qualifications, for a radio licence, were not recognised and they would both have to pass the UK City and Guilds of London Radio Amateur Exam and re sit the Morse test. In 1991 they were awarded the call signs of ZS6CVZ and ZS6SVZ.

In respect of the genetic factor, Andre's grandfather was ZS6BDX, his grandmother ZS6AUH, father VQ2VZ, mother VQ2WZ, sister ZS6BVZ, brother in law ZS6PSM, two nephews ZS6SGM and ZS6AAU he also had two uncles VQ2EZ/ZS5CX and ZS6AXC. Along with Andre and Jane VK3MJS, the hobby now enters the *fourth generation* with Ruben VK3FRJS.

Museum Weekend

The GARC set up VK3ATL, the club station call sign, at the Queenscliff Maritime Museum in the Marconi Hut covering 160 m to 2 m.

Once the skeleton slot beam, provided by Peter VK3ZAV, was erected, the use of the club's IRLP node on 145.475 simplex was to prove

concludes page 56



Dallas VK3DJ operating the TS-2000.

VHF/UHF an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

Mid-Winter VHF/UHF Field Day

The recent mid-winter field day saw a good level of activity despite the middling to awful weather conditions in some parts of the country (exactly what you would expect for mid-winter!) As of four days prior to the closing date, the Contest Manager had received 60 logs, which must be something of a record.

Some brief reports from participants:

From Andy VK5LA:

My first winter field day but won't be my last! The weather was good where I was, not too windy, but I feel a relatively poor turnout in VK5, but there were still a few stations around.

Only operated for the first 8 hours, then packed up and went home, only because of poor preparation on my behalf - It'll be 24 hours next year.

There seemed to be a good number of stations around on 23 cm, which is great! Alinco's new DJ-G7 23 cm handheld probably has a bit to do with that, and I had some great contacts with 1 watt stations back in to Adelaide from PF85WF. I had 33 elements and 10 watts. Andrew, VK5AKH was S9+60 on occasions on 23 cm.

The biggest lesson I learned (I'm always learning) is you can have all the gear in the world, but if you're not comfortable and warm, you will soon lose interest!

From Lou VK3ALB:

We made our first attempt at a field day in Summer 2009 and the lesson we learned was to protect ourselves from the elements be it the sun, wind or rain. I was lucky enough to find a run down A-frame van that has been our field day shack ever since. It's not perfect but it really does make our field day outing much more enjoyable. Even though it was cold and rainy at times over the weekend we still had a great time.

From Nik VK3BA:

I went out with VK3ALB and co. The most satisfying part of the FD experience was packing up on a dark and rainy Saturday night... the true test of an amateur!

From Compton VK2HRX:

I was happy with the number of stations in and around Sydney. Wasn't real busy but enough to make it worthwhile. We could always do with more!

Made a couple of 23 cm contacts down to Canberra from Carlingford in the North Shore of Sydney which were the highlights of my 8-hour stint. Had them S5 with no preamp at one point at I think around 70 W. I was running 10 W from the IC-910H with a 55-element loop Yagi on a rotator. Didn't bother with the 23 cm linear and preamp as its always local stuff in winter, doh!

Made over 100 contacts across 6 m, 2 m, 70 cm and 23 cm. 52.150 was almost busy at one point. I also worked split to 50.150 for one contact so don't forget us 52 MHz operators in the next contest!

Weather brilliant, a little wind but mast was OK. Got visited by the boys in blue (was set up in a public car park). I had bunged a WICEN magnetic badge on the side of the Cruiser, he had a look then drove off.

Interestingly I also had about 10 passers by who stopped to have a chat about what I was doing. Next time I'll take a few Foundation Manuals with me and hand them out! I didn't forget anything, everything worked, nothing broke and I set up in 60 minutes and packed up in 30 minutes.

From Rob VK2GOM/G0MOH:

My second field day in VK... a summer one and a winter one so far. I'm not new to contesting though; I did quite a few VHF QRP contests in the UK where I entered, but here in VK it's only for fun - I don't enter the logs.

I managed to attract the attention of the Park Ranger where I was set up, who came over with a walking gait that suggested he wanted to clear me out of the place. Instead, I introduced myself with a handshake and told him more about it. Once he realised I wasn't a terrorist, or going to kill anyone with it, and it was a hobby and not conducted as a part of a business, he happily went on his way. It seems microwave dishes can scare the uninitiated! Fortunately I did not have to resort to my "So where does it say that?" line...

An enjoyable day out, not as many

stations heard as the Summer field day, but good fun all the same.

I was only out a couple of hours and got a handful of points and 18 QSO's. I might have a more serious attempt in the Summer one.

My 10 GHz rig for the contest was solar powered with a BP 20 W solar panel. Any others operate for the Field Day on solar power? Should there be another 10x points multiplier for solar powered stations?!

From Iain VK5ZD:

I operated from the South Hummocks on Saturday and a local hilltop for an hour and a half on Sunday morning. As expected, the weather was cold and damp. In an effort to remain as comfortable as possible, I arranged things so that I could do all the operating from inside the car.

An FT-897 was for 6 m, 2 m and 70 cm, and an FT-290R was the IF for the 23 cm, 13 cm, 9 cm and 6 cm transverters and an FT-60 H/T was for 3 cm. Add one old laptop for logging and I could operate in relative comfort.

From Doug VK4ADC:

Up here in southern VK4, there was some activity but the number of stations around was not enough to keep you handing out numbers and staying focussed on the FD. My log shows 80 contacts across 6 m, 2 m, 70 cm and 23 cm - including 7 VK5 callsigns courtesy of some 6 m Es - for the first 8 hours. The few club stations were a big help as they were operating the same bands (some plus more) so were around for the 3 hour repeats.

Unfortunately VKCL did not process my log entries correctly - it created the log file as section E - 24 hour home station - instead of section B - 8 hour portable single operator. Beware that your log is correctly created before you email it in.

We need to get more operators, maybe some F calls, interested enough to participate and hand out some numbers, even if only on 2 m and 70 cm FM. They might get to like it and do even more the next time... A report on my outing can be found at <http://www.vk4adc.com/2010wfd.php>.

Roll on November 20/21 for the Spring FD!

From Andrew VK1DANK2UH:

I arrived back from a Europe trip on Friday night before the contest and got back to Canberra the next day. Unable to mount a decent portable operation, I just operated from the car.

Made 21 contacts, split more or less evenly between 144 and 432.

I was really pleased to hear several field stations on the air in Canberra so it seems the third year of this event has been quite successful.

Well done to all those who operated in the cold and wet conditions, and enjoyed themselves in spite of conditions. Much better than staying inside and watching TV!

From Gordon VK3EJ:

On Sunday morning, I worked 18 stations on 2 m SSB only and heard at least three more. I don't think I ever, in 28 years here, worked that many on a "normal" propagation field day from my allegedly "good" location at Berowra Heights. I then had up to 7.5 dB more antenna gain and 6 dB more power plus maybe a dB and a half better receive noise figure. Longest distance was to Kerry VK2BXT at 500 km.

From John VK4TJ:

This was probably my best ever dead band contest result. I haven't moved, so I put it down to F calls being a bit keener than us old geezers to freeze their extremities off on a mountaintop under lacklustre band conditions.

I also note that virtually everyone (except me) is now packin' 2.4 GHz and 10 GHz gear. Even 23 cm is evidently considered DC these days...

From Dave VK2TDN:

There wasn't one F call QSO in my log for the winter or summer FDs but

I still had a much better day out than the summer one as far as QSOs. The weather wasn't kind, a howling freezing gale in the Blue Mountains made the day unpleasant trying to stay warm and keeping the antenna poles vertical!

Field Portable 23 cm EME

Bob VK2ABP has set up a substantial 23 cm portable EME station. He reports:

When I think of EME I think of big dishes or other huge arrays pointing up to the moon, tracking it across the sky. When one starts to search for EME online it is immediately obvious that there can be a huge passion for it by some people. Most of what I found was HUGE, far too big for my place in suburbia, even if I am in a country town with a decent sized house block. Additionally, I am in the middle of lots of landscaping at home, but the final outcome of the work at home will mean I will finally be getting the Aussie Guy's mandatory backyard shed. Until such time that the landscaping and shed construction are complete, there is only one real option for me to pursue EME – going elsewhere.

The elsewhere I have been going is out to Dave's (VK2JDS) QTH. As most readers have probably seen in AR already, Dave VK2JDS is quite active with EME communications. He has been great with encouragement and assistance in my quest to experiment with EME. I have been out at his QTH, enjoying the benefits of being out of town many times. He has a great setup there with a decent sized dish (just shy of 5 m diameter). Many times when out at Dave's we had joked about mobile EME, so on a recent trip there we sorted out a field portable setup for me to be able to use a bit more readily

The idea is that now I can drive somewhere suitable (there are plenty of great mountain tops in the local area), and then quickly setup and be operational EME.

I am not sure how many people have done field portable EME in Australia but obviously once we figured out the logistics of how everything will mount and plug in, we had to give it a try. We did some quick tests including a listen to the 23 cm Dural beacon and then shortly afterwards my first field portable EME 23 cm contact. The contact was with Bruce PY2BS in Brazil using JT65c. Bruce has a similar setup to Dave equipment-wise, so it was great to know that I would be able to work stations that are a little more the norm rather than just the "real big guns" that you can find online.

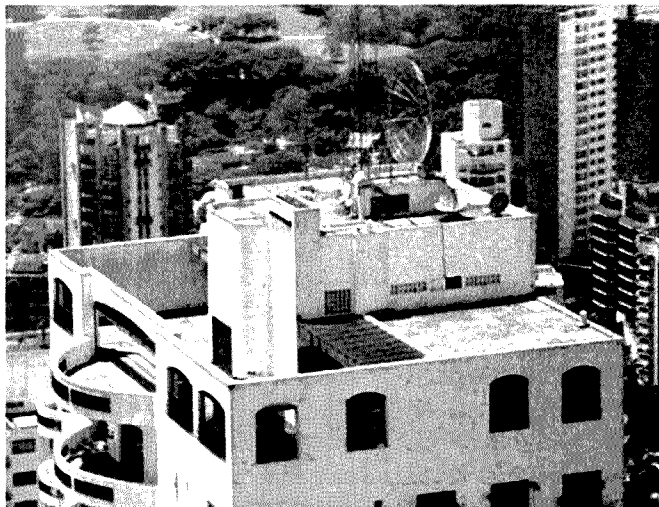
Expect to see a bit more activity from me and my portable setup, and with the amount of fun it has been I will probably end up with the current setup and a separate permanent one at home. The details of my portable setup are as follows; transceiver – Icom IC-910H, VLNA – G4DDK kit, PA – approx 40 W at feed, 23 cm feed – homebrew septum, feedline – currently LDF4-50, dish – 2.5 m mesh with elevation actuator and arm-strong rotation for azimuth, PC – 10" netbook with USB serial and audio for connection to the IC-910H, batteries for both 12 V components (transceiver, actuator, tx/rx relays) and 24 V for PA.

I think that this sort of setup proves that no one really has an excuse for not being able to be EME active. I hope to bounce signals to you all soon.

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



Bob VK2ABP and his portable EME setup.



Bruce PY2BS QTH in Brazil.

Digital DX Modes

Rex Moncur VK7MO

During June and July, Rex VK7MO travelled around VK1, 2, 3 and 5 opening up grid squares and conducting tests on 10 GHz digital with Neil VK2EI, David VK3HZ, Alan VK3XPD, Russell VK3ZQB and Colin VK5NY. As expected during winter, conditions were flat with no lift from ducting and rain often attenuated the signals – nevertheless 49 contacts were made from 19 different grid squares over distances of up to 585 km. Generally operations were from flat ground or near sea level with few opportunities to work from hilltops. All stations were GPS-locked allowing the use of narrow binwidth digital modes. Stations used small dishes of 45 to 65 cm diameter. Power levels varied from one watt to 10 watts with many of the contacts being made with only one or two watts at one end. The map at Figure 1 shows contacts completed.

In summary it was concluded that:

Using JT65c, tropo-scatter works effectively up to around 450 km in dry weather but the range was reduced to around 350 km in wet weather – presumably due to rain absorption. As an example VK3ZQB was worked over 453 km at -15 dB on a dry day and the following day over the same path, when it was raining, there was no evidence of his signal down to -30 dB, so at least 15 dB reduction with rain.

While 10 GHz tropo-scatter requires a good take-off, preferably close to zero degrees, it works well over the flat ground such as the “Hay plains” with the antenna just a metre or so above the surrounding ground. It seems this is because in terms of wavelengths a one metre high antenna at 10 GHz is equivalent to a 72 metre high antenna at 144 MHz.

Tropo-scatter signals were seen to be spread up to 40 Hz but this spreading varied considerably down to as low as 3 Hz. Wide tropo-scatter spreading was sometimes seen on dry days so cannot be put down to rain scatter. The visual effect of spreading on the waterfall display shows up much more when signals are strong. It seems that the spreading has a peak like a mountain shape or perhaps a bell curve and the stronger the

signal the further down the sides one sees the spreading. Figure 2 shows examples of tropo-scatter spreading on VK5DK's signal at various locations. It is seen that in some cases the tropo-scatter signal spreads more to the left and in other cases more to the right and in other cases it is more symmetrical. These features may tell something about the propagation.

Aircraft scatter is useful up to around 600 km but the aircraft must be closely aligned with the path of propagation to keep the change of Doppler small. Compared to two metres, Doppler variations are magnified 72 times.

JT65c was found to be the most useful mode in that with its 10.8 Hz bins it copes well with tropo-scatter spreading – the explanation for why it copes with spreading of up to 40

Hz probably relates to the fact that the peak signal can still be separated into separate 10.8 Hz bins. JT4d also performed well on tropo-scatter requiring just 2 or 3 dB more signal than JT65c and without the Deep Search facility. Tests by VK5DK and VK3ZQB concluded that JT4f and JT4g are to be preferred on rain scatter. JT65c is preferred for aircraft scatter providing the variation of Doppler shift is relatively small – no more than 20 Hz per TX period. For more rapid Doppler shifts the new WSJT8 mode ISCAT proved useful although more testing is required.

Antenna alignment was the most difficult issue in looking for either very weak tropo-scatter or aircraft scatter with an error of just one degree making the difference between detecting a marginal signal or not. An inclinometer was used for elevation

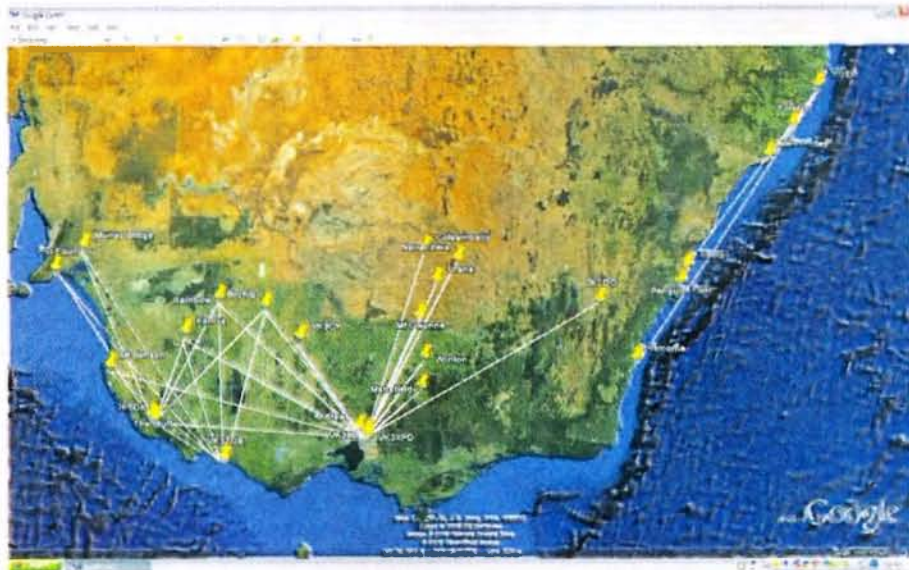


Figure 1: Contacts completed.

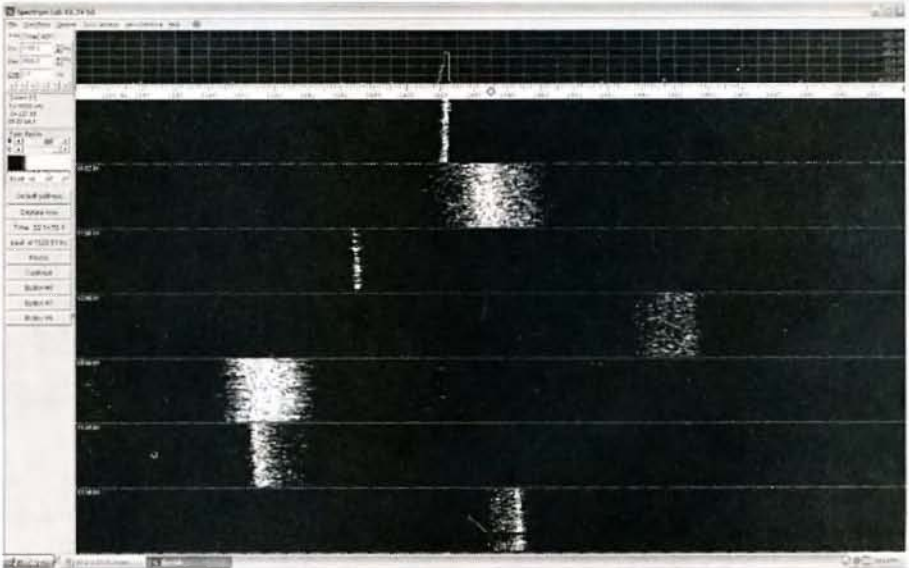


Figure 2 shows examples of tropo-scatter spreading on VK5DK's signal at various locations.

giving better than one degree accuracy. The plan was to walk a hand held GPS to define azimuth but the accuracy is no better than plus/minus three degrees and then only if one has a clear view of the sky for at least 50 metres. In practice it was found that the best method was to align on a stronger nearby station and then change the azimuth to the weaker station against a protractor. In some situations a sun shot was useful but accuracy is difficult if the sun is high above the horizon unless the elevation mechanism is exactly perpendicular.

Alignment on a feature at a known GPS position can be helpful but this was rarely possible. The problem of alignment is still the most difficult issue and some innovative solution is still required for portable weak signal operations.

One useful technique for alignment was that VK3XPD set up a TWT with 10 watts to the feed which produced a carrier which could more readily be detected. It should be noted that a carrier produces 3 to 4 dB improvement in reported S/N than a

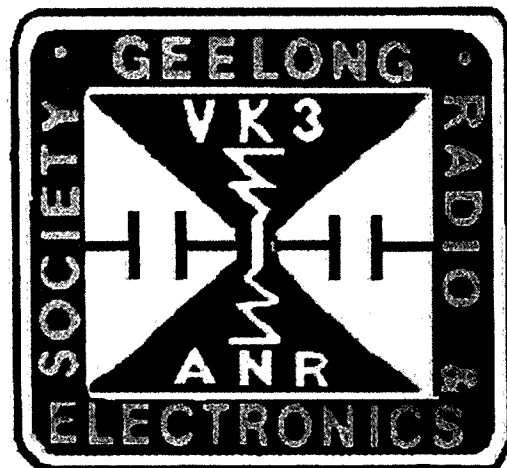
standard JT65c transmission. This is because a standard JT65c transmission spends only around half its energy transmitting the sync tone which is used to measure the S/N and is seen when looking for a weak signal. One can produce the same 3 to 4 db improvement on JT65c by using the message "@1270" which produces a single continuous tone on 1270 Hz. Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

ar

VK3news

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ



communications. Topics covered here were horns, parabolic reflectors, and lens systems. This evening helped to educate newer less experienced amateurs on antennas used on our microwave bands.

Over the years Keith VK3AFI has given many practical demonstrations on correct soldering practices. He once again shared his expertise with us but this time with a difference. In the past he had concentrated on soldering of leaded components.

This time he concentrated on surface mount components.

This is an area of construction that possibly in the future will become more and more important. Even those members of our society who have had experience with SMD devices found something of interest in Keith's presentation.

Our activities have not been confined to our club rooms. We did visit the workshop of TonyVK3TJV. For many years Tony has been involved in the development of electric and solar powered cars.

Tony showed our members what he had been working on and also outlined his plans for what he hopes to achieve in the future.

We have also been involved in two other outside activities. Both of these were a joint venture between our society and the Geelong Amateur Radio Club.

The first was involvement in the Geelong Heritage Festival. A station was set up at the Geelong Regional Museum. The festival which is an annual event had more significance this year as it fell on the anniversary of the proclamation of Geelong as a city.

The second was the setting up and operation of a station at the Old Geelong Gaol. As regular readers of these notes will be aware the GRES has a museum located inside the Gaol. The occasion was the International Museums Weekend. Many contacts were made from this location, and the success of these two events is due to the effort of Barry VK3MBW and many others who helped set up and operate the portable stations.

The third joint venture between the two clubs was the "Solstice Dinner". This event was initially the brainchild of the GARC members. However last year the GRES members were invited to the GARC club rooms as guests. It was decided that this year the dinner would be held at the GRES clubrooms, the format being that all attending bring food to share thus eliminating the problem of catering. This event was well attended and looks as though it may continue to be a regular event on the calendar.

Visitors to Geelong are welcome to attend our meetings which are held on Thursday evenings at 8 pm local time. The club rooms are at 237A High St., Belmont.

ar

Meetings over the last three months have been not only varied but extremely interesting. Possibly one of the most interesting was the showing of a CD organized by John VK3LJS. This excellent CD was about a particular kit for an HF noise bridge. Items covered were not only the construction technique but included tutorials on the uses of a noise bridge. Topics concerning antennas and instruments for antenna measurements have always been popular syllabus items.

John also gave a presentation on the various software programs that are available for amateur radio. The message that came from this presentation was to be sure you knew precisely what you wanted and to obtain software specific to your needs.

Another evening was spent looking at the different types of antennas that are used for microwave

The Magic Band – 6 m DX *Brian Cleland VK5BC*

The first three weeks of June produced some good winter Sporadic E openings mainly down the east coast and from ZL to the east coast. VK5 also did not miss out with some good openings to VK2 and VK4.

Brian VK4DDC reported working Bob ZL1RS 13 out of 15 days in the first three weeks of June. Bob worked several other VK4s and VK2s, good days being 10 and 13 June to VK4, 15 June to VK2 when Bob worked VK2s HN, BHO and BZE. Bob also worked Brian VK5BC on the 15th.

2 June Norm VK3DUT worked VK5s APA, RO and BC and Brian VK4EK. Around the same time Rob VK1ZQR worked Brian VK4EK, Wayne VK4WTN and Col VK5RO. Andrew VK3OE also worked several VK4s.

On 6 June Frank VK7DX worked Brian VK4DDC, Brian VK4EK and Kerry ZL2TPY. Norm VK3DUT worked ZL4LV and David VK3AUA worked Glen VK4BG.

7 June good opening from ZL to VK2 and 3.

10 June Brian VK5BC worked Brian VK4QB and Brian VK4EK.

Good opening from VK4 to VK5 on 14 June. Many completions and then on 16 and 18 good VK5 to VK2 winter openings with very strong signals.

On 19 June the band did the right thing for the winter field day with good openings from VK4 to VK2, 3 and 5. Several VK4 portable stations were actively enjoying the good conditions.

Brad VK2QO also reports:

2nd: Brian VK4EK 5/1, Kevin VK4BKP 5/7, Col VK5RO 5/7;

10th: Kevin VK4BKP 5/5, Brian VK4EK 5/5;

14th: Brian VK4EK 5/7, Harvey VK4AHW 5/7, Wayne VK4WTN 5/3, Bob ZL1RS 5/3, Glen VK4BG 5/4;

16th: Brian VK5BC 5/7;

18th: Rod ZL3NW 5/9, Kerry ZL2TPY 5/2, Brian VK5BC 5/5 then later at 5/9, Garry VK5ZK 5/7.

Michael VK6BHY sent details of the re-activation of the Dampier VK6RSX Beacons.

After a nine month search for a new location, the VK6RSX beacons situated in Dampier are once again transmitting on 50.304 MHz and 144.576 MHz.

These beacons originally came from

Exmouth to the old Hamersley Iron open air cinema site in Dampier in March 2001. The Amateur Radio Society of North West Australia monitored them for the next eight years until told by Rio Tinto Iron Ore that they need to be relocated (along with 20+ years of AR gear stored in the rooms, much of which was donated to other AR groups in VK6). The beacons went off air in August 2009.

I then started negotiations to house the beacons elsewhere and gained permission to use an old office building (now a store) near the iron ore loading area of East Intercourse Island in the Dampier Archipelago.

While the beacons were down, I took the opportunity to clean them up, built a new rack frame and then erected the horizontal U-dipole antennae with new RG213 coax. On testing, a SWR of 1.1 was noted and the power out from both beacons was measured at approximately 50 W (depending on which meter I used).

The beacons were turned back on, Monday 14 June and were being heard within 24 hours.

The West Australian VHF Group Inc continues to maintain the VK6RSX licence and equipment with help



144.576 MHz transmitter based on a modified PHILIPS FM814 "A" Band transmitter with inbuilt power supply and VHF GROUP standard keyer.

50.304 MHz transmitter based on a modified PHILIPS FM814 "E" band transmitter with inbuilt power supply and VHF GROUP standard keyer.

from the remaining members of the Amateur Radio Society of North West Australia.

Rio Tinto are thanked for their support.

Repeater equipment and antennas pictured below:

Thanks for your efforts Michael and also Peter VK6KXW and Phil VK6ADF who have been assisting in the background. I am sure all 6 m operators appreciate your efforts in re-establishing these beacons.

Meanwhile Brad VK2QO continues to coordinate the early morning meteor scatter activity and reports the following contacts:

1st: Wayne VK4WTN at 1049 km 5/3, Brian VK5BC at 1103 km 5/2; 4th: Brian VK5BC/P Corny Point at 1258 km 5/1;

9th: David VK3AUA at 597 km 5/3; 11th: Scott VK4CZ at 826 km 5/5, Frank VK7DX at 896 km 5/2, Brian VK5BC at 1103 km 5/7;

14th: Wayne VK4WTN at 1049 km 5/1, Frank VK7DX at 896 km 5/1;

15th: Wayne VK4WTN at 1049 km 5/1;

16th: Wayne VK4WTN at 1049 km 5/1, Brian VK5BC at 1103 km 5/5;

17th: Wayne VK4WTN at 1049 km 5/1, Frank VK7DX at 896 km 5/1;

18th: Scott VK4CZ at 826 km 5/7, Frank VK7DX at 896 km 5/5;

19th: Frank VK7DX at 896 km 5/5, Brian VK4EK at 1264 km 5/1, Peter VK5PJ at 1077 km 5/5.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com



50 MHz "U" dipole omnidirectional antenna above, with the 144 MHz "U" dipole omnidirectional antenna.

GippsTech 2010 – another successful year

Peter Freeman VK3PF

The annual GippsTech amateur radio technical conference started out in 1998, with a small number of amateurs in the Latrobe Valley supporting the idea of sharing experiences in building and operating on the amateur VHF, UHF and microwave bands, with the focus on working weak signals. The Eastern Zone Amateur Radio Club Inc. agreed that the idea was worth a try. GippsTech is now the main fundraising effort undertaken by the Club.

The 2010 event was held over the weekend of 10 and 11 July at the usual venue: Monash University Gippsland Campus in Churchill.

Approximately 60 people gathered at the Morwell Hotel/Motel (The Top Pub to locals) bistro for an informal dinner on the Friday evening. Plenty of enthusiastic discussion occurred, with good food and drinks meeting more fundamental needs.

Over 100 amateurs attended the conference, listening intently during the 13 presentations made over the one and a half day event. Topics varied from Very Low Frequency propagation through to building microwave filters and constructing a 10 GHz transverter. The conference opened with a detailed report on the VK9NA VHF, UHF and microwave DXpedition in January this year, which included some of the plans of the team as they prepare to do it all again next January.

The formal sessions were separated by long coffee and lunch breaks, allowing plenty of time for amateurs to catch up and to discuss the presentations and/or the progress of the latest projects. Some limited trading of radio related goodies also occurred during the breaks, including sales of the Proceedings volumes from previous GippsTech events.

Most of the attendees and their partners participated in the Conference Dinner, held at the Morwell Club. The Dinner is informal – it provides a meal at a venue with plenty of space. Apart from food and drinks, the main feature of

the evening is once again lots of discussion.

The Sunday morning breaks had a little more interest, as G&C Communications and Vertex Standard were in attendance. Graham and Carol were kept busy with sales of radios and accessories. Peter VK3TE from Vertex Standard had the range of Yaesu amateur transceivers on display. Peter was kept busy answering questions regarding the transceivers and also gave away coffee mugs.

The club raffle was drawn after the coffee break on Sunday. The major prize was an FT-270R/E handheld transceiver donated by Vertex Standard, won by Chas VK3PY. Ross VK3FRED won the discount voucher donated by Icom Australia, with George VK3HV winning the discount voucher from TTS Systems. Iain VK5ZD won the 23 cm 60 W solid state power amplifier that was donated by Alan VK3XPD. Peter VK3MV and Richard VK7RO won prizes from G&C Communications. Doug VK3UM provided three sets of recent issues of DUBUS magazine, which were taken home by Justin VK7TW, Jim VK3II and Helen VK3FYAP. A number of small prizes donated by the Electronics Hive (the local Jaycar stockist) were won by Ron VK3FRDL,

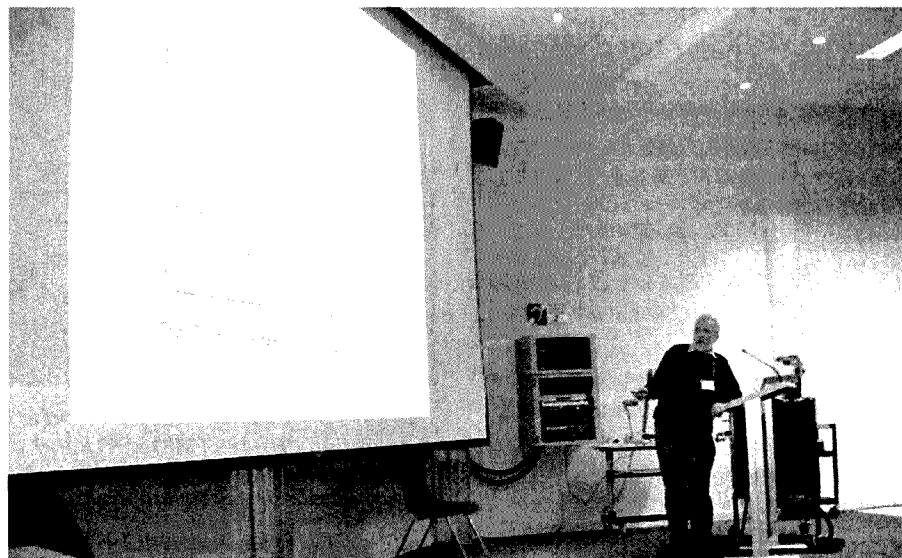
Tom VK3UBS, Robert VK2ABP and David VK2JDS. EZARC thanks all who donated prizes for the raffle.

On both days, conference attendees were well fed, thanks to the efforts of the Churchill Lions Club who used their barbeque trailer to good effect in preparing all the food. Having 100 hungry mouths to feed at a set time on both days must be a challenge for their team, but the effort is rewarded by the fees charged – the profits of course go into a variety of Lions projects which support the wider community.

Twelve partners participated in the Partner's Tour, with Ken VK3FKRK driving the minibus and offering suggestions as to what activities might be considered. Ken was assisted by Pauline, wife of Tom VK3QZ. Activities included visiting art galleries and a book fair, with good food and plenty of conversation also on the agenda.

Thanks to all who assisted in putting the weekend together, but especially to those who were willing to prepare and present at the conference.

EZARC looks forward to another well attended event next year – be sure to keep 9 and 10 July 2011 free!



Roger VK2ZRH presented an analysis of the likely propagation mechanisms involved in the interesting 50 MHz results obtained with amateur backscatter radar developed by Andrew VK3OE.

Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

August	7-8	10-10 International Summer Contest	SSB
	7	Waitakere Sprint	
	14-15	Remembrance Day Contest	CW/SSB
	14-15	Worked All Europe	CW
	21-22	International Lighthouse Weekend	
	28-29	ALARA	CW/SSB
	28-29	SCC RTTY Championship	
September	4-5	All Asia DX Contest	SSB
	11-12	Worked All Europe DX Contest	SSB
	18	Westlakes Cup	SSB/DSB/AM
	18-19	Scandinavian Activity Contest	CW
	25-26	CQWW DX Contest	RTTY

I am feeling a case of déjà vu. In the 2009 August Contests column I wrote about my impending move from Adelaide to Alice Springs. So here we are in the 2010 August edition and I am delighted to say that I am on the move again, albeit temporarily to Townsville. I still have my connections to the Northern Territory as I have taken a year off work without pay from my employer to spend some time working in North Queensland, but it is still a nice adventure.

The Islands on the Air contest would have taken place a couple of weeks prior to you reading this column. At the last minute I have been able to organise a little DXpedition to Magnetic Island OC-171 for the IOTA contest. Magnetic Island is off the coast from Townsville; my wife just rolled her eyes and said "now I know why you want to work in North Queensland!!" Of course she is right, so fingers crossed it was a success, details are on <http://vk4ldx.blogspot.com/>

Results

from Ian
Godsil VK3JS,
Manager

Harry Angel Sprint 2010

CW
VK2KJJ 24 points
VK2BHO 20
VK4JAZ 16
VK8AV 12

Phone
VK4YZ 75 points
VK4RC 74
VK5LSB 63

VK2XN 60
VK2WAY 60
VK4ZD 57
VK4FY 56
VK4GH 56
VK3PDG 52
VK4FLAE 45
VK7VH 43
VK4KKN 42
VK3VIC 38

VK3ZPF 37
VK3PRA 37
VK7JGD 29
VK4DGS 29
VK2HBG 24
VK4XZ 23
VK2IO 21
VK4ION 20
VK4YOI 20
VK4YL 17

VK5FANA17
VK4FJAY 16
VK4ATH 16
VK4JM 15
VK4YQ 14
VK5LL 14
VK4JRO 14
VK4MAX 10
VK4JJ 10
VK4HER 5

VK4ADP 3
FRIDAY SESSION
VK5LSB 18
VK4VP 5
Mixed
VK4SN 76
VK4WM 45
VK4NP 37
VK4PL 24

Thank you all very much for your interest in and support of this Sprint Contest this year. Fortythree logs were received and this many makes it more interesting for the Manager, as well as giving him lots to do! I am sorry about the confusion about the date; but at least on the Saturday night the conditions were good, enabling reasonable contacts. The two entries for the Friday session are treated as a sub-group (see above).

Understandably the main focus today is on Phone communication, but I am sad that there were not more CW entries – partly because in the

lifetime of Harry Angel this mode and AM would have been the chief operating areas, and because CW is my mode of interest. Perhaps next year you may include some Morse.

I invite you to visit my new web site vk3js.com This has been set up to keep VK contesters informed of the current rules for our contests. It is not a commentary; just an information page of rules and some results. Would you also please note my new permanent email address of ian@vk3js.com. Some other email addresses may be kept for contest work only. If you would care to spread this information to others, I shall be most grateful.

Again, thank you all. Those to receive certificates will get them soon and next year's date will be Saturday 23 April 2011.

73, Ian Godsil

ian@vk3js.com

QRP May Marathon 2010 CW

VK4ZW Ray
42 points
VK2AVQ Bob
10 points
[VK3JS Ian
167 points.
Not eligible for
inclusion]

PHONE

VK7VH Vince
484 points
VK2HBG Gerald
310 points
VK3KTO Mike
95 points

Remembrance Day Contest 2010 Rules

Peter Harding VK4OD

This contest commemorates the Amateurs who died during World War II and is designed to encourage friendly participation and help improve the operating skills of participants. It is held on the weekend closest to the 15th August, the date on which hostilities ceased in the southwest Pacific area in 1945.

Sat 14 August 2010,

0800 UTC to 0759 UTC Sun 15 August 2010.

Sat 13 August 2011,

0800 UTC to 0759 UTC Sun 14 August 2011.

Sat 11 August 2012, 0800 UTC to 0759 UTC Sun 12 August 2012.

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 is 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 29.0MHz 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).

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 0100 and 0600.

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 from the WIA website 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.

By using one of these programs, the file that is emailed to me can be imported easily into the scoring database program.

Links for these programs are listed below. I have tried and tested them all and with the assistance of all the creators, they have rewritten parts of their program to assist scoring. On completion of the contest you can email the VK?XXXX.csv, which is a comma delimited file format, which can be imported into our database.

See Software download links below.

In all cases, logs must be received by last mail on Monday usually within 30 days after the contest, (the date will vary from year to year).

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” for “when the file was 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 a request for the receipt for your paper log.

HOWEVER in all circumstances the rule above WILL STILL APPLY. So get the logs in early.

Contest results

Any station observed as departing from the generally accepted codes of operating ethics may be disqualified.

Determination of Winning State or Territory.

Scoring will be achieved by taking the total number of logs for each State or Territory, divided by the total number of licences issued in that State or Territory (excluding beacons and repeaters) as published in the WIA Callbook for that year, and multiplying by the total score for that State or Territory.

Points can only be considered where a station has submitted a valid log.

Unless otherwise elected by the entrant concerned, the scores of VK0 stations will be credited to VK7, and the scores of VK9 to the mainland call area which is geographically closest. Scores of P2, ZL and SWL stations will not be included in these calculations, although entrants in those areas are eligible for all certificate awards.

Contest award

Certificates will be awarded to the First, second and third entrants in each sub-section, both single and multi-operator; P29 and ZL. Entrants must make at least 10 contacts to be eligible for awards, unless otherwise determined by the Contest Manager.

30TH ALARA Contest

NOTE: Contest is always on the last FULL weekend of August.

Eligibility:

All licensed operators throughout the world are invited to participate. Also open to SWLs.

Object:

Participation: YL works everyone, OMs and Clubs work YLs only. One contest (combined phone and CW) run over 20 hours.

Times:

Saturday 29 August 2010, 0400 hours UTC to 1359 hours UTC
 Sunday 30 August 2010, 0400 hours UTC to 1359 hours UTC

Suggested frequencies:

Bands to be used are 3.5, 7, 14.21 and 28 MHz only. The following are suggested frequencies for easier location of contacts: 28.380 to 28.410 21.170 to 21.200 and 21.380 to 21.410 14.250 to 14.280 7.070 to 7.100 3.560 to 3.590

Operation:

Single operator only (one operator per callsign). NB: If YL is operating as a second operator, her husband/partner CANNOT participate in the contest. Every individual phone or CW contact may be counted. There must be an interval of greater than one hour between contacts with any one station on any one band and in the same mode. No net or list operations. No crossmode operations. No crossband operations. All contacts must be made in accordance with operator and station licence regulations.

Procedure:

Phone: Call "CQ ALARA CONTEST"
CW: YLs call "CQ TEST ALARA"
 OMs Call "CQ YL"

Exchanges:

ALARA member: RS or RST, serial no. starting at 001, ALARA member, name.
 YL non-member, OM or Club: RS or RST, serial no. starting at 001, name, and whether Club station.

OMs, Clubs & SWLs work YLs only.

Scoring:

Phone: 5 points for ALARA member contacted
 4 points for YL non-member contacted
 3 points for OM or Club station contacted
CW: All contacts made on CW count for double points

OM, SWL, & CLUB: 5 points for ALARA member contacted, 4 points for YL non-member contacted.

Logs:

Single log entry. Logs must show date/time UTC, band, mode, callsign worked, report and serial no. sent, report and serial no. received, name of operator of station worked whether it is a Club station and points claimed.

Logs must be signed. Logs also to show full name, callsign and address of operator, and show final score (points claimed). Logs must be legible. No carbon copies. No logs will be returned. Decision of the Contest Manager will be final, and no correspondence will be entered into.

Logs must be received by the Contest Manager by:

30 September 2010.

Contest manager:

Mrs Lesley Smit VK5LOL
 PO Box 271
 ASHTON SA 5137
 AUSTRALIA
 OR: alaracontest@wia.org.au

Certificates

Certificates will be awarded for the following:

- Top score YL overall
- Top score phone only
- Top score Australian YL CW
- Top score DX YL
- Top score ALARA member in each country and VK call area
- Top score OM in each continent
- Top score SWL in each continent
- Top score, VK YL Foundation Licence holder
- Top score overseas YL CW
- Top score VK Club station

Trophy

A trophy will be awarded to:
 Top scoring Australian YL
 Top scoring Foundation Licence ALARA member
 The Top scoring VK non-ALARA member will be awarded membership to ALARA for one year.

Club stations

Operators of Club stations may use the Club call only for contacts, and MUST identify each contact as with a Club station. Use of personal callsigns while operating as a Club member is not permitted. A Club station will be recognized as such whether operators are YL or OM. If the Club call is used, the score will be as a Club station

Extra section of contest: VHF/UHF
 There will be a certificate awarded for the top scoring YL using 2 m and 70 cm in each VK state.

The suggested frequencies for easier location of contacts are:

146.5 MHz FM 439.0 MHz FM
 NO REPEATERS ARE TO BE USED.

The rules and times for the VHF/UHF contest are the same as the HF contest.

Sample Log:

Date UTC	Time UTC	Band MHz	Mode	Callsign	RS(T) & Serial No. Sent	RS(T) & Serial No. Rcd	Name	Points
29/10	0135	28	SSB	VK6DE	59001	58028	Bev	5
	0141	21	CW	VK3KS	599002	599045	Mavis	10
	0600	14	SSB	FK8FA	59025	59011	Aimee	5
	1103	3.5	SSB	VK3BSP	59130	59006	Joe (Club)	3

Westlakes Cup

Date: Saturday 18 September 2010.

Time: 1030 - 1130 UTC

Band: 3.535-3.620 MHz

Mode: SSB, DSB, AM

Power: Max Power Limit 100 Watts
Standard and Advanced Licence
Holders, 10 Watts Foundation Licence
Holders.

Exchange:

All Stations shall call 'CQ Westlakes Cup' and the exchange shall be the operator's name and a signal report.

After the contact is made and reports exchanged the station that had called 'CQ' must QSY at least 5 kHz from the frequency before calling again. There will be no 'sitting' on a frequency and working a 'pile up'. You must QSY after each contact is made.

Valid Contacts:

Only VK or Special Prefix (VI)
Australian stations may be worked.

Points A:

There will be two BONUS stations operating in the contest. The BONUS stations are the stations that hold the Cup from the previous year's contest. The stations that are the BONUS stations will be worth 1 point for the QSO plus 3 bonus points and may be worked twice in the contest, once every half hour. This year, (2010) the BONUS stations will be VK4ZD/BONUS and VK2FSBB/BONUS.

Points B:

Amateur Radio Clubs and WIA affiliated stations are encouraged to take part. Every Amateur Radio Club that takes part in the contest shall be worth 1 for the QSO plus 1 bonus point. Every Amateur Radio Club taking part shall sign with the call e.g. VK2---/CLUB. WIA station calls such as VK2WI, VK4WIT, VK2BWI etc. shall qualify under the same scoring system as Amateur Radio Clubs and must identify themselves with a /CLUB after the Call sign e.g. VK3W--/CLUB. Amateur Radio Club stations and WIA Club Stations may be worked only once in the Contest hour.

Points C:

Every station that does not fall into the BONUS categories listed above shall be worth 1 point per QSO and shall be

worked only once during the Contest.

Points D:

SWLs shall be able to claim the same points as per transmitting stations. For example if an SWL hears a BONUS station they may claim 1 point plus 3 bonus points.

Contest Procedure:

At 1015 UTC on 3.585 MHz +/- QRM, the BONUS station shall make an announcement outlining the basic rules of the contest. For 2010 the station making the announcement will be VK4ZD. At the end of the basic outlining of the rules of the contest VK4ZD may pass the microphone to VK2FSBB to issue a word of encouragement and greeting to contest participants. If there are any last minute questions to be asked then questions will be answered at this stage.

At two minutes prior to the beginning of the contest, the BONUS station shall make an announcement to the effect that the contest shall begin in two minutes. At the completion of the contest, the BONUS station shall call in all stations that wish to declare their scores for the contest. If, for any reason, the BONUS station cannot perform these functions, the Westlakes Amateur Radio Club Contest Manager or a deputy will do the job.

The call-in shall be on 3.585 MHz +/- QRM and shall start from the lowest scoring stations, e.g. 10 points, up to the top scorers in the contest. During this process, additional stations may be seconded from the group on frequency to take call backs from any region which the BONUS station thinks his signal may not be covering well. Such station/s may receive a special certificate in recognition of their efforts.

The object of this 'Check In' after the contest is that stations may get an idea of the contest results on the same night as the contest takes place although confirmed places will only be made known after the Contest Manager has received and checked the logs.

Logs

Logs submitted should contain the following information:

Cover Sheet:

Call Sign: Name of Licensee: Address of Licensee: E-Mail Address of Licensee: (optional) Points Claimed including BONUS Points

Log Details:

Time: Local or 'Z', call worked, signal strength of station worked, and name of operator: Signal strength given to station worked:

Declaration:

'I declare that I have operated in accordance with the rules and spirit of the contest and in compliance with my licence conditions'.

Awards:

Inscribed cups shall be awarded to the stations with the highest points attained. If two or more scores are the same, the winner will be decided by the first person that contacted a BONUS station being the winner. There will be one cup awarded in the Advanced and Standard Licence Category (100 Watts) and one in the Foundation Licence Category (10 Watts). The cups shall be inscribed with the callsign name and details of the highest points scorer and shall be retained by the contest winners.

The stations that gain possession of the cups shall become the BONUS stations for the following year's contest. Certificates shall be awarded to the first, second and third place getters in each section (Advanced/Standard, Foundation and SWL) of the contest.

Logs should be sent to:

The Contest Manager,
Westlakes Amateur Radio Club
P.O. Box 3001
TERALBA NSW 2284.

Logs via Internet may be sent to the following E-Mail address:
contestmanager@westlakesarc.org.au

The closing date for the receipt of logs is Friday 29th October 2010.

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The 'old days' of gradually learning when bands were likely to open for various locations has long passed as propagation programs are now considered essential tools for Dxers. There are several available, but probably the most popular, and perhaps the easiest to use is W6EL's program, which is in the public domain, at www.qsl.net/w6elprop

It is generally held that VOACAP (*Voice of America Coverage Analysis Program*) is one of the best HF prediction engines available. It is in the public domain, but it is not an easy program to use. OH6BG has now made available 'VOACAP Online', a very easy to use variation of VOACAP, available at <http://online.voacap.com>. Just enter the coordinates of your location in Lat/Long and the DX site that you are interested in. The prediction is given as a "circuit reliability" graph showing the probability of achieving a CW-grade transmission quality between you and the selected DX station.

So what has been happening on the DX front? The Annobon Island DXpedition has now taken place after several delays but the operators had to leave earlier than originally planned. EA5BYP handled the SSB side of the operation and EA5KM the CW QSOs. During the latter part of the operation from the Island they had a big storm that destroyed the majority of their antennas, but they did manage to make 11,657 contacts during the eight days of operating.

The DXCC Desk has announced that

the following operations have been accepted for DXCC credit:

3B8EME - Mauritius, operation from 2010; 9U2T - Burundi, operation from 2010; 9UPVI/9U1 - Burundi, operation from 2010; 9X0CW - Rwanda operation from 2010; 9X0LX - Rwanda, operation from 2010; YI9HOC - Iraq, operation from 2009; FT5WO - Crozet Island from December 1, 2008 through November 30, 2009.

Ken KJ2U plans to be active as HL5/KJ2U from Busan, South Korea until June 2011. QSL via Kenneth Jennings, Tongnae PO Box 73, Busan, Korea 607-600.

SV2ASP/A - Mt Athos: Monk Apollo is reported to have moved to a new QTH. He has a new tower and a SteppIR antenna will be installed later this year. Let us hope that the SteppIR is a beam and that it will be pointed our way occasionally. We understand that his current radio is being repaired, so it does not look as though we will see activity from here for some time. Monk Apollo operates SSB/RTTY and CW when he has time to get on the air.

Gerard F2JD is back in Manila, Philippines for at least six months and will be QRV as DU1/G0SHN (yes the call is correct !) on all bands and modes. He plans to try to activate some islands. He will have an on-line log at <http://lesnouvellesdx.fr/voirlogs.php> As usual, QSL via F6AJA.

If you have worked Pierre ZS8M and are looking for a QSL, note that the P.O.Box number has changed to

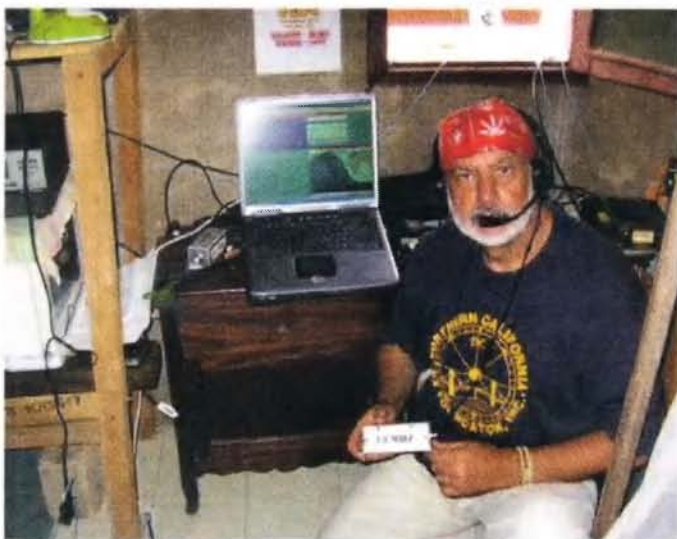
Pierre D. Tromp, P.O. Box 1151, Worcester, 6850, South Africa. Those who have already sent a request to POB 1481 do NOT need to resubmit. Further QSL information will be available on QRZ.com under ZS8M.

T31UR and T31X: "We are Ukrainians, persistent people": according to the Pacific Odyssey's web site (www.uz1hz.com/pacificodyssey.html) The team has found a new boat for the Apia (Samoa) to Kanton Island (Central Kiribati) voyage, casting off on 8 September.

VK6LC will be on a "DX-vocation" (We do not know if he meant "DX-vacation," but "DX-vocation" could be apt in some situations) in Vietnam August 12 to September 10, doing repair work on antennas in Ho Chi Minh City and giving out QSOs with his XV2LC callsign. He will also do some operating from "the majestic tropical Mekong Delta" as XV4LC. He will be near the famous Mekong River "Cai Rang" floating markets in Can Tho (pronounced "Cahn Kerr"). Mal says he will have a 40, 20 and 15 m delta loop and quad loop for 17, operating CW and SSB. From a farm near Soc Trang in the Mekong River Plateau he will operate primarily CW with some SSB, all portable equipment and antennas. He says, "Space not being a problem here, I will try for 160 m." QSL via VK6LC with the QRZ.COM info.

Valeriy Grabovskiy UA0QV will be in Saurimo, Angola starting July 1, says

Concludes at foot of page 51



Elmo EA5BYP at the 3C0C SSB position.



Javi EA5KM operating on CW from 3C0C.

An experiment in Doppler shift

Doppler shift is one of the two things that differentiate satellite operation from other facets of amateur radio, the other being full-duplex operation. But what is Doppler shift? This month we take a closer look. There are also reports on the satellite Negai and the AMSAT-NA presentations at the Dayton Hamvention. The AMSAT-VK info-box has also been updated for the new repeaters carrying the AMSAT-VK nets.

Doppler shift

In his book 'A brief history of time', Stephen Hawking was told by someone that each mathematical formula he used would halve the book sales. He managed to limit it to one and the book still became a best seller. So I will brave the decline in readership and use one formula for Doppler shift which is $\Delta f = \pm v f / c$.

Δf is the change in frequency (the Doppler shift), v is the relative velocity between transmitter and receiver, f is the transmit frequency and c is the speed of light. The change in frequency is positive when the distance between transmitter and receiver is decreasing.

So to experience the Doppler shift all you need is a transmitter, a receiver and some relative motion between them. From the formula it shows Doppler shift is proportional to both frequency and velocity. For this article I will limit to just having the transmitter and receiver within line of sight and one is fixed in position.

There are many ways of describing the Doppler effect; the ambulance siren changing pitch as it goes past, the Police radar ready to fine another speeding motorist etc.

One definition of the Doppler effect is 'The change in length of a wave (light, sound, etc.) due to the relative motion of source and receiver. Things moving toward you have their wavelengths shortened. Things moving away have their emitted wavelengths lengthened' [1]. Doppler shift is a perceived effect as the transmit frequency does not change.

To get things rolling, let us start with an experiment. You are travelling in your car at 100 km/h towards the local 70 cm repeater on 438 MHz. How much Doppler shift would you experience?

To answer this question I packed the car with my trusty FT-817, a tuning fork and a trained musician (my XYL). We parked by the side of the road and adjusted the FT-817 so the tone



AMSAT-VK AMSAT Co-ordinator

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Group Moderator

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Website

www.amsat-vk.org

Group site:

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About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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: 146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404,
EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node
6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP

node 6124

VK7RTV Gawler 2 m. Repeater 146.775 MHz.
IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

received from the local 70 cm beacon (VK5RSE on 432.550 MHz) resonated with the tuning fork (tuned to 440 Hz) then hit the dial lock to avoid any fumbling. Then we probably annoyed all those behind us on the highway by speeding up to 100 km/h and then hitting the brakes while listening for any changes in tone. The result was that moving towards the beacon the tone increased in frequency, moving away from the beacon decreased the tone. The amount of shift was quite small (from A to B-flat) but the brain can differentiate a small change in pitch quite well (despite the road noise and irate horns). This website has an online test for listening to the frequency difference between two tones. Most people can get within a few Hertz [2].

Using the formula gives a Doppler shift of approximately 40 Hz from 0 to 100 km/h. The shift we heard was less but we were not driving directly towards the beacon so our relative velocity would have been less than the 100 km/h we were travelling.

Now to put this into perspective with low Earth orbit satellites. Given a satellite in a circular orbit, its velocity will vary due to its altitude. For example AO-7 travels at 7.1 km per second (25500 km/h) at an altitude of 1450 km, the ISS travels at 7.7 km per second as it is at the lower altitude of ~320 km. Satellites in an elliptical orbit have greater variation in their velocity as they vary in altitude.

Using these velocities in the above formula give Doppler shifts of approximately +/-3.5 kHz for 146 MHz, +/-9 kHz for 70 cm and +/-50 kHz for the 2.4 GHz transmitter on AO-51. The Earth's rotation also contributes a small amount of shift when operating the satellites. This is in the order of 226 Hz at 146 MHz so is small in comparison to the Doppler shift from the velocity of the satellite. I plan to explain more about Doppler shift in a future article.

Negai

By the time you read this, the Japanese cubesat Negai will have re-entered. Negai was built by students of the Soka University in Tokyo. Negai's mission was to demonstrate the use of a Field Programmable Gate Array and to take images of the Earth. It was launched on 21/5/2010 as part

of JAXA's Akatsuki (Planet-C) mission to Venus. Negai was separated from the rocket while in low Earth orbit at an altitude of only 304 km. Satellites at his height suffer from drag as they orbit through Earth's tenuous atmosphere giving them a short lifetime. Negai had a CW beacon on 437.305 MHz broadcasting continuously with many reports received by amateurs worldwide. I heard it on five occasions but was unable to decode the telemetry due to rapid fading. Negai's mission was stopped on 24/6/2010 and achieved most of its goals apart from managing to obtain a picture of the Earth. The camera did work but was not orientated successfully.

Dayton Hamvention videos

AMSAT-NA hosted a forum at the Dayton Hamvention in May. Videos of five talks are available for viewing on the AMSAT website [3].

AMSAT-NA president Barry Baines WD4ASW gave a talk on the current status of AMSAT-NA covering such topics as ITAR (International Traffic in Arms Regulations), ARISSat-1, the AMSAT laboratory and outreach programs with universities. He gave an overview of how ITAR is impacting their involvement with other AMSAT projects worldwide.

Gould Smith WA4SXM gave a presentation on ARISSat-1. He talked about the design of ARISSat-1 and the changes made as it evolved, some of the challenges in building ARISSat-1 such as the thermal vacuum chamber used for testing, components and experiments, and even when the Russians wanted the call sign changed.

By the time you read this ARISSat-1 should be in Russia undergoing its final tests and integration ready for a launch to the International Space Station in August. They predict it will be thrown out of the ISS during December. There are actually five satellites being built. One is a prototype, two will go to Russia and the other two will be ready for any future available launch. The prototype was on display at the Dayton Hamvention and the transponder was activated.

K4T DXpedition team leader Mike Forsythe AC2V gave a summation of what went on in 13 months

to produce the largest satellite DXpedition ever. K4T was held on Dry Tortugas off the coast of Florida during 11 to 15 March 2010. K4T was notable for its total reliance on green power and having a 14 year old operator. They used a custom designed bird-safe wind turbine and 1400 Ah of batteries that ran throughout the five day event to power all radios, rotators, computers, and lighting. The turbine was so successful that they did not need the 900 W of solar panels they took with them.

Dr. Roger Westgate W2CR gave a presentation on work underway at IBM's SUNY University at Binghamton, NY. They are designing deployable solar panels and electrical systems using pseudo-supercapacitors instead of batteries for the upcoming NextGen cubesat project. They want to squeeze the circuitry of ARISSat into a 3U cubesat and not have to use batteries to give a long lifetime.

Drew Glasbrenner KO4MA presented details on AO-7, AO-16, AO-51, SO-67, and HO-68.

Drew focussed on how AO-51 is currently being managed and will be run in the future. He gives details on the batteries; the latest on-board software AO-51 uses to self manage transmitter power and how it will be affected by eclipses during the next five years.

Final pass

The truth is we did the experiment on a quiet stretch of road and it was pleasing to successfully prove the theory. There will be some major changes in how AO-51 will be used in the future. Eclipse free periods will be a thing of the past and we will all have to get used to different operating usage to keep its batteries in healthy condition.

References.

[1] <http://images.nrao.edu/glossary.shtml>

[2] <http://www.tonometric.com/adaptivepitch>

[3] <http://www.amsat.org/amsat-new/information/videoNews.php>

I have found it rather difficult to monitor lately because of a recurring ear infection. It has been extremely frustrating not being able to monitor shortwave. As I look out of my window, I can see a blanket of snow on nearby Mount Barrow. I do look forward to warmer weather as I have never really been a winter person.

Further cutbacks in shortwave broadcasting are inevitable, especially from the major players. European governments have been forced into slashing their budgets and international broadcasters reliant on government funding are bracing for further shortfalls. Britain elected a new coalition government in May and one of their first acts was to dramatically reduce expenditure. The huge BBC organisation, which incorporates the World service, had a huge reduction in their budget. This will probably accelerate the demise of the shortwave capability that remains.

Also seriously affected by this European financial crisis are Greece, Spain and several Balkan nations. Already the shortwave service from

Athens has been plagued by wildcat strikes. The Spanish Foreign Service in Madrid is still operational yet it is widely expected that programming will be reduced. Romania and Bulgaria are still broadcasting while most other European broadcasters have largely deserted shortwave, opting instead for Internet streaming.

Shortwave broadcasting is likely to continue in the Pacific region from both Radio Australia and Radio New Zealand. The latter has been using DRM to feed several Pacific Island broadcasters, yet the analogue mode will be needed especially since the Fijian Government banned foreign ownership of the media and the relaying of both RA and Radio New Zealand over domestic broadcasters.

I have often commented on the apparent failure of DRM to take off commercially. Although there are some organisations employing this, it is still quite small in comparison to those remaining analogue broadcasters. China and India opted for DRM to be the standard mode for broadcasting yet they are in the minority although the two nations

have 40% of the World's population. I suspect that the Chinese have chosen DRM for security reasons and by design not for external broadcasts.

I am informed that the small ethnic station, Radio Symban in Sydney, is again on 2368.5 from a new location in the south-western suburbs of Sydney. Programs are largely in Greek and apparently it is relayed from another low powered outlet off FM.

The recent World Cup in South Africa had extensive live coverage on shortwave which was much more than that of the Olympics. Even if you could not understand the languages, the ever present African trumpet-horns were easily heard despite the best efforts of attempting to filter them out.

Well that is all I can report for now. I am hamstrung by this continual problem with my hearing and do look forward to the time when this rushing, ringing sensation will be gone. Until then, the very best of 73. VK7RH.

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DXnews & views

continues from page 48

Vasilli V D2QMN. Valeriy has been issued D2QV. No other details at the moment.

Vincent F5MJV will be stationed in Djibouti "at least until 2011, and more probably until 2012", F5NQL reports. He will be active as J28JV on the HF bands, mainly CW and digital modes with some SSB, initially during his weekends (Friday and Saturday), then, once he has settled down, also during his evening hours. Weekend activities from IOTA group AF-053 (Moucha Island) are in Vincent's plans, but unfortunately he will not be able to operate from the much rarer AF-059 group. QSL via F5NQL, direct or bureau.

Vanuatu 2010 DXpedition News

In co-operation with ODXG, a group of four Australian amateurs will be activating Vanuatu (YJ0) from

27 August until 2 September. The accommodation and flights are booked and the team are waiting on callsign allocation from the Vanuatu government. Chris VK3QB (Leader), Allan VK2CA, Luke VK3HJ and Brenton VK3CBV will spend six days and nights working the HF bands from the island of Efate – as well as enjoying some of the sites of this beautiful country. The team plans to keep things simple with two HF stations limited to 100 watts and vertical and wire dipole antennas. For more information please contact Chris VK3QB vk3qb@wia.org.au

- Katsumi JF1OKX will begin operating from Lusaka with the callsign 9J2KK from the first part of July and stay there until September 2011 He will be working 80 - 6 metres with digital modes (PSK31/62, RTTY/WSJT/SSTV) with some SSB/CW. QSL via JK1NSR.

- 9XØCX - This is Fraser MMØEFI, who is reported active on HF using

mostly PSK31 and some SSB. It is not known how long Fraser will be in Rwanda. QSL per his instructions.

Patrick ON4HIL plans to be QRV with a specially requested call 9Q50ON (Nine Quebec Five Zero Oscar November) from Kinshasa, Democratic Republic of Congo in celebration of Congo's 50 year independence anniversary. This is a reconnaissance operation in hopes for a bigger operation by ON Amateur Radio operators in the future. QSL via ON4BR.

Good luck in the pile-ups until next month.

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/trial.htm

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Gridsquare Standings

at 11 June 2010

Guy Fletcher VK2KU

144 MHz Terrestrial		
VK3NX	Charlie	106
VK2KU	Guy	102
VK3PF	Peter	88
VK3HZ	David	87
VK2ZT	Steve	80 SSB
VK2ZAB	Gordon	78 SSB
VK5AKK	Phil	78 SSB
VK2DVZ	Ross	77 SSB
VK3PY	Chas	73 SSB
VK3BDL	Mike	65 SSB
VK7MO	Rex	64
VK2EI	Neil	63
VK3QM	David	63 SSB
VK2TK	John	62
VK2MER	Kirk	61 SSB
VK3BJM	Barry	61 SSB
VK4FNQ	John	59
VK4FNQ	John	58 SSB
VK3II	Jim	56
VK3II	Jim	55 SSB
VK3WRE	Ralph	55 SSB
VK5BC/p	Brian	55 SSB
VK2AMS	Mark	54 SSB
VK3PF	Peter	54 SSB
VK5BC	Brian	53 SSB
VK3ZLS	Les	51 SSB
VK4CDI	Phil	49
VK3HY	Gavin	48
VK3VG	Trevor	46 SSB
VK7MO	Rex	46 SSB
VK4CDI	Phil	45 SSB
VK7MO	Rex	44 Digi
VK4KZR	Rod	43
VK4TJ	John	40 SSB
VK3PF	Peter	39 Digi
VK2TK	John	35 SSB
VK2KOL	Colin	34 SSB
VK3DMW	Ken	34
VK6HK	Don	34
VK2TG	Bob	33 SSB
VK3EJ	Gordon	33 SSB
VK3ZUX	Denis	33 SSB
VK1DA/p	Andrew	31
VK1WJ	Waldis	27
VK2TK	John	27 Digi
ZL3TY	Bob	24
VK3TLW	Mark	23 SSB
VK4EME	Allan	23

VK1WJ	Waldis	22 Digi
VK3BG	Ed	22 SSB
VK3II	Jim	21 Digi
VK4CDI	Phil	21 Digi
VK3ECH	Rob	20 SSB
VK6KZ	Wally	20
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK6KZ/p	Wally	16
VK4EME	Allan	12 Digi
VK2EI	Neil	11 Digi
VK2KOL	Colin	9 Digi
VK2ZT	Steve	9 Digi
VK1WJ	Waldis	6 SSB
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 CW
VK4AE	Denis	5 SSB
VK2AMS	Mark	4 Digi
VK4JAZ	Grant	4 FM
VK2DVZ	Ross	2 Digi
VK3QM	David	1 Digi
VK4FNQ	John	1 FM

144 MHz EME		
VK2KU	Guy	384
ZL3TY	Bob	373
VK2KU	Guy	370 Digi
VK3AXH	Ian	265 Digi
VK4CDI	Phil	205 Digi
VK7MO	Rex	155 Digi
VK2KU	Guy	43 CW
VK3DDU	Paul	39 Digi
VK2ZT	Steve	28 Digi
VK3HZ	David	19
VK3II	Jim	14 Digi
VK3NX	Charlie	5 CW
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
VK3NX	Charlie	48 SSB
VK3QM	David	48 SSB
VK3ZLS	Les	40 SSB

VK2KU	Guy	38
VK3BJM	Barry	38 SSB
VK3HZ	David	38
VK5AKK	Phil	38 SSB
VK2DVZ	Ross	34 SSB
VK2ZT	Steve	32 SSB
VK3BDL	Mike	32 SSB
VK3WRE	Ralph	32 SSB
VK3PF	Peter	30
VK3PF	Peter	29 SSB
VK5BC	Brian	26 SSB
VK1DA/p	Andrew	24
VK2MER	Kirk	24 SSB
VK3VG	Trevor	20 SSB
VK5BC/p	Brian	20 SSB
VK7MO	Rex	20
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2AMS	Mark	17 SSB
VK2TK	John	17 SSB
VK3BG	Ed	15 SSB
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK4KZR	Rod	15
VK4CDI	Phil	14
VK4CDI	Phil	14 SSB
VK6KZ	Wally	13
VK2EI	Neil	12 SSB
VK2KOL	Colin	12 SSB
VK4TJ	John	11 SSB
VK2TG	Bob	10 SSB
VK3AL	Alan	10 SSB
VK3ECH	Rob	10 SSB
VK4FNQ	John	10 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK3DMW	Ken	6
VK4EME	Allan	6 SSB
VK1WJ	Waldis	4 SSB
VK3PF	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK4CDI	Phil	4 Digi
VK2ZT	Steve	3 Digi
VK4AIG	Denis	3 SSB
VK4JAZ	Grant	3 FM
VK2DVZ	Ross	1 Digi
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz EME		
VK4CDI	Phil	26 Digi
VK4KAZ	Allan	14 CW
VK4EME	Allan	10 Digi
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK3NX	Charlie	5 CW
VK3AXH	Ian	4 Digi
VK3HZ	David	4
VK2ZT	Steve	2 Digi
VK4EME	Allan	1 CW
VK5BC	Brian	1

1296 MHz Terrestrial		
VK3PY	Chas	39 SSB
VK3QM	David	39 SSB
VK3NX	Charlie	37 SSB
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2DVZ	Ross	25 SSB
VK2KU	Guy	25
VK5AKK	Phil	24 SSB
VK3PF	Peter	20
VK3BJM	Barry	19 SSB
VK3KWA	John	19
VK3PF	Peter	19 SSB
VK3BDL	Mike	17 SSB
VK3HZ	David	17
VK3WRE	Ralph	17 SSB
VK2ZT	Steve	12 SSB
VK3VG	Trevor	12 SSB
VK4KZR	Rod	12
VK3BG	Ed	11 SSB
VK5BC	Brian	11 SSB
VK7MO	Rex	11 SSB
VK1DA/p	Andrew	10
VK2TK	John	10 SSB
VK5BC/p	Brian	9 SSB
VK3TLW	Mark	8 SSB
VK2AMS	Mark	7 SSB
VK3AL	Alan	7 SSB
VK3DMW	Ken	7
VK2MER	Kirk	6
VK3ECH	Rob	6 SSB
VK3ZUX	Denis	5 SSB
VK4TJ	John	5 SSB
VK6KZ/p	Wally	5
VK4CDI	Phil	4
VK4CDI	Phil	4 SSB
VK6KZ	Wally	4
VK4EME	Allan	3 SSB
VK7MO	Rex	3 Digi
VK3PF	Peter	2 Digi
VK3QM	David	2 Digi
VK4AIG	Denis	2 SSB
VK4FNQ	John	2 SSB
VK4CDI	Phil	1 Digi
ZL3TY	Bob	1 SSB

1296 MHz EME		
VK3NX	Charlie	50 CW
VK4CDI	Phil	36
VK4CDI	Phil	36 Digi
VK7MO	Rex	30
VK7MO	Rex	27 Digi
VK4CDI	Phil	3 CW

2.4 GHz Terrestrial		
VK3PY	Chas	18 SSB
VK3NX	Charlie	17 SSB
VK3QM	David	17 SSB
VK3WRE	Ralph	11 SSB
VK3PF	Peter	7 SSB
VK3HZ	David	5
VK4KZR	Rod	4
VK6KZ	Wally	4
VK3BJM	Barry	3 SSB
VK1DA/p	Andrew	2
VK2AMS	Mark	2 SSB
VK3PF	Peter	2 Digi
VK2DVZ	Ross	1 SSB
VK2EI	Neil	1 SSB
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB
VK3ZUX	Denis	1 SSB

2.4 GHz EME		
VK3NX	Charlie	36 CW
VK7MO	Rex	9
VK7MO	Rex	7 Digi

3.4 GHz Terrestrial		
VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3WRE	Ralph	8 SSB
VK3PF	Peter	6 SSB
VK6KZ	Wally	4

3.4 GHz EME		
VK3NX	Charlie	16 CW

5.7 GHz Terrestrial		
VK3NX	Charlie	14 SSB
VK3QM	David	12 SSB
VK3WRE	Ralph	9 SSB
VK3PY	Chas	8 SSB
VK3PF	Peter	7 SSB
VK6KZ	Wally	4
VK3BJM	Barry	2 SSB
VK3PF	Peter	2 Digi
VK6BHT	Neil	2 SSB

VK3ZUX	Denis	1 SSB
--------	-------	-------

5.7 GHz EME		
VK3NX	Charlie	18 CW

10 GHz Terrestrial		
VK3PY	Chas	15 SSB
VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3HZ	David	9
VK3PF	Peter	9 SSB
VK3WRE	Ralph	9 SSB
VK6BHT	Neil	9 SSB
VK2EI	Neil	6
VK6KZ	Wally	5
VK2EI	Neil	3 Digi
VK3TLW	Mark	3 SSB
VK3BJM	Barry	2 SSB
VK3DMW	Ken	2
VK3ZUX	Denis	2 SSB
VK4KZR	Rod	2
VK7MO	Rex	2
VK1DA/p	Andrew	1
VK3BG	Ed	1 SSB

10 GHz EME		
VK3NX	Charlie	15 CW

24 GHz		
VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK3NX	Charlie	2
VK6KZ	Wally	2

474 THz		
VK3WRE	Ralph	3
VK3HZ	David	2
VK7MO	Rex	2
VK7MO	Rex	2 Digi
VK7TW	Justin	2
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 <http://vhfdx.radiocorner.net> - click on Gridsquares.

Next update of this table will close on or about 15 October 2010.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

WIA Centenary Award

A limited issue operating award is available to celebrate the 100th year of the Wireless Institute of Australia (WIA), the world's oldest national radio society.

To qualify for an award contact is required with the Centenary of Organised Amateur Radio in Australia special event station VK100WIA. A distinctive QSL will be available.

The WIA, through its affiliated radio clubs, will operate this unique callsign from 1 May to 31 October 2010. The callsign was used in Canberra, at the WIA Annual General Meeting and associated events on 28-30 May.

It will be on all amateur bands available to VK radio amateurs including the popular HF bands.

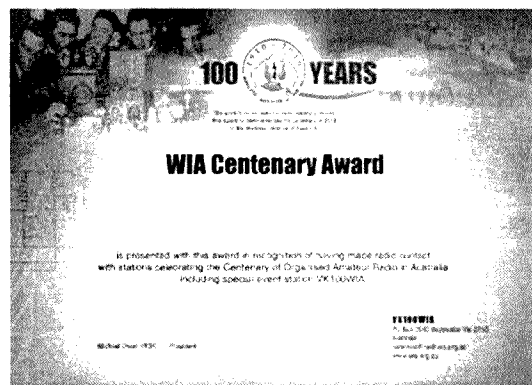
The award rules are: Those radio amateurs outside Australia need to

achieve 50 points while VK hams require 100 points.

A contact with VK100WIA operated by the WIA or a Club is worth 10 points (only one contact with VK100WIA operated by the WIA and only one contact with each Club) and there must be a minimum of two contacts with VK100WIA.

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contacts are permitted. Send AU\$5 or 3 IRCs and a list of contacts (QSLs not required) to the Awards Manager WIA Centenary Award, PO Box 2042, BAYSWATER VIC 3153 AUSTRALIA.

Listen around the bands or visit the WIA website www.wia.org.au for frequent updates of the operator club's roster. **ar**

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WANTED - OLD

Kantronics Paket Communicator 3, in good working order, or similar model Paket modem. Contact Tom VK4TY on 07 3396 5944 or 0428 159 164, or tyapp@ozemail.com.au

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WANTED - SA

Murphy B41 LF receiver (ex RAN?) - must be in good working condition. Freight costs will, of course, be met. Other boat anchor types of LF receiver considered. Peter Whellum VK5ZPG, Lot 366 Schmidt Road (Box 390), Quorn, SA. 5433. Phone 08 8648 6508 (reverse charge is OK) or email pwhelum@bigpond.com

WANTED - WA

IC-7000 or IC-706Mk2G HF/VHF/UHF transceiver, in excellent condition, with manual, power leads and microphone, and preferably with the head separation cable. Contact Steve VK6VZ at vk6vz@arach.net.au

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 Alan Baker VK8AB
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 Wayne Cockburn VK8ZAA

The GARC from page 36

useful in establishing DX contacts.

Although the HF bands were

somewhat flat over the weekend they managed to work a couple of other museum sites one of which

was HMAS Castlemaine VK3RAN.

Contacts were made with west coast USA on 20 m and also on 2 m using the IRLP node; as well as a dozen contacts on 160 m. The museum will allow the club to attach an oregon mast to the Marconi hut that will be used to fly a flag for the museum but will facilitate an easier means of antenna erection at future events.

The Big Morning Tea for the Cancer Council Charity

With many other similar Big Morning Tea events in the City of Geelong, the GARC ladies organised and promoted their own contribution to this worthwhile charity.

The sum of \$513 was raised on the day. Whilst Vanessa VK3FUNY could not personally thank all those that contributed to the days' events with the organising, catering and decorating, she extended special thanks to Jenni VK3FJEN who generously donated items that were raffled off.

Solstice Dinner

Last year the dinner was held at the GARC Club House in Storrer Street in conjunction with the GRES. This year the Solstice dinner was held at the club house of the Geelong Radio and Electronics Society (the GRES) in Belmont, Geelong. (See GRES notes page 40.



Craig VK3VCB positioning the 2 m beam

ar



Centenary Merchandise

Celebrate the Centenary in style

To help members celebrate the WIA Centenary, a range of 'limited edition' Centenary merchandise is now available for online purchase via the Centenary Merchandise section of the WIA website.

The merchandise below sports the WIA 100 Years Centenary logo and is being expanded to include many other commemorative items and memorabilia. Members are encouraged to keep an eye on the WIA website for all the latest products. Visit www.wia.org.au and click the Centenary logo on the right hand side of the home page.

All shirts and jackets are available in the following sizes: Small, Medium, Large, X-Large, XX-Large, XXX-Large.

Please note: all prices below are WIA member prices and are inclusive of GST, delivery charges are calculated with your online order.



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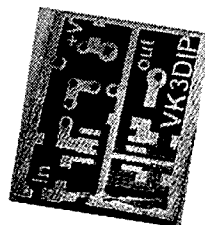
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Our Cover

The background picture is a ten times actual (shown here) size reproduction of one of the etched boards used to create a generic PC interface in our homebrew project this month. Part one of this explicit and expansively described project is on page 16, part two will follow next month. *Photo: Paul McMahon VK3DIP*



We are always in need of high quality images to be considered for use as cover photos. See the guidelines for submission on the AR pages on the WIA website.

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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Back issues are available directly from the WIA National

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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 oldest National Radio Society,
founded 1910.

Representing

The Australian Amateur Radio Service

Member of the

International Amateur Radio Union

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Editorial

Peter Freeman VK3PF

Continual improvement and self education

Many workplaces promote the idea of continual improvement. Our hobby is about "self education". How can one combine these two themes? Easy, from my perspective! You can read technical articles on the web or in a magazine such as *Amateur Radio*. Or you can attend a technical talk at a local club meeting.

Other events which present the opportunity to hear about several topics in a short space of time are technical conferences, such as the GippsTech Conference each July.

There are many conferences held in the US and elsewhere in the world. Many publish printed Conference Proceedings volumes, which contain lots of technical information. Some authors also publish their papers on their own websites. Recent BATC and AMSAT-UK meetings can be found as streaming video on-line.

Whilst such resources are very valuable, there is nothing like actually being at the conference/symposium. In addition to the material presented, there is also the stimulating discussion that is ignited which ensures that any coffee or lunch break is far too short. I can only recommend that readers seriously consider attending such events. To date, there have been only a few such events organised in VK, apart from the annual GippsTech conference.

For those located in South Australia and those that may be tempted to travel to Adelaide, I commend the upcoming AHARS symposium to be held on Sunday 19 September. With a full day of technical presentations and a practical demonstration of the hpsdr transceiver system, plus some historical perspective, it looks like an excellent way to spend a Sunday. From prior experience, I am aware that at least two of the speakers do an excellent job of explaining potentially difficult material at a level that most, if not all, amateurs should be able to understand. If it were not such a very long drive, I would definitely be there! Check out the club advertisement in this issue or their website at <http://www.qsl.net/vk5bar/>

Coming public events

Coming up in October are two key events that enable us to expose the broader community to our hobby. You need to be finalising your plans now.

In this issue, we have a report from Jamboree On The Air (JOTA) from last year. Yes, it is a long time after the event. As Editor, I decided to save this article as a reminder to all amateurs that the 2010 event is almost upon us.

If you will actually be directly involved with the youth members of either the Scout or Guide movements, your plans should be well advanced by now.

If you are not directly involved, at least be aware that some of the on-air activities may not necessarily meet our usual expectations with regard to on-air conduct – after all, we will be trying to encourage youngsters to actually speak into a microphone and make conversation. As a result, procedures may be a little more "relaxed" than usually apply. We all beg your tolerance. Of course, if you hear a Scout or Guide calling with no response, please do respond to them for a brief contact – any contact will make an impression, even if they are looking for another Scout or Guide contact.

I am aware that the VK100WIA call sign will be active over the JOTA weekend – the local club here will be operating the call sign on Sunday (UTC day). I would suggest that you give all the Scout and Guide groups as much opportunity as possible to work the call sign – I am sure that the operators will be willing to work "non-JOTA" stations if JOTA contacts are scarce.

The other event is the inaugural National Field Day. The rules are published in this issue, and Michael Owen VK3KI explains some of the background in his Comment. Whilst there are rules and points to be gained, it is not really, as far as I can see, a "contest". Some club may gain a "top score", but they will not be the winner. If clubs and/or individuals establish and operate stations within the spirit of the event, there will be one very important winner – the hobby of amateur radio. Our profile with the public will be improved.

Hopefully, we will be better understood and we may gain new participants in our hobby.

Cheers,

Peter VK3PF

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'Tune-in to the world — Amateur radio gets people talking'

WIA comment



Michael Owen
VK3KI

The rules of the WIA National Field Day to be conducted on Saturday 23rd October next are published in this issue of *Amateur Radio*, under the heading "Tune-in to the world - Amateur radio gets people talking".

That is because it is not your usual contest. The heading we have used is the catch phrase that we hope will be used by clubs when participating in a public place to describe amateur radio.

Last month I wrote about the call to clubs to conduct "an event that promotes amateur radio in its community" in association with the WIA's centenary celebrations, and I discussed how a number of clubs and groups had responded to this call.

I also mentioned the new National Field Day.

So, I really am banging on again about the same thing, promoting amateur radio in our community.

Then why call it a Field Day? I could give two reasons. One is that we all have an idea what makes a field day. The other reason is that we could not find another name that really was better as a name.

There are problems with that. One is that when I said we all had an idea what a field day was I was certainly not suggesting that we all had the same idea. And, as we want to use the event to promote amateur radio to the public, it has even less meaning to the people who we are targeting as the people we want to interest.

That is why we have the heading.

If you look at the rules you will see there are two categories of station, a "public station" and a "private station". The "public station" is a station operated by three or more amateurs (usually a club) in a public place or a place open to the public.

If you look at the rules you will see that there are a significant number of bonus points on offer to "public stations". The big ones include 200 bonus points for operating in a prominent public location, for example a shopping centre, achieving publicity or hosting a structured

amateur radio educational activity. There are even 100 bonus points available if the station provides a public information table to promote amateur radio.

Guest operators (non licensed people) are encouraged.

I have said many times during this year that the WIA hoped that all clubs would turn their mind to promoting amateur radio during the year, perhaps in association with the use of the VK100WIA callsign, perhaps in association with another activity.

I know of some clubs who want to use the VK100WIA callsign just to make as many contacts as possible. That is good, as we have overseas stations asking where can VK100WIA be found.

A number of clubs have said they would like to do something to promote amateur radio but could not find a really suitable activity.

This is the chance for all clubs to do something that should be fun, could attract new members and new radio amateurs.

But please think about how you will use the activity. It is not going to do much if all the onlooker sees is a person with a microphone or key exchanging numbers.

We need some posters – yes, we have the Calling CQ poster, but we need one to say a bit more about amateur radio – perhaps "Tune-in to the world - Amateur radio gets people talking", we need our Calling CQ brochures and we need more information on how to become a radio amateur.

The WIA hopes to be able to help with some of that.

But we also need people to talk to people, to explain what is happening, and what it is all about, and really how easy it is to get started. We don't want to look like groups of radio geeks.

Remember that not all of us like chatting to strangers, or are very good at it. Make sure that we use the best operators to operate the station, and the best salespersons to sell our club and amateur radio.

Whether we are a station just making a contact with a club station seriously participating, or the club station, we need to think about what we are saying. Are we saying something that is likely to interest the casual observer?

If you go back to the rules, you will see that emergency readiness is also encouraged, with 200 bonus points for power from renewable energy and 100 bonus points for power from non-renewable portable sources. So, we can also tell the public what amateur radio can do that is useful for our community.

So, please think about this very special activity. I urge clubs to plan where to go, if they haven't already done so. Plan how you are going to address all the many issues, proper approval of the location you want to use, local newspaper, perhaps radio, perhaps TV publicity, safety issues, insurance, who is undertaking what tasks and so on.

The WIA will have a registration page on its website very soon.

Please read the rules, remember our message, "Tune-in to the world Amateur radio gets people talking" and start planning now. And register as soon as you can.

Finally, let me say this.

As they say to the students before every ARISS contact, "this is an experiment". This year it is part of the WIA Centenary year. Should we hold it next year, what changes should be made to better achieve the objective, how can we make it more interesting, even what should we call it, are real questions.

I certainly hope that every individual, group or club participating this year will tell us whether they want to do it again, and how we can make it better.

ar

ARDF Host; CGARC Museum; VK100WIA contacts 10,000; Spratly's; Temporary 70cm

WIA to host 2011 Region 3 ARDF Championships

The WIA will host the IARU Region 3 ARDF Championships to be held in late 2011. The event is held every two years, alternating with the World ARDF championships.

The last IARU Region 3 Championships, scheduled for late 2009 near Bangkok, Thailand, were cancelled at the request of the host society because of the risk of political unrest.

Jack Bramham VK3WWW, WIA ARDF Coordinator and an International Class Referee, will organise and manage the event, working with the Victorian ARDF Group and supported by the WIA. The WIA will provide administrative support.

The event will be conducted in regional Victoria, at a venue yet to be finalised. This championship was last held in Australia in 2003, near Ballarat, Victoria. They were regarded as a great success. Volunteers will be called for to assist Jack's team.

Look out for future information on the WIA site www.wia.org.au and on the Victorian ARDF Group site www.ardf.org.au

Communications Museum shows off amateur radio

The very last available three-day rostered slot for WIA affiliated clubs to use the special callsign VK100WIA was taken up by the Central Goldfields Amateur Radio Club (CGARC) in Maryborough, Victoria.

That was in February enabling plenty of time to decide when and how the club would best use the slot.

Club President Peter Rafferty VK3CC says the Talbot Radio, Arts and Historical Museum was confirmed as the venue. The museum volunteers are very keen to lend their support.

The cross benefit was that the Centenary of Organised Amateur Radio, and the Museum were both included in promotional material. That resulted in articles in the Maryborough Advertiser and radio stations in Central Victoria.

At the formal opening, Peter Rafferty thanked Ron Firman and the other volunteers at the Talbot Museum for

their strong support and assistance.

He then introduced the WIA President, who congratulated the CGARC for having chosen a place that is interesting and attractive.

Michael said the wonderful location was fitting to celebrate the centenary, and also to promote amateur radio to the community.

CGARC, led by Peter VK3CC made plenty of contacts for VK100WIA. Its members and a few guest operators from the Ballarat Amateur Radio Group had a great time contributing to the centenary celebration.

VK100WIA contacts 10,000

Members of the Southern Peninsula Amateur Radio Club (SPARC) in Victoria Australia are thrilled at having logged contact 10,000 for the special callsign VK100WIA. Club Secretary John Ross VK3BJR reports that at 10.26 am local time (0026 UTC) Sunday 8 October 2010 the club activating VK100WIA at the Rosebud Scout Hall put the online log of QSOs into five figures, by contacting Rob Tilbury VK2LOZ at North Nowra, NSW.

John Ross said it was a most enjoyable activity for the Club and the level of activity encountered on the bands demonstrated the popularity the Centenary of Organised Amateur Radio in Australia celebration.

DX0DX countdown update

Only 150 days to go before the scheduled start of the multi-operator DXpedition on Thitu Island in the Spratlys 6-24 January 2011. Substantial progress has been achieved.

The Philippines National Telecommunications Commission has issued the DX0DX licence and DXpedition Team Leader Chris Dimitrijevic VK3FY and DU8/VK3FY confirms that documentation has been filed with the DXCC Advisory Committee. Formal DXCC accreditation is expected soon after proof is electronically submitted that operators have reached the island and DX0DX is on air. It was announced that Bob Schenck N2OO will be the QSL manager.

Among the current and growing list of corporate sponsors are ICOM

America which is providing ten top-line IC-7600 transceivers plus one IC-9100 transceiver; amplifiers from Acom International, OM Power and THAMWAY Corp; antennas from SteppIR, Spiderbeam and Mosley-Electronics; bandpass filters from WX0B Array Solutions; masts by Rohn Products; Ham Radio Outlet; headsets from Heil Sound; and feeders from The RF Connection.

ACMA proposes temporary use of 70 cm

On Monday 19 July 2010, WIA Directors Peter Young VK3MV and Phil Wait VK2ASD attended a briefing presentation by the ACMA on the proposed re-arrangements for the 400 MHz band (403 – 520 MHz) that includes the 70 cm amateur spectrum and the UHF CBRS band.

The WIA has made written submissions to the ACMA in respect to the 70 cm amateur Secondary Service allocation, detailing amateur use of the 400 MHz spectrum and expressing its concerns.

The ACMA confirmed the need for the temporary ad-hoc use of the spectrum segment 440 to 450 MHz by affected land-mobile licensees.

Clearing out parts of the land mobile spectrum at 400 MHz is needed for an orderly transition from a 9.5 MHz to a 10 MHz transmit/receive frequency split, and those affected land-mobile users need somewhere to go within the tuning range of their existing radios. The temporary use of the 440 to 450 MHz amateur band will be confined to the top and bottom 500 kHz, (440-440.5 MHz and 449.5-450 MHz, that is either side of the 70 cm ATV segment), and most likely will be only in the heavily congested areas of Sydney, Melbourne and Brisbane.

The ACMA has indicated that the temporary use arrangements could last up to three years.

The temporary use of 440 – 450 MHz has been utilised in the past for major sporting events and has not resulted in any reported interference issues. The WIA will be working with the ACMA's Operations Branch that will have the carriage of the implementation arrangements. **ar**

Is reflected power lost power?

Gary Gibson VK8BN

Here is some experimental evidence that suggests that this is not necessarily the case.

After reading a number of articles by Walter Maxwell W2DU, ARRL Technical Advisor, I was prompted to carry out some of my own experiments with mismatched loads. I carried out a couple of similar experiments that Walter described in Chapter 19A of his book 'Reflections'.

My experiments were not nearly as comprehensive as those Walter described, however they were sufficient to convince me that the experiments that he described were indeed valid. The purpose of the experiments was to determine if all the reflected power from a mismatched load was necessarily lost. Many amateurs have the belief that the reverse power is simply subtracted from the forward power to establish the useful radiated power.

Using a TS-830S transceiver as the RF source and tuning and loading the pi network to deliver all the available power to a 50 Ω termination, the measured impedance of the termination using an Autek RX vector analyst was found to be 50 +j0 Ω. Grid drive was adjusted to give a forward power of 40 watts as indicated on a Bird 43 wattmeter with zero watts reflected. I also had a 2.5 amp RF ammeter in circuit to measure the RF current into the load. With 40 watts indicated on the wattmeter the RF ammeter measured 0.9 amps with a load of 50 Ω; this gives 40.5 watts, very close to the 40 watts indicated on the wattmeter.

Leaving the tuning and loading controls undisturbed the transceiver was powered down. I then attempted to measure the input impedance of the π network. The Autek RX analyst is unable to measure above 1 kΩ so at this point I had to put my trust in Walter Maxwell's figures. He measured approximately 1400 Ω. I connected a 1400 Ω non reactive resistor to the input of the pi network and the impedance looking back

into the output of the network was measured at 52 Ω with the Autek analyst. Very close to the expected 50Ω. Now comes the interesting part, the termination is replaced with two 50 Ω terminations and a 100 Ω wire wound resistor all in parallel. The measured impedance of this load at the end of a short length of coax was 21+j5 Ω. The Autek analyst also measured this as an SWR of 2.38:1.

The transmitter was powered up again and the plate tuning and loading readjusted for maximum output power as indicated on both the ammeter and power meter. The ammeter now read 1.6 amps; a quick calculation of power ($P = I^2R$) into the 21 Ω load was 53.76 watts, the Bird Wattmeter now read 54 watts

forward power with the reflected power reading 14 watts. The plate voltage and current readings on the TS-830S were the same with the 50 Ω termination and the mismatched load after readjustment of the plate tuning and loading controls. I again powered the transmitter down and placed a 1400 Ω resistor at the input of the Pi network and measured the impedance at the output of the network; at first attempt I obtained a reading of 24-j4 Ω and with repeat attempts I obtained a spread of readings between 20-j7 to 24-j4. Using the wattmeter to obtain the maximum reading was not accurate enough to find the peak so I then used an HP410c RF voltmeter to indicate the maximum voltage across the load and obtained a reading of 21-j5Ω.The

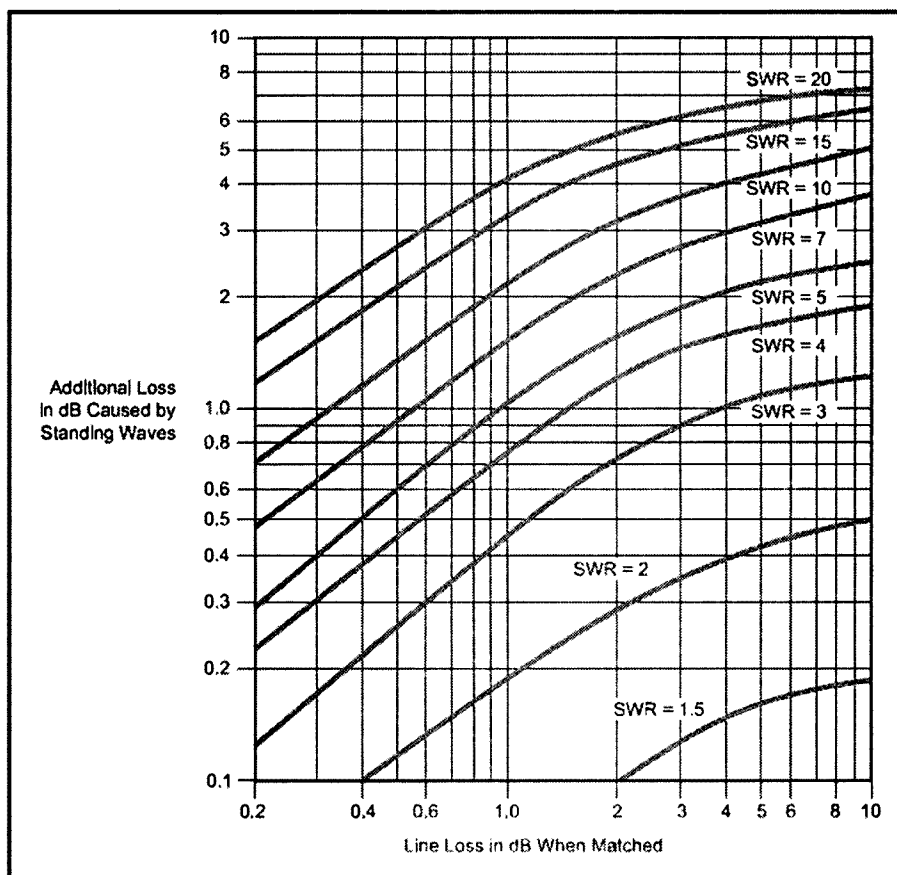


Figure 1: A graph showing the additional loss in dB caused by standing waves against line loss in dB when matched.

conjugate of the load impedance $21+j5 \Omega$.

This is where we should take a look at the Maximum Power transfer theorem and I shall quote Everitt (2):

The maximum power will be absorbed by one network from another joined to it at two terminals, when the impedance of the receiving network is varied, if the impedances looking into the two networks are conjugates of each other.

Or put more simply *if the delivery of power decreases when the receiving impedance is increased or decreased we have a conjugate match.*

So what conclusion can we draw from the above experiment? The forward power reading of 54 W is actually the initial forward power of 40 W plus the re-reflected power of 14 W. We are not getting something for nothing; we are just adding the power that was reflected back to the incident wave.

The adjustment of the plate tuning and loading controls has matched the resistive part of the load and cancelled the reactance causing total re-reflection of the reverse power back down the line to the load. It is a common misconception that a valve amplifier with an SWR such as this will get a little hot in the face but handle the mismatch. However as can be seen from above the plate current and voltage readings are the same as for the 50 Ω matched condition; the tubes are totally unaware of any mismatch due to the re-adjustment of the pi network.

I will digress for a moment and have a quick look at the L match method of impedance matching that may shed more light on what is happening.

The tools needed are the following equations from the ARRL Antenna Book (1):

$$X_s = QR_s \text{ and } X_p = R_p/Q$$

$$Q = X_s/R_s \text{ and } Q = R_p/X_p$$

$$R_p = R_s(Q^2 + 1) \text{ and } R_s = R_p/(Q^2 + 1)$$

$$Q = \sqrt{\frac{R_p}{R_s} - 1}$$

The L network is based on a technique known as series to parallel transformations. Taking values from

the load used in the transmitter experiment and for the moment I will ignore the $+j5$ reactance and work with the pure resistance of 21 Ω and match it to 50 Ω with an L network.

We first give the larger impedance the designation of R_p then determine the Q.

$$Q = \sqrt{\frac{50}{21} - 1} = 1.175$$

Then find the parallel reactance required

$$X_p = R_p/Q = 50/1.175 = 42.55.$$

So we now have our parallel form 50 Ω in parallel with a 42.55 Ω reactance, at 14.2 MHz the frequency I used for my tests

$$C = \frac{1}{2\pi f X_c} = 260 \text{ pF.}$$

Now convert to the series equivalent:

$X_s = QR_s = 1.175 \times 21 = 24.675$ this is the required reactance to be placed in series to cancel the remaining reactance.

$$X_s = 2\pi f L$$

$$\text{So } L = X_s/2\pi f$$

In our case the frequency is 14.2 MHz so this is an inductance of 276 nH. Now taking the extra $j5$ reactance into consideration the required inductance will be 332 nH. So to match $21+j5 \Omega$ to 50 Ω at 14.2 MHz we need a 260 pF capacitor across the load and an inductance of 332 nH in series. While in this example the parallel reactance I made was a capacitor it could have been an inductor with the series reactance. The reactance values may be more practical one way or the other. If you are not so keen on the calculations there are numerous L network calculators available on the web.

Looking back to where we started, the π coupler in the TS-830S can be considered simply as two L networks back to back. The TS-830S π network has no trouble matching the 2.38:1 mismatch. So within the constraints of the values used in the π network a large range of impedances can be accommodated.

None of the reverse power returned to be dissipated in the tuning network or in the output tubes and all of the power returned to the load.

If the π network has insufficient range to match a particular load, adding an external matching device just after the transmitter will allow a greater range of impedances to be accommodated.

So where is the catch? If the transmission line has no loss then all of the power will be radiated regardless of the SWR, however if the power has to make return trips up and down a lossy transmission line then there will be considerable loss. This is where the handy graph from the ARRL Handbook allows us to see the additional loss due to SWR. See Figure 1 (3).

Again turning to the ARRL Handbook (4) a 30 metre [100 foot] length of RG-8 or RG-213 will have a nominal *matched-line* attenuation of approximately 0.6 dB at 40 metres [7 MHz]. Take a look at Figure 1. With an SWR of 3:1 the additional line loss due to SWR will be approximately 0.4 dB. This additional loss will be imperceptible at the receiving end. However at two metres this same length of cable will have a matched loss of about 3 dB plus an additional loss of about 1 dB due to the 3:1 SWR. Now *this is* lost power.

Solid state transceivers don't usually have the luxury of a π network output so what happens with them? Well yes they do get bothered with high SWR. Most solid state HF transceivers have a simple impedance matching transformer to match the 50 Ω transmission line down to a few ohms presented by the output transistors with no means of adjustment. However an antenna tuning unit immediately following the transmitter is a practical method to achieve the same result. The tuning unit provides the conjugate mirror in the same way as the π coupler did with the old valve rig.

There are some who regard placing the tuning in the shack and not at the antenna as poor practice, but for instance in the case of an 80 metre dipole it is not possible to obtain low SWR from band edge to band edge without some form of tuning. We amateurs operate in bands not on fixed frequencies; flexibility is necessary if we are not to be tied to small segments of our bands.

It should be stressed that a tuning

unit in the shack does not do anything to the standing waves on the transmission line, it simply allows you to re-reflect the reverse power back to your antenna. And the key to success is *low loss* transmission lines. Open wire feeders are the very best. An SWR of 3:1 or less with reasonable lengths of low loss transmission line does not significantly add to the overall loss at HF assuming you keep your transmitter happy by some form of impedance match at the input to the line.

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OTY Two responses to 'A basic trap for young players'

From Wayne VK5YP

After reading the article about Richard (VK2XRC) Cortis' automatic antenna tuner fed whip and the failure to work, I got to thinking. The arrangement worked when the Terlin whip was used, so the base did not affect the operation then, so what happened?

It is reasonable to assume that the Terlin presented a correct match to the transceiver, that is a 50 ohms impedance, or thereabouts, thus giving an SWR of about unity. With these conditions, the voltage at the base with a transmitter power of 100 watts would be 70.7 volts.

When the arrangement was changed to a whip of fixed length and matched to the transmitter with an automatic tuner, the scenario changed dramatically.

The presented impedance of the whip will vary wildly with frequency,

but the antenna tuner is designed to match into loads between the values of 5 to 1200 ohms, therefore compensating for this impedance variation, while still presenting a 50 ohm load impedance to the transmitter.

Using the formula $\text{voltage} = \sqrt{\text{power} \times \text{impedance}}$, it follows that as the impedance at the whip base increases, so does the voltage at that point.

Using real values, if we use a power of 100 watts and the tuner has to match into an impedance of 1200 ohms, then the voltage that the whip base has to withstand calculates to 346.4 volts, which is probably not enough to cause a flashover.

When we look at the arrangement, the whip base is some distance up the path between the tuner terminal and the tip of the whip, therefore the

voltage at that point is considerably greater.

This voltage may be enough to cause a flashover or internal insulation breakdown at the base or at the coaxial cable connector. It is likely that if an ohmmeter is used on the base, it will be found that the insulation has broken down, therefore presenting a low resistance to the tuner and converting all of the transmitter power to heat and shunting any received signal to earth.

It is interesting to note that the matching SG-303 whip base uses a 20 kV insulator at this point. By using a piece of wood of sufficient length, Richard has inadvertently solved his problem, provided it does not rain. It possibly also explains why Terry VK8TM had the same problem with a similar setup.

Wayne Cockburn VK5YP

From Andrew VK1DA

Reading the article about the mobile antenna problems faced by Richard VK2XRC, I was puzzled by the reported behaviour of the antenna base. It worked on higher frequencies but was progressively worse as the frequency was lowered, i.e. on 14, 7 and 3.5 MHz. This behaviour seemed typical of a parallel inductor, not the suggested parallel capacitance. A parallel capacitance would affect higher frequencies adversely and would be progressively less significant on lower bands, the reverse of what Richard had observed.

I recall that some of the antenna mounts designed for CB use had an

included parallel inductor, intended to discharge static build-up and keep the whip at the same static potential as the car body. The inductance was sufficient to be irrelevant at 27 MHz but would be significant at frequencies lower than say half that frequency. This appears to be the way the "plastic insulated antenna base" originally used by Richard was behaving, i.e. the antenna became increasingly harder to feed at lower frequencies.

In antenna bases designed for 27 MHz, the inductance of the installed (and invisible) inductor was high enough to allow the antenna to work normally on 27 MHz, but as

will be appreciated, that inductance would present one eighth of the inductive reactance at one eighth of the frequency, very likely sufficiently low to drastically affect the input impedance of the antenna on 3.5 MHz. Similar effects would be in play on higher frequencies, progressively becoming less significant as the frequency rises.

If Richard has not already consigned the antenna base to the circular file, it would be interesting to know whether there is indeed a DC short circuit, indicating the presence of a parallel inductor.

Andrew Davis VK1DA

Amateur radio gets people talking

Tune-in to the world

The 2010 WIA National Field Day Saturday 23rd October 2010.

This event is being held as part of the WIA's centenary celebration year and has been initiated to promote amateur radio to the public.

Object

To promote amateur radio to the public, to introduce potential operators to amateur radio while working as many stations as possible on any and all amateur bands using a variety of modes.

1. Date

The 2010 WIA National Field Day (Field Day) will be held on Saturday 23 October, 2010.

2 Time Period

2200 UTC 22, October to 1000 UTC 23 October, 2010 (0900-2100 EDST 23 October)

3 Bands and Modes

All amateur bands permitted for the level of licence used to run the station.

National Field Day

Saturday, 23 October 2010



The Wireless Institute of Australia

Phone, CW and Digital (i.e. SSTV, PSK31, RTTY, MT63 etc.) modes are permitted but contacts employing any digital mode are considered as one.

Repeater contacts and the use of IRLP, D-STAR and EchoLink are permitted.

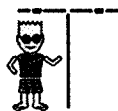


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4 Eligibility

The Field Day is open to all amateurs in Australia. Stations residing in other regions may be contacted for credit, but are not eligible to submit entries.

5 Categories

A *Public Station* is a station run by three or more amateur operators (which may be a club) operating on a single callsign from a public place, or club premises open to the public for the duration of the event.

A *Private Station* is a station which does not fulfil the requirements of Public Station and includes an individual operating portable, mobile or from a private residence.

6 Exchange

Serial numbers only commencing at 001 (RST is not required) followed by a suffix.

Public Stations should use a suffix of F for general contacts or G when a guest (non-licensed operator) makes their first contact.

Private Stations should use a suffix of H for a home, P for portable or M for mobile stations.

7 Repeat Contacts

A station contacted in a one hour block may be re-worked in the next one hour block using that particular band and mode combination.

NB To prevent waiting an immediate rework with a recently contacted station is permitted when a guest (non-licensed) operator makes their first contact from a Public Station using the G suffix. Subsequent contacts would be treated as normal contacts.

8 Logs

Public Stations and Private Stations will keep a log for each transmitter operated. Entries should include UTC time, call sign, mode, number sent and number received.

9 Scoring

Final Score = Contact points + Bonus points (detailed below)

Contact Points

All standard contacts regardless of band or mode count for one point each.

Where a guest (non-licensed person) makes their *first* contact at a Public Station and records their name and telephone number in the log, an additional 50 points will be awarded. The G suffix must be used for this exchange.

Bonus Points that may be awarded to Public Stations

An additional 20 points will be awarded for each amateur assisting in the operation, promotion or other activities at the station. All participants must enter their name, callsign and the nature of their involvement in the logbook.

An additional 200 points will be awarded to a station which operates in a prominent public location (i.e. shopping centre, or adjacent to a public facility). A supporting photograph of the station must be submitted with the log.

An additional 100 points will be awarded for each transceiver for which a log is submitted provided that the transceiver is connected to its own dedicated antenna. Handhelds are not eligible for these points but may be used during the field day.

Where the operational transceiver is powered by renewable energy (i.e. solar, hydro, wind, human powered) an additional 200 points will be awarded. A supporting

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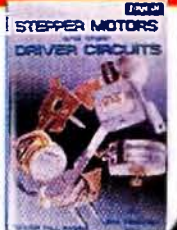
Torque: Low
Operating Volts: 1.5-4.5V
Speed (no load): 12000rpm
Diameter: 20mm
Total length: 25mm
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photograph of the power source must be submitted with the log.

Where the operational transceiver is powered by a non-renewable portable power source (i.e. generator, batteries) an additional 100 points will be awarded. A supporting photograph of the power source must be submitted with the log.

A station logging a contact using CW will be awarded 100 points.

A station logging a contact using a Digital mode (RTTY, PSK32, EchoLink etc) will be awarded 100 points (once off).

Where a station operation is accompanied by publicity the following points will be awarded:

Where the station is referred to on a non-amateur television station(s) – 200 points per reference.

Where the station is referred to on a commercial radio station(s) – 200 points per reference.

Where the station is referred to in a press publication(s) – 200 points per reference.

Where the station is visited by an invited Government (including local Government) official (i.e. Member of Parliament or local Mayor) – 100 points per official. A supporting photograph of the visit must be submitted with the log.

Where the station is visited by an invited member of a community emergency service (i.e. CFA, SES) – 100 points. A supporting photograph of the station must be submitted with the log.

Where the station hosts a structured amateur radio educational activity for five or more children below the age of 18, (i.e. formal training, kit building, licence examinations) 200 points will be awarded. A supporting photograph of the activity must be submitted with the log.

Where the station provides a public information table to promote amateur radio – 100 points.

Where the station submits a video, photographs or print articles describing the activities of the Field Day operation at the station – 50 points will be awarded for each type of presentation submitted up to a maximum of 150 points.

Awards

In order to be eligible for an award the station must have registered as a participant on the WIA National Field Day Web Site.

All registered participants who submit a log will each receive a participation certificate.

The three highest scoring Public Stations will each receive an award certificate.

The three highest scoring Private Stations will each receive an award certificate.

The WIA National Field Day Co-ordinator will judge photographs received based on general appearance and presentation of participants, location and equipment layout, and award certificates to the three best public station photographs, videos and articles submitted.

Miscellaneous

By submitting an entry you agree to be bound by these rules and agree that the judge's decision on the interpretation of the rules, awarding of points (including bonus points), certificates and awards will be final and that no correspondence will be entered into. The judges may modify these rules in order to preserve the aims of the field day.

The copyright in all material submitted must be held by the submitter and the WIA is expressly authorized to use the material for promotional purposes.

Logs and supporting evidence for bonus points must be received by the National Field Day Co-ordinator at the Wireless Institute of Australia, nfd@wia.org.au by 5.00 pm on 23 November, 2010.

Logs and supporting evidence for bonus points must be received by the National Field Day Co-ordinator at the Wireless Institute of Australia, nfd@wia.org.au by 5.00 pm on 23 November, 2010.

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OTY Amateurs helping amateurs

I would like to extend my sincere thanks to the following amateur operators for their assistance on Sunday 1 August: Stuart VK3FSTU, Nathan VK3FUZZ, Gary VK3LCD and Dennis VK3FDAS.

While on a camping trip, my son and I managed to bog our respective 4x4s. My son's Patrol sank up to its axles in soft mud and my Pathfinder bottomed out in a deep puddle on a track whilst heading to Hall's Gap to see if I could get some recovery gear.

I was lucky enough to be able to trigger the Mount William repeater and placed a call for assistance. Stuart came back first but his signal was too scratchy for good communications. Then up popped the other three stations; between them contact was made with the Parks Victoria Ranger and the Police.

The happy ending is that I was easily towed out. The Patrol

had to be dug out, as the Ranger did not want to venture too close to the muddy area.

Lessons learnt:

1. You can always rely on fellow amateurs to be there for you in time of need. To quote one of the above (I cannot remember which one): "We might be b____y amateurs but we do a professional job".

2. Do not plough through water hazards without checking the depth etc beforehand. My Pathfinder bottomed out on the LPG tank strung under the rear of the vehicle. Had it not been for the LPG tank I would have made it through.

But amateur radio saved the day.

Again my thanks to the four amateurs who came to my aid.

Ron VK3JRC

ar

The good, the bad and the ugly: the G5RV antenna

Geoff Emery VK4ZPP and Ross Pittard VK3CE

Most of us are fortunate these days to get onto the HF bands with a multi-band rig. Natural curiosity makes us want to try the bands at our disposal and then it comes to the decision as to what is going to be an effective antenna. Arguments abound as to whether various HF multi-band antennas are compromises or just dummy loads that radiate a little signal.

There are obvious limitations to the amount of yard space that people have and some people are forced to consider commercial multi-band vertical antennas, neglecting the requirement that these require good soil conductivity or an effective counterpoise/ground plane system to achieve best results, although some DX expeditions have had fabulous results with vertical antennas mounted at the ocean's edge with salty wet sand beneath them.

There is a trend to market vertical non-resonant antennas for field use or limited space. These "aperiodic" antennas are designed not to be resonant on any band of interest. They are untuned structures, as far as the amateur is concerned. You will see reviews and analyses of these aperiodic antennas that show they are lossy on most bands below about 20 metres. But you will also be able to see that the military uses this type of antenna, both on land and sea, because of the large range of frequencies they can accommodate.

What I am trying to impress is that each installation is different for each and every one of us and pragmatism rather than theoretical efficiency often defines our choice.

One antenna that can be successfully home brewed and used has a long history in the amateur literature, and was designed by Louis Varney G5RV (SK). Originally designed for 20 metre operation when 75 ohm coax and twin lead was the norm for feeding doublets, the G5RV continues to be home brewed and manufactured commercially, after 50 odd years. With the advent of commercial ATUs and now automatic ATUs, this antenna is beloved by probably more users than it has detractors as a cheap and reliable sky hook which can be used from 160 to six metres.

So what is a G5RV? Generally you can describe this antenna as a doublet or dipole antenna with a parallel tuning stub. The tuning stub is fed with coaxial cable through to the ATU. As a lot of the literature you will read dates to the invention of this antenna or is pre-metric, for simplicity I will use the original imperial measurements.

The dipoles are 15.54 metres (51 feet) on each leg, 31.09 metres (102 feet) overall, see Figure 1. Depending on the *velocity factor* of the parallel line used, the tuning stub is around 9.14 metres (30 feet) long. The coaxial cable can be any length. I have seen this antenna mounted a little over head height but it is recommended that you aim for as much height as possible above 10 metres. Many amateurs use these antennas whilst on the road and use whatever supports, be they saplings, trees or whatever, that might be available. The other advantage is that this antenna works well mounted as an inverted V.

Obviously, the closer to the ground that the wires are the more effective capacitance exists and the more detuning there may be of the antenna. However, in practice, using an ATU largely overcomes this problem. It is not theoretically perfect but if you look at the efficiency of helically wound antennas mounted on the bumper bar, you will be surprised at the effectiveness of the G5RV. Many land mobile HF services depend on these antennas

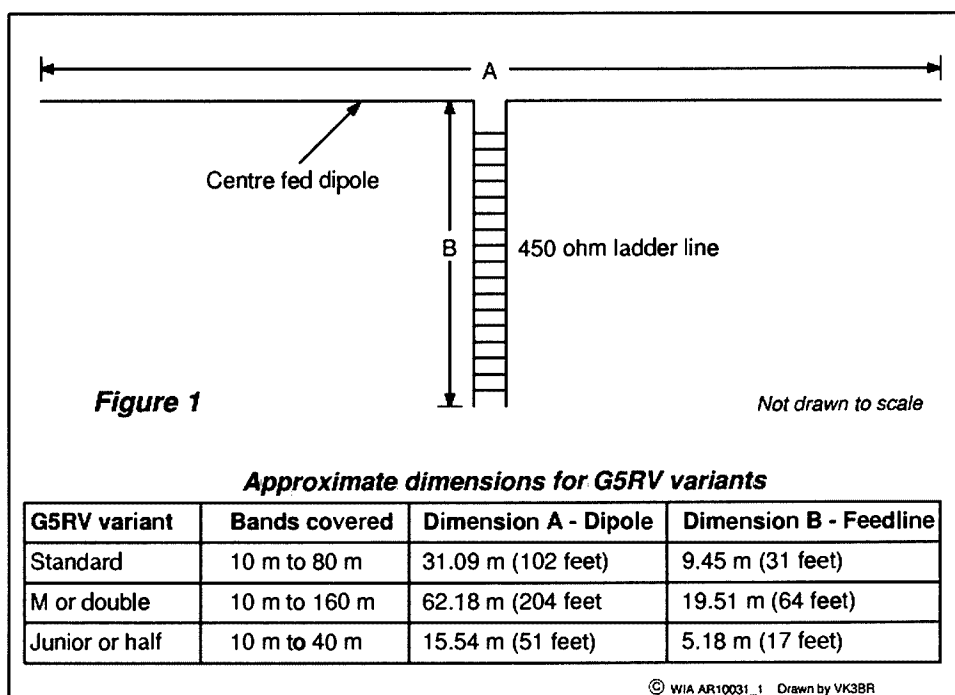


Figure 1: Dimensions for three G5RV variants.

and the signal gets through. Ask your 4WD club member if HF works. Even the amateur "screwdriver" and the land mobile auto-tune antennas share a common design heritage and analyses of their efficiency does not deter people from spending hundreds of dollars for what is found

to be an effective antenna.

(Although not available to Foundation calls, joining the inner and braid of the coaxial cable and feeding as a single wire allows use at 160 metres. I went on HF as a "Z" call using a

home brew G5RV and made my first contacts on 160 metres using the same antenna. I currently use one with the apex about 14 metres, and the ends about 1.5 metres, from the ground – Geoff VK4ZPP).

What do I need?

Apart from some way of hanging the antenna, you will need enough guy rope (non-metallic) to hold your G5RV and allow you to lower it to the ground. You will need two end insulators. The larger size "egg" insulator made for electric fences is suitable (see Foundation Corner 2). I have used ceramic "eggs" and even short lengths of PVC tubing, drilled at each end. You will need a centre insulator, and refer to Photo 1 for an example, which must also clamp and hold the terminations, pig tails and parallel line. You can make a suitable triangle shape from materials like electrical power board material, a piece of white synthetic kitchen chopping board, PVC sheeting, Lexan®, or use two small egg insulators with short rope ties to the feed line.

To make the join between the parallel

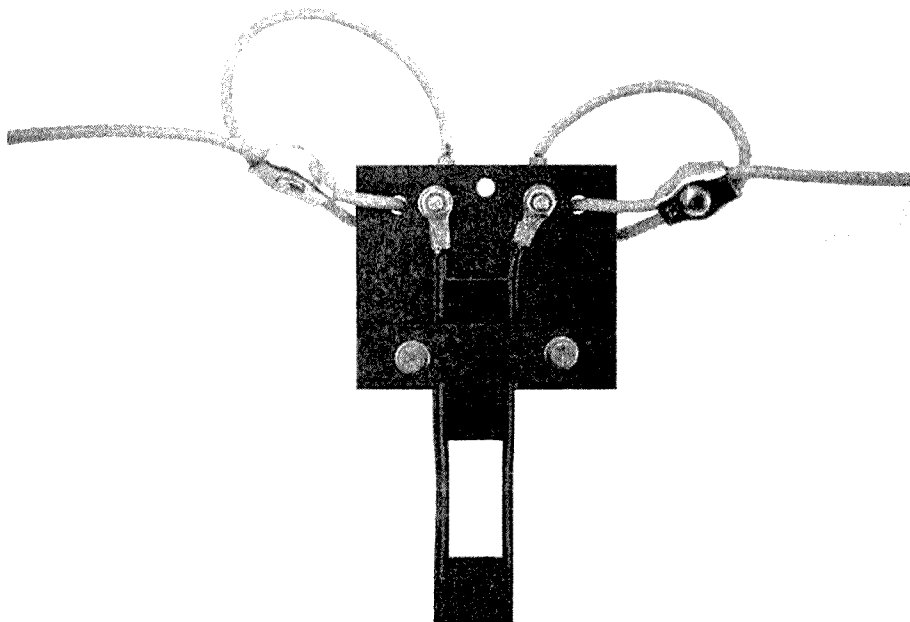


Photo 1: An example of the G5RV centre insulator and feed support.

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line and the coax, combine a choke balun with terminations. With a piece of 75 - 100 mm diameter PVC about 250 mm long, drill two holes large enough to feed the coax from the inside of the tube and wind as many turns of cable as will fit and take the cable through the second hole. If you wish, place a chassis mount SO-239 at the bottom, and at the top drill two 3.5 mm holes into which are inserted 3.2 mm (1/8 inch), or M3, brass metal threads with two nuts. Select the spacing for the metal threads to suit the width of the parallel line wires. The braid of the coax connects to the outside of the SO-239 and the core to the centre pin. At the top, either connection of coax goes under the head of the metal thread. On the outside the first nut is tightened against the PVC and after soldering loops on the end of the bared wires of the parallel line, they are secured by the second brass nut. Also have a look at the balun described in Foundation Corner 3.

This makes a tidy joint and follows Varney's later recommendation of using a choke balun to go from the unbalanced coax to the balanced parallel line. You can also use an "ugly" balun made by coiling coax and securing it by cable "zip" ties.

Thanks go to Geoff VK4ZPP for sharing his observations and experiences on building a G5RV. For further information on setting up and fine tuning *your* G5RV, I suggest having a look at Owen Duffy's web page (Reference 1) which has a detailed step by step guide, and the original G5RV article can be found on the VK3CE web site in the download area (Reference 2).

That is it for this month: keep the feedback and ideas coming.

References

<http://www.vk1od.net/antenna/G5RV/optimising.htm>

<http://vk3ce.no-ip.info>

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OTY Inspectors

Dear friends,

I read with interest your article on the inspectors in the July AR. I offer a small anecdote that may raise a smile to readers; names and locations have been omitted.

I was living in a large rural town in WA in the early 1980s and we used to have frequent visits from the Inspectors as they conducted licensing for professional fishermen. I got quite friendly with one of the inspectors who brought up a tape recording of an interception that had been made in Perth.

He and members of his team had been recording an illegal pirate FM radio station in a northern suburb of Perth. Over a beer, we listened to the recording as the announcer proclaimed the frequency and the "great hits of the past" that he was playing.

Suddenly, one could hear in the background someone knocking, the door opens and a female voice stated "Bob! There's a policeman at the door!".

This was immediately followed by the Sounds of Silence.

Regards,

Peter Scharf VK6APS

ar

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We start this month with congratulations to Vince VK7VH, who is the first VK7 recipient of the VK100WIA Centenary Award.

Last month saw the International Lighthouse and Lightship Weekend and there was a great turn-out for VK7 with six lighthouses being covered at the time of writing. These included: VK7WCN at the Point Home lookout, VK7KW at the Mersey Bluff lighthouse, VK7VTX at Pot Boil Channel on Flinders Island, VK7FWAY and VK7FEJE at the Table Cape lighthouse, VK7MX, VK7FYM and VK7FLAK at the Low Head lighthouse and VK7ZM at the Rocky Cape lighthouse. Congratulations to all involved for a great activation.

Repeater Update

Hayden VK7HAY lets us know that the 70 cm repeater VK7RCH has moved to Grey Mountain in the Huon Valley covering the Huon and Channel areas. It has been linked to VK7RAA at the moment, however requires some fine tuning over the coming months due to pager interference. A big thank you to Tasmanet for the repeater site space. The repeater transmits on 438.575 MHz and receives on 433.575MHz, with no tone required.

Northern Tasmania Amateur Radio Club

NTARC's June meeting was a presentation by Phil VK7JJ who demonstrated the Apple iPad. From reports the presentation was well received with Phil having to wipe drool off the device many times...HIHI. Joe VK7JG also gave a presentation about some antennas he has been using along with photos from his latest holiday including some of large HF antenna arrays on the mainland. Thanks Phil and Joe.

North West Tasmanian Amateur TeleVision Group

Congratulations to Greg Radford who recently was assessed for

his Foundation licence and was successful. Greg has received the callsign VK7FJF. We welcome Greg to this great hobby of amateur radio and wish him successful DX.

WICEN Tasmania (South)

Thanks to Roger VK7ARN for the info for this report. VK7s Peter TPE, Stu NXX, Garry JGD, Peter KPC, Roger ARN, Chris FCDW and Michael FMRS together with harmonics Jessica and Nicole were all involved in the Southern Equine Endurance event at Cliftonvale in Southern Tasmania on the weekend of 17th and 18th July. Weather was good with cold nights and warm days and some of the group even staying overnight and enjoying roo steaks on the campfire BBQ prior to returning to Hobart on the Sunday.

Apparently from this event and the many equine events in which WICEN has been involved, there has been contact made from Western Australia Equine eventers wanting to know how they can get the same great community services from AR operators in WA. WICEN's great job also received high praise in a wonderful thank you email from the organisers. Congratulations to all involved.

Photos of the event can be found at: http://tas.wicen.org.au/Photo_pages/clifton_vale_0107.html



Four eager constructors with obligatory supervisors...HIHI

Radio and Electronics Association of Southern Tasmania

REAST's July monthly presentation night took the form of a constructor's night with the building of twenty simple optical transceivers. We had a great roll-up and a full house of soldering irons going at a great pace. Young and old alike all built and got working their transceiver with help from experienced home brewers and constructors. The unit uses three ICs, red LED for the transmitter, a BPW-34 IR photodiode for the receiver and a handful of passive components. Two of the kits even went to VK5 for a science fair!

It was a fantastic night with a full house of constructors all eager to get into building their transceivers. Mike VK7MJ (the kit's designer) brought along his test transmitter and the author brought along his big optical transceiver to send and receive signals along with a range of lenses both traditional and Fresnel and reflectors to demonstrate how the lens or reflector provides gain and increases the distance that can be worked.

From the feedback it was a wonderful night and we will certainly be planning another for next year.

The details of the project are available at: <http://reast.asn.au/events.php#constructornight> ar

Spotlight on **SWL**

Robin Harwood VK7RH

Spring Sunspots, Darkest Africa, East Asia, Shepparton

Spring is almost upon us and propagation is slow to return to normality. While I am writing this there is a major solar storm happening, severely disrupting communications. It is so frustrating not to hear signals on the higher frequencies. One does speculate whether the theories of an 11 year cycle still hold up after all this as it has gone longer than is the norm.

I have been really listening to 40 metres on my very modest setup and it has been interesting noting where signals do come from during the day.

The local early morning hours see European and Asian signals come via the short path and a few Africans as well. The latter have mainly been logged as Intruders to our exclusive allocation from the Horn of Africa.

As previously reported here, Ethiopia and Eritrea have been locked in a war for decades and Somalia as well has degenerated into inter-tribal warfare. This continuing instability has spilled over into neighbouring countries such as Kenya, Uganda and the southern part of Sudan.

Civil warfare again based on ancient tribal animosities has continually plagued The Congo, Burundi and Rwanda, frequently erupting into genocide. No wonder international broadcasters are increasing their output to Africa. The Internet will be out of reach for the average citizen in Africa for some time and hence streaming programming to audiences there is a non-event.

If you are interested in hearing African signals, Ethiopia is easily heard on 7110 up till 2100. Eritrea is heard on 7165 but Ethiopia has also been known to use the channel. Both

nations are also jamming each other and international stations as well, such the VOA.

As a predictable result, both nations are known to shift about in an attempt to avoid jamming. Deutsche Welle has been operating a major shortwave base in Kigali for some time, even during the genocide in 1995. Kenya left shortwave some years back but there have been infrequent reports of Ugandan shortwave senders. The sender on 7125 is reported to be Bangui, in Chad, next door to Sudan. It has been heard in North America and Europe.

The North Koreans have been heard on 7200 for some months now but their audio is terrible. There is a problem within the sender with a nasty heterodyne drifting about.

Burma also has been heard underneath and is in the clear after the annoying Korean sender goes off. However it too does not seem to stay on the channel for long. This is at 1250 UTC.

I can confirm that the former Radio Australia site on the Cox Peninsula In the NT has indeed been completely dismantled. The senders have been moved to Guam or Shepparton and minor ancillary equipment to Kununurra.

Also there have been moves within the US Congress to save the Greenville shortwave complex but it is unclear if it is too late as closure is slated for the end of October.

Well that is all for now. My thanks to John VK4BJ for his input. Until October and the warmer weather, good listening and 73.

Robin VK7RH

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SilentKey

John Woodward

I wish to notify you of the sad passing of my father, John Woodward, formerly VK2WW, on 4/8/2010 aged 88. He died in the St. George Public Hospital Emergency Ward from double pneumonia.

He leaves behind wife Betty, daughter Janis, son Roger and grandsons Mark and Brett.

He was much loved and is sadly missed.

Submitted by Roger Woodward VK2WW, formerly VK2DNX.

Amateur Radio Specialist

Look forward to hearing from you

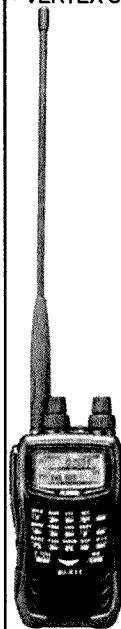


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This relatively cheap and simple interface allows the amateur experimenter or home brewer to explore and work with the increasing number of circuits and modules that require computer control to function. In particular it is targeted at I2C components but also handles other digital interfaces such as that used by the AD985x DDS series.

As a bonus it also optionally provides:- an RF dB level meter good to 500 MHz plus, a frequency meter handling up to 1 GHz, two analogue voltage measuring inputs with 10 bit resolution, an analogue output with 8 bit resolution, plus a 5 volt supply available to power devices under test.

All these items are controllable and readable from the PC using a simple human understandable set of commands. In addition I have provided some software with source, using the freely available Microsoft Visual Basic 2008 Express, for a control panel for the device on the PC which provides a one page view of what is happening with the interface along with logging and simple scripting abilities.

Introduction

This project originated from my desire to 'play' with an analogue television tuner module recovered from a junked PC TV card.

I had initially thought of making either a frequency selective level meter, or maybe a form of spectrum analyser. Before getting to this though I just wanted to try out the tuner to determine its capabilities. After several frustrating attempts to use various converters attached to the parallel port of a desktop PC, I decided there must be a better way.

The fact that I would have liked to use my netbook to do this work, which only has USB ports, was also a factor. A quick search of the web turned up many interesting interfaces built and used by hams, almost all of which used some form of microcontroller, but none of them seemed to be a perfect fit.

The available designs fell into two categories. The first and most desirable designs used later model advanced microcontrollers which had the ability to natively talk USB plus lots of other features. For me the problem with these boiled down to cost and availability. The second category of designs used older style devices and did not offer the flexibility or features I sought.

In the search for something both cheap and function rich, I came across the PIC 16F88. This chip is actually used in some of the PICAXE family of devices. It has lots of features and matched the power of many of the previously published designs in all ways except for not having inbuilt USB functionality. Even better I could buy them at \$5 each (plus postage, from NSW) from an eBay shop, refer Reference 1. When added to a cheap USB to serial converter also bought from another eBay shop, for under \$5 including postage, see Reference 2, you have what I think is a very good package.

So I designed a PC board, built it up, and it worked well. I also found I had space left in the on-chip memory so I started adding additional functions, one thing led to another and this article is the result.

The completed interface is shown in Photo 1 along with the matching screen on the PC in Photo 2.

Overview of Capabilities

Firstly, what this interface is not. It is not, though it could possibly be hacked to be, an

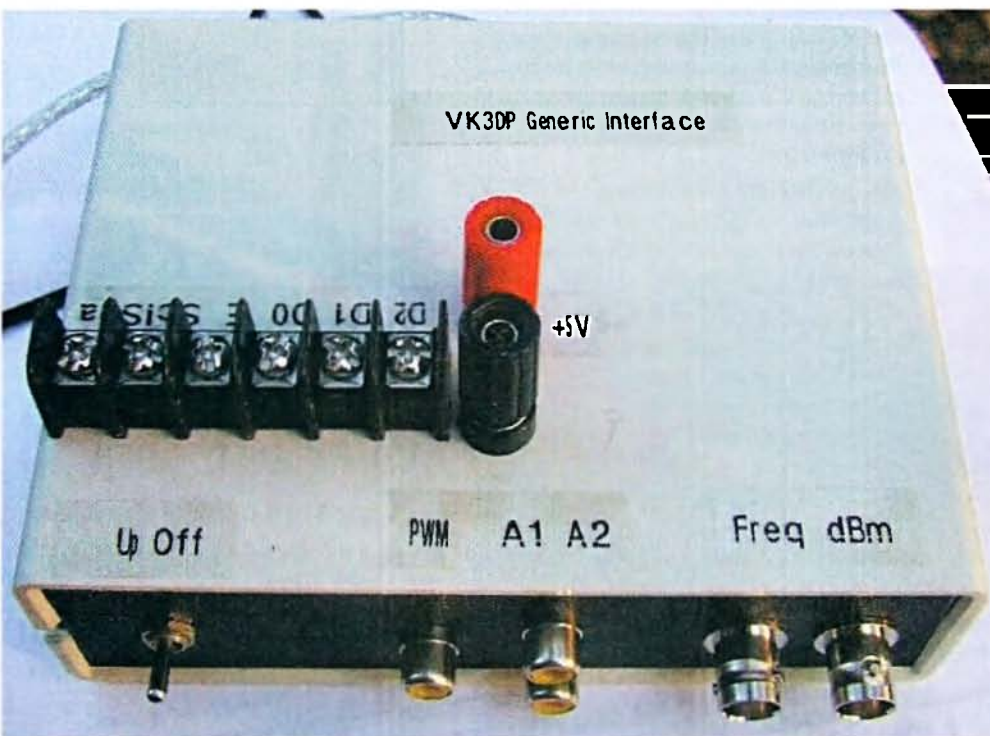


Photo 1: The finished interface in a box.

interface for any commercial transceiver for controlling band, frequency, and so on. It is also not a soundcard interface for a Software Defined Radio. What it is, is a means for an amateur on a PC to easily talk I2C or similar protocol to a chip or module to make it do things. It also has some additional features to help during testing of the chip to determine if it has done what it was told to do. It is a sort of portable general purpose mini test bench or suite of test equipment to help develop more dedicated equipment.

The interface as presented here has the following features:

- I2C Master two-wire interface with built in pull up resistors, for talking to TV tuners and a myriad of other things.
- Pseudo SPI three-wire interface as used by the AD985X series of DDS chips.
- Or alternately a generic three-wire digital interface, with each bit individually switched, to roll your own.
- Two 10 bit analogue inputs, setup in my prototype for 0-10 Volt measurements with a 10 M Ohm input impedance.
- An AD8703 based RF dB level meter with a 70 dB plus range to well over 500 MHz.
- A pre-scaled frequency meter usable to at least 1 GHz.
- A controlled (8 bit/256 level) analogue voltage out source.

- A 5 volt supply to run the items under test.
- High speed USB connection to PC.
- A simple but powerful human readable command language so that the interface can be debugged or tested using hyper-terminal or an equivalent dumb terminal software package.
- Configurable PC software for those who do not want to build their own with numerous display options, tracing, logging, and simple scripting.

Circuit Descriptions – How it works

As you will see, I made the interface modular so that I could mix and match various components as required. In the full house case there are five modules, four built from scratch and one (the USB to RS232-ish one) extracted from something else. In the following sections the functioning of each module is discussed.

Main Board

The heart of the interface and the only thing you need to build if all you want is the I2C is the main 16F88 board. The circuit for the main module is shown in Figure 1.

You will see that apart from the 16F88 PIC there are only a handful of resistors, capacitors, a 10 MHz crystal, and two small voltage regulators. While this PIC is capable of operating free running without a crystal, as this interface has a frequency measurement facility I wanted it to be as accurate and stable as possible. I chose 10 MHz simply

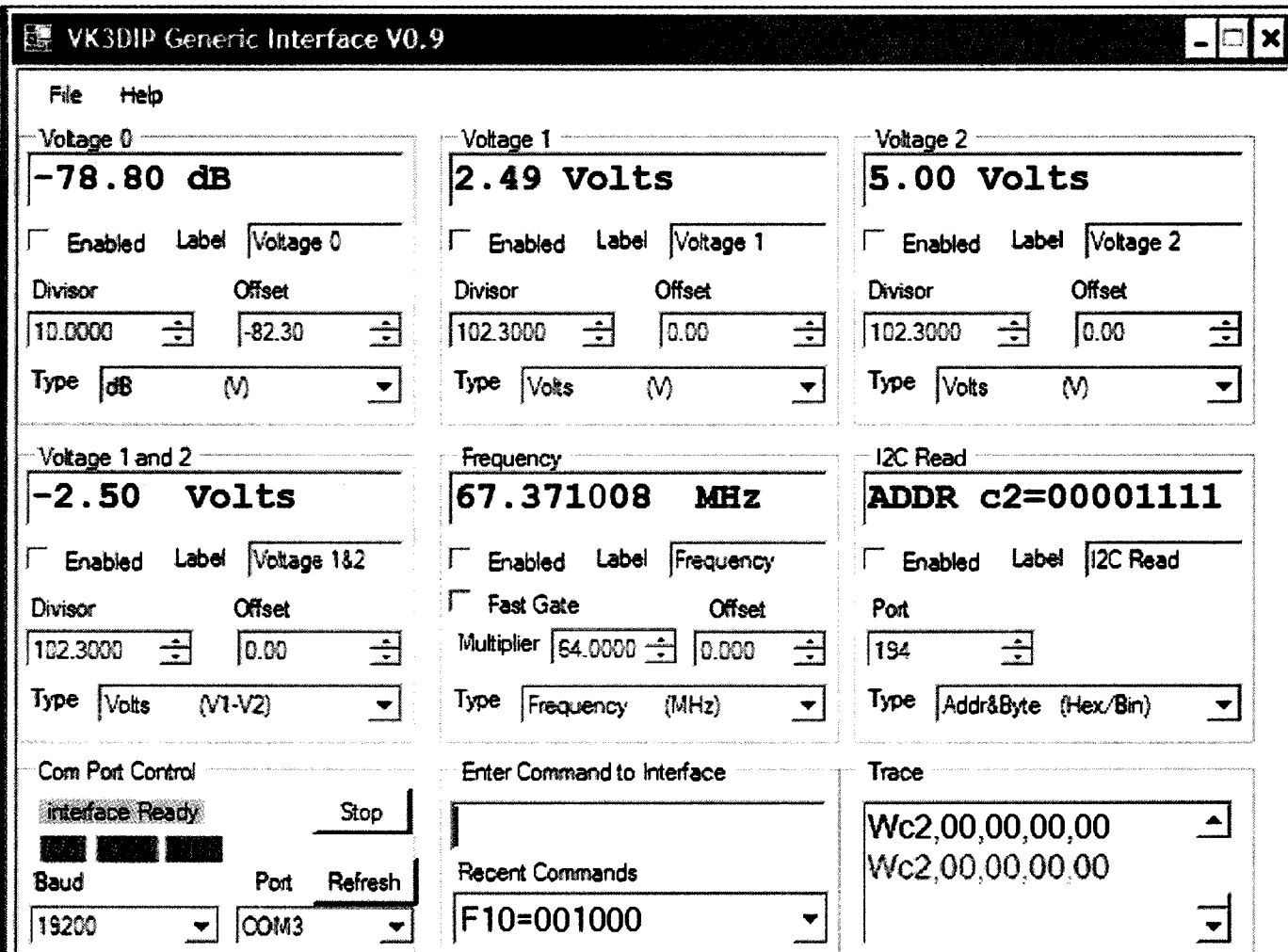


Photo 2: The PC control software.

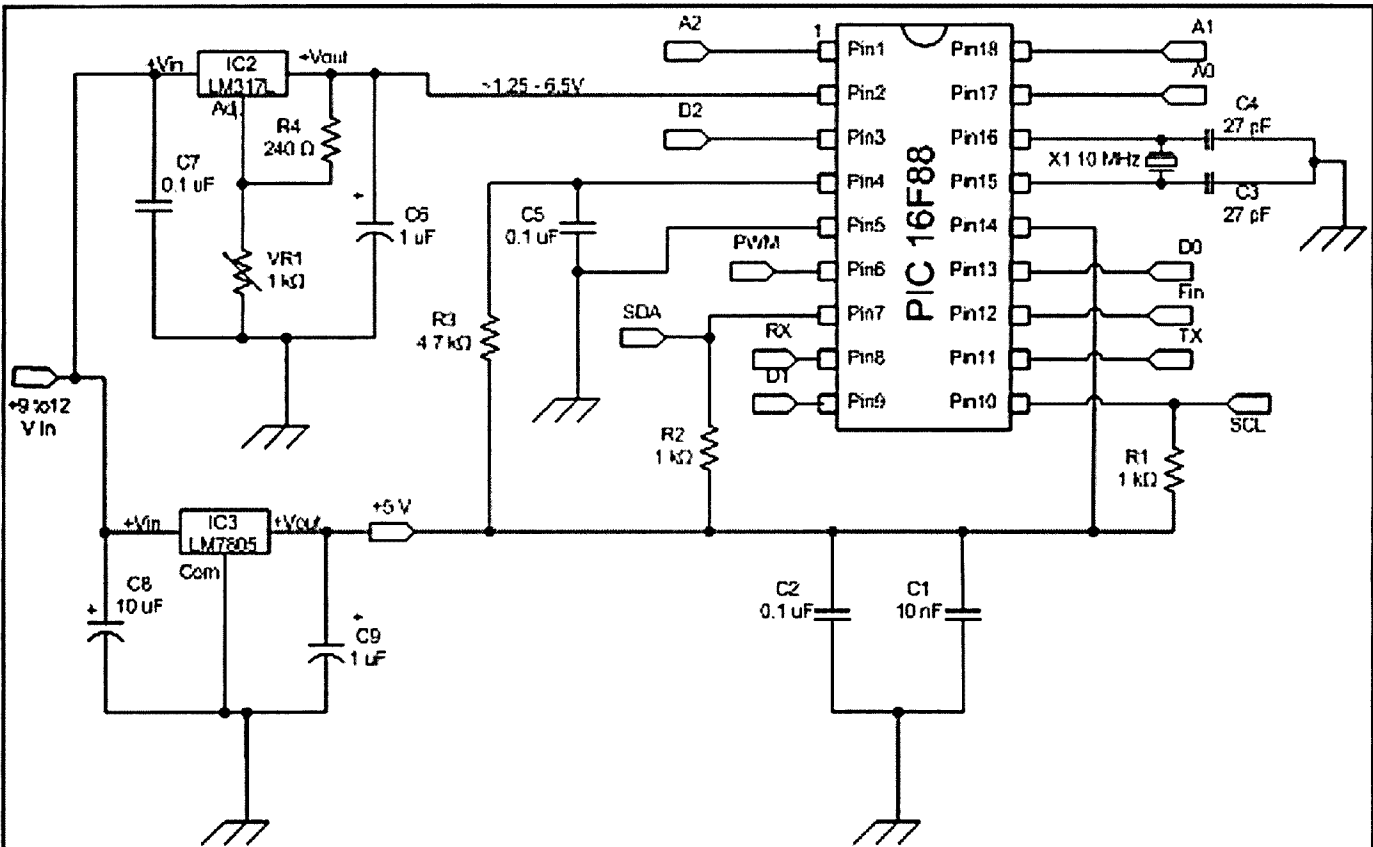


Figure 1: The main PIC board..

because that was a frequency I had some crystals at hand. If you want to change this to suit what you happen to have available, and have access to PIC Simulator IDE, see Reference 3, the full source code etc is available on my web site. Refer Reference 4.

The LM317L regulator is used to set the positive voltage reference value for the Analogue to Digital inputs. With the resistor values shown it is possible to set this value anywhere between about 1.25 volts and 6.5 volts. Basically being a 10 bit A/D conversion the 16F88 has 1024 levels that it will quantize the analogue input into between 0 volts and whatever is set as the Positive Reference Voltage (Vref+).

In my case I chose to set this at 2.56 volts for a number of reasons:

- It is low enough that I can use readily available single supply Op Amps like the LM324, which would have a problem with swinging above 3 and a bit volts on a single 5 volt supply.
- 2.56 is a nice 'binary' number that will make the maths easier. That is, 1024 levels in 2.56 volts gives 2.5 millivolts per level.
- 2.56 is close to the highest voltage available out of an AD8307 thus maximising the available resolution.

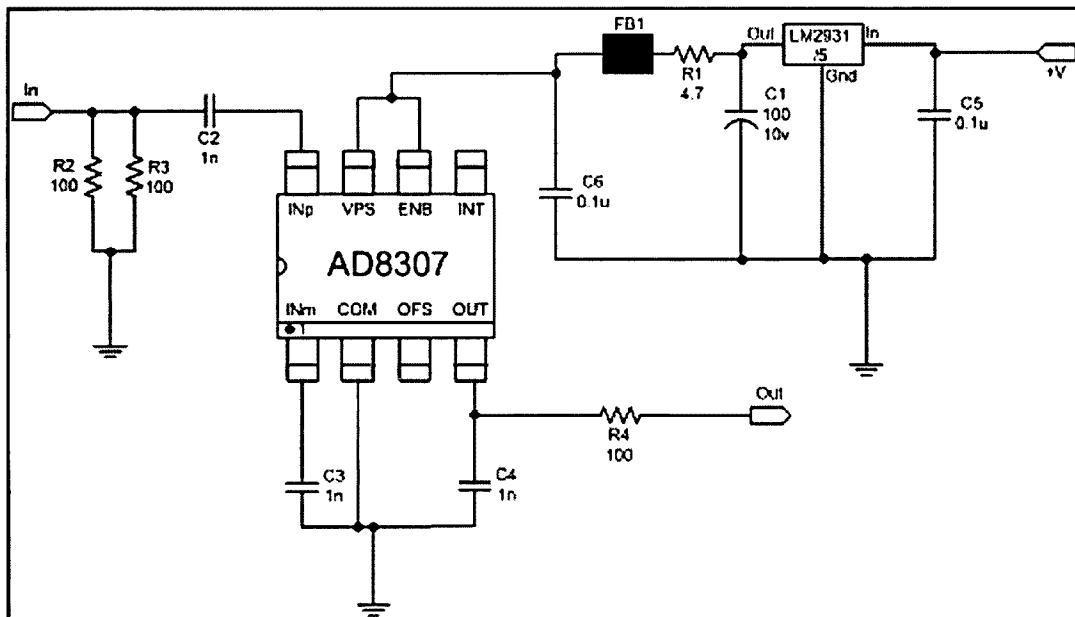


Figure 2: The AD8307 RF Level Module.

If you want to use some other reference value then you will also have to look at possible changes to resistor values on the analogue board.

A description of the code in the PIC 16F88 is too big for this article. Those interested in how it works can download the source and read the comments, refer Reference 4. It was written primarily in PIC Simulator IDE Basic, refer Reference 3, with a little bit of embedded assembler for the timing critical bits such as the frequency measurement calls.

RF Level Module AD8307

The circuit around the AD8307 to provide an RF level indication is basically the same as I used in Reference 6. It is shown here in Figure 2.

The only real differences are that I added a 100 ohm resistor in series with the output to help protect against accidental shorts. Also, as I made a printed circuit board in this case, it was easier to use two 100 ohm resistors in parallel on the input, rather than the three 150 ohms used last time.

For other details of this component refer to Reference 6.

Pre-scaler Module

While the basic 16F88 itself as programmed will provide an up to about 16 MHz frequency meter function (at logic levels), I was interested in higher frequencies and more sensitivity. The circuit of the pre-scaler I came up with is shown in Figure 3.

This pre-scaler is not new, it is basically that used in many of the designs present on the web for PIC frequency meters. It uses the SAB6456 configured as a divide by 64 with a single transistor level shifter to convert the ECL output levels from the SAB6456 to the CMOS/TTL levels required by the 16F88. I used a BF199 because I had a few of them but pretty much any low level NPN RF transistor with a Ft of a couple of hundred MHz will probably do. The only part of the circuit which may require some playing with is the value of R2 which may have to be chosen to suit the particular transistor used. The idea is that R2 is chosen so as to bias the transistor so that the DC output voltage (on the collector with no signal in) is at about mid supply, in this case about 2.5 volts. Doing this maximises the output voltage swing from logic high to low. I have used this circuit a number of times and in each case I have found that with a BF199 a 33 kΩ resistor does the job.

As in the AD8307 case, an on board voltage regulator is used to limit switching noise from getting back on the DC power supply lines. In both cases in the prototype, simply because I happened to have them to hand, I used low voltage dropout versions of the 5 volt regulators or LM2931-5. If you want you can happily use the more garden variety LM78L05 part with the only changes needed being that the 100 uF output filtering capacitor can be decreased in value down to about 0.1

uF and the input filtering capacitor increased to 0.33 uF or greater.

Analogue Module

The analogue voltage interface circuit I used is shown in Figure 4.

This is the circuit where it is most likely that you might want to make some resistor value changes. The circuit can be seen to be in four parts, one for each op amp in the LM324 quad op amp. One of these is a simple voltage follower, that is, one to one. This case provides a buffer function between the output of the AD 8307 and the PIC input.

Two of the other circuits are basically identical as they provide for the scaling and buffering of the external voltage measurement inputs to the PIC. For these circuits the values shown are what I used to give me 0 to 10 volts in with a 10 MΩ input impedance, given the 2.56 full scale value set by my choice of Vref+. I chose 10 MΩ because it is a common value used with digital multimeters. This does make the resistors a bit harder to come by as the 2.2, 3.3, and 3.9 MΩ ones are only available in 5% carbon rather than 1% metal film at places like Jaycar. If you wanted to stick with 1% metal films then you could just divide all the resistor values by 10, that is, 2.2 MΩ becomes 220 kΩ, and so on, and the input impedance would be 1 MΩ which would be similar to that of older analogue meters which

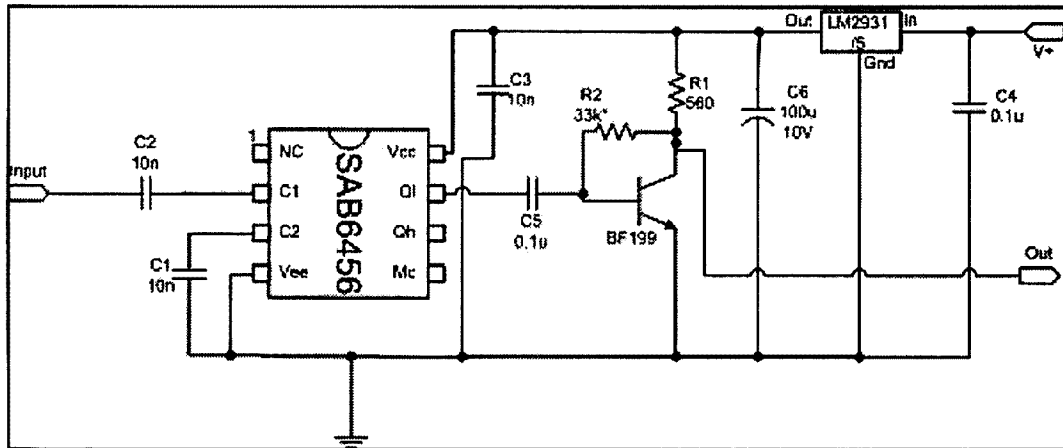


Figure 3: The pre-scaler module

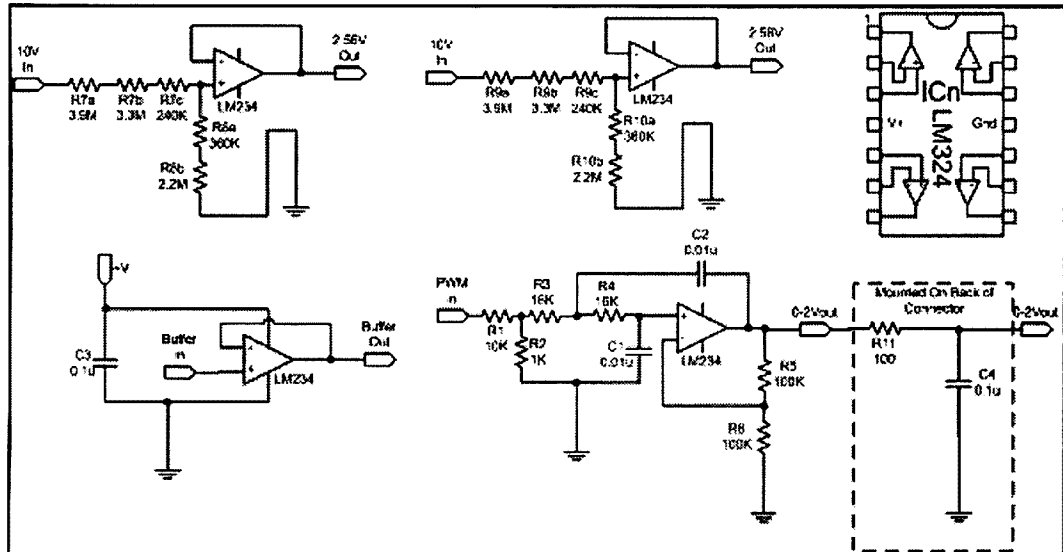


Figure 4: The analogue module.

typically had 100 kΩ per volt (100 k x 10 volts = 1 MΩ). In my case I was happy enough with the 5%.

The 10 (or 1) MΩ input impedance also means that for each additional 10 volt of full scale I want I just have to add a 10 (or 1) MΩ series resistor, that is, a single additional 10 MΩ in series gives 20 volts full scale, two gives 30 volts and so on. Because of the setting of 2.56 volts as my reference level I needed to use combinations of resistors in series to get the values I required, however my experience is that doing this (while it doesn't look as neat) is quite a bit more robust than using a trimmer and having to set it.

The final quarter of the LM324 is used to both filter and buffer the 0 to 5 volt Pulse Width Modulated (PWM) output from the PIC. Again a simple voltage divider is used at the input to the DC coupled active filter to set the voltage level such that the upper voltage swing level of the op amp is not reached. In this case the division is approximately by 5 to put the peak 5 volts down to a one volt level.

The active filter which follows is basically the 1 kHz example from the LM324 datasheet. It is directly (that is, DC) coupled and has a voltage gain of 2. The PWM output frequency of the PIC is set at some 39 kHz so that the 1 kHz filter does a good job of converting the variable duty cycle 39 kHz signal input to a variable level DC output. Because of the gain of 2 we end up with 100 percent duty cycle giving 2 volts, and 0 percent giving 0 volts with the 8 bits (or 256 levels) in between. Note, to prevent some instability and to further clean up the DC output, I added an additional off board R-C filter stage.

USB to RS232 Module

The other primary module in the interface is the RS232 to USB conversion module. As mentioned above I recovered this from a cheap converter purchased off eBay. To understand why I was willing to cut up the converter, it is necessary to understand a bit about how typical micro-controllers and similar devices tend to implement RS232 support.

Firstly a true RS232 interface uses 3 to 25 volt bipolar voltage signalling. Basically this means that a mark or space, the RS232 equivalent of a binary logic 1 or 0, is represented by a negative line voltage for mark and a positive one for space. While the specification mentions values of 3 to 25 volts, typically values like +/-12 volts are used. Creating these line voltages in equipment with a single power supply takes some fancy circuitry using voltage doublers and the like, and

the most common way of providing these interfaces is to use something like the MAX232 single chip solution.

This chip provides both the voltage doublers and so on to produce the dual supply voltages from the typically lower, say 5 volt, supply rail, and the line drivers and receivers capable of sinking and sourcing some reasonable currents with bipolar levels on one side and standard logic levels on the other. These sorts of chips have become quite ubiquitous, so items like the PIC 16F88 are built basically assuming that if you want to use RS232 you will include one of these in your design.

You may also have noticed that the standard says a logic 1 or mark is a negative voltage and a 0 is positive, the line drivers and receivers in chips like the MAX232 also have an inversion function to invert the usual logic 1 = high setup, so even if the PIC did produce the correct voltage levels it would be the wrong way around.

Enter the USB to RS232 converter. These devices are typically intended to allow access to RS232 interfaced devices such as cameras or GPSs, or the like, on things like laptops that lack an RS232 port. In practice these things are often made with specialized micro-controllers which for the same reasons as in the PIC case tend to assume the use of something like the MAX232. So when using a USB to RS232 converter to connect to a PIC based product, the chip line up could typically be something like PIC to MAX232 to another MAX232 to RS232/USB chip. Obviously the thing to do if you were producing a matched set of both ends of this communication path and you wanted to save some money, and you were happy that it would only work over relatively short distances, would be to just leave out the two MAX232s as they basically just cancel each other out, and this is very often the case with things like mobile phones. Some manufacturers of cheap RS232 to USB converters just assume that this is the case anyway and leave the MAX232 out sticking with the inverted logic level version of RS232.

So if you have bought a RS232 to USB converter some time in the past and could not make it work with your GPS or what not, then this is probably what you have purchased.

I bought a sample of three different converters all obtained for a similar price from eBay, all moulded in the same blue translucent silicone rubber stuff, all looking pretty much identical on the outside, and all strangely enough with the identical small CD of driver for all sorts of things USB.

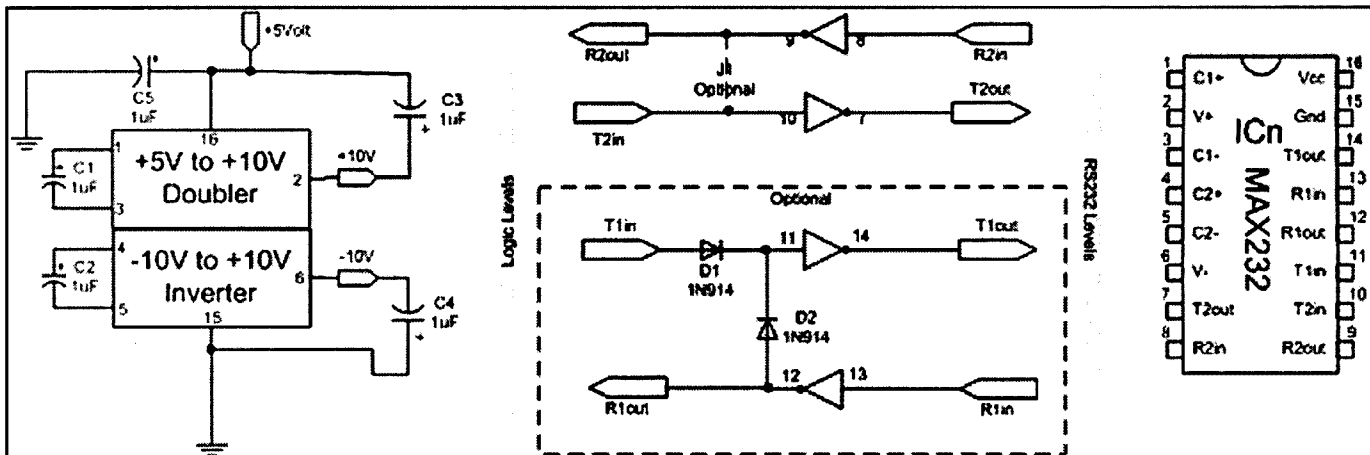


Figure 5: A generic MAX232 circuit.

Opening them up revealed one of them had no MAX232 equivalent (which was why it did not work with my GPS), one had a small sub board with two transistors to do the inversion but no bipolar supplies (it relied on the other end doing that work), and one had a slightly newer version of the USB-RS232 chip which supposedly automatically detected which way around you wanted it and would invert the lines if it detected a true RS232 level coming from the far end. This last one still did not have the dual supplies source and still relied on the far end to do a lot of the work.

Worse from my point of view this last one was very dependent of the order you switched things on, that is, if you plugged in the USB connector before powering up the RS232 device, it would guess the wrong polarity.

In short I had all these otherwise useless converters I had bought from eBay to try and use my GPS with my netbook, so reusing the bits seemed like a good idea, and yes, obviously I did not put in the back to back MAX232s.

The devices I ended up using were based on the PL-2303 chipset.

Optional MAX232

If for one reason or another you want a standard RS232 interface then you could use as discussed above a MAX232 circuit. A version of this is shown in Figure 5.

In the case of this interface only two of the four inverters in the MAX232 need to be used. The other two inverters are shown in the optional box wired to act as a repeater circuit. These are not necessary for this current project but were used in an earlier project to enable both a PIC and a PC to be able to connect to a single serial GPS source. The diodes, if fitted, act as a simple OR gate so that we do not have two logic outputs fighting each other. In the case here, again the items in the optional box are not required even if you decide you need real serial; I have left them shown here because there are spots for them on the board described below and some people may have been interested in what was the purpose of the unused holes.

Building it

The first step in all cases is to produce the relevant printed circuit boards for each module desired. If all has gone well in the magazine publishing process, you should find below full size artwork suitable for my favourite production process which is the laser print or photocopy to special paper (single sided, coated, matt, inkjet photo paper), iron on, wet rub off paper, and etch. If you need further details of this process you will find some photos and information on my website at www.yagicad.com Along with the software in Reference 4, I will include copies of the PCB artwork just in case the print on your copy of AR is not quite dark enough.

You will note I produce my PCB designs with a standard drawing package rather than specialist PCB software so they are not quite as professional looking. The look however, does not make much difference to how well they work, and I just find this way works quickest for me.

Main Board

The main board is a single sided one and the PCB artwork for the main board ready for iron on is shown in Figure 6.

After etching and drilling, the components can be mounted in accordance with the overlay in Figure 7.

In the photo of the assembled board shown in Photo 3, you will see that I used a socket for the PIC to facilitate taking it in and out to reprogram it if necessary. You will also see a fairly robust heatsink on the LM7805 regulator as this device also supplies the externally available 5 volts.

You will also note in this photo I

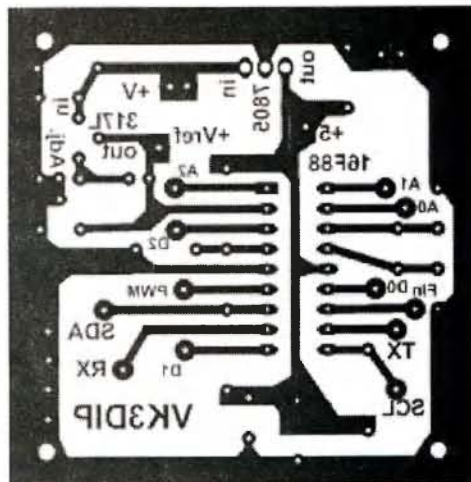


Figure 6: Full size main PIC module board.

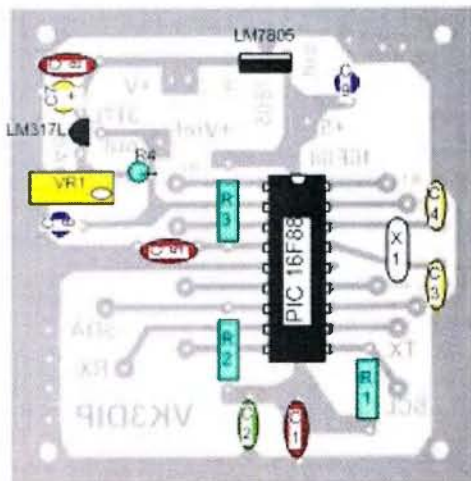


Figure 7: Component overlay for main board.

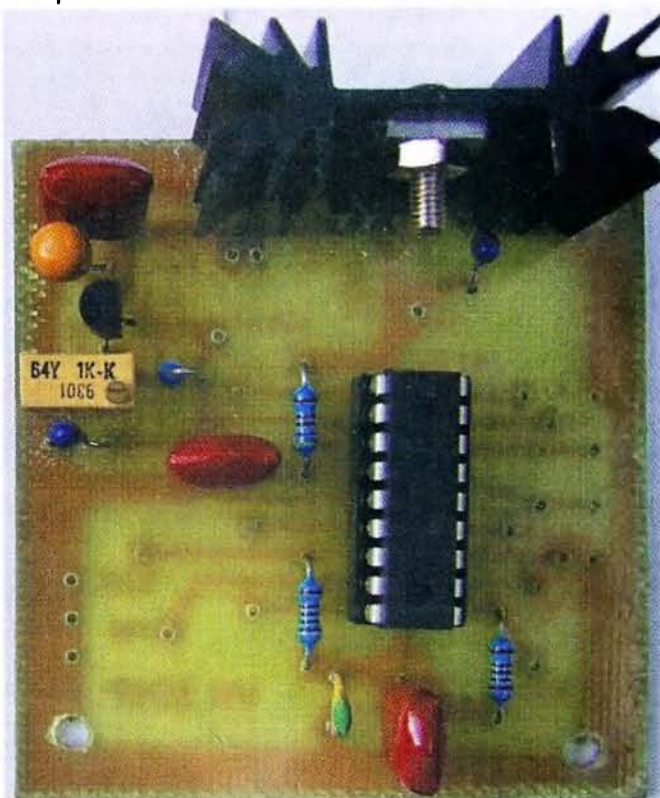


Photo 3: Main PIC board..

had not yet mounted the crystal or associated capacitors, however hopefully the placement of these components is obvious from Figure 7.



Figure 8: Full size board pattern for AD8307.

The PIC 16F88 needs to be programmed with the firmware from Reference 4. If you have a programmer yourself this is easy, if not ask around friends or people at your radio club and someone will be able to do it for you.

RF Level Module AD8307

This module can be built as in Reference 6 or if desired using the

PCB as shown in Figure 8.

To fit everything into the small box I used for the overall unit, the new PCB is probably the easiest. In this case the PCB is made with double sided material with one side being a solid (that is, un-etched) earth plane. For the small number of components that are through hole mounting on this board, those leads not connecting to earth will need to have the copper on the earth side removed from around the hole, which I usually do with a 3-4 mm drill bit held in my hand and given a few turns. See Photo 4 for details.

The majority of the components are surface mount and are mounted directly on the bottom of the board. The simplest way I have found for soldering the 8 pin SOIC AD8307 is to first heavily, but evenly, tin the pads and then while holding the SOIC in place, tack one leg in place using just the soldering iron and no additional solder. The SOIC can then be carefully positioned so that all the other pins align, then again using only the slightly wetted soldering iron touch each of the pins until the tinning flows; do not apply more solder. If you do happen to make a solder bridge, usually

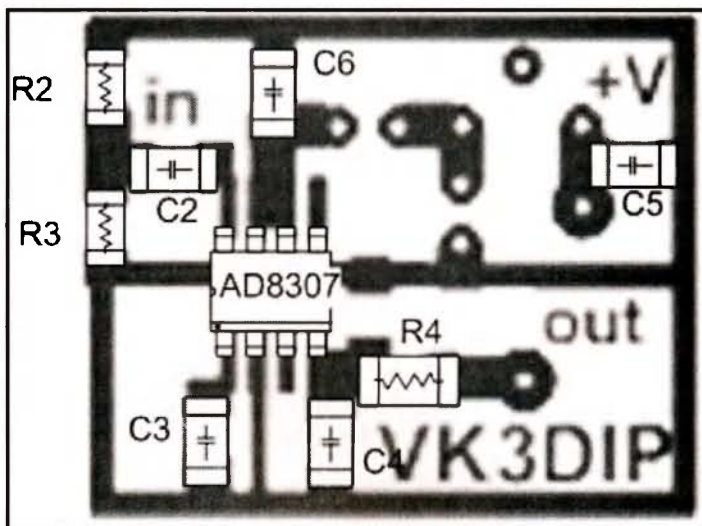


Figure 9: Component overlay for surface mount side of the AD8307 board.

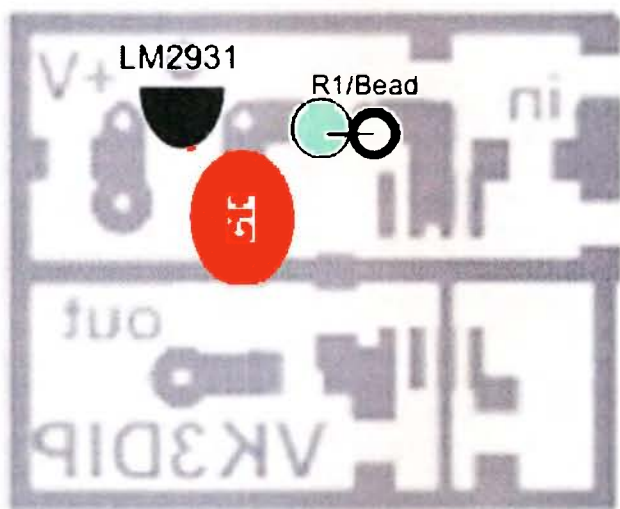


Figure 10: Component overlay for the top of the AD8307 board.

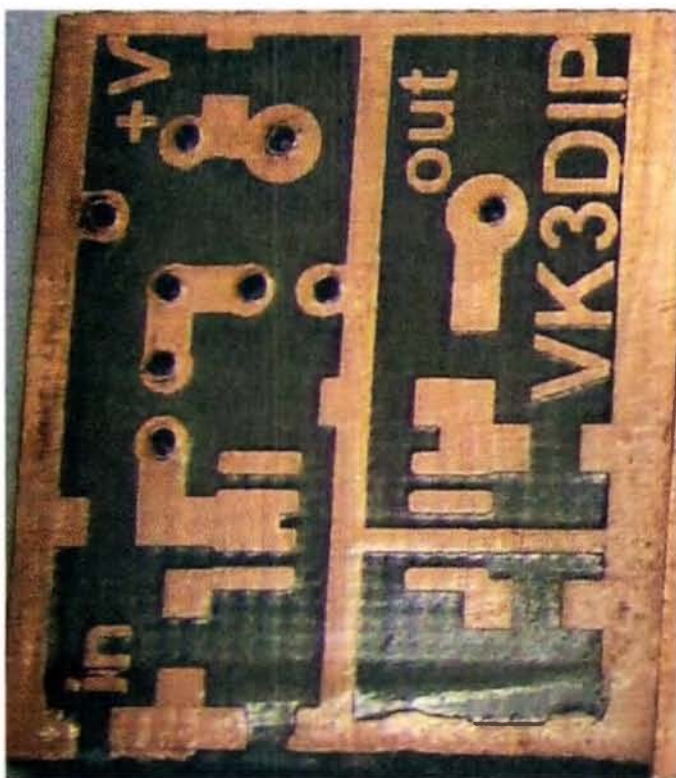


Photo 4: Top and bottom of AD8307 board.

some solder wick will fix it without too many problems. The other components are relatively straightforward to mount including the through-hole components. See the component overlays for the bottom in Figure 9 and the top in Figure 10.

With the through-hole components that are earthed ensure they are soldered to both the top and bottom layers of the board. As well as this you will note in the completed board as shown in Photo 5 (facing page) that I have soldered some scraps of PC board along the sides of the board to ensure the top and bottom earth areas are connected solidly. These scraps of board also protrude about a centimetre out from the board on the input end. I use these projections to simply solder mount this module to the back of the front panel of the box.

Pre-scaler Module

The pre-scaler board, like the AD8307 board, is made with double sided board with one side left solid copper for an earth plane. The board pattern for the bottom of the

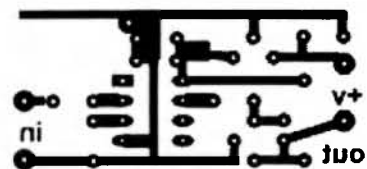


Figure 11: Pre-scaler board.

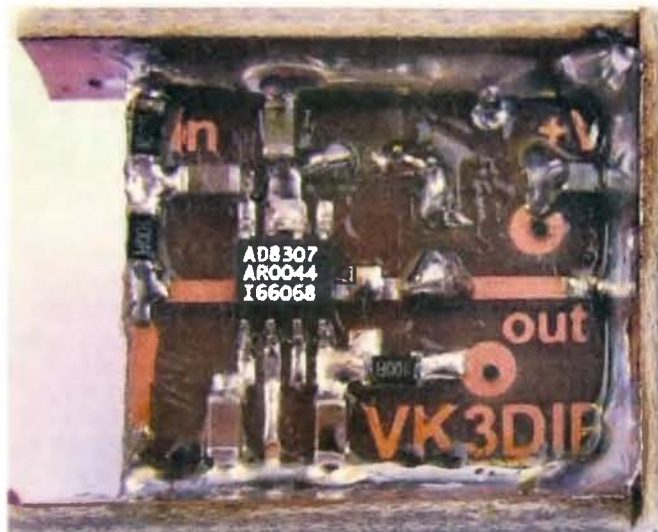


Photo 5: AD8307 board surface mount side.

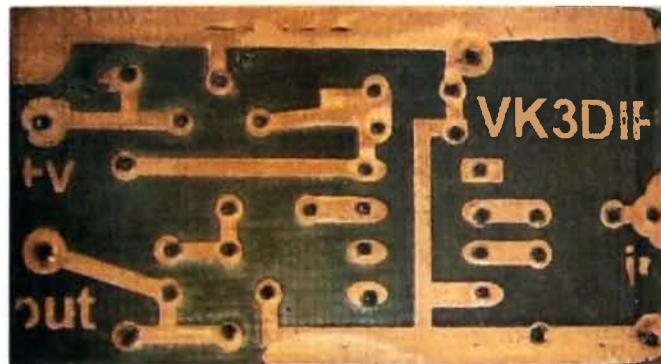


Photo 6: Pre-scaler board top and bottom.

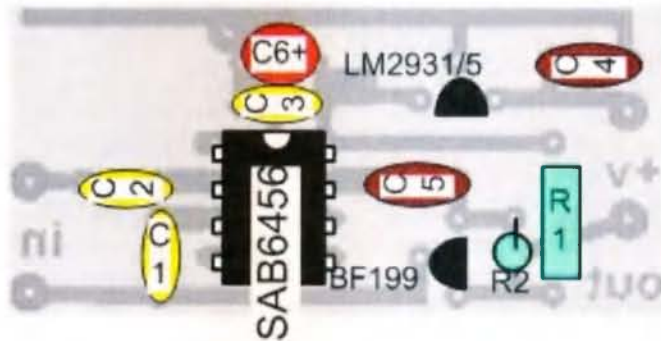


Figure 12: Pre-scaler board component overlay.

board is shown in Figure 11.

Again those holes which do not connect to earth have the copper around the hole on the earth plane side of their holes removed to prevent shorts. See Photo 6.



Photo 7: Pre-scaler board, top view.

The components are mounted as per the component overlay in Figure 12.

Those pins which are earthed are soldered on both sides of the board and again two small scraps of PCB are used on the edges of the board. Photo 7 shows this on the completed board, again the strips extend out the input side to facilitate mounting to the back of the box front panel.

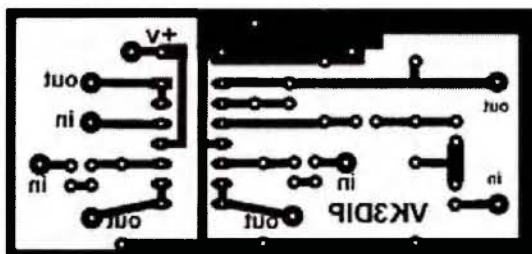


Figure 13: Analogue board full size pattern.

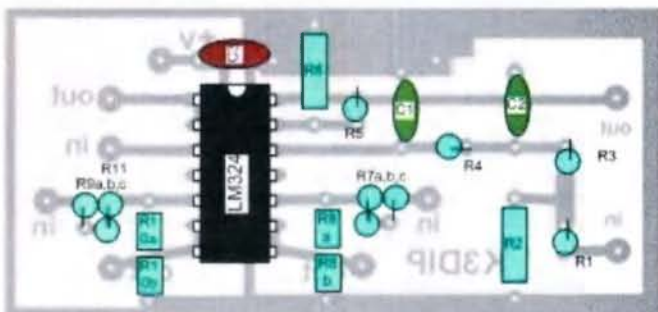


Figure 14: Analogue board component overlay.

Analogue Module

The analogue board is a single sided board made either using a bit of vero-board, proto-board, or the PCB shown in Figure 13.

If the PCB is used the component overlay is shown in Figure 14.

Note that a number of resistors were used in series to make up particular values. As I did not specifically cater for many of these on the board some of them have to be paired with the two ends twisted and soldered in mid-air. This is the area where the most customising will probably take place. If you wanted say a higher or lower voltage range it is pretty straightforward to calculate new resistor values and the circuits are very tolerant.

Note though that I did have to put an additional bit of filtering on the output of the PWM filter



Figure 15: Generic MAX232 board full size pattern.

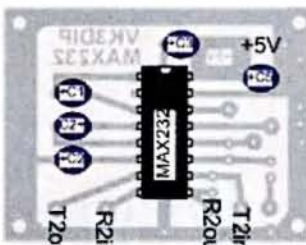


Figure 16: Generic MAX232 component overlay.

but in my case I mounted it on the back of the output socket. If you are using a proto or vero-board you may choose to put these additional components on the board.

RS232/USB Module

If you choose to build the true RS232 interface using a MAX232 you can use the board shown in Figure 15, with the components as per the overlay in Figure 16.

If you choose to use a USB-RS232 device then basically, in this case, the idea seems to be the cheaper the better. The version I used is shown in Photo 8. The blue silicon rubber outer is removed by carefully slicing down each side with a sharp blade and then peeling the two halves apart as

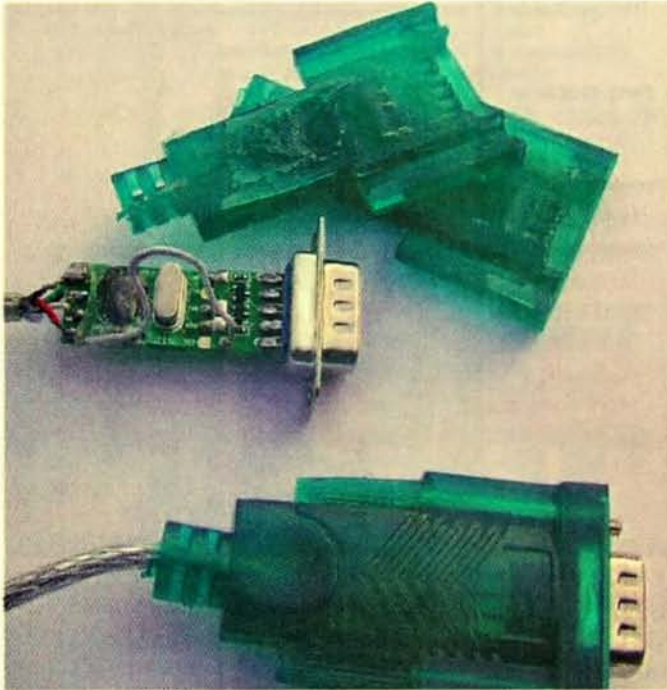


Photo 8: Opened and unopened USB/RS232 device.

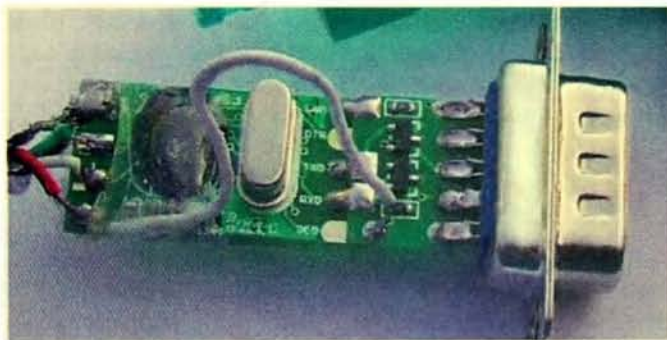


Photo 9: Close up of USB/RS232 device internals.

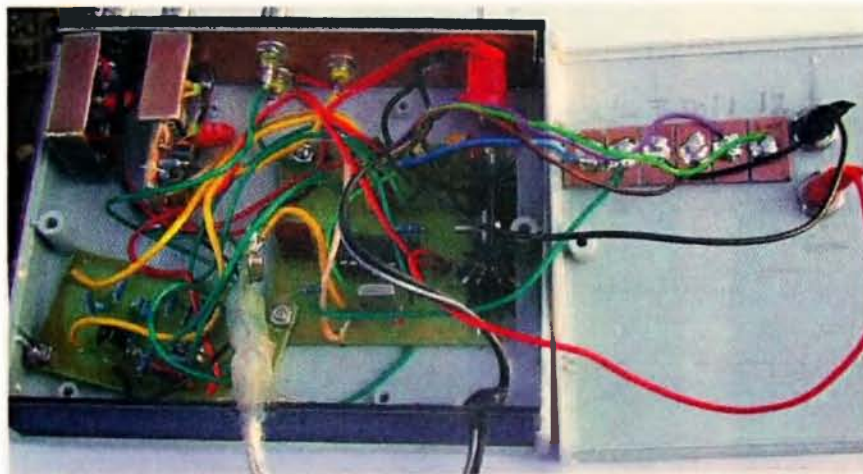


Photo 10: Inside wiring.

shown. Photo 9 shows a close up of the device I used in the prototype.

In this case you can see the main board with the USB/RS232 IC mounted under a black blob and its associated crystal. The various RS232 control lines are clearly marked on the main PCB however only the TX and RX ones (and ground) are connected to the other small board with the two transistors and the DB9 connector. For the purpose here the daughter board is separated by unsoldering the three connections and the main board alone is used. Here I only used the TX and RX but the other control lines are available as additional IO if required; note there are other control lines on the other side of the board.

So far I have opened three different types of the cheaper converter and all have been usable. One way of telling what is inside the converters before opening them, assuming you cannot see through the translucent plastic, is to check on the drivers that get loaded on the PC. This should give you the chipset used, which can then be looked up on the web for the data to see if they have the inverted output or not. As mentioned earlier the version I used had the very common PL2303 chip in it, the data for which is available at the Prolific web site, refer Reference 7.

Putting it together

The individual boards are wired up as per the overall connection diagram as shown in Figure 17. (Facing page.)

For the prototype I installed the various boards into a small plastic case. The Jaycar part number is HB5970, but Dick Smith has an equivalent box (H2512); both have dimensions of 140 x 110 x 35 mm, as can be seen from Photo 10. I placed a piece of unetched PCB behind the plastic front panel. It is held in place by the various sockets and switch being mounted through it. This board serves as a convenient earth rail for all the connectors and enables the small RF critical boards for the RF level and frequency to be soldered directly on over the relevant connector rather than using flying leads as used for the DC and low frequency stuff.

The other output leads for I2C, DDS, and 5 volt rails are connected to a small screw terminal strip, and banana sockets mounted on the lid.

Testing out

Each module can be visually inspected for shorts as it is built. Similarly the boards with regulators can be checked by powering them up and checking the relevant voltages. In the case of the main PIC board this is best done with the PIC not in its socket, as this both prevents damage to the PIC, and provides some convenient test points.

Once everything is assembled and wired up, but before inserting the PIC, you can check all the voltages levels through the analogue card, and the setting of the 2.56 V (or whatever else you have decided to use) reference voltage using the trimmer. The reference voltage will be on pin 2, and with no PIC in the socket the supply 5 volts will be on pins 4, 7, 10 and 14. For the analogue board just check that, with whatever you

chosed as the full scale voltage in, you get whatever you set with the reference voltage appearing on the appropriate PIC socket pin (pins 18 and 1). As a simple test with the levels I used in the prototype of 10 volts and 2.56 volts reference, connecting analogue inputs 1 and 2 to the 5 volts rail should give you half of 2.56 volts out or about 1.28 volts on pin 18 and 1 respectively of the PIC socket. You can also simply check the PWM filter out by carefully placing 5 volts DC on the empty pin 6 of the PIC socket which should produce DC 2 volts out. A CRO if you have one is useful here to check there are no oscillations or ringing present as you connect and disconnect the 5 volts.

You can also do a basic test of the AD8307 levels by connecting up a suitable low level signal generator and seeing the output voltage appearing on pin 17 of the PIC socket. This voltage should vary from some small fraction of a volt with no signal present to about 2.5 volts with +10 to 13 dBm (10 – 20 mW) input.

On the prescaler board the voltages also need to be checked especially that of the operating point of the BF199 or whatever transistor you have used. As mentioned in the circuit description section the DC output voltage with no signal in, which will be appearing on pin 12 of the PIC socket should be close to half supply or 2.5 volts.

Once all the voltage checks are OK you can insert the PIC and connect up to your PC. If you are using the USB option do not forget that some chips need you to have powered up the PIC end before you insert (and thus power up) the USB connector into the PC. You should of course have loaded the appropriate PC drivers that came with the USB/RS232 device.

With all this done you can either use the generic application I have provided in Reference 4 or just use some generic serial terminal such as Hyperterm on a Windows machine. The important settings to get correct are the correct comport, baud rate, and 8 data bits no parity and 1 stop bit. While the flow control I have used is actually a simple version of XON/XOFF, it is simpler for testing purposes to leave this as off or no flow control in the PC settings. In things like Hyperterm, you may also need to set it to send a line end with line feed, and echo typed characters locally, that is, to be half duplex. In Hyperterm's case these settings are in the properties settings ASCII setting area. As far as the baud rate is concerned, I have been testing the interface out with increasingly higher speeds so it is best to check the readme file in the distribution from Reference 4 for the speed for that particular version.

If you are connected at the correct speed and settings and have either a terminal window open in something like Hyperterm or at the command line in my application, then the simplest first command to type to test things out is the ? character (do not forget the enter). If all is OK you should get back something like 'VK3DIP simple serial IO V3.3'

from the interface. Do not worry if you are using a terminal package and there seems to be a funny character at the start and end of this string as this is just the XON/XOFF flow control I mentioned earlier. Continued pressing of the enter key by itself after this should just repeat the previous command and keep giving you back the same message.

If all of this works you are ready to go; have a play with my interface application - it should hopefully be pretty self explanatory and straight forward.

In part 2 of this article I will go into more detail on how to use the interface and the sort of things you can do with it.

References

- Reference 1. There are many places to buy 16F88s from but I got mine from Clints Components at <http://stores.shop.ebay.com.au/Clints-Components>
- Reference 2. There are also many places to get cheap USB to Serial cables. I got the ones I ended up using here from Keyhere at <http://stores.shop.ebay.com.au/keyhere>
But as mentioned in the text, in their original condition they only had the TX and RX lines implemented and still were not true RS232 levels.
- Reference 3. PIC Simulator IDE: <http://www.oshonsoft.com/>
- Reference 4. The full source for all of the PIC and PC software used in this interface can be found on the VK3DIP/Yagicad Homepage at www.yagicad.com In this case it is at least on the miscellaneous projects file page.
The PIC code is for the Basic compiler built into PIC Simulator IDE – from Reference 3. And The PC code is in Visual Basic.net and is compiled with the free Microsoft 2008 Express version of VB. Reference 5.
- Reference 5. Thank you, thank you, Microsoft for this wonderful free powerful tool for experimenters. Available at <http://www.microsoft.com/express/vb/Default.aspx>
- Reference 6. A simple sensitive power meter – Paul McMahon VK3DIP, *Amateur Radio* magazine, June 2009, Pages 13-21.
- Reference 7. A Prolific PL2303 datasheet and other info is available from <http://www.prolific.com.tw> in the support/downloads area.

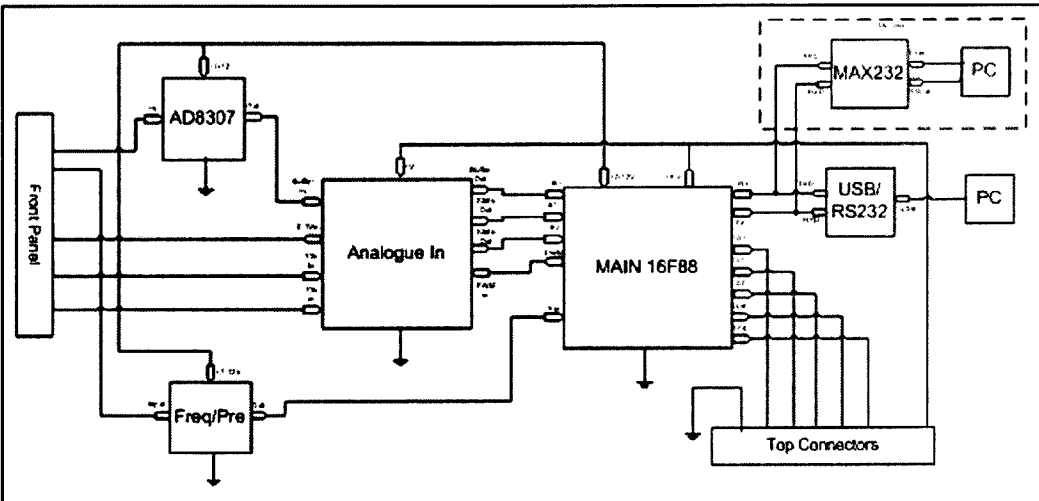


Figure 17: Overall interconnections.

Once upon a JOTA....

Ben Ramsden VK2GHZ

Sydney North Region Scouts and Guides had a ball at their annual VK2SNR JOTA/JOTI camp. The Manly Warringah Radio Society (MWRS) were there to run the radio side of things.

'Why do you like Guides so much, and give us biscuits?' an incredulous VK3 Scout asked some of the Guides when talking to them on 80 metres.

The girls were having none of it and gave as good as they got. 'It's fantastic. And I've got a really, *really* irritating brother at home', one of them replied. Welcome to a world of hobby radio, not for senior gentlemen involved in worthy conversation, but the young generation passionately doing it their way.

Our campsite for the weekend was located on the shore of Lake Narrabeen, 20 km NE of central Sydney, within the grounds of the Sydney Sports Academy. The 151 campers cycled through several activities over the weekend including boating, electronics, computing and radio.

The MWRS had a variety of modes operational for the event; HF on 80 and 40 metres, VHF into our local repeater and a specially installed EchoLink RF node and PC EchoLink.

We were also fortunate to have Kylie on hand who ran a fun two-way handheld radio exercise to give

participants confidence using radios, and keep them occupied whilst they waited their turn for longer distance QSOs.

Club members worked hard to stage a great event. Patrick VK2PN constructed an OCF HF dipole which was erected between the tallest gum trees in the vicinity using Bruce VK2ZZM's 'patent antenna launcher'.

Greg VK2VGM and Mal VK2TMF installed a temporary simplex EchoLink repeater nearby. A 2.4 GHz WLAN radio link was established using Dom's VK2JNA patch antennas to provide internet access for a PC-EchoLink station. Yves VK2AUJ, Connie VK2CON and Tim VK2BT flew a helicopter from Bankstown airport over the site, where those on the ground were able to track via the onboard APRS, and speak to on VHF. At least fourteen club members contributed in some way.

Mai VK2TMF brought along his Toyota Hilux ute that he has converted to fully electric. Several campers were very interested in this, including one who asked Mal please can you tell me about the history of radio. Many hours later the Scout was heard giving an in-depth briefing about the working of the car to an examiner for his electronics proficiency badge!

Some radio die-hards had expressed concerns to me about using EchoLink for the event because 'it's not real

radio' but the organisers were keen that we had it to increase the volume and range of QSOs.

In the event it was invaluable, especially when HF propagation deteriorated. One Scout was a fluent Swedish speaker and so we had him calling CQ via a Stockholm repeater. Others had a

conversation with a Scout in Hawaii (where it was 'yesterday' afternoon) rushing to finish his homework before his own local JOTA camp.

At one stage the kids were getting too used to speaking to people all around the world. I overheard some of our Guides on-air asking about the local weather and time zone, only to discover that they were talking to someone a few km away.

We were all reminded that radio was at the core of things when our TS-430 'popped its clogs' mid-session and Bruce and Yves took the top off and demonstrated rapid fault finding and fixing to all.

A true 'radio experience' contains both the thrill of speaking to someone on the other side on the continent, and the monotony of calling CQ endlessly with no replies. Too much of the latter however is not compatible with a positive participant experience so I felt myself drawn to those modes with the greatest probability of success, which was often EchoLink.

Considering how many JOTA stations were operational in our time zone that weekend, it was remarkably difficult to contact them when you wanted to. I would be interested to hear whether others had similar experiences.

We were operational in sessions from Friday night to Sunday lunchtime, with breaks overnight and for meals. During this time we logged 45 QSOs in ten countries, including Australia. We worked all the mainland states, but somehow managed to miss VK7. Our station count was six local, twenty five interstate and fourteen international.

Thank you to everyone who talked to us, to the MWRS members who ran the event, and especially Glenn Satchell the local Scout activity leader, without whom it wouldn't have happened.

At least two of our club members can trace their interest in amateur



Photo 1: Greg VK2VGM and the girls calling on VHF.

radio back to an experience at a Scout radio camp. Only time will tell how many future radio amateurs we encouraged this weekend, but I suspect that at least one Scout will be building himself an electric ute in a few years!

ar

2010 JOTA is on 16-17 October
Are you prepared?

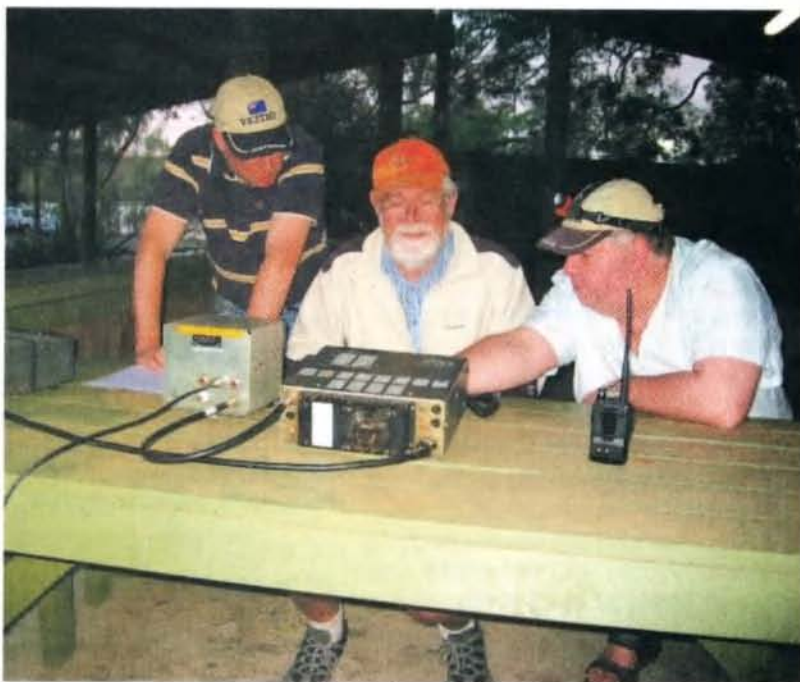


Photo 2: Mal VK2TMF, Russ VK2BYN and Dom VK2JNA setting up the VK2SNR HF station.

16 - 17 OCTOBER / OCTOBRE, 2010



Photo 3: A Guide at VK2SNR trying to pick out the speech from the noise on HF.

Promoting Amateur Radio

Deniliquin Ute Muster

Friday 1st and Saturday 2nd October 2010

Robert Pope VK5TS

My interest in radio communications started in 1976 when I finished school and started learning to be a professional shearer to complement the family farming business.

While travelling remote and outback regions alone, I was concerned about my personal safety. This led me to CB radio (27 MHz SSB) and worked really well for many years driving around South Australia, New South Wales and Queensland following the shearing industry. I used the CB radio on the family farm and still do between the family properties.

In the mid to late 70s I met an amateur operator and was fascinated with his well-equipped amateur radio shack but the Morse code segment of the licence frightened me off. With the introduction of UHF CB into Australia, my interest in communications continued to grow. Through UHF and my interest

in the transport industry, I met Gary VK3FREQ who at the time advised me of the new Foundation level amateur licence with no Morse code requirement. With this news I could not wait to complete the study and become an operator myself.

My interest in communications led me to a position in the Country Fire Service and I became a Brigade and Group Communications Officer with VHF, later progressing to Government Radio Network (GRN) and VHF equipment. Approximately two years ago, HF was looked at for areas outside GRN range for remote region communications. Given my experiences over the years, I was recommended to join the State Volunteer Telecommunications Advisory Committee for Country Fire Service as a Regional Representative and have been on this board for some time.

My VS Holden Ute is set up with the following equipment:

- 27 MHz CB President Grant SSB into a 1220 mm white lightning antenna
- UHF Electrophone TX4400 into a Polar ground independent antenna
- Motorola MCS 2000 into an antenna on the right hand mudguard (CFS)
- Codan HF NGT AR into a 9350 Codan auto tune antenna (CFS) with a Codan GPS engine attached
- Icom IC-207 into a Comet SBB5 dual band antenna 2 m/70 cm
- Yaesu FT-857D into a Comet SBB5 dual band antenna 2 m/70 cm and HF modified commercial antenna for 80/40 m with an FC 30 tuner or Terlin Outbacker
- Terlin Outbacker antenna replaces the commercial antenna for extended band coverage
- Realistic Pro-37 Scanner into an RFI elevated feed UHF antenna
- Garmin nuvi 760 GPS into an external antenna in the cabin
- Phone operates through a Laser 508 antenna (CFS)

In October 2009, I attended the Deniliquin Ute Muster and was amazed at the number of people at the venue (20,000 plus) observing vehicles with radio communication. I enjoyed that weekend immensely and will be attending this year but thought it would be a great idea to give something back to amateur radio and promote our hobby at this venue.

I am entering my vehicle in the Show 'n' Shine section and hope to meet many radio enthusiasts and encourage others to join the amateur radio hobby. If any readers are planning to attend the Deniliquin Ute Muster please come forward for a chat or help me promote our hobby.

Cheers. Rob VK5TS

ar



Robert VK5TS and his VS Ute mobile antenna farm.

Welsh end of the First UK-Australia Press Message re-enactment

Jim Linton VK3PC

The Dragon Amateur Radio Club in North Wales over 16-18 July 2010 operated a special station GB2VK from the former Marconi Long Wave Transmitting Station at Waunfawr in the hills above Caernarfon.

The club has operated previously from that site, notably on International Marconi Day held annually to celebrate the birthday of Guglielmo Marconi (25 April 1874).

DARC Secretary, Stewart Rolfe GW0ETF said, "So when Gippsland Gate Radio and Electronics Club Secretary, Steve Harding VK3EGD proposed to DARC that it might like to be part of the Centenary of Organised Amateur Radio in Australia, the club instantly agreed.

"The GGREC proposal was to re-create the passing of the very first wireless press message which was transmitted from Waunfawr in 1921 to a receiving site set up at Koo-Wee-Rup near Melbourne.

"The aim was firstly to contact each other on as many bands and modes as possible and then hopefully GB2VK operators send the text of the original message to GGREC at Koo-Wee-Rup. Given band propagation conditions it was going to be struggle, might not be achievable, but at least all involved would have a lot of fun trying."

The Dragon Amateur Radio Club made use of its caravan in quasi-Field Day style operation. Stewart GW0ETF explained that the old Marconi buildings are now used principally as the Beacon Climbing Centre (the vast former transmitter hall is now the highest indoor climbing wall in the country).

Getting access inside for a 24 hour a day operation would have been awkward as well as producing problems for siting and feeding the doublet and vertical antennas.

Sleeping in the caravan proved invaluable, he said, with the overnight and early morning long path operations to Australia.

The Dragon ARC Secretary said, "I kicked off things at about 0330 UTC on the Wednesday with my Elecraft K3 and Acom 1000 amplifier.

"Conditions were not promising and I stuck to CW. Fortunately we could pick up the WiFi from the climbing centre so were able to 'sked' with VK100WIA in real time using Skype and to our surprise and delight made contact four times between 0538 and 0714 on 40 m and 30 m.

"None of these were deemed quite good enough to attempt passing the original message. No contact was made on Thursday but a marginal improvement on Friday produced a CW contact on 20m at 0635; the 339 reports exchanged meant again no attempt was made at passing the message.

"In terms of the original aims this was only a partial, though nonetheless satisfying success. I was surprised at how enjoyable the whole event turned out to be, aided no doubt by the gloriously hot sunny weather.

"We made many contacts worldwide and the GB-to-VK concept seemed to have produced much interest around the globe."

The Dragon ARC has thanked GGREC Secretary Steve VK3EGD and President Chris Chapman VK3QB for their hard work and encouragement.

"It was a great effort by many DARC and GGREC members, in the planning and particularly during those three days of setting up, dismantling, and operating GB2VK and VK100WIA.

"And best wishes from the Dragon Amateur Radio Club to the Wireless Institute of Australia on its centenary, and our club members are very pleased to have been officially part of the year-long celebration," said Stewart GW0ETF.

Photos by Stewart Rolfe GW0ETF.



Looking WSW (Long Path to VK3) from above the station; Caernarfon is in the distance alongside the Menai Straits with Anglesey beyond. You can make out the mast supporting the inverted vee doublet to the left of the Marconi buildings and the white roof of the caravan just behind and below.



Looking more or less north west showing the vertical and the caravan. The doublet is running parallel with the fence. The vertical is positioned off the end of the doublet and the 'wire' you can see crossing it is the nylon supporting cord.

Welcome to spring. *Amateur Radio New South Wales* is planning a Mini Field Day for the Trash and Treasure Sunday on 28th November. The day may include a forum for club representatives and members. Details in the October and November AR. This month the T&T will be on Sunday the 26th. For major items on offer, check out "Disposals" on www.arnsw.org.au

All levels of licence assessment exams are available on these Sunday mornings. Please advise anyone looking for an exam venue. Register interest on ARNSW phone 02 9651 1490. A one day Foundation course is being planned, please register interest. All these activities are at the VK2WI site, 63 Quarry Road, Dural.

Thanks from Ian VK2ZIO of the *Kurrajong Radio Museum* for the donation of some Australian callbooks from the 1950s to 1970s, following the request last month.. There are still gaps, so if you have issues that you no longer require, Ian would be pleased to receive them. Phone 02 4573 0601; email vk2zio@yahoo.com.au or postal

842 Bells Line of Road, Kurrajong Hills 2758. Or call at the Museum.

Bill VK2ZZF advise the *Snowy Mountains ARC* are now meeting at new club rooms provided by Fred VK2FJS. The club has the call VK2SNO and repeaters on 6 metres – 53.575 and 2 metres – 147.025. The Saturday evening net is now on the 2 metre repeater at 2030, the 80 metre net has been discontinued. *Hornsby and District ARS* meet twice a month – on the second and fourth Tuesday evenings at Mt. Colah and nets each week – Monday evening on their repeaters, Wednesday evening on 80 metres and Friday evening on 40 metres. Details www.hadarc.org.au

The *Mid North Coast ARG* meet monthly on a Sunday at different locations. They have a new committee and have been making changes to their repeater locations. Planning is well under way for the 2011 Expo at the end of January advises Jason VK2LAW. Check out www.mncarg.com They are planning various courses. Postal address P. O. Box 463 Toorima

2452. The *MidSouth Coast ARC* held their AGM last month. Their next quarterly meeting will be the second Saturday in November.

Summerland ARC held SARCFEST last month. This month is a 40 metre Portable Antenna Shootout on the 19th at the club rooms. The antennas have to be constructed on site between 1030 and 1100 hours. To test the results transmitter input power is to be up to 10 watts, frequency 7075. The performance will be assessed by a remote receiving station. More details - Chris VK2ACD or Duncan VK2DLR.

The club will conduct a Foundation course on the weekend 25 and 26 September. Details from Duncan 02 6628 1337 or at education@sarc.org.au

Waverley ARS also have courses planned this month – details from education@vk2bv.org

Blue Mountains ARC conducted their annual Winterfest last month at the Nepean Rescue Operations Hall at 18 Simeon Road, Orchard Hills. This is their regular meeting place on the first Friday. They have an 80 metre net on Tuesday night at 2000 – 3.543 MHz.

Last month saw AGMs for both the *Orange and District ARC* and the *Oxley Region ARC*. Orange was formed in 1960 and Oxley in 1971. Orange club members have met weekly with students of the Glenroi Public School., teaching simple theory, construction and morse code. This year's *Orange* committee has Robert VK2ZRJ, President; Bob VK2ABP, Vice President. Ross VK2ER is Secretary and Treasurer is John VK2TUV. Committee members -Bruce VK2DEQ, Lez VK2SON and Lindsay VK2AMV.

Oxley Region ARC held their AGM early August. The committee for the next year has Henry VK2ZHE continuing as President. Bruce VK2HOT is Vice President. John VK2KC is Secretary and John VK2KHB is Treasurer. Committee members are Bill VK2ZCW, Arthur VK2ATM and Bill VK2ZCV. The club has a monthly meeting on the first Saturday afternoon and an informal night on the fourth Friday. Meetings at the Port Macquarie SES in Central Road. Nets on local 6700 Sunday at 0830 and Wednesday at 2000. The *Great Lakes ARC* had their AGM early August with Bruce VK2EM in the role of President.

Eighty Years on Air.

William (Bill) Hall VK2XT has been both licensed and a member of the WIA since 1930. His first call was X2BH but this was required by the commercial broadcast station being established in Broken Hill. He was given a choice of other calls and he chose VK2XT.

He has lived in various Newcastle Hunter Region locations. He was first a member of the Newcastle Radio Club which became the Hunter Branch of the NSW Division, which these days has become the Hunter Radio Group. Bill operated the VK2 QSL Bureau for the NSW Division for many years until it became a function of Westlakes.

He was very keen on 15 metres, working most regions of Japan and perhaps most of their amateurs. He has collected extensively and at last count there were over 150 mantle radios, for example. He still drives and until a couple of years ago was mowing his lawns.

He attended the opening earlier this year of ARNSW's Centenary Building at VK2WI Dural and was one of the three old timers cutting the cake. In a couple of years Bill will be celebrating his Centenary.



From Tim VK2ZTM and Brian VK2WBK.

ar

Clubs are always having problems sourcing a lecturer for the monthly meeting. I have been helping out with some of the early history of the hobby in VK2. This month I will be at Hornsby, Waverley and Hunter. Early October will be at Blue Mountains. I can be contacted via email via the ARNSW news site news@arnsw.org.au or vk2notes@arnsw.org.au

WICEN NSW have the Trek for Timor exercise on the weekend 18 and 19 September. Next month there is the annual SAREX search for a missing aircraft on the weekend 16 and 17 October, followed by the Hawkesbury Canoe Classic overnight from Saturday 23 to Sunday 24. There is a First Aid Course being conducted by the Bushwalkers Wilderness Rescue Squad in October, They, like WICEN, are VRA squads. Check out www.bwrs.org.au if you need the first aid qualifications.

Mark VK2XOF, the **VK2WI** Engineering Officer, has advised

an upgrade to the VK2RWI 7000 repeater with new equipment and a power increase. Work is proceeding to replace the 23 cm repeater, in service since the late 1980s.

ARNSW is a bit short on photos of their former properties – Amateur Radio House 1959 to 1982 at St. Leonards. Then Amateur Radio House at Harris Park 1982 to 2006. If you have any which show the buildings and interiors they would welcome copies. P. O. Box 6044 Dural Delivery Centre, 2158.

They have a change of venue for their first Tuesday evening in September and October. They will be back at the previous venue at the North Parramatta McDonalds. Details will be in the weekly VK2WI news sessions. They have a net on the third Tuesday at 1930 on Sydney 7000 and then on 3686.4 kHz at 2000 hours. They also meet on the Sunday afternoon of the T&T Sundays at the VK2WI Dural site.

73 – Tim VK2ZTM.

ar

Summerland Amateur Radio Club

This September marks the 30th year of continuous running of the early morning 80 metre net of the Summerland Amateur Radio Club. Remarkably, this net has been run for 29 of those years by Leith Martin VK2EA.

The following history of the “Dawn Patrol” net was written in 1987, by Bernie Foster VK4FOS, now silent key:

‘In July 1980, a few members of the Summerland Amateur Radio Club decided to take a tour into the Outback, and it was arranged for Bernie, then VK2VTP and Duncan VK2DLR to hold a sked at 10 am EST on 21.190 MHz, so that the travellers could keep in touch with events back home. Contacts were made right through this tour to Adelaide River, Northern Territory, Tennant Creek, Alice Springs etc.

A few weeks later when another trip was organized to Port Augusta, Waikerie and the Mildura districts, the same sked was kept by Duncan, and Bernie who was then living at McLeods Shoot.

When all the travellers returned, as the contacts had been so enjoyable it was decided to continue the net, but as a 10 am sked was impossible to keep for those working, it was decided to cater for the workers with an early morning net at 0630 EST on the frequency of 3.600 MHz, this net being started on 22nd September 1980. Within a few weeks it was realized that this frequency was clashing with a harmonic of the local broadcast station and the frequency was changed to 3.605 MHz. One feature of this net has been the daily weather reports as to local conditions given by each station.

Early participants in the net were Duncan VK2DLR, Graeme VK2GJ, Bob VK2AFP (now a silent key), Bluey VK2AEU (also silent key), John VK2NSA (now VK2JWA), John VK2ATI, Leith VK2EA, Bill VK2BCW (later VK2WJC, now a silent key) and Bernie VK2VTP (later VK4FOS, now also a silent key) as net controller.

As quite a few of the nucleus had been connected with the Air Force or Flying and in the winter the net started in the half light of dawn, Bernie started to call the net “The Dawn Patrol”.

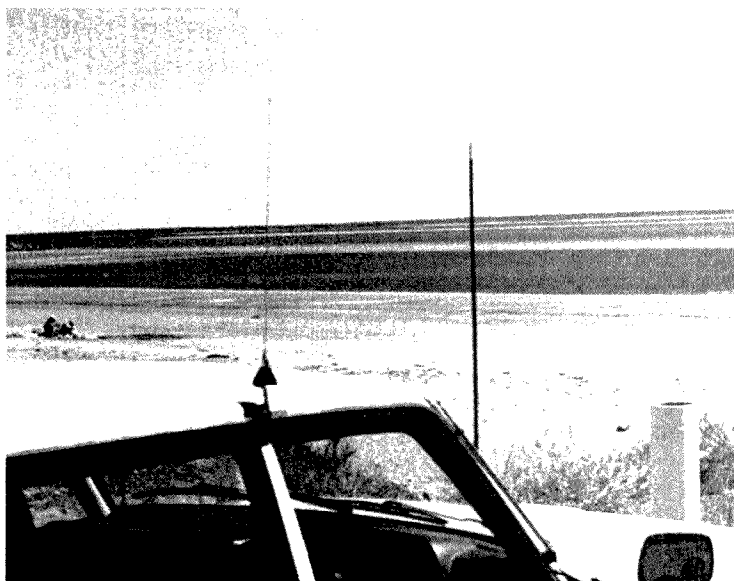
On 19th October 1981 Bernie moved to Queensland and handed the running of the “Dawn Patrol” to Leith VK2EA who then commenced using the Club’s call sign

30th anniversary of the “Dawn Patrol” Chris Meagher VK2ACD

of VK2AGH. The Dawn Patrol has been run by Leith most efficiently and consistently every week day since

Footnote:

The dawn patrol now runs under the club’s current callsign VK2SRC, at 0630 local time. Please feel free to call in, especially on the week of the 30th anniversary, September 20 to 24. A special QSL card will be issued for the occasion. ar



Duncan VK2DLR Subaru at Fannie Bay, Darwin, with 2 metre and 15 metre antennas. The HF rig was a TS-120V with 100 watt linear ocky-strapped to the passenger’s seat.

1477 0120	21.1159	VK2SP/4	56	55		0205	JACK (6 YMHV) N. REID, MARRI...
0500	21.7	VK2AEU	57				16-7-80 PORTABLE AT CENTRAL MOUNT STUART AIRFIELD VIB CENTRAL AUSTRALIA
		VK2VTP	52				
		VK2VTQ	52				
		VK2ACO	57			0530	
0500	146.5	VK2ZES/B	59	59		0530	
0700	21.787	VS6BF	54	57		0715	LYLE HARRIS N. ALICE SPRING
1477 2355	21.7	VK2AEU	55				AT ALLIB SPRINGS
		VK2VTP	51				
		VK2EA	53				

Extract from the log book of VK2DLR, showing contacts on 21 MHz from VK8 back to Summerland (NSW North Coast).

AHARS

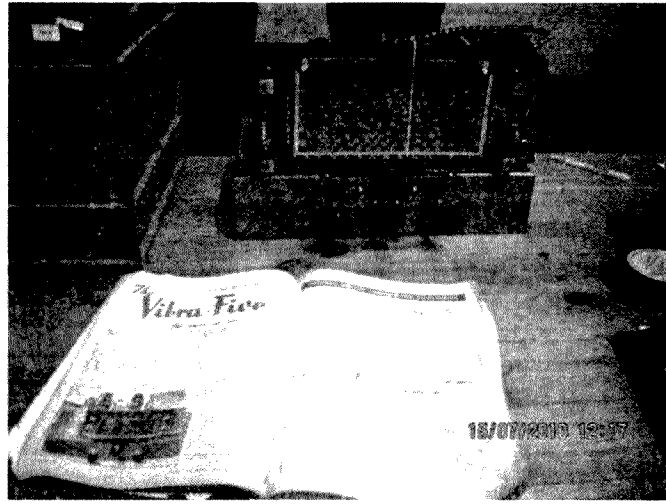
Christine Taylor VK5CTY

At the July meeting a very interesting talk was given by Phil Storr of the Historical Radio Society. He talked about the various types of old radios that he had come across, showing how some of them could be refurbished so they worked just as well as they had done many years ago. He also pointed out why some old radios cannot be rebuilt.

In the rebuilding of old radios there are two schools of thought. One says any old components should only be replaced with new but similar components – which becomes difficult when faced with leaking electrolytic capacitor or wirewound resistors of types no longer available etc. The other school is quite happy to replace old components with modern ones of different types but suitable for the same purpose.

Phil talked about cabinets as well as circuits and had a number of of his rebuilt radios to show us.

Although he was talking about broadcast radios mainly he



did say there are some members of the Historical Radio Society who are interested in and have re-built amateur radios, too.

The photo show one of the re-built radios a Vibra-five, and the reference for it in a copy Radio and Hobbies **ar**

Technical Symposium

AHARS will hold a Symposium on Sunday 19 September at the Belair Community Centre. Speakers: Drew Diamond VK3XU; Phil Harman VK6APH; Rob Gurr VK5RG; Keith Gooley VK5OQ; Iain Crawford VK5ZD; Graham Dicker VK5ZFZ. Lunch and morning and afternoon tea provided.

TOPICS: Microwave antennas, front panel finishing, early SSB techniques, innovative home brew techniques. Display of a working hpsdr station by Hans Smit VK5YX.

More details will be heard on the Sunday morning broadcast and through the regular Monday night net on the Adelaide repeater 146.000 at 8.00 CST.

This should be an interesting and informative day for us all with some well-known speakers.

Locals, please come and any visitor, please time your visit for 19th September. **ar**

Adelaide Hills Amateur Radio Society, Inc

VK5 2010 TECHNICAL SYMPOSIUM

Sunday September 19

9:30 am to 5 pm.

Current developments and experiments in Amateur Radio.

Key Speakers:

Drew Diamond, VK3XU.

Phil Harman, VK6APH.

Keith Gooley, VK5OQ and

Iain Crawford, VK5ZD.

Rob Gurr, VK5RG.

Demonstrations:

Hans Smit, VK5YX.

Graham Dicker, VK5ZFZ.

Subject:

- Innovative Home Brew ideas
- LF Development Work
- HPSDR
- Microwave antenna construction techniques
- Early SSB Techniques.
- A working HPSDR setup.
- Front panel finishing



Drew Diamond



Phil Harman

VENUE: Belair Community Hall.

Burnell Drive/Sheoak Road, Belair. (Just north of the BP Servo).

Travel south from the City along Unley/Belair Road to Belair.

Luncheon is provided, plus tea, coffee, etc.

Drew Diamond's books for sale.

ENTRY: \$20, payable at the door. **Students:** Free entry with Student ID Card. Lunch \$5.

ENQUIRIES: AHARS Secretary, (VKSKC), David Clegg, davidclegg@internode.on.net ph. 08 7127 0738

AHARS President, (VKSEMI), John Elliott, dellio2@bigpond.net.au ph. 08 8278 1269

People from different backgrounds continue to show interest in becoming an amateur. At each Foundation licence training session we ask attendees to say what attracts them to the hobby. Some are individuals who unsuccessfully attempted the Novice licence and missed due to the training methods or a lack of study technique.

Prior to the introduction of the new assessment system in 2005, it took about six months to study the NAOCP Theory, Regulations and Morse code, depending on the skill of the instructor plus applicant's motivation, or available time.

Failing a test would be disheartening, but missing a second or third time saw many lose interest and give up.

Under the old system a candidate could not learn why they had been unsuccessful. Under the new assessment method, it is clear that those who failed at the Novice licence tests have not only found success at the Foundation licence level, but many

have upgraded to the Standard or Advanced licences.

Still joining the ranks are family members of radio amateurs, plus current or lapsed CB operators. Another source of recruits is Information Technology sector people who see the benefits of hands-on communications and are eager to learn new radio (wireless) skills, that may be transferable to their careers.

The yachting and four-wheel drive fraternities are also showing interest, as are people who know nothing about radio or electronics but are attracted to amateur radio for what it has to offer.

Volunteer emergency service personnel are a recent group showing interest in the basic training, knowledge and skills achievement gained with an amateur radio licence.

Better promotion of amateur radio will generate more interest and grow amateur radio. We can all have a role to play in creating new radio amateurs.

The six month-long special call sign VK100WIA as part of the Centenary of Organised Amateur Radio celebration concludes at the end of next month. It has certainly generated a lot of interest and helped participating clubs demonstrate amateur radio to the public or publicise it in local media.

Part of this has been more people being exposed to and showing an interest in amateur radio around Australia. Elsewhere in this month's AR magazine are details of an event that aims to show the Amateur Radio Service to the public, and generating even more interest and understanding about what we do and why we do it.

Foundation class

Our Education Team, led by Barry Robinson VK3PV, will run the next weekend training and assessment session for the Foundation licence on 11-12 September. For inquiries contact Barry on 0428 516 001 or arv@amateurradio.com.au

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Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

GARC – The next generation

Within the club are four family groups in which their children have either earned Foundation licences or are in that process. This 'organic' growth sits well alongside the recently recruited adult members who are also being trained to elevate their licences to Standard and Advanced calls by the two Peters VK3KP and VK3ZAV.

Beacons and Repeaters

The GARC currently supports:

Repeater VK3RGL on 147.000 MHz with 91.5Hz CTSS

Repeater VK3RGC on 147.125 MHz with no CTSS

Repeater VK3ROW on 147.275 MHz with 91.5 CTSS

Repeater VK3RNP on 438.1750 MHz D-Star

Repeater VK3 RGL on 439.575 MHz no CTSS

IRLP – VK3ATL node no. 6572 can be accessed via VK3RGC

Beacons RGL on 144.530 MHz and 432.530 MHz both located in QF22DC beaming alternately west and northeast.

September General Meeting

With President Dallas VK3DJ, in the USA, and Secretary Tony VK3JGC, in the UK, there will be no general meeting in September. Instead will be a social event and barbeque.

Recent Events

Gerhard VK3HQ spoke on the Icom IC-7000 and its elaborate and impressive software-driven menu. Very effective with the IC-7000's internal computer and video output coupled to the club's video projector.

One entertaining club event is the coffer swelling auction of members' unwanted radio gear. The MC is usually Chas VK3PY, who knows how to 'work an auction room'!

Anyone who has recently logged onto www.vk3at1.org will have noticed a complete revamp of the web site by Lou VK3ALB. Of particular interest are the project pages and links to other sites of interest to amateur radio.

The Queenscliff Maritime Museum has requested photos of the last radio event there and will allow us to erect an oregon mast next to the Marconi hut which serves as our /P QTH. The mast will be a flagpole, but primarily it is to facilitate the antenna erection process. The Museum has suggested a summer time event to attract tourists.

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The GARC young guns. From left to right are Michael VK3FMIC (13 yo), Dana (11 yo), Rubin VK3FRJS (14yo), Aden (9 yo) and Jono (10 yo). Missing is Ingrid VK3FGRL (16 yo).

National Radio Event Comes Of Age

Richard Begbie

[It all began as a way of bringing vintage radio buffs together from across the country. Over a decade it has grown beyond recognition....]

The National Radio and Phono Fest has come a long way from its humble beginnings. In 2001 it looked like something of a gamble, so a modest suburban hall was hired, with equally modest publicity and planning. But as the event loomed and interest grew, a second hall had to be conscripted, and by the big day both halls were crammed to bursting with an extraordinary array of vintage radio and parts. People came from every corner of the country and overseas as well.

Now held every two years in the National Capital, the Fest attracts vintage and historic radio enthusiasts, communications and audio interests of all kinds, as well as a general collecting public which has grown rapidly in recent years. The weekend of September 18-19 this year should see another bumper event.

Brief details on this year's event

WHEN

September 18-19,
with main fair Sunday 19, 9 am-3 pm.

WHERE

Kamberra Wine Centre,
Northbourne Ave., Canberra
(map on web-site)

COST:

Admission to Sunday fair
\$5, \$10 family. Workshops,
displays etc. included in
admission price.

For detailed enquiries go to:

HRSA's web-site at
www.hrsa.asn.au/
(click on RadioFest)

Richard Elliott on
lambdas@optusnet.com.au
or (02) 4846 1096

Richard Begbie on
rb@bordnet.com.au
or (02) 6238 2246

Although the fair began as the idea of one enthusiast, it has now evolved into a premier event for our national vintage radio organisation – the Historic Radio Society of Australia. HRSA president Mike Osborne (VK3ZCZ) is enthusiastic. "I'm delighted the RadioFest has become a central part of the HRSA calendar, and personally look forward to it immensely. Because it brings people together from all over Australia, we have once again decided to hold our AGM in conjunction with the Fest weekend."

In a brief decade the Canberra event has become the region's largest regular fixture for a wide range of vintage radio and sound-related interests. Although the large trading fair remains a centrepiece, the Fest now caters for people who want to learn, share information, and join the wider community of radio interest at all levels.

Canberra in spring also opens up possibilities beyond vintage radio. Alternatives abound for longsuffering

wives and partners. The magnificent Floriade Festival is in its first bloom, and perennials like the War Memorial, the Museum, the Film and Sound Archive, and the Australian National Gallery are always filled with interest. Many couples and families make a weekend of it, and as well as

exploring their own interests, "other halves" will often join in the convivial Fest dinner held the evening before the main events.

Although the big day revolves around the trading hall, the relaxed Saturday night dinner catches the spirit of the event. Apart from the pleasures of connecting with others, the evening features entertainment of various kinds, as well as a preview of the display. Speakers have

taken us back to the adventures of early "steam radio", into the quirky world of the collector, and offered comical perspectives on many of the odd things we do. The night's program is put together as much for partners and wives as for the wireless-besotted.

Workshops have been an integral part of the event since its inception.

**Piled on tables
...are boxes of
valves, knobs,
rheos, capacitors
of every
conceivable
kind, period
resistors,
escutcheons,
chokes,
transformers**



A crowded hall at the 2009 event.

These have ranged far and wide over the years, from home-made test equipment through every aspect of radio and phonograph repair and restoration. This year's workshops will explore the mysteries of the valve, the story of our forgotten radio pioneer John Graeme Balsillie, and feature the finer points of timber restoration with an antique expert.

The event also expands this year into a new and larger venue. For the first time it will include a display to put major parts of the history of sound and wireless into historic perspective. Already booked are fascinating items associated with the recording and broadcast careers of our two most famous singers during the high noon of radio – Dame Nellie Melba at the beginning, and Peter Dawson across the golden years.

As well, we look forward to a display of beautifully restored period military radio, and a fine collection tracing the early period of the telephone. Exhibits tracing the early days of broadcast will feature handsome equipment, as well as fascinating accessories designed to convince the lady of the home that wireless had a place in the parlour. Perennial interests like Bakelite, the programs of the war years and beyond, and the evolution of the transistor will also feature.

But there is little doubt that the weekend revolves around the Sunday trading hall.

Scores of tables are jammed with all things related to radio, from the 1920s right through the transistor era. Horn speakers and early cones, TRF sets, crystal sets and early phones rub shoulders with some of the best and rarest of the Bakelite era. Piled on tables and early console sets are boxes of valves, knobs, rheos, capacitors of every conceivable kind, period resistors, escutcheons, chokes, transformers – the list is unending.

There is usually a good scattering of communications and military equipment, and that's before we get to the ephemera. Magazines, crystal tins, adverts, books, technical manuals, and promotional items can always be found amongst more quirky and unexpected items. The interest in early phonographs and wind-up gramophones is steady, and there are always a selection of these on offer, along with Edison cylinder

records, 78s, needles, tins and related paraphernalia.

Some are happy to share stalls. "Sharing gives me the chance to get around and have a look at things for myself," says return stallholder Barry Poor. Brian Lackie (VK2DLM), another long-time stallholder, is equally enthusiastic. "I haven't missed a RadioFest yet," he says, "and don't plan to miss this one. Although I do sell a fair bit, I sometimes wonder whether I

go home with more than I brought!" Which all catches nicely the positive spirit that has characterised the RadioFest since its inception. **ar.**



Vintage variety is a feature of the Fest.



Workshop in progress.



How radio went to war.

A New Country Next Month

New Country

An all time new one! 'Press release' issued 28th July 2010.

"The Sint Maarten 2010 team are proud to announce that they are in high gear with the planning for the celebration of the new country status on 10-10-2010.

They have a 12 member international team assembled, including: Franz DJ9ZB, Max 1BNHJ, John K6MM, Dave K4SV, Kevin K6TD, Craig K9CT, Ralph K9ZO, Bill N2WB, Charlie NF4A, Charlie K6KK, Bruce W6OSP, and Joe W8GEX. This is a team of highly experienced, hard workers and some of the nicest people you could meet.

In addition to the operators, Tom Harrell N4XP is the team treasurer and Janet Pater W8CAA is helping in the organization. John K6MM has done an outstanding job as web master.

The website, can be viewed at www.stmaarten2010.com The website will feature oqsl (online QSL) and accept donations by PayPal.

The group plans to have four stations on the air 24/7, and will have two additional stations that can be activated if needed. They will work all bands, and on CW, SSB and RTTY.

Equipment sponsors are Icom, Alpha, Tennadyne, DX Engineering, Acer and M2.

Leaders Joe W8GEX and Craig K9CT. were on Sint Maarten for a week and have secured two operating locations on opposite ends of the island. They were very happy with all of the cooperation received from local residents.

Our frequency plan for the operation."

BAND	SSB	CW	RTTY
10	28475	28014	28088
12	24955	24901	24925
15	21305	21014	21088
17	18155	18084	18098
20	14205	14014	14088
30	-	10110	10148
40	7078	7014	7048
80	3799	3514	-
160	-	1826.5	-

If you missed the recent operation from Togo by 5V7DX, you will have another opportunity with the forthcoming operation by 5V7TT taking place from October 10th to October 23rd. They plan to be active on 160-10 m CW, SSB and RTTY. The Mediterraneo DX Club Headquarters' operators 11HJT, I2YSB, IK1AOD, IK2CIO, IK2CKR, IK2DIA and IK2HKT will run the radios. Target frequencies are 28025, 24895, 21025, 18075, 14025, 10106, 7005, 3505 and 1822 on CW. On SSB, 28495, 24945, 21295, 18145, 14195, 7056/7180 and 3780. On RTTY look for 5V7TT on 28080, 24920, 21080, 18103, 14080, 10140 and 7040. Art IK7JWY (engarturodapri@libero.it) will be a pilot station. QSL direct only, to I2YSB, Silvano Borsa, Viale Capettini 1, 27036 Mortara, Italy. They have a Web page at www.i2ysb.com

Susan W7KFI/KH6 said on the ON4KST Chat page that she is going to try and go to *Johnston Island (KH3)* in September for two weeks. Bernie of 'The Daily DX' emailed her asking for more details. She replied "I am trying to get boat ready for trip and hope to leave towards end of hurricane season" in October/ November. "I have permission from USAF to stop there." For the record Susan is now 75 and has been trying to get to KH3 since 2007, but has

had several obstacles along the way including being hit by a car while riding a bike.

ANZA DX Net

Lindsay VK3WM, ANZA DX Net boss, suggested that readers of 'DX News and Views' might be interested in their new website for the Net at <http://anzadx.net/>

The ANZA DX Net is a team effort, fostering the spirit of amateur radio in an hour long net every day at 0515 UTC on 14.183 MHz. On Saturdays at 0445 UTC on 21.205 MHz, Alan VK3HCN runs the 15 metre net, checking propagation as the solar cycle evolves.

The original website is still maintained at <http://anzadxnet.webs.com/>

Recently Col VK4CC provided the perfect domain name and space on a fast internet server: <http://anzadx.net/> which is enhanced with some nice graphics and regularly maintained news and information about the Net. Prefixes of DX stations that have recently checked in to the Net are also displayed.

This year the ANZA DX Net celebrates 40 years of operation. Sage operators, including Morris ZL1ANF, Lindsay VK3WM and John VK4LJ serve to promote fine operating skills. Net control operators, a different one every day of the week, are selected to take advantage of productive paths. The website aims to complement the net by bringing together internet resources that enhance DX operations.

73 and good DX, Ken, KI6KFB, webmaster at anzadx.net Many thanks Lindsay and Ken.

Updating N0TG's planned operation from *Sable Island, CY0*. Gary Bartlett VE1RGB has been added to the team. He has operated from Sable Island previously. The callsigns for the operation will now be CY0/AA4VK, CY0/AI5P, CY0/N0TG, CY0/VE1RGB and CY0/WA4DAN. Their preference is to QSL to the "ONLINE QSL



Ed. note

October 10, 2010 is a special day for Sint Maarten, as they gain their independence from Dutch rule.

A planned restructuring of the Netherlands Antilles (in the Caribbean) will see Sint Maarten become a separate country within the Kingdom of the Netherlands (as Aruba and the Netherlands Antilles are now). On that day, the Netherlands Antilles will cease to exist. The countries of Curaçao and St. Maarten will be formed in its place.

REQUEST Service." Instructions are on www.CY0dpxpedition.com

9Q50AR is a special event callsign to celebrate "the 50th anniversary of the independence of the *Democratic Republic of The Congo*", DX World reports. It will be aired from the club station in Kinshasa by different local operators until the end of 2010. Please be patient with them, as they "might not all be skilful enough to handle huge pile ups".

Tom DL2RUM will be going on a business trip to *Kigali, Rwanda* - 9X - and will remain there until late August - early September with a few interruptions (6-8 days each). Tom hopes to get his 9X0TL licence on 21 July, and to operate on 80-6 metres CW, SSB and RTTY during his spare time. QSL via home call. Further information and logsearch at <http://dl2rum.de>

6V7X, *Senegal*, will have Enrico IK2FIL at the controls for the last two weeks of September, including the CQWW DX RTTY Contest September 25- 26. He will be single op all band, 80-10 m. Outside the CQWW event, look for him on 30 m RTTY. Get your QSL credit on LoTW, eQSL or bureau or direct from IK2FIL. <http://6v7x.jimdo.com>.

Also from Senegal, Gerard F5NVF/6W will be active from October 25th to November 1st, HF CW. QSL to his home call.

5Z4EE is relocating to *Nairobi* from Pretoria, South Africa, where he was ZS6SIG. In the US he is known as Sig NV7E (ex WA9INK, C31IL, DA1SI, F0ZR, FO0ZR, TU4CN, ZB2DA). He originally had the 5Z4EE call back in the 1980s. Sig will be in Kenya for four years this time around and plans to be active on 160-10. "Sorry, no 6 m yet in Kenya," he says. Sig adds, "I prefer CW, which [is] why I originally asked for the 5Z4EE call. I was also 9Q5EE in Kinshasa from 1989-91 and SU1EE in Cairo 1988-89." Sig will be geared up with Flex 5000 and 3000 transceivers and an Elecraft K3. He has a Superantennas YP-3 and will be putting up a hex-beam on 60 foot (18 m) mast and maybe later go to a Spiderbeam if he can fit it amongst the trees at his QTH. He says the backyard is small but faces a forest with a clear shot to both Europe and North America. He hopes the

monkeys do not "monkey with" his antennas. "They have already visited my backyard several times." QSL via NV7E or the DPO address listed on QRZ.com. He will respond to Kenya bureau QSLs but it will take a while.

Sig notes that another new Kenyan licensee is 5Z4ZD, operator Andy KI4THF, who now is his next door neighbour in Nairobi. QSL Andy to his QRZ.com info. He will operate from his own QTH and sometimes from Sig's. Andy's XYL, Liz, is KI4THL. Sig says they are both very enthusiastic about amateur radio.

Gab SU/HA3JB will be active again this fall in the September to November timeframe. He has renewed his licence with a mind to get on CW, RTTY, PSK31 and "some SSB." He plans to get into the RTTY Contest. QSL to his home call, direct only, with SAE: Gabor Kutasi, H-8601 Siofok, P.O. Box 243, HUNGARY. Write your email address on your QSL. www.ha3jb.com

Willi DJ7RJ goes to *FR, Reunion Island*, to operate from September 23rd to October 3rd. He moves on, then, to *Madagascar* with the 5R8RJ callsign, October 4th to October 29th, hoping to be on 160-10 CW and SSB and possibly 6 m as well. QSL to his published address.

Fazlay S21RC is staying in *Haiti* and has got a licence for HH2/S21RC. He will work in the capital Port-au-Prince until the end of September. Roberto YS1RS helped him to put up his antenna. He now has an inverted V for 40 m but wants to add another one for 20 m. Fazlay will be QRV mostly during the weekends and HH2/YS1RS should hit the airwaves soon as well. See also online at: <http://www.s21rc.net/> and <http://twitter.com/s21rc>

Finally if you want to check the *ZS8M Marion Island* log, go to <http://dx.qsl.net/logs/> and enter the callsign ZS8M.

Good luck in the pile-ups until next month.

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/trial.htm

SilentKey

Michael (Mike) Warrington VK5AMW 1934 - 2010

Mike was born in London in 1934. For as long as he could remember, he had always had an interest in radio. His father never held an amateur licence, but Mike could remember a homemade copy of a Baird television system in their garage, although he never saw it working.

We married in 1963 and migrated to Australia in 1964. In 1974, (a mortgage and three children later!) he sat for and passed his AOLCP taking the callsign VK5ZBI. He was working for Weston Communications in Adelaide at the time and his first 2 metre rig was a converted Weston 551.

He made the mistake of telling me, jokingly, that the Weston was my Christmas present, so the decision was made that I should get a licence to go with it!

In 1977 Mike passed the CW exam and upgraded to become VK5AMW. Six months later I passed my AOLCP and was allowed to take over his VK5ZBI callsign. For a period, around this time, a group of amateurs met at our house every Thursday night to practice sending and receiving Morse, and at other times the "older set" would call in just for a chat and a "cuppa".

Mike was delighted when, a few years later, our elder son David sat for his licence and obtained the callsign VK5ZHB, later still up-grading to VK5KIM.

Although divorced for many years, Mike and I had remained friends.

Mike passed away on May 5 at Flinders Medical Centre in Adelaide after several months of declining health. Vale Mike, you will be missed.

Jennifer (Jenny) Wardrop VK5ANW

VKHAM.COM

AUSTRALIAN AMATEUR RADIO

Hundreds of pages and links related to Amateur Radio and radio in general

Home of

- VK Classifieds
- VK Auctions
- VKs on the Internet

Repeater Maps, Software, Prefix Maps and more...

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ALARA

Margaret Blight VK3FMAB

Keys, cards, museums and members

It can be both interesting and informative to visit events at other Radio Clubs when the occasion arises. There are of course the various Meets held during the year but other opportunities also come up, such as our visit to Koo Wee Rup to attend the re-enactment of the first press radio contact between the U.K. and Australia which was organized by the Gippsland Gate Radio & Electronics Club (see story page 29).

We found the GGREC club members to be friendly and welcoming. A number recognized the ALARA scarf that I wore and this led to an interest in our organization.

See clipping opposite.

Another historical link

During the visit to Koo Wee Rup, I was approached by a man who

introduced himself and mentioned his parents had been radio operators and his mother had been an early member of LARA. He himself had not carried on the hobby but was interested enough to attend the re-enactment and historical display. I offered to find out what information might be available about his mother.

As a result I later made contact with Norma VK2YL who was part of the original LARA membership. She certainly remembered Raedi and her OM Ray VK3BHL. Raedi was a keen member of LARA and even held the role of President for a time. So together we were able to pass on news of the early history of LARA and how it developed into the current organization.

Norma was even able to locate a photo of Raedi from those days much to the delight of her son.

Business cards can be informative

It was interesting to learn that members of the GGREC club will happily use club business cards to pass on information to interested people. I received more than one in conversations with members and found it a useful tool. It was also very eye catching with the heading on the reverse side stating: 'HAM RADIO IS FUN' then displaying their Club Badge and website should anyone want more information. The front of the card states The Radio Operator you met today -----, leaving space for the name and contact mode to be inserted. What a practical way to meet and greet other amateurs or anyone interested in the hobby.

See card opposite.



Amateur Radio EXPO

Celebrating 100 years of Amateur Radio
in Australia

Tuesday 5th to Thursday 7th October 2010

38 Kurrajong Street, Sutherland 2232

Daily 10.00 AM to 10.00 PM

- VK100WIA Special Event Station - 160m to 23cm
- Technical displays
- Video presentations
- Refreshments

Wednesday from 5.00 PM

- Sausage Sizzle
- Meet and greet with SGARS members
- Show and Tell
- Demonstrations

Come along to The St George Amateur Radio Society Amateur Radio EXPO. Share in the special event station, receive free SGARS membership and meet up with other operators in your area.

For more information go to www.sgars.org/expo or email expo@sgars.org



Historical message: Pat Pavey (call sign VK30Z) of the Gippsland Gate Radio and Electronics Club sends a morse code message. **Picture: Ted Kozynski**

Hamming it up for radio history

By Elisa Miller

IT may have only been a few dots and dashes but the first direct radio transmission from the British motherland in 1921 put Koo Wee Rup at the international map.

Last week that message was again sent during a re-enactment of the momentous event by Gippsland Gate Radio and Electronics Club members celebrating the centenary of the Wireless Institute of Australia.

The Cranbourne-based club partnered with Koo Wee Rup Swamp Historical Society, Cardinia Shire Council, Casey-Cardinia Library Corporation and community members to mark the historic occasion.

In 1921, a message took up to 48 hours to send between Britain and Australia via the telegraph system.

So when the Marconi M.L.U. station buildings in Caernarfon, Wales made contact with the Australian Wireless Association receiving station in Koo Wee Rup at 5am on December 5, there were celebrations all round.

GGREC president Chris Chapman said it was a milestone in Australian radio history.

"There had been plenty of experimental connections before that but nothing that would show that there could be reliable communication between the motherland and Australia," Chris said.

"This first transmission proved that wireless radio was commercially viable."

Chris and GGREC members spent three days in Koo Wee Rup last week communicating via voice, Morse code and other electronic mediums to radio enthusiasts overseas.

"We set up at the historical society museum in Rossiter Road, just a short distance from the 1921 receiving site, and on day one made contact with the original site in Wales.



International voice: Gippsland Gate Radio and Electronics Club member Mike Ide (call sign VK3KTD) gets his message across to radio enthusiasts in Wales.

"The equipment used back then was very basic so we used Morse code to make contact."

During last week's celebrations, Cardinia Shire mayor Graeme Legge unveiled a plaque to commemorate the site of the original wireless station in Rossiter Road.

"It was just a little shack on the outskirts of town on the way to Bayles and it's so wonderful that Koo Wee Rup was able to be part of this historic achievement," said Heather Arnold of the Koo Wee Rup Swamp Historical Society.

The Koo Wee Rup Swamp Historical Society museum is open 1.30-4.30pm on Sundays. Details: Heather, 56294396 (AHT).

The original message relayed, in part, read: "Warmest greetings to you and all our kinsmen under Southern Cross may this first direct wireless press message to Australia be harbinger of that closer communication between Mother Country and Australia."

A trip to the museum

Isn't it wonderful how one thing can lead to another? As a result of meeting Graeme VK3BXG at Koo Wee Rup, and listening to his story, I found myself escorting two excited young ladies to the Melbourne Museum in order to catch him working at a Morse Code demonstration for children. It was encouraging to see how many parents and children were willingly seated at the tables and using the cards provided to spell out their names in morse, ably supported by volunteers. Certainly my two were happy to participate. I felt it was a unique method to introduce an aspect of radio, in a fun way, to a younger generation. Certainly the



Tegan and Ellie sending their names in Morse tutored by Graeme VK3BXG.

parents seemed just as interested in becoming involved.

Graeme's story

As an example of how one person can make a contribution to our hobby, I thought Graeme's story might be of interest to us all. With his permission it is told in his own words. He saw a small advertisement requiring someone with knowledge of Morse to work on week-ends at the Museum. Certain that the job had probably already been filled he was encouraged to apply.

"My Sundays at the Melbourne Museum

I am certainly not the best Morse code operator in the world and I was even more taken back recently when I was offered a Sunday job by the Senior Public Programs officer at the Melbourne Museum.

My "Working with Children" registration, I also learnt, secured me the job.

It proved to be a promotional activity in conjunction with the Titanic Artifacts Exhibition now currently on display at the Museum. Children or anyone for that matter are given an A5 size card with a detailed coloured picture of the Titanic on the front. They are then invited to write their names on the back of the card from top to bottom and then format it into the dot and dashes with a little help from the code printed on the side – a Morse code activity.

Nevertheless, at the beginning I asked what I was expected to do and the job description was "demonstration of Morse code and telegraphy equipment" – mainly to the volunteers and assist with children on Sundays. The problem was there was no

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telegraphy equipment; plenty of volunteers though!

So it was I started off with my own key and my very quiet tone oscillator. This is fine for a one on one but proved inadequate among four or five volunteers. We also agreed that it would also add some fun to the children if they could attempt to send their names in Morse code, no matter how terrible it might sound.

So it was agreed we needed five keys and five tone units.

With budget constraints I searched the net but could only find two keys in Australia that were within price so bought them to keep the programme moving. For tone oscillators I put together three piezo-buzzers and a battery in small cases but ultimately I was not happy with the quality of the sound – we needed something more professional especially for an international class museum.

Meanwhile my web-searching had bought up a supplier in Colorado USA who specialised in Morse equipment – keys and tone oscillators and all could be shipped out within seven days and well within budget. So I decided on five K4 Ameco straight keys and five Ameco code practice oscillators which upon arrival proved to be of very good quality and very professional in appearance.

When I demonstrated these at the Museum for the first time on 9th May all involved commented on how nice it all looked with a comment that the tone oscillators seemed to have that 60's look about them. Also the set of ex-military 1960's headphones now looks the part if parents wish to take a photograph of their child.

As we all know there is no easy way to learn the code – weeks, months and even years of monotonous repetitious listening. I decided in this case to teach the volunteers the theory of the correct timing of the characters, the spacing of the letters and words as most important and the correct hand position on the straight key. Finally I point out to them that the Morse code was not just randomly drawn up; it follows a pattern of letter usage as we all know.

In observing the volunteers and the permanent staff showing the children they have learnt well and I hear my words being echoed constantly and the volunteers always conclude with the important part Morse code played in the final call for help in the Titanic disaster.

This whole experience has been very humbling for me; that is be given a free rein by the senior staff without question and except for the printed cards, to set up the whole practical demonstration for the public to participate."



VK100WIA callsign

As part of the WIA Centenary Celebrations, ALARA was one of the organizations who participated in using the anniversary callsign. This occurred over ALARA's birthday weekend from 23rd-25th July, 2010. Many thanks to those operators who were rostered on over this period. Thanks also to those who assisted by manning the online logbook.

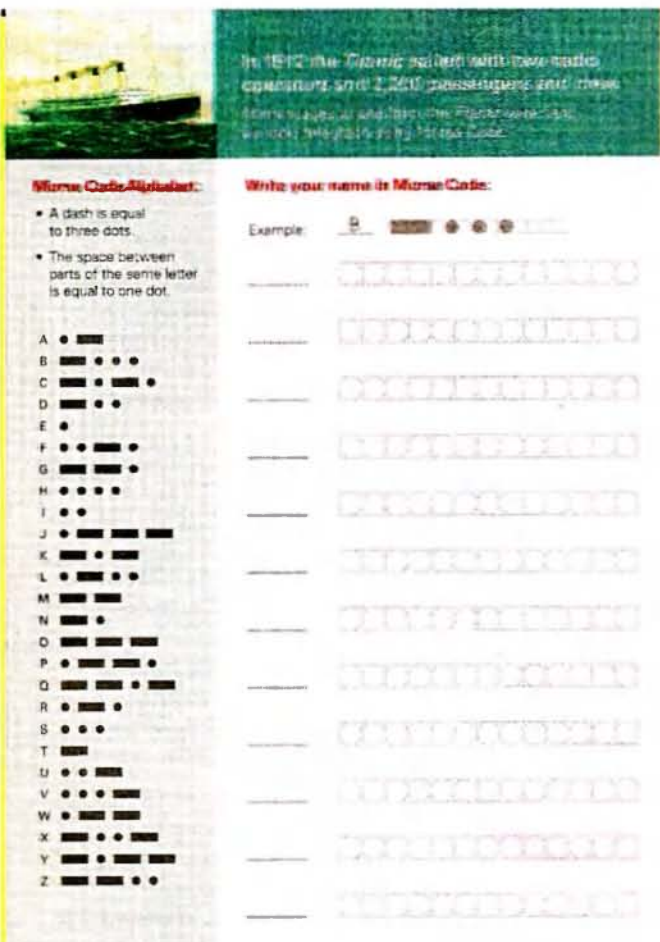
Various frequencies were used by the operators and sometimes there were so many people attempting to make contact that "dog piles" were the result. This kept the adrenalin running at times. There have also been reports of some good DX contacts being made.

In addition Jean VK3VIP and her team found themselves featuring in an ATV contact with Peter VK3BFG. This led to some hilarity in the station as the camera was on one side of the room and the video monitor was on the other. Lots of head turning!

A number of other amateurs made contact to let us know



YL ops. Jean VK3VIP, Michelle VK3FEAT, Margaret VK3FMAB.



Morse card used by children at the Museum.

they had seen the transmission. (We all wished we had known beforehand in order to make appropriate grooming repairs).

VK3 news

Congratulations to Susan VK3LOV who achieved her Advanced licence. We look forward with anticipation to the new call sign.

The ALARA birthday celebrations were held in Sunbury this year where everyone present enjoyed the good company, food and entertainment.

VK6 news

Please note a correction for the VK6 lunch details for the next edition of AR Magazine. The lunch is held on the last Wednesday of the month at the Bayswater Hotel. For further details, contact Poppy VK6YF on 08 62784339.

VK2 news

Norma VK2YL also informed us that NSW ALARA was planning their first birthday party this year. Well Congratulations! Do please let us know how things fare. We look forward to hearing all about it.

ALARA's birthday luncheon in VK5

We had 22 at our luncheon this year, more than we have had for a few years.

We were at the Glenelg Hotel in Jetty Road this year, where the food was very good; even though a few people had to wait a while for their plates to arrive. It was a lovely day so some of us walked along looking at the shops, so many of which are open on a Sunday. We all agreed this was promising for the visitors we are expecting in 2012.

In fact one of the reasons for choosing Glenelg as the venue for the International Meet was the fact that Glenelg is open every day of the week, so any spare time could be spent shopping by those who enjoy it. For others, a walk along the beachfront or out on the jetty is always interesting because there is so much activity, at any time.

The people in the picture from l-r are Sue VK5AYL, Myrna

VK5YW, Rina, Sue, Jean VK5TSX, Lesley VK5LOL, Colleen;

In the middle of the table is VK5DOL, made by Meg. VK5DOL has been to many birthday luncheons and most ALARAMEETS, including Perth, when Meg was not there.

Across the table we have Christine VK5CTY, Shirley VK5YL, Tina VK5TMC, Meg VK5YG, Amanda VK5FAAM, her daughter Victoria and Jenny VK5FJAY. At the far end of the table are several OMs of the ladies present.

International YL Meet

ALARA was well represented at the 2010 Munich International YL Meet which has been voted a great success. Our President Tina VK5TMC gave a presentation at the Conference on the next International YL Meet which is to be held in Adelaide, South Australia, in 2012. There has been a great deal of interest already displayed in this event so keep an eye out for further details.

A name from the recent past

At the Friedrichshaven Radio Meet, we had an interpreter known to a number of VK2 amateurs. If you visited the ALARA/HARDAC stall at a Gosford Field Days a few years ago, you may have met Nina VK2INZ, while she was living here. She attended three or four Gosford Field Days and has had her photo in AR with Dot several times.

Nina spent four or five years in Australia and now lives in Germany with her husband and little boy.

When a translator was required for the YL Forum, Dot



Tina VK5TMC, Christine VK5CTY and Dot VK2DB and Nina's little boy.

VK2DB suggested Nina and she was happy to oblige. Nina translated for Lois WB3EFQ, President of YLRL, for Anne WB1ARU immediate Past President of YLRL and for Tina VK5TMC when she made her presentation about the next YL International Meet in Adelaide in 2012, so she was quite busy.



ar

Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

September	4-5	All Asia DX Contest	SSB
	11-12	Worked All Europe DX Contest	SSB
	18	Westlakes Cup	SSB/DSB/AM
	18-19	Scandinavian Activity Contest	CW
	25-26	CQWW DX Contest	RTTY
October	2-3	Oceania DX Contest	SSB
	9-10	Oceania DX Contest	CW
	9-10	Scandinavian Activity Contest	SSB
	16-17	Worked All Germany Contest	CW & SSB
	23	WIA National Field Day	All
	30-31	CQWW DX Contest	SSB

This is a great time of the year as some of the big events for Oceania and the world are beginning in September and carry on through to November. Please take note of the changes to the Oceania contest, and it is great to see the low power category being introduced to give a more even playing field.

Oceania DX Contests 2009 Results

The results of the 2009 Oceania SSB and CW contests have now been published and are available in full at www.oceaniadxcontest.com

Congratulations to all the winners and thank you to everyone who participated in the 2009 Oceania DX (OCDX) Contest, even if only to make one or two QSOs. We had a fantastic turnout for the 2009 event. A total of 999 logs was processed which sets a new record for participation in the contest. This is a big step up from the previous record of 783 logs in 2008. The increased participation is very encouraging, especially considering that conditions were not much better than those experienced in 2008. Of particular note is the growth in the number of logs from Europe, increasing from a total of 383 logs in 2008 to 532 logs in 2009. Oceania activity was also up - from a total of 166 logs in 2008 to 187 in 2009. As well as the more common VK, ZL, YB and KH6 stations there were a number of rarer Oceania entities active including 3D2, 9M6, DU, FO8, KH2, P29, and T88.

The conditions were still good enough for several new records to be set in the 2009 contest. Of particular

note is the outstanding performance from VK6AA (operator Bernd Langer VK2IA) in the Oceania CW Single-Op ALL Band category. Bernd's score of 7.17 million easily beats the previous record of 5.60 million set by KH7X in 2003, and has significantly raised the bar in this category. Also of note is the performance of the VK4KW team in the PHONE Multi-Multi category. Their score of 8.86 million is well

ahead of the previous record of 4.99 million set by ZL6QH in 2003.

See table below.

The Australia Club Plaque is awarded to the local club from Australia with the greatest number of member stations participating in the contest. In order for a club to be eligible there must be at least five logs submitted by member stations, with

The winning stations from each continent in the PHONE section are listed below.

Category	Oceania	Asia	Europe	North America	South America
SO ALL	VK6IR	JA7NVF	UU7J	K3ZO	HK3JJH
SO 160	ZL4R	-	-	-	-
SO 80	YB1WR	JM4WUZ	SP3POZ	-	-
SO 40	VK3EW	JO1WKO	UA3MIF	K3TW	PY2ADR
SO 20	VK8PDX	RZ9UI	SP4XQN	-	R1ANC
SO 15	YC1FWO	JA6WFM	YO2R	KS4X	-
SO 10	VK4NEF	JA2MWV	-	-	-
MS	VK6NC	RK9JWV	SN2K	-	-
MM	VK4KW	RW0A	UZ1H	-	-
SWL	-	UA0-107-181	LZ1G42	W1-7897	-

The winning stations from each continent in the CW section are listed below.

Category	Oceania	Asia	Europe	North America	South America
SO ALL	VK6AA	JO1WKO	RX4HZ	N6RO	R1ANB
SO 160	ZL2AGY	-	-	-	-
SO 80	ZL1AZE	JA1PS	UA3MIF	W8IQ	-
SO 40	VK2IM	JR9NVB	SN2K	K3TW	-
SO 20	ZL1BYZ	JK1LUY	RA3EG	K6DBG	R1ANC
SO 15	YD1XUH	JA7DOT	RA3UT	K7SS	PY4XX
MS	ZM2M	RK9JWV	UZ1H	-	-
MM	-	ZM1A	-	-	-
SWL	-	UA0-107-181	SP7-003-24	-	-

each log containing a minimum of 50 valid QSOs. Only two clubs met this requirement in 2009 - the Eastern and Mountain District Radio Club with 6 logs (VK3AVV PH, VK3KIS PH, VK3QI PH, VK3QI CW, VK3TZ PH, VK3TZ CW) and the Northern Corridor Radio Group with 5 logs (VK4KW PH, VK6AA CW, VK6HZ PH, VK6HZ CW, VK6IR PH). The rules state that there must be three or more clubs competing in order for the plaque to be awarded but the plaque sponsor (VKCC) has decided to waive this requirement for the 2009 contest, in the interest of continuing to encourage clubs to support the contest. The ongoing sponsorship of plaques is critical to the future growth and success of this contest. The Contest Committee welcomes new sponsorship offers and invites anyone who is interested in becoming a sponsor to contact the Committee. The cost of sponsoring a plaque is approximately AUD \$50.00 per annum, to cover the expenses associated with the manufacture and delivery of the plaques.

The Committee is developing a list of the record scores that have been established in the OCDX Contest over recent years. These records will be published on the web site. It is hoped that the availability of this information will inspire further interest and participation in the contest. Thank you to the members of the Oceania DX Contest Committee who managed the various tasks for the 2009 contest: ZL1AZE, VK3TZ, ZL3GA, VK7GN, VK2HN, VK4TI, VK6DXI, ZL2BSJ/PE7T.

Detailed results can be found on the WIA website: <http://www.wia.org.au/members/contests/oceania/>

Oceania DX Contests 2010 Rules

1. SPECIAL NOTES for the 2010 Contest

- The SINGLE-OP entry category has been split into High Power (SINGLE OP HP) and Low Power (SINGLE OP LP) categories. Total output power must not exceed 100 Watts in the Low Power category. Rule 7 has been updated to reflect this change.
- The MULTI-SINGLE entry category has been deleted. It is replaced by the MULTI-ONE and MULTITWO entry categories. Rules 7 and 8 have been updated to reflect these changes.
- Rule 6 has been updated to clarify that only one entry may be submitted by each operator or team of operators.
- All email logs are processed by an email robot. The robot sends an automated email acknowledgement indicating either acceptance or rejection of the log. If you do not receive this acknowledgment,

or are encountering difficulty in having the log accepted, then please contact the Contest Committee at info@oceaniadxcontest.com

- Electronic logs are to be in Cabrillo format which is now generated by all popular contest logging software programs. Alternatively entrants can use the forms at <http://www.b4h.net/cabforms/> to manually create and submit a Cabrillo file.

- Portable prefixes must be inserted in front of the home callsign, e.g., W1XXX operating in ZL1 would sign as ZL1/W1XXX.

- If the station worked does not provide a serial number, then log the received number as 001. See rule 8. This new provision allows credit for contacts with stations that are not in the Oceania DX Contest.

- A reminder that Single-Op Single Band logs must record ALL contacts made by the station - both on the band chosen for the entry and on any other bands.

- Stations must log a minimum of 10 contacts to be eligible for an award.

2. CONTEST PERIODS

PHONE Contest: 0800 UTC Saturday 2 October to 0800 UTC Sunday 3 October 2010

CW Contest: 0800 UTC Saturday 9 October to 0800 UTC Sunday 10 October 2010

3. THE AIM

The aim of the contest is to promote HF contacts with stations in the Oceania region (VK, ZL, Pacific Islands and other locations within the IARU "Worked All Continents" Oceania boundary).

4. THE OBJECT is for:

- Oceania transmitting stations to contact as many stations as possible both inside and outside the Oceania region.
- Non-Oceania transmitting stations to contact as many stations as possible inside the Oceania region. There is no penalty for working non-Oceania stations but contacts between non-Oceania stations will score no points or multiplier credits.
- Oceania receiving (SWL) stations to copy as many contest stations as possible both inside and outside the Oceania region.
- Non-Oceania receiving (SWL) stations to copy as many contest stations as possible inside the Oceania region.

5. BANDS:

160 m – 10 m (no WARC bands).

6. TERMS OF COMPETITION FOR ALL CATEGORIES

- Only one entry is allowed for each operator or team of operators.
- A different call sign must be used for each entry.
- High power entrants must not exceed 1500 watts total output power, or the maximum permitted output power in their country, whichever is less, on any band.
- QSO alerting assistance (e.g., packet spots) is allowed in all entry categories, but self-spotting, asking other stations to spot you, or any other form of soliciting QSOs is not allowed.
- All of an entrant's transmitters and receivers must be located within a 500-meter diameter circle or within the

property limits of the station licensee, whichever is greater. All antennas must be physically connected by wires to the transmitters and receivers used by the entrant.

- Remote operation is permitted. The entry location of a remote station is determined by the physical location of the transmitters, receivers, and antennas. A remote station must obey all station and category limitations.

7. ENTRY CATEGORIES

- Single Operator Low Power (SINGLE-OP LP): Either All Band or Single Band. One person performs all of the operating and logging functions. Total output power must not exceed 100 watts. Only one transmitted signal is permitted at any time.

- Single Operator High Power (SINGLE-OP HP): Either All Band or Single Band. One person performs all of the operating and logging functions. Only one transmitted signal is permitted at any time.

- Multiple Operators and Single Transmitter (MULTI-ONE): More than one person can contribute to the final score during the contest period. Only one transmitted signal is permitted at any time. A maximum of ten (10) band changes may be made in any clock hour (00 through 59 minutes). For example, a change from 20 meters to 40 meters and then back to 20 meters counts as two band changes. Use a single serial number sequence for the entire log.

- Multiple Operators and Two Transmitters (MULTI-TWO): More than one person can contribute to the final score during the contest period. A maximum of two transmitted signals is permitted at any time on different bands. Either transmitter may work any and all stations. A station may only be worked once per band regardless of which transmitter is used. The log must indicate which transmitter made each QSO. Each transmitter may make a maximum of eight (8) band changes in any clock hour (00 through 59 minutes). For example, a change from 20 metres to 40 metres and then back to 20 metres counts as two band changes. Use a separate serial number sequence for each band.

- Multiple Operators and Multiple Transmitters (MULTI-MULTI): More than one person can contribute to the final score during the contest period. No limit to transmitters, but only one transmitted signal (and running station) allowed per band at any time. Use a separate serial number sequence for each band.
- SWL: Short Wave Listener (Receive Only), All Band.

8. EXCHANGE:

RS(T) report plus a progressive contact serial number starting at 001 and incrementing by one for each contact. MULTI-TWO and MULTI-MULTI entries must use a separate serial number starting at 001 for each band. If the station worked does not send a serial number,

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The Oceania DX Contest 2009 Results

Annex 1: 2009 Oceania DX Contest PHONE Results

* Country Leader ** Continent and Country Leader

Category	Call	Score	Mults	Total QSOs	160M QSOs	80M QSOs	40M QSOs	20M QSOs	15M QSOs	10M QSOs
Oceania		Australia								
PH SO ALL	VK6IR**	3525525	675	1253	10	59	785	291	107	1
PH SO ALL	VK2APG	1671678	607	1118	0	10	327	547	230	4
PH SO ALL	VK6DXI	1646304	528	815	8	46	397	218	143	3
PH SO ALL	VK4ZD	856830	390	645	3	37	245	196	146	18
PH SO ALL	VK4HAM	656205	451	710	0	3	113	352	218	24
PH SO ALL	VK4VCH	484404	222	475	0	19	384	72	0	0
PH SO ALL	VK3IO	342510	210	323	3	19	268	25	8	0
PH SO ALL	VK8NSB	331150	370	560	0	0	3	244	303	10
PH SO ALL	VK3TZ	189600	158	241	6	15	174	34	10	2
PH SO ALL	VK4EMM	146165	155	256	0	7	148	81	8	12
PH SO ALL	VK4FI	136383	169	237	11	4	66	110	31	15
PH SO ALL	VK7GN	105185	109	175	4	6	165	0	0	0
PH SO ALL	VK5NPR	96985	119	230	0	6	126	73	23	2
PH SO ALL	VK2BJ	87449	157	205	9	10	14	142	25	5
PH SO ALL	VK2HN	79344	171	263	0	0	36	172	53	2
PH SO ALL	VK3AVV	73392	132	207	0	10	57	109	31	0
PH SO ALL	VK2BD	54165	69	130	4	33	70	21	2	0
PH SO ALL	VK8HPB	51754	113	215	0	0	21	35	159	0
PH SO ALL	VK2ACC	48279	77	145	5	13	64	50	12	1
PH SO ALL	VK2HBG	39845	65	141	0	22	64	37	18	0
PH SO ALL	VK6HZ	34776	138	177	0	0	0	104	71	2
PH SO ALL	VK2TMM	33176	58	107	7	8	65	27	0	0
PH SO ALL	VK7JGD	32708	52	103	10	12	56	21	4	0
PH SO ALL	VK7FWAY	30784	37	130	0	40	84	0	6	0
PH SO ALL	VK2PDX	28044	57	109	0	8	72	12	11	6
PH SO ALL	VK4HEC	22491	63	101	0	7	44	33	17	0
PH SO ALL	VK2LAW	22446	43	118	0	9	77	21	7	4
PH SO ALL	VK6ZRW	17250	46	66	0	15	42	3	6	0
PH SO ALL	VK4ATH	12862	59	81	0	0	26	30	17	8
PH SO ALL	VK7ARN	12738	33	61	8	1	41	11	0	0
PH SO ALL	VK3FASW	10584	27	78	0	4	68	0	6	0
PH SO ALL	VK3MDX	8320	64	71	0	0	12	48	11	0
PH SO ALL	VK6NDT	8211	51	66	0	2	12	23	29	0
PH SO ALL	VK3KIS	7805	35	60	0	5	28	21	6	0
PH SO ALL	VK2FHQQ	7728	23	71	0	2	59	0	9	1
PH SO ALL	VK4BL	5945	41	48	1	2	15	30	0	0
PH SO ALL	VK4CAG	5763	51	64	0	0	6	37	17	4
PH SO ALL	VK3BUH	5100	25	40	0	8	23	9	0	0
PH SO ALL	VK3AKT	4991	31	49	0	2	21	16	10	0
PH SO ALL	VK3TDX	4669	29	38	0	4	18	4	9	3
PH SO ALL	VK4MON	3741	29	37	0	0	21	10	4	2
PH SO ALL	VK3QI	3485	41	61	0	0	6	55	0	0
PH SO ALL	VK1IAN	2844	18	41	0	0	29	11	1	0
PH SO ALL	VK2KTT	2544	16	33	0	2	27	4	0	0
PH SO ALL	VK3AFK	1890	14	21	1	7	8	5	0	0
PH SO ALL	VK3TL	880	20	34	0	0	0	24	10	0
PH SO ALL	VK4GLC	728	13	15	0	3	1	4	4	3
PH SO ALL	VK6FDX	252	7	8	0	0	7	1	0	0
PH SO ALL	VK4TD	245	7	11	0	0	6	5	0	0
PH SO ALL	VK3DAG	30	2	2	0	1	1	0	0	0
PH SO 40M	VK3EW**	1567165	379	827	0	0	827	0	0	0
PH SO 40M	VK2IM	839535	291	577	0	0	577	0	0	0

Category	Call	Score	Mults	Total QSOs	160M QSOs	80M QSOs	40M QSOs	20M QSOs	15M QSOs	10M QSOs
PH SO 40M	VK3YXC	52440	69	152	0	0	152	0	0	0
PH SO 40M	VK3VTH	44660	58	154	0	0	154	0	0	0
PH SO 40M	VK1HW	19035	47	81	0	0	81	0	0	0
PH SO 40M	VK4AN	13640	44	62	0	0	62	0	0	0
PH SO 40M	VK4JAZ	1150	10	23	0	0	23	0	0	0
PH SO 20M	VK8PDX**	129195	261	495	0	0	0	495	0	0
PH SO 20M	VK4KKD	52128	181	288	0	0	0	288	0	0
PH SO 15M	VK4FJ*	18080	80	113	0	0	0	0	113	0
PH SO 10M	VK4NEF**	3312	23	48	0	0	0	0	0	48
PH SO 10M	VK8AA	180	4	15	0	0	0	0	0	15
PH MS	VK6NC**	2761875	625	1128	11	31	678	317	91	0
PH MS	VK3FRC	194194	143	307	0	63	121	123	0	0
PH MM	VK4KW**	8855975	1175	2153	0	249	606	682	513	103

PHONE Operators	
Call	Operators
VK3FRC	VK3GB VK3AEJ VK3JPA
VK4KW	VK4BAA VK4TI VK4NDX
VK6NC	VK6IA VK6BEC VK6VY VK6NU VK6RK VK6EH

Annex 2: 2009 Oceania DX Contest CW Results

* Country Leader ** Continent and Country Leader										
Category	Call	Score	Mults	Total QSOs	160M QSOs	80M QSOs	40M QSOs	20M QSOs	15M QSOs	10M QSOs
Oceania		Australia								
CW	SO ALL	VK6AA**	7178724	934	1649	0	248	885	254	259
CW	SO ALL	VK6DXI	4733550	785	1279	8	295	370	144	460
CW	SO ALL	VK4EMM	4366908	806	1207	0	273	362	287	264
CW	SO ALL	VK3TDX	691808	416	614	0	27	171	294	122
CW	SO ALL	VK2BJ	560112	336	468	2	49	164	193	56
CW	SO ALL	VK3IO	348635	245	294	3	59	132	87	13
CW	SO ALL	VK3TZ	299811	219	275	4	60	118	87	6
CW	SO ALL	VK2PN	204918	294	435	0	3	34	299	99
CW	SO ALL	VK4AN	187596	243	324	0	5	90	188	39
CW	SO ALL	VK5MAV	185168	163	239	0	6	210	20	3
CW	SO ALL	VK4TT	102087	199	242	0	2	39	104	97
CW	SO ALL	VK6HZ	13188	84	93	0	0	0	29	64
CW	SO ALL	VK3QI	10224	72	96	1	3	0	92	0
CW	SO ALL	VK3GDM	2772	22	24	0	6	12	6	0
CW	SO 40M	VK2IM**	1625055	393	827	0	0	827	0	0
CW	SO 40M	VK4SN	111510	118	189	0	0	189	0	0
CW	SO 20M	VK2AYD*	198250	325	610	0	0	0	610	0
CW	SO 20M	VK7GN	69112	212	326	0	0	0	326	0
CW	SO 20M	VK5SW	46956	172	273	0	0	0	273	0
CW	SO 20M	VK4TJF	33288	152	219	0	0	0	219	0
CW	SO 20M	VK3CTN	11284	91	124	0	0	0	124	0
CW	CK	VK8NSB	79158	167	237	0	0	0	0	237
CW	CK	VK2CCC	1080	6	9	9	0	0	0	0

then the received number is to be logged as 001.

9. MULTIPLIER:

The multiplier is the number of different valid prefixes worked. Note that the same prefix may be counted once on each band for multiplier credit. A prefix is the letter/numeral combination that forms the first part of the amateur call - the same as the CQ WPX contest definition.

Examples of valid prefixes are N8, W8, WD8, HG1, HC19, KC2, OE2, OE25, etc. Any difference in the numbering, lettering, or order of the same shall constitute a separate prefix. A station operating from a DXCC country different from that indicated by its callsign is required to sign portable. The portable prefix must be an authorized prefix of the country/call area of operation. In cases of portable operation, the portable designator will then become the prefix. Example: N8BJQ operating from Wake Island would sign KH9/N8BJQ or NH9/N8BJQ. KH6XXX operating from Ohio must use an authorized prefix for the U.S. 8th district (W8, K8, etc.) Portable designators without numbers will be assigned a zero (0) after the second letter of the portable designator to form the prefix. Example: PA/N8BJQ would become PAØ. All calls without numbers will be assigned a zero (Ø) after the first two letters to form the prefix. Example: XEFTJW would count as XEØ. Maritime mobile, mobile, /A, /E, /J, /P, or interim licence class identifiers do not count as prefixes. Special event, commemorative, and other unique prefix stations are encouraged to participate. Prefixes must be assigned by the licensing authority of the country of operation.

10. CONTACT POINTS:

Each QSO is credited twenty points on 160 m; ten points on 80 m; five points on 40 m; one point on 20 m; two points on 15 m; and three points on 10 m. Note that the same station may only be counted once on each band for contact points.

11. THE FINAL SCORE

final score is the sum of the Contact

Points multiplied by the Multiplier (the total number of prefixes worked on all bands, noting that the same prefix can be counted once on each band).

12. AWARDS

Each station must log a minimum of 10 contacts to be eligible for an award. Certificates will be awarded to the top scoring station in each category listed under Section 7 for each IARU WAC continent and each country. A special participation certificate will be awarded to every station that makes at least 100 QSOs in either the PHONE or CW sections of the contest. The trophies and plaques to be awarded will be available on www.oceaniadxcontest.com

13. GENERAL LOG REQUIREMENTS:

Transmitting entries are to submit a log showing the following details for each contact - band or frequency, mode, date, time in UTC, callsign of station worked, RS(T) and serial number sent, RS(T) and serial number received. SINGLE-OP Single Band logs are to record ALL contacts made by the station both on the band chosen for the entry and on any other bands. All logs must be submitted in date/time order. All duplicate contacts must be shown - DO NOT delete duplicate contacts. No penalty will be applied for showing duplicate contacts. For SWL entries see the above web address for more details.

14. ELECTRONIC LOGS

ELs are preferred and are compulsory for stations logging more than 50 contacts. For details on electronic and paper log submission, visit the complete rules at www.oceaniadxcontest.com

15. PAPER LOGS:

Electronic Logs are preferred (see Rule 14 above) but paper logs of less than 50 contacts in the Oceania DX Contest format may be submitted. Each paper log is to be accompanied by a summary sheet that clearly states

The station's callsign

Operator callsign/s

Entrant's name and mailing address (for

receipt of awards)

Mode and Category entered

Contact points claimed on each band

Number of multiplier prefixes claimed on each band

Total claimed score

Official log sheets and summary can be downloaded from the Oceania DX Contest web site at www.oceaniadxcontest.com. If you do not have access to the official forms then you may make your own in accordance with the general requirements outlined above and in Section 13. Paper logs are to be posted to: Oceania DX Contest, c/o Wellington Amateur Radio Club Inc. PO Box 6464, Wellington 6030, New Zealand. Only one entry is to be included in each submission. Airmail please for logs from outside VK or ZL.

16. DEADLINE

All logs must be emailed or postmarked NO LATER than 8 November 2010. The reception of logs will be acknowledged by the email robot (for electronic submissions) and a listing of all logs received by the robot will be posted on the Oceania DX Contest website.

17. DISQUALIFICATION

Violation of amateur radio regulations in the country of the contestant or the rules of the contest; unsportsmanlike conduct; or taking credit for excessive unverifiable QSOs or multipliers will be deemed sufficient cause for disqualification. Incorrectly logged calls will be counted as unverifiable contacts. ANY entrant that uses means, other than contacts on the permitted bands and modes, to SOLICIT, ARRANGE, or CONFIRM any contacts during the contest is unsportsmanlike and the entry will be subject to disqualification.

The latest information about the contest will be published on the Oceania DX Contest web site at www.oceaniadxcontest.com. Any questions can be emailed to info@oceaniadxcontest.com or posted to Oceania DX Contest Committee, c/o Wellington Amateur Radio Club Inc., PO Box 6464, Wellington 6030, New Zealand.

Winter VHF-UHF Field Day 2010 Results

Contest manager: John Martin VK3KM

The section winners were:

Section A – Iain Crawford VK5ZD;

Section B – Dave Nelson VK2TDN;

Section C – the Blasco family station VK3ALB;

Section D – Alan Devlin and Michael Coleman operating as VK3XPD;

Section E – Ross Keogh VK3MY; and

Section F – Tim Dixon VK5ZT.

Congratulations to all, and I hope you will all be back for the Spring Field Day on November 20/21. Remember that you will receive a special certificate if you are able to participate in all three Field Days in this WIA centenary year.

Summer Field Day: Score Correction

In the published results for the Summer Field Day, Matt Hetherington VK2DAG entered two sections, but his score was accidentally omitted from one of them. His scores should have been 1404 points for Section A and 1231 points for Section B.

Full results over page

Winter VHF-UHF Field Day 2010 Results

Call	Name	Location	50 MHz	144 MHz	432 MHz	1296 MHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	24 GHz	TOTAL
Section A: Single Operator, 24 Hours												
VK5ZD	Iain Crawford	PF95, PF96	81	330	540	608	640	660	640	660	640	4799
VK4OE	Doug Friend	QG62	61	348	480	672	680	450	-	450	-	3141
VK3JTM	Tim Morgan	QF12	21	501	665	936	570	-	-	340	-	3033
VK4HBO	James Kop	QG61, QG62	-	234	375	264	440	-	-	-	-	1313
VK3ECH	Rob George	QF23	-	366	415	352	-	-	-	-	-	1133
VK3VCL	Wayne Bruce	QF12	-	300	415	360	-	-	-	-	-	1075
VK5FANA	Adrian Addison	PF85	-	396	625	-	-	-	-	-	-	1021
VK2AMS	Mark Swannack	QF68	29	126	150	232	250	-	-	-	-	787
VK1PAR	Al Long	QF44	14	360	355	-	-	-	-	-	-	729
VK5FPAW	Paul Schulz	PF94, PF95	-	240	345	-	-	-	-	-	-	585
VK1AGP	Greg Parkhurst	QF44	61	222	270	-	-	-	-	-	-	553
Section B: Single Operator, 8 Hours												
VK2TDN	Dave Nelson	QF56	-	192	285	352	210	-	-	330	-	1369
VK5AKH	Andrew Hall	PF95	60	333	390	320	-	220	-	-	-	1323
VK3HY	Gavin Brain	QF33	32	330	465	472	-	-	-	-	-	1299
VK2HRX	Compton Allen	QF56	58	309	355	536	-	-	-	-	-	1258
VK2DAG	Matt Hetherington	QF56	-	159	250	384	220	-	-	220	-	1233
VK4ADC	Doug Hunter	QG61	118	240	320	464	-	-	-	-	-	1142
VK3YFL	Bryon Dunkley-Smith	QF22	47	249	330	488	-	-	-	-	-	1114
VK5LA	Andrew Williss	PF85	-	300	380	432	-	-	-	-	-	1112
VK5OM	Jim Bywaters	QF03	21	249	350	440	-	-	-	-	-	1060
VK2GG	Dan Joyce	QF56	22	108	180	192	210	-	-	330	-	1042
VK5HZ	Darryl Ross	PF95	-	198	320	272	-	-	-	210	-	1000
VK4UH	Kevin Johnston	QG62	79	246	330	280	-	-	-	-	-	935
VK5AR	Alan Raftery	PF94, PF95	66	339	505	-	-	-	-	-	-	910
VK1BL	Ted Gamett	QF44	33	138	235	-	210	-	-	210	-	826
VK5FANA	Adrian Addison	PF85	-	336	490	-	-	-	-	-	-	826
VK5OQ	Keith Gooley	PF95	47	180	265	280	-	-	-	-	-	772
VK2GOM	Rob Greaves	QF56	-	114	185	-	-	-	-	330	-	629
VK5FMJF	Matt Ferris	PF95	-	225	355	-	-	-	-	-	-	580
VK2CQ	Dave Maloney	QF55	-	78	130	-	-	-	-	230	-	438
VK1DA	Andrew Davis	QF44, QF45	-	153	205	-	-	-	-	-	-	358
VK4JAZ	Grant McDuling	QG62	-	111	245	-	-	-	-	-	-	356
VK2CZ	David Burger	QF56	-	-	-	272	-	-	-	-	-	272
VK3SF	Ross Sargent	QF22	-	63	-	-	-	-	-	-	-	63
VK2TRF	Jack Swart	QF56	-	63	-	-	-	-	-	-	-	63
Section C: Multi Operator, 24 Hours												
VK3ALB	(1)	QF11	-	552	795	808	500	-	220	460	-	3335
VK3UHF	LUMEG (2)	QF21	21	333	430	656	560	210	330	450	-	2990
VK4WIS	SCARC (3)	QG63	136	324	445	480	500	340	-	460	-	2685
VK5LZ	Elizabeth ARC (4)	PF85	100	462	565	488	-	-	-	-	-	1615
VK4WIE	CBRS (5)	QG62	121	402	450	616	-	-	-	-	-	1589
VK3ER	EMDR (6)	QF21, QF22	58	207	300	352	-	-	-	-	-	917
VK2FIL	(7)	QF46	24	456	320	-	-	-	-	-	-	800
Section D: Multi Operator, 8 Hours												
VK3XPD	(8)	QF21	-	309	355	456	430	210	210	320	-	2290
VK4CZ	(9)	QG63	88	189	295	376	210	-	-	210	-	1368
VK2EH	CCARC (10)	QF56	47	213	185	288	-	-	-	-	-	733
VK1DSH	(11)	QF45	23	81	140	-	210	-	-	210	-	664
VK2MA	HADARC (12)	QF56	42	159	230	-	-	-	-	-	-	431
VK3BJA	GGREC (13)	QF21	-	141	105	-	-	-	-	-	-	246
Section E: Home Station, 24 Hours												
VK3MY	Ross Keogh	QF22	22	510	620	904	450	-	-	-	-	2506
VK5NE	Paul Roehrs	PF95	62	471	500	344	-	-	-	210	-	1587
VK3VFO	Nick Kraehe	QF31	39	618	625	240	-	-	-	-	-	1522
VK3PF	Peter Freeman	QF31	21	495	515	280	-	-	-	-	-	1311
VK5VCO	Paul Mullins	PF95	42	447	645	-	-	-	-	-	-	1134
VK4TJ	John Kirk	QG52	47	285	345	400	-	-	-	-	-	1077
VK3TPR	Peter Roberts	QF22	-	294	305	472	-	-	-	-	-	1071
VK4ZDP	David Purkis	QH32	102	339	395	184	-	-	-	-	-	1020
VK3KH	Michael Coleman	QF21	-	249	350	376	-	-	-	-	-	975
VK2MER	Kirk Mercer	QF55	44	276	305	344	-	-	-	-	-	969
VK2EI	Neil Sandford	QF68	52	171	155	240	250	-	-	-	-	868
VK5LSB	Simon Brandenburg	PF94	32	195	310	168	-	-	-	-	-	705
VK4KZR	Rod Preston	QG62	-	216	-	-	460	-	-	-	-	676
VK5MEF	Matthias Fresacher	PF95	-	297	350	-	-	-	-	-	-	647
VK3HV	George Francis	QF31	52	354	180	-	-	-	-	-	-	586
VK4NA	Alan Wills	QG62	54	237	270	-	-	-	-	-	-	561
VK5FD	Allen Dunn	PF95	38	189	305	-	-	-	-	-	-	532
VK5FXYL	Jade Ross	PF95	-	195	305	-	-	-	-	-	-	500
VK3FDNO	Dean Webster	QF31	-	213	200	-	-	-	-	-	-	413
VK3TOM	Tom Steadman	QF31	29	165	195	-	-	-	-	-	-	389
VK2NR	David Porter	QF56	-	147	240	-	-	-	-	-	-	387
VK3BG	Ed Roache	QF24	21	63	105	-	-	-	-	-	-	189
Section F: Rover Station, 24 Hours												
VK5ZT	Tim Dixon	PF85, 86, 87, 95, 96, 97	142	483	785	1144	640	1400	640	640	640	6514
VK5AGZ	Derek Reuther	PF85, 86, 87, 94, 95, 96, 97	165	534	860	1088	-	1360	-	-	-	4007
VK2VVV	Ross Masterson	QF45, QF55, QF56	67	276	405	536	-	-	-	-	-	1284

(1) Lou Bisasco VK3ALB, Nk Presser VK3BA, Peter Westgarth VK3APW, Jenni Bisasco VK3FJEN, Michael Bisasco VK3FMIC
 (2) Lara UHF-Microwave Experimenters' Group: Chas Gnaccarini VK3PY, David Learmonth VK3QM
 (3) Sunshine Coast Amateur Radio Club: Harvey Wickes VK4AHW, Leicester Hibbert VK4ALH, Trevor Humphrey VK4FGTS, Cec Tysoe VK4FMOZ, Wayne Shaw VK4WS, Mike Little VK4YFL, Kirsty Golder Elizabeth ARC: Bruce Gauz VK5VAB, John Ross VK5NI, Wayne Rankin VK5LWR
 (4) City of Brisbane Radio Society: John Morris VK4NJF, Miles Colledge VK4FUST, James Young VK4FJLY, David Noble VK4KSY, David Colledge VK4WRC, Ian Melville VK4FABD

(5) Eastern & Mountain District Radio Club: M. Subocz VK3AVV, M. Chadwick VK3WT, J. Bramham VK3WWW
 (6) Phil Derbyshire VK2FIL, Colin Sibraa VK2FABV, Paul Thomas VK2WPT
 (7) Alan Devin VK3XPD, Michael Coleman VK3KH
 (8) Scott Watson VK4CZ, Alan Meek VK4WR, Campbell Watson
 (9) Central Coast ARC: VK2JDH, VK2KCM, VK2JDD, VK2ARE
 (10) Dale Hughes VK1DSH, Dimitris Tsfakis VK1SV
 (11) Hornsby & District ARC: VK2DAY, VK2TTP, VK2FDIW, VK2FMAM
 (12) Gippsland Gate Radio & Electronics Club: Mike Ide VK3KTO, Albert Hubbard VK3BQO

2010 CQ World Wide RTTY Contest Rules

Mode: RTTY

Date: September 25-26, 2010

Time: 0000 UTC Saturday to 2400 UTC Sunday

Objective:

For amateurs around the world to contact as many other amateurs in as many zones, countries, US states and VE areas as possible.

Bands: 3.5, 7, 14, 21, and 28 MHz Baudot mode only. No unattended operation or contacts through gateways or digipeaters permitted. All entrants must operate within the limits of their chosen category when performing any activity that could impact their submitted score. Only the entrant's callsign may be used to aid the entrant's score. A different callsign must be used for each entry. All entrants must not exceed 1500 watts total output power, or the maximum output power of their category, or the power limit of their entry country, whichever is less, on any band. Self-spotting or asking other stations to spot you is not allowed. All operation must take place from one operating site. Transmitters and receivers must be located within a 500-meter diameter circle or within the property limits of the station licensee, whichever is greater. All antennas must be physically connected by wires to the transmitters and receivers used by the entrant. The entry location of a remote station is determined by the physical location of the transmitters, receivers, and antennas. A remote station must obey all station and category limitations.

Entry categories:

Single Operator (All Band or Single Band):

For all single operator categories, only one person (the operator) can contribute to the final score during the official contest period. QSO alerting assistance of any kind (this includes, but is not limited to, Packet, local or remote Skimmer and/or Skimmer-like technology, Internet) places the entrant in the Single Operator Assisted category.

- 1 **Single Operator High (SO High):** One person. One signal at a time. QSO alerting assistance of any kind is not allowed.
- 2 **Single Operator Low (SO Low):** Same as *SO High* except total output power per band must not exceed 100 watts.
- 3 **Single Operator Assisted (SOA):** One person. One signal at a time. QSO alerting assistance is allowed. No power subcategories.

NOTE: Each of these three entry categories can be entered as All Band (AB) or Single Band (SB). Single band logs must include all QSOs made on other bands, if any. The AB or SB entry

category is specified in the log's Cabrillo header. Any QSOs in the log on bands other than the SB entry will be treated similar to a check-log.

Multi-Operator (all band operation only):

- 1 **Single-Transmitter High (MS High):** Only one transmitter, limited to 8 band changes in any clock hour (00 through 59 minutes). For example, a change from 20 metres to 40 metres and then back to 20 metres constitutes two band changes. Exception: One--and only one--other transmitter may be used if--and only if--the station worked is a new multiplier. This second transmitter is also limited to eight band changes in any clock hour. Violation of the eight band change rule will result in reclassification to the MM category. Logs must show which transmitter made each QSO ('0' for the primary transmitter and '1' for the second multiplier transmitter, shown in column 81 of the Cabrillo format).
- 2 **Single-Transmitter Low (MS Low):** Same as *MS High* except total output power per band must not exceed 100 watts.
- 3 **Two-Transmitter (M2):** A maximum of two transmitted signals at any time, each on a different band. Only one running transmitter allowed per band. Either transmitter may be used to work any and all stations. A station may be worked once per band regardless of which transmitter is used. Logs must show which transmitter made the QSO ('0' and '1' shown in column 81 of the Cabrillo format). Each of the two transmitters may make a maximum of 8 band changes in any clock hour (00 through 59 minutes). For example, a change from 20 meters to 40 metres and then back to 20 metres constitutes two band changes. Violation of the eight band change rule may result in reclassification of the entry to the MM category. No power subcategories.
- 4 **Multi-Transmitter (MM):** No limit to the number of transmitters, but only one signal and running transmitter allowed per band. No power subcategories.

Exchange:

RST plus zone (e.g., 599 14). US and VE stations also send US state or VE area (e.g., 599 05 MA, see multipliers below.)

Multipliers:

Three types of multipliers will be used.

- 1 A multiplier of one (1) for each different zone contacted on each band.
- 2 A multiplier of one (1) for each different country contacted on each band.
- 3 A multiplier of one (1) for each different US "lower-48" state and VE area contacted on each band.

Stations are permitted to contact their

own country and zone for multiplier credit. The CQ Zone Map, DXCC country list, WAE country list, and WAC boundaries are standards. Maritime mobile stations count only for a zone multiplier. One multiplier for each US state (48) and each Canadian area (14) on each band. Please use only official U.S. Postal Service abbreviations to identify states (e.g., Michigan = MI, Massachusetts = MA, Ohio = OH). **Note:** Alaska (KL7) and Hawaii (KH6) are counted as country multipliers only and not as state multipliers. Canadian areas (14 total) are as follows: NB (VE1, 9), NS (VE1), QC (VE2), ON (VE3), MB (VE4), SK (VE5), AB (VE6), BC (VE7), NWT (VE8), NF (VO1), LB (VO2), NU (VY0), YT (VY1), PEI (VY2).

Points:

- 1 Contacts between stations on different continents are worth three (3) points.
- 2 Contacts between stations on the same continent but different countries, two (2) points.
- 3 Contacts between stations in the same country, one (1) point.

Scoring:

All stations: the final score is the result of the total QSO points multiplied by the sum of your zone, country and US state/VE area multipliers. *Example:* 1000 QSO points x 100 multipliers (20 Zones + 40 Countries + 40 States/Areas) = 100,000 (final score).

Awards:

First place certificates will be awarded in each category listed in every participating country and in each call area of the United States, Canada, Russia, Spain, Australia and Japan. All scores will be published. To be eligible for an award a Single Operator station must show a minimum of 12 hours of operation. Multi-operator stations must operate a minimum of 24 hours. A single-band log is eligible for a single-band award only. Single band entrants who also operate on other bands must include those QSOs in their logs. **Note:** The single band entry is specified in the Cabrillo header. In countries or call areas where the returns justify, 2nd and 3rd place awards will be made. See www.cqwwrtty.com for awards/plaques, details of the club competition and log submission instructions.

WRTC 2010 Results

Congratulations to the Russian duo of RW1AC and RA1AIP for making the home nation proud in winning the 2010 World Radiosport Team Championships held in Russia. ES5TV and ES2RR won the Silver while the team of N6MJ and KL9A came third. Our team of VK2IA and VK6LW came in 44th in this competitive event and all the details are at www.wrtc2010.ru

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VHF/UHF an Expanding World

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

The origins of the title for this column go back at least 40 years to a time when the VHF/UHF bands were a fairly specialised area. Becoming operational on the 23 cm required building exotic equipment and the bands above that were very tricky technology. This, I believe, led to the phrase “An Expanding World” meaning that it was one of the few areas of Amateur Radio in which experimentation and innovation was still quite extensive.

Fast-forward to today and we now have a wide selection of off-the-shelf rigs that cover the VHF-UHF bands up to 23 cm and do quite a respectable job of it. While there is still some innovative work going on, such new digital communication modes and high power solid-state amplifiers, most of the technology is now well established.

Those who, 40 years ago, might have experimented in the VHF/UHF region are now getting their hands dirty in the mid to upper microwave regions – what I believe is now “The Expanding World”.

All this is in way of a mild apology to VHF/UHF enthusiasts, because this month's column is devoted entirely to the microwave areas where we are currently seeing a surge of interest.

New 10 GHz World Record

For a number of years, the 10 GHz World Distance Record was held by Australian amateurs. On 30/12/1994, Roger VK5NY/5 portable near Adelaide worked Wally VK6KZ/6 portable in the south of VK6 over a distance of 1912 km. This record stood until 2000 when DL4AM and DJ3KM worked over a distance of 2070 km. Recently, the distance has again been bettered.

On 10/7/2010, a group of six Swiss hams located in the Cape Verde Islands worked into Portugal over a path of 2696 km. They used SSB and the QSO continued for almost 25 minutes. Earlier in the day, they had already broken the record with a contact into Morocco over 2200 km.

All is not lost for VK however. We do have good sea paths of greater distance – for example, from the southern tip of VK6 across to Wilson's Prom is 2700 km and to the northeastern tip of VK7 is about 2870 km. Unfortunately, these areas are sparsely populated with microwave operators, so portable operations would be necessary. As well, suitable propagation would be very rare. Perhaps we should investigate the establishment of beacon stations that can also be remotely operated for the occasions when openings do occur.

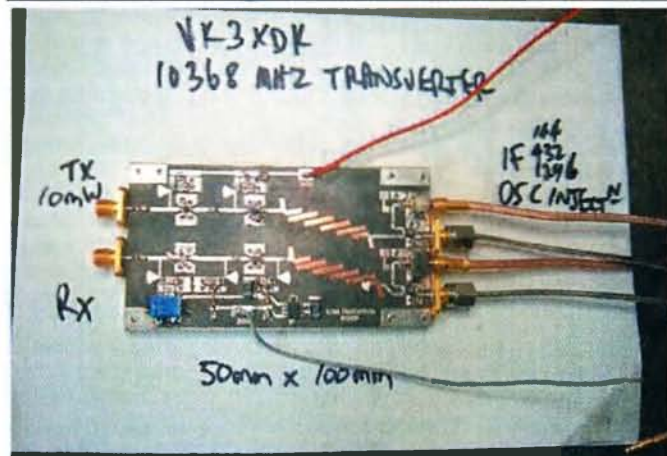
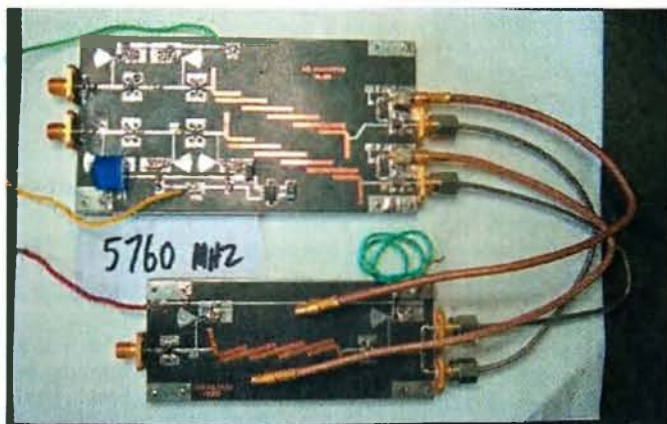
New series of microwave transverters

Graham VK3XDK has been working on the design of simple, no-tune transverters for the microwave bands 2.4 GHz, 3.4 GHz, 5.7 GHz and 10 GHz. Performance testing of the prototypes by Alan VK3XPD has shown very good results.

The transverters use MMICs and low cost mixers with no-tune stripline filtering on the board. The standard IF is 70 cm, but 2 m is also an option for some of them. No

onboard RF switching is included, with separate chains for the transmit and receive paths. Each transverter has a separate multiplier board for generating the LO from a lower frequency oscillator. A synthesised oscillator board is currently under development. The PCBs are made from Teflon board with the transverter board roughly 100 x 60 mm and the slightly longer multiplier roughly 120 x 60 mm in size. The boards are glued to an aluminium base using silver epoxy glue.

Prototype boards that have been hand-etched by Graham are shown in the accompanying photos.



For earthing, the prototype boards use tiny screws which have proven somewhat fragile. Graham and Alan are currently investigating having the boards professionally produced using plated-through holes for the earthing.

It is proposed that kits will be supplied with the blank PCB already glued to the aluminium base. Assemblers then fit the supplied SMD components etc. themselves. No pricing is currently available, but will be “at-cost” and so very reasonable.

More information may be found at: <http://www.vk9na.com/Transverters.html>

With very limited advertising on the VK-Microwave group, there are currently Expressions of Interest from 30 Amateurs for about 60 transverters. If you are interested, please contact Alan VK3XPD on alandevlin@bigpond.com

24 GHz surplus transverters

Recently on "that" auction site, a number of 23 GHz and 26 GHz transceiver modules appeared from an Israeli seller. These were snapped up quickly, but if you do see one available, they appear to be the basis of a very good transverter for 24 GHz. These modules, originally manufactured by the French company Thales, have



quite impressive specifications for their small size. The quoted power output is over 1 watt with very low IF drive requirement of -20 dBm. The LO is at half frequency (12 GHz) at +12 dBm. Output is direct to waveguide, although waveguide to SMA transitions could be used allowing a cheaper (and higher loss) SMA relay to be used for T/R switching.

An article appeared in a recent issue of the UK Microwave Group magazine *Scatterpoint* described the simple conversion of one of these modules to 24 GHz.

47 GHz experiments

Dan VK2GG has been developing a 47 GHz setup based on a Kuhne transverter with an Elcom synthesiser as LO and 432 MHz IF.

On Sunday 8th August, he and Peter VK2YGM tested his two transverters over two short paths. Using 0.15 mW directly from the transverters into 36 dB dishes, signals were reported as "full scale" over an 8.3 km line-of-sight path. That is already a VK2 record. The dishes are very sharp – beamwidth is about one degree – so accurate pointing is required.

On Friday 13th, they extended to distance to 32.3km over a sea path with lots of sea spray. Look out for more to come.

MADs

Matt VK2DAG is proposing regular Microwave Activity Days to boost activity on the microwave bands. He writes:

I would like to get more action happening than just three contests a year!

Your wife and family know that there is a set day per month that you want to go out and play.

Other people with microwave (uW) gear will go out and play as they will know there will be someone out there.

You can haul the uW curious out with you to show how its done.

Get out and test those possible field sites you have seen on Google maps.

So how does the 3rd Sunday of each month sound?

15th August, 19th September, 17th October, 20/21st November (also the VHF/UHF Field Day) and 19th December.

Between 10 am and 2 pm local. Gives enough time to get anywhere and set up.

Liaison on 146.500 FM simplex calling. Far enough away from transverter IFs and pager crud (most of us will set up on hill tops close to pager sites, so the further away the better).

Go here <http://www.heywhatsthat.com/> and zoom in on the hills you want to try. Select "New Panorama", give it a name (I have been calling the sites I have been looking at VK2 hill name). After the website has processed your request on the map press "Visibility Cloak" to see what you can see and also press "Show Profile" to see what the terrain is like between any points you click on the map.

Justin VK2CU and I are planning to have a test of 13 cm (2403) on Sunday 15th August. I will be going to hill at Killcare QF56ql. I will also throw in 3 cm and 13 cm (2301).

All reports are that Sunday 15th was a great success. According to Matt:

Good to see a bunch of us get out there and have a go. Also good to see some spots from VK4 (VK4OX, VK4OE and VK4WIS were also out in Queensland).

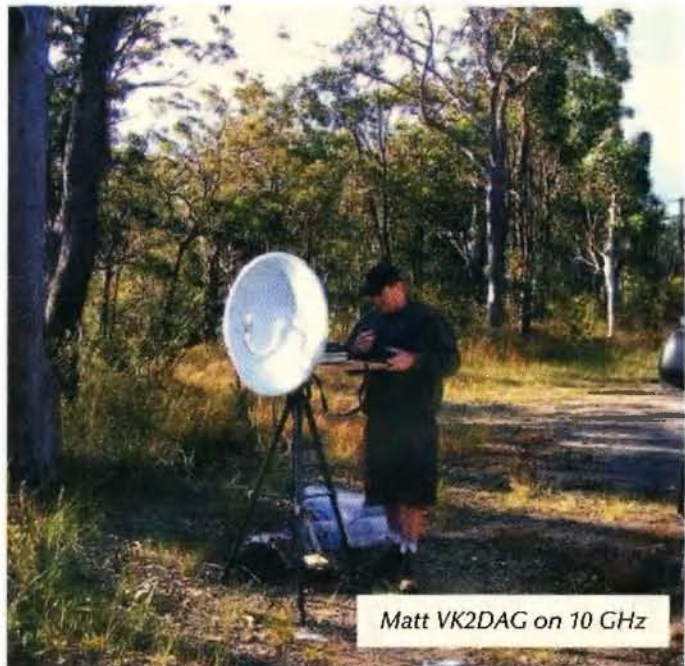
I was mostly happy with my gear. Had some cable fails and other pitfalls, so now I know how what to fix and what needs improving. 100 km on 3 cm and almost making a contact on 6 cm - all good. VK2XDE Steve and I had the chance to test theory we have been toying with on 2403.

12 cm VK2XDE Steve and VK2CU Justin.

6 cm VK2CU Justin.

3 cm VK2GOM Rob and VK2TRF Jack.

Jack VK2TRF had the idea of swapping the day (alternate



Matt VK2DAG on 10 GHz

Saturday/Sunday) each month so we can capture more happy uWers. Next month some people have already organized Sunday, so I suggest we go forward from then.

Keep an eye on the VK Logger Forum for the latest information.

Justin VK2CU bolted a mast into the back of the Kingswood ute, mounted several antennae and ventured out. Rob VK3GOM also headed to the hills, but was a little nervous about the windy conditions. After his recent mishap when his dish was blown over and destroyed by an errant gust, he compensated with some locally available counterweights (rocks) on the tripod feet.



Rob VK2GOM's stabilised 10 GHz system.

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

Digital DX Modes

Rex Moncur VK7MO

Joe Taylor K1JT advises that while the new modes in WSJT8 all work, they do not generally demonstrate a useful improvement over the modes in WSJT7. The one exception is ISCAT, designed for ion scatter on six metres which showed a useful improvement over JT6M. Our own VK testing (Alan VK3XPD and Dave VK3HZ to Rex VK7MO) shows that ISCAT is useful for 10 GHz aircraft enhancement and troposcatter, as it copes well with the high Doppler shift at 10 GHz.

Joe has now withdrawn WSJT8 and has set up a test team in Europe, the US and VK to give him practical feedback on the further development of these modes. John VK4JMC, Peter VK3SO and Rex VK7MO are the VKs on the test team. To date, ISCAT has been further improved and will become a permanent feature of the next release of WSJT. In VK, our work has focussed on JTMS which is a new mode designed to replace FSK441 but has been significantly improved since its release in WSJT8, by providing information from shorter pings. WSJT9 also includes echo mode that allows testing of the EME performance of your station and was originally included in WSJT4 but not in later versions.

JTMS uses minimum shift keying as compared to FSK for FSK441 and transmits about 30% faster to make better use of short pings. It also includes an averaging feature, which allows it to pick the best from a message where the ping is long enough to repeat some of the information. Our tests to date indicate that its performance is similar to FSK441 but that it gives far fewer garbage decodes and a much cleaner output. Further testing and development will continue to see if it can in fact produce the potential advantage implicit in its faster speed before a decision is made on including it in the next public release of WSJT. In the interim, it is likely that we will conduct wider testing of a Trial version during some VK/ZL meteor scatter activity sessions. If so information will be promulgated on the VHF reflector.

Another feature of the Trial version is a new Graphical User Interface (GUI). While the Europeans and North Americans have been the main drivers, this has provided the opportunity to extend the size of the boxes in which the transmitted information is typed. This has advantage in VK/ZL where we often call more than one station at a time as all of longer message is visible in the box. Another new feature of the GUI is information in the Astronomical Window on the amount of spreading for EME at the frequency being used. This is useful for selecting the appropriate JT4x mode for microwave EME.

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

ar

SilentKey

Gordon Yorke VK3ABI

Gordon was ex-RAAF and maintained his interest in radio and became a "ham".

A severe stroke unfortunately limited his activities but he became one of the foundation members of the "Dad's Army" net on 80 m; at this time mainly ex-servicemen, some similarly incapacitated. I can vouch for amateur radio as a valuable form of therapy, as he continued to enjoy

his hobby for the further 25 years with new members to replace those who fell by the wayside.

He was a "cracker" bloke and a friend for 64 years.

His voice is sadly missed.

George Lance VK3DS.

'C' ing into the future

'C' ing into the future

Two recent sources of inspiration have prompted me to write this month's article on the utilisation of C-band with amateur satellites. The first was the Unitec-1 spacecraft on its way to Venus and the second was an excellent homebrew microwave transverter displayed at this year's GipsTech.

What is C-Band?

C-Band covers the SHF microwave frequencies from 4 GHz to 8 GHz [1]. The only amateur allocation in this range is the 6 cm band from 5.65 GHz to 5.85 GHz. This is a secondary service with radio-location being the primary service. The terrestrial weak signal and EME segment is concentrated around 5.76 GHz. There are two 20 MHz segments allocated to the amateur satellite service. These

are 5.65 to 5.67 GHz for Earth to space uplinks and 5.83 to 5.85 GHz for space to Earth downlinks.

Amateur satellite use

So far there has not been much use of 6 cm on amateur satellites. AO-40 had a receiver on 5.688 GHz which was tested but had very little use. On the ill-fated cubesat launch in 2006, the University of Hawaii's cubesat had an 'active antenna' that used a free running oscillator that was resonant around 5.85 GHz. This would have provided a 2 mW EIRP signal that would have been a real challenge to receive. Unfortunately the launch was a failure so this and the other twelve cubesats became part of a large crater in Kazakhstan [2].

This year the Unitec-1 was launched along with Japan's Planet-C Venus orbiter. Signals were received on

5839.9 GHz very early into the mission but have not been heard since. While Unitec-1 was not an amateur satellite, amateurs were involved in receiving telemetry.

Future proposals

However, there have been some detailed proposals for future satellite missions. AMSAT-NA proposed the C-C Rider transponder for the high Earth orbit Eagle mission that was to use both uplink and downlink segments during the 2003 symposium [3]. C-C Rider was revised for the 2004 symposium with design updates and changes to the 5.8 GHz spectrum. These included using multiple modules consisting of a 0.5 Watt transceiver and patch antenna. These would be combined to provide a large signal that could be electronically steered. In 2006 C-C



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www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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: 146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404,
EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node
6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz
IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz.
IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

Rider had to be abandoned as it was deemed impractical due to difficulties in isolating the receiver from the transmitter. At the 2006 symposium a revised proposal was presented that used 5.8 GHz for the downlink and a choice of 1.26 or 3.4 GHz for the uplink. 3.4 GHz is not available for satellite use in region 1 (Europe and Africa). This may change in the future as more European countries are allowing amateur operation in that band [4].

AMSAT-DL's P3E mission has a 5.6 GHz receiver which was constructed in 2005. During operation it will be connected to either the 10.4 GHz or 47 GHz transmitters.

Probably the next satellite to fly with C-band is the ESEO low Earth orbiter. The amateur payload is proposed to have a U/S FM transponder, a U/V linear transponder and a CW/FSK beacon on 5.840 GHz. The beacon will transmit a 400 mW linear polarised signal using a short horn antenna.

At the 2009 UK Colloquium more details on the mission were presented. A PowerPoint presentation is available on their website [5]. Included are a block diagram of the amateur payload, a picture of the transmitter and antenna, and a block diagram of a groundstation downconverter for 5.84 GHz to 145 MHz.

To get some idea of what I would need to hear this signal, I put the following into the AO-51 link budget spreadsheet found on the AMSAT-NA website [6]. In the downlink column I changed the frequency to 5840, the Tx power to 0.4 and the antenna gain to 0. The minimum dish size should be ten times the wavelength, so in this case a 60 cm dish will do. According to the VK3UM EME calculator [7] this gives me a gain of around 25 dB with a beamwidth of 6.6 degrees (assuming an efficiency of 50%). For a pre-amplifier/downconverter combination, I will assume it is right at the feedpoint of the dish and has a noise figure of 1 dB and a total gain of 30 dB.

Using the receiver performance section of the VK3UM calculator (5.76 GHz, cable 2 = 0, LNA noise figure 0.9 dB, LNA gain=30 dB, 2.4 kHz bandwidth) it comes up with a receiver sensitivity of -145 dBm. Putting this in as the receiver noise floor ends up with a signal to noise ratio of 13 dB which is audible. These

figures are only a rough guide done very quickly. The pre-amplifier/downconverter figures are from the Down East Microwave website for their 5760 transverter and pre-amplifier kits [8].

Now onto the other aspects of receiving the signal: tracking and tuning.

A 60 cm dish with a 3 dB beamwidth of only 6.6 degrees will need far more accurate pointing than a typical 2 m/70 cm satellite setup. Going to a bigger dish will increase the antenna gain but will make tracking even more difficult.

The tuning will present a bit of a challenge. The Doppler shift for a 5.84 GHz transmitter at an altitude of 600 km is a mere +/-135 kHz (or a total of 270 kHz for an overhead pass). Little wonder the C-C Rider concept was aimed at a high Earth orbit satellite.

I should point out that I do not currently have any equipment for 5.7 GHz and the above is a collection of thoughts on the subject.

Final Pass

While C-band has not featured prominently in the past amateur satellites, it has been attempted and has plenty of proposals for future low and high Earth orbit missions. C-band is challenging but 2.4 GHz was also challenging before AO-13 and AO-40 helped popularise it. Is it inevitable that there will be a C-band amateur satellite orbiting in the near future?

References

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- [5] http://www.uk.amsat.org/component/option,com_wrapper/Itemid,278/
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- [7] www.sm2cew.com/download.htm
- [8] www.downeastmicrowave.com

SilentKey

Keith Haverfield VK4APQ

Born in Bendigo and later working in Melbourne, Keith was apprenticed to Radio Corporations (Astor) and then worked for 20 years as a technician with Mason's Radio in Hampton. His own business "Personal TV Services" flourished in Beaumaris for a time but the sea and the sun beckoned.

Keith built a sextant, taught himself navigation and built a 40 ft steel yacht, machining most of the parts himself and sailed away from Melbourne in 1980, settling near Bundaberg on the shoreline at Innes Park.

Obtaining an amateur licence in 1982, he joined the Bundaberg Club and WIA in the same year and remained a faithful friend to both. Keith was aged 83 and after battling illness that annoyed him terribly, he lost the fight in July this year.

Always wanting to learn more, during his life he built TVs, stereo, radios, a welder, a movie projector with sound, battery chargers, sextant and a couple of boats.

He researched army surplus tower sections and oversaw the design and construction of a 30 m tower on Mt Goonaneman. Completed in 1985 it became an enduring legacy providing communications for the club and the entire region for over 25 years.

He was a member of WICEN, served as Club Secretary, and then President in the late 80s and was a regular attendee at the TARC North Queensland Amateur Radio Convention in Townsville. VK4APQ was a constant voice on weekly nets and was always there to help club members with a technical problem.

Keith leaves a loving wife and fellow amateur, Gaynor VK4FGAY and will be greatly missed by all.

Submitted by Bundaberg Amateur Radio Club.



Welcome to the VK6 Notes for September. I am writing this the day after a very eventful Hamfest 2010. I will start with other news received, and that means a report from Bob VK6POP of the *Scouts Communications Team*.

We conducted an amateur radio Foundation licence course over the weekend of 16-18 July at the Peter Hughes Scout Communication Centre. Five Scouts and three leaders attended, and all passed their assessments. Two participants drove from Geraldton to Perth to attend. Participants camped at the facility over the weekend. On the same weekend, Scouts who already had a licence participated in on and off air activities.

The Team are planning to conduct a Standard licence course later in the year. This course is aimed at Scouts and Leaders who have a Foundation licence; however newcomers will, of course, be welcome to attend.

Excellent news Bob, the Scouting fraternity is increasing its amateur numbers at a rapid rate!

2010 Perth Royal Show: VK100WIA – WARG/VHF Group/WICEN/Scouts

This year these groups are combining to attract the attention of the general public at the Perth Royal Show, held in October. The WIA Centenary call sign will be in use for the duration of the show with demonstrations, live on air activities and EchoLink/IRLP will be used to assist operations. A link on 5 GHz to Wireless Hill will allow better coverage than the electrically noisy showground could hope to provide. Drop in and say hello if you are attending or, better still, offer your services to man the stall. More information can be obtained by contacting Heath VK6TWO at actionman5@gmail.com

Hills ARG

The Hills ARG had their AGM on Saturday 31 July and I look forward to receiving an update on their new committee for the next edition of *AR*.

Hamfest 2010

The Northern Corridor Radio Group (NCRG) Hamfest has become the

main event in WA's amateur activity calendar over the past 23 years. From its early days at Carine College to its current venue Cyril Jackson Recreation Centre in Ashfield, it has become the place to showcase amateur radio in WA.

See photos on inside back cover.

I believe its main function is to get the radio population of Western Australia together to socialise, recycle used gear, and to view new equipment from the manufacturers. Attendance this year was slightly down, approximately 350 compared to 380 last year, though you would not have noticed it in the packed hall. We lost three exhibitors just before the event. Terry from Terlin Outbacker antennas was in hospital over the weekend but still donated an Outbacker Perth antenna and heavy duty spring base; get well soon Terry.

Neil Penfold VK6NE, the club's patron, was to put on a QSL display, but also was hospitalised and Vertex Standard had to pull out four days before, but we thank them for their donation of a FT-207R handheld for the raffle.

This year the club itself dug deep and provided two transceivers as prizes, an FT-8900 quad bander and an FT-2800. Other prizes were a TET Emtron 40/80 dipole supplied, of course, by TET Emtron who put on an excellent display of their antenna products and seemed to be doing a roaring trade. Alek VK6AP also donated two solder stations, one for the raffle and one for the Homebrew competition. The raffle first prize was won in dramatic fashion by our raffle seller extraordinaire John VK6NU drawing out his own number! He took the FT-8900. Second out of the barrel was Ken VK6CO who won the Terlin Mobile antenna. Next came John VK6JGF who won the FT-270R handheld, and he then drew the next number and pulled out VK6NU again - the luck of the Irish! John declined and it was redrawn, to be won by Steve GM0WRY who received the FT-2800. As luck would have it the next ticket was not VK6NU again, but VK6JGF again! He pocketed the solder station and drew the final prize. That was

won by Gerhard VK6GMD who accepted the TET Emtron 40/80 dipole, having just bought a G5RV from TET a few minutes before!

I mentioned the Homebrew Contest earlier. The standard was amazingly high with some truly professional equipment made in home workshops. The judges were very hard pushed to come up with two winners but in the end Bob VK6CC won the power grip driver donated by Metabo and Rob VK6HRW won the soldering station from VK6AP.

John from Tower Communications had a lovely display of a vintage FT-101 series complete with all the options for sale, as well as Icom and Yaesu equipment. Once again Allcom had tables piled high with used communications radios and associated equipment and Fritz VK6UZ had a record eight tables to dispose of his hard to source accessories for the higher frequencies.

Our guest display, *Morsecodeans Fraternity of WA* had a place of honour. It was a pleasure to see and hear these characters of times past sending beautiful Morse on their sounders. The four members present sent telegrams all day from one to the other on their sounders and were receiving them on the old typewriters.

Many present availed themselves of a telegram to treasure. When they last attended several years ago, a friend of mine, David G3UFO, was here on holiday and sent a telegram to his good friend in the UK Ken G3WIC. Ken has this telegram in pride of place above his operating position in his shack. The NCRG is hoping to stage a more permanent display in association with the *Morsecodeans* in the near future, and we thank them for providing an entertaining display at Hamfest. You can see more of them every year at the Perth Royal Show.

I must not forget the others who attended, the guys who cleared out their shacks and sheds and disposed of many weird and wonderful things.

continued on page 56 and inside back cover

WIA Centenary Award

A limited issue operating award is available to celebrate the 100th year of the Wireless Institute of Australia (WIA), the world's oldest national radio society.

To qualify for an award contact is required with the Centenary of Organised Amateur Radio in Australia special event station VK100WIA. A distinctive QSL will be available.

The WIA, through its affiliated radio clubs, will operate this unique callsign from 1 May to 31 October 2010. The callsign was used in Canberra, at the WIA Annual General Meeting and associated events on 28-30 May.

It will be on all amateur bands available to VK radio amateurs including the popular HF bands.

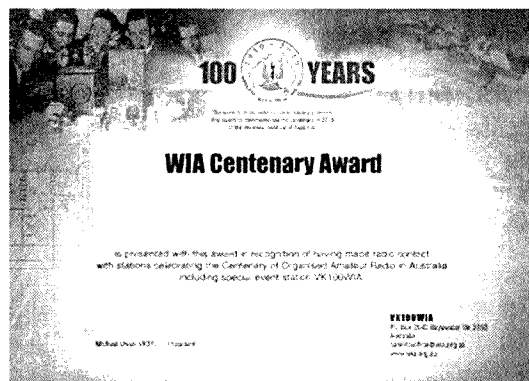
The award rules are: Those radio amateurs outside Australia need to

achieve 50 points while VK hams require 100 points.

A contact with VK100WIA operated by the WIA or a Club is worth 10 points (only one contact with VK100WIA operated by the WIA and only one contact with each Club) and there must be a minimum of two contacts with VK100WIA.

Contacting any WIA member between 1st May 2010 and 31 October 2010 is worth five points (Example: working VK100WIA at 10 different Clubs would be eligible for the award. Working 16 WIA members gives 80 points but then two contacts must be made with VK100WIA).

Any mode may be used; cross-mode and cross-band contacts are permitted. Satellites and repeater



contacts are permitted. Send AU\$5 or 3 IRCs and a list of contacts (QSLs not required) to the Awards Manager WIA Centenary Award, PO Box 2042, BAYSWATER VIC 3153 AUSTRALIA.

Listen around the bands or visit the WIA website www.wia.org.au for frequent updates of the operator club's roster. **ar**

Hamadsclassifieds free to members

FOR SALE - VIC

For sale as a package only - 1 only FT-897D transceiver, #8L050361. 1 only LDG AT897 tuner fitted. 1 only FP30 power supply fitted, #8H067. 1 only FT meter (small). 1 only MH31 microphone, and 1 only MH31 OBP microphone. All are in as new condition, \$1,100 lot. Daiwa CN801 meter, new in box, \$50.00. Contact Tony VK3VTH, on 0423 635 152 or email vk3vth@wia.org.au

WANTED - VIC

Wanted book title - Electronic Applications of the Smith Chart, by Philip H Smith. Contact Roderick Wall VK3YC, phone 0413 074 386 or email vk3yc@wia.org.au

FOR SALE - NSW

DB37-FT2000 cable for Microham Microkeyer II, new, \$70.00. Elecraft KFL3A-2.7 kHz filter, new, \$100.00. Elecraft KXV3RXA mod board, new, \$25.00. Trimble Lassen SK II GPS board, new, \$40.00. Trimble GPS antenna 5V, 26 dB gain, new, \$30.00. Quality soldering wire, manufactured by Kester, 0.5 kg, \$30.00. Hy-Gain RF-550A RF power meter and antenna switch, 4 antennae selection, 400 W and 4000 W power range meter. The external case is rusty, but the unit is fully operational, \$100.00. Tom VK2OE, 3 Buller Street, Bonalbo. NSW. 2469, email wojtech.tomczyk@det.nsw.edu.au

HyGain 14AVQ HF vertical antenna, negotiable. Ringo Ranger 2 metre antenna, \$10. MDS Downconverter, \$5. N and SO239 switches, filters, SWR bridges, magnetic bases and mobile whips, negotiable. Satellite Package - 2.4 metre mesh dish on polar mount, Chaparral C Band Polarator feed, Norsat Gold 15K C Band LNB, 24" actuator,

Winersat WR920 Rx (dish controller), \$220. Digital Satellite Rx's - UEC DSD660, \$100. Nokia 9500S with DVB2000 S/W, \$100. Xanadu DSR, \$30. Zenith DTH300-S, \$5. 2 x Pace DGT400's, \$5 ea. Other Satellite parts - Chaparral CoRotor II C/Ku feed, Norsat Gold 15K C Band LNB, Gardiner .7dB Ku LNB \$100. Dynalink C Band LNB "One Cable Solution", \$15 California Amp C Band LNB 25K, \$25. Chaparral Model C Ku LNB, 9.75/10.75 GHz LO's, \$20. ACESAT Twin Ku LNB's, \$20 ea. California Amp Ku LNB, \$10. Sharp Ku LNB's, \$15 ea. DX Antenna DSA527N Ku LNB, \$5. 2 x DX Antenna DSA527D Ku LNB's, \$5 ea. Zinwell SAB-09C Coax relays, \$15 ea. 4 x Irdeto CAM's, not CI, various ages and S/W, \$20 ea. Many other miscellaneous satellite parts. Contact Roger VK2WW, VK2WW@Hotmail. Com or phone 02 9546 1927.

Antique multimeter, 0-500 VDC, 0-100 mA DC Ferranti, in wooden case; large air wound coil on frame 28 cm (11 inches) long by 15.2 cm (6 inches) diameter; a series of radio text books, send email to get inventory; Reel to reel tape decks - send email to get more details; valve tester - Palec model VCT-T; common aerial filter Marconi- 150 - 174 MHz.

Kantronics packet modem 'Communicator 3'; Antique multimeter - USA - made - AC 600 VDC 1500 V, 150 mA DC in compact metal case; Linerarity pattern generator - Heathkit, model LP1; Antique signal generator - Paton Electric - 150 kHz to 15 MHz in metal case; collectable antique (Australian made) oscilloscope - BWD 'Portascope' 7.5 cm (3 inch) screen; VTVM-AWA Voltohmyst type A56010; Ammeter - car type 60-0-60 Amps UK - CAV brand; Multimeter,

Japanese, 1000 VDC, 250 mA DC - may be a war trophy; AVO multimeter, up to 15 A DC and 7.5 A AC - 750 V AC/DC, made in 1945, in excellent condition; morse key, Hi Mound HK 708; morse key, Hi Mound HK 705.

I will accept reasonable and genuine offers for all of the above items.

Contact Graeme Scott VK2KE, email gsco8077@bigpond.net.au or mobile 0438 218 897.

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Carbon elements for the standard size Scope soldering iron. Neville Chivers VK2YO, QTHR or phone 02 6674 2095.

WANTED - QLD

TS-120S or TS-120V, or similar, in good working order. Please advise price and details to ejcantle@bigpond.com Mervyn VK4DV.

FOR SALE - SA

Icom IC-718, Serial No 0812854, plus power leads, microphone and handbook, \$500.00. Power supply, GME 13.8 V, 35 A peak, Serial No 4057229, \$450.00. ATU, MFJ Versa Tuner II - 941, \$230.00. All in very good condition. Contact Bill VK5MZ, on 08 8536 8510, or email bilandot@hotmail.org.au

A short Ham Radio adventure written for children and teenagers but suitable for people of all ages.

Details at www.vk5sw.com or \$20 delivered within Australia. Rob VK5SW QTHR.

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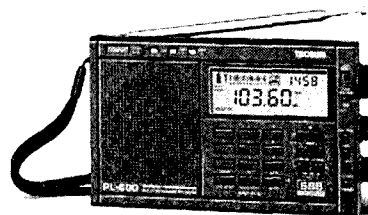
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Continued from page 53

Our regulars, the VHF Group and the WA Repeater Group, signed up members. The Scouts Communications team raised funds selling junk, sorry pre-loved equipment.

The WIA was represented and did a good trade in shirts, caps and callbooks, as well as publicising Ham College and their efforts to encourage new members. It was good to see amateurs from Kalgoorlie, Esperance, Albany, Tom Price, Geraldton and all parts of the state making an effort to

attend, then making the long trip back. Very pleasing to hear from Geraldton, about their increase in local activity and proposed repeater/ IRLP/EchoLink projects as I often pass that way.

Club members work very hard to stage this event; it takes much planning to fill this large venue and to cater (thanks ladies, and Ian VK6ZIC) and this year Wayne VK6EH, Richard VK6BEC and their team did an excellent job.

So, finally as President of the NCRG, I would like to thank all who attended

this year, our paying guests, our traders, the clubs and the club members for another excellent day. I even had a table and sold some surplus gear! Next year's event is already being planned and the venue booked for Sunday 7 August, hopefully we will see you there.

Back to normal next month, with October being the prime contest month of the year with major contests on every weekend, with the NCRG out at Muresk Agricultural College again for one weekend and two other weekends contesting from the club. Then there is JOTA, which this year will see the NCRG hosting two Scout groups for the weekend, and the inaugural WIA National Field Day. I am not sure I can convince members to be active every weekend in a contest but I am going to try.

Please have a look at the WIA National Field Day on the WIA website and have a go even if you have never contested before, honestly, you can be easily hooked! And, as usual, a plea goes out for input to this column.

73, Keith VK6RK vk6rk@wia.org.au ar



The Hamfest Homebrew Contestants



Hamfest NCRG
Clockwise from top left.
The telegraphy 'boys', the Morsecodeans.
Neil VK6BDO at the WIA table.
Hamfest raffle first prize winner VK6NU(l) with VK6RK.
The packed Hamfest hall.
The Homebrew prize-winners—Bob VK6CG (r) won the power grip driver donated by Metabo and Rob VK6IRW won the soldering station from VK6AP.



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Amateur Radio

Volume 78
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Saturday 23 October 2010



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Cover Photo

Help promote our hobby to the broader public - set up a station and participate in the WIA National Field Day on 23 October, allowing the public to "Tune-in to the world". See the story on page 8.

Photo by Robert Broomhead VK3DN.



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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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

If back issues are unavailable, 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

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Editorial

Peter Freeman VK3PF

For many, October will be a very busy month.

Jamboree On The Air

Across the world, many amateurs will be involved in the Jamboree On The Air (JOTA) and Jamboree On The Internet (JOTI) event, involving youth who are members of the Scout or Guide movements. This is an excellent opportunity to expose younger people to our hobby.

As Bob VK6POP explains in his article, your plans should be well underway by now if you are directly involved with a Scout or Guide group for this event.

Locally, our club will be running JOTA on the Sunday, with the local Guide group. We will also have the bonus of using the special callsign VK100WIA, celebrating the centenary of organised amateur radio in Australia. We will be focussing primarily on JOTA contacts for the Sunday, but will work other stations if JOTA contacts are hard to find.

I am aware that the Victorian Scout Radio and Electronics Service Unit will be using the VK100WIA callsign over the period Thursday to Saturday, so Saturday (and Sunday morning in most states except WA) will be another opportunity for JOTA stations to work the special callsign.

Also note that another special callsign will be on air – VK100GG, celebrating a century of the Girl Guide movement. I understand that the callsign will only be in use for a short period, so I expect that many will be seeking contacts so that they can claim a rare QSL card.

Last chance to work VK100WIA

The end of October marks the end of the operations using the special event callsign VK100WIA. It also marks the end of the period for working that callsign and any WIA members if you hope to qualify for the WIA Centenary Award. The award applications must be submitted by the end of January 2011, but eligible contacts must have been made in the period 1 May to 31 October 2010, so you had best make that little extra effort now!

Make your plans for the WIA National Field Day

Do not forget that in addition to JOTA, there is another opportunity for you and/or your club to promote amateur radio to the broader community this month – the WIA National Field Day, with its theme “Tune-in to the world: Amateur radio gets people talking”.

Full details were in *AR* last month, and this month our cover story highlights the event. Plan out what you can do. Consider purchasing some of the clothing available with the event logo – but be quick if you want the clothing for 23 October, as there is a two week delivery. If you decide to set up a station in a public place, consider having the promotional banner printed in colour. There are plenty of resources available, as outlined in the article and available for download from the WIA website.

Ballarat Hamvention

On the day after the WIA National Field Day, Sunday 24 October, the Ballarat Amateur Radio Group will be holding its annual Hamvention. This event draws visitors from far and wide, including most of western Victoria, Melbourne and suburbs and even South Australia. Due to its wide catchment area, it is an event that is worth attending, if only for the social aspects – it is a great place to catch up with friends that you have not seen for some time. I know that I am making plans to make the long trek from Churchill for this reason. Of course, you may also find something attractive for sale, or even win a prize in the raffle. Either outcome would be a huge bonus, really making the long trip a complete success.

Moving finally complete

Yes, I have finally completed moving everything from the old location. I need to start sorting the mess at the new location. Due to time pressures during the move, boxes were simply placed in a convenient spot on arrival. Now the big task is to make decisions about assembling a new shack, planning which antennas to erect in what order, refurbishing the Nally tower support pole, obtaining a building permit for the Nally and so on. It will eventually happen, but I am taking a considered and staged approach.

Cheers, Peter VK3PF

Amateur radio is worldwide— Australian amateurs need a voice in world forums

WIA comment



Michael Owen
VK3KI

Where it all starts

At our recent face to face meeting, the directors discussed a new brochure to promote membership of the WIA.

The brochure listed all the obvious things, like this magazine Amateur Radio, QSLs, contests, and so on.

But we were also talking about the representative and advocacy role of the WIA.

We were talking about what reference should be made to the fact that the WIA participates in the IARU process and participates nationally in Australia in preparatory meetings for a WRC and may nominate a delegate on the Australian delegation for an ITU WRC.

I have always been very anxious to ensure that the WIA's role nationally and internationally and through the IARU to represent the amateur service at the ITU is highlighted.

At times, it has been suggested that such topics are all too complicated, and it really does not interest many people.

I know that one can very easily make it all very complicated, simply by trying to describe the process and procedure, and trying to describe it all in too much detail. I know because I have been guilty of doing exactly that.

But then one of the WIA directors pointed out why the ITU was so important.

Actually, it is a very simple proposition. It was also saying the obvious.

He suggested that in a reference to the ITU, where it said that it determines global radio regulations we should add the statement "and consequent Australian allocations for the amateurs."

Simply, it will not happen, whether it is good or bad, unless it happens first at the ITU.

So why do we make it so complicated?

I think it is because we are always trying to get across the message that the representation of the amateur

services at this level is not just like dealing with ACMA. It is not just writing a careful letter, perhaps a phone call or two, even a meeting.

It is a whole process, over four years, culminating in a four week meeting in Geneva.

And it is made more obscure by a never ending use of abbreviations and acronyms, for example ITU, APT, CPM, ITU-R, RTO, SG, WG, WP, APG and of course WRC. Indeed, the IARU Administrative Council document, the Plan for the Development of Support for Amateur Radio Frequency Allocations 2007 – 2012, an internal document, has a full page and a half of abbreviations and acronyms.

The process starts at the national level, with the formulation of the Australian position.

Now that process includes the regional telecommunications organisations (the RTOs). In our case, the preparatory meetings (APG) of our regional organisation, the Asia-Pacific Telecommunity (the APT).

There has already been one APT meeting this year for WRC-12, in March this year in Bangkok, and there will be another this year, in December in Hong Kong. IARU Region 3 attended the Bangkok meeting and will attend the Hong Kong meeting.

In the other two ITU Regions, the IARU regional organisations represent the amateur service at the RTOs in their Region.

The IARU is a Sector Member of the Radiocommunications Sector and participates in the Study Groups and attends the WRC as an Observer.

The IARU attends many ITU meetings, some not directly related to WRC-12.

However, in the current year, 2010, the IARU has or will attend some eight or nine WP (Working Party) or SG (Study Group) meetings in Geneva, all directly related to WRC-12.

It is this now never ending series of meetings that represents the focus of the protection and advancement of the interests of amateurs that face national societies like the WIA.

Immediately a WRC ends, a CPM

(Conference Preparatory Meeting) of the ITU-R (Radiocommunications Sector) is formed for the next WRC. Its task is to take the input from the various groups, summarise the technical and operational studies and other relevant material and to formulate the possible methods for satisfying each agenda item. The methods may vary from doing nothing to a number of different solutions.

All of this requires the commitment of people having particular skills, and experience. It involves funding travel and accommodation expenses, usually in very expensive cities.

So, if we are promoting the membership of the WIA why shouldn't we explain all of this?

We should, to those who are interested.

But that will not be everyone.

But every amateur should understand the very obvious.

What ultimately happens at the ITU, if it relates to a frequency band used by the amateur services or the regulation of the amateur services, will affect amateurs in Australia.

That is why the WIA asks for the support of every amateur, because what the WIA does affects every amateur. And the more amateurs who are members, the greater the credibility of the advocate.

But trying to say more than the simple, obvious proposition is, for some people, a step too far.

But be assured, behind that very simple statement is a process that is long, slow and tedious, all in a complicated structure, but is absolutely critical.

Phil Wait Appointed WIA Vice-President

The WIA Board met at the WIA's Bayswater, Victoria, offices on the weekend of 4/5 September 2010.

Vice President Ewan Mcleod VK4ERM requested to be relieved of his duties as Vice-President because of the pressure of other commitments.

The Board accepted Ewan's resignation with regret, thanking him for his contribution. The directors were pleased he was able to continue as a director.

The Board appointed Phil Wait VK2ASD as Vice-President.

Phil, a director since the restructure of the WIA in May 2004, is well known as the joint author of the Foundation Licence Manual and for his valuable work for the WIA, particularly in relation to BPL and standards.

Darwin Venue for 2011 WIA AGM Weekend

At its recent meeting over 4/5 September 2010, the WIA Board considered the date and venue for the next AGM weekend.

Suggestions for a venue had been invited and a number of State Advisory Committees consulted.

From comments at different times, particularly from the Canberra Centenary event, it is obvious many people want the location to be interesting in itself, and not a capital city.

Many members had requested early advice as to date and venue, so that they can plan a break around the WIA weekend.

The Board took into account the requirement to give notice of the AGM in *Amateur Radio* magazine after the completion of the audit, as well as the dates of other activities, such as the Dayton Hamvention.

The weekend chosen was the 27-29 May 2011 and the venue Darwin.

The directors were much influenced by the proposal submitted by Peter Blackadder VK8HPB on behalf of the Darwin Amateur Radio Club. The club made its name in Region 3 as a result of the very well remembered IARU Region 3 Conference held in Darwin in 2000 and the legendary hospitality of the club and the Darwin amateurs.

Further details will be released as soon as possible.

To give the WIA an idea of the interest in this very different venue, if you are thinking of coming, please let the WIA Secretary Geoff Atkinson know, without any commitment, at secretary@wia.org.au

Pierce Healy VK2APQ celebrates his 99th birthday

The WIA extended its congratulations to Pierce Healy VK2APQ on his 99th birthday on 13 August 2010.

Pierce gained his amateur licence at the beginning of World War 2 but could not get on air at that time. In the 1950s he was a member of NSW Division Council and later President. Whilst President, Pierce prepared and read the VK2WI morning bulletin. He served many years as VK2 Federal Councillor. Pierce was particularly well known for his amateur radio notes that were published in Radio and Hobbies, the predecessor of Electronics Australia.

Pierce is a Life Member of the WIA and ARNSW. He is still a regular voice on the VK2WI Sunday callback.

A milestone for the WIA Centenary Award

Claims continue to arrive steadily for this limited edition operating award celebrating the Centenary of Organised Amateur Radio in Australia with more than 160 now issued.

The first from Hawaii is also the 100th award certificate, and it goes to Dan Greeson KH6P.

The first radio club to get the award is the Moorabbin and District Radio Club VK3APC.

Also receiving his award certificate is Franck Alcidi VK8FNCY of Palmerston in the Northern Territory. As a new radio amateur in May, Franck made his very first ever contact on air with VK100WIA. He joins ten other Foundation licensees qualifying for the WIA Centenary Award and their first amateur radio operating award.

Some of the award claims have included personal comments, many simply to congratulate the WIA on its Centenary and making the award available. Winston Henry VK7WH said, "I have held a licence since 1958

but have been QRT the past 30 years. The Centenary of the WIA was the catalyst to get back on the air and rejoin the WIA."

The special callsign VK100WIA will be on air until the end of October. Claims close on 30 January 2011.

Christchurch New Zealand Earthquake

A massive recovery operation followed after the 7.1 magnitude earthquake that hit Christchurch at 4.36 am on Saturday 4 September.

The Amateur Radio Emergency Communications (AREC) members quickly established an on air net and observed the operational status of the repeater systems. Apart from at least one switching to emergency power, all was fine.

AREC Assistant National Director Geoff Chapman ZL3PX said designated emergency frequencies on the 80 m, 60 m and 40 m bands, plus 2 m band simplex were activated. The Christchurch AREC Communications Bus ZK9EAC and Comms Vehicle ZK9EAD operated on all those frequencies. They were deployed with the military for three days in the initial recovery phase of the disaster. AREC also provided communications for the volunteer clean-up teams.

International Space Station Contact with South Hobart Primary School

On Friday 27 August 2010, students from the South Hobart Primary School asked questions of US Astronaut Colonel Doug Wheelock as he flew over the Goddard Space Flight Centre in Maryland, USA. The contact was made via the telebridge network to the ISS (NA1SS) under the guidance of Coordinator Tony Hutchison VK5ZAI (Australian ARISS Coordinator) in Kingston SE South Australia.

The amateur radio ground station was K6DUE at Goddard Space Flight Centre in Maryland USA run by Dave Taylor W8AAS with Mark Steiner K3MS and Burnie Hahn N6ZOA.

EchoLink streaming was by Graham Lawton G7EVY in Lancashire UK.

The operator at the school was Justin Giles-Clark VK7TW. ■

A Review of CDs published by the WIA

The WIA has three CDs available featuring the history of the development of amateur radio in Australia, all worthy of a place in any amateur's shack!

The Sounds of Amateur Radio ~ Volume 1

In 1985, a group of amateurs produced a cassette tape featuring recordings of amateur radio activities collected over the years. The 75th Anniversary was the catalyst and material was sourced from acetate discs, plain aluminium discs, Recordon paper backed magnetic discs and the then common, ¼ inch magnetic tapes.

The resultant cassette recording *The Sounds of Amateur Radio~ Volume 1* featured the voices of many early, amateur experimenters talking of their experiences from pre World War 1, through the early days of short wave communications and included actual off-air recordings of amateurs operating on the broadcast band. Australia was one of the few countries which permitted selected amateur experimenters to operate on the broadcast band when the commercial stations had closed down at night. These unique recordings provide us with a glimpse of a period long past.

The tape included Alan Fairhall VK2KB, the then Minister for Defence, speaking of the worth of amateur radio to the Australian Nation in 1967 and also refers to emergency communications associated with the Ash Wednesday bushfires in 1983.

The Sounds of Amateur Radio ~ Volume 1 has now been transferred to CD after re-mastering. It has an additional section by two original producers, VK3AML and VK3RV, in which they talk of the archival activities and challenges surrounding the gathering of the original material from unusual sources – a similar exercise which many have to face in recovering important data from early media. Where are the working machines which can handle this?

This is a fascinating CD witnessed by the use of sections of it by the ABC, Radio Australia, Commercial and Community radio broadcasts over the years since it was originally produced,

but largely forgotten for the past 15 years or so.

The Sounds of Amateur Radio ~ Volume 2

Volume 2 is a 100th Anniversary project and involved much 'detective work' to identify many un-labelled tapes held by the Institute. Like Volume 1, it starts with the earliest days of 'wireless' communications in this country.

Featured speakers include: Bill Jenvey OA3AY talking about his father Walter Jenvey's experiments at the turn of last century; and Walter Hannam (later VK2AXH), the first secretary of the Institute of Wireless Telegraphy (NSW, 1910), explaining his early involvement with the Institute and the lead up to his trip to the Antarctic with Mawson's 1911 Expedition.

Other speakers include Dr. Alan Butement (G)2TM, VK3AD, (one-time Chief Scientist for the Commonwealth of Australia) who talks of early experiences in England working New Zealand and his involvement in the development of early radar and its first demonstration to Winston Churchill.

'Snow' Campbell VK3MR was a WWII prisoner. He talks of his experiences in the POW camps and the part that radio played in them. A fascinating and at times humorous account! Part of the 1956 Yasme DXpedition is related by Danny Weil, particularly his near disaster off Port Moresby. Yasme was the name of the boat which Danny sailed the world and after which the Yasme Foundation is named. Early television experiments are related by Alan Butement (who talks about J.L.Baird), Len Moncur and Geoff Hughes. Australis-Oscar 5 was an amateur satellite designed in Australia and launched from America in 1970. The period immediately following the launch was covered by a broadcast over AX3WI which involved a number of well known amateurs including Dr. Deane Blackman VK3TX who later appeared on television programmes talking about amateur radio and space age communications.

This CD contains much more: including Sir Richard Williams (of RAAF and Civil Aviation fame) talking

about his early involvement with amateurs at the time of the First World War and in 1929, with the WIA initiated RAAF Wireless Reserve. WIA Federal President, Maxwell Hull VK3ZS explains how the use of the spectrum changed dramatically after WWII, resulting in pressures on our bands and the need for amateur radio to be represented at the 1959 Geneva Conference at which John Moyle, editor of Radio and Hobbies magazine, and a WIA member, became our first international representative. There is an amusing story about wireless being used to stimulate rainfall. Radio can be used for almost anything! Can't it?

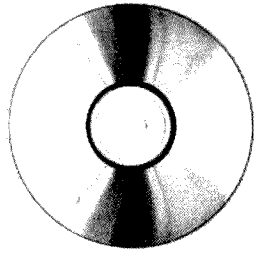
Both CDs are narrated by Warren Moulton VK3LX who worked in radio broadcasting including Radio Australia for many years.

Amateur Radio magazines, 1933 to 1939

Amateur Radio magazine was first published in 1933 at a time when amateurs were still very much 'back-yard experimenters'. Two years ago, Will McGhie VK6UU scanned all AR issues from October 1933 to December 1939. The magazine was then half the size of today's and is now available as PDF files on CD. Will has done an excellent job of scanning the magazines and has ensured that high quality images of the early issues have been preserved for posterity. Let's hope that someone else will pick up from where Will left off and volunteer to scan later issues of our magazine.

These CDs are available from the National Office at a member's price of \$20 each (plus postage). They would be an excellent Christmas gift for any amateur with an interest in the history of amateur radio or the history of radio development in Australia.

Further information is available on the WIA website: www.wia.org.au Click onto the Members Area tab on the front page and then go to WIA Bookshop and select WIA Publications.



Saucepan lids, woks and dishes

(What's Cooking on 47 GHz?)

Dan Joyce VK2GG

Every microwave enthusiast has heard the ribbing before: "What are you going to cook on that wok?" Or, "Does your wife know you have her saucepan lid?"

Well, we really DO have a sort-of-parabolic saucepan lid as a dish for 47 GHz. It started out as a pan which Les VK2APE had in his bits-and-pieces. I then began modding it to take the penny feed, but botched it a little. Pete, VK2YGM then took it over, and managed to finish the mounting of the feed at the optical focal length; it actually looks pretty good, as you will see in the photos.

It performs every bit as well as the very snazzy looking Procom dish, and together with some quite exclusive gear from Kuhne in Germany, and a bit of planning, and some good luck with the weather, we achieved a national record for 47 GHz.

Now 47 GHz has some unique properties; it is quite severely affected by path losses due to the atmosphere. Forget rain, as it is out of the question! High humidity, or even high oxygen concentrations attenuate the signal.

The International Microwave Handbook suggests that atmospheric path losses might be in the order of 180 dB for a 60 km path. Fortunately for us, the Kuhne receivers are quite sensitive, and the dish gain is in the region of 36 dB; thus our modest 0.15 mW seems to go the distance. Just how much distance?

We felt that our 58 km on a late winter's day of moderate temperature and low humidity was probably pushing close to the edge of the envelope! Next time we may select a cooler day closer to the middle of winter to achieve 60 – 80 km; we will see!

Our equipment consisted of a pair of Kuhne Transverters with 0.15 mW output, Kuhne local oscillators



Photo 1: The dish antennas used to make the contacts on 47 GHz.



Photo 2: Dan VK2GG at Gan Gan.

and approximately 36 dB dishes. IF was provided by a Yaesu FT-817 at each end. The path was an elevated one, from Mt Sugarloaf with which local Newcastle amateurs are quite familiar, as it hosts six repeaters on 2 m and 70 cm, to Gan Gan Lookout in Port Stephens.

Both sites have multiple commercial installations, and may be regarded as "RF sewers", so that 2 m liaison was difficult. The path length was 58 km line-of-sight, with elevation at 345 m and 154 m.

The contact was difficult, because direct visibility was impossible due to haze. After lining up the dishes using compass bearings we finally began hearing each other, thanks to our "Freakin' Beacons". Beamwidth is only about 1.5 degrees!

Although locked to 10 MHz Rubidium oscillator sources, there was very annoying transceiver drift on CW and SSB, obviously due to the FT-817s drifting. There was also rapid fading in the path propagation!

We wished we had picked a colder day; the temperature was 24 degrees C with 51% relative humidity. Pete has a "sling psychrometer" for measuring humidity, (which Jack VK2TRF was supposed to put on video!)

Successful two way SSB was achieved, with some improvement in conditions after about 40 minutes. Later, we found that the RH at Williamtown had fallen from 50% at midday to about 40% at 3pm.

We had been lucky! Come on guys! Get some 47 GHz gear working: it is lonely up here!

Thanks to Peter VK2YGM, Irene VK2FIRH, Jack VK2TRF, Les VK2APE and Heather.

References:

Freakin Beacon: <http://www.expandedspectrumsystems.com/prod5.html>

Kuhne: www.kuhne-electronic.de/en

International Microwave Handbook. Barker A, G8ATD (Ed) RSGB & ARRL, London 2002.

Procom: http://www.procom.dk/eng/Page_menu/Products/Microwave_Antennas/47_GHz

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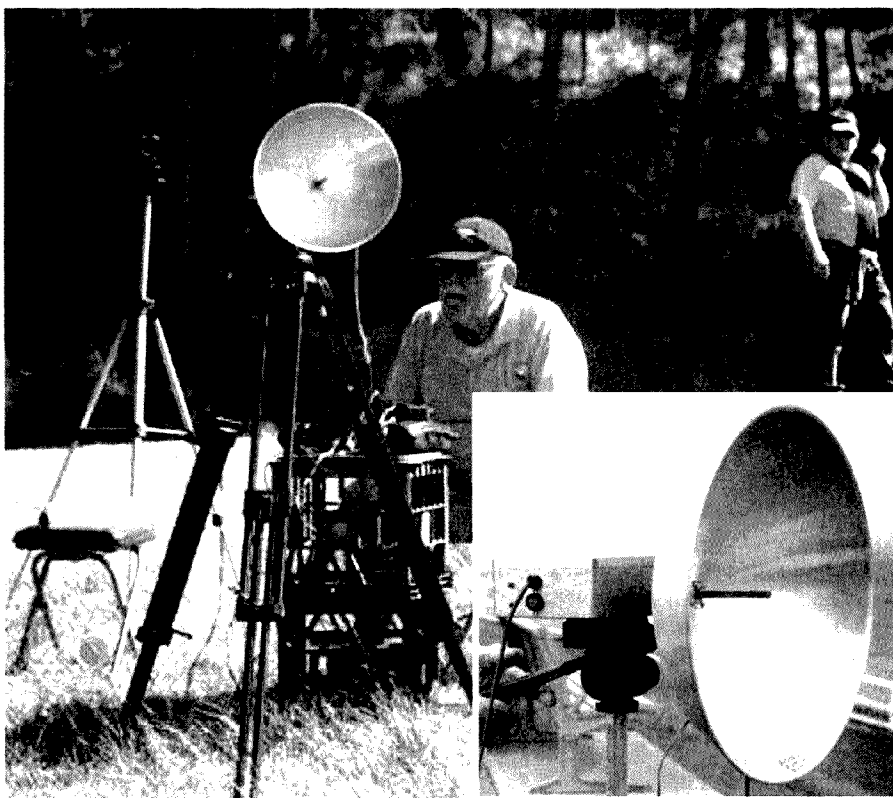


Photo 3: Peter VK2YGM with the wok lid at Mt Sugarloaf. Inset: THE LID



Photo 4: The view from Gan Gan along the path.

The WIA Online Bookshop
 We have just the reference you need
<http://www.wia.org.au/>
 Look in the Members Area

Cover story: Tune-in to the world

Our inaugural national day of amateur radio promotion

Jim Linton VK3PC

Tune-in To The World - amateur radio gets people talking;

The WIA National Field Day on Saturday 23 October is a bold new outreach initiative to show the public the educational, recreational and social aspects of an activity now enjoyed by three million people worldwide.

This comes after some 12 months of discussion and planning involving a handful of radio amateurs, all deeply dedicated and already active in growing amateur radio. Check out the event rules and scoring available on the WIA website and you will see the amount of thought that has been put into it.

Amateur radio has undoubtedly kept up with technology, all the while preserving its heritage, traditions and culture. As few other activities can, amateur radio truly offers a great opportunity for anyone wanting to learn and to do new things for pure personal achievement.

In Australia, at least until this centenary year, few people were conscious of amateur radio. Even now, most do not know that it exists and some have an outdated view of it. Others believe it was killed by the internet, the mobile phone, and indeed the convergence of these two which has put amazing communication capabilities within easy reach.

The licence restructure in 2005 did two main things. It reviewed the level of theoretical knowledge required for the then Unrestricted and Limited licences (now Advanced), and also middle level Novice and Novice-Limited licences (now the Standard Licence). It also reduced the number of licence types following the end of the mandatory Morse code tests.

At the same time, the regulatory control for amateur stations in Australia was streamlined and the information that had to be studied to get a licence further reduced, in line with international practice.

The Foundation licence became the new entry point for those wanting to take up amateur radio. The primary aim behind these somewhat overdue

changes was to make amateur radio much more attractive and more accessible to a wider range of people.

These changes have achieved their intent reasonably well in the past five years but, without a concerted public relations effort involving many radio amateurs, we are only just scratching the surface of potential recruitment into the hobby.

Runs already on the board for Publicity

The WIA Centenary celebration, especially the roster of clubs using the special callsign VK100WIA, has shown how adopting a professional marketing approach can result in good media exposure and other publicity for amateur radio.

Participating clubs regularly report that they have attracted new candidates to their Foundation Licence training sessions through this focussed publicity.

Now there is an opportunity to build on that with radio clubs, or even a group of say three like-minded radio amateurs mounting a portable station and display in a high pedestrian traffic area.

In the past such activities were ad hoc, often lacking in structure, quality posters and hand-out information. The WIA will make available the WIA's Centenary poster, Calling CQ posters and Calling CQ brochures to clubs and groups registered for the National Field Day. If you and/or your club intend to participate in the Field Day, do not leave it to the last minute!

The centre-piece of the display material is a simple, distinctive logo which gives a powerful 'brand recognition' message. The logo appears throughout professionally



designed 'plug and print' artwork for a banner and A-frame. The files for these 'point-of-sale' displays can be downloaded onto a USB stick from the WIA website and taken to Officeworks where the display can be created. (see box opposite)

A clothing range branded with the logo and catch phrase is also



obtainable. There are hoodies, T-shirts and Polos, all in blue, available in sizes Small, Medium, Large, XL, 2XL and 3XL. These may be purchased through the WIA website. Allow two weeks for delivery.

Also available is a sample media release that can be easily adapted by any radio club or group to publicise their participation in *Tune-in to the world - amateur radio gets people talking*, the WIA National Field Day.

Challenges to be met

On Saturday 23 October, radio amateurs will set up in public places, parks, shopping centres, halls, markets or festivals. Most will need to seek permission to do so and, when required, have appropriate public liability insurance.

The display will demonstrate the usefulness of amateur radio and its preparedness for its role in emergencies. Displays may also incorporate renewable energy such as solar or wind power generation.

Make the portable station look neat and tidy, pay attention to cabling, guys, and any trip or other perceived hazards. Position the equipment so that it is easily seen and visitors can instantly see what is happening.

This is a great opportunity to showcase our hobby and its capabilities to the public. Encourage visitors at every opportunity to give it a 'hands-on-mike' try.

Critical to over-all success is to have at least one radio amateur on site to greet and talk to visitors, engaging them in what it's all about, rather than allowing them to just look and walk off.

Certainly have fun and enjoy your hobby, but do remember that on this occasion it is all about promoting amateur radio. Think of the information needs of visitors to the display, speak with them in plain language, rather than jargon and acronyms.

Ask questions, and from their replies, build on their existing interests or activities, so reinforcing that amateur radio is something they could easily enjoy doing.

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Three suggested display options

Printer-ready artwork can be downloaded from the WIA website, copy it to a memory stick and take it to your local *Officeworks* to economically print a banner, or other signage.

There are three PDF files for each of three different types of sign styles.

Option 1

This is a highly visible, self-standing, portrait aspect display banner called an "Xbanner".

Pictured right, it is 1800 mm high and 800 mm wide, the price from *Officeworks* is \$97, which includes the cost of the banner, the stand and the printing.

You will need the file called X-Banner-artwork.pdf

Option 2

A slightly more expensive self-standing, A-frame display board (below right) is much better suited for outdoor use or in high wind or high traffic areas. It is double-sided and is available from *Officeworks* for \$194 (both the product and printing cost).

You will need to download the file called A-Frame-artwork.pdf

Option 3

The least costly display is a A0 or A1 poster printed by *Officeworks* and suitable for pinning up on a wall or similar.

The A1 poster (594x841 mm) on plain 160gsm paper is \$19 or a better quality, more durable 200gsm gloss paper is \$26.

For a larger A0 poster (841x1189 mm), *Officeworks* print on plain paper for \$28 or on gloss paper for \$36.

If you choose either the A0 or A1 posters, please download the file called Poster-artwork.pdf



Foundation Corner 12: Tackling the next level

Ted Thrift VK2ARA

Preparing for an exam is always a bit stressful and success requires some effective study and the desire to pass. In your upgrade to Standard or Advanced, in Theory or Regulations, you will have to demonstrate that you have really learned some of what it is all about. If you are like many others, it may be many years since you last sat a serious exam, so you will need to learn how it is done, all over again.

At the outset I would like to put down two misunderstandings. The first is: "All I have to do is pass the exam, I will never need to know this again." Oh so wrong. Even if you are only going to be a black box operator, you will need this when you least expect it, and have nobody around to ask.

The second is: "I will just study the sample questions. I can remember enough answers to get me through." Wrong again! You will be extremely lucky if you do pass. The only thing that you can be sure of is that the questions will come from the syllabus. There is no assurance that you will see any of the sample questions in your exam paper.

Now that you know that you are going to have to 'work' to pass your upgrade, I will try to make it much easier.

A lot of people only think of preparing

for an examination, as the study that you do to learn the subject matter. They could not be more wrong. Preparing for an exam involves both physical and mental preparation. It is a bit like professional sport. The team coach may be able to train his team to play well together but it is not until the mental preparation and tactics come together that it becomes a winning team. Let us have a look.

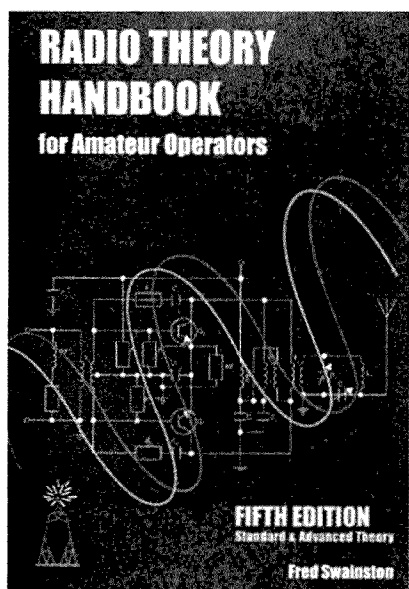
In many years of instructing various subjects, I have observed one consistent fact in examinations and how students pass or fail. I believe that you often get the answer to a question wrong, not because you do not know the answer; but you choose the wrong answer because you failed to understand what the question is asking. In my last two years of amateur exam debriefs, more than 80% of wrong answers were because of this failure to understand the question.

There is no single method that can be used effectively to deal with all types of questions in these multi choice examination papers. It is the "type" of question that determines "how" the question should be answered and it is never as simple as remembering which answer goes with which question. When I refer to the "type" of question,

I am pointing to "what" it is that you are required to do in order to provide an answer that will resolve what is being asked. There are many "whats" but questions for amateur radio can usually be broken down into one of the following categories:

- Calculate a direct answer.
- Do other calculations, so that you can calculate the final answer.
- To recall facts, values, definitions and terminology.
- To recall and apply proportional unit values, mega, kilo, micro, nano, etc.
- To recall operation of basic circuit units.
- To recall theory principles of, say, propagation or antennas.
- To complete a statement that something is, or does.
- To complete a statement that something is not, or does not.

With this information stored away, you are ready for assessment day. My suggestions do not offer any guarantee that you will pass but I do guarantee that if you take this approach, you will have a much better chance of passing. Preparation for an exam does not end the week or day before the exam. Your



Radio Theory Handbook for Radio Amateurs

The 5th Edition of this valuable reference for radio amateurs is now available. This reference has been updated and includes a comprehensive cross reference to the ACMA Standard and Advanced syllabus.

The 5th edition also has a CD tutorial with over 100 theory questions, referenced to the 5th edition to where the topic is covered. A commentary on the CD relating to each question is provided and will greatly assist those studying for the Standard or Advanced examination.

The book, including the theory tutorial CD, is available from:
Silverdale Publications, 248 Johnston Street, Abbotsford
Phone (03) 59629421 - Fax (03) 59629180 - email silverdale@silvertrain.com.au

The book, including the CD, is also available from:
WIA Bookshop (Member discount applies) - Phone (03) 97290400

A similar tutorial CD is available for preparing candidates for the regulations examination. This includes questions and references to the regulations origin documents for each question. The regulations CD is \$20.00 plus postage.

preparation only ends when you arrive on exam day, assemble your resources and are ready to go.

When you open your exam pack, you place your calculator on top of your formula sheet, ready to be used!

Think briefly about this. I have an allotted amount of time. It seems like a lot but this much is allotted because it takes that long to:

Read the question.

Digest it.

Decide on how to find the answer.

Prove (calculate) or choose an answer.

Move on to the next and remember that each question may need a new method.

When given the OK to start you remind yourself of this:

For every question I must ask myself; what is the question?

How do I go about getting the answer?

Now go and get the answer.

The type of question determines "how" the question should be answered.

There are many methods that will work to some extent but in most cases, taking the time to identify the type of question and knowing "how" to answer, makes a huge difference.

The easiest of all is the simple question where you are given two or more facts, and are required to calculate an answer. All you need to do is identify the answer that is required and do the calculation. In the more complex calculations, the formula sheet provides the formula.

If you are faced with a question about the operation or function or stage in a transmitter or receiver, if you clearly understand the question, you may already have the answer. Here is a method that works 99% of the time. (Always allow for the X factor.)

Take for example a question about a balanced modulator and an input or output. One way to find the answer is to gather what you know about a balanced modulator and see if the answer is there.

Example: 'A balanced modulator has two inputs. RF carrier signal from the carrier oscillator, which may also be the BFO in the receiver, and the audio signal from the microphone amplifier. The main function of the balanced modulator is to suppress the carrier

and produce two sidebands. The output of the balanced modulator is upper and lower sideband plus very low level carrier.' In an examination it would be much quicker to draw a block and jot down key words for input, output, and so on.

You will find at times that initially the question does not appear to have any logic. If this happens it is almost certain that you have not read the question correctly. These are usually the "is" or "is not" type of questions. With this type of question, I have found that the most effective method is to read the question and each of the answers, in turn. Sometimes it is quite clear which answers do not fit but usually one, plus a fact or two that you can recall about the subject, will stand out as correct.

I do not intend to describe every one of the question types. With a bit of practice this will become clear to you. You might even be able to skim through and tag questions with the method that you will use.

When about half time or half way through, pen down for a moment and take stock. Unwind a little and see how you are going. Reassure yourself that half way at half time with only a couple of questions tucked away, is not bad.

Start again

When you have finished the last question, including those two that you tucked away, check your answers, and ask yourself, "is this my best answer?" If it is, leave it alone. If you have doubts and feel stumped, try another method for that question, or ask is there any way that I can work this out. Do not leave any question unanswered. Even if you have no idea, you have a 25% chance of being correct.

Then comes the assessment, and I do hope you have done well. If you have passed easily, with only a few wrong, you are still entitled to ask your assessor to explain the correct answer as on the template. You may see that question again in your next upgrade. If you have not made it to the magic 70%, please listen carefully to the assessor's explanation. If you still do not understand ask for his advice on where to look it up.

Good luck with your efforts. Listen carefully to our amateur shorthand and ask lots of questions. If you are not getting answers that you understand you can even drop me an email at vk2ara@wia.org.au

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The Amateur Wireless Society of Victoria

An 'archeological dig' into amateur radio in Victoria

Deane Blackman VK3TX

My uncle, H. H. Blackman (Bert), born in 1887, was active as an amateur from the earliest days of wireless in Australia. I recall my father, 15 years his junior, describing how he as a boy watched his brother erect a large mast at the family house in Osborne Avenue, East Malvern, then the outskirts of Melbourne, to be used with his spark transmitter.

During the Great War he served as a signaller, training with the Rollestone Company in Wiltshire, England in the spring of 1917, and saw service in France. After the war, while continuing for a time with amateur activity (using eventually, by parental hearsay, the call sign VK3PR), he worked for the (then) General Post Office (GPO) in telephones, chiefly at the Windsor exchange, and was there when the manual exchange was converted to the new "automatic" system; I think Windsor exchange was the first in Melbourne to be so equipped. For my parents, after they married in 1926, he made a 3-valve battery-powered receiver. It was housed in a beautiful mahogany "coffin" case with embossed panels, and I suspect was for listening to the cricket tests in England. With his wife, he lived out his life in Closter Avenue, Ashburton.

When he died, around 1970, I went over the residue of his workshop. It had a lathe and other machine tools, all dated and sadly lacking use. There remained only fragments of his radio equipment. I recovered the brass bar and pivot of a Morse key which he had made for himself; I added a knob, base, contacts and terminals to make a key which I still use.

The shack was almost knee-deep in paper; for years he had just thrown magazines and other stuff in as he finished with it. I decided to go through this. It was like an archaeological dig: the deeper I went the older the material. And then I struck gold in the form of a small book, published by the "Wireless Institute of Victoria" in 1914, entitled "Wireless in Australia". It is a soft-covered book of about 30 pages and measures 120 mm

× 160 mm; it is what we now know as a call-book. Its preface claims it to be the first of its kind for Australia. It is probably the first in the world.

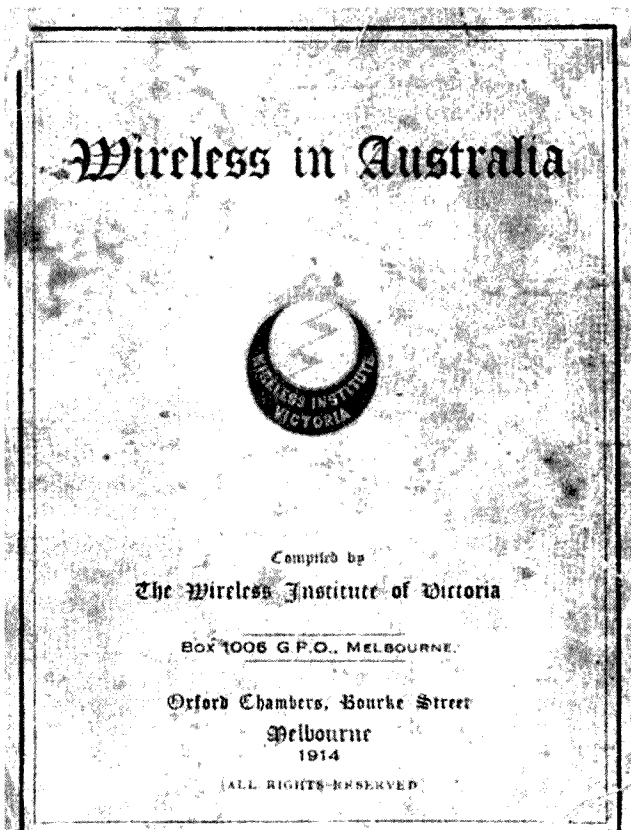
"Wireless in Australia" lists about 25 'commercial' Land Stations, in fact the coast stations VIM, VIS and so on of fond memory. And it lists about 300 'commercial' Ship Stations; these are all three-letter calls, ante-dating the more familiar four-letter ones long since used for ships. This list includes: DSA (Scharnhorst) and DGU (Gneisenau), German naval cruisers about to be sunk (December 1914) by the British at the Battle of the Falkland Islands; and VKD (HMAS Sydney), soon to achieve fame by sinking the German cruiser Emden after an alert radio operator at the Cocos Islands land station penetrated her disguise and alerted the Navy.

There are about 400 experimenter stations (as amateur stations were then called) listed. As a portent of the amateur future, the three-letter calls in New South Wales run from XAA to XIZ, with four-letter calls beginning XA, and in Victoria XJA to XPZ with four-letter XJ calls. Queenslanders were XQ, South Australians XV, Western Australians XY and Tasmanians XZ; there are only about 50 of these latter calls. The 'X' is for 'experimenter'.

In Victoria, as well as XOE (HH Blackman) I noticed these: XPJ (Wireless Institute of Victoria); XJDY (LA Adamson) who was the formidable headmaster of Wesley College at this time; XJAD (CJ Brown) who gives his address as Melbourne Grammar

School, was a science master who taught there from 1904 until 1948. They were not all urbanites: XJED (H MacKinolty) was at Korumburra – before soldier settlement put a sprinkling of farmers on the Strezleckis it must have been isolated down there; and XJDV (TA Crerar) at Hexham – there is not a lot there even now.

In NSW, XADK was the Wireless Institute of New South Wales, and enterprising was XACI, Rev Fr. O'Reilly in Bathurst. One name I do know, XIQ (EG Lampard): his son DG Lampard was the foundation professor in Electrical Engineering at Monash University, and has named after him the capacitor which he discovered which can be used as a calibration standard. A helpful couple of pages list not only the International Morse Code and quite a few prosigns, but a page of familiar Q-codes, only recently (1912) approved by the



(then) International Radiotelegraph Convention, (now) ITU.

To offset the costs, Marconi-Telefunken (an unlikely collaboration) were advertising courses for certification, Warburton-Franki were offering a range of radio equipment, and Lawrence and Hanson were offering accumulators which were 'practically indestructable' as well as other electrical hardware. Familiar names all. The Victorians had a proposal form for membership included, and the Wireless Institute of New South Wales invited you to apply for one at Box 2, King Street Post Office, Sydney. A delicious find.

But there was more to come. At the next layer, at ground level, was a moist, water-stained exercise book, which was the hand-written minutes of meetings of the Amateur Wireless Society of Victoria. I had struck oil!

The record begins with the inaugural meeting, which followed a newspaper notice (a copy of which was pasted into the minutes) headlined "Wireless Telegraphy Society", held at the Esperanto Hall (the Hall was at 157 Elizabeth Street, and "Esperanto" was one of a number of 'universal' languages being promoted around this time) on 30 November 1911.

The meeting agreed on a name for the society, and appointed officers and a committee of six. The annual subscription was set at five shillings.

They moved quickly. The committee met a week later and drafted the Rules and Regulations which were approved at a General Meeting a week after that. Six days later, on 19 December, the committee met to approve a 'crest' for the new society – a pair of headphones circling a spark gap – and a printer's block of it was ordered. There is a note of the first technical meeting on 1 February 1912, when there was a lecture on "Induction Coils", and a paper entitled "A train stopped by Wireless" was read. One cannot but be curious about the content of the latter.

The Society met monthly at a variety of venues, including the homes of members, but the base camp became "Oxford Chambers", 473 Bourke Street, where the Society had rooms. Initially on the second, then ultimately on the sixth floor where its station was established with facilities for assisting members with technical problems. Finances were tight, and attendance falling, until the December meeting when as "... the result of a broadcast"

about 100 folk turned up and heard a(nother) lecture on Induction Coils. They were, after all, the PA of the spark days. For the Melbourne of 1912 that was a lot of people.

In 1913 the committee met on 31 January and resolved to duplicate and sell a list of licensed amateurs drawn up by a Mr. Long. The proceeds to be used to acquire instruments for use by the members. The lists sold well at the next general meeting on 3 February.

The March lecture was from a GPO man on telegraphy; the April lecture was on "radium" (complete with a sample thereof!), but the business of the meeting was approving a deputation to wait upon the GPO, who were taking a heavy-handed approach to experimenters who 'clashed' with government stations. Given the difficulty of maintaining, let alone determining, frequency (they always spoke in terms of 'waves' in those days) this comes as no surprise. The deputation further complained that the government stations, when they became aware of a problem, in advising the offending amateur transmitted at speeds well in excess of the 12 wpm which is all that experimenters were required to master. It is interesting, in the minuted report on these discussions, that the deputation is described as representing "the institute".

And, indeed, at the meeting on 1 May 1913, the name of the organisation was changed to "Wireless Institute of Victoria". The minutes of this meeting refer to the "Wireless Institute of New South Wales" in relation to an upgraded list of amateurs (doubtless the forthcoming call book of 1914, mentioned above). The lecture was given by HW Jenvey, who is certainly the man for whom a cairn exists at Queenscliff as being responsible for the first ship-to-shore communication in Australia.

In July it was noted that all amateur operation in New Zealand had been stopped. The August meeting was held at the Engineering School, University of Melbourne, by favour of MW Kernot, the foundation professor of engineering at Melbourne University. The present sloping bridge across the Yarra at the eastern end of Victoria Street, Richmond, is his work, and he has lasting fame for pioneer work concerning wind loads on engineering structures, then very arcane but now a significant main-stream technical

area. Kernot gave the lecture this night on "Discharges in Air and Vacuum", complete with demonstrations. More ominously, it was noted that the GPO was contemplating withdrawing all experimenter licences on account of interference.

The October meeting, as well as hearing a lecture on "hot-wire ammeters" (doubtless early models of a device which measures average power by assessing the heat liberated by the passage of the fluctuating current), approved a new 'crest' described as: "... of distinctive appearance with a streak of lightning flashing through a cut-out section of the medal", and which would seem to be the progenitor of the present WIA emblem. By November, new arrangements with Oxford Chambers had been negotiated, including the erection of aerials (200 ft (61 m) of 14 gauge copper wire). The meeting approved subscription to the journal "Wireless World", a publication which was to enjoy a very long life.

The notice of meeting for 14 June 1914 advised that the call book, was now available at a cost of two shillings – 40% of the annual subscription. The last entry in the book is a copy of a notice of a forthcoming meeting for 9 March 1915 to be held at the "Oxford Chambers"; the lecture for the evening, to be given by one H Blackman, was on the subject of "Telephony" – advanced stuff for the time. Why he took the minute book home with him after his lecture, and why its return was never demanded by the Institute, will remain a mystery.

The original documents are now held by the Australian Academy of Science in Canberra, who supplied me and the Victorian Division (as it then was) with photocopies. More recently, I have scanned my copies digitally, and copies are held at the WIA office. The figure in this article is taken from those scans. There are about 100 pages in the minute book. It would be a useful, but a very significant task, to study the whole book and deliver a clean transcript. A machine readable copy of the call book is posted on the web site of the Radio Amateurs Old Timers Club (www.raotc.org.au); click on "Early Call Book".

This article is a revision of one which first appeared in Old Timers' News in 2006.

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Here & There – ‘Oscar’s Amateur Radio Adventure’

Rob Norman VK5SW

It was a moonlit night.

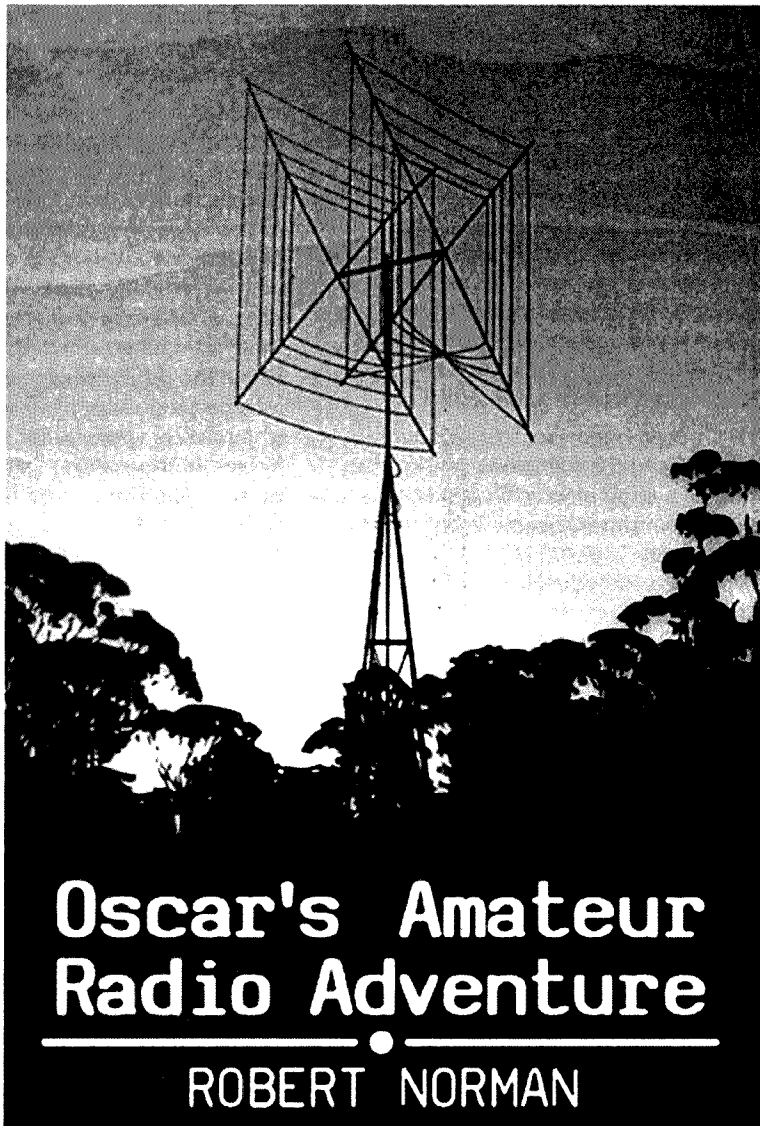
The air was still and quiet except for the sound of distant traffic while the backyard of the house was bathed in an eerie glow on that balmy summer's night. Not a mouse stirred. Not a tree leaf moved. The atmosphere was dead calm but there was indeed something happening here. In the corner of the yard and next to a tall tree there stood a small tin shed lit up by the glow of the moonlight. A dim light could be seen in the window.

In that shed, someone was speaking. Not to just anyone but to someone on the other side of the world. It was Oscar speaking into a microphone, talking to his friend in England. Oscar was 17 years old. He was an amateur radio operator and each Friday night using his radio, he talked to Peter who lived in the countryside on a small farm about a hundred kilometres from London. The weather there was the opposite to what it was like where Oscar lived in Adelaide, Australia. It was blowing a gale and cold as ice as Peter explained that winter had brought the snow which was lying on the ground and parts of the country were now under water. By contrast, the weather in Adelaide had been hot and dry with day time temperatures nearing 40 degrees Celsius. Global warming was a fact of life nowadays with extremes of weather now more prevalent than a few years before.

'It's freezing here. I'm just about sitting on top of the electric radiator as we speak,' Peter said, his voice travelling half way around the world to reach Oscar's ears, interrupted now and again by the crackle of static. 'It won't be long and I won't be able to get to work anymore because we'll be snowed in. I'll have to stay home with nothing to do but get on the radio, I can see that!' he chuckled. Any excuse to be on the radio was a good excuse to Peter.

He was a couple of years older than Oscar and lived with his parents who ran a herd of milking cows on their property. Peter worked in the nearby town as an apprentice electrician. 'The antenna's taking a battering in this wind, it's blowing a gale here. I just hope it doesn't break!' he said. It was about midday there while in the land down under, it was night time. Oscar was sitting in his small ham shack in the back yard of this parents' home with headphones on his ears listening intently to what Peter was saying. 'The weather conditions are just too rough to go anywhere today,' Peter said 'but I'd better get going Oscar, there are a few things I have to do here so won't keep it any longer. I'll see you next Friday, same time, same place. 73 for now.' Peter signed off and Oscar likewise.

Perspiration was beading on Oscar's forehead while the odd mosquito buzzed around the desk lamp. Even though it was night time the temperature was still in the high 20's.



The cover of 'Oscar's Amateur Radio Adventure', a short adventure book by Robert Norman VK5SW.

He took off the headphones, pressed the power switch on the radio, turned off the light and locked up his ham shack. Yawning, he slowly started to make his way back up the garden path towards the house at the front of the property.

Note

Details of my new book 'Oscar's Amateur Radio Adventure' can be found on my website www.vk5sw.com

The above short story, though, is not an excerpt from it. Rob Norman VK5SW.

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Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The August meeting was a discussion meeting. The club looked at itself and at the future of both the club and amateur radio and how our club can combine these two ideas. The discussion was led by John VK5BJE.

He led us through the SWOT process. We looked at our Strengths, our Weaknesses, the Opportunities facing us and the Threats to us and our hobby as we look into the future.

The whole evening was interesting and thought provoking. The committee will take the results of the discussion and hope to come up with some ways in which our club, the largest in South Australia, can advance into the future.

These ideas will then be presented to the members and their assistance in making them into practical propositions will be sought.

The rest of the evening was devoted to information about the forthcoming Technical Symposium, to be held on Sunday September 19th, and our annual Buy and Sell on Sunday 7 November.

The Symposium will be held at the Belair Community Hall and the Buy and Sell at the Goodwood Community Centre.

Please come along to both these activities, and remember that if you are in Adelaide on the third Thursday of the month, our regular meetings are held in the Belair Community Hall, commencing at 7.30 pm and all are welcome.

Christine VK5CTY.

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SilentKey

Alan Widdowson VK7CI

It is with regret that we let readers know of the passing of one of our early prominent VK7 amateurs Alan Widdowson VK7CI, who died in late August, he was 91. Charles VK7PP comments: "He was a thorough gentleman and ran the WICEN group some years back when I was involved."

Long time friend John VK7JK commented that Alan started life up in Westbury and followed his father as the local pharmacist. He moved south and was involved with the Kingston Pharmacy, from whence he retired. Alan then went on to become an accountant with the tunnel boring company at Kingston. He continued as a keen photographer and amateur radio operator.

Alan was also an RAAF Wireless Operator during WWII and rose to becoming a Wireless Instructor, teaching many RAAF wireless operators.

Our sincere condolences to his family and friends.

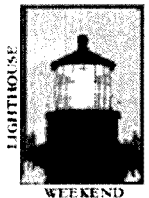
Vale Alan.

Submitted by Charles VK7PP and John VK7JK.

Justin Giles-Clark VK7TW

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

INTERNATIONAL



The International Lighthouse and Lightship Weekend saw five lighthouses activated in VK7 and the following is a short wrap-up of the Rocky Cape, Mersey Bluff and Pot Boil Lighthouses. The others are covered in separate reports. Stuy VK7ZM and his two sons camped at Rocky Cape lighthouse on

the NW Coast of VK7. The operating situation was an Icom IC-7200, MFJ tuner into a 9 m squid pole antenna mounted in the centre of the Landrover with 12 x 6 m ground radials. The 40 m band turned out to be band of choice due to damage to the 20 m loading coil! 40 metres provided some great contacts with over 100 made and 42 being other lighthouses. One of Stuy's sons is aiming to do his Foundation licence and help as second operator next year.

See the 'Big Picture' on page 56 and inside back cover



Mersey Bluff was covered by Keith VK7KW with help from Winston VK7EM and Dick VK7FORF. A trusty FT-857D running from batteries into either an inverted V 80, 40 and 20 m or a squid pole vertical for 40 and 20 metres was used. The weather was a little cold but that did not prevent the making of 41 contacts with other lighthouse stations and many other stations. Much fun was had by all involved and the site has already been booked again for next year!

Gavin VK7VTX operated near the Pot Boil Lighthouse on Flinders Island and commented that of the seven years he has operated in the ILLW this was by far the best. Contacts were made with lighthouses around VK, ZL and Germany. One of the benefits, Gavin comments, is the non-contesting environment of the ILLW which results in long friendly conversations during the weekend between amateurs.

Northern Tasmania Amateur Radio Club

August 11 saw hungry NTARC members at the Royal Oak Hotel in Launceston which included some very funny holiday anecdotes from Joe VK7JG and Peter VK7PD during dinner. A big thank you to Bill VK7AK for the very generous donations to the NTARC repeater fund which will go directly to keeping the excellent NTARC repeater network on air.

Cradle Coast Amateur Radio Club

September 7 to 9 saw the Club operate the VK100WIA callsign from the fascinating Devonport Maritime Museum which overlooks the Mersey River where the Spirit of Tasmania arrives and departs each day. Thanks to all involved with the activation.

North West Tasmanian Amateur Television Group
 August 7 was a general meeting of the group and it was reported that it was great to see Barry VK7FR accompanied by XYL Mary VK7NBL attend the meeting. JOTA 2010 support was on the agenda and it was agreed to provide the usual support throughout NW VK7.

Radio and Electronics Association of Southern Tasmania

We welcome Noel Gadd VK7FLCN, who was recently successful in gaining his Foundation licence. Noel is active in JOTA as a Cub Leader and is interested in exploring the opportunities that amateur radio has for Scouts, Cubs and Guides.

Thanks especially to Thomas VK7NML who operated with the author for the full 24 hours plus setup and tear-down and Warren VK7FEET who operated for the best part of the 24 hours fitting in family duties. Thanks also to the many amateurs who dropped in throughout the night and day and operated. It was great fun!

WICEN Tasmania (South) Inc.

The AGM of this group was held on the July 31 with the adoption of the following office holders:

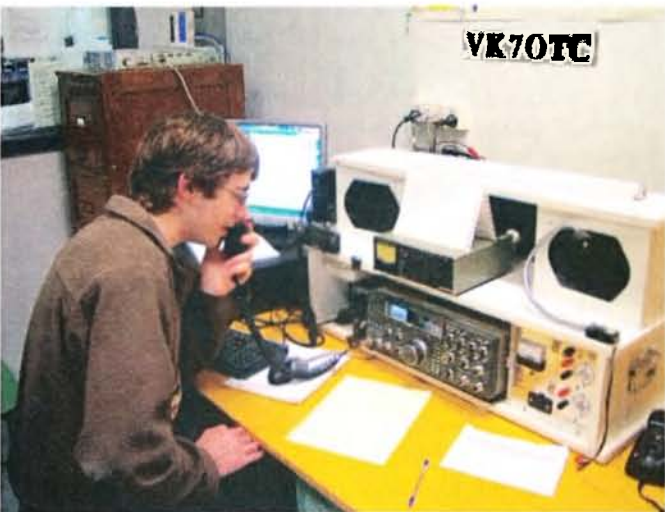
- Chair - Chris Webb VK7FCDW,
 - Deputy Chair - Michael Sweeney VK7FMRS,
 - Secretary/Treasurer - Roger Nichols VK7ARN,
 - Operations - Stu Braunholz VK7NXX,
 - Equipment Officer - Garry Duence VK7JGD
- and other Committee members - Brian Welch VK7BW and Rod Finlayson VK7TRF.

Many reports were presented including the equine endurance events support, Targa and Targa Wrest Point, the ILLW activations and many other events.

On the afternoon of August 27, contact was made between the International Space Station and South Hobart Primary School via telebridge.

Astronaut Doug Wheelock fielded questions from very excited Year 2 to Year 6 students. We received some great publicity in the local newspaper and radio networks. A great big thank you to all involved, especially Tony VK5ZAI the Australian ARISS Coordinator and his team of helpers and thanks to Steve VK7OO, Warren VK7FEET and Thomas VK7NML for their local help during the contact.

More information can be found at: <http://reast.asn.au/events.php#IS>



Thomas VK7NML operating 24 hours on the club station during the RD.

The club station VK7OTC was put to air during the 2010 RD Contest for the first time in a very long time from the historic Queen's Domain Clubrooms.



ISS Contact students (L to R): Felix, Reuben, Alex, Angela, Marcus, Theo, Gabe, Johann, Beau and Joe – all ready to ask their question of Astronaut Doug Wheelock.

A generic PC interface for the amateur experimenter

Part two

Paul McMahon VK3DIP

Introduction

In Part One of this article we looked at the design and building of a simple interface that enabled the ham radio experimenter to easily talk from a PC to some of the sorts of circuits used in radio today, (Reference 1). While Part One presented this in the form of a self-contained 'one with the lot' style of package, just the interface itself as a module can be built into larger projects if desired. If all you want is to talk to an I2C peripheral for example then all you need is the main interface board.

As a summary of the capability of the main board the following table describes the various functions available.

PIN	Item	Dir.	Function	Cmd/s
A0	Analogue Input 0	IN	Analogue Voltage Read	V00,C00 dd
A1	Analogue Input 1	IN	Analogue Voltage Read	V01,C01 dd
A2	Analogue Input 2	IN	Analogue Voltage Read	V02,C02 dd
D0	Bit0/ W_ CLK	OUT	Generic Data bit / DDS Specific data exchange	B01/Dhh
D1	Bit1/DATA	OUT	Generic Data bit / DDS Specific data exchange	B02/Dhh
D2	Bit2/FQ_UD	OUT	Generic Data bit / DDS Specific data exchange	B04/Dhh
PWM	PWM	OUT	Pulse Width Modulated output at 39 kHz	Phh
Fin	Frequency	IN	Measure Frequency	F10
TX	Serial TX	OUT	Logic Level, Inverted Serial Stream 57600 Baud	
RX	Serial RX	IN	Logic Level, Inverted Serial Stream 57600 Baud	
SCL	I2C SCL	OUT	I2C Clock	Waa,hh/ Raa
SDA	I2C SDA/ Trig.		I2C Data in/out, Capture command Trigger input	Waa,hh/ Raa

As an indication of some of the things we can do with this interface, Figure 1 shows an early version of the interface connected up to both power and I2C control a Multimedia TV/FM radio tuner module. (This arrangement was used so that the pair could be built into the one box to be used as a simple frequency selective level meter.) With this setup it is possible under PC control to set the receive frequency, mode and so on anywhere within the limits of the tuner, in this case about 50 MHz to 850 MHz.

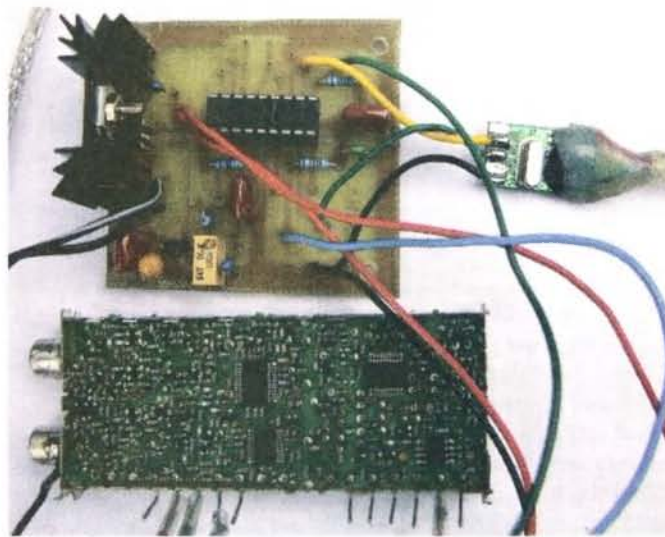


Figure 1: Interface and Tuner Module.

Note in this case this was using an earlier version of the PIC software that did not have the frequency input and had the RS232 serial running at a slower speed and thus used the 16F88 internal oscillator rather than the crystal controlled one shown in Part 1.

Figure 2 shows the interface in the stand alone packaged form being used to debug a AD9850 DDS board that I have plans to turn into a signal generator/sweeper at some stage.

In this case I have things set up to power and control the

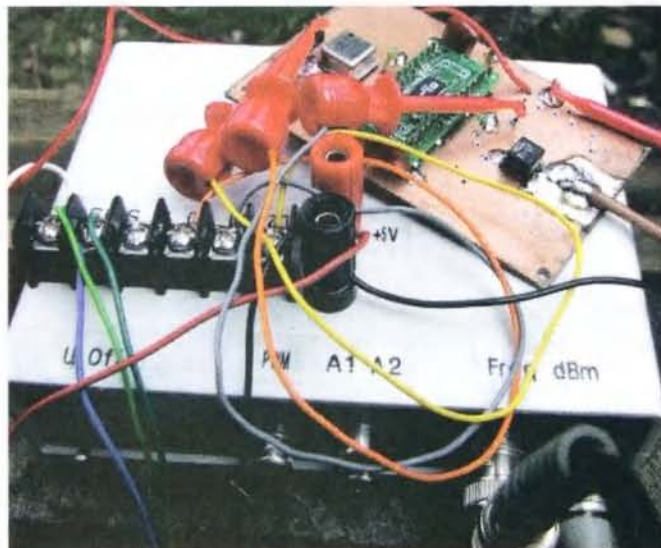


Figure 2: Interface and AD9850 Board.

:DDS, while measuring the output frequency and level.

The view of the Figure 2 setup on the PC end using the generic PC software is shown in Figure 3.

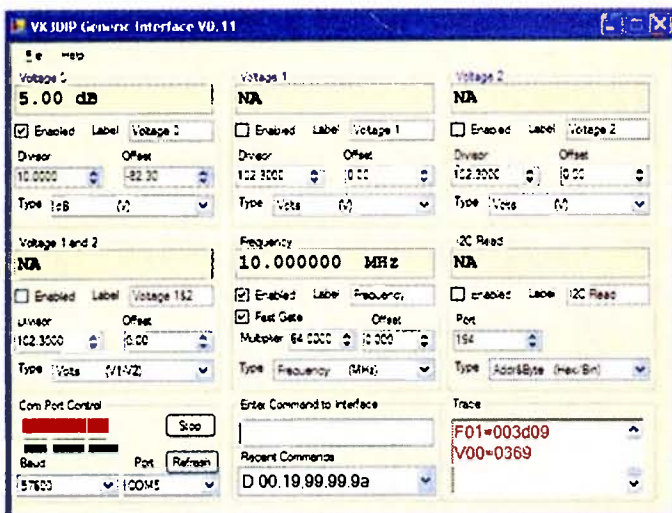


Figure 3: Generic PC software view of DDS setup.

Looking at Figure 3 you can see that I had just sent the command D00,19,99,99,9a to the DDS. As expected with a 100 MHz reference clock this caused the DDS to run at 10 MHz as indicated in the frequency meter section. The DDS also produced an unfiltered (i.e. not necessarily clean) RF output of +5 dBm (about 3 mW), as indicated by the 5 dB value read on the V0 meter. The offset value of -82.3, with a divisor of 10, in the case of my prototype, roughly calibrates this scale to read in dBm (or dBmilliwatts) in the HF frequency range.

Interface Commands

General

No matter whether you have built the true RS232 version or the USB one, the command structure to the interface is the same. You can test out the interface with either the supplied Generic PC application (PC Windows only, I am afraid), or a terminal program as discussed in Part 1. The bottom line is that communications are 8 data bits, no parity, plain (ASCII) person readable characters, with a simplified XON/XOFF flow control which most of the time you can just forget about. The only thing you may need to check is that your terminal package sends the new line or line feed character at the end of a line, as some packages by default just send a carriage return only. Carriage return and line feed is fine and should be obtainable in most packages.

The basic command structure used with the interface consists of a single upper case character command type followed by a variable number of parameters in hexadecimal using character digits 0–9 and lower case a–f, finally terminating with a line feed character. Note, the a to f characters in hex numbers must always be lower case, upper case letters are only used for command types. So in a terminal program you just type the command in and hit enter and the interface will do what you told it. Once the interface has received the new line character at the end of the command it will send an XOFF character back to the PC to tell it to wait and not send

anything else while the interface is working doing what the command specified. When finished the interface will send whatever data has been requested back to the PC (or 'OK' if no data is applicable) with finally an XON character to tell the PC it is ready for the next command.

Commands can be as simple as a single line feed character by itself which will just repeat the last command whatever it was, or a '?' line feed which will return the interface version information. Commands can also be quite long, sending many bytes of data to a particular I2C address for example.

The example given in Figure 3 above of 'D 00,19,99,99,9a' <CR><LF> is a command as discussed using the DDS interface. The 'D' is the command and in this case the five bytes of hexadecimal data separated by spaces or commas are the command parameters, in this case the data sent to the DDS. For completeness in this case, as no data is returned by the DDS, the interface will send back OK to the PC when completed sending to the DDS. If the interface doesn't understand the command, or if too many, or too few parameters are given, an error message will be returned to the PC.

You should note that the space, comma, and most other punctuation and special characters are treated as white space by the interface so 'D 00,19,99,99,9a<CR><LF>' will have exactly the same effect as 'D001999999a<LF>' or even 'D - 00 - 19 ; 99 : 9a<CR><LF>'. These extra characters are allowed just to make the commands more human readable if desired. If you are really trying to get as quick a response as possible out of the interface then just leave them out.

The following sections give details for the individual specific commands.

I2C

This is not a tutorial on what I2C is or how it works; if you are interested in this Philips have some application notes, and standard documents that explain all of this, refer Reference 2. For the purposes here I2C is a mechanism used by many integrated circuits and modules for control and data transport. It uses a shared three wire bus of an earth, the SCL (clock) and SDA (Data) lines. An I2C master device seizes the bus and addresses one or more slave devices passing write (set) commands or read commands; the addressed slave device replies over this same bus back to the master. Each device type has a unique address and if it makes sense to have multiple devices of the same type on the same bus there is usually some mechanism to vary a device's address.

It should also be noted that the least significant bit of the device address indicates if this is a read or write command. This means that devices effectively have two device addresses, one for write which is even or has bit 0 equal to 0, and one for read which is the same as the write one save that it is odd or has bit 0 equal to 1. Using this interface you can use either address for either command type as the interface knows what you wanted from the command type and will correct bit 0 accordingly. I tend to just use the write address for everything and let the interface sort it out.

Often different device types and particularly things like memory devices have extended addressing techniques

with sub addresses and the like. To handle this, the commands in this interface provide a couple of variants.

I2C Write – the ‘W’ command.

The interface acts as an I2C master and writes the data contained in the command over the I2C bus to the addressed slave device.

Syntax PC to Interface:
W aa, hh, hh, hh, hh, <LF>

Where:
W is the upper case ASCII character ‘W’
aa is two ASCII characters representing a hexadecimal byte 00 to ff . Typically this first byte represents the address of the required slave device.

hh is a variable number of ASCII character pairs representing hexadecimal bytes, 00 to ff. In the current version of the interface the number of bytes allowed is limited to 49 plus the address byte = 50. If sub addressing is required as used in some devices the first byte hh would be the first level of sub address and so on. Note. Bytes are sent left to right, that is, the first byte after the W is sent first, the next byte next and so on.

Commas, spaces and so on are treated as white space and are simply to make things more human readable and are ignored by the interface.

<LF> is the ASCII line feed or new line character hexadecimal byte 0a.

Response Interface to PC:
OK <CR><LF>

Example:
PC -> Interface W c2,1d,58,8e,90<CR><LF>
Interface -> PC OK<CR><LF>

In the case of a Philips or compatible tuner module (FM1216 etc. with the address select lines open, that is, address c2) this command would select the TV. IF of 38.9 MHz, a step size of 62.5 kHz, mid band, low noise (slow) tuning, and a receive frequency of 430.600 MHz. See individual I2C device data for details.

I2C Read – the ‘R’ command

The interface acts as an I2C master and requests a read from the addressed slave device.

Variant 1. ‘Read one byte from I2C device at slave device address aa

Syntax PC to Interface:
R aa<LF>

Response Interface to PC:
Raa=dd <CR><LF>

Where:
R is the upper case ASCII character ‘R’
aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.

dd is two ASCII characters representing a hexadecimal byte 00 to ff and is the data byte read from the slave device.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.
<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Example:
PC -> Interface R c2 <CR><LF>
Interface -> PC Rc3=c0<CR><LF>

In the case of a Philips or compatible tuner module (FM1216 etc. with the address select lines open, that is, address c2) this command would read the single status byte from the tuner and in this example it would indicate that the tuner has powered up, is locked on frequency and that the signal level is zero. Note the interface fixed up the address used to allow for a read.

Variant 2. ‘Read nn bytes from I2C device at slave device address aa

Syntax PC to Interface:
R aa, nn<LF>

Response Interface to PC:
Raa=dd <CR><LF>
Raa=dd <CR><LF>
Raa=dd <CR><LF>
.... nn times

Where:
R is the upper case ASCII character ‘R’
aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.

nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of data bytes to be read from the slave device.

dd is two ASCII characters representing a hexadecimal byte 00 to ff and is a data byte read from the slave device.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.
<CR> is the ASCII Carriage Return character hexadecimal



Photo 1: The LCD screen

byte 0d.

Variation 3. 'Read nn bytes from I2C device at slave device address aa, with 8 bit sub address ss. Note, some devices will auto increment sub addresses, see individual device data sheets for details. This interface does not know if this is the case so all data retrieved will be indicated as coming from the initial sub address.

Syntax PC to Interface:
R aa, ss, nn<LF>

Response Interface to PC:

Raass=dd <CR><LF>
Raass=dd <CR><LF>
Raass=dd <CR><LF>
.... nn times

Where:

R is the upper case ASCII character 'R'
aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.
ss is two ASCII characters representing a hexadecimal byte 00 to ff and is the sub address in the slave device that we want to read.
nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of data bytes to be read from the slave device.
dd is two ASCII characters representing a hexadecimal byte 00 to ff and is a data byte read from the slave device.
<LF> is the ASCII Line Feed character hexadecimal byte 0a.
<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Variation 4. 'Read nn bytes from I2C device at slave device address aa, with 16 bit sub address ssss. Note, some devices will auto increment sub addresses, see individual device data sheets for details. This interface does not know if this is the case so all data retrieved will be indicated as coming from the initial sub address.

Syntax PC to Interface:
R aa, ssss, nn<LF>

Response Interface to PC:

Raassss=dd <CR><LF>
Raassss=dd <CR><LF>
Raassss=dd <CR><LF>
.... nn times

Where:

R is the upper case ASCII character 'R'
aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.
ssss is four ASCII characters representing two hexadecimal bytes 0000 to ffff and is the sub address in the slave device that we want to read.
nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of data bytes to be read from the slave device.
dd is two ASCII characters representing a hexadecimal byte 00 to ff and is a data byte read from the slave device.
<LF> is the ASCII Line Feed character hexadecimal byte 0a.
<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Read Voltage - the 'V' command

The interface is setup to provide a 10 bit number representing the value of the voltage read on the specific pin. The 1024 possible values (0000 to 03ff in hexadecimal) read will be spaced between 0 volts and whatever value has effectively been set on the reference pin. To convert from the received value to voltage use the following formula.

$$\text{Voltage} = \text{Reading} \times \text{Reference} / 1023$$

In the prototypes case as discussed in Part 1 the effective reference for ports 1 and 2 is 10 volts, and this simplifies to:

$$\text{Voltage} = \text{Reading} / 102.3$$

See Part 1 for details of setting the reference values and range.

Three ports are provided by the interface 0, 1, and 2. With the V command you can request the voltage on any one of these ports or alternately all three ports. An optional parameter can be used to specify a number of repeated reads of that port.

The basic voltage read takes 20 microseconds to sample a voltage, and an additional 1 to 2 milliseconds even at 56700 baud to communicate this back to the PC. So while you could sample some reasonably slowly changing voltage waveforms this interface is not really suitable for use as, say, an input to a software oscilloscope. The special purpose 'C' or capture command can do a little better than this timing but has other limitations.

In my case I use port 0 as the port for the AD8307 power measurement with the other two being setup as general purpose 0 - 10 volt inputs.

Syntax PC to Interface:
V aa, nn<LF>

Response Interface to PC:

Vaa=dddd <CR><LF>
Vaa=dddd <CR><LF>
Vaa=dddd <CR><LF>
.... nn times

If aa in the V command = 03 then individual results for each port will be returned, that is:

V00=dddd <CR><LF>
V01=dddd <CR><LF>
V02=dddd <CR><LF>
V00=dddd <CR><LF>
V01=dddd <CR><LF>
V02=dddd <CR><LF>
.... nn times

Where:

V is the upper case ASCII character 'V'
aa is two ASCII characters representing a hexadecimal byte 00 to 03 selecting one; 00, 01, 02 or all (03) ports.
dddd is four ASCII characters representing the hexadecimal number 0000 to 03ff and the voltage read on that port.
nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of times the voltage read is to be repeated. If this value is omitted it defaults to a single read.
<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Read Frequency - the 'F' command

The interface implements a standard frequency measurement scheme in which a counter is zeroed, a gate is opened for a precisely defined amount of time to let pulses through, and the counter increments as each pulse is received. Once the gate is closed the value in the counter represents the number of pulses or cycles in that time. For example if the gate time was one second and the counter counted 100 then this would correspond to 100 cycles in a second or 100 Hertz. If the gate time had been one tenth of a second, then again assuming a count of 100, this could only have been achieved if the input frequency was ten times higher than before, that is 1 kHz. Faster gate times lead to a quicker, more responsive, frequency measurement but trade this off with reduced precision. In the example given the one second gate provides one Hertz resolution, while the one tenth of a second gate only provides 10 Hertz resolution.

The frequency measurement capacity of the interface as implemented is limited to two different gate times, one second and a tenth of a second. With a three byte counter the maximum count is ffffff or 16,777,215 in decimal. With a one second gate this would represent a frequency of 16.777215 MHz, with a tenth of a second gate this would be nominally 10 times this frequency (or some 167 MHz) however the timer1 input of the 16f88 is only good to about 20 MHz anyway, so this limits the un-prescaled upper limit of frequency measured. In the version of the interface detailed in Part One, I used a divide by 64 prescaler chip which is good to about 1 GHz; in this case neither gate times will have a problem with reaching this limit. If however you use a faster prescaler or one with a lower divisor then it is possible that you may find a case where the one second gate reaches maximum count before the gate time expires. Within these limitations for the set up described in Reference 1 the actual frequency measured will be equal in Hertz to 64 times the count for the one second gate and 640 times the count for the tenth second gate.

The ultimate accuracy of this measurement will be dependent on how accurate the 10 MHz crystal is. In the board layout given in Part 1, no particular provision was made on the board for a trimmer, though one could be squeezed in by replacing one of the capacitors to earth if desired. I haven't bothered doing this as my experience is that while you may be able to set the crystal to some particular value you end up with more thermal drift to compensate. In this case, as the actual count is processed by a PC before it is displayed it is easier to software calibrate any fixed differences rather than to tweak a trimmer. The biggest source of errors that is hardest to calibrate away is thermal drift of the clock. If absolute accuracy is important you can either recalibrate against some known standard just before taking a measurement, or implement some form of oven controlled or similar oscillator. In the source code and object available from Reference 4 I have included an 'E' version of the PIC code which is identical save that it expects an external 10 MHz clock such as from a temperature controlled oscillator module, rather than using the PIC's own oscillator.

ELECTRONICS ONE-STOP-SHOP

Ultrasonic Antifouling for Boats

new

Refer: Silicon Chip Magazine September/November 2010

Many of you know that you can buy \$3-8,000 imported marine growth electronic antifouling systems. Jaycar, with Silicon Chip have developed a similar system based on this technology and information in the public domain. This project uses the same ultrasonic waveforms and virtually identical ultrasonic transducers mounted in sturdy polyurethane housings. By building yourself (which includes some potting) you save a fortune! Standard unit consists of control electronic kit and case, ultrasonic transducer, potting and gluing components and housings. Research reveals only one transducer is needed for boats under 40ft. Basically all parts supplied in the project kit including wiring.

- 12VDC
- Suitable for power or sail
- Could be powered by a solar panel/wind generator
- Call first for availability
- Available end of October

\$249 00

*Price includes epoxies

KC-5498



Asuro Programmable Robot Kit

new

In addition to six collision sensors and an optical unit for following a line, Asuro has two odometers and several display elements. The supplied duplex infrared interface permits wireless programming, as well as a remote control with a PC. The "brain" of the robot is a RISC processor that also permits the processing of complex programs. Asuro is ideal for hobbyists, school and student projects, schools, training in the electrical engineering and mechatronics fields as well as university course. This is not a kit for the faint-hearted! Some soldering required.

\$79 95

KR-3120



Compact DAB+ & FM Radio Tuner

Tune into digital radio. Perfect for the bedside table or on the kitchen window sill, it can even be taken out and run off batteries. The LCD clearly displays the time, date and station ID. Alarm mode, 10 station memory and headphone output. Requires 4 x AA batteries or the included AC adaptor.

\$89 00

- DAB+/FM
- Backlit 2-line LCD
- Headphone socket
- Size: 178(W) x 76(W) x 40(D)mm

AR-1751



Solar that Really Works

A highly informative and practical guide showing the do's and don'ts of DIY solar installation. From caravans to fishing lodges, it features detailed descriptions of working solar systems with illustrations. Written by acclaimed Australian author Collyn Rivers.

Softcover, 82 pages, 290 x 210mm

\$42 50

Also available in this series:

Motorhome Electrics BE-1536 \$42.50
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Syntax PC to Interface:

F aa <LF>

Response Interface to PC:

Faa=dddddd <CR><LF>

Where:

F is the upper case ASCII character 'F'

aa is two ASCII characters representing a hexadecimal byte 10 or 01 representing the gate time of one second (10) and point one second (01).

dd is six ASCII characters representing three hexadecimal bytes 000000 to ffffff and is the value of the counter after the relevant gate time.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Pulse Width Modulated Output – the P command.

The interface provides a single output which has a variable duty cycle square (well rectangular, really) wave output at a fixed frequency of 39 kHz. This output when low pass filtered produces an effective DC output with level proportional to the duty cycle. In this interface the duty cycle can be set at any value from 0 to 255 (00 to ff hex), a duty cycle of 0 corresponds to the output being always off, a duty cycle of 1 corresponds to a very thin pulse, 2 slightly wider, and so on up to 255 which corresponds to the output always on. The net effect depends on exactly what scaling has been set up in the filter and buffer circuitry but in the prototype described in Reference 1, 00 equates to 0 Volts DC out, ff equates to 2 Volts DC out, with some 254 values in between.

Syntax PC to Interface:

P aa <LF>

Response Interface to PC:

OK <CR><LF>

Where:

P is the upper case ASCII character 'P'

aa is two ASCII characters representing a hexadecimal byte 00 to ff representing the duty cycle of the output. 00 is output off, ff is output hard on, the values in between equate to intermediate states.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.



Photo 2: The LCD screen, and associated tuners.

Digital Bits output – the B command

The interface provides three digital output lines which can be either individually addressed using the B command or alternately used as a set using the D command - see later.

In the individual bits case the state of all the three lines are set with a single B command with the various combinations of states represented by the hexadecimal numbers 00 to 07 with numbers outside this range causing an error message to be returned. The states of the three lines RB7, RB3, and RA4, (or D2, D1, and D0 respectively as marked on the PCB of Part 1) can be thought of as the binary equivalent of the hexadecimal value. The various states are represented in the table below.

B Hex	Binary	D2 or RB7	D1 or RB3	D0 or RA4
00	000	Low	Low	Low
01	001	Low	Low	High
02	010	Low	High	Low
03	011	Low	High	High
04	100	High	Low	Low
05	101	High	Low	High
06	110	High	High	Low
07	111	High	High	High

Once a B command has been recognised by the interface the line states will be set to the requested pattern and will remain in that state until further commands are received.

Note, the digital outputs are direct from the PIC and while they will have no problems driving normal 5 volt logic level inputs of other devices, and are even able to provide a few milli-amps to light a LED if needed, they are not suitable by themselves for high powered use. If you wish to control larger loads or the like then you will need to provide suitable interface electronics or relay drivers etc.

Syntax PC to Interface:

B aa <LF>

Response Interface to PC:

OK <CR><LF>

Where:

B is the upper case ASCII character 'B'

aa is two ASCII characters representing a hexadecimal byte 00 to 07 representing a bit pattern on the RB7, RB3, and RA4 pins. 00 hex or 0000 binary corresponds to RB7,RB3,RA4 = 0,0,0 and 07 hex or 0111 binary corresponds to RB7,RB3,RA4 = 1,1,1.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

DDS control output – the D command

The DDS command utilizes the same three lines as used by the B command but has specific features to match the requirements of devices like the AD9850, or AD9851, or similar. These devices have a serial programming mode that uses a three wire interface. One line is a clock, one carries the data, and the last is used to latch the data. In the case here the RA4 line (marked as D0 on the PCB) is used as the clock or W_CLK as referenced in the Analog Devices Data sheet, RB3 (D1) is DATA, and RB7 (D2) is FQ_UD. A check of the DDS Data sheet will show that the order of data to be programmed is reversed between the serial and

the parallel programming interface. This also shows up in the Analog Devices web design applet (see Reference 6) with different results being shown for serial and parallel load. To make things as simple as possible for the user of this interface the data order used by the D command takes its parameters in the same order as the AD parallel load even though it is actually loading it serially. The interface will take care of effectively sending the data to the AD9850 in reverse order. For those that don't or can't get to the internet for the Analog Devices web application I have included the source and executable version of a similar helper application with the other components in Reference 4. More detail of this later.

Syntax PC to Interface:

```
D hh, hh, hh, hh, hh <LF>
```

Where:

D is the upper case ASCII character 'D'

hh is five ASCII character pairs representing hexadecimal bytes, 00 to ff. The command will accept more than 5 bytes but the AD9850 only uses 5 which equates to the 40 bits required to program the device. Note. The bytes are sent to the DDS device in the inverse order to which they are entered, that is, right to left, least significant bit first. The effect of this is to have the bytes presented to the command in the same order as for DDS parallel programming.

Commas, spaces etc. are treated as white space and are simply to make things more human readable and are ignored by the interface.

<LF> is the ASCII line feed or new line character hexadecimal byte 0a.

Response Interface to PC:

```
OK <CR><LF>
```

Example:

```
PC -> Interface D 00,19,99,99,9a
```

(With a 100MHz reference clock this sets the DDS to run at 10 MHz)

```
Interface -> PC OK<CR><LF>
```

Capture Voltage - the 'C' command

This command was instigated by my brother-in-law Charles VK3CLE. He wanted something to capture the trace off some older test equipment like a spectrum or network analyser (and equivalent home built versions) without having to use a camera. Most of these things have a voltage output that mirrors the trace information; originally intended for connection to pen or chart recorders. The idea is to capture this voltage directly to a PC as data so it can be stored, and analysed, more readily. The 'V' command can be used for this but has some limitations in terms of the possible sampling rates, the accuracy of the timing between samples, and the synchronisation of the data. See the 'V' command for more details. The 'V' command can be used for capturing very slow scans but the synchronisation issue remains. Without some form of synchronisation it is hard to figure out which sample corresponds to which point in time. The 'C' command addresses all these issues in that it samples as fast as the PIC can, storing the samples internally and when finished sends them all to the PC. The 'C' command also can add an accurate, repeatable delay between samples. The final feature of this command is that it has a simplistic trigger function. Once the PIC has received the command it will

not begin its capture of data until port B pin 1 undergoes a high to low transition. This pin is also used for the I2C SDA line and is so marked on the PCB and circuit diagrams of Part 1. Note, because of the I2C use this line has a pull up resistor to 5 V on the main PCB and thus it will normally be high unless pulled low. When you want the sampling to start you could pull the SDA line low with a pushbutton to earth. Alternately with a suitable electrical level interface this line can be connected to the 'pen down' control output on many older pieces of test equipment which indicates the start of a scan. This way if the command is issued while a scan is underway (that is, line low) the interface will wait for the scan to finish (line go high) and keep waiting until it goes low again, that is, starts a new scan. Only then will the interface start capturing data.

This command can address the same three analogue ports used by the 'V' command but there is no provision to capture on multiple ports at the same time. The port is selected via the first parameter of this command. The second parameter sets the additional delay in 100 microsecond intervals between samples. The intrinsic or minimum delay between samples is of the order of 100 microseconds so a setting of delay of 00 corresponds to 100 microseconds, 01 is 0.2 milliseconds and so on. The number of samples taken is limited by the available memory on the PIC, and even after some tricks to efficiently store the 10 bit samples without wasting space, there is only room for some 256 samples available.

Because this command needs as much internal space as possible the shortcut of repeating the command with just a <LF> has been disabled. The command can of course be repeated by sending the whole command again. This only applies to the 'C' command all other commands are repeatable with just the <LF>.

Syntax PC to Interface:

```
C aa, nn<LF>
```

Response Interface to PC:

```
Caa,nn <CR><LF>
```

```
[<CR><LF>
```

```
dddd <CR><LF>
```

```
dddd <CR><LF>
```

```
dddd <CR><LF>
```

.... Repeats depends on available memory 256 in version 4.0

```
dddd <CR><LF>
```

```
] <CR><LF>
```

Where:

C is the upper case ASCII character 'C'

aa is two ASCII characters representing a hexadecimal byte 00 to 02 selecting port 00, 01, or 02.

dddd is four ASCII characters representing the hexadecimal number 0000 to 03ff and the voltage read on that port.

nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the additional inter sample delay in 100's of microseconds, that is, ff=25.5 milliseconds.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

PC Application

Of course you don't have to use the interface with the supplied PC program, if you want you can either write your own program, perhaps based on the source code provided, or if you are more comfortable with some other language there are a myriad of possibilities. The supplied PC application is something that will do for general usage of the interface when developing or testing out initial phases of some project. If however you want something to use to control your homebrew spectrum analyser or some such then you are pretty much going to have to do your own thing.

Prerequisites

As well as the software in the distribution from Reference 4 the PC software requires the dot net runtime and whatever drivers the particular USB/Serial converter you are using needs to be loaded. If you are going to use the USB option do this first before running the Generic Interface program.

The Generic Interface PC application like the various helper applications are produced with the free Microsoft Visual Basic 2008 Express edition (Reference 5). In order to run they need to have a version of the Microsoft .Net runtime (pronounced dot Net) installed on your machine. In many cases this will probably already be installed, but just in case I use version 3.5 of the routines and the run-times for which are downloadable from the Microsoft download site in Reference 7.

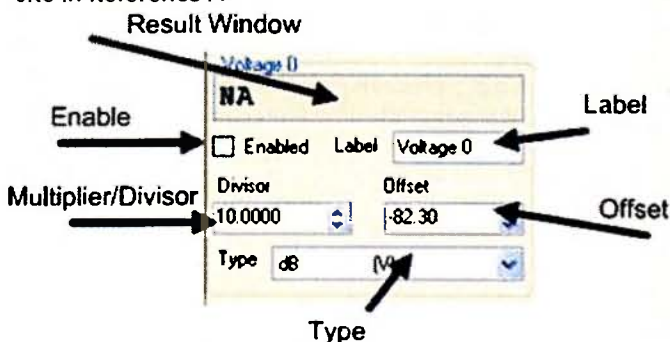


Figure 4: An Input Frame.

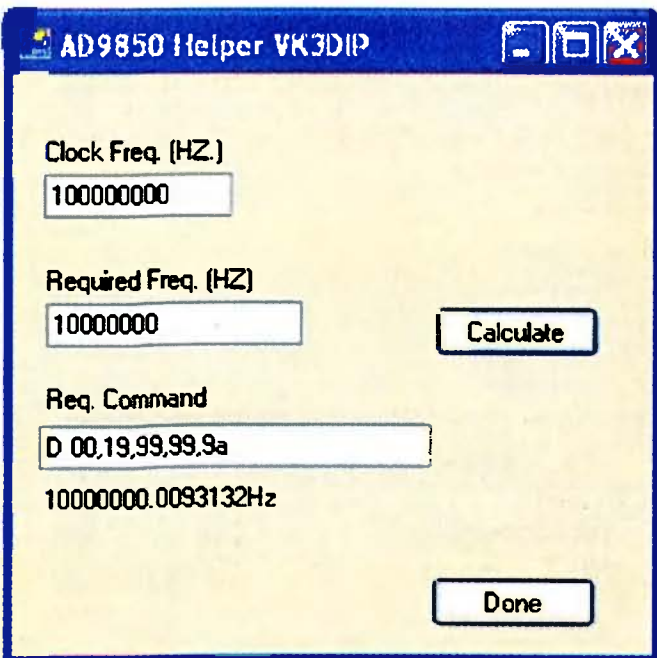


Figure 5: The AD9850 Helper Application.

Given that you have the .Net runtime installed then to run the main programs or the helpers all you need to do is to copy the .exe files from the distribution (Reference 4) onto your PC in a convenient folder and double click on them. If desired you can make shortcuts on the desktop if you find you are using them a lot.

The distribution also contains the full source and MS VB Express 2008 project files for all the software mentioned here so if you want a new or different feature have a go at changing it yourself, it is not that hard to do.

Main Screen

When you run the main program (GenericInterface.exe) everything being OK you should see the main screen. If you are running it on a netbook or PC that doesn't have a serial port it may complain that it can't find a free port but once you plug the USB connection to the interface into the PC, a click on the port refresh button on the bottom left hand side should find it.

The Main screen of the PC application is shown in Figure 3. This main screen is somewhat crowded and consists of three rows of three framed sub areas. The top row of frames corresponds to the three analogue inputs on the interface. The middle row three frames are for a derived or combined value made up of two of the analogue inputs, the frequency input, and the I2C read input. The lower row of three looks after the communication port, the sending of ad-hoc commands, and the final one is a trace window showing the flow of commands and results going backwards and forwards.

All of the top six frames are structured somewhat similarly. A typical frame is shown in Figure 4.

The Enable check box if selected will cause the PC software to regularly poll the interface for the relevant item. In the case in Figure 4 this is Analogue Voltage Input 0. The PC software will send the appropriate command to the interface and retrieve the hexadecimal value read from the port. The Type drop down selects how this value is treated. The type of treatment is indicated in the brackets of the type value. If it is just (V) then the result displayed in the results window will be calculated by:

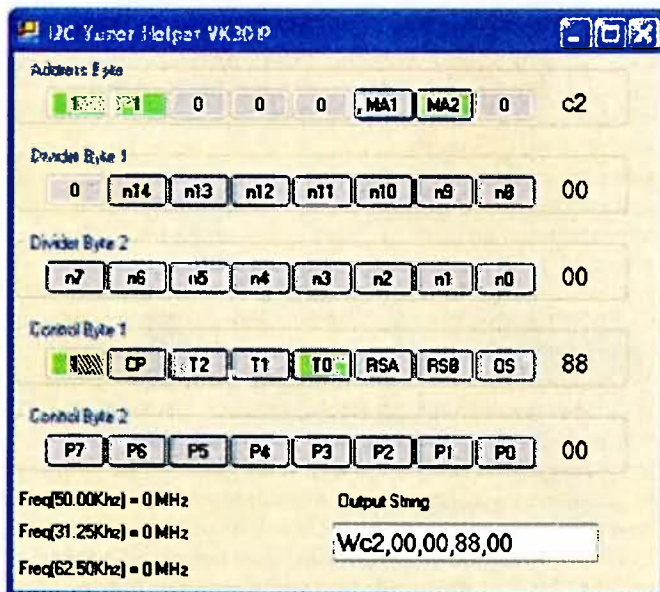


Figure 6: The I2C Tuner Helper Application.

- 1 Converting the hexadecimal value received to decimal.
- 2 As the label suggests the value from 1 is then multiplied or divided by the number set in the Multiplier/Divisor field.
- 3 The resultant from 2 then has the number in the offset field added to (or subtracted from) it. The end result is then placed in the result window followed by the units indicated in the Type.
- 4 The Label field is only used by the logging function to label the particular end value recorded in the logging file if set on.

If the type treatment shows as (LogV) then the treatment is the same as above however after step 1. the base 10 Logarithm of the value is taken and this is used for the remaining steps. Similarly if (V*V) is shown the value is squared and so on.

Using the multiplier/divisor and the offset it is possible to calibrate and compensate for most inaccuracies and/or record in whatever units are required.

By default the various input windows start up with enabled off, that is, they won't self prompt for input. Similarly if you haven't selected the correct baud rate and com port and pressed start in the com port control frame nothing will happen. Once you have successfully pressed start any enabled frames will start polling. If however while started (that is, connected to the com port) you manually type a command into the command frame which results in one of these values being returned the appropriate frame will still capture the result. As manual commands are typed and sent to line with the enter key, they are stored in the recent commands dropdown just in case they need to be used again.

At the top of the main screen are a couple of menus File and Help.

Help brings up a small window with my contact details if you need to contact me or see if there are any updates etc.

From the file menu you can:

- Save or load (open) a particular set of configurations
- Turn logging to a file on or off
- Control which items show up in the trace window
- Run a simple script of commands.

Scripting

The PC interface software supports a simple form of scripting which allows:

- Setting of any configuration item
- Sending of any command
- Inserting a comment in the log
- Inserting a delay
- Prompting the user for
 - Yes/No
 - Continue
 - A value

More details of this will be found in the distribution.

Helper Apps.

Screen shots of the two helper applications provided are shown in the Figures 5 and 6 (facing page).

Figure 5 shows the AD9850 helper application . Operation is very basic, enter the clock frequency, the required output frequency, and hit the calculate button. You will then be given the required command, which can be cut and pasted into the command window on the generic

interface software, or just sent via a terminal program. The helper also shows the actual frequency obtained after allowing for quantisation and so on.

Figure 6 shows the I2C tuner helper application. The screen represents the typical five registers present in a Phillips I2C PLL or equivalent as used in many TV tuners.

To use click on those bits you wish to set as determined by the device datasheet. A further click will clear the bit. Each time you change a bit value the output string will update along with the nominal receive frequencies assuming a particular PLL step size. Again the command can simply be cut and pasted to the command window on the generic application or sent any other way that suits.

Conclusion

This interface has hundreds of uses for the ham home brewer. I have a number of projects in line for its use in an embedded sense, let alone the all in a box setup which I use as a portable lab. If you come up with any other good uses, or have some comments or suggested improvements please send me an email at VK3DIP@yagiacad.com.

References

Reference 1.

A Generic PC Interface for the Ham Experimenter
Part 1 Introduction and Build.
Paul McMahan VK3DIP
Amateur Radio magazine, September 2010

Reference 2.

THE I2C-BUS SPECIFICATION
VERSION 2.1
JANUARY 2000
Philips Semiconductors (Now NXP Semiconductors) -
Document Number 9398 393 40011
Available as a PDF from: <http://www.nxp.com/>

Reference 3.

PIC Simulator IDE <http://www.oshonsoft.com/>

Reference 4.

The full source for all of the PIC and PC software used in this interface can be found on the VK3DIP/Yagiacad Homepage at: www.yagiacad.com
In this case it is at least on the miscellaneous projects file page.

The PIC code is for the Basic compiler built into PIC Simulator IDE – from Reference 3. And The PC code is in Visual Basic.net and is compiled with the free Microsoft 2008 Express version of VB. Reference 5.

Reference 5.

Thank you, thank you Microsoft for this wonderful free powerful tool for experimenters.
Available at: <http://www.microsoft.com/express/vb/Default.aspx>

Reference 6.

Analog Devices Web Applet for DDS Design for example the AD9850 one can be found at:
<http://designtools.analog.com/dt/dds/ad9850.html>

Reference 7.

The Microsoft .Net 3.5 redistributable (that is, runtime) can be found at the Microsoft Download centre by searching for '.net' - <http://www.microsoft.com/downloads>

SilentKey

Alan David Nutt VK2GD



It is with great sadness that we record the passing of Alan Nutt VK2GD, at Port Macquarie on Monday 5th July 2010 after a short illness.

He was aged 75 years. Alan is survived by his wife Elaine and their five children. His funeral was at Port Macquarie on Friday 9th July with a large attendance from a wide cross section of the community including many members of the amateur radio fraternity.

Alan led a very interesting and full life. After completing his Leaving Certificate at Sydney Boy's High School in 1949, Alan began his working life in 1950 and gained numerous technical and theological qualifications over the next six years. He and Elaine were married in 1955.

By 1956, Alan was already working as a research and development technician with the Telecommunications Company of Australia, part of the Philips Company, a leader in the rapidly evolving telecommunications industry.

From 1957 to 1969, Alan undertook a missionary posting in New Guinea. His knowledge and ingenuity served him well in servicing and operating an extensive communications network in a very challenging environment. During this period, he gained an enormous amount of practical experience, which he continued to share with others throughout his life. Yes, he did find time to enjoy his hobby of amateur radio as VK9AN.

Always taking every opportunity to contribute to the organisations to which he belonged, Alan served as a Councillor of the NSW Division of the Wireless Institute of Australia in 1961 and 1962 during a furlough from his posting to New Guinea.

Many amateur radio operators first

met Alan through the pages of the magazine *Electronics Australia*. When Alan returned to Australia in 1970, as VK2GD he became a Technical Journalist for a year for that magazine, read by almost everyone with an interest in electronics.

Alan then spent an interesting 10 years as divisional manager for record manufacture at Ambassador Press in Granville. This was followed by three years at Shaw Consulting Services in Castle Hill as a technical consultant to the marine insurance industry.

From 1983 to 1995, Alan taught electronics at the Sydney Institute of Technology at Ultimo. Teaching was one of Alan's great loves and he excelled at clearly explaining technical concepts in a manner that everyone was able to understand and remember.

After retirement in 1995, Alan still continued to teach part time at both high school and TAFE in Sydney, and later in Port Macquarie when he and Elaine moved to there in 1997.

He immediately joined the Oxley Region Amateur Radio Club as a very active member. He was the Club Secretary for three years from 1999 to 2002, followed by three years as President from 2002 to 2005. After a year as Vice President, he again became President in 2006 for another three years until 2009, when he continued to serve on the committee.

With his great interest in education, Alan was quick to gain accreditation as a WIA Assessor for all grades of amateur radio licence in 2005 when the Foundation licence was introduced and the structure of amateur radio licensing changed. He teamed up with fellow club member Larry Lindsay VK2CLL, who also became an assessor at the same time. Together they added more than 30 new amateur radio operators to the hobby through teaching and assessing candidates.

Alan's many interests, included radio broadcasting, where he was able to use his constantly updated technical skills in solving many problems for Radio Rhema and various other endeavours.

Alan will be remembered for his great enthusiasm for all things, and for so

freely taking the time to share his knowledge and experience using his great gift as a teacher. He was a real gentleman and a great communicator in every sense of the word. Alan was a committed Christian and that was mirrored in the way he treated his fellow man.

The members of the Oxley Region Amateur Radio Club join with the wider amateur radio fraternity in expressing sincere condolences to Elaine and the family members.

Vale Alan David Nutt VK2GD.

Submitted by Henry Lundell VK2ZHE and John McLean VK2KC.

ar

David Lording VK3ADL

David Lording VK3ADL of Cowes, Philip Island, passed away suddenly in his sleep on 13 September.

I had known David for a mere nine years and we became good friends through this hobby. I am sure others have known him for considerably longer and could probably fill in much more detail.

I first made contact with David in November 2001 when he had the callsign VK3MED. David was a constant wealth of information for me since I was then new to the hobby. He moved from being a CBer to Novice and on to Advanced. David, myself and many others had lots of QSOs on 2 metres via VK3REC, 70 cm via VK3RHF and of course HF. I shall very much miss our morning drive time QSOs on RHF and coffees in Cowes.

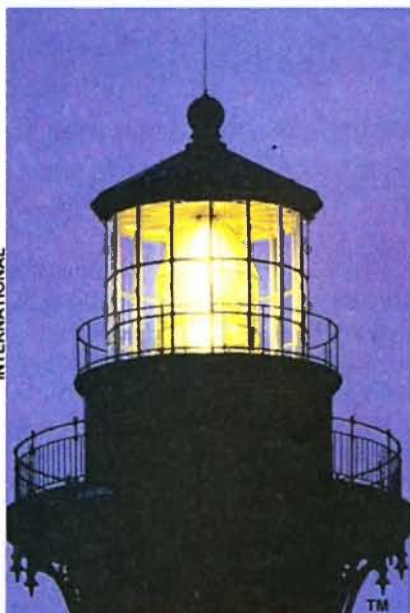
David is survived by his parents, sister and his daughter. He is now with his brother, who lost his life in a motorcycle accident several years ago. A number of our amateur fraternity have expressed their memory of David as "a good operator and a gentleman".

Vale David.

Submitted by Ron Cook VK3JRC

ar

LIGHTHOUSE



WEEKEND

ILLW lights up record numbers

The 2010 International Lighthouse & Lightship Weekend was a great success. There were 447 registrations, a record, with Germany topping the list with 60 registrations. Australia had 55 lighthouse stations activated with 17 in VK2, 12 in VK3, 10 in VK4, 4 in VK5, 6 in VK6 and 6 in VK7.

(Ed: A great effort as Germany has about five times as many amateurs as we do but, on the other hand, we have many more lights. Another pleasing feature was the 'hardship' factor, some of the sites were not easy gets with one intrepid group backpacking their station 18 km into the light at Wilsons Promontory, the southernmost mainland light.)

Tablelands Radio & Electronics Club at Archer Point

Dale McCarthy VK4DMC.

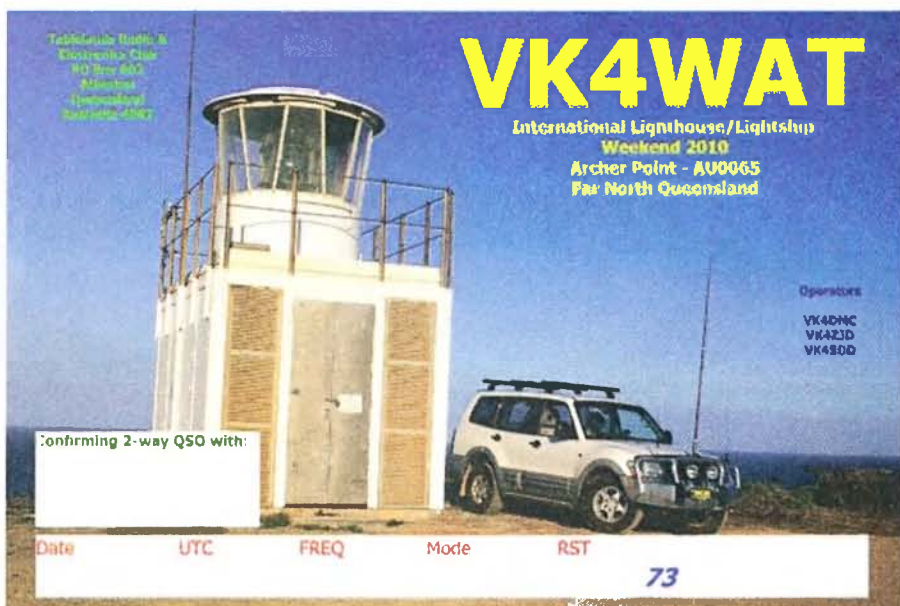
Members of the Tablelands Radio and Electronics Club Inc. (TREC) activated the Archer Point Lighthouse AU0065 for the 2010 ILLW. Archer Point is located some 200 km north of Cairns in Far North Queensland on a very isolated and exposed headland.

TREC members Stu VK4SDD, Paul VK4ZJD and Dale VK4DMC travelled up from the Atherton area, a 600 km round trip. Archer Point lighthouse being located at such an isolated location with no facilities available meant that we had to be totally self sufficient. Tents, camping gear, batteries and generators were the order of the day.

Antennas were erected on the Friday and VK4WAT, the TREC callsign, was on air at 0001 Zulu on Saturday morning.

Whilst erecting a portable mast the wind was so strong that it caused one of the aluminium poles to break allowing the vertical antenna to crash to the ground with a resounding thud. No damage to the antenna fortunately.

We set up two stations, one from a vehicle right next to the lighthouse and the other station a little way below the lighthouse in a slightly less windy location. Conditions proved to be very good on 20, 40 and 80 metres.



A total of 36 other lighthouse amateur radio stations were contacted around Australia, New Zealand and the United States of America. Lighthouse stations in every state of Australia were contacted.

We also worked many other amateur radio stations world-wide including ZS8M on Marion Island in the southern Indian Ocean, V44NEF in Nevis in the Caribbean, New Caledonia plus many other Australian and international amateur radio stations.

The Tableland Radio and Electronics Club has been established over 22 years and is based on the Atherton Tablelands inland from Cairns in Far North Queensland.

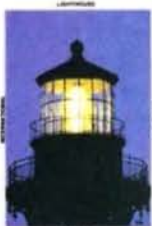
Thanks to all the stations who worked VK4WAT this year and sorry for mentioning our 28° temperatures, especially to the operators at Cape Leeuwin who shivered in only 3° temperatures.

We are looking forward to working ILLW again next year. **ar**

WICEN Tasmania at Point Home Lookout

Roger Nichols VK7ARN

WICEN Tasmania (South) VK7WCN headed to Tasmania's east coast for a new lighthouse weekend activation – Point Home Lookout.



ILLW 2010

This is a relatively recent light, built in 1971 to assist woodchip carriers entering Triabunna, and very similar to the more easily visited light at Cape Tourville near Coles Bay. The tower is 14 metres high and 57 metres above sea level, with a 36,000 candela light.

The lighthouse is hidden from view on the landward side by a low hill,

so is seldom seen other than from the sea. Access involves crossing private property from the Triabunna woodchip mill road. The view from the light is outstanding, looking across Mercury Passage to Maria Island and, at night, the light on Ile du Nord off the northern tip of Maria.

Cedric VK7CL, Chris VK7FCDW,

Garry VK7JGD, Roger VK7ARN and Ray VK7VKV, with harmonic Ben VK7FBGS, gathered in Triabunna and headed across the paddocks to set up stations at three locations around the lighthouse. With some dismay, and the odd expletive, we discovered S9 noise, thought at first to be emanating from a transformer on a pole 100 metres from the lighthouse. However, driving across the paddock to an alternative rocky knoll made no difference. Ray found the noise blanker on his Yaesu FT-897D coped reasonably well, so his station became the mainstay. Interestingly, the noise dropped off later in the day, so we assumed it was coming from the woodchip mill just over the hill.

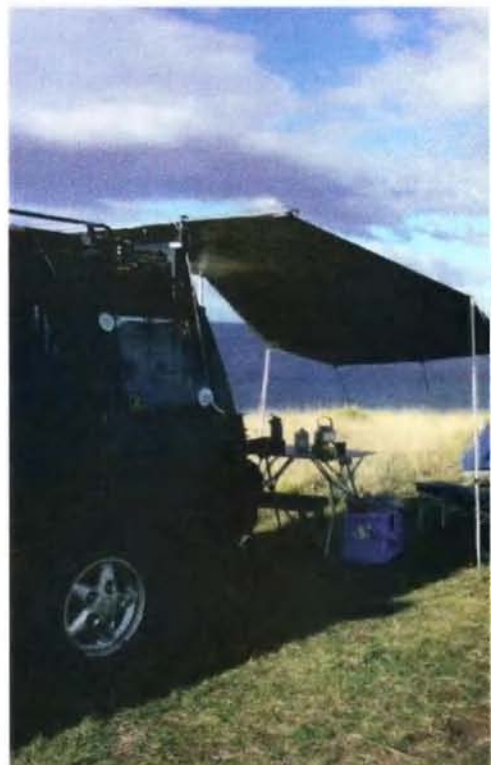
Station equipment included a Yaesu FT-897D with SGC-237 Smarttuner into a nine metre squid pole, two Icom IC-706MkIIIG with AH4 tuners and nine metre squid poles and a Kenwood



Ray VK7VKV and Ben VK7FBGS setting up the squid pole. Photo by VK7FCDW.



Ray VK7VKV and Cedric VK7CL. Photo by VK7FCDW.



Maria Island across Mercury Passage look



Maria Island across Mercury Passage looking past the camp

Photo : Roger VK7ARN.

TS- 130SE into a Ten-Tec ATU. The Kenwood had a choice of a five band trapped vertical and 90 metre longwire slung low in trees near the cliff edge. The preponderance of squid poles and Garry's vertical gave the Point the look of an echidna on a long leash in the form of Garry's longwire.

Come evening, Chris had to head off leaving the happy, but cold, campers with their two campervans and two tents. The weather was challenging for an activity consisting mainly of sitting around. Reasonably dry but cold and made more uncomfortable by the chill factor due to the strong wind.

Sunday dawned with a clear sky and welcome sunshine, but still with a fresh but lessening breeze keeping the felt temperature down. The heavy throb of diesels from the cray boats below made alarm clocks redundant. The bands were still busy but new lighthouse contacts were becoming few and far between. So, following a group call back on 80 metres after the WIA and regional broadcasts and an attention diversion to observe a pod of dolphins passing through Mercury Passage, we decided to do a leisurely pack up, take a light lunch and head off back across the

paddocks, to return the landowner's key and to meet up in Orford for a final coffee, snack and vitamin D boost in the, by now, warm sun.

More photos of the weekend can be found at http://tas.wicen.org.au/Photo_pages/illw_2010.html



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The 'big picture' is on page 56 and the inside back cover.



Garry VK7JGD unloading his rig. Photo by Chris VK7FCDW.



t the camp Photo : Roger VK7ARN.



Garry VK7JGD, Chris VK7FCDW, Roger VK7ARN, Cedric VK7CL and Ray VK7VKV. Photo by Ben VK7FBGS.



SCARC at the unique Point Malcolm lighthouse in VK5

Graham Thomas VK5GCT

SCARC members activated a lighthouse reputed to be the only one of its kind in the Southern Hemisphere— it is a freshwater light.

ILLW 2010

CQ lighthouse, CQ lighthouse, CQ lighthouse, this is VK5ARC.

The Kenwood TS-440S crackled into life as four members of the South Coast Amateur Radio Club (SCARC) in South Australia activated the Point

Malcolm lighthouse near Narrung.

Mal VK5MH, Mark VK5MWH, Steve VK5ZEO and Graham VK5GCT set up the field station at the reserve opposite the lighthouse on Saturday, 21 August, 2010 during rain showers.

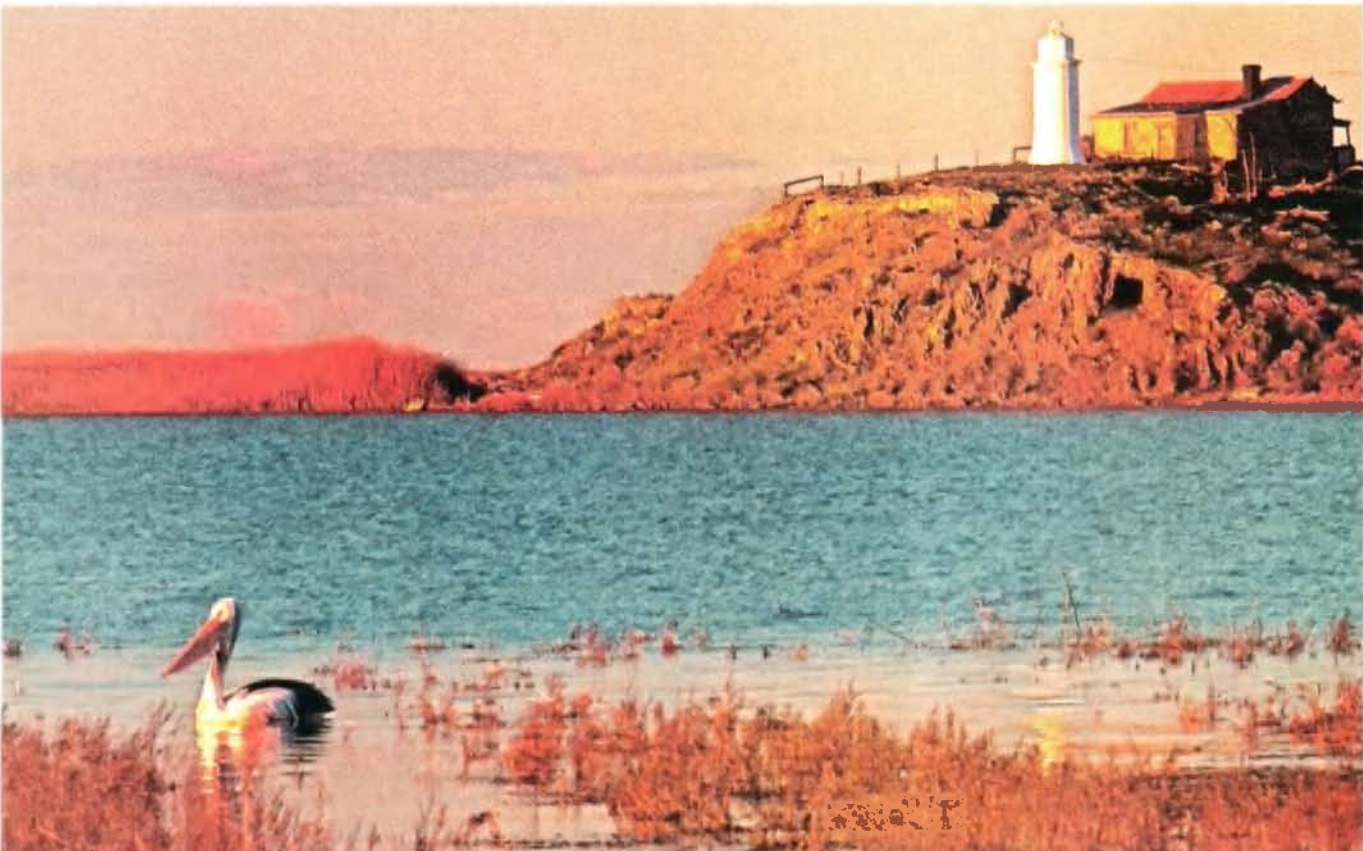
Point Malcolm lighthouse is on the Narrows between Lake Alexandrina and Lake Albert. Built in 1878 to guide paddle steamer traffic it was extinguished in 1931, and replaced by an electric light which operates today for safety and recreational purposes. It is reputedly the only freshwater lighthouse in the southern hemisphere.

Access to the site is problematic due to landowner concerns, so the VK5ARC call-sign made it onto the airwaves just after midday. Steve's camper trailer and its awning provided the participants with shelter from the rain and wind.

The station consisted of a Kenwood TS-440S, homebrew tuner and G5RV antenna mounted on a pump-up mast some 14 metres in the air. A Yaesu FT-857



The campsite at Point Malcolm.



A view of the lighthouse, situated on the Narrows between Lake Alexandrina and Lake Albert.

connected via a three element 2 metre Yagi, 70 cm Yagi and squid pole made up the rest of the portable set up.

In response to our first call, ZL6LH at Cape Egmont light responded with a 5 and 9 signal report. This augured well as we proceeded to work the 20 and 40 metre bands through the afternoon and early evening. One highlight was a QSO with an R1 station in Antarctica.

Despite close-by high voltage power lines, the ambient noise level was almost non-existent. The weather also improved making the event very enjoyable. It was particularly noticeable that more VK stations were participating as the ILLW did not clash with the Remembrance Day contest weekend (*organisers please note*).

As the sun sank, the temperature sank as well. Much warming fluid was needed to keep our jaws from freezing up.

Some problems were experienced tuning for the 80 metre band with a modification needed to the tuning circuit. Propagation was excellent with many stations making contact; some of these were repeats of earlier QSOs with lighthouses. Both two metres and 70 cm were available for local stations. At around 2200 hours local time, it was decided that a rest was in order.

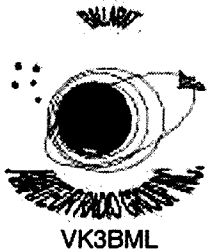
As the sun rose and the temperature got a little better, ILLW calls began again around 0700 local time on 80 metres. This band quickly deteriorated and we once again worked the 40 and 20 metre bands. Although the morning



Three of the four operators at Point Malcolm were, from L to R, Mark VK5MWH, Steve VK5ZEO and Mal VK5MH.

sun shone brightly, the NNW wind made for very cool conditions. Some two metre simplex QSOs were made with VK5 stations adding to the broad coverage. All too soon it was time to make the last call before pulling down the temporary set-up. This was completed without fuss and we were soon headed back to our homes feeling very pleased with the event. Some 47 lighthouses/lightships made contact with VK5ARC/portable Point Malcolm.

In summary, SCARC made a total of 180 contacts. This consisted of: VK1 = 3; VK2 = 30; VK3 = 41; VK4 = 27; VK5 = 44; VK6 = 8; and VK7 6. DX contacts = 21. Our thanks to all who made the effort to make the event so memorable.



B.A.R.G.

Ballarat Amateur Radio Group Inc.

Inc. # 6953T

ABN 44 247 200 143

HAMVENTION

on

Sunday, 24th October 2010

at

THE BALLARAT GREYHOUND RACING CLUB,
Rubicon Street, Redan.

DISPLAYS & SALES

Starts **STRICTLY** at 10.00 AM.

ENQUIRIES TO:

Bill Wells at 03 5352 3662

Email:

wilton@netconnect.com.au

Mail:

PO Box 1261,
Mail Centre,
BALLARAT VIC 3354

Gates open for set-up of traders at 8.00 am.

Trestles available at \$15.00 (1.8 m), which
includes one admission.

ADMISSION \$6.00
(Under 15 yrs old free)

Light lunch available.
Tea and coffee all day!

Having just returned from a wet week in Kalbarri, I am a little late writing the roundup this month, something that has been to my advantage it seems, as I have had several snippets from the various groups around the state sent in the past few days, so here we go.

First up unfortunately, from Cliff VK6LZ a notification of a silent key.

Sad news just received from Betty Fisher, the widow of Ron Fisher VK6RF, licensed since 1949, first in VK3 then VK6, who was just short of 82. He had been suffering with Alzheimer's for the past eight years. He had been in care for two years and passed away with pneumonia, on 1st of July 2010. The funeral has taken place at Pineroo on 7 July. He was a long time member of the WIA and WARG. His equipment was disposed of some time ago. Vale Ron.

73 Cliff.

News from Martin VK6ZMS: **HARG**

Perth has another APRS digipeater on air, VK6AHR-3 located at the Hills Amateur Radio Group in Lesmurdie. Ideally situated to cover the South East corner of the coastal plain the new digipeater will greatly enhance coverage around Perth. Initially it will run on a temporary antenna on HARG's roof but plans are under way to install a high gain collinear on the club's tower.

HARG also intend to interface a weather station in the transmissions. APRS traffic can be monitored on the internet by going to www.aprs.fi and centring the map on Perth.

The Hills Amateur Radio Group recently held the VK100WIA call sign with great success. Over 450 contacts were logged, the highlight being a pile-up into Europe on Saturday night July 31. The group was almost ready to pack it in for the evening when they gave 20 metres one last go. A station was heard calling CQ from Italy so the band was open. A spot was put on DX Summit and the resulting dogpile can be viewed on You-Tube.

<http://www.youtube.com/user/torquelimited8115>

Propagation was average on Sunday night, so Heath VK6TWO used the call sign on the D-STAR reflectors. Again

this proved to be very popular and he stayed up late into Monday morning making contacts.

HARG managed to gain publicity in two local papers about the event and the fact the shack would be open. A number of visitors took the opportunity to see an amateur radio station first hand, with many expressing an interest in the hobby.

HARG are currently planning their next event: the WIA National Field Day in October.

(also see box on facing page)

Thanks Martin for the update and the picture of activity at the lighthouse, it looks as if it was fun.

Ham College had its AGM on 17th August and the following was received from Joanne Breeze.

All positions were declared vacant and a new committee was elected for 2010-2011. The new committee is:

President: Doug Bell

Secretary: Joanne Breeze

Treasurer: Neil Husk

Assistant Treasurer: Kevin Pestell

Education Officer: Neil Husk

Enrolment Officer: Kylea White

Thanks for the update Joanne. I hope Ham College continues its sterling work recruiting new amateurs into the fold.

JOTA/JOTI is rapidly approaching and I know several groups will be active assisting the Scouts at various locations around the State, please contact Bob VK6POP if you can help in any way.

Also coming up is a very busy Contest month, with the NCRG away at Muresk for the Oceania DX SSB contest and intense activity on other weekends of the month from the club premises in Whiteman Park.

They will also be hosting the Herne Hill Scout group for JOTA in the midst of all the contests. They also received a visit from Barry WD4MSM, who is living in Fremantle on a University exchange program, the first of many visits he assures us while he is here.

I was up in Tom Price recently and tried out the new 2 metre repeater VK6RTP. The coverage was excellent

around the town and for a reasonable distance into the surrounding country side. Hopefully the new improved antenna system will extend that even further for the travellers passing through this beautiful part of the Pilbarra.

As I was there on a Wednesday during working hours, I was unable to drum up any of the locals for a contact. I was also in Karratha and Port Hedland the week before, with equal lack of success for a 2 metre contact. The amateur population up there is increasing with the transient workforce, so I am sure there will be plenty of activity soon.

The WIA National Field day is on Saturday 23rd October and I hope some of the State's groups will be participating, more details on the WIA website. Register your intent to participate on the website to enable events to be coordinated.

Finally for this month an update from Maarten VK6MP for the **Geraldton Amateur Radio Group**:

The Geraldton Amateur Radio Group had a bimonthly meeting on 08/8/2010.

During the meeting this new committee was elected, Chairman Maarten Plug VK6MP, Secretary/Treasurer Steve Wellington VK6FSWR and remaining again as Technical Equipment Officer Graham Drage VK6KAE. Maarten thanked outgoing Chairman Gordon Williams VK6IU for his many years service. Also without his excellent efforts, the Geraldton Amateur Radio Group more than likely would have folded many years ago.

There are many plans afoot for the Group. To start off with, we will be resurrecting repeater VK6ROO 146.775 MHz located on the CBH Elevator Building on the Geraldton Wharf. The EchoLink node VK6MP-L will be back on air shortly along with APRS and later, IRLP We are looking to link repeater VK6RGN with VK6RNR at Northampton.

An APRS I-Gate has been established and a digipeater should be installed in the next few weeks. Some of our members now have TinyTrack4

trackers that have both position and messaging capability, so if in the area, keep an eye out for us.

For those interested in AIS (Automatic Identification System) for shipping, Rick VK6XLR has a node online.

This is a receive-only system monitoring AIS data on 161.975 and 162.025 MHz. Traffic can be viewed at www.marinetraffic.com. The system is a very effective indicator of tropospheric propagation on the West Coast. Best two days so far has displayed traffic from Albany to past Exmouth. That's some troppo!

73, Maarten Plug VK6MP

Chairman Geraldton Amateur Radio Group

I am delighted to see activity again from the Geraldton area. It has been quiet up there for some time and I was pleased to chat with GARG members at Hamfest this year and to see their enthusiasm.

That about wraps things up for this month's notes. Thanks for all the input and please keep it coming!

73 Keith VK6RK
vk6rk@wia.org.au

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City Lights

While some went remote coastal, other ILLW participants found a light on their doorstep.

HARG participated in the International

Lighthouse Lightship Weekend, activating the North Mole Lighthouse in Fremantle AU0073 using the club's call sign VK6AHR.

Richard VK6BMW made his camper van available for use as the radio room. It doubled as the kitchen with Richard's cooking setting off the smoke alarm during a pile-up on 40 metres. The main antenna was a 9 metre long squid pole with an SCG auto tuner at the base. Radials were run over nearby rocks with one bared and thrown into the sea. This proved to be an excellent set up with strong signal reports received from Europe on 20 metres and the United States on 40 metres.

Power was provided by a number of solar cells and heavy duty batteries; the sun stayed out long enough to ensure a full charge. The Group also had a visitor from America call past, Barry WD4MSM, who jumped at the opportunity to have a go on the microphone making many overseas contacts. A great time was had by all members and HARG will be back next year.



Working in tight spots

I mentioned that I would be starting up a 'show and tell' for shack pictures. So to start it off, I have selected this submission from Lindsay VK6KID: Thanks Lindsay. I hope others will continue to submit their pictures as well.

Hi Keith, Pictured is my shack.

I am in an apartment so space is at a premium. I am using a G5RV on top of the building.

Equipment bottom to top:

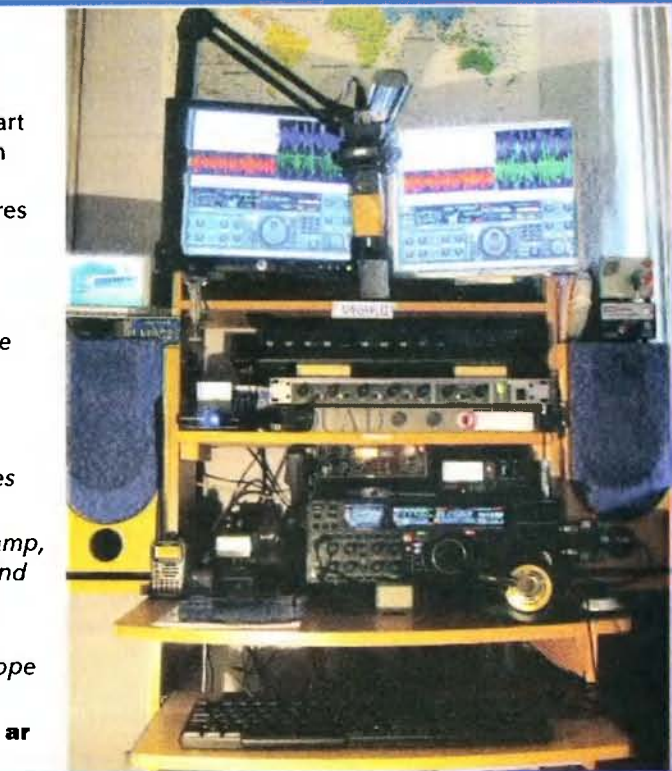
Yaesu FT-2000

Left: Tram CB radio converted to 10 metres thru 50 watt linear amp.

Right: AV 1000 SWR Meter, QUAD audio amp, Aphex Studio Dominator (stereo MultiBand peak limiter), Soundcraft Spirit Mixer.

AKG 414 Condenser studio broadcast microphone, computer monitors with scope and FT-2000 controller software.

73 Lindsay Muggridge VK6KID.



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Recent activities on the 137 kHz band in VK1 and VK2

Dale Hughes VK1DSH

Australian amateurs were granted a frequency allocation between 135.7 and 137.8 kHz in January 2009. This band offers a number of interesting challenges:

- As the wavelength is approximately 2200 m, any antenna that the average amateur can erect is very inefficient, resulting in very low radiated power.
- Most commercial equipment has very limited capability at LF, so much of the equipment used has to be home built.
- The band is very noisy due to interference from switch-mode power supplies, compact fluorescent lights and many other devices.
- For anything beyond local contacts, the operating modes and procedures are unlike that used on most of the other amateur bands.

However, despite these factors, or perhaps because of them, there is activity taking place in a number of locations at present.

The purpose of this article is to inform other interested people and to increase activity in this fascinating area of radio communications.

Arranging LF activities

Since approximately November, 2009 there have been fairly regular test transmissions from VK2AVQ and VK2AWD in Sydney and VK1SV and VK1DSH in Canberra, with a number of listeners in New Zealand also observing and hoping to receive signals. Due to the presently small number of people involved, these tests are usually arranged in advance

via the Low Frequency Experimenters (lofexp) mailing list which is run by Steve VK2XV as part of his *DownUnder LF Experimenters' Group* website (<http://au.groups.yahoo.com/group/lofexp/>).

Transmission times, frequencies and modes are posted on the mailing list, as are signal reports which are usually posted shortly after the test transmission is complete. Aside from the advertised tests there are ad-hoc transmissions in the usual amateur way, but given the few likely listeners (at present) these tests generally go unreported.

Communication Modes

Due to high levels of noise (natural and man-made) and weak signal

strengths for all but local contacts, long distance contacts use various types of slow, or very slow speed Morse code, either as conventional On-Off Keying, or some variation of Frequency Shift Keying (dots and dashes sent as different frequencies).

These modes are generically referred to as QRSS with a descriptor for the length of the signalling element (a 'dot') e.g. QRSS120

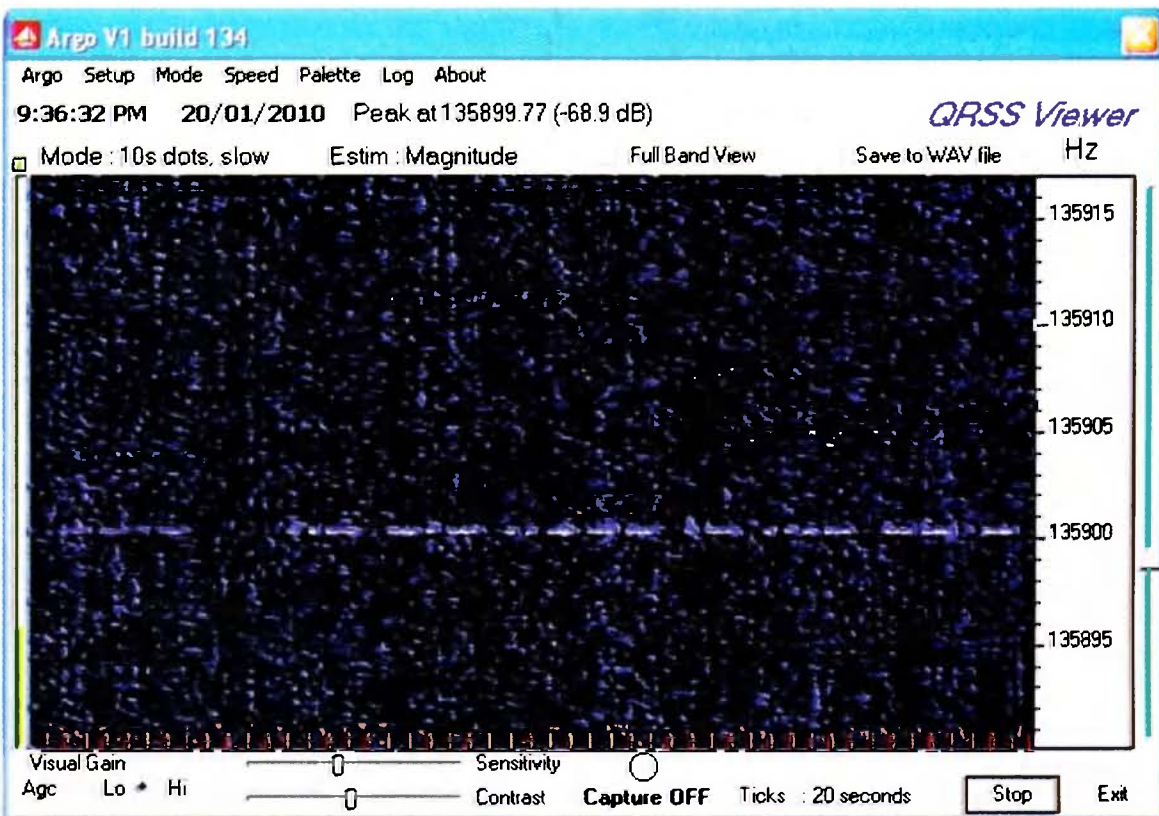


Figure 1: A QRSS CW signal received in Canberra from VK2AVQ using ARGO. The user has the option of calibrating ARGO so that it shows the actual transmit/receive frequency or the audio beat frequency.

translates to very slow speed CW using 120 second dot lengths.

The implication of the slow speed is that the receiver bandwidth can be very narrow (to maximise received signal to noise ratio) and that the message takes a long time to transmit.

Recent work by ZL1BPU to increase the amount of text sent in a given time has resulted in the introduction of CASTLE mode, where dots and dashes are sent at slightly different frequencies depending on their location within the actual code character. This improves signalling efficiency by approximately three times. See <http://www.qsl.net/zl1bpu/MICRO/EXCITER/castle.htm> for more details.

In all cases, a QRSS contact uses a computer to acquire and display the spectra of the received signal and the operator decodes the message by looking at the display. A typical example is shown in Figure 1.

The free available program called ARGO is generally used, although other packages exist. ARGO can be downloaded from the website of its author I2PHD: <http://www.weaksignals.com/>

Equipment used

A wide range of equipment can be used for LF activity, either all home made or a combination of home made converters and commercial equipment. A typical setup uses separate aerials for receive and transmit; receive aerials are usually either loops or active whips depending on the local

electrical environment.

Transmit aerials are generally an 'inverted L' or 'T' type antenna at a height of about 10 m (or higher if possible) and as long as possible.

Drew Diamond VK3XU has published a number of construction articles in AR magazine for 137 kHz equipment and the RSGB book *LF today* (available through the WIA bookshop) contains a wealth of construction and operational information.

Results so far

Recently there have been a number of transmission tests which are very useful for determining and developing the capability of individual LF stations.

Signals have been successfully received in Canberra from Sydney stations and vice-versa.

Two-way QSOs have occurred between VK1SV and VK1DSH, between VK2AWD and VK1DSH and between VK2AVQ, VK2AWD and

VK2XV. Various modes have been used, including standard CW.

On 21 March 2010 signals from VK1DSH in Canberra were received by stations in New Zealand. This is believed to be the first time that a transmission from VK1 on the 137 kHz LF band has been heard across the Tasman.

The transmission took place using QRSS120 CASTLE mode and Figure 2 shows the signal received by ZL2CA.

Conclusion

This short article was written to highlight the current 137 kHz activity known to the author in the VK1 and VK2 regions.

The 137 kHz band offers many interesting challenges and the opportunity to explore a part of the radio spectrum that has remained 'off limits' to amateurs since (more-or-less) the beginning of the radio age.

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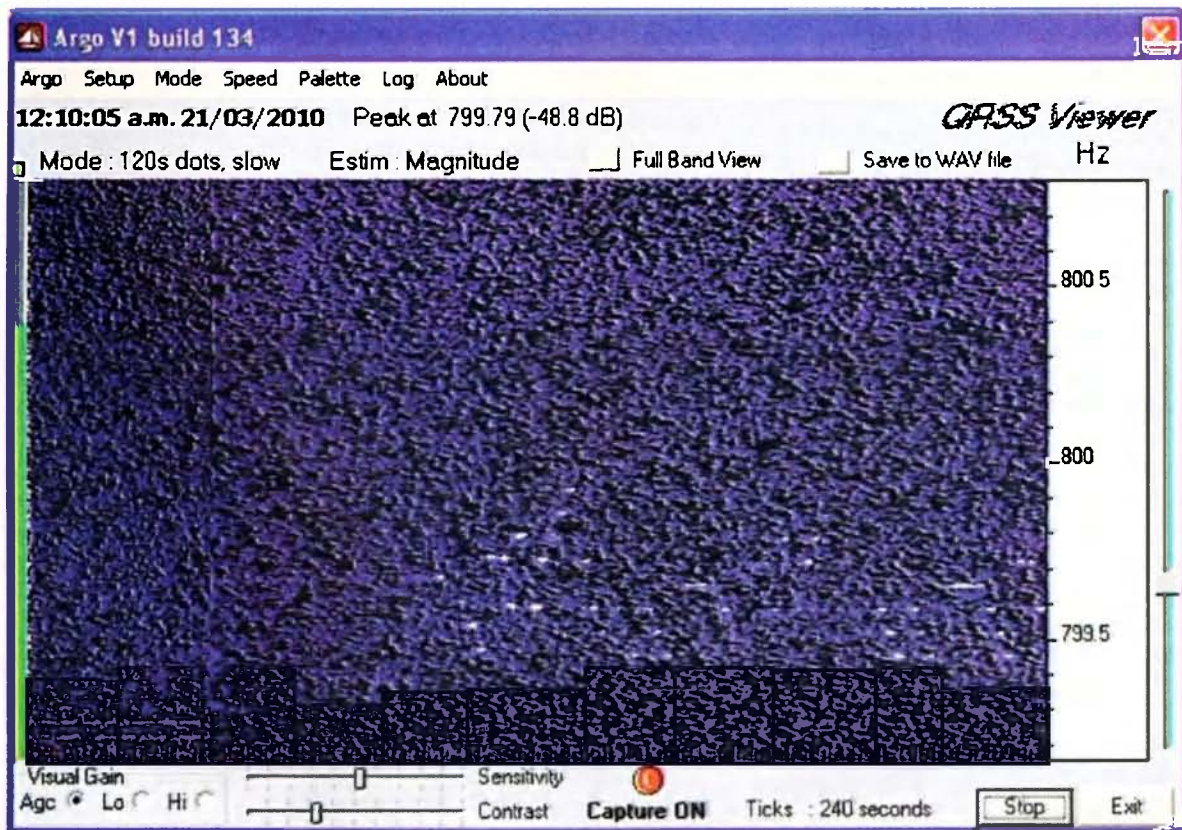


Figure 2: CASTLE mode signal received by ZL2CA of VK1DSH transmission. The estimated EIRP was 25 mW and the distance from VK1DSH to ZL2CA is approximately 2330 km. CASTLE is decoded by observing that individual dots are below the centre frequency of 799.65 Hz and dashes (same length as dots) are above 799.65 Hz; the frequency shift of each signal element is determined by its position within the code group for each character. Thus 'V' is collection of three lines below the centre and one line above. The actual frequency used for the test was 135.920 kHz.

I hope that you are ready to work the new countries which will have become operable from 10 October!

So onto other DX news.

Kevin VK4KEV (ex VK4FRAT) expects to be operating as VK0KEV from Macquarie Island somewhere around November and then for as much as 18 months. He will be active mostly on 40 and 20 m SSB and digital. He is awaiting formal approval and firm inward voyage dates. Currently, Kevin is operating as VK4KEV/VK7 in Hobart, Tasmania while undergoing training for the long stay on Macquarie.

The upcoming October 2010 DXpedition to Sable Island team have modified the dates of their trip. Also one of their team members has withdrawn due to work commitments. The new dates are expected to be October 21 to 29 and unfortunately the original organizer Murray WA4DAN will not be going. The four man team will be signing their own calls (CY0/AA4VK, CY0/A15P, CY0/N0TG and CY0/VE1RGB). The team's website is www.cy0dxpedition.com and includes all QSL details.

Virginia DX Century Club members Tip KG4AS (N4SIA), Quint KG4QW (K4CQW), Stu KG4SS (K4MIL) and Bill KG4WV (W4WV) are heading to Guantanamo Bay. They will be arriving late on October 5th and leaving on October 19th. The group will operate on 160 through 6 metres as band conditions dictate and with CW, RTTY, and SSB. Due to a local noise source by the shack there might be limited activity on 160. QSL via the operator's home call.

Craig VK4LDX/VK8PDX will be holidaying on Fitzroy Island (OC-172) and QRV as VK4LDX/P from October 16 to 22. with expected activity on 40, 20 and 15 metres SSB, PSK and RTTY. This IOTA has not been on since 2003. He has a Web page at <http://vk4ldxoc172.blogspot.com/>

Pierre ZS8M (ZS1HF) reports that the ship that he supports when it is in port has now left, giving him some free time for amateur radio. The ship dropped off a team of 50 construction workers to complete the new base on Marion Island. The ship comes back in November to pick

them up. Pierre says "ZS8M is back and operational again, but I need to watch my operating times as I don't want to create any problem with management." The SteppIR vertical will stay boxed until the weather improves enough for him to put it up, or he can put it up at the new base.

Bill N7OU is heading back to the Cook Islands. Plans are to operate again as E51NOU from Rarotonga (OC-013), South Cooks between October 18th and November 13th. He will be QRV in his spare time from his volunteer work. Bill will be running 100 watts into a vertical on 7 through 28 MHz. QSL via N7OU.

A multi-national team plans to go to Niue Island (ZK2) and then Norfolk Island (VK9N) during late November and early December. First it will be ZK2AA from 20 November to 3 December. Plans are to have four Europe focussed rigs with an emphasis on 1.8 through 10 MHz, as well as 17 and 24 MHz and CW and RTTY. Then they will be operating from Norfolk, no call mentioned, from 5-12 December, with the same focus and emphasis. They are planning a Web site. QSL via PA3LEO.

ARRL DXCC Entity ZD9 consists of the islands of Tristan da Cunha, Inaccessible, Middle, Nightingale, Stoltenhoff and Gough. Tristan da Cunha has a permanent population (200-300) and over the years several have been active ZD9s. The other islands are uninhabited. During 2009 there was no activity from ZD9. John ZS1LF (ex ZR1JON) is heading to Gough Island (AF-030) this September for a one year work assignment as the team leader and radio technician. For those who are participating in the CQ Magazine's CQ DX Field Award Gough Island is the only island located in the IE Field. This will be his second time to the remote island. He is brand new to HF and has no experience on HF. John plans to be QRV in his spare time as ZD9GI. Activity is not expected until after the *SA Agulhas* drops off the team and their supplies sometime in October. He will have a TS-480, an amplifier and dipoles. Plans are to operate on frequencies between 1.8 and 28 MHz, usually "after official

working hours and weekends". Initially he will be on SSB only and then afterwards on the digital modes. ZS1A (ex ZS6JHS), Johan Sevenster, will be the QSL manager. His address is: 2 Roozeboom Str, de Bron, Bellville 7530, SOUTH AFRICA.

Iranian Amateur Radio operators EP2ES, EP3AG, EP3SMH, EP3HAM, EP3CQ and EP3DX, all members of the Iran Amateur Radio Club station EP3PTT, are currently active, says Col MM0NDX. Despite the fact that Iran is a member of the Universal Postal Union (UPU), Iranian DXers cannot redeem International Reply Coupons (IRCs) to Iranian postage and request US Dollars for direct QSL requests. Iran does not have a QSL bureau.

K5LBU (A25CF), K5ZOL (A25BI), KD5TAN (A25AN), I0ZY (A25ZY), IK1MDF (A25DF), IZ5MMB (A25MB) and W5SL (A25ASL) will be active from Botswana between 21 October and 4 November. QSL via home calls. They plan three stations on 160-10 metres (hopefully also on 6 m) and to participate in the CQ WW DX SSB Contest as A25HQ (QSL via K5LBU). Financial support to help with the expenses is gratefully accepted. The website is at www.qsl.net/a25-2010

Joe JA1LZR and Yutaka JQ2GYU will be active as JW/HB9LEY and JW/JQ2GYU from Svalbard on 10-14 October. They will operate CW and SSB with a low band focus as well as on 30, 17 and 12 metres. QSL for both via JQ2GYU, direct or bureau.

Andy ZC4VJ (G3ZB) has completed his work assignment at the UK Sovereign Bases on Cyprus and is expected back in the UK soon. He made some 66k QSOs while there.

Tom K7ZZ is making a micro-lite trip to Ascension Island. Look for ZD8ZZ (that is double zed) from October 6 through 19 on 160 through 10 metres on CW and SSB. Although bare foot, operations will be from near the top of Green Mountain (elevation 2300 feet (700 m)) overlooking the Atlantic. Antennas include a two element phased vertical array. QSL is via LOTW or direct to K7ZZ.

Finally for this month R11FJ is now active from Franz Josef Land. Note, this is a new prefix, not a

typographical error. This is the former R1FJT station from 2006-2008. Operating is Eugene UA4RX. He is on a new one-year tour that started August 24th at the weather station on Heiss Island in FJL. He has been on 20 and 17 CW so far, typically between 0130- 02 Z and 09-12 Z. QSL via Eugene Chepur, P.O. Box 1122, Kaliningrad, 236019 RUSSIA.

Good luck in the pile-ups until next month.

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/trial.htm

ar

YJOVK

The YJOVK team is now home, after almost six days of operation from Vanuatu, which finished on 2 September 2010.

The team logged 3946 QSOs from 69 countries, with 2200 unique callsigns. The teams reports they were very happy, considering the very poor propagation.

They send a big thank you to the patient DXers out there who worked them.

They wished that "the conditions were kinder, especially into EU, but it was not to be. We did our best. 73 to all - see you next time!"

More details of the Expedition can be found at: <http://yj0vk.vkham.com/>

*Some people busy....
some people not?*



The YJOVK team: Allan VK2CA, Luke VK3HJ and Brenton VK3CBV (standing), with Chris VK3QB at the controls.

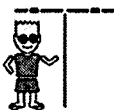


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ALARA ALARA 35TH birthday celebrations

The VK2 birthday luncheon was held on 24th July at the Winston Hills Guide Hall. The party was planned and prepared by Norma VK2YL and Frank VK2AKG and their daughters Lorraine VK2FICQ and Michelle VK2FMYL. The hall was decorated and a table was bursting with food.

I think they must have eaten well the following week for only four other people turned up. Karen VK2AKB and her OM Peter VK2EHQ, Dot VK2DB and OM John VK2ZOI. We had a good afternoon with Dot showing her photos of the Friedrichshafen Radio Meet and the Zeppelin Museum and Norma showing us the photos of the ALARA talk she gave at the WIA Centenary Convention in Canberra. Even though the numbers were low, we had good food, good company and a good chat. Diane VK2FDNE and a friend were coming from near Newcastle but got lost, so after three hours driving and two hours looking for the place, they stopped and ate the food they were bringing and went back home. Diane said they had a good afternoon together but it was just not what they expected! We are planning to hold another VK2 lunch meeting towards the end of the year and hope that more YLs and their OMs are able to attend. Dorothy Bishop VK2DB.



VK2 ALARA lunch: Norma VK2YL and her daughters are in the middle of the photo.

Congratulations to the VK2 members for initiating a get together for NSW ALARA members. I am sure the word will get around and numbers will increase. It is such a great way to catch up in person and communicate face to face.

VK3 held their ALARA birthday luncheon at Sunbury this year. Jenny VK5ANW/3 hosted together with Peter VK3RV who provided an appreciative audience with entertainment. 23 people attended and had a most



VK3 ALARA birthday luncheon.

enjoyable time. There was a generous amount of food including a special birthday cake. Those present included members of the Midland Radio Club, the Gippsland Gate Radio and Electronics Club, and the Eastern and Mountain District Radio Club. Jean VK3VIP brought along two visitors from New Zealand, Marlene who is sponsored by Jean, and her husband Laurie who were visiting Melbourne for a few days. Marlene a member of WARO informed us she was going to sit for her licence shortly after returning home. Margaret VK3FMAB.

22 attended the VK5 ALARA birthday luncheon – see the story on page 41 of the September issue of AR.

Snippets

Congratulations, ALARA operators managed 600 contacts when using the VK100WIA centenary callsign over the three day period they were assigned.

WARO (NZ) will celebrate their 50th anniversary in 2012. People might like to keep this in mind if planning a trip to New Zealand and would like to attend.....

The new callsign for Susan VK3LOV is now VK3UMM. Thanks Susan this is a nice easy one to remember.

In response to an earlier article which referred to business cards being used by a radio club to advertise their hobby suggestions have been received about other ways ALARA members can promote our organization.

Organisers of Club Field Days or Ham Fests can be asked to display notices or display hand-out Sheets with information about ALARA and who to contact to follow up an interest. Usually the refreshment side of things is XYL territory. So this could be encouraged within various clubs.

Shirley VK5YL reminds us that the ALARA conference station on EchoLink is on '0500 UTC on the fourth Thursday'. It is a good chance to catch up with other members.

Comments from Dot VK2DB (Editor ALARA Newsletter)

Last weekend I attended the Blue Mountains Winterfest and shared Judy VK2TJU's table having my ALARA cloth on one half and her AMSAT cloth on the other half. We had a good chat and I showed her and other interested viewers some of my photos of the YL Meet in Munich and my river cruise from Amsterdam to Budapest.

Judy popped outside with her antenna now and then to give demonstrations and answer questions about the amateur satellites. It did appear to me that YL numbers were a bit down this year.



ALARA

ALARA lights up

"Steadfast, serene, immovable, the same, Year after year, through all the silent night.

Burns on for evermore that quenchless flame.

Shines on that inextinguishable light"

Ode to LighthousesHenry Longfellow

The International Lighthouse Lightship Weekend came into being in 1997. It now coincides on the Sunday with the International Lighthouse Day which is an event organized by the International Association of Lighthouse Keepers whereby many world lighthouses will be open to the public for the day. This year 447 lighthouse locations were represented and 57 of these were Australian.

This event provides an opportunity for operators to have fun while making contact with as many amateur radio stations as possible. Each station's operators decided modes and bands. The basic objective is to promote public awareness of lighthouses and lightships and their need for preservation and restoration, to promote amateur radio and to foster international goodwill.

Eastern and Mountain District Radio Club

Eastern Mountain District Radio Club had members at two lighthouses. ALARA member Jean VK3VIP went to Cape Liptrap with several other members of the club.



Cape Liptrap: Jean VK3VIP manning the radio with some of the team.

Apart from erecting the antenna in poor weather, they remained cosy inside their accommodation. The operators made a total of 387 contacts; approximately 30% of these were DX.

(Editor's Note: I have been advised that this operation has been withdrawn from the ILLW list of activations this year, as apparently most of the operation occurred not at the lighthouse but approximately 5 km away at Bear Gully Cottages. Therefore the operation was not in compliance with the ILLW guidelines.)

Five EMDRC members attended the Cape Schanck lighthouse. The weather was quite tempestuous Friday and Saturday. Fortunately the accommodation was comfortable and apart from setting up the antennas, the operators remained inside during the worst weather. Sunday however, saw brilliant sunshine and blue skies. Altogether 90 contacts were made, including 22 lighthouses.

Gippsland Gate Radio and Electronics Club – Wilsons Promontory

Comments: Pat VK3OZ and Graeme VK3BXG

Perhaps one of the most adventurous ILLW participants was a group from the Gippsland Gate Radio and Electronics Club who walked into the lighthouse at Wilsons Promontory carrying all their equipment. This included ALARA member Pat VK3OZ, who had been training for some weeks for this event.

"Seven of us departed for the lighthouse from Telegraph Saddle, just south of Tidal River at 09:00 on Friday 20th August. The weather was atrocious with gale force winds but we made good time which included a 30 minute lunch break along the way and arriving at the lighthouse at about 14:30 just as it started raining almost horizontal with the gale force wind. The accommodation was a much-renovated 150 year old light keeper's home – 4 bedrooms with bunk beds to bed-down 12 people.



See the 'big picture' on the inside back cover.

Equipment we had back-packed in were two transceivers – an IC-706MkIIIG and an IC-7000, two ATUs and two switch mode 240 volt AC to 12 volt DC power supplies. Although it was envisaged running only one HF station, the time and expense would have all been for nothing if there had been a failure with one item with a one-only set of equipment. But the extra transceiver later proved its worth for 2 metres SSB use.

For the mast, we chose to take and use a ten metre squid pole with the top three sections removed, bringing it back to a sturdier type of seven; bearing in mind it too has to be back-packed in and out. The mast was nylon cord guyed in the middle and top to keep it straight and the antenna, a coax and balun fed inverted vee dipole with clips for 80, 40 and 20 metres can then be hoisted up the mast.

Contact was made with 30 other lighthouses in Australia and New Zealand and over 180 home stations – well worth the effort. Pat VK3OZ made our CW contacts into New Zealand for the log. With the 2 metre beam mounted low down on the mast we also made contact with VK3EG, Point Hicks some 300 km over water to east north east. They were the only 2 metre contacts we made over the weekend.

By early Sunday morning the wind had dropped significantly, the sky was clear and the sun shining. The return journey was more pleasant although 18 km still needed to be covered. All seven members were glad of the training they had undertaken beforehand."



Pat VK3OZ making contacts.

Operating Portable in the Deep North

Mike Patterson VK4MIK and Ross Anderson VK4AQ

Contacts from Grassy Hill



TRG has an increasing record of involvement in the International Lighthouse Lightship Weekend (ILLW) with the Group having just completed our sixth year of operations from the Grassy Hill Lighthouse, just above the township of Cooktown.

Established in 1885 the light has operated pretty much continuously since. It is rather unique as the structure is of a tapering corrugated iron from top to bottom, a rather specialized process even by today's standards.

is of a tapering corrugated iron from top to bottom, a rather specialized process even by today's standards.



The 'shack' on Grassy Hill 2010.

Our Group adopted this particular light as it has a proud record of helping mariners plot their way through the Great Barrier Reef and we also have several members whose livelihood depended on work on Cape York Peninsula or at sea around Cooktown.

Stan VK4MFA worked on many of the roads, Wilf VK4ZNZ worked for PMG servicing much of the area for many years, Alan VK4HBN was involved with stream flow work, Dave VK4FUY and Pat VK4MUY lived in Cooktown for several years, Ray VK4TFT still works in telecommunications in the Cape and Gulf region, Bill VK4WL lived and worked on the Cape and Torres Strait, Dennis VK4JDJ worked cattle and was involved in drilling operations over an extensive part

of the Cape and Gulf district and Mike VK4MIK carried our hydrographic survey work on the Barrier Reef for about eight years.

With this close regional connection it seems perfectly natural for TRG to be part of this wonderful event from this particular location.

Preparations for the ILLW commenced several months prior to the event with construction of new antennas, equipment updating and negotiations with the Cook Shire Council for access because of extensive upgrading of the road up to the light.

The group usually travels to Cooktown in convoy on the Friday morning prior and takes up residence in our regular motel thus ensuring a rest between radio shifts and allows



A view of Grassy Hill Lighthouse following recent road works.



ILLW.Cooktown 2010 (L-R): Wayne VK4ARW, Wilf VK4ZNZ, Stan VK4MFA, Ross VK4AQ and XYL Bev, Mike VK4MIK (rear) and Billy VK4WL. (Absent Dave VK4FUY and Pat VK4MUY).

a break and hot shower after the strong winds and dust for which Grassy Hill is quite infamous.

Mirth and frivolity were the order of the evening on Friday with our usual BBQ supper. Our guests included Mayor Peter and XYL Sayah and half a dozen friendly Cooktown identities.

The famous TRG Goose Club followed and sufficient funds were raised to cover all our licences for the upcoming year. Dave FUY and his friends entertained us with a range of working model steam engines which provided a few light-hearted moments of anticipation before bedtime.

On the Saturday morning we started early and set up the pergola and wind breaks, antennas, batteries and solar panels plus generator for night lighting. A normal shift involves two operators rotating as operator and logger. Having 11 at the site this year certainly assisted in record breaking setting up and subsequent logistic support. We are indeed fortunate to have several XYLs supporting this annual venture.

The inverted vee, hoisted on a 12 metre mast worked reasonably well and withstood the very strong winds as it had been built to do. The Group is getting quite proficient in building wind resistant structures.

The station operated for in excess of 25 hours even though bands were not good at some of these times. VK4GHL logged in the order of 100 calls, some 25 of which were CW, and contact was made with about the same number of actual lighthouses. This was a pleasing result given that much of our time on 'the Hill' was spent with the large number of inquisitive visitors to the 'shack'.

This was a quite unexpected and a rather delightful extension to our usual laid back fun day. The big winner out of this, of course, was amateur radio. In our post event debrief it was estimated that we entertained at least 200 visitors. This even led to a bottle of port wine being sent up to the Group by a grateful tourist.

We also welcomed two amateurs in Russell VK3RJL and Sam VK2FMAS. Year 9 student Sam spent some time in the operating chair and was hopeful of a QSO with his grandfather in VK3 but conditions at the time were just not favourable for him although each knew the other was there.

Sam's mum, Shelly, was doing research work for her PhD in Cooktown and has assured us of a return visit next year. The road closure meant that visitors to the light were on foot this year which resulted in a keener scrutiny of the group's activities – a pleasant and rewarding experience. *During his visit to our site, the Mayor was moved to suggest we take on the additional role of tour guide during future ILLWs, hi.*

On Sunday afternoon the station was dismantled and we retired to the motel to debrief and rest prior to the four hour drive return trip on Monday morning. Motel bookings were made and approvals received from Council to operate from Grassy Hill Lighthouse again in 2011, so the well travelled and versatile TRG is not letting the grass grow under its feet.

The return to our home QTH involved unpacking, cleaning, maintaining and repacking for a quick turnaround for a trip to Mt Fox, west of Ingham and the site of Australia's last volcanic eruption.

Three days at the volcano

A DX venture to Mt Fox, west of Ingham, the site of Australia's last volcanic eruption

Ross VK4AQ, Bill VK4WL and Mike VK4MIK were joined by Vern VK4FVC and XYL Nell at the Mt Fox Cricket Club. Many amateurs would know that Mt Fox is the QTH of well known motor bike racing aficionado, Rob VK4ARQ. He and XYL Caroline were on hand to greet us with that warm hospitality so well known in country folk.

We arrived just after lunch and immediately set about getting the various tents and antennas up and rigs operating. It was great to have a variety of HF antennae ranging from trapped dipoles, inverted vees, long wire and squid pole vertical plus a small vertical to use on digital.

We operated in CW, SSB and digital modes on the usual Nets plus participated in some very worthwhile DX. The three days at Mt Fox were mainly social and Rob and Carolyn hosted a lovely BBQ for us during our visit. We were also able to meet the local primary school principal and enjoyed his company at the BBQ as well. A group of Jeep owners came up and bivouacked on Friday evening and we had a long discussion about amateur radio and 4WDing.

TRG enjoy their many and varied 'up country' trips as it provides the opportunity to explore new locations, maintain camping and bush cooking skills and, importantly, operate radio equipment under a range of differing conditions. Murphy is a regular visitor but our ability to



Ross VK4AQ, Vern VK4FVC, Mike VK4MIK and Billy VK4WL at Mount Fox.

overcome the challenges he throws our way will soon see him give up on us.

The opportunity to promote amateur radio is always uppermost in our minds and WIA brochures seem to be taken with interest by visitors to our operations.

Camaraderie and humour are the standout features of TRG activities and the only essential characteristic required for one of these trips is to have a hide as thick as that of a rhino.

Until next time 73 and good DX.

Amateur Radio Victoria

Plenty to talk about this month. There is an update on VK3RAN, the announcement about special event callsign VK100GG for JOTA, and recording the passing of an old-old-timer.

Firstly, thanks to Tony Hambling VK3VTH for his support in the past and recent acceptance of a position as a Councillor for Amateur Radio Victoria.

Museum ship on air

The amateur station VK3RAN on HMAS Castlemaine, moored at Gem Pier in Williamstown, is being heard on air more often.

A small number of volunteers are operating it on board this retired 1942 Corvette/Minesweeper and have consolidated its return that began with the International Museum Weekend in July for the past two years.

Now added to the calendar is the new activity on ANZAC Day 25 April that encourages the use of amplitude modulated (AM) transmission. Our Event Coordinator Terry Murphy VK3UP and Michele Grant VK3FEAT put it on air this year.

Despite a high level local noise 113 stations were worked, three in the Australian capital territory, 40 in VK2, 34 VK3, 10 VK4, 16 VK6 and 10 VK7.

Amateur Radio Victoria has indicated

its willingness to participate in the ANZAC Day event should it be held again.

More recently VK3RAN was back on air for the annual Historic Military Vehicles Display, 8 August, which attracts quite a crowd to the wheeled muster along the pier.

Promotional material including a poster leaflet and media release helped publicise the day. Terry VK3UP made 68 contacts and there were plenty of visitors on board learning about amateur radio.

Until now VK3RAN had been operating from the ship's bridge. Now the warship radio room has been cleared and it will be used in future.

A restored Navy B40 radio receiver is being installed and an AM transmitter will join it later.

Two display boards are being created, one explaining the radio station and the other is as a show-board of the incoming QSL cards received by VK3RAN.

While on the subject of QSLs, full colour VK3RAN cards have been printed courtesy of the Maritime Trust of Australia which, through volunteers, maintains the museum ship.

Girl Guides Australia Centenary

Amateur Radio Victoria is proudly supporting this milestone by putting on air later this month the special event callsign VK100GG, already being dubbed the 'sister callsign' to VK100WIA issued for the WIA Centenary.

Both callsigns will be on air for JOTA. VK100WIA is rostered to the Scout Radio Electronics Service Unit on the Saturday (UTC) and then it switches to the Eastern Zone Amateur Radio Club on Sunday. VK100GG is keen to make contact with both, and who knows it might even be able to qualify for the WIA Centenary Award.

Our Event Coordinator, Terry Murphy VK3UP, has attended several planning meetings with the organisers of Girl Guides Association. More details about VK100GG will be announced soon.

Alf Chandler exVK3LC (SK)

It is with deep sadness that we learn of the passing of Alf Chandler at the age of 105.

Alf, who lived his final years in a care facility, celebrated his 105th birthday on 1 June with family and friends and said, "I have lived a very happy life. The secret is not being sad at any time, never be sad."

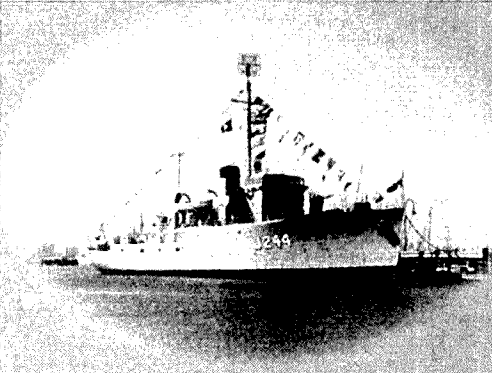
He was predeceased by his wife Elise for a quarter of century in May this year. During his student years

at Melbourne's Scotch College, he discovered wireless and that became a life-long passion.

Well known for his contributions to the WIA, both Federal and Victorian – an Honorary Life Member of both organisations, and loyal member and elder statesman of the Moorabbin & District Radio Club. VK3LC the 'Ripple from the South' is now a silent key.


Rest in Peace Alf. You were a gentleman, a long time carer, quiet achiever, and gave inspiration to many.

ar



VK3RAN

THIS STATION IS OPERATED BY AMATEUR RADIO VICTORIAN MEMBERS IN SUPPORT OF THE MARITIME TRUST OF AUSTRALIA AND ITS VOLUNTEERS



CONFIRMING QSO WITH <i>VK3PC</i>		<i>JTM</i>		DAY <i>20th</i>	MONTH <i>JUNE</i>	YEAR <i>2009</i>
UTC <i>21:18</i>	MHz <i>7</i>	MODE <i>SSB</i>	RST <i>55</i>	Amateur Radio Victoria 40G Victory Blvd, Ashburton 3147 Victoria, Australia		

Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

October	2-3	Oceania DX Contest	SSB
	9-10	Oceania DX Contest	CW
	9-10	Scandinavian Activity Contest	SSB
	16-17	Worked All Germany Contest	CW & SSB
	23	WIA National Field Day	All
	30-31	CQWW DX Contest	SSB
November	6-7	Ukrainian DX Contest	CW & SSB
	13-14	WAE DX Contest	RTTY
	13-14	Japan International DX Contest	SSB
	20-21	Spring VHF/UHF Field Day	CW & Phone
	27-28	CQWW DX Contest	CW

This is clearly my favourite contesting month of the year. We have Oceania at the start and then CQ World Wide SSB at the end. I have also managed to squeeze in a holiday DXpedition on October 16-22 to Fitzroy Island IOTA OC-172. So it should be a great month.

2010 CQ World Wide Contest

Rules

At the time this column had to be submitted, the rules for the CQ World Wide Contest still had not been published. So visit www.cqww.com to get the rules. This year's grand event will be starting on October 30 at 0000 UTC and goes for 48 hours through to 2359 UTC on October 31. I have already applied for 48 hours family leave to remove myself from the real world and stay in the shack and transform into sleep deprived zombie mode. It is a reasonable assumption that a sick day from work will follow, especially if 10 m is open to North America in the last couple of hours of the event!

To help prepare for this year's event by studying how other competitors went last year, you can view everyone's Cabrillo log who submitted an entry for the 2009 CQWW at www.cqww.com/cq-ww-ssb-2009.htm

2010 80 metres VK/ trans-Tasman Contest results

The brief results are in the table below.

The full report is at www.wia.org.au/members/contests/transtasman/

80 metre Trophy	VK7VKV	Vince Henderson and Ray Smith	
Phone			
1 st	VK7VKV (multi-op)	2562	Vince Henderson and Ray Smith
2 nd	VK3FRC (multi-op)	2497	Frankston and Mornington Peninsular ARC
3 rd	VK3KID (multi-op)	2287	Sherbrooke Community School R.C.
4 th	VK2WJD/QRP	2060	Lindsay Murphy
5 th	VK7FWAY	2011	Wayne Hays
6 th	ZL4AA (multi-op)	1928	Otago Branch 30, NZART.
QRP Phone			
1 st	VK2WJD	2060	Lindsay Murphy
2 nd	ZL2AYZ	1527	
3 rd	VK2IG	1473	Mike Dower (ex VK2ENG)
Foundation Licensee Phone			
1 st	VK7FWAY	2011	Wayne Hays
Multi-Operator Phone			
1 st	VK7VKV	2562	Vince Henderson and Ray Smith
ZL Phone			
1 st	ZL4AA	1928	Otago Branch 30, NZART.

2010 80 metres VK/ trans-Tasman Contest results

2010 160 metres VK/ trans-Tasman Contest results

The full report is at www.wia.org.au/members/contests/transtasman/

160 metres Trophy VK3FRC Frankston and Mornington Peninsular ARC (Roy Seabridge VK3GB and the team)

Phone

VK3FRC (multi-op) 1156

F.A.M.P.A.R.C

VK7VH (multi-op) 1141

Vince Henderson and Ray Smith

VK2AOA (multi-op) 927

Orange and District A.R.C

VK2CU 849 Justin Lavery

VK2MA (multi-op) 690 Hornsby and District A.R.C.

QRP Phone

VK2IG 583 Mike Dower

ZL Phone
 ZL4R 605 Ron Falconer
 Multi-operator Phone
 VK3FRC 1156 F.A.M.P.A.R.C.
 VK7VH 1141 Vince Henderson
 and Ray Smith
 VK2AOA 927 Orange and District
 A.R.C.
 Highest Aggregate Score for 80 metres
 + 160 metres: VK7VH

Worked All Europe RTTY DX Contest

This prestigious event starts on Saturday November 13 and finishes 48 hours later on Sunday November 14 2359 UTC. Due to the various intricacies in the rules, for example QTCs and off times etc, it is best to have a look at www.darc.de/referate/dx/contest/waedc/en/rules/

Scandinavian Activity Contest - SSB

I found that this contest last year heralded the beginning of the short path propagation into Europe on 20 m and it lasted right through until early December. So fingers crossed this will be a fun event again. It begins Saturday October 9 at 1200 UTC and finishes 1200 UTC Sunday October 10. For all the rules visit www.sactest.net/

SPRING VHF-UHF FIELD DAY 2010 Rules

Contest manager:

John Martin VK3KM

The rules for this Field Day are the same as for the Winter Field Day last June.

I have received a query about the right contest category for club station operating from its clubrooms (i.e. from the "home" location of the club callsign). Does this qualify as a portable station?

According to the rules, a station is portable only if all of its equipment is transported to a place which is not the normal location of any amateur station. But this would disallow anyone from setting up a portable station at club premises, even if they did not make use of equipment that was already installed at the site. So I think the most suitable ruling is this: if a station makes any use of equipment or antennas that were previously installed at the site, that station would have to enter the home

station section. If the equipment and antennas used for the Field Day are brought to the site, the station qualifies as being portable.

Dates: Saturday and Sunday 20 and 21 November 2010

Duration in all call areas other than VK6: 0100 UTC Saturday to 0200 UTC Sunday.

Duration in VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Please note that there is now a 3 hour difference between the eastern states and Western Australia, because daylight saving time no longer applies in WA.

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.
- F: Rover station, 24 hours.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours, and nominate which 8 hour period they wish to claim for scoring purposes.

Entering more than one section: If a portable station operates for more than 8 hours, it may enter both the 24 hour and 8 hour sections. If the winner of a 24 hour portable section has also entered the corresponding 8 hour section, his log will be excluded from the 8 hour section.

If a portable or rover station spends part of the contest period operating from his home station, he may also enter the home station section.

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: Portable stations with more than two operators must enter Section C or D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

Rover stations: The Rover section is

for all portable or mobile stations that operate from more than two locator squares or change locator squares more than twice.

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. Portable 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 either 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 4 digit 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 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 at foot of this article 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. Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, MDB, PDF, or any

Open Document format. Logs must be received by Monday, 7 December 2010. Early logs would be appreciated.

FIELD DAY WEB SITE

<http://www.wia.org.au/members/contests/vhfuhf/>

This site includes the rules for the next Field Day, rules and results of all past VHF-UHF Field Days, cover sheets and scoring tables, and other information.

Special 2010 Field Day Cumulative Certificate

A reminder - special certificates will be awarded in December 2010 to the entrants who have participated in all three 2010 Field Days. To be eligible you must operate under the same callsign in all three Field Days.

Deadline for November issue:
September 30 to vk4ldx@yahoo.com.au

Band	Locators Activated	+	Locators Worked	+	QSOs	x	Multiplier	=	Band Total
	(10 points each)	(10	(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

Scoring Table Format

ar

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450 ohm ladder line separators

Improved balun designs

Improved RF choke design

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The **Central Coast ARC** have confirmed the date of next year's Field Day – Sunday 27 February 2011 at the current venue, the Wyong Race Course, advises Ray VK2HAY. The Club has also changed the name of the event – it will be now be the Central Coast Hamfest. Ray goes on to say that the aim is to make the Hamfest bigger, brighter and more enjoyable for all patrons. Check out the CCARC website for more details. You can contact Ray by phone 02 4325 2182.

In August the **Summerland ARC** held their SARC FEST at their Richmond Hill club rooms with about 80 attending on a fine winters day. Also in August the **Blue Mountains ARC** held their WINTERFEST, also on a fine winter's day with their attendance exceeding 225. Both clubs have pictorial coverage of the events on their web sites.

Also last August Pierce Healy VK2APQ celebrated his 99th birthday. Pierce has been licensed for over 70 years, in part of which he was a member of the NSW Division Council and served in many roles including those of President and Federal Councillor. For many years he wrote the Amateur Radio notes in Radio and Hobbies / Electronics Australia.

In late August the **Fishers Ghost ARC** conducted an open day at the Cataract Scout Park where they maintain the permanent Amateur Radio facilities of Scouts NSW. Besides the radio shack - the site has three 22 metre high towers for yagis on 40 and 20 metres, a 20/15/10 tribander along with an 80 metre delta loop and various dipoles. The club hold their meeting on the last Wednesday evening of the month at Campbelltown locations. They also conduct regular Licence assessments. Check out www.fgarc.org

Some of the VK2 clubs who took part in the Lighthouse weekend included **Manly Warringah RS** at the Barrenjoey Lighthouse at Palm Beach. **Waverley ARS** at Macquarie Light in Vacluse. **Oxley Region ARC** at Tacking Point Lighthouse in Port Macquarie. **Summerland ARC** activated Point Danger, Cape Byron, Ballina and Evans Head. **Mid North Coast ARG** went to Yamba Lighthouse.

The **Hellenic ARA** meet on the last Tuesday evening at the St. George Sailing Club in Sans Souci when they activate the club station VK2CL. In August they operated from Montague Island under the call VI2MI reports President Tommy VK2IR. [0413 005 511] Web site www.haraoa.com

WICEN NSW have the Hawkesbury Canoe Classic over night 23- 24 October where they are always in need of operators for the various check points along the river. Also the annual search for the missing aircraft on the weekend of 16 -17 October. There is the Bushwalkers' first aid course this month – check www.bwrs.org.au In November there is the Fitz's Challenge bike ride in the ACT - 7 November and the National Capital Rally on 20 November. On 11 December Rallye des Femme, also in the ACT. WICEN always seeks support and these events are an opportunity for the Amateur Service to give something back to the community. The duty operator 0408 397 217. The web site www.nsw.wicen.org.au The WICEN Management Committee conduct some of their meetings at the VK2WI Dural site.

The **IPS Radio and Space Services** conducted their annual HF Radio Propagation course in Sydney last month. This course is conducted at other venues throughout the country during the year and the website is [www.ips.gov.au/Products and Services/2/2/](http://www.ips.gov.au/Products%20and%20Services/2/2/)

The **Liverpool and District ARC** have monthly meetings on the second Wednesday and project days at various locations. Along with Fishers Ghost ARC, they hold Foundation courses. Details from the Secretary Garry VK2BR on 0427 063 553 or email vk2tsr@bigpond.com

The **Hunter Radio Group** meet on the second Friday evening – except January, July and December – at the NBN TV Studios, Mosbri Crescent, Newcastle, starting at 8 pm. They provide a Monday evening news net – VK2AWX - at 1930 hours from early February until early December with highlights from the Sunday sessions and local news.

The **Oxley Region ARC** meet at the SES building in Central Road, Port Macquarie with the monthly meeting on the first Saturday at 1400 and an informal gathering on a Friday evening. Currently this is the fourth but consideration is being given to changing to another Friday to provide a better spacing between gatherings. They conduct training courses and assessments when there are sufficient registrations. Contact via mail to P. O. Box 712 Port Macquarie 2444 or the web site www.orarc.org

Do not forget **JOTA** this month. VK2WI will transmit any opening address at 1300 hours Saturday on the usual broadcast frequencies. Would those hosting operations with their local Scout and Guide groups advise VK2WI News at news@arnsw.org.au of your locations and schedule so that you may gain assistance and publicity etc.

In last month's notes ARNSW made a request for photos of the former NSW Division properties. A typo crept in for Atchison Street – 1959 to 1982 – Its should have been 'Wireless Institute Centre', not Amateur Radio House - which was the name of the later Harris Park property – 1982 to 2006 -. The new building at Dural has been named 'The Centenary Building'.

The first Secretary of the Wireless Institute of NSW – in 1910 - was Wally Hannam (1885 to 1965)(final call VK2AXH) and research is being carried out into his history and background. Various sources – Amateur Radio magazine, old Callbooks, Newspaper archives and his involvement with [Sir] Douglas Mawson in the 1911 – 1914 Antarctic expedition have answered most questions. What is still to be sourced is whether he had any family – his Obituary – AR June 1965 – only refers to 'relatives'. If anyone can assist, or add material, please email news@arnsw.org.au or telephone the office 02 9651 1490 and leave a message. Thanks. These printed sources have made sure that some of the history has been retained.

Three VK2 clubs have VK100WIA slots in this final month. St.George 5th to 7th; Chifley 20th to 22nd and Westlakes 29th to 31st.

The November ARNSW Trash & Treasure [28th] and events were still in the planning stages when these notes were

Spring has arrived here and it is much better listening on the bands. It has taken so long for propagation to improve and this has accelerated the decline of major international broadcasters to finally leave HF. The VOA is scheduled to close the remaining Greenville HF complex at the end of this month. There is still a remote possibility that the American Congress could overturn the closure. The VOA and their parent body, the IBB, will continue with senders outside the continental United States.

Hungary also looks as if they finally have left shortwave. They closed their senders and started relaying from Germany, yet this too may have ended. I would not be surprised that there could be other disappearances

These departures on shortwave have allowed reception of smaller domestic stations and senders who have been masked by the major players. DXers Worldwide are reporting that Brazilian signals are being observed at quite good signal levels. I have never heard any Brazilians here in Tasmania nor worked any. I recollect one of the radio pioneers telling me sometime back that for some reason he could not hear them either.

I have received an email telling me that Radio St. Helena will be operating again this year. It will be on 11092.5 and on USB. The date will now be in October and not November. Here are the details:

Saint Helena.

Radio St. Helena Day 2010: Date, Times, and Targets RSD 2010 will be on Saturday, 9 October 2010.

Target Region	Times (UT)	Beam Heading
Europe	1900 - 2030 UT	10 degrees
India	2030 - 2130 UT	70 degrees
Japan	2130 - 2300 UT	50 degrees
North America	2300 - 0030 UT	310 degrees

Gary Walters, Station Manager of Radio St. Helena, has confirmed the above information, and, as usual, Derek Richards will operate the RSD shortwave transmitter. *There will be a special email-address exclusively for the evening of RSD 2010. As soon as Gary sets up this special email account, we will publish the account name. The RSD 2010 QSL cards are being sponsored by the Danish*

ShortWave Club International. Reception reports for RSD 2010 should be sent with sufficient return postage to RSH using the special Airmail address via Ascension and the United Kingdom - exactly the same procedure as for the RSD 2009 reception reports. ALL mail to RSH should use this procedure.

The sunspot minimum between sunspot cycles 23 and 24 is the longest in history - much to the dismay of shortwave listeners everywhere. This minimum has lasted since 2007. and is still ongoing. There are not very many sunspots to "help" propagation, and there is no real sign of significant change. The UTC times for broadcasting to the various target area have been very carefully selected to have the very best chance of good reception in each area. Also, we need to have the RSD broadcasts one after the other. After RSD 2009, it was decided to change the times somewhat and to move RSD from November to October. RSH hopes that everyone around the world has excellent reception conditions during RSD 2010 and is looking forward to your emails and also, if possible, to your telephone calls.

With very best 73, Gary Walters, Station Manager of Radio St. Helena.

This is on our local Sunday morning and I have not heard it direct but "cheated" by listening via remote internet receivers, a commonplace practice now. The sender is only a kilowatt and DXers donated a beam antenna.

October is also when the Northern Hemisphere reverts back to Standard Time and some Southern Hemisphere countries advance their clocks. Dates do vary with the Europeans changing back on the last Sunday, that is the 31st. North America reverts on 7 November. NSW, Victoria, SA and Tasmania Advance on 4 October. The NT, Queensland and WA do not have DST although the latter did again experiment with it for two years. NZ commenced DST on the 26th of last month.

The Commonwealth Games commence on 3 October and run through to the 14 October and are held in New Delhi. I do expect that this will give an opportunity to hear Indian shortwave signals particularly on the tropical bands. Also note that the Australian cricketers are scheduled to play in India in October, prior to the upcoming Ashes tour.

Robin L. Harwood VK7RH

vk7rh@wia.org.au

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VK2news continued

prepared. Work is still proceeding with unpacking several hundred boxes from storage and setting up the ARNSW library and other facility at Dural. Unearthed are some copies of the NSW Division Education Service publications. Titles found so far included 500 Questions for AOCPC Candidates; 1000 Questions for Novice Licence Candidates; 100 Basic Electronic Projects; Novice Electronics and Learning Morse Code. There have been inquiries in recent times about these publications and if they were still available. In future notes, advice will be given as to availability. In the meantime unpacking continues.

73 - Tim VK2ZTM.

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This hamad may be of special interest to North Coast Amateurs around Forster

HELP WANTED to finish building my VK5JST aerial analyser kit. Surgery has left me visually impaired to the extent that I can no longer work on the PCB and the rest of the project. I am happy to meet all costs of an experienced kit builder.

Contact John Bennett VK2SIG/VK3ZA on email macben2@bigpond.com

Jamboree on the Air 2010

Bob Bristow VK6POP

JOTA-JOTI Co-ordinator, Scouts Australia

The Jamboree on the Air, or JOTA, is on Friday 15th to Sunday 17th October. Around 500,000 scouts around the world take part in this, the largest annual Scout event.

JOTA begins at midnight Friday, local time, and continues to midnight Sunday, local time. JOTI, the Jamboree on the Internet, runs parallel to JOTA, and is often run alongside JOTA as a joint activity.

Theme

The theme for Jamboree on the Air 2010 is directly related to article 12 of the Convention of the Rights of the Child, 'the Right to be Heard'. The theme is linked to the 20th anniversary of the Convention.

How is article 12, the Right to be Heard, linked to the Jamboree on the Air and the Internet? Scouts and Guides in many, but not all, countries have the permission to speak directly over amateur radio, and have access to the Internet. This greatly enhances their experience of JOTA-JOTI: a free and direct exchange of ideas between Scouts and Guides of all nations, helping them to get a feeling and understanding of other cultures.

Where to find information

Information about JOTA-JOTI, including information for amateur operators, can be found at www.international.scouts.com.au. Follow the menu to JOTA-JOTI. I can be contacted by email at jota.joti@scouts.com.au

This year, we have developed a resource kit for JOTA-JOTI. Details on the Scouts Australia website.

Registration

All Scout and Guide groups and individuals may register

at www.jotajoti.org – registration at this website has many benefits for groups as well as providing important information about the event to the organisers.



Scout/Guide activity

JOTA-JOTI is a Scout and Guide activity that is conducted by Scouts and Guides with the assistance of amateur radio operators and others. It is the responsibility of Scout and Guide Leaders to provide a venue, provide for the comfort and sustenance of those helping, and to provide an interesting program of activities to keep young people active and interested.

Working With Children

For those States where Working With Children laws apply, and depending on the arrangements for the activity, helpers may have to obtain the WWC card (or State/Territory equivalent).

You should check with the Scout or Guide Leaders early (you should have done it before October) and apply. This is the law of your State or Territory, and not something made up by the Scout or Guide Associations.

To all amateur operators, to those who help directly, those who lend equipment, give advice and so on, and to those who stay clear of the bands to make room for JOTA, on behalf of Scouts Australia, I offer my thanks and gratitude. I hope it is a rewarding experience for you and the Scouts. **ar**

VK4news

VK4 - QTC

TREC (Tablelands Radio and Electronics Club)—VK4TL

Members and friends gathered together recently to celebrate the 80th birthday of Club President John Roberts VK4TL. Born in Wales in 1930, John developed an interest in radio at an early age, firstly with crystal sets and then early transmitting gear.

John has held the callsigns GW3IVS, VS6CW, VQ4GX, VQ3GX, VQ1SSB (ex Op of ZB2A) and VK4TL.

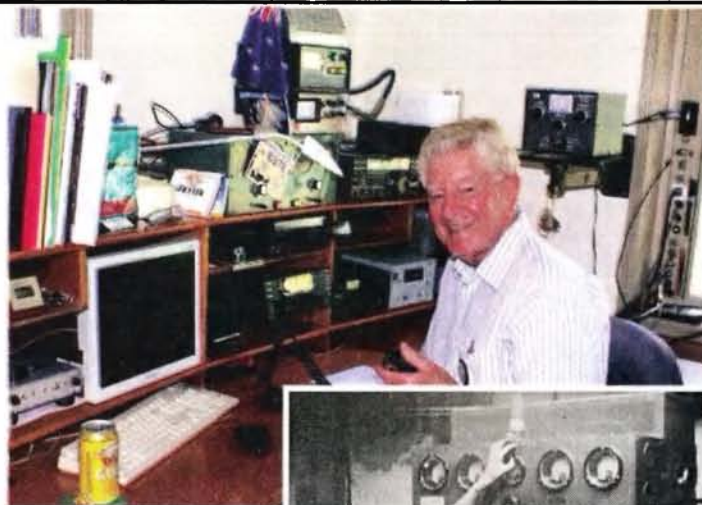
News items for this page.

"War and Peace" scripts not necessary, just a basic story of recent Club activities with pictures if available.

Please remember the deadlines for submitting articles.

Apology

In a previous edition of AR magazine, I misquoted the callsign of the Bundaberg Amateur Radio Club's new repeater at Mt. Watalgan. It is of course VK4RBW. Apologies to all concerned.



VK4TL at the microphone recently and working at a Marconi SW-8 circa 1950 at Gibraltar



ar

VHF/UHF An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

Even in the depths of the cold months of winter, there is still plenty of activity on the VHF bands – if you know where to look. Rob VK3MQ reports on various regular happenings in the Melbourne area:

We have had a steady response to the 150 net (144.150 on Wednesday evening at 2030 VK3 time) even through the darkest months of winter. About 7-10 stations participate each week and even the original net controller – Robbie VK3EK surfaces occasionally. Ballarat is well represented by Ian VK3AXH, Ian VK3IDL and Craig VK3CMC. City stations: John VK3ACA, John VK3BLX, Chris VK3KIH, Les VK3SL, Ian VK3TB, Peter VK3TPR and Alan VK3XPD. Gippsland: George VK3HV, Jim VK3II and David VK3AUU.

Co-controller Mike VK3KH has been busy with work, so he does not always make the net. But when he is in the control seat Chris VK2DO, Leigh VK2KRR, Colin VK5DK, Jeff VK5GF, Andy VK5LA and Peter VK5PJ have been pulled out of the noise.

The monthly Sunday evening scramble has not been well supported of late but maybe the warmer months will see an improvement.

Thanks for the update, Rob. The remainder of this month's column is once again filled with reports on activities in the microwave regions. If you would like to hear about happenings in the VHF/UHF region; I would be happy to print any news, provided that people submit it to me!

Microwave Activity Day Update

Doug VK4OE has sent in a photo of some potential candidates for microwave activities.

He writes:

This picture was taken during the recent Remembrance Day Contest (which was also the inaugural 'Microwave Activity Day'). Three fellows of the Sunshine Coast Amateur Radio Club in the club grounds near the Maroochy River are pictured during a QSO on 2.4 GHz from the Sunshine Coast location down to VK4OE who was portable on Mt Gravatt in Brisbane – an obstructed path of a hundred kilometres or so.

The particular significance of this picture is the sharing of the fun of operating microwave radio gear by one experienced amateur with others who are being introduced to this part of the fun of amateur radio! From left to right these operators are: Cec VK4FMOZ, Wayne VK4WS and Ches VK4WT (Ches normally pilots the planes we use for Aircraft Enhancement!)

Note what they termed an 'intelligent antenna aiming arrangement'! The challenge here was that the two fellows holding the antenna (Azimuth and Elevation controllers?) could not hear what the person operating

the radio could hear on his headphones - every now and then a slight shift of the antenna led to a dramatic reduction in signal strength received at each end!

Thanks to Harvey Wickes VK4AHW for the photograph.

New VK4 24 GHz record

With the increase in microwave activity in the region, Doug VK4OE has been spurred on and reports on his efforts to further the 24 GHz record:

On Friday afternoon, 3 September 2010, VK4OE/4 at Springbrook Mountain (QG61ps on the NSW-Qld border) and VK4WS/4 at Howell's Knob (QG63je in the Sunshine Coast hinterland) completed a contact on 24.048 GHz, extending the Queensland distance record for this band to 170.1 km.

Equipment used was two 0.5 watt transverters (constructed by VK4OE), each feeding a 320 mm dia. prime focus dish.



Microwave activity manual rotator: Cec VK4FMOZ, Wayne VK4WS and Ches VK4WT making a contact on 2.4 GHz during the RD Contest.

The only DB6NT modules used were receive preamplifiers, one at each end.

On the same path, Wayne and I have previously worked each other on a variety of 'lower' microwave bands, always with huge signals. It was thus likely that, when the two 24 GHz transverters were completed, a contact over the same nearly-line-of-sight path should be relatively easy to compete. But due to the warm and medium-humidity afternoon, with rain clouds developing, we knew that it was not a sure thing. 24 GHz and atmospheric humidity are not compatible with long distance propagation!

After half an hour of calling and listening without a signal heard, we were about to give up when, following a new adjustment to Wayne's beam heading, I briefly heard an extremely weak signal, but for long enough to start to maximise his signal as received at my end. There was also QSB on the path. After that, we planned to complete the QSO using CW, but Wayne quickly discovered that his CW paddle's 6.5 mm plug was incompatible with the 3.5 mm key input on the IC-910 that was being used as a 'tuneable IF'. However, it followed that, after careful dish position optimisation and timing our calls with QSB peaks, signals were strong enough for an SSB contact to be completed. 5x1 and 4x1 reports were exchanged.

We count ourselves lucky to have completed the contact because the cloud was increasing and it had actually started to rain at my end. I relocated 30 metres to a point in the "Best-of-all Lookout" car park that is just across the geographical border into NSW, with a view to possibly also extending the 24 GHz distance record for VK2. Given the worsening weather, the half-hour delay involved in moving and setting up the gear again was enough to preclude success on this occasion. Signals were there, but ever so much weaker now than before.

The success of the afternoon was doubled because it

revealed a significant improvement that could be made to the receive path of one of the transverters, which need could only have been identified under weak signal conditions. After that technical change is effected, more pushing of distances on 24 GHz will ensue - including fixing our sights on the Australian distance record for the band!

Microwaves are real radio fun – and with that we both agree, whatever the frequency!!!

New 47 GHz record

Further to last month's report on new 47 GHz band activity, Dan VK2GG reports that he has made some significant progress:

I have solved my deaf receiver problem on 47 GHz. A new Kuhne LO has solved the problem! It injects 40 mW.- far more than the Elcom, and obviously less phase noise, or so it would seem.

I now have two equally good receivers - identical with Kuhne Mixer and LO in each. In fact yesterday (August 30th), we set a new Australian Record for 47 GHz of 58 km (LOS path - Gan Gan to Mt Sugarloaf)!!! It was a very weak signal, with fade and some noticeable drift, probably attributable to drift in the FT-817, as the transverters were locked on Rubidium at both ends. Humidity was about 51% - not bad for such a warm day as yesterday. Once dishes were locked at each end, we both had reasonable SSB copy, with terrible drift. Upon leaving the gear set, we tried again about 40 minutes later, with better results, but with humid NE winds expected in the afternoon, things were not going to improve. A great day out. Many thanks to Peter, VK2YGM, Jack VK2TRF, Les VK2APE, and Heather & Irene for the catering! Peter had a sling psychrometer to measure humidity at Mt Sugarloaf.

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

Digital DX Modes

Rex Moncur VK7MO

A group in VK continues to test various new WSJT modes for Joe Taylor K1JT. While the new meteor scatter mode JTMS has been improved, its sensitivity is not quite as good as FSK441. However, as it is faster, it gets more data through on stronger pings. The end result is that all we can say is one or other mode works better in some situations and that it is difficult to draw a conclusion as to which is best overall. Testing has also started on a new EME mode called Diana (Diana is the Moon god). Diana gets to within 1 or 2 dB of JT65's Koetter-Vardy decoder (non-Deep Search decoder) but runs twice as fast in 30-second periods. Rather than use standard size messages, like JT65, Diana can use any free text and for shorter messages it can average the message more times. Thus short messages like CQ VK7MO give around a further 2 dB improvement compared to a longer message like

VK3AXH VK7MO QE37. Joe Taylor proposes to add a facility to average over multiple periods (like the old JT44) to further enhance Diana. One significant downside with the present version of Diana is that, as it does not use a sync tone, it is difficult to detect on the waterfall. Still, it is the absence of a sync tone which wastes half the energy on JT65 that gives Diana the potential for a 3 dB performance improvement. It is still early days for Diana so the VK group will continue testing and hopefully Joe Taylor will come up with further enhancements. It is expected that by the time you read this article a public release version of WSJT 9 will be available for wider testing.

10 GHz Digital – Pointing in the right direction

One of the problems in working with very weak digital signals on 10 GHz is to be sure that you are beaming in

the correct direction while waiting for an aircraft to cross the path or the troposcatter to rise out of the noise. The following program can be used to find the bearing of the other station or of a reference marker such as a building or squid pole that is at a known longitude and latitude:

http://reast.asn.au/2010/Great_Circle_Bearing.xls

It has been found that if one uses two GPS units such as the Garmin 60 handheld units (which allow averaging of data) and average the results for 15 minutes, one can get to within 0.5 degrees with a 200 metre baseline. A single GPS will achieve the same accuracy over a 500 metre baseline.

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

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VK2news

Gentlemen, start your handhelds!

Coffs Harbour and District Amateur Radio Club gets involved with the Coffs Coast Car Rally 2010



Eric Shaw VK2ES

The Coffs Coast Rally was held on 14-16 May 2010. The rally was held in the State Forests to the west and north west of Coffs Harbour and covered a distance of approximately 290 kilometres. Coffs Harbour and District Amateur Radio Club (CHADARC) was invited to provide radio communication for the start and finish and progress reporting for the various sections of the rally.

Preliminary runs were made into forests to check coverage from the Club's repeaters, located at Mount Moonbil and Mount Coramba, to the areas where the rally was scheduled to operate. These runs were carried out in the week prior to the Rally and showed good coverage in most areas except in the shadow of the high mountains and in the bottom of the gullies in some sections of the Rally course.

Our President Terry VK2TEZ was the contact person with the organisers and after much discussion we were allocated Saturday and Sunday for the section of the rally near Nana Glen.

CHADARC's responsibility was to set up communications between the field and the base which was located in the Coffs Harbour Show ground. Communication was carried out using our members' handheld and car mobile two metre radios via the CHADARC repeater on 146.850 MHz. This repeater is located on Mount Coramba which overlooks the Rally location.

This communication consisted of advising the start time, finish time and the progress of the entrants through the various stages of the course along with reporting any accidents. This information went to the Rally organisers who entered it into their computers. This enabled them to track the location of each car and to organise search and rescue in the event of a car becoming involved in an accident or breakdown.

Our base was set up at the Showground prior to the event scheduled commencement on Friday. It consisted of an Icom IC-22S two

metre radio with mains power supply into an antenna mounted on the top of a squid pole and attached to the outside of the building we were using. This proved to be adequate.

The action started on Saturday morning at 0700 with Terry doing the rounds in the field allocating duties to our members who were participating. Two stages lasting for two hours each were run in our section on Saturday.

The members who participated on Saturday were Fred VK2FM, Ray VK2BRG, Ken VK2DGT, Pat VK2BPH, Arnold VK2ADA and Ian VK2NOT with Terry VK2TEZ at the base. Several others were down to assist but last minute emergencies prevented them from attending.

Sunday started similar to Saturday with Terry in the field organising duties. The morning session was only a relatively short one requiring two operators in the field. These were Darren VK2PDX ably assisted by Tracy VK2FTAM, and Jason VK2LAW ably assisted by Connie VK2FCO both from the Mid North Coast Amateur Radio Group. At the base was Eric VK2ES and when he returned from the field, Terry VK2TEZ.

The afternoon session was the same as Saturday and required more operators. These were

Darren VK2PDX with Tracy VK2FTAM, Jason VK2LAW with Connie VK2FCO, Arnold VK2ADA, Fred VK2FM, and Ian VK2NOT, with Eric VK2ES and Terry VK2TEZ at the base.

A good time was had by all our members and the assistance from them and from the Mid North Coast Amateur Radio Group members was greatly appreciated.

Coffs Harbour and District Amateur Radio Club meets every Thursday at the Rex Hardaker Oval, on Hogbin Drive south of the University, between 1000 and 1400. Visitors are most welcome.

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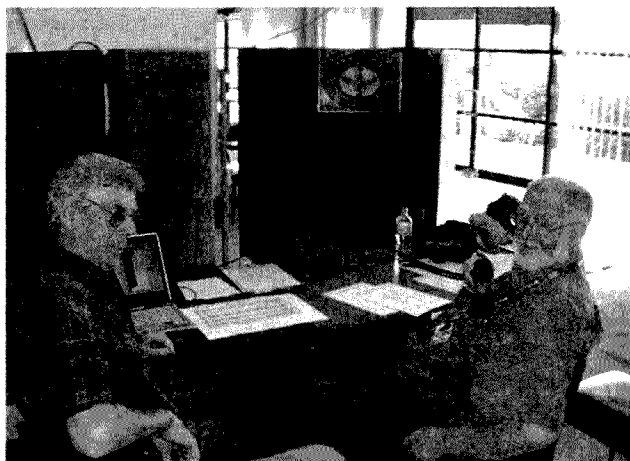


Photo 2: Terry VK2TEZ and Eric VK2ES on the mike, at the base in Coffs Harbour Show Ground.



Photo 1: Ken VK2DGT and his able helper, Robyn, set up at King's Ridge in the Lower Bucca State Forrest.

AMSAT

David Giles VK5DG
vk5dg@amsat.org

25th AMSAT-UK Colloquium

On the weekend of 31 July and 1 August, AMSAT-UK held their 25th annual colloquium near the University of Surrey. There were many presentations and demonstrations pertaining to satellites. Most are available for view from the BATC website (1). Here is a report on some presentations.

FunCube

Members of AMSAT-UK gave two talks on the FunCube mission (2). Jim Heck G3WGM started with the initial proposals made one year ago and gave a detailed report on the progress made since. FunCube will be a 1U sized cubesat with a linear 70 cm to 2 m transponder. The mission has a strong educational outreach program which will feature a materials science experiment.

Wouter Weggelaar PA3WEG talked on the RF board design. He was part of the Delfi-C3 (DO-64) team and the FunCube RF system is based on the DO-64 design. The 435 MHz receiver has two IF stages at 70 MHz and 10.7 MHz with a bandwidth of 20 kHz. The command receiver uses FM while the transponder is linear. The transmitter uses a single conversion from 10.7 MHz to 145 MHz. Telemetry is sent using 1200 baud BPSK. Learning from AO-16 the transponder can be put into 'loopback' mode with the FM receiver connected to the balanced modulator for a double sideband transmitter.

David Bowman G0MRF spoke on the separate RF power board. The amplifier uses a single FET biased to mode AB1 and produces up to 500 mW from a 6-8.2 volt supply. Using a separate board improves thermal stability of the satellite. The board has filtering to reject third harmonics on 70 cm and sensors for current, RF power and temperature. One bonus measurement will be monitoring changes in the bias for the FET due to radiation damage. AO-40 used large FETs as radiation sensors as part of the CEDEX experiment.

Michael Castle G1ZVN spoke about the 'almost no on-board computer'. The command control and telemetry board is made up of two chips: a low power 8-bit microcontroller and a CPLD (Complex Programmable Logic Device). The microcontroller takes care of the telemetry and cannot be reprogrammed once in space. The CPLD does all the interfacing between the microcontroller and the sensors as well as handling the operational functions of the satellite. The CPLD is just a programmable chip that replaces a large amount of discrete logic and is less affected by radiation than the microcontroller and in the event of the microcontroller dying, the CPLD can run the cubesat with just the transponder activated.

Dave Johnson G4DPZ detailed the proposed ground station software. There will be similarities with the RASCAL ground station program developed for DO-64. It will capture telemetry and send it to the command stations for storage and analysis. Unlike RASCAL the telemetry can be made public for use by schools. Much of the software design has been made to integrate with the computers used in the British education system and conform to their regulations. Part two of the FunCube talk was given by Howard Long

G6LVB. He demonstrated the ground station receiver prototype. As FunCube is primarily an educational mission, a simple plug-and-play ground station that is easy to use by teachers is needed. Howard demonstrated a USB 'dongle' that plugs into any modern computer. It consists of a 2 m $\frac{1}{4}$ wave whip antenna, a wideband television receiver chip, CODEC chip and USB soundcard chip. To the computer it just looks like three fairly standard chips so no special drivers are needed. The receiver wins no prizes for selectivity as it can receive from 65 to 1700 MHz. No input filtering has been put in. Total cost of components is around 10 pounds, the labour cost is not yet determined. Howard demonstrated the prototype showing how easy it is to use.

FunCube was started from a substantial bequest to AMSAT-UK. There are enough funds to design and build the satellite but extra money will be needed to launch. Also, teachers are needed to plan school lessons and operation guides. The operation schedule is expected to be based on two modes— the high power telemetry mode on during daylight hours on schooldays; the amateur transponder and low power telemetry on during darkness and on weekends. The telemetry will be made up of real-time data, whole orbit data and 'fitter' messages. These messages can be news bulletins, messages to or from amateurs etc.

SA-AMSAT

The presentation I found interesting was not about a satellite at all. Hans van de Groenendaal ZS6AKV gave a two part talk about the new SA-AMSAT cubesat and a balloon project called Lalela (3), (4).

The Lalela (Zulu word for 'listen') mission's aim is to fly a hydrogen filled balloon around the world at an altitude of 22 km. It is the brainchild of John Willescroft ZS6EF. It is hoped the mission will last around 600 days. The balloon will transmit SSB voice telemetry on a HF band with a transmitter power between 100 mW and 1 W. The transmitter design will be used in the upcoming SA-AMSAT cubesat project. There are going to be five balloons in the series. So far three test flights of prototypes have been made. The biggest problem identified so far has been poor antenna performance. An automatic antenna tuner has now been incorporated. The balloon itself is made from polyester coated with aluminium on the inside and gold on the outside and stands 1.67 m tall. Three weather balloons are attached to the top to lift it to an altitude of 9 km before being released. The base of the balloon has the electronics and a five-bladed turbine for electrical power and to generate hydrogen. The electronics consists of a lithium-ion battery, microprocessor, GPS receiver, SSB transmitter, batteries, temperature and pressure sensors and a command receiver. The sole job of the command receiver is that in the event of the transmitter malfunctioning, the command station can order the balloon to self-destruct. They do not intend on using it. The entire payload is in a 40 mm round package and the whole balloon has a mass of a mere 243 grams. Transmissions have been tested on 20 m but better results were obtained from 40 m and 14 m. The antenna is a wire under the payload housing.

SA-AMSAT announced that it was building a cubesat and called for payload ideas. A competition was held to name the cubesat. Some of the entries had been given in Zulu through an Internet translator which came up with interesting but not useful results. According to the SA-AMSAT website a name has not been selected. Also a payload has not been finalised. They would like to fly two payloads—one for the radio amateur community and one with an educational outreach. Plans are for a 30 kHz wide linear transponder and a receiver to measure HF noise pollution over southern Africa linked to GPS data. Part of the mission is to involve a non-technical team that would do such jobs as administration, fund-raising, organise teleconferences and education outreach to schools.

Other Talks

Michael Castle G1ZVN spoke on STEM-Science Technology Engineering Maths. STEM's aim is to enthuse the next generation of engineers and scientists. FunCube is a part of this larger project. But the emphasis of the talk was the need for material to give to teachers so they can quickly and easily use FunCube. AMSAT are planning to hold a booth at a science teacher's exposition in January 2011.

William Leijenaar PE1RAH demonstrated his tiny UV linear transponder for cubesats. It is a complete transponder with 200 mW output and CW beacon that is only 70 mm square.

Cubesats were not the only subjects for discussion. Some real rocket science was discussed from the Surrey Space Centre. Tom Harle's talk on Scaled helicon double layer thrusters was about a new development in ion thrusters for small satellites they were working on. Using RF power to ionise argon atoms for high speed but low density thrusters,

these would move satellites less than 500 kg for long term or interplanetary missions. Lourns Visagie outlined an upcoming solar sail mission from the Surrey Space centre. The cubesail nano-satellite project is for a small satellite mission that will use sunlight for propulsion. Peter Guelzow DB2OS gave an update of AMSAT-DL activities in the past year focussing on P3E/P5A. Similarly Barry Baines WD4ASW gave a report from AMSAT-NA. Ivo Klinkert PA1IVO outlined methods of determining the orbits of satellites using ground station reception reports as part of the upcoming GENSO project. GENSO will be an international ground station network made up of universities and radio amateurs.

Murray Niman G6JYB gave a talk on proposed changes to satellite bands, with emphasis on securing a small section of 6 m for satellite use. He mentioned getting the 9 cm band for satellite use in Region 1 and more use of the 23 cm band.

Final Pass

Satellite hardware and ground station software, ion-drives and solar sails, low earth orbit and interplanetary missions; the AMSAT-UK colloquium had a wide range of subjects to give an idea of the diversity of this facet of amateur radio.

References

- (1) The BATC website is at www.batc.tv You can follow the link from the front page of the AMSAT-UK website at www.uk.amsat.org Click on the film archive button and select the video stream.
- (2) <http://www.funcube.co.uk/WP3/>
- (3) <http://www.amsatsa.org.za/>
- (4) <http://www.eepublishers.co.za/view.php?sid=22107>

ar



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About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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: 146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404,
EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node
6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz
IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz.
IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

WIA Centenary Award

A limited issue operating award is available to celebrate the 100th year of the Wireless Institute of Australia (WIA), the world's oldest national radio society.

To qualify for an award contact is required with the Centenary of Organised Amateur Radio in Australia special event station VK100WIA. A distinctive QSL will be available.

The WIA, through its affiliated radio clubs, will operate this unique call sign from 1 May to 31 October 2010. The call sign was used in Canberra, at the WIA Annual General Meeting and associated events on 28-30 May.

It will be on all amateur bands available to VK radio amateurs including the popular HF bands.

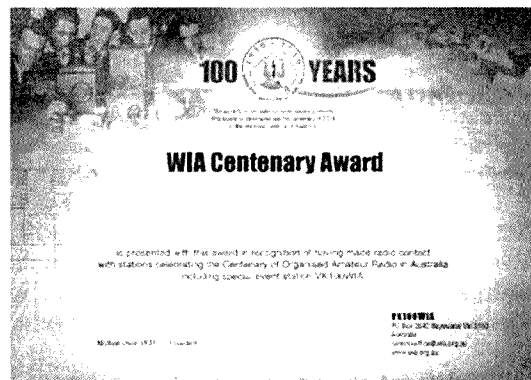
The award rules are: Those radio amateurs outside Australia need to

achieve 50 points while VK hams require 100 points.

A contact with VK100WIA operated by the WIA or a Club is worth 10 points (only one contact with VK100WIA operated by the WIA and only one contact with each Club) and there must be a minimum of two contacts with VK100WIA.

Contacting any WIA member between 1st May 2010 and 31 October 2010 is worth five points (Example: working VK100WIA at 10 different Clubs would be eligible for the award. Working 16 WIA members gives 80 points but then two contacts must be made with VK100WIA).

Any mode may be used; cross-mode and cross-band contacts are permitted. Satellites and repeater



contacts are permitted. Send AU\$5 or 3 IRCs and a list of contacts (QSLs not required) to the Awards Manager WIA Centenary Award, PO Box 2042, BAYSWATER VIC 3153 AUSTRALIA.

Listen around the bands or visit the WIA website www.wia.org.au for frequent updates of the operator club's roster. **ar**

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Tom VK2OE, 3 Buller Street, Bonalbo, NSW. 2469.
Email wojtech.tomczyk@det.nsw.edu.au

WANTED - NSW

Carbon elements for the standard size Scope soldering iron.
Neville Chivers VK2YO, QTHR or phone 02 6674 2095.

HELP WANTED to finish building my VK5JST aerial analyser kit. Surgery has left me visually impaired to the extent that I can no longer work on the PCB and the rest of the project. I am happy to meet all costs of an experienced kit builder.

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Beat the pending price rise. VK5JST Antenna Analyser kits still available. See AR article December, 2009. Postage and parts increase costs will soon mean a price rise. For more details see www.scarc.org.au; contact SCARC, PO Box 333, Morphett Vale. SA. 5162, or email: kits@scarc.org.au

Repeater Over Timer. Lets you know when you have been talking long enough on the repeater. See November 2009 issue of AR magazine. Complete kit of parts with instructions, last few kits to clear. \$20 each, including postage. Also available built and tested \$25 including P&P from Elizabeth Amateur Radio Club. See <http://www.earc.org.au/articles/2009/05/repeater-over-timer/> or email vk5oq@earc.org.au

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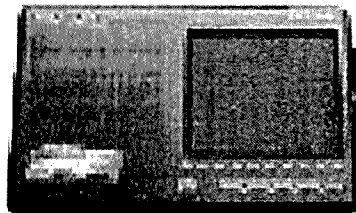
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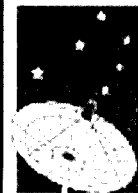
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ILLW International Lighthouse and Lightship Weekend — photo log

The ILLW weekend of radio activity (this year 21-22 August) grows in popularity each year. As a non-competitive event the contacts are generally more 'chatty' and the magnificent and often remote locations make for a great weekend away. Or perhaps like the Timeball at Williamstown VIC, North Mole at Fremantle WA and Barrenjoey in suburban Sydney, they are not so remote.

Many early reports are in this issue, either as part of club notes or as stand-alone reports. On this and the facing page are some photographs that caught the editorial eye.

The photo on this page is of Tablelands Radio & Electronics Club (TREC), based at Atherton, which trekked some 300 km to Archer Point in Far North Queensland (Full story on page 29 Big Sky country).

At the top of the facing page members of the Gippsland Gate Electronics and Radio Club did a much shorter but harder trek on foot as they backpacked their station

more than 18 km over the only access, a bush track, into the Wilsons Promontory lighthouse, which is almost at the southern-most point on mainland Australia. That is ALARA member Pat VK3OZ in the lead. Full story in the ALARA notes on page 39 Stuy VK7ZM and his two sons camped at Rocky Cape lighthouse on the NW Coast of VK7. Their set up with the 'Landy' as shown was pretty

straightforward on the only two days of sunshine in weeks of rain. Their story in the VK7 notes on page 15.

Again in VK7 VK7WCN - WICEN Tasmania (South) Inc. went to Point Home Lookout light near Triabunna on Tasmania's East Coast. Looking from the light over Mercury Passage and under the rainbow to Maria Island made for a truly atmospheric shot. Full story on page 28.



LIGHTHOUSE

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(captions on facing page.)



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Celebrating the centenary of organised amateur radio in Australia

Super Springtime
See story page 48



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GENERAL

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Our Cover:

Heath VK3TWO/VK6TWO operating the
 VK100WIA Super Springtime Public display
 within the Scout area at Perth Royal Show.

Full story on Page 48



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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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

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 oldest National Radio Society,
founded 1910.
Representing

The Australian Amateur Radio Service

Member of the

International Amateur Radio Union

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Members Ewan McLeod VK4ERM

Peter Young VK3MV

Editorial

Peter Freeman VK3PF

End of VK100WIA operations

By the time this issue reaches you, the six-month tenure of VK100WIA will have ended.

I am preparing these notes whilst the local club is operating with the callsign, with the cold, wet and windy weather slowly moderating. Station set up was done between rain squalls, with wind gusts above 70 km/hour which produced some challenges.

Sunday saw us ready for the local Guides to arrive for some JOTA operation from 10:00 am local time. But no Guides arrived, only the group leader. Unperturbed, the team was ready to go with general operations from 0000Z. After an initial busy period, the pace slowed early in the afternoon. Hopefully things will pick up later in the afternoon.

We will have a report on the overall statistics for the VK100WIA operations in a future issue. I hope that all who attempted to qualify for the Centenary Award were able to make the required contacts. From what I could see, some clubs were unable to maintain on-line logging for the full period of operations, so some may need await the processing of paper logs to confirm all contacts with the special callsign were logged.

Everyone could also work WIA members to gain points to qualify, after having worked two club operations with the special callsign. All contacts needed to be made by the end of October, but you have until the end of January to submit your claim for the award – good luck.

Publications Committee vacancies

The prime responsibility of the Publications Committee is the production of regular monthly issues of *Amateur Radio*; it also oversees the production of the annual *Callbook*. In the New Year, we may consider some additional projects. The committee has several amateurs undertaking a variety of task, from Technical Editors and proof readers, through to a Secretary and your Editor. Everyone is a volunteer, the reward is seeing the fruits of your work in print.

We have space for a small number of additional members to spread the

workload. We can determine the task that is the best fit for your skills. Ideally, you will be located close to or in greater Melbourne, so that you can attend the regular monthly meetings.

I invite your expression of interest, in which you indicate how you may assist with our operations. Email your submission to me, via the address on page one of this issue.

Contributions to AR

We have received over 100 articles this year, not including some of the Centenary historical articles, club news and column contributions. Very few articles have been rejected, but space limitations mean that some authors may wait more than six months before seeing their contribution in print. Do not be disheartened – we will eventually publish everything.

How can you see your words in print sooner? One way is to send in your report of an activity shortly after an event. The October issue reflected such prompt submission – we had articles quickly reporting on the ILLW weekend, so we made those prompt reports into a feature in that issue. Further ILLW 2010 reports will be saved to promote next year's event.

Another method to speed publication is to include high quality, well composed images with your article. I am always looking for good high resolution images for the cover, but an image must relate to a topical event or an accompanying story, either general or technical.

The details of how you can contribute to this magazine are published on the WIA website. Look under Members Area, AR Magazine. Once on the AR page, look for the link "Contributing material". There is probably some scope for us to update some details, but the basic facts are still the same: text should be submitted as a Word document or rtf file, and images in an appropriate electronic format, with photographs in as high a resolution as possible.

Do not forget the **Spring VHF/UHF Field Day** coming up in late November. Of course, there is also a contest somewhere in the world almost every weekend. If you are chasing DX, get on air and keep a watch on the propagation indicators – good hunting.

Cheers,

Peter VK3PF.

ar

Permitted Power Levels

WIA comment



Michael Owen
VK3KI

The UK has adopted the "at the antenna" measurement and NZ "at the transmitter".

Higher power limits are sought for a number of reasons.

One is to overcome the increasing global electro-magnetic noise pollution on all HF bands from consumer and commercial devices.

A factor influencing many is that the lower power limits imposed by Australia detrimentally affect their ability to provide emergency HF communications with countries in the region suffering natural disasters and to participate in radio sports. There are an increasing number of contests throughout the year, and Australian amateurs wishing to participate must do so at a disadvantage to those competing from other countries.

Recognising the previously expressed concerns of the ACMA, the WIA proposes that the ACMA adopt a policy that allows Advanced licensees to apply for a variation of their licence to permit higher power from a fixed location. This would enable assessment on a case by case basis, and allow better management of interference issues.

The WIA suggests that the following should form the basis of such a policy:

As in the case of applications for higher power for EME experiments, the applicant must satisfy the ACMA that the proposed signal levels from the station comply with the radiofrequency emission limits stipulated in the ARPANSA standard *Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields - 3 kHz to 300 GHz*.

Higher power should be available on all HF bands where the amateur service is primary (and the band 7100 to 7200 kHz).

The WIA Board has considered the many representations that have been made about the permitted power levels for amateur transmitters, and has decided to again raise the issue, in the context of applications to vary the conditions of a licence.

I set out, slightly edited, the substance of my letter to the Australian Communications and Media Authority on the issue:

"The issue of the permitted power levels for amateur transmitters has been raised many times with the WIA by many members, and has been the subject of previous correspondence.

This letter again addresses this issue.

The (then) ACA's Outcomes of the Review of Amateur Service Regulation, May 2004, (the Outcomes), Appendix A, specified Permitted Power as 10 W PEP all permitted modes for Foundation licensees, 100 W PEP for all permitted modes for Standard licensees and 400 W PEP all modes for Advanced licensees.

By a letter of May 2005 advising that the introduction of the Outcomes would be delayed, Mr. Alan Jordan also advised:

"I also advise that the proposal to specify transmitter output power only in terms of Peak Envelope Power (pX) will now not go ahead. This change is due to concerns about the potential for increased human exposure to electromagnetic radiation and increased interference resulting from what would be an effective increase in transmitter power output for some emission modes".

The WIA responded to that letter by a letter dated 12 January 2006, seeking a reconsideration of the ACMA position.

The position of the Authority in refusing the WIA's request was set out in a letter from Mr. Jordan to the WIA dated 2 May 2006.

The Authority has adopted a policy to allow higher power for earth-moon-earth experiments above 50 MHz for Advanced licensees. That policy is set out on the ACMA website.

The WIA does not suggest any change to that policy in respect of earth-moon-earth experiments.

However, many amateurs have

continued to express concern in respect of the ACMA policy in relation to amateur power limits outside that policy.

The WIA believes that these concerns are justified, and now proposes a solution that meets the concerns of the ACMA.

We believe that the reasons for change are valid.

One matter that is raised by many is the power limits permitted by other administrations, particularly the United Kingdom and New Zealand.

The Table below gives a summary of power limits permitted in a number of countries.

While the Table covers only 13 countries, it does provide a broad indication of the positions taken by countries with significant amateur radio activity.

The Table covers the general position at HF and 2 metres with a number of countries having special conditions, such as for VLF and 6 metres.

Country	Power limit for highest level licence
Belgium	1000 watts
Canada	2250 watts PEP or 750 watts carrier
France	750 watts PEP all modes on HF 120 watts PEP all modes on 2 metres
Germany	750 watts PEP all modes
Holland	400 watts PEP all modes
Japan	1000 watts HF, 50 watts 2 metres
Oman	150 watts
New Zealand	500 watts PEP all modes
South Africa	400 watts PEP all modes
Spain	HF 800 watts PEP, 200 watts carrier 2 metres, 200 watts PEP, 50 watts carrier
UK	400 watts PEP all modes
USA	1500 watts PEP all modes
Former Yugoslavian countries	2000 watts

There are variations as to whether the power is measured "at the transmitter" or "at the antenna".

Continued next page

IARU Region 2 General Assembly Ends

The XVII IARU Region 2 General Assembly held at Salinitas, Sonsonate, El Salvador came to an end on 8 October 2010. 58 delegates attended the conference, representing 19 Region 2 Member Societies, 12 in person and 7 by proxy.

IARU Region 2 is the IARU regional organisation covering the countries of North, Central and South America.

The host society was the Club de Radio Aficionados de El Salvador, CRAS, and was warmly congratulated by all for the success of the Assembly.

During the Conference many issues affecting amateur radio were discussed, ranging from the forthcoming WRC in 2012 to the question of attracting new amateurs.

The General Assembly accepted the invitation of the Federación Mexicana de Radio Experimentadores to host the XVIII General Assembly in 2013 in the city of Monterrey, Mexico.

The General Assembly re-elected Reinaldo Leandro YV5AMH as President and José Arturo Molina YS1MS as Vice President, with Secretary Ramón Santoyo XE1KK to serve another term.

Amateur radio backs up Chile mine rescue

The world watched via television the rescue of 33 trapped miners at San Jose in Chile. Giving its support was the Radio Club de Chile (RCCH) using its resources to boost the availability of communications in the area. President of the Radio Amateurs

of the Region of Atacama (Radio Club Copiapo), Jose Maldonado CE1RX has reported that support was offered to overcome the lack of communications facilities in this desert region of Chile.

It provided communication support between the authorities and emergency equipment operators inside the San Jose mine complex. The mine complex in a desert region did not have telephone contact. Radio Club Copiapo spokesman Erico Jos Andrade CE2EPB said some 80 members of the club were involved from day one of the mine accident.

They installed amateur equipment in the mine complex, and club volunteers took shifts to provide communication support. "This, together with additional mobile police stations, hospitals and fire battalions, kept everyone abreast of all the needs and urgent requirements," said Erico CE2EPB. The support enabled links for various authorities with emergency equipment inside the San Jose site and also with family and authorities in the city of Copiapo.

As this collaboration continued all shared the common hope for the safe rescue of the miners, trapped 700 metres (2,300 ft) below the ground in the copper mine since 5 August. All the miners were rescued.

2010 JOTA/JOTI Address to Scouts and Guides

Her Excellency Ms Quentin Bryce AC, Governor-General of Australia, Chief Scout and Patron of Girl Guides Australia addressed Scouts and Guides in a message broadcast at 1300 hours local time during the annual Jamboree On The Air and Jamboree On The Internet (JOTA-JOTI).

JOTA-JOTI was on the weekend of 15-

17 October 2010, and involved some 10,000 Scouts and Guides in Australia, and about 500,000 worldwide.

JOTA-JOTI gives young people an opportunity to meet and learn about Scouts and Guides in other parts of the world.

JOTA-JOTI has a long tradition in Scouting and Guiding. This year is the 53rd JOTA and 14th JOTI.

Amateur Radio in the press

The Fraser Coast Chronicle published this story dated 12 October 2010 under the heading "Radio buffs share skills".

"Amateur radio buffs got to show off the technicalities of their hobby last weekend and even got some new toys to play with.

A public display of the Maryborough Electronics and Radio Group attracted visitors from the Fraser Coast and further afield who were interested in radio communications.

Club president Geoff Emery said the weekend display at the Maryborough West Scout Hall was a great opportunity to share the hobby with the general public.

"It has been rather successful," he said.

"We even had one man come in, who didn't even leave us his name, who had some radio equipment that he wanted to go to a good home."

"He donated it to the club, which was rather tremendous. It's ideal for the hobbyist so we will definitely be able to use it."

The club is preparing for a big couple of weeks, with members' expertise needed at the Scout Jamboree of the Air next weekend, followed by another public display at Maryborough City Hall."

ar

WIAcomment continued

Power limits up to 1,000 watts PEP or 500 watts mean should be allowed.

This policy should be applicable only to Advanced licensees.

May we ask that the ACMA clarify one matter?

It is noted that within the "Key Documents" for the Amateur Service, there is a lack of clarity in respect to how transmitter power should be measured and what the test parameters should be? As a starting point the WIA suggests that the methods contained in Sections 5.43, 5.44, 5.45, and 5.46 of the former Amateur Operator's Handbook (Revised December 1978) may be a starting point.

We ask that the ACMA specify the preferred methodology for measuring transmitter RF power for the following emissions, namely SSB, AM, pulse and digital emission modes (FSK, PSK, MFSK and MPSK) which could be classified under either peak power or mean power methods.

With those changes the WIA submits that the ACMA would be adopting a policy that provides a realistic response to the many requests for a review of the earlier decision, but addresses the concerns of interference and electromagnetic radiation exposure."

I hope you agree with what is expressed in the letter. ar

Variations to some WIA examination and callsign fees

In December 2008 the WIA announced that the cost of a WIA examination would be \$67.00 including GST from 2 February 2009, except for candidates aged under 18 on the day of assessment, which remained at \$35.00.

2 February 2009 was the date that the new contractual arrangements with ACMA relating to examinations came into effect. Under these contractual arrangements the WIA is obliged to comply with the Commonwealth Cost Recovery Guidelines with charges requiring Commonwealth approval.

In February 2009 the WIA announced the charges for a callsign recommendation from 2 March 2009, necessary to obtain a licence. This was also in accordance with those new contractual arrangements.

The WIA is obliged to charge fees on a cost recovery basis. That charge must be approved by ACMA as being reasonably related to the costs incurred or to be incurred by the WIA in relation to the matters to which the charge relates.

The contract between the WIA and ACMA required a complete review of the costs after the first year, and thereafter the provision of annual audited financial information to ACMA. This complete review has taken place, in considerable detail, and with the provision of significant additional information to answer the ACMA's questions.

The result has been some small increases, some small reductions and a new charge.

Summary

- **Under 18 examinations unchanged:** The charge for all examinations (Foundation, Practical Assessment taken alone, Standard and Advanced Regulations and Standard Theory and Advanced Theory) for a candidate aged under 18 on the day of assessment remains at \$35.00.
- **Level 1 callsign recommendation unchanged:** a three or four letter call sign in any state or territory where the WIA will select the next available call sign remains at \$5.00.

Changes on and after 1 December 2010

- **All other examinations, except the Practical Assessment taken alone,** increases from \$67.00 to \$70.00.
- **A Practical Assessment taken alone:** drops from \$67.00 to \$65.00.
- **A replacement certificate of proficiency:** drops from \$14.00 to \$10.00.
- **Recognition of Prior Learning:** attracts a new application fee of \$100.00.
- **Callsign Recommendation Level 2:** a three, four and two letter call sign in any state or territory except New South Wales, Queensland and Victoria, where the individual can select two preferences for a particular call sign shown as

an available call sign from the website daily list drops from \$20.60 to \$20.00.

- **Callsign Recommendation Level 3:** a two letter call sign in the states of New South Wales, Queensland and Victoria drops from \$48.85 to \$48.00.
- **Callsign Recommendation Level 4:** a special event callsign drops from an hourly rate of \$67.80 to a flat fee of \$25.00.

WIA President Michael Owen VK3KI said that the WIA was pleased it was able to continue to subsidise, with the approval of the Commonwealth, the cost of examinations for candidates under 18, and applications for the next available callsign, also of importance to young people.

He also said that while the changes were very small, it was pleasing that there could be some reductions.

It was also pleasing that the ACMA recognised the fact that the fees for examinations were low because of the work of volunteers. No part of the charges is attributable to the time of WIA Assessors, Learning Facilitators, the WIA Directors, the Secretary or the Treasurer.

The President also announced that on and after 1 December 2010 the existing arrangements will continue for Level 3 callsign recommendations, a two letter callsign in Queensland, NSW or Victoria, with applications only being accepted by mail, but instead of providing a recommendation to the first application received and opened, the recommendation will be given to an application chosen at random after seven working days from the day the callsign was first placed on the Public List. This will overcome the disadvantage suffered by those not living in a capital city and not able to use Express Post.

Michael Owen also announced that on and after 1 December 2010 WIA Assessors will be able to claim reimbursement of motor vehicle expenses at a defined rate if travelling a distance greater than 100 km from their ordinary place of residence to conduct assessments.

All money amounts shown on this page include GST. **ar**

WIA Examination related charges:

Examination	Current Charge		Charge on/after 1/12/2010	
		U/18		U/18
Foundation	\$67.00	\$35.00	\$70.00	\$35.00
Practical Assessment taken alone	\$67.00	\$35.00	\$65.00	\$35.00
Standard/Advanced Regulations	\$67.00	\$35.00	\$70.00	\$35.00
Standard Theory	\$67.00	\$35.00	\$70.00	\$35.00
Advanced Theory	\$67.00	\$35.00	\$70.00	\$35.00
Application for RPL	n/a	n/a	\$100.00	\$100.00
Replacement certificate of proficiency	\$14.00	\$14.00	\$10.00	\$10.00

WIA callsign related charges:

Service	Description	Current Charge	Charge after 1/12/10
Level 1 Callsign Recommendation	The next available three or four letter call sign in any state or territory selected by the WIA.	\$5.00	\$5.00
Level 2 Callsign Recommendation	A three or four letter callsign (all states and territories) and two letter call signs except NSW, Vic. and Qld., where the individual can select two preferences for a particular call sign shown as an available call sign on the WIA website	\$20.60	\$20.00
Level 3 Callsign Recommendation	A two letter call sign in the states of NSW, Qld and Vic.	\$48.85	\$48.00
Level 4 Callsign Recommendation	Special event callsign.	\$67.80 per hour	\$25.00 Flat Fee

A noise meter suitable for Sun and Moon noise type measurements

Charlie Kahwagi VK3NX

Preface:

In trying to track the moon on the higher microwave bands for EME operation, it became very obvious to me early on that, with the beamwidths normally encountered, it was not enough to rely on the dish calibration to be sure one was pointing directly at the moon. With only a slight misalignment, I found that signals would be lost. So how to overcome this? One of the easiest ways is to track via moon noise and not solely rely on the dish mechanics and indicator system. While this is not an article on automatic tracking of the moon, it describes a device that gives a visual aid to helping one keep

the moon in the 'bore-sight'. As a by-product it allows for very accurate measurements on sun, moon and 'cold sky'/ground measurements. Its usefulness is also to help evaluate receive system changes and modifications with real world analysis for any receiver system.

Initial thoughts and conception

The noise meter described below will find many uses in an experimenter's shack: LNA comparisons, antenna array performance and analysis of microwave feeds The list is only limited by the imagination!

There are many things to consider when trying to measure noise. There

are many ways to accomplish this. We can use the audio output of a receiver with a linear gain and no AGC applied to do measurements or A/B comparisons. This works reasonably well for Sun noise measurements and to a lesser extent for ground to cold sky measurements. But for evaluating moon noise this method failed miserably for me. After discussing this with Luis Cupido CT1DMK, he showed me how integration mathematics is required to see that it will be almost impossible to see or measure accurately moon noise with a typical microwave EME system, such as mine, unless the moon noise is several dB above the background noise. What is required is a 'wideband' signal compared with the 'narrow bandwidth' of the audio spectrum. A wide bandwidth is required for the resolution required to see a fraction of a dB change. Most of my EME transverters use an IF of 144 MHz and as such it was an easy choice to utilize this part of the spectrum to examine a wide bandwidth portion when looking at moon noise and other noise such as Sun or Ground.

In issue 2 in 2000 of the VHF Communications publication, Wolfgang Schneider DJ8ES described a 'Logarithmic detector amplifier up to 500 MHz' utilizing an 'AD8307' device (1). This device is from Analog Devices and is readily available as a traditional in-line package or SMD device. It is an RF detector that will provide a dB linear output. Close examination of the DJ8ES circuit led me to feel that this device would be ideal to form the basic building block of my 'noise meter'.

If I tapped off some wideband signal at the 144 MHz output from my transverters then I could use this to drive the AD8307 to give me a useable and calibrated detector voltage to drive a meter. Close inspection of the specifications of the AD8307 shows that its claimed dynamic range of 90

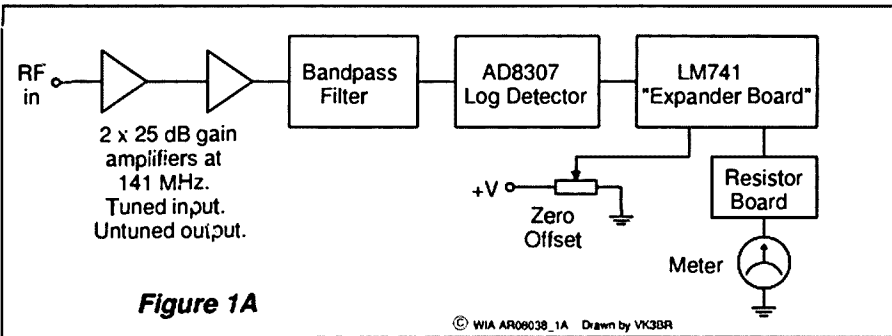


Figure 1A: The block diagram of the Noise Meter

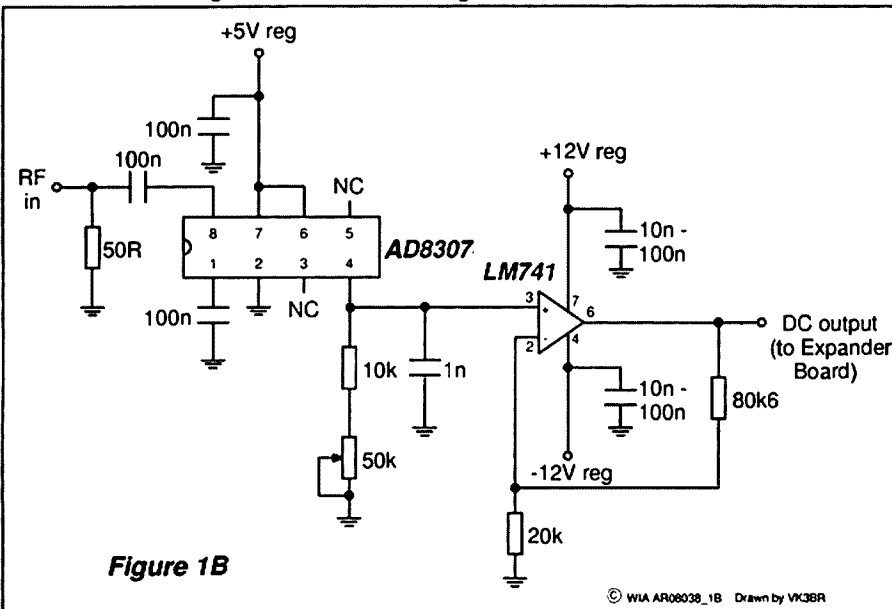


Figure 1B

Figure 1B: The circuit diagram for the AD8307 log detector section of the meter.

dB is useable between -75 dBm and +17 dBm (2). As such the RF levels required far exceeded that which one would normally be expecting to encounter in a typical receiver system.

Going through the design process

If the received RF signal in the microwave region is around -150 dBm as an example, one might expect about 20 dB gain in the LNA and another 20 dB conversion gain from the transverter. Our signal at the IF frequency is likely to be around -110 dBm. This is still well short of the minimum -75 dBm required by the AD8307. As such some further amplification is required.

I decided to use approximately 50 dB of gain ahead of the AD8307. (In my EME setup at home I use another amplifier ahead of this to put the signal levels around the middle of the range for the AD8307). By putting some amplification ahead of the AD8307, it also provides the opportunity to place a wideband filter at around 141 MHz. So having decided on this approach, the 'Noise Meter' circuit was developed. Please note that whilst the RF part of the system was designed around 144 MHz any frequency up to 500 MHz could be used.

Block diagram and AD8307 log detector

See Figure 1A and 1B

The block diagram described above shows the two stages of amplification and a band pass filter ahead of the detector. These were centered on 141 MHz and the band pass filter exhibits a 4 MHz -3 dB BW. All the important electronics comes after the detector. For an input of +10 dBm into the detector board a DC voltage of +10 V is available after the LM741. An input of -60 dBm produces +3 V. There is a little variation from true linearity and the 50 k pot helps to balance this out.

The LM741 in my detector circuit replaces the original LM358 chip in the DJ8ES circuit but it is still configured as a X5 amplifier. The output is 100 mV/dB. Please refer to the original article by DJ8ES for a thorough description on this board and for ideas on the practical construction and setup.

The RF 'preamplifiers' can be of any useful or handy design. A simple amplifier built 'ugly' style would be fine using modern MMICS. I built

some very simple amplifiers using 'tuned input, unturned output' designs around some NE42484A GaAs FETs. Any suitable rated amplifier for the chosen frequency can be utilized.

Bandpass filter

See Figure 2

Once again, if a different IF is used, a suitable filter will be required. One could leave the filter out altogether and rely on the output filtering of the transverter but it was reasoned that some additional filtering would be a good idea because of the high level of amplification in the overall system. The filtering would help keep out any spuri, and the whole system is designed in 50 ohms.

Expander board

See Figure 3

A DC voltage of ~0 V - +10 V is available from the output of the log detector board and applied to the

input of the expander board in all ranges but the 'FULL' range as selected via the front panel switch. In the full range the output of the detector board is fed directly to the 'meter resistance board'.

In the expander board, the first LM741 is configured as a X1 inverting DC amplifier and the second LM741 is configured as a X10 inverting 'difference' amplifier. The reference DC offset voltage is supplied via a front panel pot. It would be best to use a multi-turn pot for this application as it makes 'zero adjustment' easier.

Examining the function of the Expander Board

Example 1: Let us assume a signal of -20 dBm produced +7 V out of the detector board. When this is applied to the first LM741 a DC voltage of -7 V is produced at pin 6. This is then

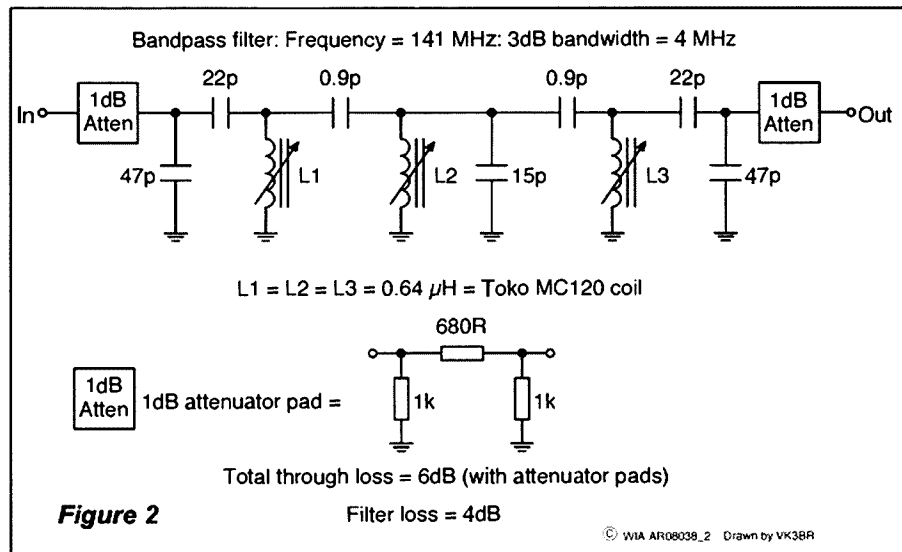


Figure 2: The bandpass filter circuit.

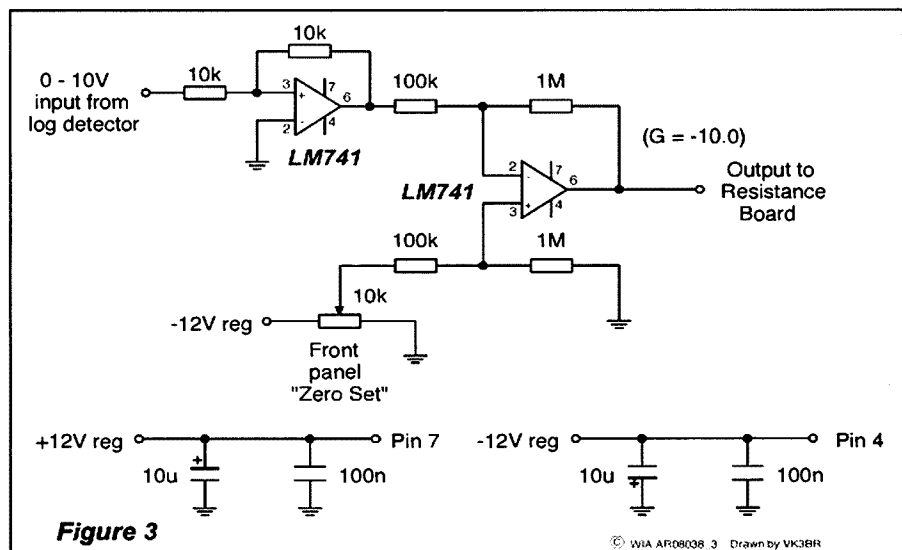


Figure 3: The expander board circuit.

applied to the second LM741 via the 100 k resistor to pin 2. At the same time a negative voltage is applied via the 100 k resistor to pin 3. This negative voltage is determined by the 'Zero adjust' front panel pot. If the signals applied to pins two and three are the same the difference is 0 and there will be 0V at pin 6.

Let us assume now that we have set the front panel pot to produce 0 V out of the expander board and now the signal level at the 50 ohm input of the log detector goes from -20 dBm to -10 dBm (10 dB increase - for example sun noise) then the output of the detector board goes from +7 V to +8 V. The output of the expander board will now go to +10 V (Vdifference x 10).

This voltage can now be fed to the resistance board to drive the meter as an indication of 10 dB. If the appropriate resistance and meter combination is used this might be set up to represent full scale deflection of the front panel meter.

Example 2: -20 dBm input to detector (that is, pointing at cold sky) results in +7 V at the input to expander board. The zero offset pot is set so there is no voltage on the output of the expander board (that is -7 V at pin 3 of the second LM741). Now a signal of -19 dBm input at the detector appears (that is, 1 dB moon noise as the dish is pointed at the moon). A DC voltage of +7.1 V appears at the input of the expander board, so a DC voltage of 1

V appears at the output. This voltage can now be fed to the resistance/ meter combination in such a way that 1 V causes a full-scale deflection. That is FSD = 1 dB.

In a practical application I found that the meter can have a FSD representing as little as 0.5 dB increase in input level and still have excellent stability and accuracy as verified with a HP signal generator as the calibrating source.

The absolute input levels are not critical (provided they are within the useable range of the AD8307). The relative measurements are very accurate provided care is taken in setting up the response of the AD8307 and calibrating the resistance multipliers correctly.

Resistance board

See Figure 4

The schematic of the resistance board helps show how the various 'blocks' come together. The actual values will depend on the required FSD range and the meter characteristics / specifications.

I used a two-pole five position front panel switch to select between:

- Full
- 10 dB
- 2 dB
- 1 dB
- 0.5 dB FSD ranges.

In the FULL range the 'Absolute' front panel meter calibration is dependant on the gain ahead of the log detector board. It should be calibrated against a very accurate signal generator. The calibration of the meter with the various range selection is linear in fashion. There is a slight variation between devices and in experimenting it was found a lot depends on the absolute input level

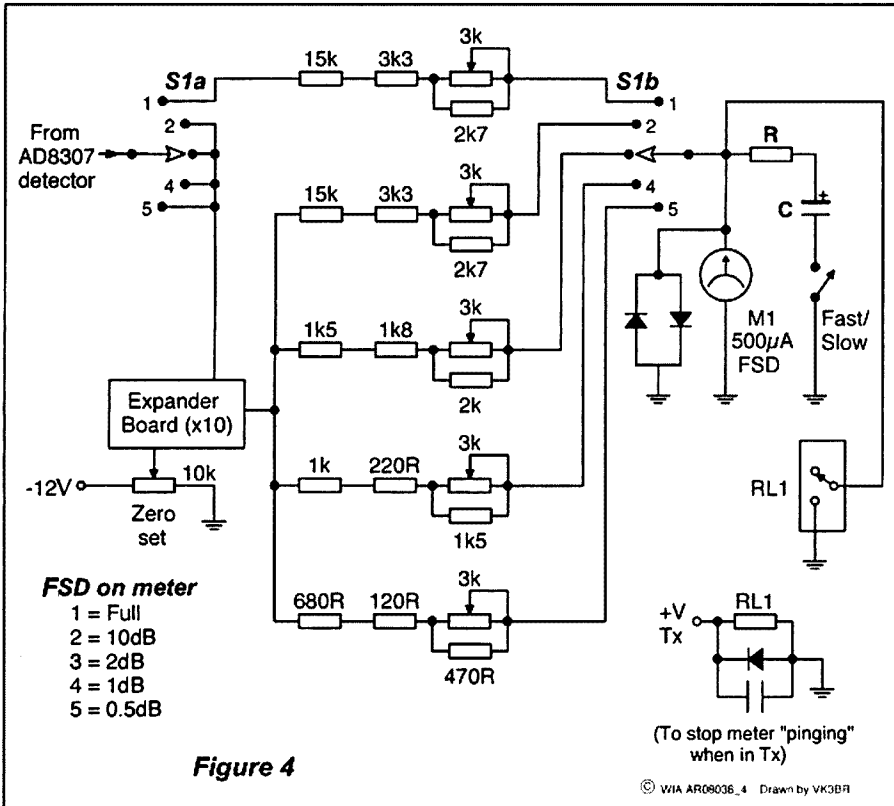


Figure 4

Figure 4: The resistance board circuit.

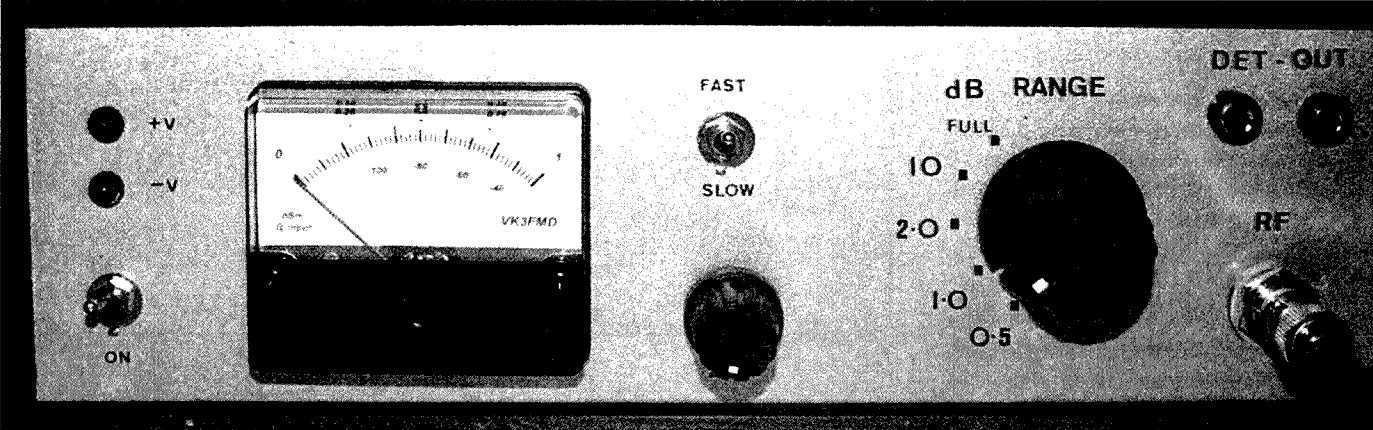


Photo 1: The completed Noise Meter.

and frequency and the setup of the detector board to start with. In my unit I found a maximum error of 5%.

Summary of meter resistance board

For FULL range - Select meter / resistors so 0-10 V gives FSD.

For 10 dB Range - Select meter / resistors so 0-10 V from expander board output gives FSD.

For 2 dB Range - Select meter / resistors so 0-2 V from expander board output gives FSD.

For 1 dB range - Select meter / resistors so 0-1 V from expander board output gives FSD

For 0.5 dB range - Select meter / resistors so 0-0.5 V from expander board output gives FSD

Miscellaneous

Regulated +12 V and -12 V supplies are required for the various boards as indicated. The Fast/Slow switch is self explanatory and adds a capacitor / resistor time constant for the meter to smooth out movement if required. The 'Anti pinging' relay is a must for Tx/Rx changeovers. The back to back diodes across the meter will help limit voltage across the meter to prevent damage. For accuracy and ease of use the biggest faced panel meter possible should be used. Proper decoupling of RF on all DC lines is required.

The absolute calibration is on the bottom of the meter scale. My unit has amplification such that FSD in the full range is -20 dBm at the front panel RF IN connector. In my EME system, the usual RF input to the front panel BNC is between -60 dBm and -75 dBm depending on the transverter. With 50 dB of gain before the log detector this means the AD8307 is operating around -10 dBm to -25 dBm. Well within specification. A direct DC output at 100 mV / dB (from the detector board) is available at the banana style connectors for use with an external 'recorder' type device.

Practical Implementation

In my EME system I use a receive splitter on the output of my 144 MHz IF of my transverters. This unit has a T/R relay and when in receive mode, it splits the Rx signal into

two paths - one signal path goes to my 144 MHz IF radio, the other Rx signal path is further amplified with a MMIC by about 20 dB and filtered with a simple series tuned filter tuned to a centre frequency of 141 MHz.

This amplified Rx signal is then applied to the 'Noise Meter' input front panel BNC. During operation the 'coldest part of the sky' is found with the dish and the meter zero adjust is used to set the reference level in one of the smaller ranges. The dish is then pointed at the moon and it is very obvious in the 0.5, 1 and 2 dB ranges when I have the dish pointed accurately. During EME operation, I 're-peak' for moon noise during receive sequences.

Calibration of the dish azimuth and elevation indication system can then be easily checked and adjusted, or if the calibration is close then manually peaking the dish on moon noise gives absolute confidence that the dish is pointed accurately. With my 'actuator' based system of dish control the noise meter has become a valuable and irreplaceable instrument to carry out EME activity on the higher microwave bands (9 cm and up).

Parts and construction

Coils and capacitors for the band pass filters were sourced from MINIKITS www.minikits.com.au I was also able to obtain the AD8307 IC from there.

Jaycar, Radio Parts and Altronic are a good source of switches and for the miscellaneous parts such as resistors and 741 ICs.

Construction can be 'paddy board' or 'ugly' style or homemade etched PCBs as I have used.

A PCB artwork exists for the 'logarithmic detector' in the DUBUS reference given below.

The RF amplifiers can be any breadboard design amplifier such as a 'universal MMIC AMP' as appears on the Minikits website or, as I have done, a dedicated 'preamp' design for the frequency of choice. If you use an 'untuned' amplifier such as a generic MMIC amp then an additional stage of filtering might be a good idea.

References

- 1 Logarithmic Amplifier Up to 500 MHz with AD8307. Wolfgang Schneider, DJ8ES. VHF Communications Vol. 32 Summer 2000 -Q2.
- 2 Data Sheet AD8307. Analog Devices, Inc. 1997 <http://www.analog.com/en/rfif-components/log-ampsdetectors/ad8307/products/product.html> - quicklinks [It is quicker to Google AD8307]
- 3 The author's website address is www.vk3nx.com

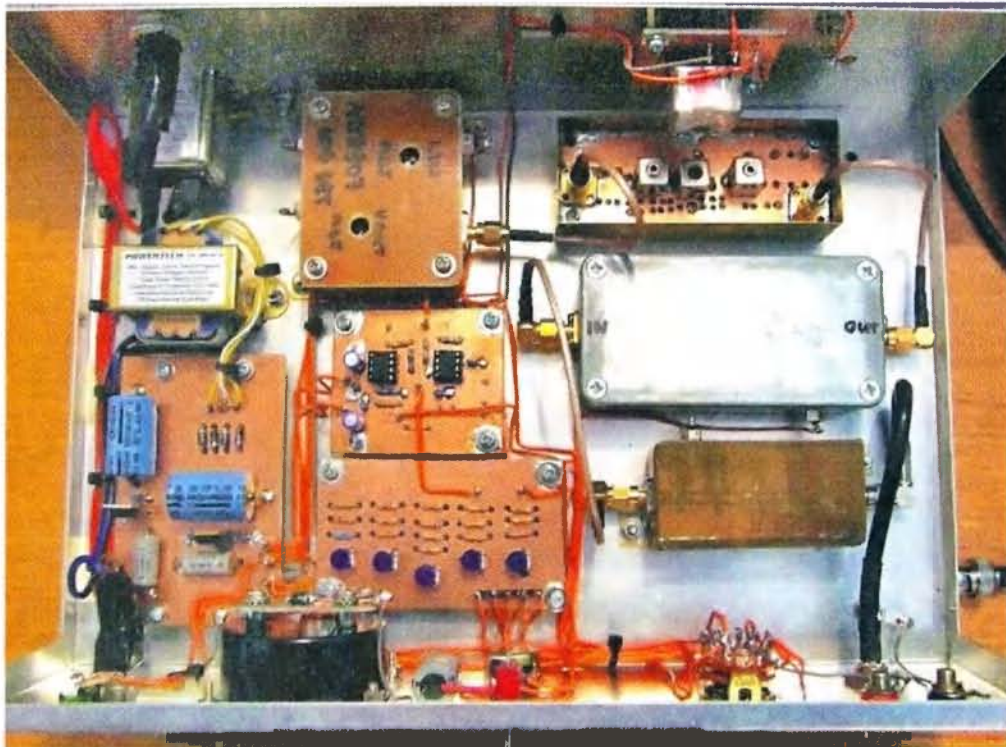


Photo 2: An internal view of the Noise Meter.

Comparing line currents in HF balanced feeders

Ron Sanders VK2WB

Introduction

The use of a centre fed horizontal wire antenna with or without an antenna tuning unit (ATU) is probably the most common HF antenna system used by amateurs world-wide. By using an ATU the overall length of the antenna can be made to suit any available space limitations at the home QTH, and in addition, allow operation on any of the HF bands. Such an antenna system means that a balanced feeder and ATU is required.

I have previously published (AR April 2008) a balanced ATU suitable for HF operation using a nominal 100 W transmitter. In the antenna system described, the current flowing in each feeder line should be of equal but opposite magnitude for correct balance. The actual value of the current will depend upon your particular antenna geometry and operating frequency, but is not required – we only need the comparison between the two readings. Any difference between the readings will result in some radiation from the feeders which will distort the expected radiation pattern and add extra noise on receive, and

maybe even TVI or BCI on transmit.

This article describes a simple unit which will allow a comparison of the currents flowing in each feeder line. The whole unit can easily be incorporated into the ATU, as shown in the photos.

Circuit description

The circuit is designed for use from 2 to 30 MHz with a power rating suitable for nominal 100 W transmitters. Line currents are measured by using two toroid current transformers, one on each line. For RF operation the core will be a ferrite material, which is chosen for operation across the range of frequencies you require. I have chosen a 12.7 mm diameter Amidon FT-50-43 core (Reference 1). Each feeder is passed through the centre of the toroid and forms a single turn primary winding. The secondary consists of 15 turns of 0.5 mm enamelled copper wire (ECW).

As in power line current transformers, the secondary winding should never be left open circuit. The reason is that the secondary impedance is reflected into the primary by the

inverse of the turns ratio squared, that is, $1/15^2 = 1/225$. This reflected impedance appears in series with the primary winding. With an open circuit secondary the secondary load impedance is always infinite, so that the reflected primary impedance is also infinite, and the primary then looks like an open circuit – bad news. Similarly, when the secondary load is a short circuit, the additional reflected primary impedance is zero – good news.

A 100 ohm resistor across the secondary helps broaden the frequency response of the transformer, but at the expense of reduced sensitivity. This will introduce an additional 0.44 ohms in series with the primary ($100/15^2$). I have placed a normally closed pushbutton switch (Reference 2) across the secondary when the meter is not being used, in case the 0.44 ohms introduced is significant in a particularly low impedance primary load. It could be omitted if not considered necessary. Power dissipated in the 100 ohm resistor is less than 1 W for 100 W of RF into a balanced 50 ohm system.

The diode detector rectifies the secondary RF voltage and after filtering with the 10 nF capacitor the DC current is supplied to the meter (Reference 3). Layout is left up to the builder – the only stipulation is that the RF section (from the top of the schematic down to the 10 nF capacitor) is kept reasonably compact, but do provide extra RF filtering for any long DC leads. I have included a Hi/Lo sensitivity switch which adds series resistance (R1) in the Lo sensitivity setting. The switch is normally left in the Lo position, but its inclusion in the circuit is optional. You can select values for R1 and VR1 to suit your particular system.

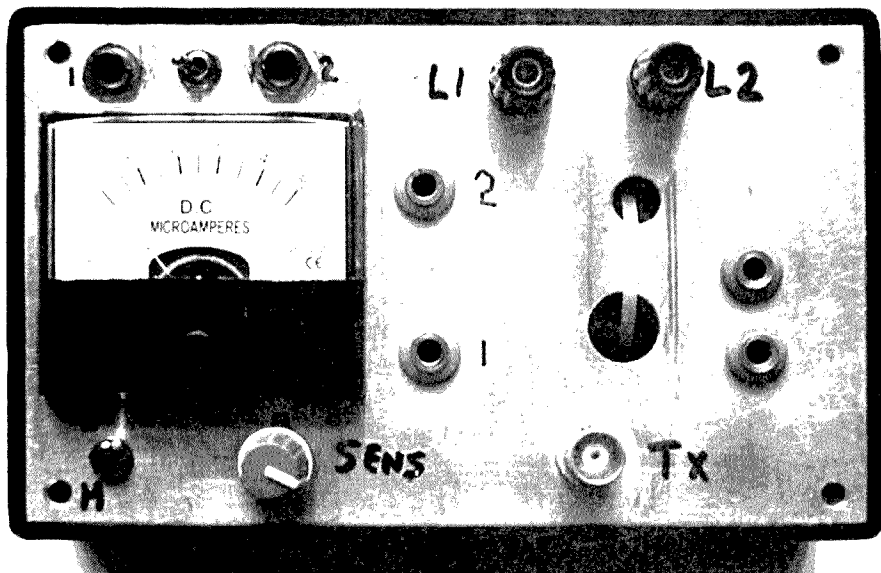


Photo 1: The finished HF balanced line feeder current measurement tuner.

Operation

Make sure the Hi/Lo switch is set to Lo if fitted. At a low power setting, adjust your ATU for best SWR on the chosen frequency and key the transmitter. Any SWR greater than 1:1 will result in some imbalance between readings.

Select L1.

* Push the 'read L1' button.

Adjust VR1 if necessary for a suitable meter reading.

Now select L2.

Freq (MHz)	Power (W)	Lo/Hi Switch	Sensitivity	Meter reading
7.1	100	L	max	25
	50	L	max	20
	10	L	max	12.5
	1	H	max	35
	14.1	100	L	max
	50	L	max	35
	10	L	max	20
	1	L	max	10
	1	H	max	50+
28.6	100	L	max	45
	50	L	max	40
	10	L	max	20
	1	H	max	7.5

* Push the 'read L2' button.

Check the meter reading. It should be very close to the L1 reading.

If there is a substantial difference (>10%) between the readings you should check your SWR, feeders and antenna for problems.

Reset transmitter power output to your normal setting and check the L1 and L2 readings again, resetting VR1 as required.

* These operations not necessary if the normally closed pushbutton switches are deleted.

Operational Readings

Meter readings obtained with a balanced 50 ohm dummy load.

Freq (MHz)	Power (W)	Lo/Hi Switch	Sensitivity	Meter Reading
7.1	50	L	min	31
14.1	50	L	min	28
28.6	50	L	min	25

The following table of meter readings reflect my particular antenna system, and the power reading from my SWR/Power meter, after adjusting for 1:1 SWR on my ATU. Other antenna systems will have different current through the transformer and therefore create different readings.

Conclusion

The number of turns on the secondary can be changed, but I would not exceed 15 as too many turns can produce self-resonances in the winding.

The diode should be a type suitable as a detector rather than switching.

All components are available from DSE, Jaycar,

TTS Systems, Altronics but some single-source items noted in References. See advertiser details in AR.

References

TTS Systems.

Dick Smith Electronics – P 7561.

Jaycar – QP-5012.

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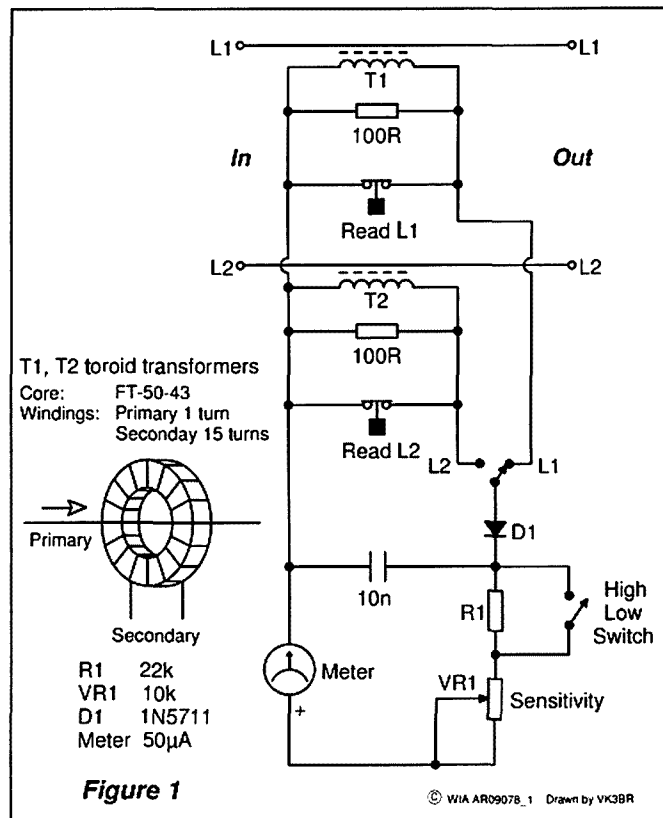


Figure 1: The HF balanced line feeder current measurement circuit.

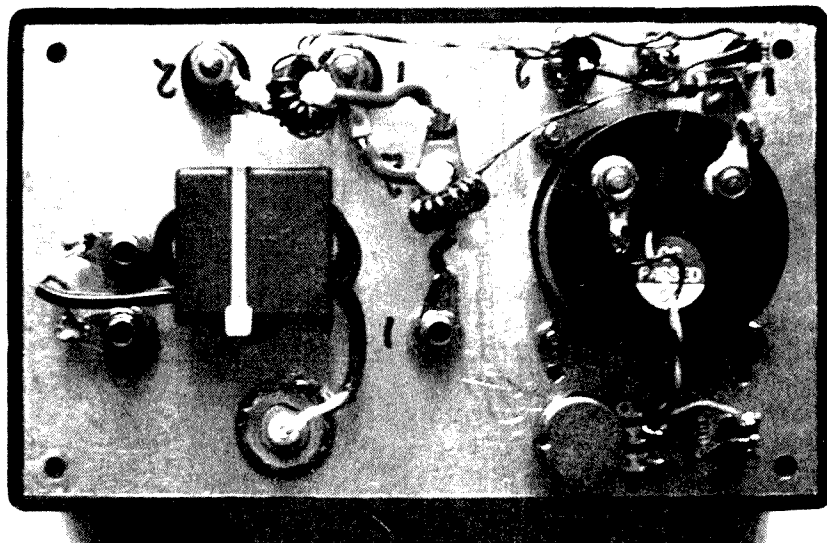


Photo 2: The finished meter, from underneath the cover.

Six metres for Standard class operators

Stuart Birkin VK8NSB

Two years ago I decided to venture onto six metres, and put a quarter wave vertical up in the air. This was around November 2008, ready for what the six metre guys were calling the Magic Band time of the year.

I was already aware of VK LOGGER on the Internet, using it for HF, and had seen the six metre page but had never ventured onto it, thinking it was for Advanced operators only. I actually thought I would be ignored or told to leave if I went on the page because I was a Standard class operator.

However I decided to jump on to VK LOGGER and was amazed to find the guys were quite willing to help out with answers to my questions and willing to have QSOs with me on 52.100 MHz SSB, or split because of the Advanced guys antenna being cut for the bottom part of the band, for 50-51 MHz.

In the Christmas season of 2008 I worked 23 VKs and 2 ZLs on six. When the band closed off around February/March, 2008 I then went very quiet and did not really bother with it for 2009 – and that Christmas the Magic Band was very poor.

Then, I just happened to come upon a three element Yagi for six metres on VKHAM, purchased it and started working on putting it up on one of the towers I have here - finally got it up around the end of January 2010.

One evening I saw on the DXcluster Mark VK8MS spotted by a JA and thought, wow, six metres is open, so I rushed up to listen and could hear the JA quite clearly on the beam. I was able to talk to Mark later that night and he explained to me about TEP.

I had never heard of it before but was interested in learning more about this TEP. Over the next two weeks I was lucky to work KH2, VR2, JA, DU and BV on both SSB and CW on 52.100 MHz and some further QSOs using split 50-52 MHz. Both Mark VK8MS and John VK8JM helped me with some of the QSOs, asking the operators to go split so that I could make the QSO.

I have noticed one thing on the VK

LOGGER and that is there are not many VK Standard class operators active on six metres. Why not? For the guys throughout VK, from VK 1 to VK7, six metres looks fun, with openings all around Australia, and even DX openings.

For myself, with only 100 watts and a three element beam, I have had some really great evenings on six over the last couple of weeks, thanks to TEP. I would say to those Standard class operators out there, give six a go; it is easy to put up a vertical, dipole or even a beam for this band, as it does not need massive space to do so. Get on VK LOGGER and say good day to the guys, they won't bite and you might find you actually enjoy this Magic Band.

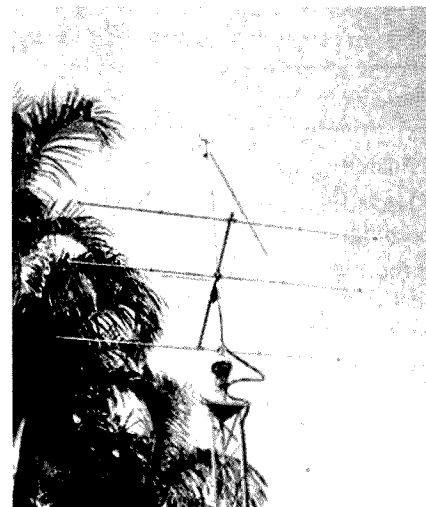
I had always said that six was not really for me, as I was a HF DXer and I was not going to get too serious about it, but over the last couple of weeks I have actually enjoyed this truly Magic Band. Give it a go.

Yes, as a Standard class operator you might be limited to the frequencies you can use on the band but you will

be amazed how many guys will work you split or even come up on 52.100 MHz to say "g'day".

I now keep my eyes on the six metre chatter in VK LOGGER and the six metre spots on the clusters I monitor.

Take it easy and catch you on six from Darwin, de Stuie VK8NSB.



The VK8NSB antennas.



Stuart VK8NSB in his well 'wall-papered' shack.

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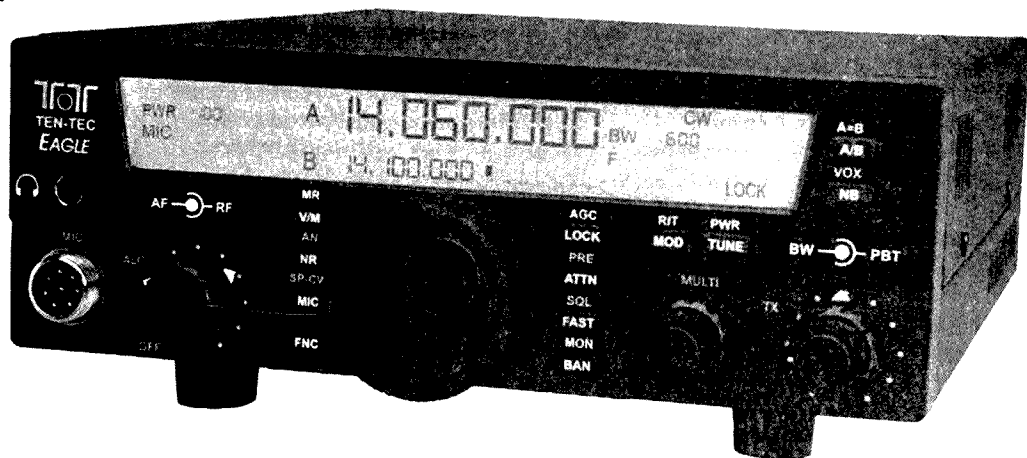
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Is good enough good enough when it is not perfect?

Geoff Emery VK4ZPP

There was a time in the CB circles that the holy grail of station operation was to have a perfect VSWR, a reading of 1.1:1. When you check the difference this elusive ratio provides to the power available for radiation from the antenna to what a 1.5:1 VSWR provides, it is hardly worth the effort let alone the expense. The thought of tuning or matching your antenna system for maximum radiated signal could not be acknowledged. The field strength meter was neglected for the SWR meter.

This, of course, is a focus on one area whilst neglecting the system as a whole. The purpose of our amateur radio station is to be able to contact other amateur radio stations. Our licence conditions tell us the maximum power that we can radiate and sensibly we want the maximum amount of power up the stick and going in the direction we want. By the same token, we have to allow for the whole engineering of the station and all QTHs are not created equal.

Soil conductivity, the climate and topography are all factors over which we may have no control. We may try to mitigate poor soil conductivity by burying wires under our antenna system. We probably cannot control the weather other than by moving QTH, so strike that one. Hills, buildings and even re-growth of trees may cause problems in getting signals where we want.

Use of higher gain antennas is seen as an immediate solution by many to their problems. Okay, what that means is basically putting a lamp housing and reflector around a bare light. The amount of light remains the same but by careful focussing you maximise the output in the direction you want. It is like running an old fashioned movie projector where the lens adjusted the focus of the image

on the screen and you could lift or lower as well as rotate the light beam to get the image undistorted on the screen.

Consider the satellite dishes used for TV and internet transmission, for commercial ground stations, broadcast and domestic use. These antenna systems are very precisely focussed on the target signal source. The 'Dish', at Parkes, NSW, made famous in the film, is a manoeuvrable version which depends on the same engineering principles to do its job.

At 'higher' amateur frequencies, say two metres and 70 cm, we can use directional antennas which are physically small and manageable (Geoff, some would consider the 2 m and 70 cm bands to be the region where amateur bands really begin! Ed.). However, depending on our target, say a repeater, you may find the 0.25 wavelength antenna may outperform a new 'you beaut' collinear vertical because the signal is no longer focused correctly to reach the target over the distance and terrain in between.

Similarly, it is often proven that at 40 metres, a vertical 0.25 wavelength antenna will outperform most wire dipoles for DX working. This is because the angle of radiation best suits the ionospheric propagation characteristics of the signal path we wish to use. It is like shining a torch at a mirror to illuminate a distant object.

To maximise this kind of vertical antenna it is best to use multiple radials mounted above ground to form a counterpoise. To maximise the efficiency of the antenna, engineering studies show that a minimum of 120 such radials is needed. That is 1.2 km of wire you would have to spread out from the base of your antenna. Other

engineering studies have shown that a minimum of about 16 radials provides the best compromise of efficiency versus cost. You will read papers available on the internet from manufacturers which show you how to use effectively one radial per band of operation.

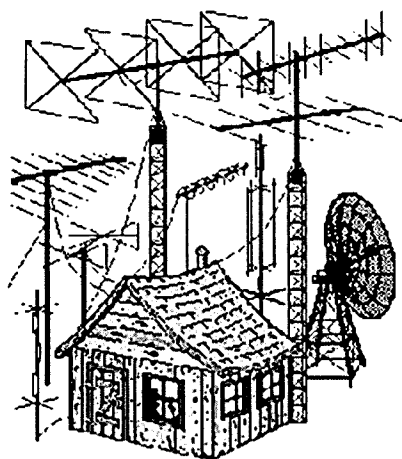
There are untuned antennas being sold which are chosen to be of a length which will not resonate within an amateur band. These are also known as aperiodic antennas. Often a 4:1 balun is used at the feed point to permit easier matching with an antenna matching unit (ATU).

You may see these types of antennas advertised as '....pole' and may be as short as 4.75 metres, from a Japanese manufacturer, to about 13.1 metres, from VK and the USA. Similar non-resonant 'back stay' antennas have been used on boats for years and milspec versions of these antennas sprout from the decks of naval vessels like mushrooms.

Now are these antennas maximised for greatest efficiency? Well, obviously not, but they do work in providing TX/RX capability over signal paths which are useful. The aperiodic antennas give frequency versatility so if you want frequency agility, one of the new automatic ATUs mounted at the base of the antenna with or without a balun transformer may meet the bill for you.

As you talk and learn about the science of antennas and propagation, you are going to stumble over many opinions and arguments as to the merit of different antenna types and configurations.

There are those who claim vertical antennas radiate equally poorly in all directions. There are those that will tell you that multiband antennas



There is no point in having a multi thousand dollar antenna on a tower that we cannot lower by ourselves. Storms do happen. There is no point in planning an eight wavelength HF long wire, if you live in an apartment with just enough room for the BBQ in the lawn area.

Certainly we can work to achieve greater efficiency in our station but think about the average HF mobile installation. Find some efficiency charts for a helically wound or linear loaded antenna on a minimal ground system. If you get 5%, from my reading, you are doing well but people do not complain if it works.

Similarly, I suggest that we should aim for good working stations with clean RF output. Some of the standard text books we amateurs use give us the best case scenario. That is our aim but we should recognise that first we have to have a station that sends and receives signals. After that we should seek to improve what we have.

This probably brings us back to the old question as to what is the best antenna. It may be good manners not to answer a question with a question

but this demands it. The best antenna for what, in what location, single or multi-band use are the obvious modifiers to the initial question.

There is no simple answer until the rest of the parameters are known. Just maybe for you and me, the best antenna is the one that we made ourselves and have learned its benefits and experienced its limitations – we have the benefit of experiential learning to supplement the book learning and these will help us decide on what will be our next project.

I have had people argue on the basis of book learning (?) that what we were using would not work. Too little understanding of the amateur station and its components as part of a communications system will stop you gaining knowledge. Amateur radio is fun and it is each of our tasks to enjoy our part in it.

Just a final reminder; I have touched on many areas of the technology and not given any references. Consider that a bit of homework to ferret out more detail on the areas that interest you. ar

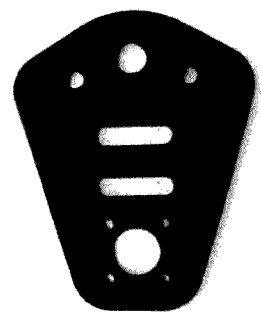
such as the G5RV are compromises. If we all had the real estate and the bank balance we could have all sorts of directive and high gain antennas. How much real estate is there on an eight metre yacht? How much room is there on the hull of an airliner to mount an antenna farm? How much room is there on a cubesat?

There is the need for us to make practical choices and this includes how well the piggy bank has been fed, how much room is available and can we manage the physical structures without bringing in help.

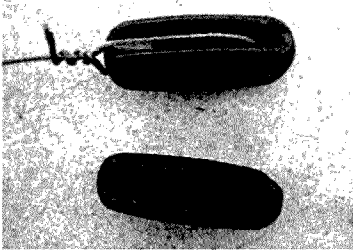
TET-EMTRON

News Flash! OPEN DAY

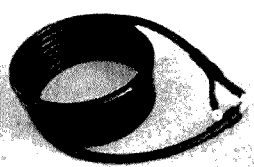
TET-Emtron in conjunction with Tower Communications is having an open day on Sunday, 23rd January 2011. On display will be a variety of antennas, home brew parts and HF gear. We will have different radios hooked to different antennas for trial. \rightleftarrows It is hoped the new ICOM-9100 will be released before hand and be available on the day. \rightleftarrows A sausage sizzle and tea and coffee are provided free, and soft drinks are available. Shed is air conditioned. \rightleftarrows Doors open at 10.00 am, and close when you all go home. Anybody interested in radio is welcome.



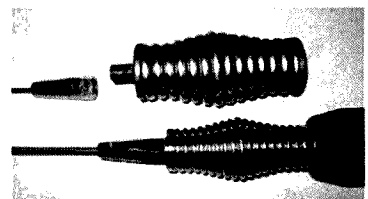
Dipole centres



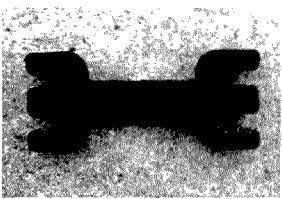
Insulators



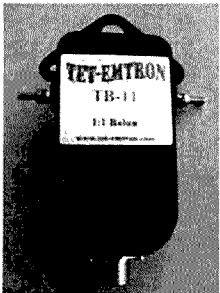
HF chokes



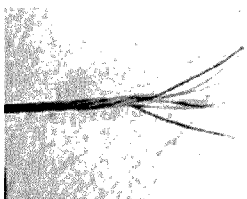
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A truly wintery Winter Field Day June 2010



Phil Derbyshire VK2FIL

We decided to hold our field day (week end) activities at a location just north of Grenfell at the Grenfell repeater site. This is in the western part of the central tablelands area of NSW. The call sign used was VK2FIL. Those who took part were Paul VK2WPT, Colin VK2FABV and Phil VK2FIL. The 24 hour multi section of the contest was operated.

As this was our first outing we decided it was going to be a bit of a test for future contests from the same spot. The site was found to be excellent from a number of points and we could work signals from all directions on all bands except one. The only real problem direction was from Mt Canoblas for the six metre band only. This was in the form of TV noise from the TV transmitters on that site. The other bands were found to be extremely quiet.

The weather was very cold, about 2°C plus the chill factor, and windy at times, with light rain and extreme fog.

The station was housed in a caravan to get away from the cold and wind. Bands worked were six and two metres, and 70 cm. The output was 100 watts on all bands. The aerials used were a six element beam on six metres, a 14 element beam on two metres and a 16 element beam for 70 cm. There was also an eight element two metre beam, vertically polarised - yuk!

Power was from batteries for the radios and 240 V from a generator, for the rotators and lights. Heat was derived from a rather large bonfire.

Stations worked in the main were from the south, from Canberra and into Victoria. We did work into the central coast and into Sydney and the southern coastal areas of NSW. We could also hear stations in South



The general arrangement of the camp site.



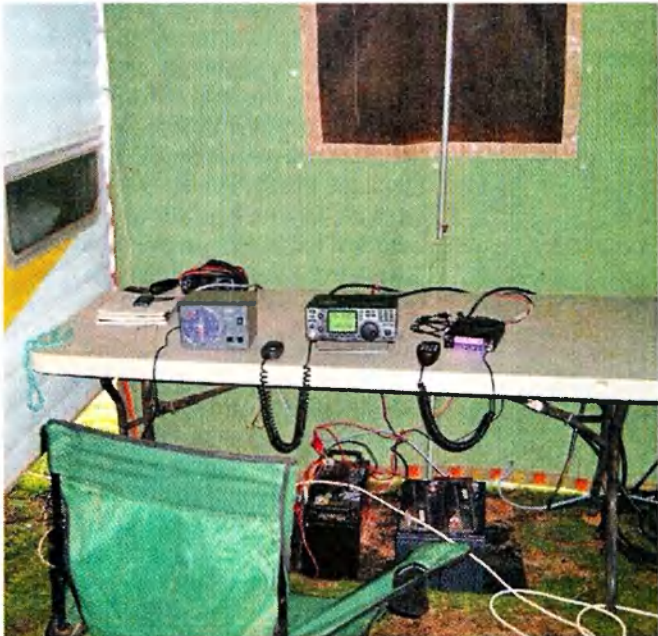
Up goes the six metre beam.

Australia, at quite workable levels, but for whatever reason no response came from that neck of the woods.

ar



Fog – and lots of it.



Part of the station – all of the comforts of home!



Running repairs by Phil VK2FJL and Colin VK2FABV.

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- Available end of October - call first for availability
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- Automatic pinout identification
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An RF voltmeter for transceiver servicing

Jim Tregellas VK5JST

I recently needed to re-align an old Yaesu FT One transceiver, and promptly found myself in trouble. The manual demands that a whole bunch of AC voltages must be measured and set up and I did not have an RF voltmeter. Further, this type of voltmeter cannot be bought off the shelf at the usual retail supply outlets and are quite expensive on the second-hand market. So, out

came the calculator and soldering iron.

Typically the voltages to be measured lie in the HF/VHF area and have magnitudes from 100 millivolts to a few volts. Checks must be made on VHF oscillators and similarly sensitive circuits and so it is vital that test gear has a very low input capacitance and high input resistance. The usual approach to this problem is to rectify

the RF with a simple diode probe, and display the resulting DC on a DVM. Several good probe designs have been published in AR recently. Unfortunately, such probes have a very non linear response to low AC input voltages and so a calibration chart is necessary. Under these conditions diode turn on potentials become very significant and this is particularly the case for input levels below 200 millivolts RMS. Even a germanium point contact diode (still the best HF/VHF detector diode despite all the hype about Schottky diodes) has a turn on potential which is relatively very large at these low voltage levels.

One of the half truths floating around the electronic world is that diodes have a turn on potential and are off below this figure. The voltages usually quoted are around 200 millivolts for germanium and 700 millivolts for silicon. At normal load currents of a few milliamps these figures are fair enough, but if the diode load resistance is very high, then the turn on potential is actually zero, as the current /voltage curve is very smooth and extends right down to zero at the graph origin. The germanium point contact diode is best, simply because the turn on potential is lowest at normal currents and it has a very low junction capacitance. Further, germanium is inherently faster than silicon due to higher carrier mobilities.

One very severe disadvantage of readily available very fast semiconductor diodes is that they all have low peak inverse voltage ratings. The PIV rarely exceeds 100 volts and so a half wave rectifier circuit using such a diode cannot cope with an input much in excess of 30 VRMS. The 1N34 diode used in this instrument has a PIV of around 70 volts depending on manufacturer.

The basic specifications of an RF voltmeter which uses such a probe

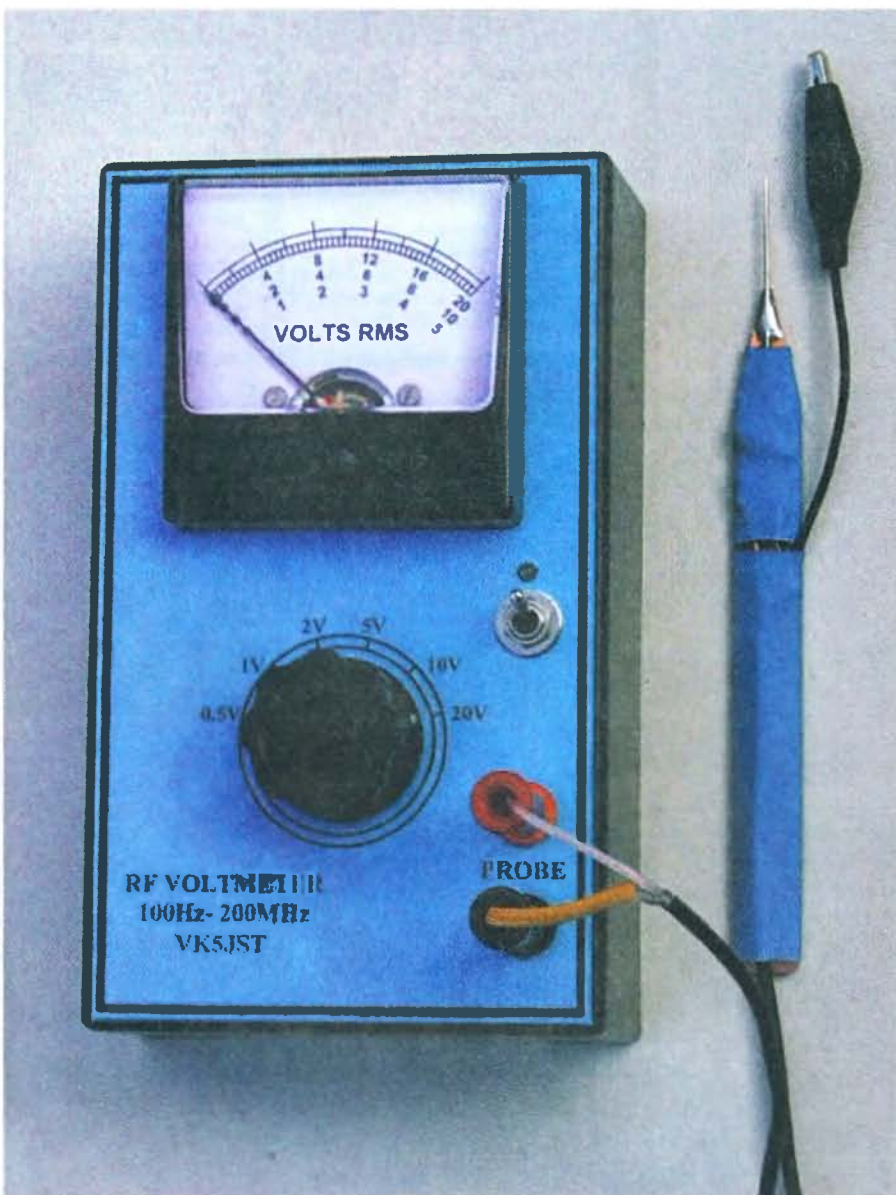


Photo 1: The RF voltmeter and its test probe.

start to emerge. This instrument covers an input frequency range from below 200 Hz to above 200 MHz, has an input capacitance of about 1.5 pF, and an input resistance of 5 MΩ (almost irrelevant in comparison to the capacitive loading). The electronics which follow the probe must compensate for its gross non-linearities at low input voltages, and the resulting accuracy should be better than, say, 5%. Unless you wish to wreck the voltage probe, do not allow the input voltage to exceed, say, 20 V RMS.

How it works

The process starts with the voltage probe just described. A 1N34 germanium diode rectifies the incoming AC and stores its peak value in C1. Note that such a half wave probe system assumes a DC return path through the circuit under test. This is almost always there with a resistance value well below 50 kΩ, but the user should definitely check that such a path exists. It can go directly to ground, or via a positive or negative rail, but must be there. Because the instrument has an input resistance of around 5 MΩ, a 50 K source resistance will not upset the accuracy by more than 1%. The rectifier system is followed by a 470 kΩ resistor and several hundred picofarad of capacitance in the shielded microphone cable, which together form a low pass

filter to remove any RF from the rectified DC output of the probe. The resulting DC is then applied to the input attenuator of the instrument. The instrument is structured to compensate for probe diode non-linearities for input voltages up to 2 VRMS. Beyond this figure (2.8 volts peak) the probe output is quite linear because the diode turn on potential rapidly becomes negligible.

A commonly published scheme to compensate for diode non-linearities in input circuitry is to place a matching diode in the negative feedback path of a following operational amplifier.

Unfortunately, this approach does

not work too well, as the detector diode in the probe works under pulse conditions while the diode in the feedback path works under continuous DC conditions. After a lot of network analysis, the very simple addition of R11 and R12 was developed, and this keeps the whole system linear within 5%, down to 80 mV RMS. Below this figure the square law response of D1 again rears its ugly head, and at an input of 50 mV RMS the instrument indicates 45 mV (10% error).

Returning to the input attenuator, the DC resulting from all input voltages beyond 2 VRMS is attenuated to avoid overdriving IC1. Further audio /RF low pass filtering is provided by R9 and

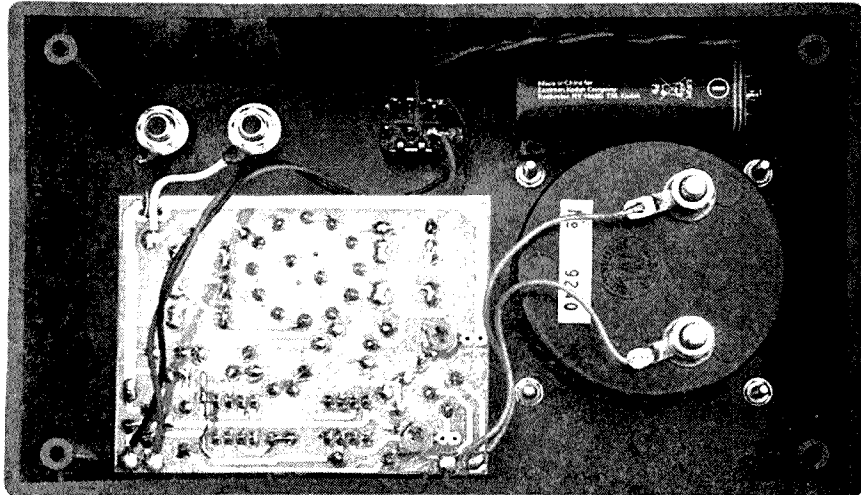


Photo 2: The rear view of the RF voltmeter showing assembly details.

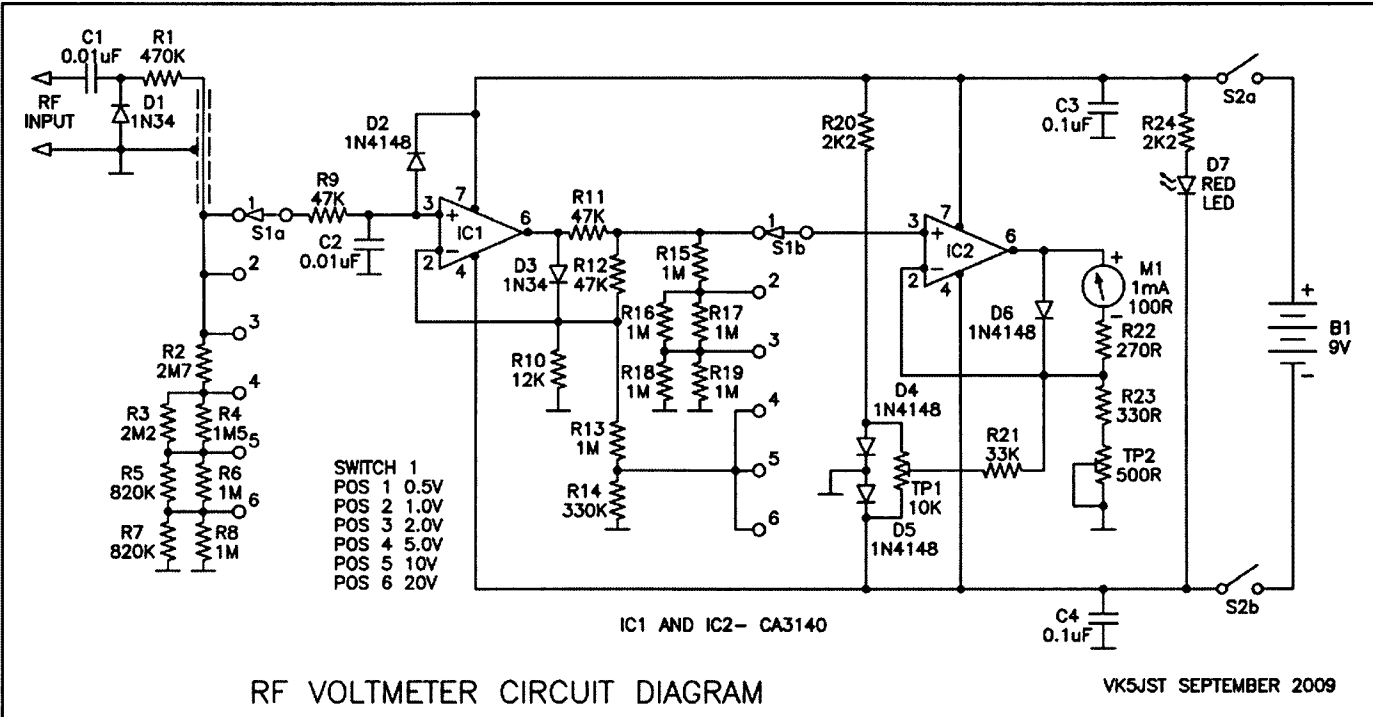


Figure 1: The RF voltmeter circuit.

C2, and D2 prevents possible damage to IC1 due to high probe output voltage.

The end result of the first half of the circuit is that at full scale on

any range, a voltage of about 540 mV dc appears at the wiper of S1b, which in turn appears across R23 and TP2, generating the FSD meter current. Protection against violent

'meter bashing' is provided by D6 which turns on hard when the meter current exceeds about 1.5 milliamp. In a single rail operational amplifier circuit with its output at ground potential, input offsetting (zero setting) circuitry cannot work properly because the output cannot go negative with respect to ground. A low voltage negative rail (around 0.7 volts) is therefore provided by R20 and D5 so that this feature works correctly. Total current drain for the circuit is around 11 mA, giving good battery life, particularly if the unit is operated from AAA rechargeable cells.

Different meters can be used provided the values of R22, R23 and TP2 are appropriately adjusted.

For a 100 uA movement, R23 is 3K3 and TP2 is 5K. R22 should be selected so that the total value of it and the meter internal resistance is around 3K7. For 50 uA movements, these figures are 6K8, 10K, and 7K4 respectively.

Assembling the unit

First make your printed circuit boards. The main single sided PCB can be made from the pattern shown elsewhere in this article by whatever method you favour. The iron-on resist film available from Jaycar is excellent, and an alternative much cheaper method using clay surfaced paper can be found on the author's home page at <http://www.users.on.net/~endsodds>. The probe PCB is probably best made by just grabbing a piece of PCB, cutting it to shape and generating the insulated pads to which the components are soldered by means of hacksaw cuts.

Next make the front panel label by photocopying the pattern elsewhere in the article. For long life have the label laminated professionally with plastic film to protect the surface. Use the front panel label as a template to mark out the rear of the UB1 plastic box for drilling. Drill all holes in the box rear, and then cover the rear of the front panel label with double sided adhesive tape. Do not remove the protective paper from the tape. With a very sharp pointed hobby knife exactly cut out the hole provided in the front panel label for the rotary switch. Place a well fitting drill in the switch hole in the box and remove the protective paper from the double-sided adhesive tape on

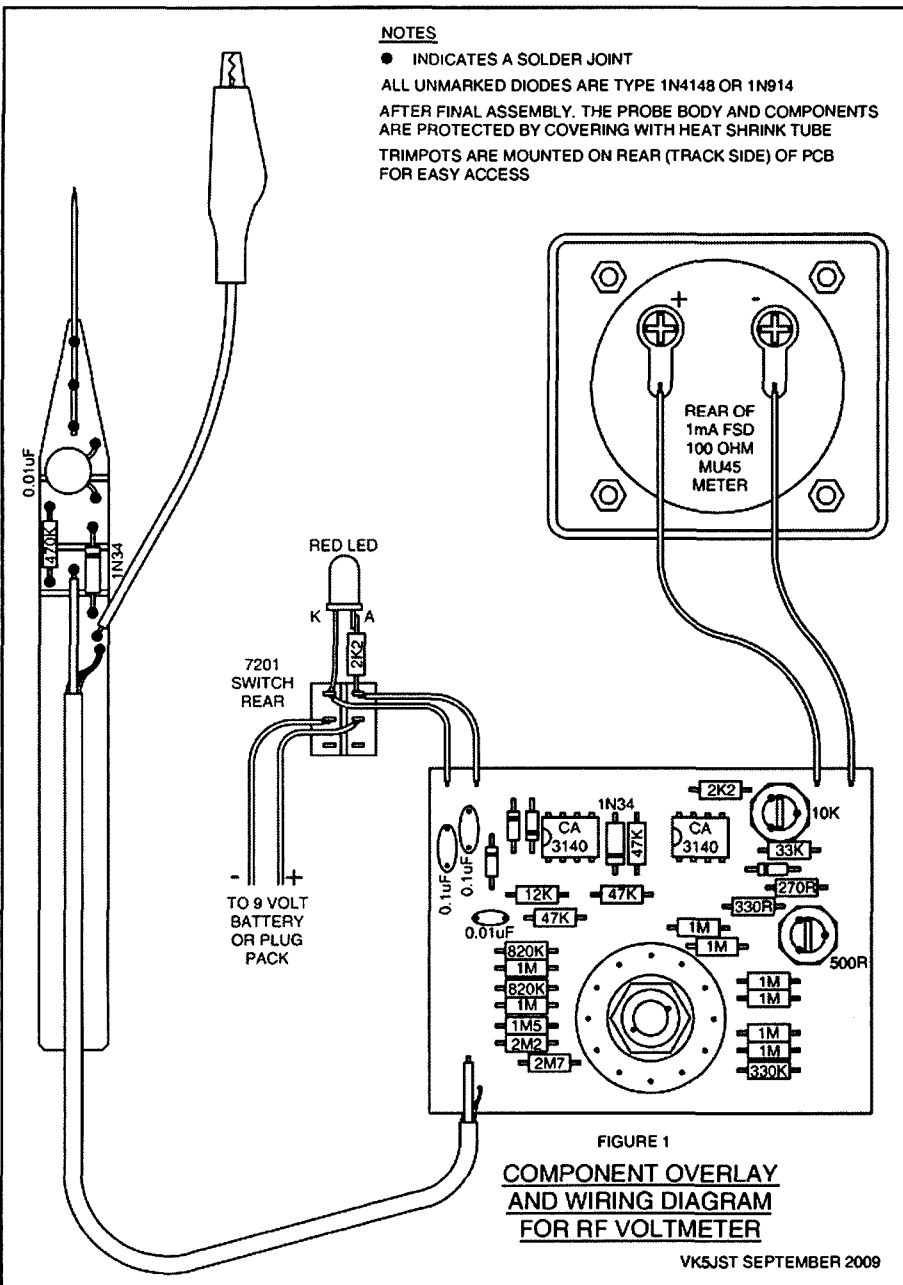


Figure 2: The RF voltmeter component overlay.

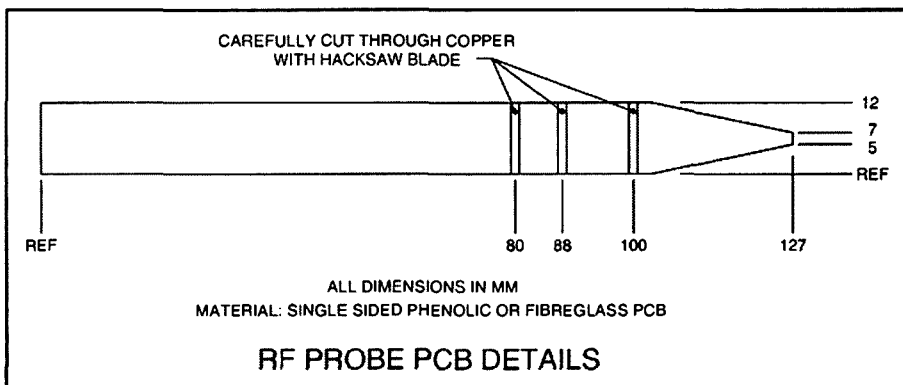


Figure 3: The RF voltmeter probe PCB dimensions.

the label rear. Now place the switch hole in the front panel label over the drill, and use the drill as a guide to exactly position the label while you stick it to the box. Last cut all remaining holes in the front panel label using the box holes as a guide.

Assemble both printed circuit boards as per the component overlay. Use 60/40 lead solder. The unleaded stuff is incompatible with most components sold and has been banned by military establishments throughout the world because soldering temperatures are high and board damage is a possible outcome of any repairs.

Assemble the main board starting with the lowest profile components and ending up with the rotary switch. The printed circuit has been laid out for the most commonly sold variants of the plastic rotary switch, but check your switch and the way each common terminal relates to the other six possible switch positions. It may be necessary to drill additional holes in the PCB for the common switch terminals because there are six possible variants of this switch.

Use proper static handling procedures when you place the two CA3140 FET op amps into their sockets. Install the main PCB assembly in the case together with the meter, on/off switch, power lead and optional input terminals. Complete all wiring as per the component overlay.

Testing and setting Up

Before switching on, use the set zero screw provided at the front of the meter to set the meter needle to zero. Set the instrument to its 500 mV range, plug in the probe and switch on. Immediately check the total current drain which should be between 7 and 15 mA. The meter needle should remain near zero (within 10% of the total scale length) if all is well. Adjust the meter for zero reading (op amp balance) using the 10K 'set zero' trimpot.

If the meter cannot be set to read zero, or wanders about badly after a short settling period, you have leakage problems. This could be due to a dirty PCB, a leaky protection diode D2, or a damaged op amp. With an input resistance of 5 MΩ, it only takes a few stray nanoamps to badly unbalance IC1 and upset the instrument zero reading.

The instrument is quite flat down to 1 kHz and most digital voltmeters on their AC voltage ranges are accurate up to at least 1 kHz, so

Construction Note.

Due to the small size vagaries that are inherent in our printing process, constructors using the templates on this page should photocopy the illustrations, and, using

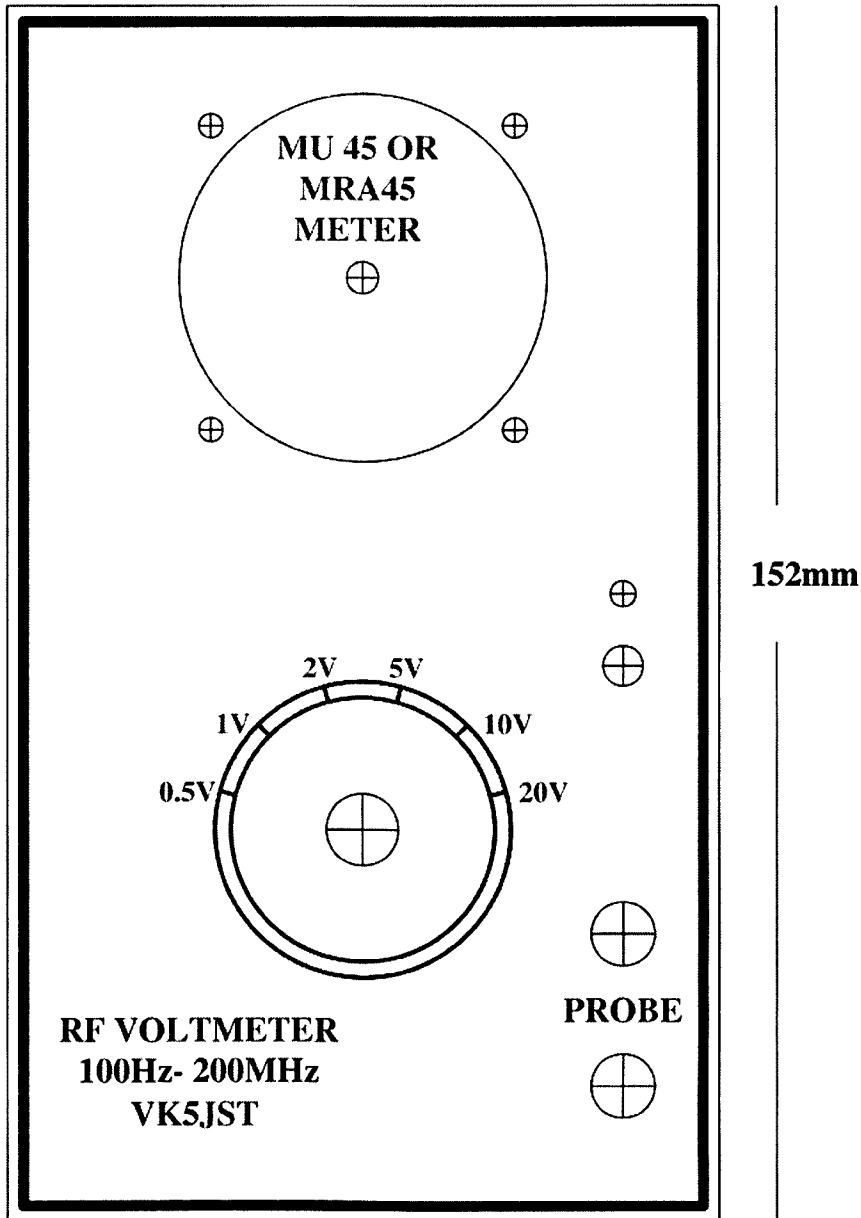


Figure 4: The RF voltmeter front panel drawing.

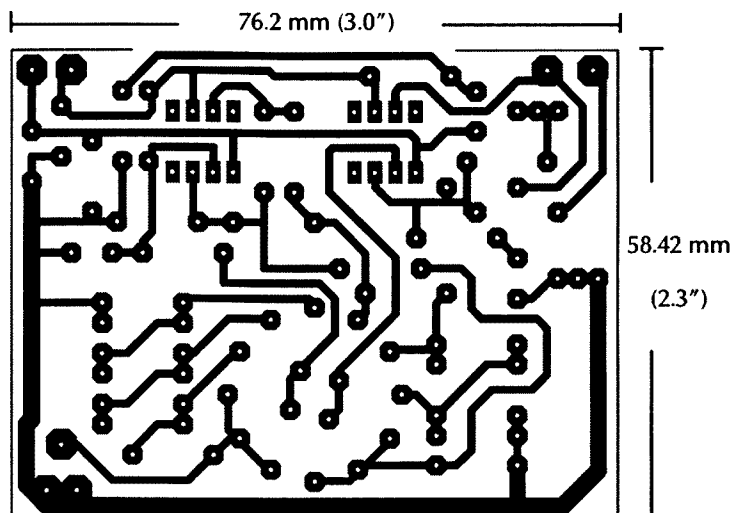


Figure 5: The RF voltmeter main PCB.

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an audio generator and DVM can be used to accurately calibrate the instrument. The audio generator should be set to an amplitude of 500 mV RMS using the DVM. But check your DVM specifications - some DVMs are only flat to a few hundred Hertz. Connect the probe to the audio generator output and switch on. Set the meter to read full scale using the 500 Ω 'set FSD' trimpot. Check that calibration on the other ranges lies within 5%.

Final notes

The value selected for C1 in the probe is a large compromise. Self resonances in this capacitor can interact with the inductance of the probe earth lead to cause nasty peaks and dips in the instrument response.

Under test, the value of 0.01 μ F used in the probe gave a flat output to 200 MHz, with a rising response then occurring to 350 MHz, beyond which it rapidly rolled off. This was measured using a 50 Ω source, a good quality disc ceramic capacitor for C1 and an earth lead length of 60 mm.

With a larger value for C1, say 0.1 or 0.22 μ F, the probe can be made to work down to the very lowest audio frequencies (10 Hz) much extending the usefulness of the instrument, but its high frequency performance will then be severely compromised.

So if you want to use the unit for audio work as well as for RF, construct C1 from two good quality capacitors in parallel - say 0.22 μ F in parallel with 0.001 μ F. And remember the iron rule at VHF - keep earth leads on all instruments very short if you want to make accurate measurements!

Finally, please note that like many AC measuring devices, this is a peak responding instrument which has been calibrated in RMS terms. If the waveform being measured is not a reasonable approximation of a sine wave, then the meter reading does not mean much.....

Good measuring!

ar

RF voltmeter parts list

Resistors - 5%, 0.25 watt

1 @ 270R
1 @ 330R
2 @ 2K2
1 @ 12K
1 @ 33K
3 @ 47K
1 @ 330K
1 @ 470K
2 @ 820K
8 @ 1M
1 @ 1M5
1 @ 2M2
1 @ 2M7

Semiconductors

2 @ 1N34 or equivalent
4 @ 1N4148 or equivalent
2 @ CA3140
1 @ Red Led

Capacitors

2 @ 0.01 μ F 50VW disc ceramic
2 @ 0.1 μ F 50VW disc ceramic

Trimpots

1 @ 500R PCB mounting (Jaycar RT4352 or Altronics R2476B)
1 @ 10K PCB mounting (Altronics R2480B or Jaycar RT4360)

Switches

1 @ 2 pole 6 position rotary (Altronics S3022 or Jaycar SR1212)
1 @ DPDT subminiature C&K type 7201 or equivalent

Hardware

1 @ probe PCB
1 @ main PCB
2 @ 8 pin DIL IC sockets
1 @ knob to suit rotary switch
1 @ meter -1 mA FSD 100 ohm internal resistance- type MU45
1 metre of thin shielded microphone cable
1 @ crocodile clip
1 @ sewing needle
1 @ plastic box type UB1
1 @ front panel label
Heatshrink tube, solder, hookup wire
1 @ red 4 mm plug and socket (optional)
1 @ black 4 mm plug and socket (optional)

Winners all over

South East Radio Group

Andrew McKinnis VK5KET

About 20 amateurs attended the South East Radio Group AGM on 20 August at the club rooms in Mount Gambier. After the minutes of the previous AGM were read and accepted, the President Charles VK5HD, reported on the year's activities and thanked everyone who supported him and the club over this time.

Charles especially thanked Trevor VK5NC who was not seeking re-election to the Education and Assessor's role. After 15 years Trevor is having a well deserved rest. The club has some candidates who are willing to assume the role. Trevor's contribution to the role, to the club and to amateur radio in general over many years has resulted in many new amateurs gaining their licence, many have gone on to upgrades as well.

After all the reports, Charles performed his last official duty and presented the two club awards.

The President's Shield was instituted in 1998, the shield presented to SERG by the then club president, Dr Kevin Johnston VK5KJ, now VK4UH. This is awarded by the Club President to a SERG member in recognition of outstanding effort, commitment to promoting the group's activities or to amateur radio in general. This year, the award is shared by two members, Tom VK5EE and Wayne VK5ZX, in a split decision. In Wayne's absence, Tom VK5EE accepted for both.

The Roy Goodwin (VK5AXV SK)

Shield is given by the Club President to the Foundation call member who excels in promoting the hobby through his/her activity. This year the shield was awarded to Ian VK5FNBL who is visible at all club events, assisting at every available opportunity. Roy Goodwin was a very keen VHF/UHF enthusiast and the family were very pleased to have him so remembered.

John VK5DJ took the chair to oversee the elections, declaring all positions vacant. For many years, Eric VK5LP (another keen VHF/UHF enthusiast) has been the club's Patron and we were honoured once again to be able to appoint him as Patron.

The ensuing electoral process saw Charles VK5HD being returned as President, David VK5HDW accepting the Vice President's role, Andrew VK5KET being returned as Secretary and James VK5HJP taking on the Treasurer's role. Wayne VK5ZX, John VK5DJ, Tom VK5EE, David VK5DG,



VK5HD and VK5EE.



VK5HD and VK5FNBL.

Greg VK5ZGY and Ron VK5AKJ took up various committee roles.

ar

Team GARC Winter Field Day Success

Tony Collis VK3JGC

Along with the continued successes of the LUMEG team, as VK3UHF, we can now add the team of VK3ALB which comprises Lou VK3ALB, Nik VK3BA, Peter VK3APW, Michael VK3MIC and Jenni VK3FJEN who won the multi operator Winter Field Day competition (8 hr) and came third in the Multi operator section (24 hr).

ar



Lou VK3ALB.



Jenni VK3FJEN.



Nik VK3BA.

“Older than amateur radio in Australia”

Alfred William Herbert Chandler VK3LC - SK

1 June, 1905 – 1 September, 2010

Ron VK3AFW, Publicity Officer for the M&DRC.

Australia's oldest radio amateur has become a Silent Key. We have had others who were still on air at 100 plus years but Alf was the oldest when he died. This is a shortened version of an article on the Moorabbin and District Radio Club website.

In 1920 when Alf was 15 and a student at Scotch College, he built a crystal set but official broadcasts in Melbourne had not commenced and the local experimental stations were not strong and those in Sydney were too distant for this receiver.

Alf then built a one valve set which was much more sensitive. By 1923 he had got up to a three valve set and it was on this set that he heard the initial broadcast from 3LO Melbourne with Dame Nellie Melba as the featured vocalist in 1924.

In 1924 Alf took a correspondence course in wireless telegraphy with the Marconi School of Wireless in Queen Street, Melbourne. In 1925 he was called up to the Marconi School

in the AWA building in Queen Street, Melbourne to finish his course with more CW training and practical experience in using and fault finding wireless station equipment. After qualifying as a First Class Commercial Wireless Operator, Alf took a job with a firm called 'Crystal Clear Radio' as their wireless set maintenance employee and salesman at five pounds per week.

In 1926 Alf applied for an amateur licence and was given the call of OA3WH. His first transmitter was in a wooden rack 1.83 metres (six feet) tall and 0.58 metres (21 inches) wide. He was quite active on the 30 and the 80 metre bands. The equipment used at that time was all home brew, the power supplies, one 350 volts and another 1000 volts, occupied the bottom section. The next layer housed the oscillator, a tuned plate tuned grid crystal controlled oscillator using a 201A valve, then in the next was the buffer stage, and above was the final amplifier, 100 watts using a 210 valve. Each stage was

link coupled. The antenna used was a centre fed Hertz with 600 ohm tuned feeders. Alf installed a 240 volt pilot lamp across the centre of the antenna which lit up when he pressed the key. Of course the neighbours wondered what the flickering light was all about.

After leaving Crystal Clear Radio in 1927 Alf started his own business, Beaumaris Radio Service, but in 1929, as things were not going too well, he joined the family business D & W Chandler (hardware merchants). He was paid three pounds ten shilling a week and ran the radio department. Alf married his first wife Iris in 1933 and they had 50 happy years together.

His years at D & W Chandler were not without some disagreements over management and procedures and after eleven years, in 1940, he enlisted in the Royal Australian Air Force (RAAF).

The Marconi training stood him in good stead. He was taken into a mustering of Wireless Operators and was posted first to rookies training

at Point Cook, and then to number one Wireless Air Gunners School (1WAGS) at Ballarat, Victoria and later to Townsville and Cairns.

It is strange to think of it now, but Beaumaris was still on the edge of the 'Bush' in those days. A bushfire destroyed much of the suburb including the Chandler family home at Beaumaris on 14 January, 1944 and Alf lost all his early radio memorabilia.

The war ended, Alf was discharged after five years service and some six months later he opened a hardware business



Alf VK3LC in his shack in 1989

in High Street, Armadale where he traded for 16 years. After selling the business, Alf did not feel ready to retire so he spent two years with the ABC as a radio technician.

In 1955 Alf attended a re-union of 1WAGS personnel where Fred Bail VK3YS, Roth Jones VK3BG and Peter Lempriere VK4ALL were talking about how they were working DX on 20 metres. The bug bit again, so he applied to the PMG for a licence and call sign, and was allotted VK3LC.

He joined the Moorabbin and District Radio Club (M&DRC) in 1959, and became Secretary in 1960, serving three years until 1963.

His radio operation led him to many a lifelong friendship with amateurs the world over. Perhaps the most notable one was with King Hussein of Jordan, also an amateur radio operator (JY1), after they first made contact in 1927.

Some 50 years later the King visited Melbourne and stayed with Alf at his home in Beaumaris and in turn Alf was a guest of the Royal family at their palace in Jordan. Alf also visited many other overseas amateur radio friends and a number of them also visited Alf.

From 1963 to 1970 Alf was a volunteer member of the publications committee of the WIA AR magazine. In 1967 he became VK3 co-ordinator of the WIA Intruder Watch and in 1979 became Federal and Region 3 Intruder Watch Co-ordinator, until 1982. Alf's approach to these intruders was typical. He recorded representative sounds of some of the harder to identify signals such as multiplexed RTTY and played these with comments on the weekly WIA broadcasts. He enthusiastically exhorted listeners to send in reports of intruders and as a result many illegal transmissions were stopped.

In 1978 Alf was given the Ron Wilkinson Achievement Award for his work in intruder watch activities.

In 1983 Jim Linton, President of the Victorian WIA Division, presented Alf with a silver medallion for

meritorious service to the Victorian Division.

In 1984 David Wardlaw VK3ADW, the Federal President of the WIA, presented Alf with a silver plaque which reads 'In appreciation to Mr A W H Chandler, VK3LC, for his long term 1975 to 1982 contribution as Regional Intruder Watch Co-ordinator IARU Region 3'.

Alf again served as M&DRC Secretary from 1984 to 1987. He was made a life member of this club in 1992.

In his 80s, Alf met and married his second wife Elise and they were inseparable. Alf and Elise were regular attendees at M&DRC Tuesday meetings and RAOTC luncheons until Alf was in his late nineties. Elise passed away just before Alf's 105th birthday.

His 100th birthday function was attended by the Kingston City mayor Councillor Topsy Petchey, the local press and representatives of the WIA and the RAOTC.

Alf had always been known as someone who prefers to get on with the job and summed up his philosophy with the following statement: 'In life you've got your talkers and your doers. I'm not one of the talkers.'

Thanks Alf for a life well lived.

References

Documents and photos supplied by John Chandler.

M&DRC archives and club members' archives.

Scotch College (Regis Profiles Winter 2010 edition

Wikipedia

Amateur Radio Magazine January 1971, December 1973, January 1974, January 1977.

<http://mdrc.org.au/>

Compiled by Ron VK3AFW, Publicity Officer for the M&DRC.

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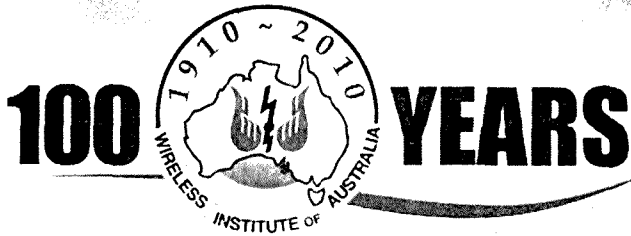
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Centenary Merchandise

Celebrate the Centenary in style

To help members celebrate the WIA centenary, we have a range of 'limited edition' merchandise available.

Time is running out.

Do not miss your chance to have a once in a century piece of memorabilia.

Go to www.wia.org.au and click on the Centenary logo.

Other commemorative items are encouraged to keep an eye on the website for all the latest products. Visit www.wia.org.au and click the Centenary logo on the right hand side of the home page.

All shirts and jackets are available in the following sizes: Small, Medium, Large, X-Large, XX-Large, XXX-Large.

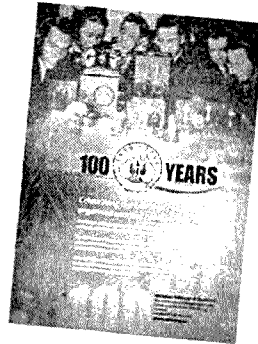
Please note: all prices below are WIA member prices and are inclusive of GST, delivery charges are calculated with your online order.



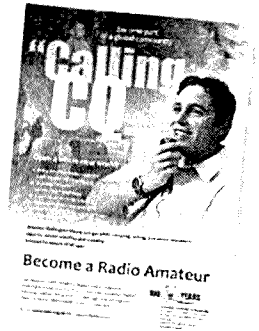
Centenary tie/
jacket pin: \$8



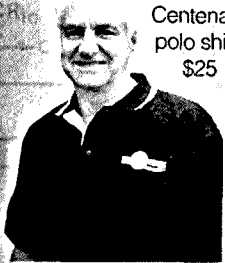
Centenary logo sew
on patch: \$8



WIA Centenary
poster A1 size: \$10



WIA Calling CQ
poster A1 size: \$10



Centenary polo shirt:
\$25



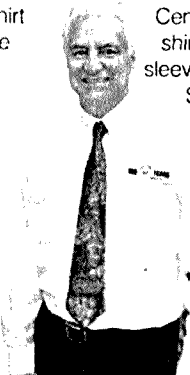
Centenary
bucket hat:
\$12



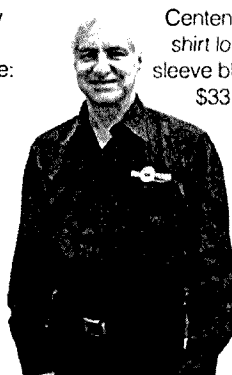
Centenary
cap:
\$12



Centenary shirt
short sleeve
black:
\$32



Centenary
shirt long
sleeve white:
\$33



Centenary
shirt long
sleeve black:
\$33



Centenary
fleecy vest:
\$35



Centenary
ranch jacket:
\$94

VK100WIA - From Cradle to Devonport

A VK100WIA report from the Cradle Coast Amateur Radio Club Inc.



David Cleland VK7DC

When club members heard about the upcoming WIA 100 year celebrations and the possibility of using the special event call sign VK100WIA, wheels were put into motion to procure a spot in the WIA roster and organize a suitable location. The end result was a confirmation from the Devonport Maritime Museum which generously provided ample space and put other facilities at our disposal for the three day allocation we received.

The Devonport Maritime Museum is the original residence of the Devonport Harbour Master, and is located near the mouth of the Mersey River where the *Spirit of Tasmania* berths.

We were treated by the staff and volunteers as if we were royalty and we are looking forward to doing another event there sometime soon. Anyone touring Tasmania, make sure to look through this wonderful museum that is full of magnificent model boats and ships plus truck loads of Tasmanian and Australian maritime history and photos; and there are no restrictions on using your camera inside the museum.

The museum staff were so excited about our event that they put up a flag message on the 20 metre tall signal mast in front of the main building. The flags read "WELCOME CCARC BZ WIA 100 YEARS" the letters "BZ" being international Naval Code which stands for "WELL DONE"

The Cradle Coast Amateur Radio Club operated the VK100WIA call sign from Sunday 5 to Wednesday 8 September. First up Sunday morning we were greeted by heavy continuous rain. Brian VK7KBE was the first one on the phone and radio to some of the operators of the day, as it was his job to erect all the wire in the sky and 'no way am I climbing

trees in this rain' was the main topic of conversation.

'What are we going to do then? We go on air in two hours; I will bring the Squid Pole antenna and hope for the best' was the reply from Wayne VK7FWAY. He arrived with his new toy, the very impressive FT-1000MP (almost as good looking as the TS-950SDX).

The squid stick was installed and all cables run. The bands were a little quiet for the first couple of hours and then Wayne started to get amongst it as conditions improved, while David VK7EX and Keith VK7KW setup the display of older ham gear and some home brew equipment.

Come Monday morning the weather was much better, and we also thought that it would be a good idea to set up a 2 metre station at the museum. David VK7EX put his hand up for that job and prepared all that was needed the night before, then loaded up his gear and headed off with plenty of time to spare on Monday morning.

Approximately 5 km from home 'Murphy' tapped on his rear window and said,

are you listening to me boy, you have left the 213 cable at home.

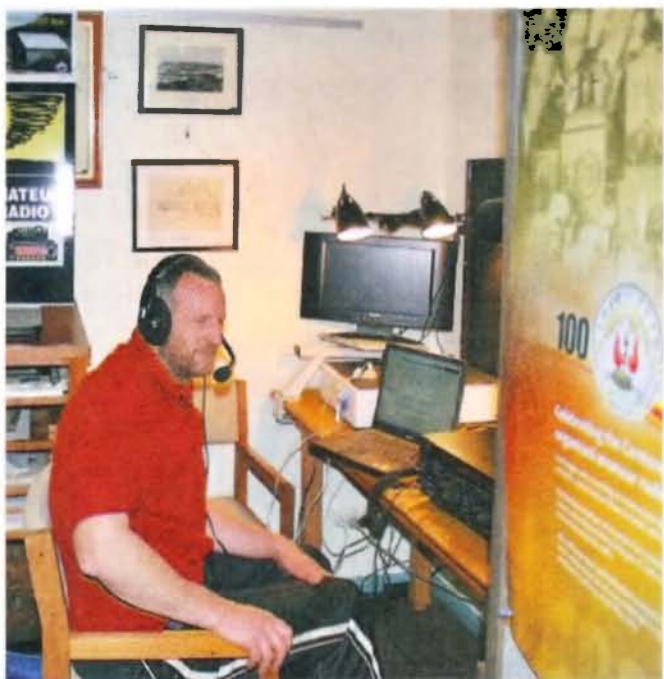
Instant cold sweat and panic mode set in. Where the hell is the next off ramp? Up ahead, Forth River Bridge, pedal to the metal and heading for home, screaming halt in the driveway, cable in the boot and smoke 'em up in reverse down the drive, heading in



The signal hoist welcoming CCARC and the WIA Centenary.



David VK7EX with his display of old gear.



Wayne VK7FWAY making a contact.



Wayne VK7FWAY and Anne VK7BYL.

the right direction once again and arrive half hour late and put it all on line, using the mobile antenna on the car as the antenna system. That ended up being a waste of time, as we made two contacts only that day on 2 metres.

Anne VK7BYL arrived early Monday morning and shared the FT-1000MP with Wayne all day and made some top contacts. Of course, while all this was going on we had the general public coming through for a look at the museum.

There was one lady that pricked her ears up when she heard a VK4 contact mention the town where she lived, having not long left there to come down to Tasmania for their holidays, so she became very interested in what we were doing.

Tuesday morning we awoke to a magnificent day, really too good to be sitting in front of a radio all day but sit we did, and it was not long before Wayne and Anne were into some more good contacts on 40 and 20 metres.

The Museum was open between 10:00 AM and 4:00 PM each day, and at closing time rostered club members then operated the call sign from their home QTH.

Many thanks to the 'out of hours' operators - Wayne (who has made the Duracell rabbit look sick), Anne, Winston VK7EM, Scott VK7FTTT, Laurie VK7ZE, who put 160m on air, and also all those who were involved with the event and turned up at the museum but did not go 'on air', including Brian VK7KBE, David VK7EX, Keith VK7KW and Dick VK7FORF. We had a wonderful, fun time and enjoyed some good fellowship.

The Devonport Maritime Museum is well worth the look through. Entry is \$5 per adult and \$10 a family. It has an extensive array of maritime exhibits, including some old ship radios, direction finding, and echo location equipment on display.

I have taken a few photos of these and if any readers have an interest and knowledge in the historic marine radio equipment area, the curator Dave Melhuish, would welcome any information on this equipment and their respective manufacturers. He can be contacted at the museum on (03) 6424 7100.



A panoramic view of the Maritime Museum.

Event Summary

The summary of the contacts reveals the following: A total of 729 contacts, VK1 21, VK2 138, VK3 214, VK4 86, VK5 93, VK6 20, VK7 82, VK8 2, ZL 36, 37 DX contacts (and if you add ZLs, 73 DX contacts) with 22 DXCC countries. Bands used: 160 m through to 20 m plus 2 m and 70 cm.

Here are Anne VK9BYL's comments on the event:

"What an explosive way to re-enter HF operation after so many years of inactivity! But what fun albeit exhausting. Wayne and I took turns at operating and he logged for me when I was operating. By the third day my voice was flagging but I had at last mastered the art of logging the contact whilst talking.

Wayne at that stage was getting his second breath and I really believe he would have gone on for the whole week. We had to physically dismantle the Squid pole and drag him out screaming to get him off air!

Surrounded by the rich treasures of the Maritime history of the north coast and the friendly staff I couldn't help but get back a lot of the old 'bug' and intend to be much more active in future. 73s Anne VK7BYL."

And a report from Winston VK7EM: "I thought the VK100WIA event was great for the coast. I felt honoured to take part from home. My modest tally was 51 contacts, operating 40 and 80 metres, early mornings and late afternoons".

ar

Ed note: David Cleland VK7DC is the secretary of the Cradle Coast Amateur Radio Club Inc.



The Squid Pole antenna.

Help wanted

The Maritime Museum has quite a collection of maritime related radio equipment.

While they have the gear, they are a bit short on identification and background stories. Does any of the gear shown in these two photographs strike a chord in your memory?

If so contact the curator Dave Melhuish. He would welcome any information on this equipment and its respective manufacturers. He can be contacted at the museum on (03) 6424 7100.



Geelong Amateur Radio Club – The GARC

Tony Collis VK3JGC

Lighthouse Weekend 2010

Gary VK3FWGR arrived followed by Ken VK3NW and they went about assembling the station for 40 m, and erecting Ken's Inverted Vee.



Andre VK3FASW and Gerhard VK3HQ operating the ILLW station.

Peter VK3ZAV operated the GARC 2m IRLP facility, via the VK3RGC repeater, and assisted some of the members of the F Call class with making contacts. Ken VK3DQW arrived in the afternoon and went about erecting his specialist antenna for 160 m and started making contacts.

The bands that were operated on were 160 m, 80 m, 40 m, 20 m and 2 m using Icom IC-7000 and IC-7600 transceivers, supplied by Gerhard VK3HQ. All up the team achieved 205 contacts over a day and a half, of which 120 alone were on the 40 m band and a total of 50 contacts were made to participating lighthouses.

The operation carried on until midnight before the

operators called it a day, restarting at 0800 next morning.

A great weekend was had by all, with a few members of the public showing interest in the proceedings and a lot of GARC members came to provide support, whilst others just came for a social visit and the food that was laid on!

And Now for Something Completely Different

Just to show that GARC club members do engage in other group activities, other than radio, is shown by Ian VK3HAJ, Jenni VK3FJEN, and son Michael VK3FMIC at a shooting contest where Michael won the under 18 contest and Jenni the best dressed award.

This was a target shooting competition held over two days by The Little River Raiders – The Battle at Walker Creek. As with radio, the participants are registered with an alias (call sign). Ian was Grizzly Grumps, Michael was Bad Boy Blasco and Jenni was Silver Lady.



Jenni VK3FJEN at the Black Powder Shoot.

VK3ADL SK

David Lording VK3ADL

David Lording VK3ADL of Cowes, Philip Island, passed away suddenly in his sleep on 13 September.

I had known David for a mere nine years and we became good friends through this hobby. I am sure others have known him for considerably longer and could probably fill in much more detail. I first made contact with David in November 2001 when he had the callsign VK3MED. David was a constant wealth of information for me since I was then new to the hobby. He moved from being a CBER to Novice and on to Advanced. David, myself and many others had lots of

QSOs on 2 metres via VK3REC, 70 cm via VK3RHF and of course HF. I shall very much miss our morning drive time QSOs on RHF and coffees in Cowes.

David is survived by his parents, sister and his daughter. He is now with his brother, who lost his life in a motorcycle accident several years ago. A number of our amateur fraternity have expressed their memory of David as "a good operator and a gentleman".

Vale David.

Submitted by Ron Cook VK3JRC

Amateur Radio New South Wales has the final Trash and Treasure event for the year at VK2WI Dural on Sunday 28 November. Clubs and the trade have been advised that it may be conducted as a mini field day but details were not available when these notes were compiled in September. On the Saturday there will be the Council meeting and a possible gathering of club representatives. VK2WI News will advise – tune in at 10 am and 7.30 pm Sunday. At all T&T events, exam assessments are available in the morning – booking and details via the office phone 02 9651 1490 or the Secretary's mobile 0400 445 829. The afternoon has the Homebrew Group. There has been a change on the ARNSW committee. Elizabeth (Beth) Langley VK2AO has had an interstate transfer into next year, beyond the committee year. Beth has stood down from the committee and has been replaced by Robert (Bob) Yorston VK2CAN until the next elections.

Work continues in fitting out the Centenary Building at the VK2WI site. Work has concluded in making racking systems for equipment in the VK2AWI station and workshop area. The library is slowly taking shape. There are plans to undertake training sessions, most likely in the New Year.

The VK2WI Morse training transmission on 80 metres – 3699 kHz – continues to receive reports from distant locations. John VK2ASU, with a simple shortwave receiver and its whip antenna, on a recent cruise trip was copying it well in the Central Pacific. DX style reports are most welcome. There are plans to reactivate the Morse service on the 2 metre frequency of 145.650 MHz as a facility for Sydney reception in the near future. It has been off this allocation for some time while other systems were in operation at the Dural site. The tests on 438.600 MHz with a software defined repeater at VK2RWI have concluded. The former voice repeater on this channel has not yet been restored.

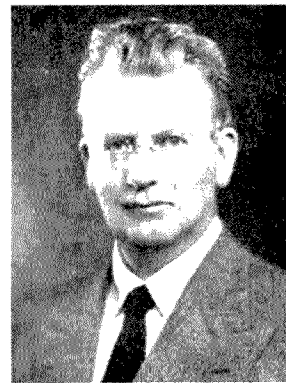
A message of thanks has been received from Ian VK2ZIO of the **Kurrajong Radio Museum** for the donations of some old Australian callbooks. He is still looking for 1955 and 1956 and 1963 into the 1970s. The first WIA produced callbook was apparently 1954. From various sources there has been coverage every few years from the first known list in 1912 through to 1954 which Ian has been able to acquire. You can email Ian at vk2zio@yahoo.com.au

An interesting thing occurred on a recent charity bush walk in the Blue Mountains, west of Sydney, reported Peter VK2EMU. The Saturday night camp site was in zero mobile phone coverage. A lot of walkers did not know what to do when their phones stopped working. There were many fascinated that Peter could throw a piece of wire up into a tree, connect it to a radio and talk to the YL in Sydney. All without using a satellite or mobile phone network.

On the first weekend of November, Tim VK2ZTM will be giving the talk on the early days of the NSW Division. On Saturday afternoon it will be to the Oxley Region ARC

in Port Macquarie. On Sunday will be given to the Port Stephens group.

In the search for the background of Wally Hannam, the first Secretary of the Wireless Institute of NSW, which has become today's WIA, is also revealing a wealth of other information and amusing trivia. The Sydney Morning Herald archives are a most interesting source. On Saturday 18 December 1954 Column 8 – when it was signed off by 'Granny' said ... "The Power of the Press. The Wireless Institute of Australia, announcing its Christmas party, warns: "As the Press may be present, those attending are kindly asked to wear collar and tie.".... Mr. John Logie Baird opened the 14th annual Convention of the Wireless Institute of Australia in 1938 as part of the 150th Anniversary celebrations of Australia. The proceedings were transmitted by VK2HF of Manly simultaneously on the 20 and 40 metre bands for amateur reception all over the world" ... the report concluded.



John Logie Baird.

In 1929, the annual meeting of the NSW Division was held in August and was able to report the successful completion of the negotiations that had been undertaken with a view to the fusion of the New South Wales Division of the Wireless Institute of Australia and the Australian Radio Transmitters League. Under the new arrangement the combined bodies will be known as the Wireless Institute of Australia New South Wales Division and the members of both will automatically share in all rights and privileges of the new body. They also reported on the classes that were conducted during the year. There was a ballot for the seven council positions. The evening concluded with a lecture from Ross A Hull 'On Radio Experiences in the U.S.A.' ... In October 1930 the NSW Division held their first annual ball. ... In August 1922 the "Cheero Girls" Wireless Concert was to be held to aid the funds for the apparatus and club rooms of the Wireless Institute of Australia [Sydney]. ... In June 1923 the NSW Division entertained Mr. E. T. Fisk, the managing director of AWA to lunch at the [old] Wentworth Hotel. He spoke about broadcasting in England and its start up difficulties. He said similar problems would be faced in Australia.



Ross A Hull.

It is good that some historical facts have been recorded. Has your club or interest group either commenced or

been recording its history? Even in this modern age what ever you do – commit it to print – that ‘server’ you may store it on could vanish one day. Last month **St. George ARS**, in their VK100WIA slot, set up in a Scout hall in Sutherland and operated an amateur radio expo from 10 am to 10 pm across the three days. It was also the alternative venue for their monthly meeting on the Wednesday evening. The **Chifley ARC** and **Westlakes ARC** also operated VK100WIA last month.

The **Oxley Region ARC** will have their informal, monthly Friday evening get together on the third Friday of the month. This is to give a better spacing from the monthly general meeting on the first Saturday afternoon. If you are a visitor to the Port Macquarie region the club meets at the SES in Central Road. Call on the VK2RPM 6700 repeater or check in on the weekly nets 0830 Sunday or 1930 Wednesday.

A recent working bee at their other repeater site to the north of Port Macquarie had an antenna change that restored the VK2RCN 7000 system back to full voice. As part of club activities there is a working bee every Wednesday morning on various club projects. Check out www.orarc.org

The **Illawarra ARS** elected their 2010-2011 committee at the August meeting. The President is Tony Stone VK2TS; V President Rob McKnight VK2MT; Secretary Ross Masterson VK2VVV and Treasurer John Lawer VK2KEJ. The committee members are Peter Reid VK2NRL; John Bernnett VK2AAL; Les David VK2EW and Neil Justusson VK2VNJ. The monthly meeting is the second Tuesday evening at Industry World, Springhill Rd, Coniston. They have an offer to new members - zero dollars - for the first year. Check out the web site www.iars.org.au

The Sydney based Television Gladesville VK2TVG last June suffered the total loss of their studio facilities along with the video library in a fire. The VK2TVG operation was a function of the **Gladesville ARC** and has been continuous for the past quarter century. With so much changing in television these days, the future of VK2TVG and its future operation has not yet been determined.

Orange and District ARC

Members of the ORARC have been delivering some electronic training

to students at the Glenroi Heights Public School. The students in years five and six receive a weekly visit where aspects of simple electronics are demonstrated and practical constructed carried out.

Morse code has also been taught to

students by Ross VK2ER, who also provides the VK2BWI session on 3550 kHz on Thursday evenings.

The article below appeared on 4 July 2010 in the *Central Western Daily*

Until next month 73 – Tim VK2ZTM. **ar**

Students wired for sound

BY EMILY BROTHERTON Central Western Daily 04 July, 2010

Children at Glenroi Heights Public School have recently adopted a new form of messaging following visits by members of The Orange and District Amateur Radio Club.

Teacher Rachael Livingstone's year five and six class have been learning basic morse code this term, using boards they have built during class.

Amateur radio club member Lez Morrison has been conducting weekly classes on electronics and soldering.

"The kids started out making small projects, and have recently completed assembling a radio transmitter.

"They have learnt to solder circuits and next they will solder components onto it to make a flashing LED."

"Hopefully by Christmas they will have made a complete circuit."

Fellow club member Ross Wilson has been teaching the morse communication component of the classes, and said the students are showing a lot of progress.

The students now have the ability

to not only communicate in morse code to one another, but also to people from around the world.

Twelve-year-old Blayde Wilson said he looks forward to the classes because he gets to learn about something different.

"I like making the equipment. I am also getting really good at the morse code."

Mrs Livingstone said the students have had a keen interest in learning the new skills and is impressed that all of them want to get involved.

"There are some girls in the class who have never done anything like this ... it's good to see them really enjoying the electronic work."

Mr Morrison, or VK2SON as he is referred to in the Orange and District Amateur Radio Club, encourages people to become a member.

An information day to promote the club was held yesterday at the cadet centre in Warrendine Street, with a free barbecue supplied.



Tapping into Morse code. Ross VK2ER teaching student Morse at Glenroi Heights Public School. Photo credit: Central Western Daily – Orange NSW.

About ALARA

ALARA was formed in 1975 by a small group of Australian ladies interested in amateur radio. Membership has now grown, with many Australian members sponsoring overseas YLs into ALARA on a reciprocal basis. The term "YL" stands for "young lady", regardless of age.

ALARA's weekly net can be found each Monday evening on 3.570 MHz (approx) at 1030 UTC (or 1000 UTC during daylight saving time). All YLs, members or not, are welcome to call in. If you are not yet licensed, you can still join in if a licensed person is there to supervise the transmissions.

YL nets can be found on HF and some repeaters. Ask your State Representative for a list of nets she knows of. EchoLink is also becoming popular and amateurs living in units can still keep in touch via their computers even if antennas are not allowed.

A newsletter is published quarterly. It contains official ALARA information as well as news of members activities, photos etc. This newsletter is available by post or email.

Each Australian State has a member who acts as the local representative for ALARA and is willing to help you with any queries.

ALARA's Internet web page address is <http://www.alara.org.au>

The above information may be of use to newcomers to the hobby of radio. It can also be used as the basis for information which members can provide to the general public when they have the opportunity to use hand out leaflets. Much of the information is also available on the Application Forms for ALARA membership which also need to be available if setting up an information table at Club events, Meets, etc.

I recently spent an enjoyable evening meeting up with a couple of old friends whom we had not seen for a number of years. The wife was astonished to learn that women radio operators were currently active in their hobby and wondered why she had not heard about them before. This may very well be a normal reaction from the general public, so it is up to us all to inform and educate about amateur radio.

There may be better definitions but the following are from the internet:

Amateur radio, often called *ham radio*, is both a hobby and a service in which participants, called "hams", use various types of radio communications equipment to communicate with other radio amateurs for public services, recreation and self-training. Amateur radio operation is licensed by an appropriate government entity as coordinated through the International Telecommunication Union.

An amateur radio operator is an individual who typically uses equipment at an amateur radio station to engage in

ALARA and its connections get the Trifecta on the VK100WIA Award

A number of operators have been working towards gaining sufficient points to receive the WIA VK100 Century Award Certificate. Of the first three Certificates awarded, those numbered two and three were to ALARA members. Heidi VK3HID and Jean VK3VIP. Certificate Number One, went to John VK3DQ who just happens to be the OM of Jean VK3VIP. I am assured that this was an entirely random choice.



Jean VK3VIP has the Number Three WIA Centenary Award.



Heidi VK3FHID with her Number Two certificate.



John VK3DQ receives the Number One certificate for the WIA Centenary from WIA President Michael VK3KI.

two-way personal communications with other similar individuals on radio frequencies assigned to the amateur radio service. An estimated two million people throughout the world are regularly involved with amateur radio (Wikipedia).

Sponsorship

ALARA has a sponsorship scheme in place which enables ALARA members to sponsor overseas friends.

Many friendships are made this way and when radio conditions are good you may get to speak to your sponsor on air. In fact a number of sponsorships are decided after meeting on air.

If you speak or have learnt another language, this is a great way to keep in practice. If you travel overseas, some sponsors can meet you and show you the sights, others may be able to offer accommodation. If/when your sponsor comes to Australia you may be able to do the same.

Some of the countries involved in this scheme are: Great Britain, America, New Zealand, Japan, Germany, Greece, Italy, Sweden, South Africa, India and France.

The ALARA member pays the subscription for a female radio amateur in another country to belong

to ALARA and she in turn pays a subscription to the women's radio club in her country. This method saves a lot of money exchange hassles. They receive our newsletter and you receive a copy of their newsletter.

Many of the DX members being sponsored receive their newsletter by email as it arrives "hot off the press" and they can read it the same time as their sponsor.

Some ALARA members have one sponsor and some have several. Many keep in touch regularly while others may only keep in touch on occasions such as Christmas and Birthdays. Our newsletter often has stories of DX YLs attending ALARA luncheons and visiting sponsors. We presently have approximately 110 happy DX members of ALARA.

If you are interested in sponsoring a DX YL or being sponsored into an overseas club, contact the Sponsorship Secretary Maria VK5BMT for more information.

Comments from sponsors:

Robyn VK3WX is one YL who is thrilled with the contact she has with her sponsors. "Alma ZL1WA speaks to me regularly and it is great that we have visited each other on numerous occasions. She can visualise our

garden and house, and I know exactly how high her camellia hedge becomes in the growing season. I am also in email contact with my US YL sponsor, Barb KA3VXR; we have been friends for many years.

She has a large extended family and every year she sends me a family calendar. She also composes a yearly letter with all their happenings which is a lovely way to keep me in touch with her world. I really value the radio friendship I have with my sponsors and I encourage other YLs to become involved in the sponsorship scheme".

Dot VK2DB met with three of her sponsors, Christa DJ1TE, Nina DL2GRC and Sarla VU2SWS, at the Munich International YL Meet in June this year.

"I have met them all on air but we also keep in contact by email and snail mail too. Last year, when OM John VK2ZOI and I accompanied son Ben VK2FBRB overseas, Nina and Christa gave us accommodation and took us sight-seeing for a week.



ZL1NYL and her sponsor, Jean VK3VIP.



Laurie ZL1ICU greets Miss ALARA.



The OMs' table at the VK3 luncheon.

I have also met my ZL sponsor Ngaire ZL2UJT when she attended an ALARAmeeet.

I have yet to meet my American and Japanese sponsors – one day! All my sponsors have interesting ‘other’ hobbies and a great sense of humour. Sponsorship has opened the world to me; just like getting my radio licence did 30 years ago.”

More recently Jean VK3VIP met up with her New Zealand sponsor Marlene ZL1NYL when she and her husband Laurie ZL1ICU visited. They had come to Melbourne specifically to meet up with Jean and her husband and stayed with them for a few days. The other purpose for the visit was to attend the ALARA birthday celebrations. So Marlene and Laurie were able to meet and greet a number of other members at the ALARA birthday luncheon.

VK3 luncheon

On Saturday 25 September, ALARA members from a number of clubs met together to have an enjoyable lunch.

There were members from the Eastern & Metropolitan District Radio Club, Macedon Ranges Amateur Radio Club, Gippsland Gate Radio & Electronics Club, Midland Radio Club and even a representative from the WIA office. All were very welcome. These lunches provide a great opportunity to catch up with members and exchange news. They also provide a friendly environment for new members in an informal setting.

The Amateur Radio Victoria website Reference section

The Repeater Directory, Australian Beacons Listing, Packet Radio Directory and VHF Records have just been updated with the latest information. You need to log into the web site with your user-name / password to view the files at <http://www.amateurradio.com.au/reference>

The Annual Whitehorse Spring Festival was set to be held on Sunday 24 October, 2010. The EMDRC is organizing to set up an active display of their equipment. This provides an opportunity to involve the public in the activities of the club as the Festival usually draws a large crowd.

A VK100WIA station was activated over a three day period in the clubrooms at Burwood. Club members rotated over this period with some repeating their shifts. Altogether they managed to log onto 1130 calls.

This was a good result and it has been interesting to note the level of interest generated, both within the

club and the amateur community in general.

There was also considerable interest in amateur television, mostly from VK3 but many VK and DX stations who worked the station and were able to view the contact 30-60 seconds later.

ar



At the ALARA luncheon were: Rear: Susan VK3UMM, Barbara VK3 AGO, Jean VK3VIP, Pat VK3OZ, Dianne VK3FDIZ, Jenny VK5ANW/3, Front Row: Unnamd Visitor, Margaret VK3FMAB, Pam VK3NK, her grandson Reuben, Tegan G and Margaret L.



Jean VK3VIP and Margaret VK3FMAB visit EMDRC VK100WIA station

ARRL Awards Committee Statement on Dissolution of the Netherlands Antilles

September 23, 2010

To clarify the administrative process by which the anticipated changes to the two existing Netherlands Antilles DXCC entities will be made, the ARRL Awards Committee has determined that at

**0400 Z (12:00 am local time in the islands),
10 October 2010,**

the two Netherlands Antilles DXCC entities will be deleted.

Commencing at

0400 Z (12:00 am local time) 10 October, 2010,

operation from the islands of Curacao, Bonaire, Sint Maarten, Saba, and St Eustatius will count for a yet-to-be determined number of new entities under the DXCC List Criteria, and Political Entities, Rule 1 and/or Rule 2 Geographic Separation Entities. When the Awards Committee determines what Rule 1 or Rule 2 actions apply, it will announce the final disposition of the entities on the DXCC list. The DXCC desk will not accept confirmations for these new entities until after 1st January 2011.

Bill Moore NC1L, Awards Branch Manager

As will often occur when a new country may be recognised, some keen DXers make plans to activate the "new one". On this occasion, with the possibility of FOUR new countries being activated at the same time, the teams have agreed a band plan to allocate sections of the HF Bands to each group.

The frequencies can be found at either of the URL's below:

PJ7E: <http://www.stmaarten2010.com/>

PJ6A: <http://www.saba2010.com/>

Moving on to DX activity and planned operations:

We have details of two operations from ZD9 (# 36 on the 2009 Wanted Countries list!).

The shorter stay is Dieter DJ2EH, who will be visiting ZD9, **Tristan da Cunha Island**. He will operate between 20 November and 8 December, if the vessel is on time. He will get his callsign once he arrives on the island. Dieter leaves Germany on a British Airways flight on November 10, and then departs Cape Town, South Africa, November 13 for the six to seven-day voyage to Tristan. If the weather is not too bad, he says, he will put up a 22.3 m (73-foot) tall vertical that will cover 160, 80, 40 and 30 m, and a three-element wire beam. His rig will be a K3 to an 800-watt amplifier. Dieter plans to operate on CW, SSB and RTTY. It will be a solo operation.

The second operation is by John ZS1LF (ZR1JON), who landed on **Gough Island** on September 16, along with a host of scientists. John and his team of eight will remain, while the others depart in about two weeks. He hopes to begin his ZD9GI activity on the air in about four weeks. John and QSL manager ZS1A, Johan, ran some tests with good signals on 40 and 20 metres. John is expected to be on Gough Island for a one-year work assignment as the team

leader and radio technician. He is brand new to HF and has no experience on HF with plans to be QRV in his spare time. His station consists of a TS-480, an amplifier and dipoles.

Chris VK3FY is certainly hitting the headlines with 100 days to go before DX0DX hits the ham bands and there is mounting interest in making contact with the DX Special Entity, **The Spratly Islands**, over a three-week period from January 6 to 24, 2011.

DXpedition Team Leader, Chris Dimitrijevic VK3FY (DU8/VK3FY) said "With equipment starting to arrive in the Philippines including the Titanex V160E Vertical the excitement is mounting. Currently 31 operators are confirmed while a number of positions are still available should any DX operator wish to join the team".

Heard Island 2013. Again Chris Dimitrijevic VK3FY and Steve Chamberlain VK6IR (Co-Leader) are in the "preliminary, but serious" planning stages to put Heard Island back on air in February 2013. It is proposed to have a 13-member DXpedition team on the island for two weeks. Costs are expected to be in the order of \$USD 500,000. Once the key preliminary steps (i.e. to get a permit to land and to charter a suitable ship) are completed, or satisfactorily progressed, they will apply for "at least one callsign" and an Internet website will be set up to keep everyone informed. This announcement highlights the amount of detailed planning necessary to activate some of these 'harsher' DX entities.

Four Japanese amateur radio operators will be operating from **Mahe Island (AF-024)**, Seychelles in November. Tug JA2ZS states that activity is planned for 1.8 through 50 MHz on CW, SSB, RTTY and PSK from November 19 to 27. Listen for Noboru S79AU (JA2AAU); Iwao S79SS (JA2LSS); Seiji S79TE (JA2ATE); and Tug S79ZS (JA2ZS). QSL via their home calls either direct or via the bureau. As a side note S79AU and S79ZS are re-issued callsign.

The OM0C Contest Crew has adjusted the operating dates for an upcoming **Gambia** operation. They now plan to be active November 17 to 30 with renewed callsigns from previous expeditions, C50C and C52C, used last from The Gambia in 2007. Special callsign C5A will be reserved for the CQWW CW Contest. Operators are OK8WW/OM2TW, OM5AW, OM6NM, OM2RA, OK1RI, OK1DIX, OK1NY, OK1DO and OK1FFU. The group will be equipped with gear from Elecraft and Kenwood with six full time stations during the CQWW, four stations other times. Amps will be the OM3500A, OM3500HF and OM2500HF. Antennas will be verticals, delta loops, four squares, Spiderbeams and Yagi stacks.

HK3JCL will be the Colombian call used by Lothar DK8LRF, starting in early October through November. He will be using a TS-50 into a rhombic antenna from the Restrepo/ Meta area (FJ34fg). No details of the orientation of the

rhombic! QSL via DK8LRF either via the bureau or direct.

Tony KM0O (XU7MWA, HS0ZJN) will be QRV as 9M6/KM0O at Kinarut, Sabah, East Malaysia from November 24 to 30, including the CQ World Wide CW DX Contest. "I will have the most work to do on antennas for 80 and 160, so I will be emphasizing those bands before and after the contest" he says. QSL information will be posted on QRZ.Com.

A further reminder that a multi-national team has plans to go to Niue Island (ZK2) and then Norfolk Island (VK9N) during late November and early December. First it will be ZK2AA from November 20 to December 3. VK9N from December 5 to 12. QSL via PA3LEO.

Craig MM0SSG has been active as D2SG from Luanda, Angola since 1 September, and will remain there for the next six months. He will be QRV on 80-10 metres CW, SSB and PSK31; "power will either be 100 or 10 watts depending on circumstances, with a small vertical antenna for most bands and a 20 m dipole". QSL via home call, direct only (correct address to be published on qrz.com).

Janusz SP6IXF and Wlodek SP6EQZ will be active as PJ5/SP6IXF and PJ5/SP6EQZ from St. Eustatius (NA-145) from November 18 to December 3. They will operate CW, SSB and RTTY on 160-10 metres. QSL via home calls. A dedicated website is under construction.

Takuto Yoshida JE1SCJ will operate as V63YT from Pohnpei (OC-010), Micronesia on November 24 to 28, including

activity during the CQ WW DX CW Contest (but he will have to QRT around 0900 UTC on Sunday because of his flight schedule). He plans to be QRV on 160-6 m mostly CW, with some SSB, RTTY and PSK31, using 100 watts, wire antennas and a Yagi for 6 m.

Outside the contest he will focus on 160, 30, 17 and 12 metres. Suggested frequencies are 1824 (QX up/down), 3510 (QX up), 7010, 10110, 14010, 18080, 21010, 24900, 28010 and 50090 kHz. QSL via JE1SCJ, direct or bureau.

Christian TL0A is back in the Central African Republic (CAR). Currently he is in Bangui but plans to relocate to Bakouma at the end of October. He expects to remain there until the end of 2011. In 2012 he could continue in Bakouma or possibly return to Niger (5U7U), depending on his job situation. Christian is QRV mostly on SSB and RTTY and often has his beam on the long path looking for Oceania, but will do CW upon request. QSL card requests go to his Callbook address in France. He is very good about answering all requests; it just takes a while as he picks up his mail when he goes home to France.

Good luck in the pile-ups until next month.

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/trial.htm

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OTY

We were there too — early YIs

Dear Sir,

I have only recently refound your magazine (after a break of more than 40 years). Of course it isn't the same magazine in format that I knew but the content and ambience were familiar. Thank you for bringing back so many memories. They hadn't been forgotten, just pushed to the back of my mind from the weight of more current-day interests and concerns.

My Dad was the 'ham' but with us it was really a family concern, and in fact several fellow hams were better known to me than my larger family. His name was Ted Whiting and his call sign was VK2ACD. He retained his licence until his death in 1985, but our connection with ham radio continued with regular contact with Sid Molen VK2SG, until in turn he died.

Your magazine made me recall the ham language, something I hadn't thought about for years and that was a joy. That led me to remembering people's names stories and events I had absorbed into my psyche. The WIA was a big part of my father's life for many years and I vividly recall listening to the Sunday WIA broadcast each week.

I must admit, for me SSB was a failure and that was about the time ham radio and I took different forks in the road. I just couldn't seem to 'hear' it properly. My ambition for a long time had been to earn my own licence, but another hearing problem was my inability to differentiate between the dots and dashes of morse. And of course, at that time Morse code was a compulsory part of the licence.

Then life took over, and with marriage and children a responsibility added to our nomadic way of life there was no way I could justify the expense of equipment from my household budget. So the dream faded.

I found the July 2010 issue of *Amateur Radio*, and I apologise for my tardiness in writing to you with my thanks, but I did enjoy the article about YIs of earlier days. The only YL licence holder I can now recall was Muriel Eagles, who took over her late husband's call sign in the 1950's. She was a close family friend, as had been her husband (from memory his name was Jim).

This brings me to the only criticism I have of the issue. When talking about the YIs reference was made frequently to the WRAAF. May I point out that given the dates none of these YIs could have been members of the WRAAF which was only formed in 1951 – as a former serving member of the WRAAF I know my service history. They would all have been members of its predecessor the Women's Auxiliary Australian Air Force – WAAAF (or as we still affectionately call these marvellous ladies, the 'triples A's). They were the trail blazers in our eyes.

Again thanks for resurfacing my store of memories. They are still coming back into my mind and I am investigating them more closely again.

Yours sincerely,
Brenda Douglas

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Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

November	6-7	Ukrainian DX Contest	CW & SSB
	13-14	WAE DX Contest	RTTY
	13-14	Japan International DX Contest	SSB
	20-21	Spring VHF/UHF Field Day	CW & Phone
	27-28	CQWW DX Contest	CW
December	5	Kiwi Digital Modes Group Twin Sprint Digital Contest	PSK31 & RTTY

As I write this I am in complete zombie mode after a busy 48 hours of CQ World Wide RTTY contesting. Fortunately I was rostered a day off for the Monday, so that I can recover and normalise for work on Tuesday.

It is a big time of the year in sport with football grand

finals and the V8s at Bathurst; so too is it in the range of big contests that have recently occurred. In November the hits just keep on coming until things slow down in December. The big one obviously is CQWW CW.

2010 CQ World Wide CW Contest Rules

Date:

November 27–28

Time:

0000 GMT Saturday to 2400 GMT Sunday

I. Objective:

For amateurs around the world to contact other amateurs in as many zones and countries as possible.

II. Bands:

All bands, 1.8 through 28 MHz, except for WARC bands.

III. Type of competition

Choose only one of several available.

Due to space considerations this month we are unable to publish the complete rules for this contest. The rules can be found at

<http://www.cqww.com/CQWW-Rules-2010.pdf>

Japan International SSB DX Contest Rules

Date:

November 13–14

Time:

0700 GMT Saturday to 1300 GMT Sunday

Bands:

3.5, 7, 14, 21, 28 MHz

Objective:

For amateurs around the world to contact JA stations in as many JA prefectures + JD1 islands as possible.

Due to space considerations this month we are unable to publish the complete rules for this contest. The rules can be found at

<http://jidx.org/jidxrule-e.html>

Spring UHF/VHF Field Day Rules

Dates:

Saturday and Sunday 20 and 21 November 2010

Duration:

Varies due to time zones.

The rules can be found on page 44 of the October issue of *Amateur Radio* and online at

<http://www.wia.org.au/members/contests/vhfuhf>

Worked All Europe RTTY Rules

Date:

November 13–14

Time:

0000 GMT Saturday to 2400 GMT Sunday

Bands:

3.5, 7, 14, 21, 28 MHz

Limits

There are no continental limits; everybody can work everybody.

Due to space considerations this month we are unable to publish the complete rules for this contest. The rules can be found at

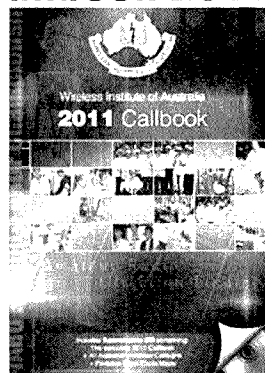
www.darc.de/referate/dx/contest/waedc/en/r

The results for the
**30th ALARA
Contest**
(Held 28/29 August, 2010)
are on page 43

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VK7news

Congratulations

Congratulations to Martin VK7GN for being the 15,000th contact with VK100WIA and also congratulations to Vince VK7VH who scored 484 points and won the QRP May Marathon contest in the phone section. At the time of writing this column there were 13 VK7s who have claimed their prestigious WIA Centenary Award certificate. According to the online log there are many others who could claim the certificate. You have until 30 January 2011.

Northern Tasmania Amateur Radio Club

The September NTARC meeting saw Jason VK7ZJA talking about radar and stealth technology. Jason brought along a small Doppler radar to demonstrate and spoke briefly about Gunnplexer modules and how easy it could be to create a 10 or 24 GHz full duplex FM microwave link.

Some experimentation on the power supplies with the Wouxon KG-UVD1P radio and the equivalent Quansheng radio has resulted in some warnings from Bill VK7MX. Bill has suffered two failures in his Wouxon SMPSU/charger and suggests that you do not leave them on any longer than over night when charging batteries. A simple replacement solution was found with the SMPSU being replaced with a linear plug pack of equivalent rating.

Any NTARC member looking for a 2011 call book, please let NTARC Treasurer, Ann VK7FYBG know ASAP.

Cradle Coast Amateur Radio Club

CCARC welcomes new Foundation Licensee Adam Brown VK7FAWB and we look forward to hearing Adam on the air in the near future.

Please note that due to interference problems on the Table Cape repeater VK7RAC (438.650 MHz), a CTCSS tone of 141.3 Hz is now required to access the repeater.

North West Tasmanian Amateur Television Group

Big thank you to Graeme VK7AQ who has donated a quantity of RT85s and PRM8030 to NWTATVG and these are available to club members for a donation. Tony VK7AX has been actively increasing the use of the club's repeater VK7RTV through regular programs and linking them to the ALKASKA Conference Server, IRLP Nodes 6239 (VK7DY) and 6215 (VK4RSS). There are also daily amateur radio broadcasts via EchoLink VK7AX-L News Link Node at 8.00 pm daily with a repeat at 9.00 am the following morning. For more information take a look at: <http://www.vk7ax.id.au/atvgroup/>

WICEN Tasmania (South) Inc.

A recent WICEN event supporting an Equine Endurance Event demonstrated some of the risks associated with these events. Spooked horses in the middle of the night running through the campsite saw a near miss with a horse demolishing a WICEN member's tent (empty at the time!) and getting itself attached to a fence. Quick action by WICEN member Roger VK7ARN released the horse which was found later that

night many kilometres away. WICEN Tasmania (South) will be conducting a risk minimisation study to safeguard members from any future horse stampedes!

Radio and Electronics Association of Southern Tasmania

REAST's September presentation was given by Warren VK7FEET who recently spent time on Macquarie Island as part of the Antarctic Division support of the Pest Eradication Program. Warren took the attendees through the whole trip from the French Antarctic Research Vessel – *L'Astrolabe's* voyage down to "Macca" where the radio operations support was mainly marine VHF with repeaters along the 30 km long island and HF where required. Warren was on the island for two weeks and then came back on the Australian Antarctic Division ship – the Aurora Australis. A fascinating presentation, thanks Warren.

Our ATV Experimenter's nights continue to be popular and we have now gone to Digital ATV on 446.5 MHz DVB-T. Recently we have featured our popular "Show and Tell" sessions along with videos of the WIA Centenary Weekend, tour of the ABC studios in Hobart, the South Hobart Primary School contact with the ISS, 80 m Voice Powered CW Transmitter, and some interesting space shuttle and ISS videos. Now we are on daylight saving time, why not come up and see what the ATV Experimenter's get up to on a Wednesday night starts around 7:30 pm. See you there!



Warren VK7FEET in the Radio Room at Macquarie Island (Photo: VK7FEET).



The Macquarie Island Base from Wireless Hill (Photo: VK7FEET).

Sad day in WA and WIA – VK6NE – SK

Welcome to the column for this month. It has been a sad time over the past week as I write this with the addition of another Silent Key to the list of VK6 amateurs no longer with us. I am sure most of you will be aware by now of the passing of one of WA's senior and most respected amateurs.

On Tuesday, 28 September, at 6 am, Neil Penfold VK6NE lost his long battle with cancer. I was asked to write a 'Radio Eulogy' for Neil who has been a friend for over 20 years as well as a companion at the NCRG. Here is the Eulogy as I read it at Neil's funeral.

Neil Penfold VK6 November Echo. SK



I am at a bit of a loss where to start this tribute to a dear friend and one of amateur radio's true personalities.

I suppose some background to his amateur radio career would be a good place to begin. First licensed in 1962, Neil soon found an interest in the administration of the hobby of amateur radio. From 1965

onward he had spells as VK6 Divisional Secretary, Councillor, Vice President, President and Federal Councillor, before moving on to the national positions of Federal Director and Federal President, roles he held for many years. His leadership skills and powers of persuasion are legendary. He was made a Life member of the WIA VK6 division in 1976 and was a winner of the GA Taylor medal.

It was not only the administration side of amateur radio that interested him, he was a dedicated DXer and achieved some of the highest operating awards available in amateur radio. I think it was his interest in DXing that led to his passion for QSL cards and QSLing. I remember accompanying him to the late Jim Rumble VK6RU's house to take over the running of the VK6 QSL bureau, and the assistance, given reluctantly I might add, by my two then young daughters in sorting out the cards for Neil over several months. The QSL bureau gave him the opportunity to study the amount of DX worked by local amateurs and enabled him to encourage others to get on the bands and work more overseas stations. As a result of his QSL activities, he was approached by many amateurs to be their QSL manager, and I believe he was, in fact, manager

for over 33 callsigns and of course the VK9/VK0 bureau manager. He was actively involved in assisting two Heard Island DXpeditions and made many friends around the world whilst doing so.

He also managed several contests over the years including the annual Oceania DX contest, which takes place over 24 hours starting this afternoon. The NCRG will participate again from Muresk Agricultural College with the intention to 'win it for Neil'.

When the NCRG was forced out of Carine College and went looking for new premises, Neil suggested we look at Whiteman Park and went off to investigate. He managed to secure a sub-lease and things started to take shape. This became his passion; the 'Manager' was born. Neil took it on himself to lay out the floor plan, co-ordinate the work undertaken and to generally manage the construction project. It allowed him to exercise his formidable leadership skills and gave us a leader with time and vision to push the project forward. We were given regular email updates, affectionately known as Pastoral Letters or Plonky's Ponderings, highlighting the achievements of the past week and urging us on to better things. We also coined a new nickname for him as the project came close to finishing. As Neil took it upon himself to keep the place tidy, he became 'Sadie the cleaning lady'. Woe betide anyone who trampled sand onto his clean floors.

The WIA centenary celebrations were held in March this year and the club decided it would be an appropriate time to have an official opening day for our virtually complete Whiteman Park premises. We also decided that Ham Heaven, whilst accurate, was not really the most appropriate name for it, and the idea for the 'Neil Penfold State Amateur Radio Centre' was born. So on 14 March, 2010, almost 100 years to the day after the Wireless Institute of Australia was founded; we chose to honour Neil and his efforts by naming the club premises after our beloved Plonky!

And it certainly made his day – he said he had never been more proud of any of his other achievements in amateur radio – and even shed a tear or two as he cut the ribbon! We also decided to treat him to a little present, so several members got together and purchased the number plate 'VK6NE' for his car. It must have had an effect because he actually put a two metre radio in there and used it!

Neil took it on himself to organise the mezzanine floor at the club into a Museum of Vintage radios and he spent countless hours almost every day on his own out there building shelves and display units to house this comprehensive collection. It is still a work in progress, but Neil, honestly, we promise it will be finished soon!

Another silent key and an old friend of Neil's was Dave

Couch VK6WT. Dave's collection of Morse keys and associated equipment was legendary and Neil suggested to me personally that an effort should be made trace it all and place it on display at the club premises. This has now become a reality and I owe it all to Neil's encouragement.

I did not get to visit Neil in hospital as I was full of the flu and did not want to risk passing it on, but Wayne tells me that he was frustrated being there, stuck in hospital on a Sunday morning and wondering who was cooking the snaggers and were there enough onions! We are going to miss you old fella, the place just won't be the same on a Sunday morning - and I will finish with a comment from a friend of his for many years:

Neil Penfold.... A man of few words, who would always take the time to consider what he had to say then deliver it with a minimum of fuss.

73 old man, now exclusive QSL Manager to Marconi and St Peter, all others via the bureau.

Thanks to all the amateurs who attended the funeral on Saturday 2 October.

ILLW at Guilderton and repeaters at Rolystone

Just in from Heath VK3TWO/VK6TWO. WICEN (VK6) was active during the ILLW weekend setting up a station at the Guilderton Lighthouse about 80 km north of Perth. The station was set up and operated by Heath VK3TWO/VK6TWO, Craig VK6FLAM and Monique VK6FMON. The station consisted of two multiband HF dipoles, a sloper and a 40 m 1/4 wave vertical. Weather was not the best with some rain and plenty of wind which called for some mid-

night emergency re-enforcements. The 3 m x 3 m Gazebo and the 4 x 4 camper survived the two nights (just) and around 100 contacts made. Some "time out" was also taken to admire the stars through a rather powerful telescope. Thanks to all who made the contact on a relaxing and enjoyable weekend.



Dennis VK6KAD with "Jet" overseeing operations at Roleystone Working Bee.



ILLW operating WICEN VK6WIE callsign from Guilderton Lighthouse, with double rainbow. Operated by Heath VK6TWO, Craig VK6FLAM and Monique VK6FMON.

A double rainbow photo of the station can be found at qrz.com/db/vk3two.

WA Repeater Group has had a very successful working bee weekend at its premier HUB repeater site at Roleystone. Over the weekend a total of three new runs of LDF5-50 were run up to the top of the 80 m mast and new antennas installed. Refurbishment of all existing coax and antennas also took place.

Several reports have already indicated a significant improvement in coverage to their area.

The WIA/Icom D-STAR repeaters are currently being relocated and tested in the new location at Roleystone. The relocation of VK6RWN from Walliston to Roleystone should see a huge improvement in the performance and coverage of D-STAR in Perth. VK6RLM will also see a new home in the hills.

There are many more working bees planned in the coming months to overhaul, improve and expand the WARG repeater network. WARG are currently investigating an overhaul/replacement of its entire 20+ repeater network with planned expansions to the north to Geraldton and to the east towards Kalgoorlie. APRS coverage has

already started expanding to the east using east/west Yagis at Wondowie.

A new repeater has been accepted by the Kellerberin Shire and equipment is in the final stages of being collected and prepared. Once the new repeater has been fully commissioned and tested, VOIP linking will be trialled to connect it to other repeaters along the route to Kalgoorlie and/or Perth. Many thanks to Peter VK6FUN, Craig VK6FLAM and Heath VK3TWO for their efforts in progressing the new services.

JOTA had been shaping up to be a HUGE affair in Perth and surrounds this year. AR exposure at the Scout area at the Perth Royal show during Super Springtime drummed up a lot of interest and the demand for radio operators was high.

The new WAHAM Google group has also assisted in organising group activations and finding radio operators to support them. Many thanks go to Bob VK6POP for his efforts as the National JOTA/JOTI coordinator; and to the many hams who offered their time and equipment for the global event.

With the Scout communications team

and Ham College running several AR licence courses in the next six months, we expect that there will be many Scouts moving up to the world of amateur radio.

VK100WIA Super Springtime in Perth

September 20 to October 2 saw the activation of the VK100WIA for the Super Springtime event in Perth. Super Springtime saw 12 days of the VK100WIA callsign in Perth, shared by WICEN WA, Scout Communications Team, WA Repeater Group, and the WA VHF Group. See the separate cover story on page 48.

I am sure with the upcoming activity for JOTA and the National Field Day, there will be a lot more in next month's column. The NCRG will be busy in the contest season, so watch this space.

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The VK6RK shack: Top row L to R: IC-970H, LP-100A, Microham Microkeyer 2R+, IC-910. Bottom row L to R: IC-7700, FTdx9000D, Expert 1K-FA.

Results: 30th ALARA Contest (28/29 August, 2010)

Lesley VK5LOL ALARA Contest Manager

Results

Catherine VK4GH	1498	Top overall, Top Phone, Top VK4 ALARA member
Pam VK4PTO	1145	
Leonie VK2FHRK	1008	Top Foundation Licensee, Top VK2 ALARA member
Gerald VK2HBG	470	Top VK OM, Top VK2 OM
Melissa VK2FMAI	429	
Pat VK3OZ	398	Top VK YL CW (CW score 40), Top VK3 ALARA member
Nora VK5NYD	380	Top VK5 ALARA member
Anne VK7BYL	311	Top VK7 ALARA member
Paul VK5FPAS	272	Top VK5 OM
Mike VK3AVV	249	Top VK3 OM
Linda G0AJJ	232	Top DX YL, Top G, M, 2E YL non-member
Gwen VK3DYL	219	
Tom VK4ATH	205	Top VK4 OM
Derek VK4MIA	177	
Shirley VK5YL	173	
Lesley VK5LOL	144	Check log
Meg VK5YG	143	
Jenny VK5ANW/3	140	
David VK5AYD	113	
David VK5DB	108	
Gerard VK2IO	79	
Elizabeth VK1FELF	58	Top VK non-member
Hans VK5YX	54	
Neil VK4FHYH/8	50	Top VK8 OM
John VK3MGZ	49	
Helen VK2FENG	48	
Dot VK2DB	30	
Cameron VK2CKP	24	
Mavis VK3KS	22	CW only
Celia ZL1ALK	20	Top ZL ALARA member

SUMMARY:

ALARA members: 15 (including 1 DX member)
 Non-member YLs: 3
 OMs: 12
 TOTAL LOGS: 30

Comments on 30th ALARA Contest Results

Thanks to all those who took the time to participate in this year's contest.

I was a bit disappointed in the participation rate by YLs this year and particularly in the VHF/UHF Section. The only person to have a go was me!!

The results were very similar to last year's with Catherine VK4GH being the top overall winner with 1498 points although Pam VK4PTO kept Catherine on her toes!

Leonie VK2FHRK was once again our top Foundation licensee with 1008 points.

Pat VK3OZ took out the CW honours again but it was great that Mavis VK3KS came up. She has been contesting since 1983.

We had three non-members join in, which was great. We hope Elizabeth VK1FELF enjoys her one year subscription to ALARA for being the top VK non-member.

The DX was not good at all this year, although Catherine made many contacts into North America on 14 Mhz. Maybe some of us should upgrade our licences so we can use 400 watts! Linda G0AJJ had a go in her local area which was great.

We missed our ZL YLs with only Celia ZL1ALK managing to squeeze in a few contacts. The solar cycle is improving so we hope for better conditions next year.

Gerald VK2HBG was the top VK OM again!

The OMs seemed to have a great time and were also disappointed in the lack of YLs. One VK2 OM said, "My first ALARA Contest but won't be my last – if only I could have heard more YLs!!" He was also disappointed not to hear any YLs on VHF or UHF.

I am particularly pleased that Mike VK3AVV has been awarded the Top VK3 OM as he went to all the trouble of producing the logging program for the VHF/UHF Section which only I used! Thanks Mike.

Out of all the logs I received, 13 were the computer logs using Mike's program. The ALARA Contest is a great one to practice your computer logging on as the YLs generally like a bit of a chat which gives you time to enter your log!

I was also chuffed to receive Neil VK4FHYH/8 log and picture showing his mobile outfit with a 10 metre squid pole as an antenna.

Do not forget the last weekend in August is always the ALARA Contest. I look forward to being inundated with your logs.

VHF/UHF Section

Lesley VK5LOL	15	Check log
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ar

VHF/UHF An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

There has been a bit of tropo action during the month with openings across to the west from the eastern states.

On the evening of September 21st, signals were strong between VK5 and VK2. Leigh VK2KRR at The Rock in central NSW was putting 5x9 signals into the Adelaide area on 2 m working Garry VK5ZK, Jeff VK5GF and several others. John VK2YW in Wagga also worked Garry VK5ZK for his first VK5 contact, followed by several other VK5 contacts. David VK5AYD in Coober Pedy also worked a number of stations in Adelaide for the first time.

The following evening, signals had dropped right off. However, VK6DZ reported hearing VK5VF on 2 m at 4x1. VK5AKK reported hearing VK6REP on 2 m at 5x1.

On the 23rd, things improved with good propagation between VK2, 3, 5 and 7. On 1296 MHz, Mike VK3KH worked Garry VK5ZK (5x1) for the first time and Phil VK5AKK (4x1). The VK7RAE 2 m beacon (now GPS-locked) was also being heard in VK5, peaking to S9 at one stage. Leigh VK2KRR was putting a big signal into Adelaide on 1296 MHz working VK5ZK (peaking to 5x9+20), VK5GF (5x9) and VK5AKK (5x9). Leigh was also seeing faint traces of VK6REP on 2 m, peaking to 4x1.

Next day, the good conditions continued. Phil VK5AKK made it across to Canberra on 2 m working VK1CJ, VK1DJA, VK1BG and VK1KW. Phil then worked Steve VK2ZT (5x1) on 2 m over a distance of 1240 km. Brian VK5BC also worked Steve.

Barry VK3BJM also got into the fray:

Having spent Thursday 23rd September in Royal Melbourne Hospital in a state of anaesthetised

ignorance of what surgeons were doing to my knee, I was a little slow in turning on the FT-736R on Friday morning. In fact it was nearly lunchtime (0135Z 24/9/2010) when I took a look west to the VK5VF 2 m beacon, having not heard anything on 144.1 MHz. Knee injury notwithstanding, you could have knocked me down with a feather - VK5VF was 599, pushing into the red on the guessometer.

I returned to 144.1 and heard Brian VK5BC, calling; he was 56. I called him and received a 52 - this was with less than 20 watts, as I hadn't turned on the AM-17 at that stage. Gordon VK3EJ was about and 57 off the side of my array.

I then took a look to the northwest; VK3RRU in Mildura was 589. VK5RSE was only 569 on 2 m, though; the better enhancement was to the west/northwest of me. At 0156Z, I logged the VK5VF 70 cm beacon at 419; I could not hear anything of the 23 cm beacon.

At 0208 Z I worked Phil VK5AKK on 144.1; he was 59. At 0211Z, Gary VK5ZK was worked at 54. Attempts on 70 and 23 cm with Phil, and 23 cm with Gary were, sadly, unsuccessful. QSB was starting to set in on VK5VF 2 m, but it remained audible for the rest of the afternoon at about 529 or so. It was back up to 569 when I took a peek before hitting the sack, at around 1000Z.

The next morning (Saturday) offered nothing from VK5VF, though Bill VK3LY was worked from Nhill at 56 with QSB, and Pete, VK5PJ, was worked at 53 via AE. At this time the VK Logger was down, due to an ISP issue. Adam VK4CP had it running again by 2252Z.

Sunday morning, VK5VF was back; I logged it at 549 at 2210Z; VK3RRU was 539 at 2212Z. At 2203Z, VK5BC was in the log at 51; Geoff VK3FIQ was a healthy 58 from Stawell. Andy VK5LA followed at 2316 at 51-2. Then, having been overstimulated by what the Hepburn Chart suggested might be possible and the VK5VF 2 m beacon getting up to 579 at 2329Z, I ran a keyer

towards David VK5AYD in Coober Pedy, and David ran one at me. Sadly, apart from numerous meteor pings, no tropo-supported contact eventuated. At 0032Z, Peter VK5PJ was worked on 144.100 at 57, and 432.150 at 41.

Weak Signal First Experience

Ian VK1FOTO enjoyed his first time with portable SSB operation on 2 m:

Wow! What a morning. Well worth the effort and definitely something I want to try again!

This morning (October 8) I got up nice and early all inspired to give some 2 m SSB a go from Red Hill (QF44NP). Admittedly, I got there a bit later than planned, but still I was on the air by about 0810 local time.

Straight away there was activity heard and the calls were being made. In the end a one hour effort resulted in successfully making six contacts on 2 m and two contacts on 70 cm - glad I bothered to check the SWR of the dipole last night on both bands so that I knew 70 cm was an option. I also heard quite a bit of activity down around 4/1 to 5/1 but those of which I tried could not hear me. That said though, I made a partial contact to VK3DUT which I was rather happy with.

I could hear VK3DUT 5/1 without a problem, but in the end he could only get a partial on my call sign (reporting VK1F something) and reported me at 4/1. Eventually this path faded so I'm wondering if that was maybe my first attempt at some aircraft enhancement?

That also said I was very impressed with the contacts I made to VK2DO down the coast at 5/8 and also VK2GKA in Penrose, NSW. Oh, and I did have another partial contact with VK2KOL in West Sydney but in the end all he heard of me was VK1.

So in the end the list of contacts were:

VL2DO - Long Beach, VK1CJ, VK1BG, VK2GKA - Penrose, VK1PWE and VK1KW.

Partial contacts with VK3DUT and VK2KOL.

Heard clearly, but no contact with VK2EMA – Tottenham.

And this was all done with a simple dipole and an FT-817ND transmitting 5 W. It is truly impressive the range increase you get with SSB compared to FM. That smaller bandwidth really makes a change, and also the fact you can have completely readable signals that aren't even registering on the S-meter.

One other good thing was that setup and tear down each took less than 5 minutes. So, minimal hassle on the way to work of a morning and definitely do-able when dressed in a suit.

I definitely look forward to doing this again! I'm impressed by the level of activity and the ease with which one can have a pretty good level of

participation (minimal antenna setup, minimal power level). Plus, I'm now really keen to have a week-end when I can get my beams active!!

See photo 1:

New 47 GHz VK3 State Record

Charlie VK3NX and David VK3QM have been exercising their new 47 GHz setups. Charlie reports:

David VK3QM and I have been working on getting active on 47 GHz. In addition this new enthusiasm has seen David make a last run attempt at getting his much awaited 24 GHz system operational. As it stands we now have some reasonably well performing 47 GHz transverters operational and decided recently to see what can be achieved as well as taking the opportunity to try some 24 GHz contacts.

Both 47 GHz transverters are based around ready-built Kuhne 47 GHz

transverter modules. Both modules are reported to be delivering 0.170 mW and a noise figure of around 6.6dB. To these we built and added the LO chain consisting of a G8ACE OCXO running at 122.250 MHz feeding a DB6NT.12 GHz LO multiplier kit. These deliver well in excess of 40 mW (up to 80 mW!) to the transverter at 11736 MHz.

David fabricated two 120 mm horns which theoretically would deliver 25 dB of gain and after packaging up our assemblies and running some initial tests at my place we were both keen to see how we would go on this band.

On October 11th, I headed up to our field day site in the Barabool Hills and David became the rover station. Initial contacts at 5 km and 19.6 km proved very easy and having already surpassed the previous VK3 record of 18.1 km on this band we were confident of extending it even more. David proceeded to a spot at 28.2 km distance and again at 29.2 km the signals on both 24 and 47 GHz were still good.

At 29.2 km, reports of 52/53 indicated that we might be reaching our limit. The day was warm at about 24 degrees C at this stage and the humidity was in the mid 60s. Our initial path loss calculations had us max'ing out at around 30 km. We decided to try a greater distance and to our surprise a line of site path at 0429 UTC from QF21CU to QF12WC produced 5x3 signals both ways over a 39.0 km path.

The improvement from the 29.2 km path was put down to a much better take-off.

Given that there was still some headroom in our systems, we decided on trying yet a further path and after finding a location at 47.5 km distance and after some initial QSB, David and I had a 5x1 /5x1 contact on SSB at 0512 UTC. Unfortunately I had other commitments and we were unable to try any greater distances.

It was very gratifying to work these distances with such a modest setup and we are already planning the addition of 30 cm dishes and increasing our power from 170 uW to about 20 mW. We are looking forward to trying over greater distances and more importantly, exploring propagation on this band. We were both extremely pleased with how both transverters worked and how stable the OXOs were in practice.



Photo 1: VK1FOTO Portable Setup.

Digital DX Modes

Rex Moncur VK7MO

We were able to "chat" for about 10 minutes each time without the need for retuning and I feel that our weak signal capabilities were enhanced by using free-running local oscillators as opposed to PLLs.

As an aside we also had some excellent contacts on 24 GHz with signals always 59+ both ways. Both 24 GHz systems run between 100 and 600 mW into 30 cm dishes and employ similar OCXO and multiplier chains. We also look forward to trying over longer paths on this band.

New 24 GHz VK2 State Record

Following on from last month's report, Doug VK4OE advises that he and Wayne VK4WS have been busy and have established a new VK2 distance record for 24 GHz. Doug writes:

I just thought a short mention here is in order to say that Wayne VK4WS and I this afternoon (1/10) increased the VK2 distance record for the 24 GHz band to 170.5 km. This was the same distance and same path (give or take twenty metres or so) that we used for extending the VK4 distance record four weeks ago.

The reason that it is essentially the same distance is that the car park that serves the 'Best-of-All' Lookout on Springbrook Mountain actually straddles the Queensland-NSW border. Four weeks ago we did try to 'do' the VK2 record as well, but // increasing rain and weak signals at my end precluded that.

Earlier this week after adding a low noise pre-amplifier in my IF line, Wayne and I brought both units together and optimised their performance on both Tx and Rx. We reckon that we obtained at least a 6 dB improvement, which has led to today's contact being easy to complete (after some initial headaches associated with dish alignment and rainforest tree leaves a few hundred metres away from where I was).

As there was some rain on the path (closer to Wayne's end this time) we reckon that there is still a good deal of potential left in the performance of the two transverters with respect to possible further extensions of distance records for this band.

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

WSJT9 has now been publicly released as a beta version. It includes:

- Echo mode for EME station performance testing
- ISCAT for ionscatter on 6 metres
- An improved detector for FSK441 which gives fewer garbage decodes
- Experimental mode JTMS for meteor scatter
- Experimental mode Diana for EME
- An improved GUI

It has been found that the timing of echoes in Echo mode can be out due to latencies in some versions of the Windows operating system and specifically XP. The problem can mean the receiver is only listening to half of the period that echoes are received and thus give lower echo values than should be the case. This has been resolved in revision r2177 and should be sorted out in the next public release of the program.

Dave VK2JDS, Phil VK4CDI and Rex VK7MO have been testing the Diana mode on 1296 EME. Dave has reported some timing problems with this also, which should be resolved in the next release of the program. Initial tests show that its performance is a few dB below that of JT65c at 1296.

The VK-ZL meteor scatter group has been testing JTMS on the weekend activity sessions. While the results show it decodes around 5% more characters on stronger pings, it is no better than FSK441 on weaker pings.

Overall we have concluded that the small advantage of JTMS is not sufficient to justify a change and, at least for the time being, activity sessions will continue on FSK441.

GPS-Locked VK7RAE Beacons

Joe VK7JG has now installed the GPS-locked 6 and 2 metre VK7RAE beacons at Don Head, Northern Tasmania. The details are:

6 metres - 50.057 MHz, 20 watts to omni-directional antenna, idents every 45 seconds.

2 metres - 144.474 MHz, 20 watts to omni-directional antenna, idents every 5 minutes.

Tests on 2 metres show the beacon frequency to be within 0.05 Hz which is as close as one can measure at a distance due to troposcatter spreading.

The two-metre beacon has almost 5 minutes key down period to allow for very narrow bandwidth experiments such as looking at the variation of troposcatter spreading which it is expected will decrease during ducting.

Because of the long key down period, it is also useful for long term meteor scatter monitoring for those within 2000 km. If you tune to 144.473 you should copy pings at 1000 Hz plus/minus the Doppler. 1000 Hz should give shorthand decodes of R27 at a DF of -118 Hz on WSJT's FSK441.

Counting the number of R27 decodes over an evening will give you an idea of the variation of meteor activity and the variation of the DF some idea of the variation of meteor scatter Doppler on 2 metres.

A similar test could be done on the 6 metre frequency where the pings are much more frequent.

Thanks go to Joe VK7JG for modifying and setting up the beacons and providing the PA units, Dave VK3HZ for designing and constructing a reverse DDS exciter that derives the carrier from the GPS, the Northern Tasmanian Amateur Radio Club for funding the exciter units and Rex VK7MO for providing the GPS unit.

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

Is your Callbook current?
The WIA 2011 Callbook is now available
www.wia.org.au/bookshop

The Magic Band – 6 m DX

Brian Cleland VK5BC

6 m has continued to be disappointing with very little to report. The equinox came and went with no significant openings. The only activity has been from northern areas of Queensland and Darwin.

Mark VK8MS in Darwin has managed some good contacts to the north in the second half of September. Openings occurred on the 15th, 16th, 18th, 20th 21st, 22nd and 26th September and 1st October. Mark has worked several Japanese & Chinese and East Malaysian stations as well as Willem DU7/PA0HIP, Charlie VR2XMT and Joel KG6DX in this period. Good work Mark.

Gary VK4ABW near Townsville reports the following:

20th Sep, early evening BY TV rose to S9 and I caught up with Ken JE1CUS S5 at 1100Z. The band was not very stable and Ken called a few more times but there were no takers.

22nd Sep, early evening BY TV again, rose +10 dB and I worked Hide JR6EXN S9 at 1145Z for a quick one. I had both JA2IGY and JA6YBR beacons in for about 30 minutes before they faded away

23rd Sep, afternoon TEP BY TV rose quickly to +20 dB and I worked Mitsuru JA9SJI S7 at 0605Z. He called many times but there were no takers this end.

28th Sep, early evening BY TV rose to +20 dB and I heard Hide JR6EXN working Mark VK8MS shortly after. The JA2IGY beacon was S3 for about 20 minutes but no other stations were heard.

Meanwhile John VK4FNQ in Charters Towers worked JR6EXN on 22nd September and then on the 23rd worked several JAs including JA2BNV @ 59 SSB, JH1WHS @ 59 SSB, JF2RDC @ 57 SSB, JK1JXB @ 55 SSB, JA1RJU @ 59 SSB, JL3LSF @ 55 SSB. John VK4TL also worked several JAs on the 23rd.

On the 1st October, JAs were worked as far south as Yeppoon by Ray VK4BLK and Sapphire by Brian VK4EK. Brian reports he worked JA1RJU 0455 UTC @ 5/9 SSB and JA3EGE 0455 UTC @ 5/8 SSB. At the time JS2IR DATA ON 43.659.5 MHz was peaking 5/9.

Willem DU7/PA0HIP has recently completed building and erecting

2 x 7-element Yagis on the 28th September. Willem had immediate success and reports working several JAs on the 28th and on 1st October VK4s TL, ABW, FNQ all 59+ and VK4ZFC 57. Willem reports signals stronger than he had previously received. It will be interesting to hear Willem again during our summer season. Willem's antennas are pictured below:

Brad VK2QO who coordinates the meteor scatter contacts each morning reports the following:

Not a lot of contacts this month but when they were made some big signal reports were exchanged with 59 both ways but most were around the S1 to S5 mark.

The main showers for September were the September Perseids and the delta-Aurigids, both class 2. I was absent for two weeks this month while a few others helped me mount my 6 m beam on top of the new tower. Here are some contacts made for during those two showers:

The September Perseids:

8th: Glenn VK7AB 53 at 970 km, Frank VK7DX 54 at 896 km, Dave VK7DD 51 at 864 km, Brian VK4EK 53 at 1264 km, Ron VK4CRO 51 at 812 km.

9th: Brian VK4EK 53 at 1264 km, Glenn

VK7AB 55 at 970 km.

10th: Frank VK7DX 55 at 896 km, Glenn VK7AB 52 at 970 km.

11th: Wayne VK4WTN 53 at 1049 km.

Then a two week absence.

The delta-Aurigids:

28th: Wayne VK4WTN 52 at 1049 km, Brian VK4EK 55 at 1264 km...

29th: Frank VK7DX 59 at 896 km and again at 55 half an hour later, Brian VK4EK 57 at 1264 km.

A few stations are having a lot of success with the digital modes on 50.230 such as FSK441, JT65 and some of the new modes such as ISCAT SSB contacts take place on 50.200. The 2000 km barrier was finally broken when Frank VK7DX and Brian VK4EK had a contact at 2058 km on the 28th September at 2235Z. Congratulations Brian and Frank.

I apologise for the lack of notes in the last couple of magazines but I was away on an overseas holidays. Fortunately for me and unfortunately for 6 m operators, there was not a lot to report. Let us hope the coming summer season provides some surprises.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com

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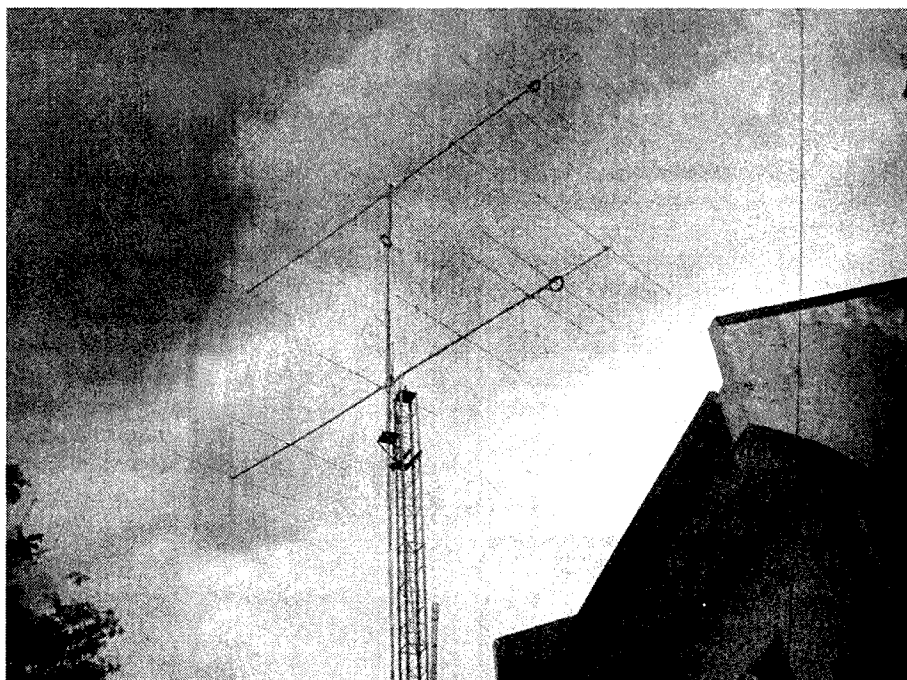


Photo 2: The 2 x 7-element Yagis built by Willem DU7/PA0HIP.

VK100WIA

'Super Springtime' in Perth

Heath Walder VK3TWO/VK6TWO

World focuses on Perth as it celebrates 100 years of organised amateur radio

September 20 to October 2 saw the activation of the VK100WIA callsign for the "Super Springtime" event in Perth:

The twelve days of the VK100WIA callsign activation was officially shared by WICEN WA, Scout Communications Team, WA Repeater Group, and the WA VHF Group. Seven Perth radio groups formally supported the operation and public display for the two weeks, including Hills AR Group, Peel AR Group, and Ham College.

Public displays at the Perth Royal Show, and historic Wireless Hill officially operated for the eight days of the Perth Show, yet many members of the public dropped in the week prior whilst we were operating the VK100WIA callsign. WIA "Calling CQ" and "Ham College" brochures were handed out, as well as VK6 club contact information.

Display items included APRS tracking, satellite tracking, software defined radio, propagation and path plots, RF spectrum charts, D-STAR, EchoLink, IRLP, using satellites, satellite antennas, homebrew antennas and test equipment etc.

Due to the high level of RF noise, most of the operating radio equipment was located at Wireless Hill (including all of the HF gear) and was remotely controlled from the Showground. A video link between the two sites also allowed members of the public to talk on the radio and see to whom they were talking.

With Wireless Hill celebrating its 98th birthday during the "Super Springtime" event, and all of the fascinating history originating from Wireless Hill, the closeness of the two centenaries made it a very special location for the event.

The Melville City Council backed the event, offering a paid advertisement in the local paper. Media releases also went out to almost all of the newspapers in Perth and surrounds so publicity was rather widespread.

Each Day Bob VK6KW operated the Australian Travellers net on 14.116 at 0200-0330Z using the VK100WIA callsign. Jim VK6JP also ran the weekly WICEN weekly nets on 3.600 and 146.750 of a Wednesday evening.



Heath VK3TWO/VK6TWO operating VK100WIA Super Springtime Public display within Scout area at Perth Royal Show.

Sunday 26 September saw a live WIA National News broadcast from the "Super Springtime" Perth Royal Showgrounds. Bob VK6POP and Heath VK6TWO read out several articles for the national news, followed by the local VK6 NewsWest and callbacks.

That Sunday saw over 200 callbacks to the WIA National News, possibly the highest on record. A big thanks goes out to all those who listened and checked in after the news. Also huge thanks go out to Dennis VK6KAD for all of his efforts in preparing for a VK100WIA National News Broadcast. Unfortunately Dennis' health took a turn just a few days prior to Super Springtime so he had to resort to listening on a handheld from a hospital bed. Get well soon Dennis!

On Tuesday 28 September, the milestone of the 20,000th VK100WIA contact was made from the Perth Royal show between Heath VK6TWO (operating VK100WIA) and Bob VK6POP handheld portable also at the Showground. Video footage from both ends of the conversation was recorded live and can be found on YouTube at www.youtube.com/user/VK3TWO

"Super Springtime" saw around 2,200 contacts, most overseas, with many several-hour pileups to EU most nights. Several operators, mainly Heath VK6TWO, Monique VK6FMON, Marty VK6FDX, Ray VK6ZRW and Jim VK6JP operated to around midnight and beyond most nights when openings to EU were open.

One night in particular saw about a three-hour pileup into EU and at 0130 WAST, whilst still open on 20 m, the operators were just too tired to continue. Many mornings also saw some good openings to North and South America. VKlogger.com and DXSummit.fi proved to be very effective tools for DXing.

Footage of some of the Pileups can be found on YouTube at www.youtube.com/user/VK3TWO

Event organiser Heath VK3TWO/VK6TWO said "our week long public displays at both the showgrounds and Wireless Hill gained much attention and we expect several dozen new licences to come out of it" The event was very educational for many involved to prepare for the new

Continued on page 56



Fritz VK6UZ's portable station at VK100WIA Super Springtime @ Wireless Hill.



Above: Bob VK6KW working hard each day on improving our antennas – Installing 6el log periodic at Wireless Hill.



At left: WA VHF Group's SDR construction project on public display at Wireless Hill.

VK5news

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

“Now this little jigger...”

September was a particularly busy and interesting month for AHARS. Our meeting was a “My most useful items” night. A number of members brought along the things they find most useful for them in their radio activities.

John VK5BJE brought along his handhelds. He has all the handheld radios he has ever owned and what is more they all still work. Rob VK5RG brought along a container full of the tools he keeps on his bench. For Hans VK5YX it was a syringe of flux paste which he finds invaluable for working on surface mounted devices.

For Erich VK5HSE it was a flat bed plate for heating surface mounted boards so that the solder melts evenly. He tried a ‘commercial’ heater but found that one made from a cheap cooking plate worked much better. He made an external frame to support the works while it heats. This also has saved him some burned fingers!

Another useful tool for working on surface mounted devices is the vice Mark VK5AVQ designed. Barry VK5ZBQ brought along an AVO meter vintage 1930 which, with its mirror scale has an accuracy of better than $\pm 1\%$.

Trevor VK5ATQ showed a set of simple traps made from electrical wire that convert an aerial to work on 20 metres or 80 metres very quickly and easily. John VK5EMI had a magnifying lens to wear on his head, a nibbler and a set of small tools mounted in a very nice zippered pouch, that his XYL found in the haberdashery department!

Another member with old but very accurate meters to show was Lyle VK5WL but he is also delighted to spend time rubbing down and re-varnishing the cases that some of these meters were housed in originally.

David VK5KC had a capacitor/ resistance bridge that he had



The collection of tools that Rob VK5RG keeps close to hand.

Buy and Sell

The annual Buy and Sell will be held on Sunday 7 November at the Goodwood Community Hall. Doors open at 9.30 am.

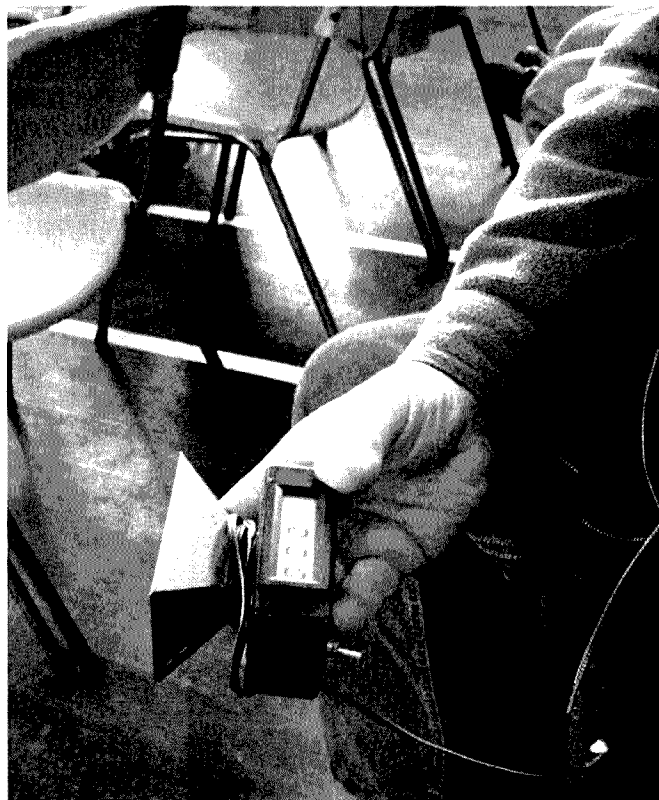
made up from a kit that he finds very useful. Keith VK5OQ also had something he had made up – from one of the Drew Diamond designs in AR – a sheet metal bender.

For Wal VK5YW it was a grid dip meter including a globe on a couple of wires and some lecher lines (if you remember these you have been an amateur for many years).

The AHARS Technical Seminar:

a Diamond in the Hills

As advertised in AR, this was held at the Belair Community Hall on Sunday 19 September. Before the door opened there was a queue of people waiting to come in. Altogether 85 people attended (including four students from one



A 10 GHz receiver and horn antenna used to receive the ‘mobile’ radio station located outside the hall.

of the TAFE colleges). All found something of particular interest. The lunch and morning and afternoon teas were pronounced to be excellent and more than ample.



The lectures ranged from two by Drew Diamond in which he spoke of some of the items that have appeared in AR from time to time and others that had not. The demonstration items he brought along were very good.

*Drew Diamond
VK3XU.*

Phil Harman explained the principle of high performance software

defined radio very clearly and his talk was backed up by the working station set up by Hans VK5YX.

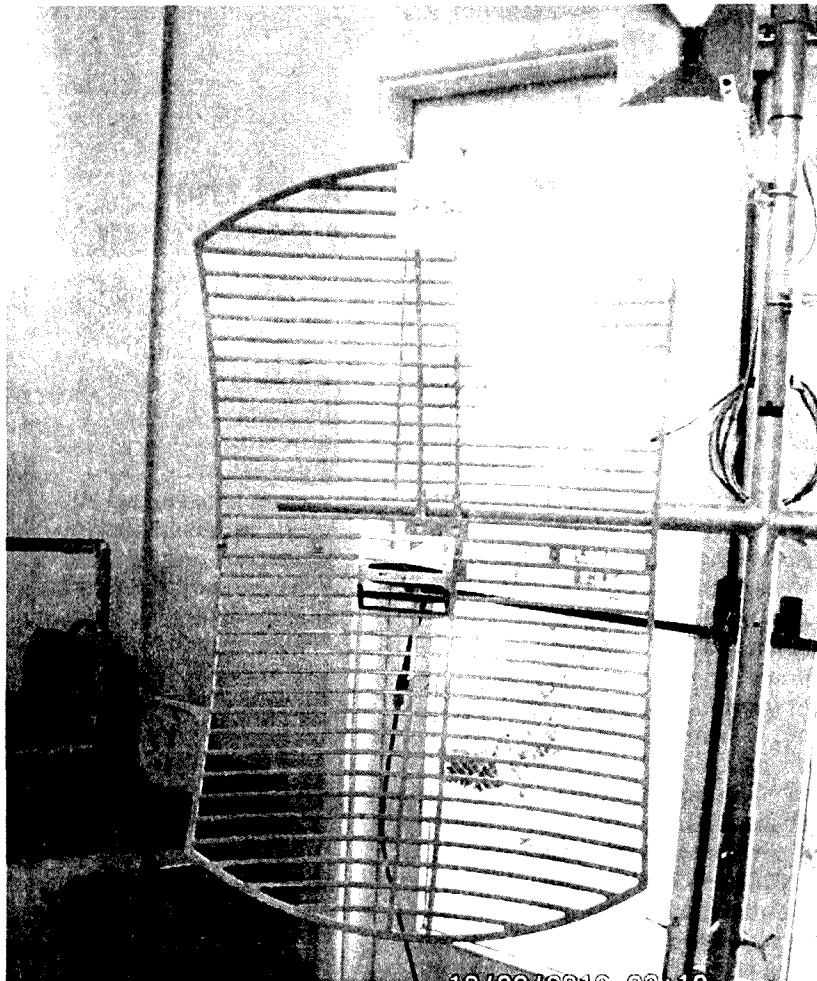
Rob VK5RG gave a talk about early SSB when the amateurs were experimenting with this new medium and were building their own phase modulated equipment because there was no commercial manufacturer prepared to make radios that may represent just a passing phase – no pun intended.

Keith VK5OQ and Iain VK5ZD demonstrated different systems used for transmitting and receiving on UHF and SHF. Several large dishes were assembled to be examined and some very small components (designed to operate on very short wavelengths) such as wave guides and mixers were passed around to be studied.

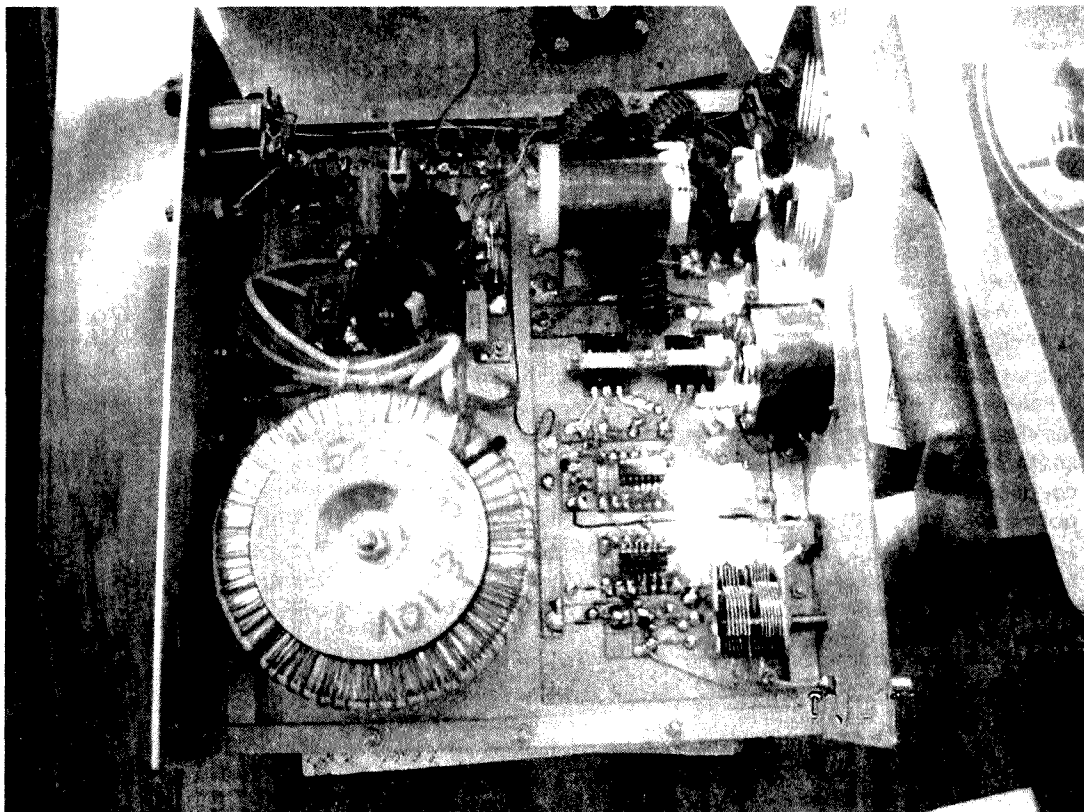
The lecture ended with a two-way contact from inside the hall to a (very) mobile station out in the car park. The vehicle in the car park looked like an angry porcupine and could operate on everything from SHF to 160 metres.

To end the day Graham VK5ZFZ showed us a number of techniques for making very professional looking front panels for your home brew equipment.

As well as the hpsdr of Hans', there were several other items to be studied in the breaks: antennas, amplifiers and other items of interest.



A commercial grid-pack style antenna put to good use by amateurs on 2.4 GHz.



A view inside one of Drew Diamond's transmitters, showing the coils he winds himself.

AMSAT

David Giles VK5DG
vk5dg@amsat.org

A review of the CD-ROM of the issues of the journal of AMSAT-UK

OSCAR NEWS is the official journal of AMSAT-UK and is published around six times a year. Recently they compiled all the issues from February 2000 to December 2009 onto a CD-ROM. This month I present a short review of the CD.

48 issues on one CD

According to the AMSAT-UK website the CD contains "more than 2000 pages of information about amateur satellites ranging from homebrew electronics projects to scientific papers, this archive offers an intriguing insight into the development of amateur radio satellites during a fast moving decade" [1]. The 48 issues (and a report on the AMSAT-UK Colloquium 2002) are in PDF format and a copy of Adobe Acrobat for Windows is included to view them. You can use your current PDF file viewer as well.

Generally each issue contains news for AMSAT-UK members, articles from members, as well as regular columnists. Some articles have been sourced from other journals such as the AMSAT-NA Journal.

Many satellites are covered from AO-40 to the latest cubesats as well as missions from other space agencies. The International Space Station gets plenty of coverage too.

Homebrew projects

Among the construction articles there are details on building a "Space radio for Windows" (a simple 2 m receiver controlled from a printer port), 70 cm parasitic Lindenblad antenna, homebrew Azimuth-Elevation rotator and controller, and a low noise 70 cm pre-amplifier. Scattered among other columns are various "hints and kinks" but these are not highlighted in the index.

Beginner's section

Clive Wallis G3CWV presents a semi-regular column entitled, "Haven't got a licence? Then this page is for you". Clive wrote a regular report

on OSCAR-11. While UO-11 and BBC BASIC computers feature regularly in his column, he deals with many other topics such as antennas, software for various systems and even the solder used in spacecraft.

Brian Catchpoole M0TAD gives a five part series, "Diary of a newbie" from 2002. Here he writes on the trials of pursuing the goal of making a QSO via AO-40 with homebuilt equipment. All this within a year and not much previous experience.

But wait, there's more

Here is just a sample of articles that caught my eye:

"Operating portable from the Cairngorm National Park Scotland" by 2M1EUB/P - an FT-817, a small azimuth/elevation rotator setup on an electric bicycle.

"Sputnik - some personal recollections" by various contributors.

"Well it's been a wonderful day" by Graham Shirville G3VZV - a blow-by-blow description of the days before launching SSETI express (XO-53).

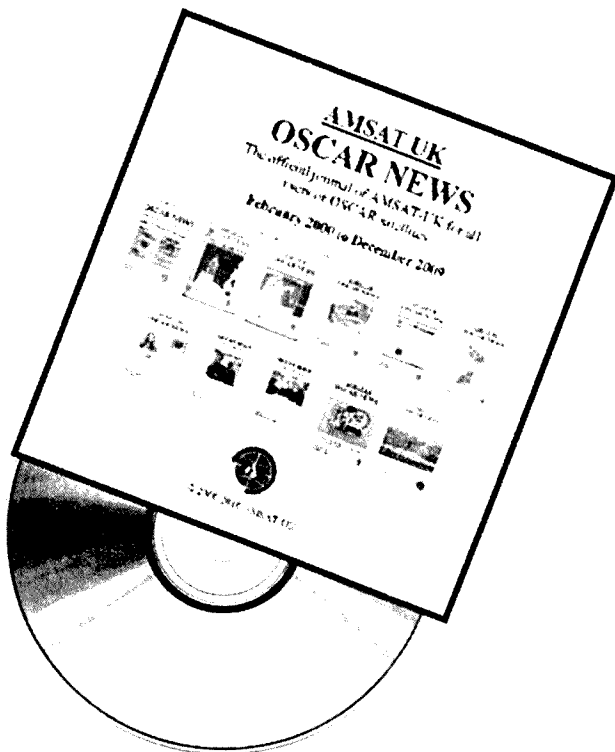
"S-Band and X-Band Deep space Reception" by Paul Marsh M0EYT - on how to build a modest receiver to receive interplanetary spacecraft.

"The Joy of ISS" by Ciaran Morgan M0XTD-the story of the Budbrooke School ISS contact with Richard Garriot W5KWQ.

"Homebrew satellite rotator" by Ray Benitez M0DHP - uses a screwjack for elevation and fully computer controlled.

How to get it

The CD-ROM is ordered over



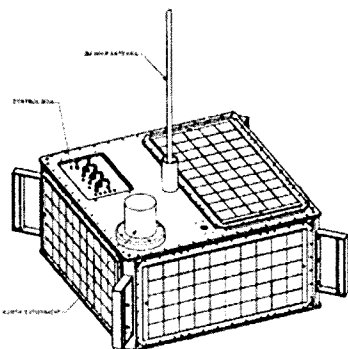
the Internet from the AMSAT-UK website. Total cost of CD-ROM and postage was around \$40 (allowing for currency exchange rates). If you use their distributor www.lulu.com, you will be asked to register with them. This will allow you to order their other publications. (Un)fortunately they will also email you with other specials.

Summary

From homebrew electronics projects to scientific papers sums this CD nicely. There is a broad range of articles for beginner to experienced satellite user.

Up to issue 184, the pdfs come from scanned paper issue so the print quality is fair. After that the pdfs are straight from their computer files with excellent quality. Overall I was pleased with the purchase.

ARISSat-1 update



By the time you read this, the two ARRISat satellites will be in Russia. They passed their vibration tests during September and shipped to Russia during October.

The flight version will have the Kursk University experiment and its Orlan spacesuit battery installed and tested. ARISSat-1 will be sent to the International Space Station during January 2011 ready to be thrown out into space during February. ARISSat-1 has also been named RadioSkaf V by the Russians. RadioSkaf-1 was the Russian name for SuitSat-1. Congratulations to the team for getting to this important milestone [2].

Future launches

Euroconsult is a consulting firm that specialises in the space industry. In a recent report they predict there will be 1220 launches worldwide during the next 10 years.

At an average of 122 per year, this is a big increase from the average of 77 launches per year for the last decade. They predict about one third will be military satellites while government

satellites will make up the majority of the rest.

They also predict that Earth observation missions will make up 267 launches with governments spending more on scientific and exploration missions.

Commercial satellites will mostly be sent to geosynchronous orbits and these will make an estimated 214 launches. A new constellation of communications satellites will be launched into Medium Earth Orbit (MEO). MEO is the range between 2000 and 25000 km high.

The zone between 6000 and 13000 km lies between the two Van Allen radiation belts. The other MEO zone between 20000 to 25000 km lies above the upper belt.

The new constellation will be supplied by O3b networks consortium and will provide satellite internet services [3]. O3b stands for the "Other 3 billion" and refers to the world population that have difficulty getting broadband internet services.

This will replace the first generation

communication constellations by Iridium, Orbcomm and Globalstar. A copy of the report can be found at the Euroconsult website [4].

Final Pass

ARRISat is another step forward for AMSAT as it will be the first software defined transponder in an OSCAR satellite. The technology will be used in future missions and there are still two more ready if a suitable launch occurs.

On a personal note, I hope to have my renovated shack finally finished and fully operational by the time this issue is on the shelves. Then I will have more time to read the rest of the OSCAR NEWS.

References

- [1] <http://www.uk.amsat.org/>
- [2] <http://arissat1.org/>
- [3] <http://www.o3bnetworks.com/>
- [4] <http://www.euroconsult-ec.com/news/press-release-33-1/37.html>

ar



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Group Moderator

Judy Williams VK2TJU
email secretary@amsat-vk.org

Website
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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: 146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404,
EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node
6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz
IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz.
IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

Spotlight on **SWL**

Robin Harwood VK7RH

I was so disappointed that Radio St. Helena cancelled the proposed DX test, originally scheduled for the ninth of last month. Apparently the rotors on the beam could not be repaired and because of the island's remoteness, suitable spares could not be procured in time. They say they are going to try again in 2011. I certainly hope so.

Radio Sweden International also departed shortwave on 31 October. It looks as if the Greenville shortwave senders have been given a reprieve for now, allowing the VOA/Radio Marti programming to continue. Radio Slovakia also looks as if it may continue but only in the short term.

Propagation is so slow in returning to normal. Some experts are still convinced that we are in for an extended period of sunspot lows, which has thrown into question the 11 year solar cycle theory.

I note that Laos on 7145 has gone again but it is unclear if this is permanent. I have heard a much stronger outlet on 6130 with different programming. The weak station on 7189.9 has been identified as being in Tamil and from Colombo. It signs off between 1200 and 1215. I do expect that we will be hearing Africans on the LP around 1900 to 2100 in the extended amateur allocation between 7.1 and 7.2 MHz. I have heard Americans working ZS on remote tuners. It is possible that Australians could work them.

I noted an American religious station on 9479 at 2200. It is WTWW, in Tennessee. I thought it must be a technical fault but apparently they were forced to move a kilocycle because the 16th harmonic caused QRM to 2-way communications on a local school bus run. How odd!

That Chinese OTHR must be causing headaches as it is so wide and intentionally puts out harmonics as well. It is between 6.8 and 6.9 MHz but can be much wider and easily infiltrates the 40 metre CW segment. I have noted it as low as 5 MHz and as high as 9.3 MHz, especially during our local evening hours. Some speculate that the system is based on Hainan Island in the Gulf of Tonkin.

The presumed location of the OTHR on higher frequencies is rumoured to be Akotiri, Cyprus. It is not as wide as the Chinese system but if anything much stronger. I presume this system is focused on the Middle East. Another source tells me that there is also a French system operating on the higher frequencies also. I wonder if the Australian Jindalee system is still operational? I seem to recollect that it closed down.

Well that is all for November. Hopefully propagation will improve soon.

73 de VK7RH

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WIA Situations Vacant

WIA Volunteers

The WIA Bayswater office is always looking for suitably qualified volunteers – or just volunteers!

If you are able to give the Office a certain number of hours on a regular basis, or are otherwise interested in assisting with the administration of the Institute or its activities, please write to, or email, Mai Brooks VK3FDSL at the address below.

If you have any experience or qualifications that you think may assist, please be sure to also set them out.

Mai Brooks VK3FDSL

malb@wia.org.au

PO Box 2042 Bayswater, Vic., 3153

Publications Committee

A limited number of volunteer vacancies exist on this committee. See editorial on page 2 for details.

WIA Awards Scheme

The WIA Awards Scheme has been developed to a world class level. It is managed by a committee who are responsible to the Board for maintaining the highest standards of award assessment.

The committee assesses existing awards and proposes to the WIA Board any changes and additions, with the WIA Office providing administrative support.

The Awards Committee is headed by the Awards Manager, who is responsible for making initial assessments of the validity of claims for credits towards awards and to advise other members of the committee of claims for such credits.

The current Awards Manager, Eddie VK4AN, has decided to retire at the end of his current term and a replacement for him is sought.

WIA members and existing Awards Committee members are invited to register their interest with the Director responsible for the Awards Scheme, Chris VK5CP, at vk5cp@wia.org.au by 30 November 2010.

The new Awards Manager will work with Eddie during a handover period to be determined and take on full responsibilities in May 2011 (or earlier by agreement).

There also exists a vacancy for an additional Awards Committee member, to start immediately.

Expressions of interest for that position are also requested to be submitted to vk5cp@wia.org.au by 30 November 2010.

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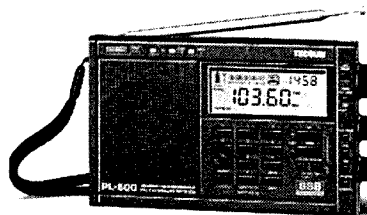
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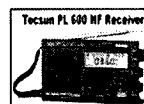
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Super Springtime continued from page 49

National Field Day. The Hills AR Group hope to operate from Wireless Hill Park (Field) for the NFD, utilising many of the items used from Super Springtime.

Being co-located with the Scouts at the showgrounds, JOTA was a VERY hot topic! Entire Scout and Venturer groups enquired about radio courses and badges. The WA Scout Communications team are going to be very busy with both Foundation and Standard courses planned in the coming months.

The WA VHF group dedicated several monthly meetings towards "Super Springtime" and a special thanks goes out to Bob VK6KW (President), Terry VK6ZLT (Secretary) and Heath VK6TWO (Vice President) for their efforts in organising and preparing for the public displays and preparing Wireless Hill for operations.

Huge thanks go out to all who supported the event and offered equipment and time toward its success. Very special thanks goes out

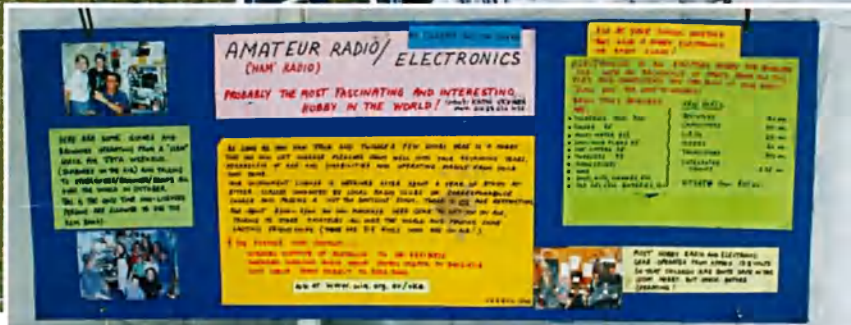
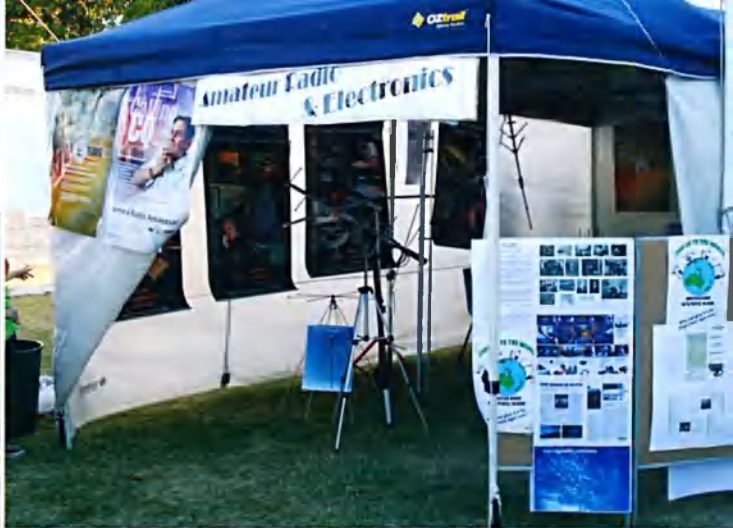
to Heath for his efforts in preparing the event, not to mention the 16+ hour days over the whole two weeks. Footage from the Super Springtime event can be found at www.youtube.com/user/VK3TWO **ar**

VK100WIA Super Springtime

Facing page: Some shots of the group-mounted and managed display as part of the Scout compound at the Royal Perth Show.



Hills AR Group meeting excursion to Wireless Hill.



VK100WIA Super Springtime

Top left: Scout area at Perth Royal Show.

Top right: The amateur radio public display within Scout area at the show.

Main photo: The interior of the working station.

Inset at right : Graeme VK6BSL's AR display at VK100WIA Super Springtime, Perth Royal Show.



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Our Cover:

Are you planning to attend the WIA 2011 AGM in May?
 If so, you will have time to explore Wangi Falls in the
 Litchfield National Park during the tour on Sunday.
Photo courtesy of Tourism NT.



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 welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Back issues are available directly from the WIA National

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Photostat copies

if back issues are unavailable, 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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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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	Keith Malcolm	VK1ZKM
Standards	Gilbert Hughes	VK1GH
	David Wardlaw	VK3ADW
	John Bishop	VK2ZOI
	John Martin	VK3KM
NTAC	Will McGhie	VK6UU
Historian	Will McGhie	VK6UU
IARU Region 3 Liaison	Geoff Atkinson	VK3AFA
Intruder Watch	Karl Hennig	VK6XW
International Travel Host	John Miller	VK3DJM
ITU Conference & Study Group	Gilbert Hughes	VK1GH
	David Wardlaw	VK3ADW
	Keith Malcolm	VK1ZKM
	Brett Dawson	VK2CBD
	Dale Hughes	VK1DSH
QSL Curator	National Office	
Repeater	Peter Mill	VK3ZPP
Webpage	Robert Broomhead	VK3DN
Emergency Communications Group		
Coordinator	Phil Wait	VK2ASD
Members	Ewan McLeod	VK4ERM
	Peter Young	VK3MV

Editorial

Peter Freeman VK3PF

Season's greetings

Another year is drawing to a close. Officially, the end of December marks the end of the WIA Centenary year. We plan to publish a summary of all the activities early next year. I am sure that we will continue to have more articles submitted of a historical nature.

With the needed emphasis on history this year, together with the large number of contributions on that theme, we now have a large backlog of articles to publish. We will be doing our best to reduce the delays in the future between the acceptance of an article and its appearance inside the magazine. I thank authors for their patience to date.

I am looking forward to a couple of weeks leave, during which I intend to work on many of my long list of radio projects. Number one task will be to get the tower and antennas back up.

I trust that all have a happy and safe festive season. Perhaps we may meet on-air in the New Year...

End of an era

This issue will mark the end of a long association between the WIA and Newsletters Unlimited (NU) – our publishing house since the start of 1999.

In reality, NU is a husband and wife team: John and Gillian (Gill) Nieman. Over the past 16 months or so, most of the work has been undertaken by John. Until then Gill was the key person responsible for the assembly of the majority of the magazine until John took over when Gill decided that it was time to embark upon postgraduate studies.

When I started in the role of Editor five years ago, both John and Gill were very welcoming and helped guide me into a production system with which we could all work. Along the

way, we have made many changes which have resulted in, I believe, a more attractive finished product.

Perhaps the most significant of these changes came early this year. On the WIA side, we imposed a new design concept from an independent designer. Together, NU and the Publications Committee sorted out the wrinkles over the first couple of issues with the new design. At about the same time, NU proposed a new printer, together with a different paper. The net result is the magazine you are now reading.

Like any relationships, we have had some bumps along the way. However, goodwill has prevailed on both sides so that we have improved our magazine while containing our budget.

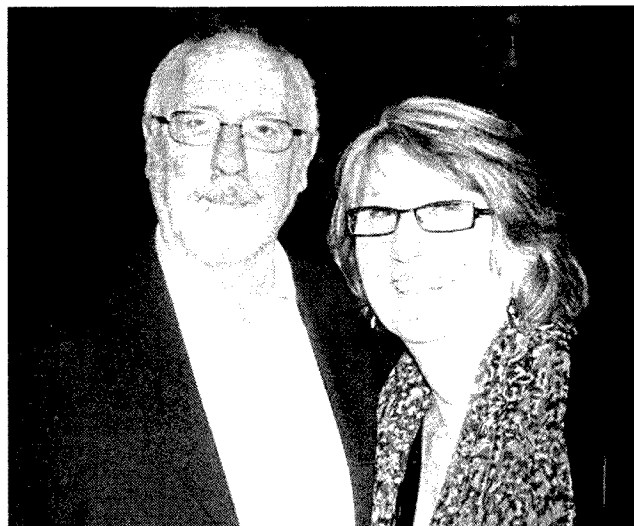
The WIA has decided, partly following a pre-retirement indication from NU, that it was time to move to a new production house. I will advise readers of the details in the first issue of 2011.

As a result, NU and WIA are working on the production of this issue and on a smooth handover to the new contractor during a busy period.

John and Gill, thank you very much for all your work, guidance and goodwill.

Cheers,

Peter VK3PF



The staff at Newsletters Unlimited, John and Gill Nieman

WIA ANNUAL CONFERENCE

Darwin, 27, 28 and 29 May 2011

These are the preliminary details of the WIA 2011 Annual Conference, incorporating the Annual General Meeting and Open Forum. They are published now, so that everyone wanting to participate has plenty of time to make their arrangements. The host club is the Darwin Amateur Radio Club, led by Spud Murphy VK8ZWM.

Venue

Travelodge Mirambeena Resort
Darwin, 64 Cavenagh Street, Darwin.

Accommodation

There are many attractive hotels in Darwin. The WIA has special deals with the Travelodge Mirambeena.

A standard guest room, with 2 queen beds, for two people, including two buffet breakfasts at \$160 per night.

Executive Room, with a king bed or two singles, for two people, including two buffet breakfasts, \$180 per night.

Townhouse, self contained, with kitchen and extra beds, for two people, including two buffet breakfasts at \$190 per night.

Travelodge will only hold these 'WIA' rooms until 30 April 2011, so early reservation is important. Additional days before and/or after the Conference may be booked at the same rates, so long as they are consecutive.

Call Travelodge Mirambeena at 08 8946 0111 and speak to Aleishia Good or Belinda Anthony, quoting the WIA Conference.

Conference Registration

From 1 December 2010, register on-line on the WIA website, or phone the WIA office. Registration for the weekend will be \$75. That fee will include morning tea, lunch and afternoon tea on Saturday, transport for Friday evening and, for partners not participating in the AGM/Open Forum/Symposium, a tour of Darwin.

Other costs are:

Darwin Sunset Dinner at Darwin Trailer Boat Club Friday \$55
Annual Dinner, Saturday night \$50
Litchfield National Park tour and BBQ, Sunday \$55
Mindil Beach Sunset Market, Sunday evening \$8
(You can buy food at the Markets)

Registrants will immediately receive the *Essential Top End Holiday Guide*, to assist planning and will receive the Open Forum documents prior to leaving for Darwin.

Program	
Friday 27 May 2011	
2 pm to 5 pm	Registration at Travelodge Mirambeena.
6 pm	Darwin sunset over Fannie Bay at Darwin Trailer Boat Club, with a buffet dinner.
Saturday 28 May 2011	
8 am to 9 am	Registration at Travelodge Mirambeena, with welcome tea or coffee
9 am to 12.45 pm	Annual General Meeting and Open Forum, Mirambeena Room
1 pm to 1.45 pm	Lunch Treetops Restaurant
2 pm to 5 pm	Symposium - Technology for the Bush, including the Centre for Appropriate Technology
6 pm to 7 pm	Drinks
7 pm	Annual Dinner, Treetops Restaurant
A Partners Tour will be available for Saturday, including visits to some of the highlights of Darwin. The cost of that tour will be included in the registration fee.	
Sunday 29 May 2011	
8.30 am to 4.30 pm	Tour to Litchfield National Park, including the termite mounds, Buley rockhole, Florence Falls, with a BBQ lunch and time at Wangi Falls.
6 pm	Host Club event: Mindil Beach Sunset Markets, for a memorable sunset dinner in a special area.

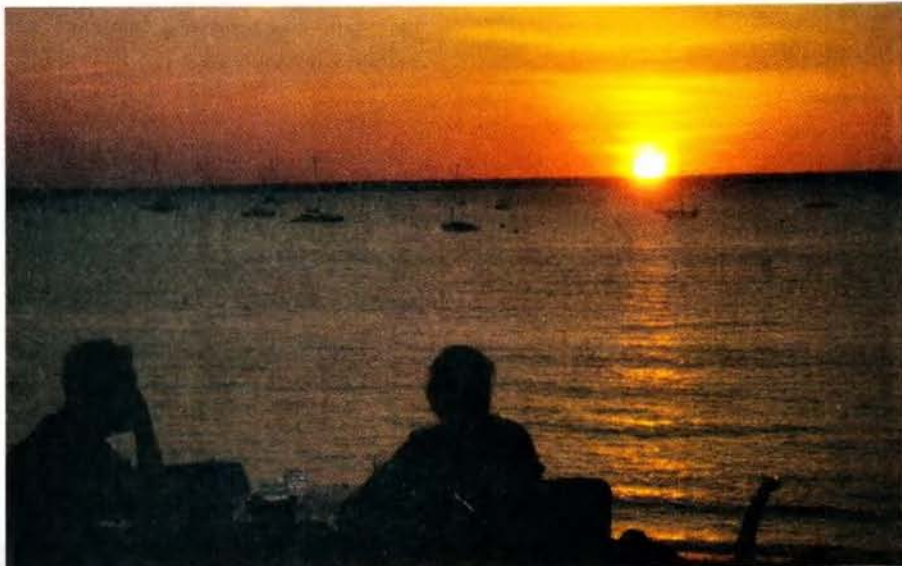
Transport to Darwin

Depending where you come from, JetStar may be a good bet but check your choice of airline and make your booking early.

Further Information

The WIA website will publish further information.

The WIA Directors hope that you will join us for this Annual Conference. In doing so you will not only be supporting the WIA but also amateur radio in one of our more remote cities and have a memorable weekend hosted by one of Australia's great radio clubs, famous Asia-wide for its hospitality. **ar**



Fannie Bay sunset from Darwin Trailer Boat Club. Photo: Michael Owen VK3KI.

New Procedure for Two-Letter Callsign Recommendations

On 1 December 2010, when new fees for Callsign Recommendations start, a new procedure will be adopted for Callsign Recommendations for two letter callsigns in Queensland, New South Wales and Victoria.

Previously, applications could only be made by mail and were processed in the order in which they were received at the WIA office.

It was pointed out that this favoured those living where Express Post operated, and meant that those in remote areas had no chance of obtaining a two letter callsign if anyone in the capital cities wanted the callsign.

The WIA and the ACMA have now agreed on a new procedure that puts everyone on an equal footing.

No callsign recommendation can be made until seven days after a callsign is placed on the Public List (the list of available callsigns on the WIA website), to allow someone who has inadvertently allowed a licence to lapse to claim back the callsign.

Applications for a two letter callsign in Queensland, New South Wales and Victoria will continue to be required to be lodged by mail.

Each application for a particular two letter callsign received in the seven days will be given a number, and after the seven days, if the callsign has not been claimed back and there is more than one person seeking it, cards bearing numbers corresponding to the numbers given to the applications will be 'placed in a hat' and one will be drawn, in the presence of a WIA Director, Secretary or Treasurer.

As at present, if an applicant is unsuccessful and cannot be recommended an acceptable callsign, the fee shall be refunded.

Important ITU Meetings in Geneva

Monday 8 November 2010 saw the start of the meeting of the ITU Radiocommunications sector (ITU-R) Working Party 5A. WP5A is the group within the ITU structure that deals with technical matters that affect the amateur service as a part of its

broader mandate to study mobile service communications techniques. The meeting ran until Wednesday 17 November.

Representing the WIA was Dale Hughes VK1DSH as a member of the Australian delegation to the meeting. The WP5A meeting is a part of the ITU preparations for WRC-12 which also includes the Conference Preparatory Meeting (CPM) which is to hold its second, and final, meeting in February 2011. The CPM establishes the technical bases for WRC-12 and identifies the possible solutions to each of the WRC-12 agenda items.

Of particular interest to the amateur service is agenda item 1-23, which seeks an amateur allocation in the MF band somewhere between 415 and 526.5 kHz. This meeting of WP5A is particularly important because it is the final opportunity to influence the content of the CPM Report which strongly guides the deliberations at the WRC itself.

Dale presented an outline of the studies currently being undertaken in Australia under authority of the scientific licences issued to the WIA for transmissions in the 505 - 515 kHz band. This information will be added to the body of data that demonstrates that amateur operation in the MF band is capable of providing useful outcomes and can be undertaken without adverse impact on other users of the MF spectrum.

Meeting of clubs in Adelaide

WIA President Michael Owen VK3KI, Secretary Geoff Atkinson VK3AFA and Director Chris Platt VK5CP and members of the South Australian Advisory Committee attended a meeting of South Australian clubs at the Scout Radio Activities Group HQ in Glenelg on 6 November 2010.

Some 11 clubs were represented at the meeting chaired by David Box VK5DB.

The WIA President gave a general report on the WIA, stressing the success of the Centenary year, and raising a number of issues for discussion. Then each club reported in turn on its activities and general

discussion followed. Among the matters raised was the very recent first National Field Day.

Final QSO of VK100WIA is with ARRL President

The WIA marked the conclusion of their VK100WIA centennial special event operation on October 31 with a QSO between WIA President Michael Owen VK3KI and ARRL President Kay Craigie N3KN. Logged at 1255 UTC, five minutes before midnight in Australia, the QSO between N3KN and VK100WIA, with VK3KI at the microphone, was the last contact recorded in the Australian special event's log.

The contact was made using EchoLink, with VK100WIA using the VK3ANT node in Melbourne, Victoria. Kay used the K4IJ 440 MHz repeater in Roanoke, Virginia to access the EchoLink node of the linked North Carolina Hospital Emergency Amateur Radio System repeaters (NCHEARS); the NCHEARS system was also linked to the South Carolina Healthcare Emergency Amateur Radio Team (SCHEART) repeaters. Repeater users across three states were able to hear the historic conversation between two continents.

More than 50 WIA-affiliated clubs have used the VK100WIA call sign for almost six months as part of WIA's Centenary celebration. Since VK100WIA went on the air in May, 24,440 contacts have been logged.

Michael told Kay that the WIA was "passing the baton on to the ARRL, as the ARRL would be celebrating its centenary in four years."

Meeting of Queensland clubs in Rockhampton

WIA President Michael Owen VK3KI and WIA Director Ewan McLeod VK3ERM attended the Annual WIA National President's lunch in Rockhampton on 14 November 2010, the first time the lunch has been held outside Brisbane.

A significant number of clubs were represented, and a very constructive discussion followed a presentation of current matters by the President. **ar**

2010 – A Year to Remember

WIA comment

As the WIA's Centenary year draws to an end, may I look back?

May I suggest that this has been a great year for amateur radio and the WIA? And in ways that are much more than just a successful celebration.

The Centenary Convention weekend at Canberra on 28 to 30 May was an undisputed success. Our special guests from home and overseas added to the excitement of the occasion. The ARISS contact was a highlight of the dinner on Saturday night. The historical presentations Saturday afternoon captured everyone's interest.

And Sunday, thanks to our Centenary patron Dick Smith VK2DJK, was a day that we all will remember.

And then there has been VK100WIA. Involving over 50 clubs, Heaven knows how many operators and, after 5 ½ months, 24,440 contacts and over 400 Centenary Awards.

The special callsign has not only drawn attention around the world to our Centenary, it has brought together many people to take advantage of the VK100WIA callsign in many different ways, with some groups focussing on working DX, others using it as a tool to promote amateur radio.

The historical articles in this magazine have made us all very conscious of how much the technology of wireless has developed in 100 years.

All of this has been built around some memorable imagery. The Centenary poster featuring that wonderfully evocative photograph from the Waverley Amateur Radio Society has been, for me, the image of the Centenary.

Many clubs have marked the year in many different ways. To mention only three, the Ipswich & District Radio Club issued a special medal, a number of clubs in the Perth area combined to create the "Super Springtime" event, bringing together the VK100WIA callsign and displays at the Perth Royal Show and at Wireless Hill and the Rockhampton and District Amateur Club had a birthday

cake for the WIA at the Queensland meeting of clubs.

But I think the real significance of this year has been much more than these events and images.

Throughout the year I have been urging anyone who will listen to me to promote amateur radio in their community. The WIA provided its affiliated clubs with a totally professional Media Kit.

The result has been that we have undoubtedly received more favourable publicity in print, radio and TV in one year in more places than ever before.

And the "more places" is significant. The many local and regional media amateur radio stories have been another success of the year. And that is because the clubs have been successful in communicating their story and the story of amateur radio to their local media, very often with the help of the Media Kit.

But in doing all of this we have also established the foundation for a continuing promotional program for next year with the National Field Day. The first National Field Day this year was extremely encouraging and a learning exercise for all involved; and we now have the opportunity to consider if we can do anything even better next year. Some very constructive suggestions have been made, including ideas to meet the challenge of diabolic propagation conditions by relying on IRLP or similar modes, a suggestion that may also meet the problem of antenna location restricting the choice of site.

I believe that we all need to continue to promote amateur radio, our clubs and the WIA. The more the community understands what amateur radio is, or indeed the value of amateur radio to the community, the more likely it is that what we do and wish to do will be accepted.

Of course, we also want to attract new radio amateurs.

But I believe that the year has been successful in an even more significant way.

It has been a very friendly and constructive year. It has been a year

when many of us felt proud to be a radio amateur and proud of the WIA. It has been a year that has rekindled an interest in amateur radio for a number of people.

I have felt a new pride and a new interest, and a new enthusiasm from many people.

And it has been a year when so many people have contributed.

Let me acknowledge a few.

I thank the Centenary Committee and in particular Peter Wolfenden for the historical research and the articles and presentations, Jim Linton for the Media Kit and the articles, Robert Broomhead for organising the Canberra weekend, the promotional material and merchandise and all the work associated with the website, Martin Luther for helping set up the Centenary Award rules, Geoff Atkinson for looking after the VK100WIA QSLs and the Centenary Award, Ted Thrift for ensuring that the clubs took full advantage of the special callsign, all the WIA directors, the WIA Secretary and Treasurer for their support and work and our patron Dick Smith for his support.

I also thank Graham Kemp, Peter Freeman and the Publications Committee for their extra efforts to enable the effective use of the WIA's broadcast and magazine to record and announce much of the Centenary Year activity.

But above all, let us acknowledge the many people from the clubs around Australia who established and operated VK100WIA, who set up the events and activities that we enjoyed and that also promoted amateur radio and who attracted the publicity that is so valuable.

In the end, it is everyone, and there were so many, who contributed and who made 2010 a year to remember.



Michael Owen
VK3KI

A matching system for two 23 cm antennas

Peter Cossins VK3BFG

This technique was derived for matching two 23 cm co-linear arrays for the Melbourne Digital Television Repeater, VK3RTV. The repeater inputs are 1250 MHz, 1255 MHz and 1278 MHz and the antenna can be pressed into service on any of those frequencies. The co-linear arrays are broadband in their nature and will accommodate the frequency range.

The matching system, using quarter wave matching lines, is not unusual in its concept. The mechanical construction however, using home made coax, allows control of dimensions that are accurate and appropriate for 23 cm work. The equation below forms the basis of the theory.

$$Z_0 = \sqrt{Z_s \times Z_L}$$

Z_0 is the characteristic impedance of the quarter wave matching line, Z_s the sending end (antenna) impedance and Z_L the load impedance.

If Z_s is a 50 ohm antenna and Z_L is 100 ohms, then Z_0 is 70.7 ohms.

Joining the two 50 ohm antennas together with their quarter wave matching lines gives two 100 ohm loads in parallel making 50 ohms, a match to the line impedance.

This simple network is often called a 'Phasing Harness'. (Odd multiples of one quarter wave can be used as well.) The theory is all well known and used, but the problem at 23 cm is that the dimensions are somewhat critical.

The length of cable required can be calculated as follows:

$$\text{Cable Length (mm)} = \frac{\text{Velocity Factor} \times 3 \times 10^5}{4 \times \text{Frequency (MHz)}}$$

The matching system uses standard stock brass tube available from most hobby shops. The diameter I used was 5.5 mm, but it was selected to just fit the inner of 5C-2V, 75 ohm solid dielectric coaxial cable. The inner was obtained by cutting a piece of the cable and removing the outer cover and shield, leaving the insulation and the inner cable intact.

The dimensions given in this article are for solid dielectric versions of the cable. If foam dielectric cable is used then the quarter wave lines will be a bit longer to allow for the higher velocity factor. Solid dielectric cable is preferred for this application as it is more robust. Velocity factors for various cable types are usually stated in manufacturer's data sheets.

Any suitable 75 ohm cable can be used, with the cable and the brass tube length cut according to

the equation above. The main criteria are that the brass tube and the coaxial cable inner form a snug fit.

The brass tube can be accurately cut and filed to the required length. Using 75 ohm cable (rather than the 70.7 ohm from the formula above) will provide a satisfactory result as final testing proved.

Referring to the photograph, the components required are a silver plated N Connector with Teflon insulation, brass tube to fit the inner of the 75 ohm cable used, double sided PCB, and a 60 by 100 mm approx diecast box. It is advisable to use stainless steel nuts and bolts for durability. The extra cost is absolutely minimal.

Be wary of cheap alternate N Connectors as the insulation in some of these is a form of plastic and will not stand the heat required.

The construction process is as follows:

1. Cut the centre solder terminal of the N connector down to a maximum of 2 mm in length.
2. Using a mini blow torch, pre-solder the N connector near where the brass tube is to be fixed.
3. Tin the ends of two lengths of 41 mm brass tube. Do not use excessive solder.
4. Join the two brass tubes at one end at an angle of approximately 30° using a metal plate to keep the tubes aligned.

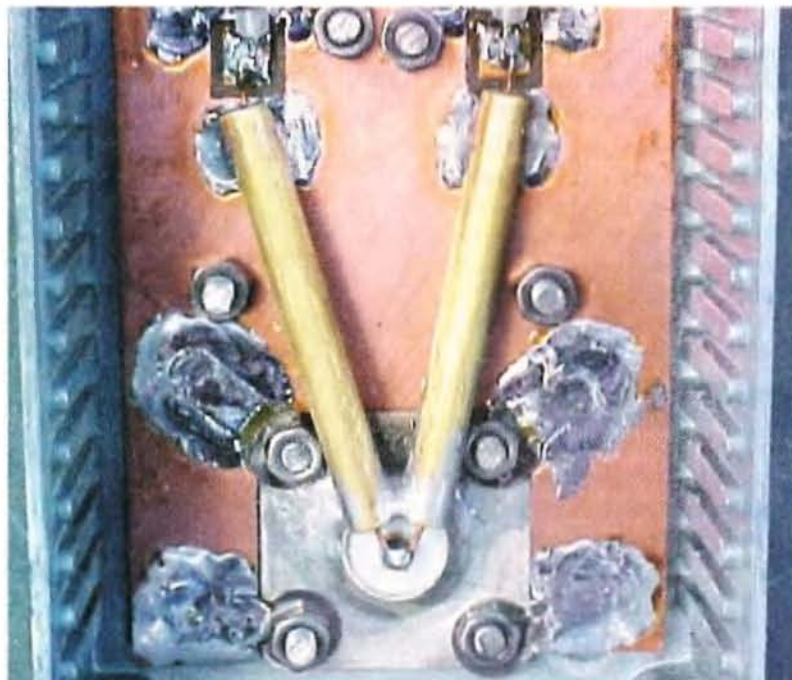


Photo 1 The completed 23 cm matching system.

5. Jig/lightly clamp the two brass tubes on the pre-soldered N Connector so that they are aligned as they will be in the final assembly. I attached the N Connector to a piece of scrap flat aluminium plate to simulate the PCB ground plane. It is very important to keep all lead lengths to a minimum.
6. Use small gas torch to fill in solder around the N connector and the brass tube.
7. Strip back the inner of the cable to be used and accurately cut two lengths using the brass tubes as a guide. Leave a small length of inner at each end. Put them aside for later use.
8. Pre-drill the diecast box for the N connector and the PCB groundplane. The N connector should be at one end of the diecast box facing outwards from the bottom. Refer to Photo 1.
9. Recess a piece of double sided PCB so that it fits snugly around the N connector as in the photograph.
10. Pre-drill the PCB and the diecast box for the stainless steel mounting bolts.
11. Pre-drill the diecast box on its bottom edge for the two coaxial cable entries and also two moisture holes. The cable entry holes will need to align with the ends of the brass tube.
12. Using the N connector and the soldered brass tubes as a guide, mark exactly where two lands (insulated connection points) should be etched or cut out. These should be just large enough to terminate the phasing harness cables and the cables from the antenna.
13. Etch or cut out the termination lands on the PCB.
14. Assemble the network using solder lugs to bind the N connector to the PCB and solder the end of the brass tubes to the PCB groundplane (Refer to photograph).
15. Insert the 5C-2V inners and terminate on the N connector and also to the two PCB lands.

16. The two 23 cm antennas should be fed with equal lengths of 50 ohm cable, fed through the bottom holes of the diecast box and terminated on the PCB lands.
17. Alternatively, two additional N connectors can be assembled to the diecast box and connected either directly to the ends of the brass sections or by short lengths of 50 ohm Teflon coaxial cable.
18. Remember to keep leads as short as practically possible with all 23 cm wiring connections. For example, if using the additional N connectors, the flanges should be pre-soldered and the Teflon coaxial cable outer soldered directly to the flange. A minimal length of inner then makes the connection to the cut down centre pin of the N connector.

Practical testing of the arrangement using a signal generator, directional coupler and spectrum analyzer with the two brass tube coaxial cable ends terminated using two 100 ohm SMD resistors in parallel on each resulted in a Return Loss of 32 dB.

Return Loss is a term commonly used in industry to describe a RF match. A Return Loss of 32 dB means that the reverse or reflected power is 32dB lower than the forward power. As most amateurs are unable to measure Return Loss, VSWR measurements are often used. A Return Loss of 32 dB represents a VSWR of 1.05:1.

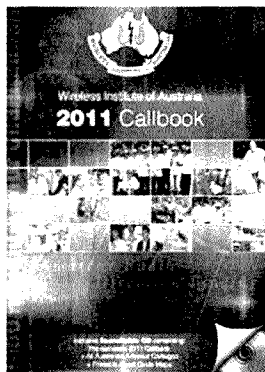
If you have access to coaxial hardline at the required impedance then this can be used with the length adjusted for the velocity factor of the cable.

I have built two of these units with almost identical results. **ar**

WIA Callbook 2011

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Amateur Radio Specialist

Look forward to hearing from you

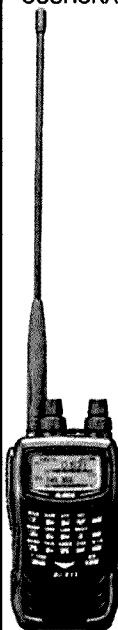


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Building a 50 ohm 150 watt RF dummy load

Roderick Wall VK3YU

Do you use a dummy load when testing your transmitters. Not only is it a good idea, it's a requirement of your licence to use one. Plus you don't want to cause interference on our bands. Here's a design that has good VSWR up to 500 MHz. It uses a Bourns™ 150 watt 50 ohm terminator chip, only 6 mm x 9 mm x 1 mm thick.

The need for a dummy load

I have a Yaesu FT-301 transceiver that I've owned since new. This transceiver, when introduced in 1976, was said to be the first solid state ham rig with a 100 watt output. My FT-301, after being in storage for many years, was put back into service with a SG-237 Smartuner and long wire. It has now been in use for around two years.

As the transceiver is now 33 years old, I decided that I should check the alignment to ensure that it was putting out a clean powerful signal.

First step was to download the user manual from the internet and print it. I decided to start with the carrier frequency adjustments. On reading the manual it says to inject a 1 kHz audio signal and to adjust the RF output to 50 watts. Then to inject a 300 Hz audio signal (same amplitude) and adjust the carrier frequencies for 12.5 watts output on each sideband.

The manual did not say to adjust the carrier frequencies to 8.9985 MHz for USB and 9.0015 MHz for LSB. This puzzled me so I placed the SSB filter onto the N2PK VNA (vector network analyser) and did an insertion loss trace to determine the filter's band pass shape.

My VNA software that drives the N2PK VNA has a matching tool that allows you to measure the filter at 50 ohm impedance, then to display the trace as if the filter was matched with 50 ohms.

Figure 1 shows that the centre frequency is not 9 MHz and that the carrier frequencies need to be set to suit each individual filter. This is why a power meter and not a frequency counter is used to adjust the carrier frequencies.

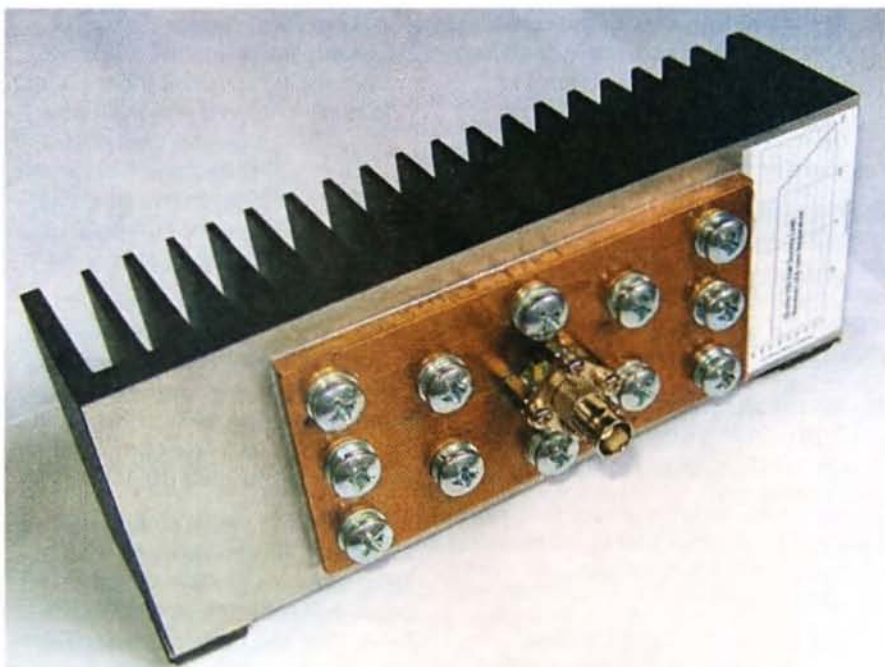


Photo 1: The 50 ohm 150 watt RF dummy load.

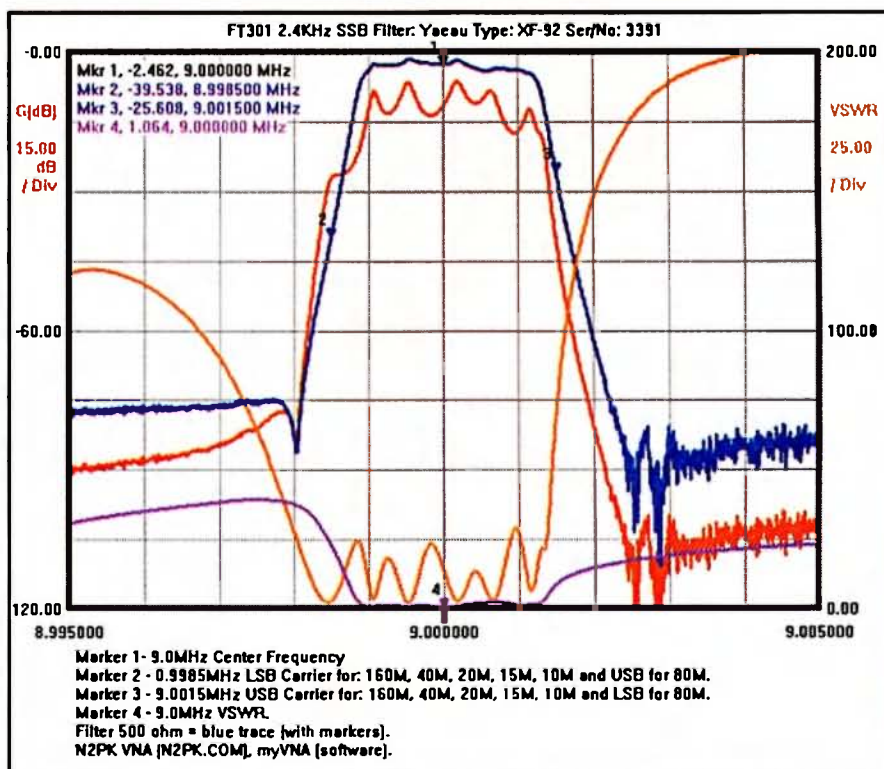


Figure 1: The FT-301 SSB filter trace.

I don't have a 50 ohm dummy load

Power measurements require a dummy load. Since I didn't have one, a hunt was on to source the parts to build a dummy load.

A search on the Farnell™ website found a Bourns™ 50 ohm 150 watt terminator 6 mm x 9 mm x 1 mm thick at a very reasonable price. Specifications were 150 Watts, DC to 3 GHz VSWR 1.2:1, +/- 5%. According to Bourns derating curve, it's able to dissipate 120% of rated power up to 100 °C, that is, 150 W x 120% = 180 watts. Farnell at that time were also shipping online orders free, so an order was placed. Refer Photo 2.

Flange and heat-sink

Now the fun had started. How was I going to dissipate 150 watts through a tiny 54 mm² area (6 mm x 9 mm) and into ambient air? Since copper is a much better heat conductor than an aluminium heat sink, then a flange has to be made from copper and have a large surface area, and be as thick as possible.

Peter VK3BPN gave me a piece of copper 120 mm x 60 mm x 6 mm thick. I didn't do any calculations. I decided that I would derate the power handling capability and/or duty cycle depending on the performance of the heat sink. Bourns specification indicates a roll off after 100 °C. I haven't tried it, but it may be possible to use a computer CPU cooler.

The Xigmatek HDT-S1283 CPU cooler has a thermal resistance of 0.16 °C/W. I decided to use a large heat sink, 0.55 °C/W, that I had purchased from Dick Smith™. A piece of copper as large as the heat sink would be better, but could not be found. A possible source of copper plate may be a scrap metal dealer.

While designing the flange, I also considered using water to cool the 50 ohm terminator. A small hose attached to a water tap and to a series of holes drilled into the flange is possible.

Making the copper flange

Marking the position for the resistor chip! The best position is in the middle of the flange as this is where total thermal resistance will be lowest. The flange also needs to be mounted onto the heat sink where thermal resistance is lowest, for my



Photo 2: A close up view of the copper flange.

heat sink this is in the middle. Mark the hole positions and drill the holes for the flange/heat sink M6 mounting screws. Tap the holes in the heat sink for M6 screws.

No measurements are given because your flange and heat sink may be different. I used twelve M6 screws to ensure the heat sink compound is as thin as possible to reduce its thermal resistance. You may want to position the holes between the fins of the heat sink. This will then allow you to drill through the heat sink and to use a taper tap. I found that the bottoming (plug) tap I used didn't cut very well in aluminium as it kept clogging up. Hint, use tapping compound or if none to hand, grease or oil at a pinch.

First try assembling the resistor chip onto the flange

The copper flange was placed onto an electric hotplate and heated to allow the flange surface to be tinned. I then placed the resistor chip onto the flange. While the flange was cooling down, a screwdriver was used to push the chip onto the flange. The solder between the flange and chip should be as thin as possible to reduce thermal resistance.

Four M3 holes were tapped into the flange for standoffs to mount the BNC connector. The next step was to solder the centre pin of the BNC connector onto the top pad of the resistor chip. But this is where I struck a problem. I couldn't get the top pad hot enough because the heat was being conducted through the chip body into the copper flange. That's good because when the chip is dissipating 150 watts you want it to be conducted into the flange and on to the heat-sink. But I needed to first make a connection.

Change the assembly procedure

There's only one answer to this problem. Due to the resistor chip body being a good thermal conductor, both connections would have to be reflow soldered at the same time. It's not possible to do them one at a time.

If you solder the wire onto the top pad, the heat will run through the chip body into the copper flange. If you solder the chip resistor onto the flange, the top connection will get hot and fall off. The solution is a spring loaded fixture that holds both connections to allow them to

be reflow soldered at the same time. Figure 2 shows a fixture holding the two top wires onto the resistor chip, and the resistor chip onto the flange.

Referring to Figure 3, a 6 mm x 9 mm piece of vero board is used as a clamp to hold the two wires onto

the top pad of the resistor chip. Use a triangle file to file a vee slot into the vero board for the wires. The slot should not be too deep, as the wires must not be loose while being reflow soldered. A spring and slotted cheese head screw holds the parts together while reflow soldering takes place.

Tightly twist the strands and tin the ends of two wires as in Figure 4. Pliers were used as a heat sink to stop the solder from flowing up the multi strand wire. The multi strand wire between the resistor chip and BNC connector must be free from solder and must be flexible. Warning! If the wire is stiff, it's easy to pull the top pad off the resistor chip. Be careful, the pad appears to be the weakest point on the resistor chip. How do I know, because I now have a resistor chip with a missing top pad!

When the flange has been tinned for the resistor chip, assemble the wires and resistor in the fixture. Place the flange onto an electric hot plate. Heat the flange until the parts are reflow soldered. Wait for the flange to cool and remove the fixture. Be careful when removing the vero board from the wires, you don't want to pull the top pad off. Make sure the wire hole in the vero board is large enough for the wires to easily slide through.

Connecting the BNC connector

To make room for the wires between the connections, I shortened the insulator and centre pin on the back side of the BNC connector. Then add the standoffs and mount the BNC connector. Solder the two parallel wires onto the centre pin of the connector. Use pliers as a heat sink to stop the solder from flowing down into the multi strand wires. Because there isn't much room under the connector, I used a rubber band on the handles of the pliers to clamp the wires while soldering the connection.

Final assembly

The base of the copper flange should be flat and free of burrs. Clean the base with Brasso™ before coating it with silicon heat transfer compound. With a spring washer and flat washer on each M6 screw, mount the flange onto the heat sink.

For maximum heat sink efficiency, the heat sink fins should be vertical and clear of the top of the workbench. Attach four stick-on rubber feet to allow this. I also attached a derating curve to remind me to derate the power/duty cycle above 100°C. Copy the label from Figure 5 or download from the WIA website, refer to the URL link listed below. I used clear book covering to protect and hold the label.

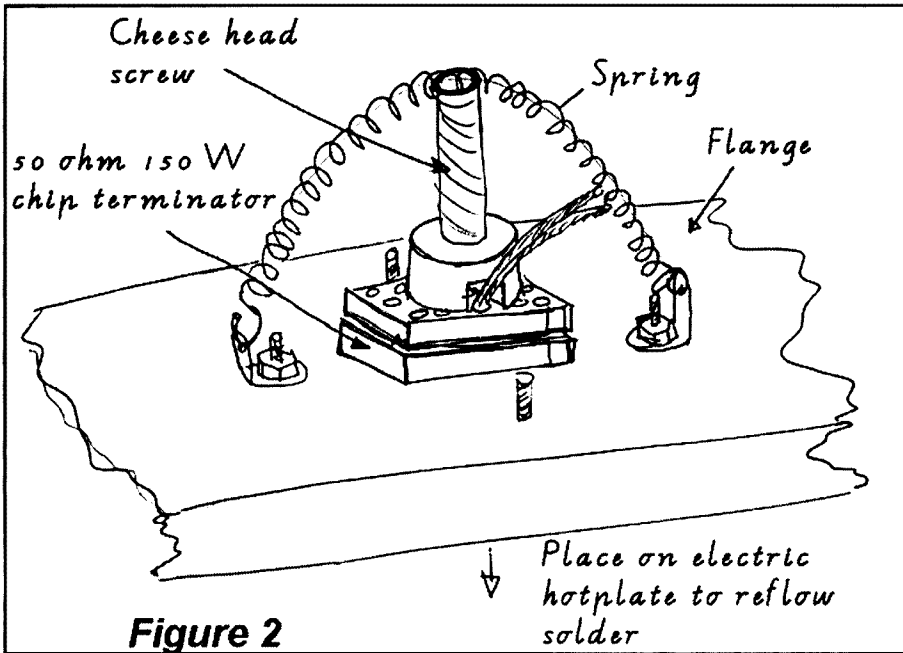


Figure 2: The soldering fixture.

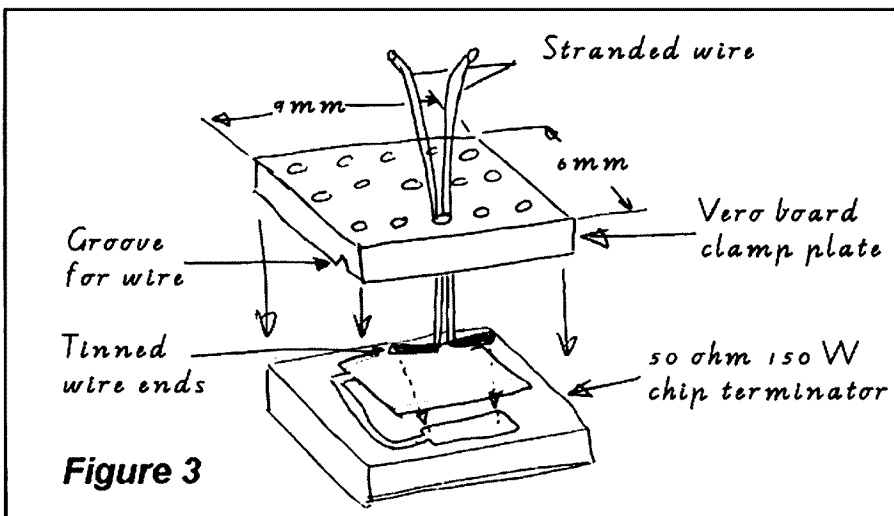


Figure 3: The vero board top clamp.

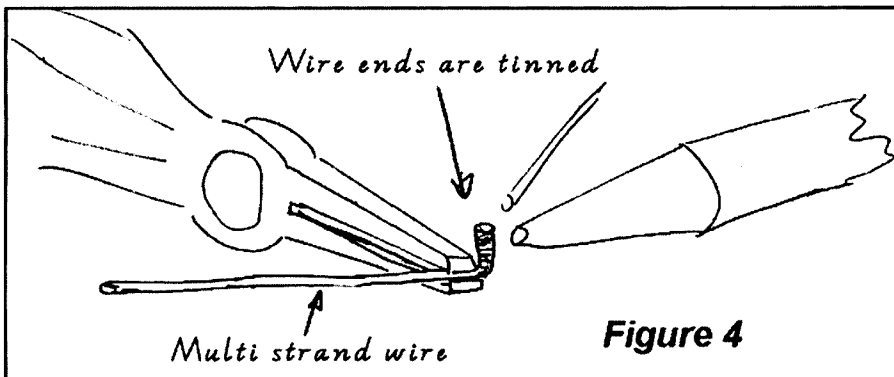


Figure 4: Tinning the wires.

Performance

Glenn VK3PE was kind enough to use a HP8753C VNA to measure the return loss, and the results are shown in the graph - refer Figure 6.

Frequency	VSWR	Frequency	VSWR
Below 50 MHz	1.01:1	500 MHz	1.07:1
100 MHz	1.02:1	1 GHz	1.16:1
200 MHz	1.03:1	2 GHz	1.39:1
300 MHz	1.04:1	3 GHz	1.85:1

Bourns specify the resistor chip as 1.2:1 VSWR at 3 GHz. High frequency return loss can be improved if the connector is mounted as shown in Figure 7. Bourns also have a 100 watt version that is specified as 1.1:1 VSWR at 5GHz.

Determining maximum continuous power rating

Maximum continuous power rating depends on: (1) Ambient temperature (T_{amb}), (2) Thermal resistance between the resistor chip case and ambient air ($R_{\theta CA}$ in $^{\circ}C/W$), (3) Resistor chip maximum temperature (T_{Cmax}), (4) and, of course, it can't be above the maximum power rating of the resistor chip. Interesting in that thermal resistance is similar to series connected resistors. Total thermal resistance is the sum of the series connected thermal resistance.

$R_{\theta CA} = R_{\theta CF} + R_{\theta FH} + R_{\theta HA}$
Also refer to the 'Thermal Resistance' URL links below.

Thermal resistance between the resistor chip case (T_c) and ambient temperature (T_{amb}) must first be determined. A test was done by dissipating 36 watts in the dummy load and then measuring both T_c and T_{amb} when the case temperature has stabilised.

I started at 9 watts and increased the power until the case temperature was 88 $^{\circ}$ C; do not go over 100 $^{\circ}$ C. Ideally this test should be as close to 100 $^{\circ}$ C as possible and with ambient temperature as high as possible.

My results were:

Power Watts	Ambient Temperature	Resistor case Temperature	Thermal Resistance
9W	23 $^{\circ}$ C	35 $^{\circ}$ C	1.33 $^{\circ}$ C/W
20 ¼ W	23 $^{\circ}$ C	52 $^{\circ}$ C	1.43 $^{\circ}$ C/W
36W	23 $^{\circ}$ C	88 $^{\circ}$ C	1.80 $^{\circ}$ C/W

Using the following formula, thermal resistance is calculated.

$$R_{\theta CA} (^{\circ}C/W) = \frac{T_c - T_{amb}}{Q} = \frac{88^{\circ}C - 23^{\circ}C}{36W} = 1.8^{\circ}C/W$$

For 36 Watts when ambient temperature is 23 $^{\circ}$ C, thermal resistance is: 1.8 $^{\circ}$ C/W between resistor chip case and ambient air.

A rough guide can be obtained for other ambient temperatures by using the following formula.

Maximum continuous power dissipation if ambient temperature is 25 $^{\circ}$ C:

$$\text{Continuous } Q \text{ (in watts): } Q = \frac{T_{max} - T_{amb}}{R_{\theta CA}} = \frac{100^{\circ}C - 25^{\circ}C}{1.8^{\circ}C/W} = 41W$$

Continues over page

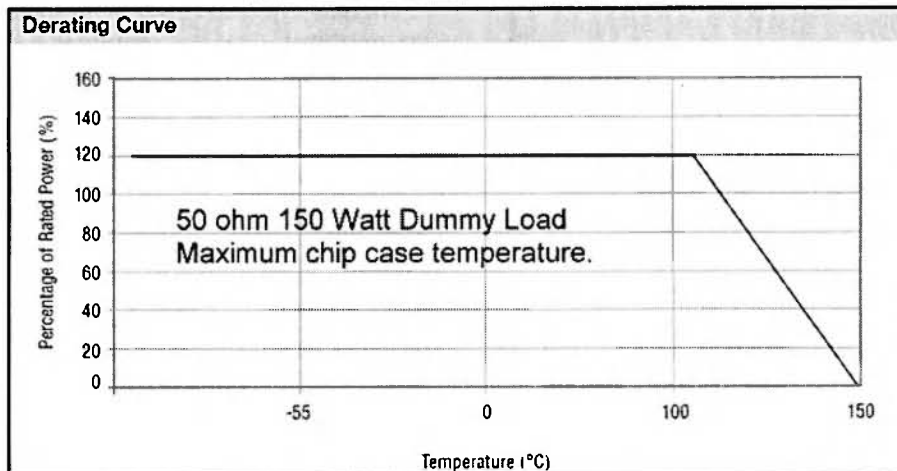


Figure 5: The derating curve label.

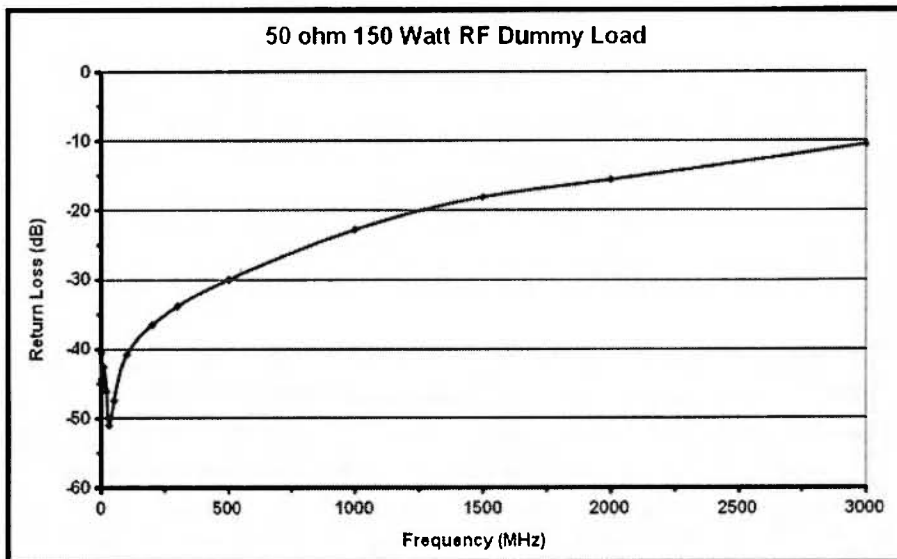


Figure 6: The return loss graph.



Figure 7: Bourns S-Parameter test fixture.

Note, only use this as a guide. Because thermal resistance increases when the temperature difference between ambient and resistor chip maximum rating (100° C) gets less. As shown in the above table, thermal resistance also increases with increased power.

I don't have an environment chamber to do tests for different power levels and ambient temperatures. Warning! you need to make sure the resistor chip temperature never exceeds 100° C.

Heat sink efficiency also depends on what the air movement is around the heat sink. Adding a fan will reduce thermal resistance and increase the maximum continuous power dissipation rating.

I did a series of calculations for different ambient temperatures. A text editor was then used to generate a stick-on table that gives a guide for maximum continuous power dissipation for different ambient temperatures. See table below.

Maximum power dissipation can be higher than 41 watts if the ON duty cycle is less than continuous. If the duty

cycle is 50% ON and 50% OFF then power dissipation can be increased to 82 watts. Further, if the duty cycle is 25% ON and 75% OFF, then the full power of 150 W can be dissipated.

Maximum continuous power dissipation is perhaps misleading. Because 150 watts can be dissipated for short ON duty cycles, you only need to ensure the resistor chip case never exceeds 100°C.

I have only ever used my dummy load for low duty test cycles. I found that I can dissipate 100 watts, do any tuning as required, switch off and the heat sink only got warm.

Of course your thermal resistance calculations will be different as your flange/heat sink will not be the same.

Power measurement

The dummy load has been built, but I need to do power measurements. Since I was only going to use it for HF from 1 MHz to 30 MHz. I used an oscilloscope and calculator to measure the power.

The oscilloscope 10 x probe was connected to the BNC centre pin, not to the pad of the resistor chip as I

didn't want to pull the pad off!

$$P(\text{Watts}) = \frac{V_{peak}^2}{2R} = \frac{V_{pk.to.pk}^2}{8R}$$

For power calculations, I use a freeware program called Mini dB-Calculator. It can be downloaded from Softpedia's website. Softpedia's URL is listed below. Mini dB-Calculator is handy as it's also able to do other types of RF calculations.

References

Derating curve label: <http://www.wia.org.au/members/armag/2010/december>

*Bourns 50 ohm 150 W resistor chip: Now available from <http://au.mouser.com/>

Thermal resistance: http://en.wikipedia.org/wiki/Thermal_resistance_in_electronics

Thermal calculators: <http://www.novelconceptsinc.com/>

Mini dB-Calculator: <http://www.softpedia.com/get/Science-CAD/mini-dB-Calculator.shtml>

CPU cooler: <http://www.xigmatek.com>

N2PK VNA: <http://n2pk.com> **ar**

Maximum Continuous Power Dissipation								VK3YC	
Watt	55	52	50	47	44	41	38	36	33
Ambient Temperature	0° C	5° C	10° C	15° C	20° C	25° C	30° C	35° C	40° C

BILL OF MATERIALS

Reference	Part No	Quantity	Purchased from/Comments
R1, 50 Ω 150 W	Bourns CHF3523CNT500LW	1	*Farnell - S/N1435944
Flange	Copper 120 mm x 60 mm x 6 mm	1	Or a size to fit your heat sink
Heat sink	0.55 °C/W 200 mm x 75 mm x 48 mm	1	Dick Smith Cat: H 3406
	Silicon heat transfer compound		Dick Smith Cat: N 1205
	Multi strand copper wire	40 mm	Around 0.5 mm diameter
BNC connector	BNC panel mount connector	1	Or your favourite connector
Connector mount	Metal spacers M3 x 10 mm long	4	
Connector mount	M3 screw 5 mm long	8	Cut the head off four screws
Connector mount	M3 flat washer	4	
Connector mount	M3 spring washer	4	
Flange/Heat sink	M6 screws (length to suite)	12	
Flange/Heat sink	M6 flat washer	12	
Flange/Heat sink	M6 spring washer	12	
	Derating curve label	1	Copy Figure 5, or WIA website
Feet	Self-adhesive rubber feet	4	Dick Smith Cat: H1745
Fixture - soldering			Refer to text

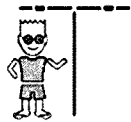


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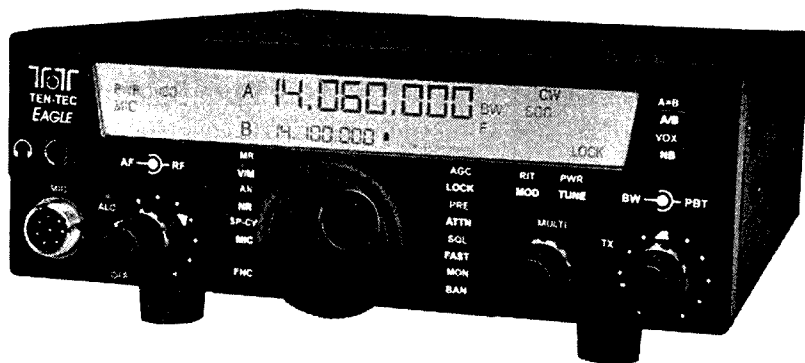
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Centre Victoria RadioFest No. 4

Sunday 13 February - Kyneton Racecourse

THE BIGGEST RADIO EVENT IN VICTORIA

Much more than a place to pick up a bargain, but you can certainly do that in the Traders Hall supported by all the major traders or at the second-hand market place.

'Socialise, see, learn and enjoy' a family friendly event where you can have picnic and relax.



Check out this great program

- ✓ The DX0DX Team Leader Chris Dimitrijevic VK3FY - DU8/VK3FY will give an exclusive insight into the planning, deployment and outcome of this major DXpedition.
- ✓ Optical (light beam) Communications has come a long way through a small number of Australians exploring technology and techniques including over the horizon and cloud bounce. Rex Moncur VK7MO will speak on the subject.
- ✓ The 8th IARU Region 3 Amateur Radio Direction Finding Championships will be held near Bendigo 23-28 September 2011. To tell us all about it and how volunteers can assist will be Jack Bramham VK3WWW the WIA ARDF Coordinator.

DISPLAYS AND ACTIVITIES

- Emergency communications at the ready
- Scout radio display
- Historical radio on show
- F-Troop photo call of Foundation licensees
- Bendigo District Astronomical Society
- CQ Awards QSL checking with VK3PA

More details listen to the VK1WIA broadcast or check out the website

Second-hand market and car-boot sales
Bookings of tables and car-boot space close soon. These are low cost and include one entry ticket. An application form and conditions on the website (see below) or contact Tony Hambling VK3VTH 0423 635 152

Catering: Hot and cold food and drinks will be catered by the Kyneton CFA Auxiliary. Hot breakfast is available from 9am. Free tea and coffee available all day. Or bring your own lunch to enjoy in picnic style.

Entry tickets \$10: On sale from 9am with the gates opening at 10am. Free entry to children aged under 13. No pets or alcohol. The venue is mostly under cover suited for all weather.

Door prizes: Entry tickets will be drawn for the winners of available door 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

Website: radiofest.amateurradio.com.au

Don't miss this major event and great social occasion for everyone with an interest in radio communications. Ready to help you maximise your participation are volunteers from **Amateur Radio Victoria** and the **Central Goldfields Amateur Radio Club**.

The program advertised reflects what is proposed at this time and may be subject to change.

SmartAds (03) 9802 5926



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.

Four directors retire at the conclusion of the next Annual General Meeting which will be held at Darwin N.T. on the 28th May 2011, namely Michael John Owen, Peter Richard Young, Ewan Ross McLeod and Philip Rex Adams. Each is eligible for re-election and Michael John Owen, Peter Richard Young, Ewan Ross McLeod and Philip Rex Adams have offered themselves for re-election to four of 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 31 January 2011:

A statement signed by the candidate signifying his or her willingness to be a candidate for election as a director together with;

the full name, age, occupation and callsign of the candidate, and

such other biographical details or other information as the candidate wishes to accompany the ballot papers, but in all not exceeding 250 words.

Delivery to the Returning Officer may be made by hand when the WIA national office is open at:

Unit 20
11-13 Havelock Road
Bayswater
Victoria 3153

or by mail to:
PO Box 2042
Bayswater
Victoria 3153.

Nominations received by facsimile or by electronic means cannot be accepted.

Chris Chapman VK3QB
Returning Officer

STOP PRESS



You only have until 30 January 2011
to claim your WIA Centenary Award
Certificate.

Full details on website.

TET-EMTRON

News Flash!

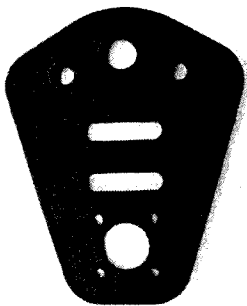
OPEN DAY

TET-Emtron in conjunction with Tower Communications is having an open day on Sunday, 23rd January 2011. On display will be a variety of antennas, home brew parts and HF gear. We will have different radios hooked to different antennas for trial.

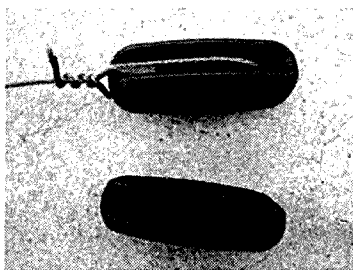
It is hoped the new ICOM 9100 will be released before hand and be available on the day.

A sausage sizzle and tea and coffee are provided free, and soft drinks are available. Shed is air conditioned.

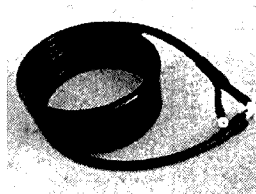
Doors open at 10.00 am, and close when you all go home. Anybody interested in radio is welcome.



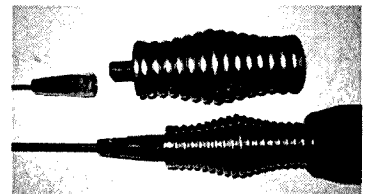
Dipole centres



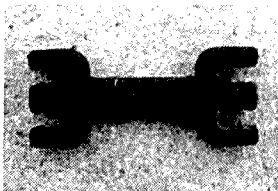
Insulators



HF chokes



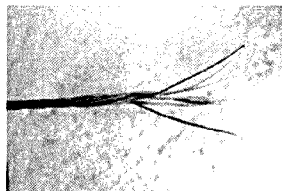
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A simple wire separating technique for coaxial cable

Dr Hank Prunckun VK5JAZ

Problem

There are many situations where one needs to connect a length of coaxial cable to a device without the aid of either an SO-238 socket or a PL-259 plug. Wire antennas immediately spring to mind as an example. For instance, half-wave dipoles sometimes require the amateur radio engineer to separate the cable's earth braid from its centre conductor and connect each to the respective wire element of the antenna. Many technical drawings show this procedure, see Figure 1, but it is not easy to achieve this result if one has not had the advantage of seeing it performed.

When one looks at an unterminated end of a 'coax' cable it is not immediately apparent how one goes about doing this – how does one divide two wires when one is inside the other, as seen in Figure 2.

Context

Coaxial cable consists of a wire conductor at its centre, a circumferential outer conductor (usually braided wire) and an insulator (the dielectric) that separates these two wires. The outer conductor is protected by a weather-proof PVC sheath. This is how the majority of RG-213 and RG-58 cables are constructed. With low-loss cables (such as LMR-400) there is an additional outer shield in the form of metallic foil. This foil is wrapped tightly around the dielectric and the earth braid is snugly draped over it to form a secondary screen. In the main, this is how it achieves its low-loss properties.

Equipment

Only two pieces of workshop equipment are required to perform this procedure: (1) a set of handheld wire strippers; and (2) a tool with a long shank and slender tip, such as an awl.

Method

The simplest way to address the problem is to strip the weather-proof PVC insulation and unbraided the earth shield to the point where separation is required (that is, the desired length of wire 'lead'), then twist the braided lead so that it forms a single wire. In order to do this, the braid needs to be unpicked.

Unpicking the braid can be done using a tool with a sharp point (for instance, any instrument for making holes in leather or fabric will do). The braid is unravelled as shown in Figure 3. This is done by unravelling the braid strand-by-strand – first one side, then the opposite, alternating back-and-forth until the desired length is reached as shown in Figure 4.

At this stage it is advisable to strip a few centimetres more than what is required as it is always an option to trim the

excess by cutting - it is much harder to extend the lengths once the procedure has been completed.

The centre conductor is now left exposed and can have its dielectric insulator stripped. If low-loss cable is being used, the foil-screen is removed along with the dielectric. It is a good idea to leave a short length of insulation extending beyond the point where the earth braid has been separated so that it helps prevent inadvertent shorting of the two wires, as shown in Figure 5. Depending on the cable's use, additional insulating and/or weather-proofing precautions can be incorporated into the final configuration.

The final step is to twist the wire braid into a single strand ready for connecting to the intended device. Refer Figure 6.

Result

There may be other methods of separating the two wires that comprise a coaxial cable but the technique described here is not only simple but effective. The whole procedure can be accomplished in ten minutes or less using only wire strippers and a sharp pointed implement. **ar**

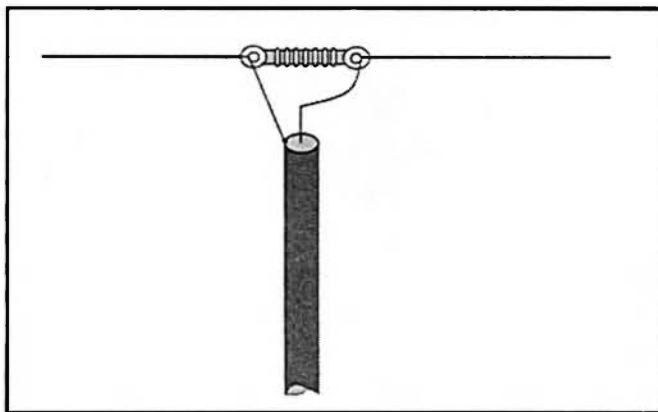


Figure 1.

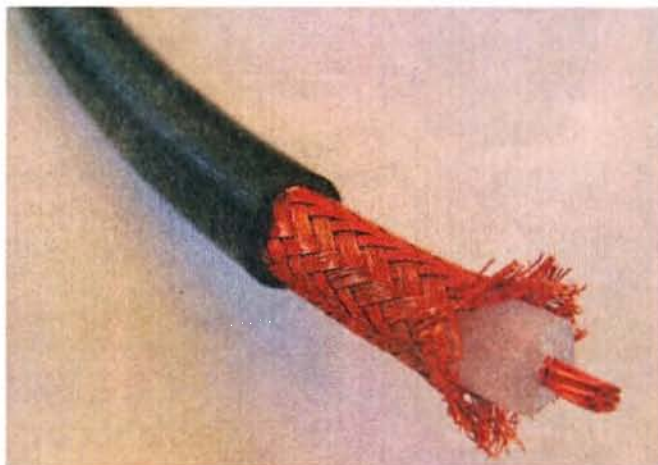


Figure 2.

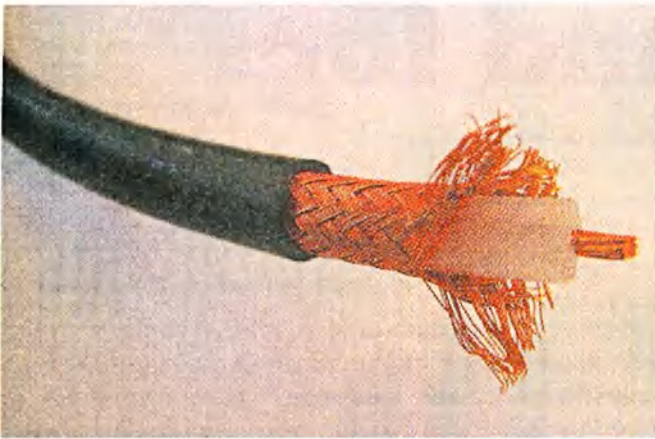


Figure 3.

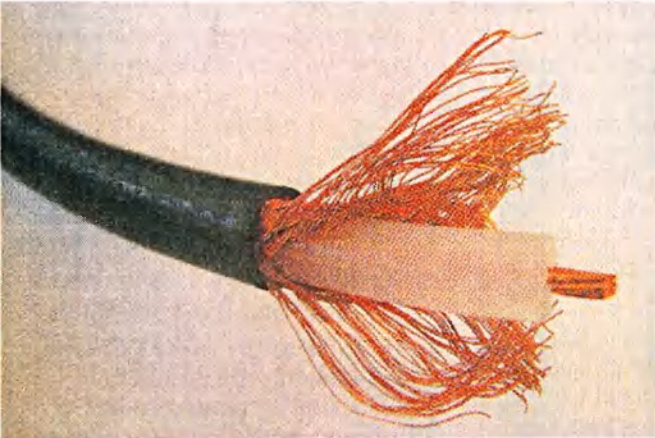


Figure 4.

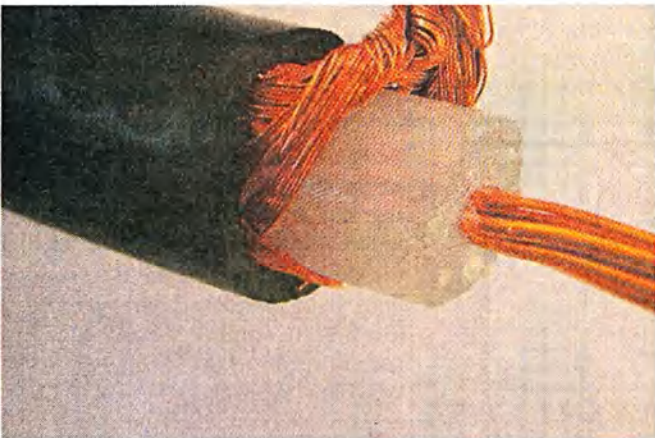


Figure 5.

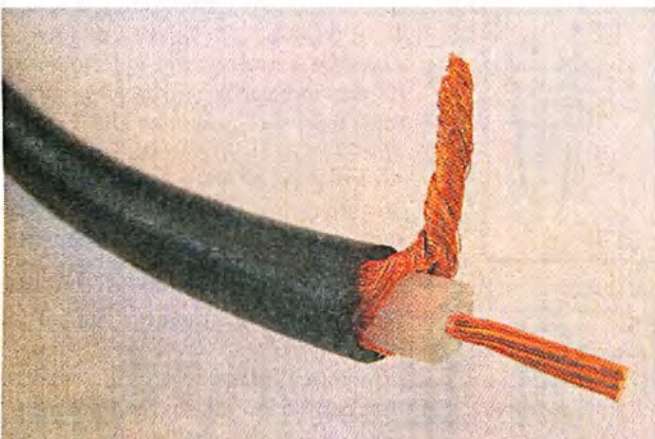


Figure 6.

ELECTRONICS ONE-STOP-SHOP

DAB+ FM Hi-Fi Component Tuner

There are very few digital radios available as hi-fi components and the few that are, cost north of \$700. Many hi-fi enthusiasts want to add a digital tuner to their system and want function and sound quality over bells and whistles. It covers DAB+ and FM, has analogue and optical audio outputs, IR remote (optional extra), an external antenna connector and is powered by a low-cost mains plugpack. The kit is complete with everything, including the case. See website for full specs.

- Digital station info display
- RCA and optical audio output
- External antenna connection
- Station memory presets
- Requires mains plugpack



\$399 00

KC-5491



Ultrasonic Antifouling Kit

Build it yourself!

Many of you know that you can buy \$3-8,000 imported marine growth electronic antifouling systems. Jaycar, with Silicon Chip have developed a similar system based on this technology and information in the public domain. This project uses the same ultrasonic waveforms and virtually identical ultrasonic transducers mounted in sturdy polyurethane housings. By building yourself (which includes some potting) you save a fortune! Standard unit consists of control electronic kit and case, ultrasonic transducer, potting and gluing components and housings. Research reveals only one transducer is needed for boats under 32ft. Basically all parts supplied in the project kit including wiring.

- 12VDC
- Suitable for power or sail
- Could be powered by a solar panel/wind generator
- Price includes epoxies

\$249 00

KC-5498



Environment Meter with DMM

A multi-function unit that combines the functions of a sound level meter, light meter, humidity meter and temperature meter. Typical sound applications include checking acoustics of recording studios, auditoriums and professional hi-fi installations.

- 4000 count
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- Dimensions: 170(H) x 78(W) x 48(D)mm

\$129 00

QM-1594

Includes full functioning digital multimeter!



Soldering Tool Kit



\$159 00

This quality Portasol Super Pro gas soldering kit features an adjustable tip temperature up to 580°C and ignition is achieved by the internal piezo crystal mechanism. Run-time is around 2 hours on a 30 second refill. The protective end cap also acts as a safety gas shut off when replaced. The kit includes:

- 2.4mm double flat tip
- 4.8mm double flat tip
- Hot knife tip and air deflector

TS-1328

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The best band for optical DX

Paul Edwards VK7ZAS

paule2@bigpond.com

Australian amateurs have taken a leading role in innovative lightwave communications, most recently with the successful development of forward scatter over-the-horizon 'cloud bounce' communication over world record distances of hundreds of kilometres. Depending on the availability of suitable hardware, a move from the visible to the near infrared band would provide increased DX capability and aviation-safe operation at visual glare-free wavelengths.

Introduction

About fifty years ago I wrote an article for AR titled 'The Best Band for VHF' (1). The present article takes another look for the best band from a theoretical standpoint, this time at optical wavelengths. Recent examples of Australian optical DX include the 167 km line-of-sight distance record (2) of 2005, and the 288 km over-the-horizon record crossing of Bass Strait (3, 4) in 2009.

Lightwave communication through the atmosphere is restricted to narrow wavelength 'windows' through which the air is transparent. Figure 1 shows how, apart from the dips in transmittance due to molecular absorption, atmospheric

transparency increases with wavelength in the visible and near infrared (NIR) bands. The visible window, from 0.4 to 0.7 micrometres (μm) wavelength, is closed at the shortwave ultraviolet end by ozone absorption. The NIR window, from 0.7 to 1.4 μm , is closed at the longwave infrared end by water vapour absorption.

What is the best choice of laser or led wavelength for optical DX? Is it in the red, 0.63 μm , recently used by a VK7 group to cross Bass Strait in forward scatter mode (3); in the infrared where atmospheric losses are least and where eye-safe (5) and aviation-safe (6) operation is more easily achieved at high power levels,

or at the blue end where large area detectors such as photomultipliers perform best? To answer this question, we look at the basic theory of three optical DX modes available to amateurs, earth-satellite to ground, atmospheric forward scatter 'cloud-bounce' and mountain to mountain line-of-sight.

The 'Best' band

The 'best' band usually means the wavelength(s) that will enable successful DX contacts over the longest possible distance. It will generally be the band that delivers the highest signal to noise ratio (SNR) at any given distance. In the limit of very weak signals the best band will allow us to exchange the minimum number of bits needed for a QSO in the shortest time with an acceptable error rate. To date, aviation safety regulations and high attenuation, typically more than 140 dB at 300 km for cloud-bounce contacts in red light, have mandated narrow band low bit rate computer-controlled communication protocols such as WSJT and WSC (3, 4). However CW and phone contacts should also be possible at longer wavelengths, as I shall show.

To find the best band we need to examine how each of the following parameters varies with wavelength: (a) Transmitter power or EIRP (= Power x Gain), whichever applies; (b) Air loss; (c) Detector response; (d) System noise (= receiver noise + sky noise + signal noise).

Eye-safe and aviation-safe beams

Strict regulations limit the optical power density in watts of radiated power per square metre of beam area that can be launched by a lightwave transmitter. These wavelength-dependent limits are set by eye-

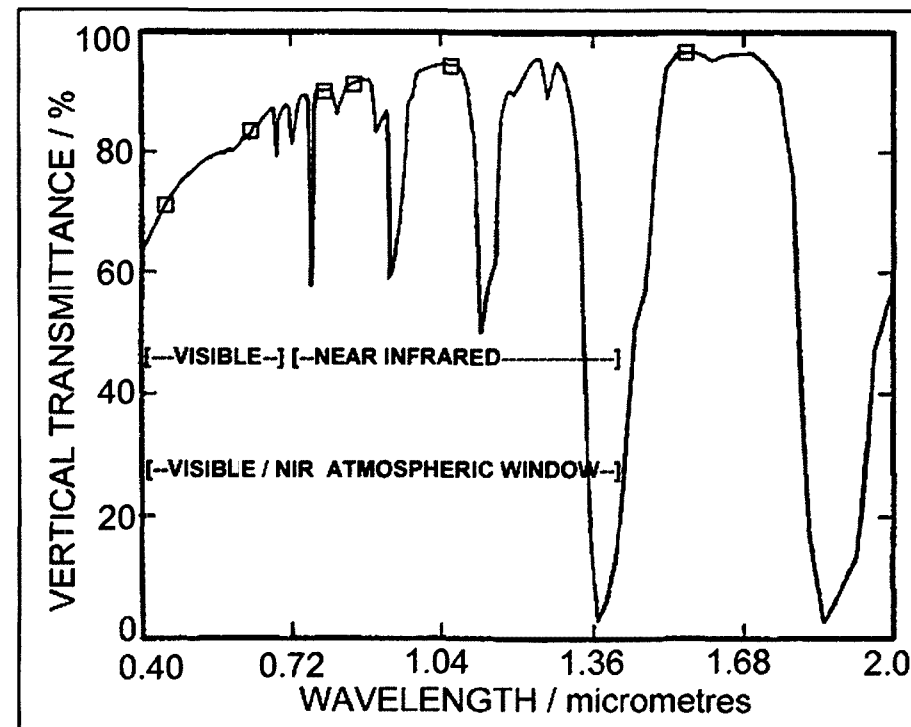


Figure 1: Light transmittance from an overhead satellite through clear air to a receiver at mountain altitude. Notice the increasing transparency at laser/led emission wavelengths of 0.45, 0.63, 0.78, 0.85, 1.06 and 1.55 μm (marked by a \square) towards the infrared end of the atmospheric window.

safety standards (5) and by aviation safety regulations (6). For a laser, the 'eye-safe' power density, that is, the maximum permissible exposure (MPE) to which the eye can be safely and continuously exposed, is no more than 10 W/square metre (m²) within the visible wavelength range, rising to about 15 W/m² at 0.85 µm, 50 W/m² at 1.06 µm and higher values at longer wavelengths. Visible light emitters are subject to additional more stringent national and regional aviation safety regulations covering navigable air space. In a laser-beam sensitive flight zone (LSFZ) (6) in Australia, this limit is only 1 W/square metre for visible light, 10 dB lower than the MPE for visible wavelengths. This tighter limit is designed to protect aircrew against glare and flash-blindness in the vicinity of an airport. At wavelengths longer than about 0.75 µm (750 nm), visual glare is unlikely to be a hazard but eye health and safety limits continue to apply and protective safety glasses should be worn as the 'blink' protection at visible wavelengths is no longer available.

From the numbers above, conservative estimates for safe continuous exposure permit 17 dB more launch power density at 1064 nm than at visible wavelengths in sensitive flight zones (LSFZ), and 7 dB more in normal flight zones where the usual eye safety standards still apply. These limits also apply to transmitter power and EIRP so they will directly affect the SNR budget.

Air loss

Table 1 shows that this increased transparency, although small for an overhead satellite, translates to a very large reduction in air loss over long horizontal line-of-sight and cloud-bounce paths. The loss rates,

which have been derived from data in reference 7 and other more recent sources, are indicative only because of the wide variability in transparency due to dust and water vapour. The recent VK7 and VK7/VK3 cloud-bounce contacts (3, 4) at 630 nm are consistent with the tabled rate of 0.1 dB/km.

Detector response

The response of a lightwave detector, measured in microamps of signal current per microwatt of optical power normally increases with wavelength. Unfortunately, the efficiency of lightwave detectors

eventually drops off at longer wavelengths. This is particularly noticeable for photomultiplier tubes which have low efficiencies for red light. Silicon photodiode detectors have much higher efficiency, approaching 100% at peak, but start to fail around 1 µm, even when specially enhanced at the NIR end of the spectrum, as in Figure 2.

The legend on the vertical axis of Figure 2 illustrates an important difference between radio and optical links: the optical signal power converts to an electrical current (or voltage), not to an electrical

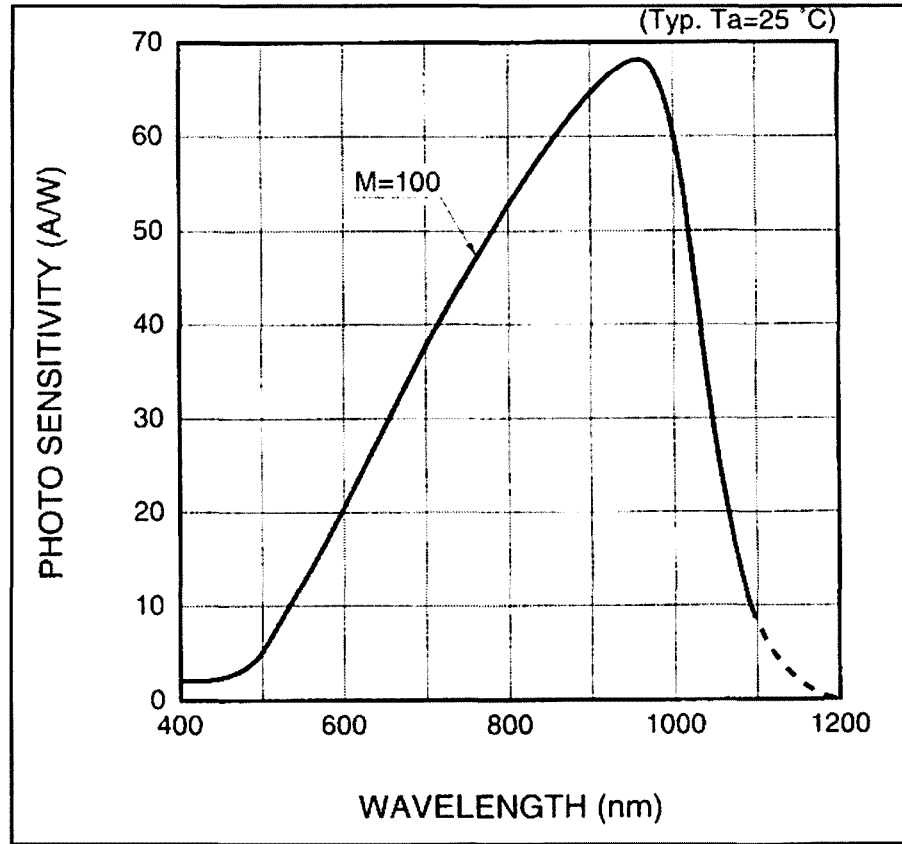


Figure 2. Spectral response (8) of a state-of-the-art NIR-enhanced APD (Hamamatsu S8890 series) showing how signal current varies with wavelength for fixed optical power.

Wavelength/nm	450 (Blue)	630 (Red)	780 (NIR)	850 (NIR)	1064 (NIR)	Calculated for:
Exceptionally clear air loss /dB. ⁷	4.7	2.5	1.4	1.1	0.64	Satellite to ground down link, 19.5 deg elevation.
Exceptionally clear air loss rate, dB/km.	0.18	0.10	0.055	0.042	0.025	High altitude cirrus cloud-bounce.
Exceptionally clear air path loss / dB for high cloud-bounce.	72	40	22	17	10	Exceptionally clear air over 400 km cloud bounce path.
Clear air loss rate, dB/km for elevated line of sight.	0.35	0.23	0.18	0.16	0.13	Clear air line-of-sight at mountain altitudes.
Clear air path loss /dB for mountain altitude line-of-sight.	87.5	57.5	45	40	32.5	Clear air mountain altitude 250 km line-of-sight path.

Table 1: Indicative clear air loss rates in optical dB/km and the corresponding path losses, showing the smaller air losses due to increased atmospheric transparency at longer laser/LED wavelengths.

power as you might expect. This is because lightwave detectors, unlike radio antennas, are 'square-law' transducers. In practice this means that every 'optical' dB of gain (or loss) in Table 1 and Figures 1 and 2, results in a change of 2 dB in the electrical signal and therefore also in the SNR for weak signals.

Signal to Noise Ratio

Noise forms the bottom line of all signal to noise ratio calculations, so if the system noise is band independent then the optimum wavelength will provide the greatest received signal power. This is the basis for using the formula below to calculate the change in SNR with wavelength:

$$\Delta \text{SNR} / \text{dB} = 2 P - 2 L + 2 R$$

This formula applies for a fixed noise level, independent of wavelength, where P = launch power (or EIRP, whichever applies) in dBW, subject to any band dependence imposed by technology and safety regulations, L =

air loss in optical dB and R = detector responsivity in optical dB.

Optical system noise consists of shot noise from the signal, the sky, and the receiver. We can usually neglect signal noise for weak DX signals, so the total system noise will be fixed if either (a) no selective optical filter is used at the receiver, or (b) the receiver noise swamps the sky noise.

Sky noise varies with wavelength in the same way as the sky brightness but, unlike the daytime sky, the night sky is brightest and noisiest at the infrared end of the spectrum (7).

The effect of night sky noise on the best band is illustrated in Table 2 and Figure 3 for a satellite downlink. Two cases are tabled, one for a fixed noise floor, the other for a noise floor set by filtered sky noise. In this latter case the night sky noise (7) in dB has been subtracted to give the SNR variation with wavelength. Actual noise and SNR values depend on factors such as detector area and field of view, bandwidth, and modulation method.

1550 nm has been excluded from the table as a noisier detector is required at this wavelength.

Satellite to Ground

Table 2 shows the weak signal SNR variation across the window for fixed EIRP. With no sky filter, or for a system limited by receiver noise, there is a large increase (35 dB) in SNR in moving from the blue to the optimum wavelength (850 nm). When optically filtered night sky noise is subtracted from the electrical signal the NIR band remains optimum although the variation across the window is now much less. Figure 3 shows both these cases.

Cloud Bounce

The current state of the cloud bounce art achieves a SNR of -30 dB in 2500 Hz bandwidth with an unfiltered silicon APD/FET receiver (3, 4) over a distance of 288 km in red light at 630 nm. No significant wavelength dependence of the cloud scatter gain is expected for high level cirrus cloud although this remains to be explored (9). According to Table 2, eyesafe and LSFZ compliant operation at 1064 nm could raise the SNR by as much as 93 dB over 400 km, providing suitable hardware is available. Table 1 gives an increase of 77 dB at 300 km, resulting in a SNR of +47 dB at 1064 nm, sufficient to give a readable cloud-bounce phone signal over 300 km. For fixed radiated power the SNR increases by about 60 dB at 400 km and more than 40 dB at 300 km, so an alternative (QRP) strategy would be to transmit in the NIR band at reduced power. This could provide unconditionally eye-safe low bit rate signals at a fraction of a watt with a range of 300 km or more.

Line-of-Sight

Narrow beam line-of-sight (LOS) DX through the lower atmosphere, even at mountain altitudes, is subject to

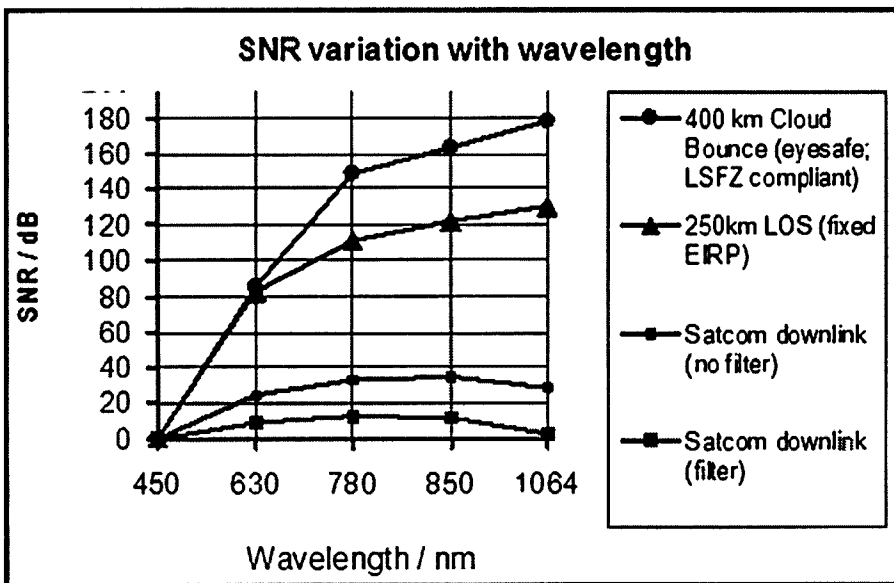


Figure 3: Indicative changes in SNR across the atmospheric window for three optical DX modes at five laser/lcd wavelengths.

Wavelength/ nm	450 (Blue)	630 (Red)	780 (NIR)	850 (NIR)	1060 (NIR)	Calculated for:
SNR / dB	0	25	33	35	28	Satellite downlink: 19.5deg elevation; no sky filter; fixed EIRP.
SNR / dB,	0	9	13	12	3	Satellite downlink: 19.5 deg elevation; sky filter; fixed EIRP.
SNR / dB	0	85	149	163	178	400 km eyesafe & LSFZ - compliant cloud bounce array; no sky filter.
SNR / dB	0	83	111	122	130	250 km LOS mountain altitude, fixed EIRP; no sky filter.

Table 2: Indicative SNR variation with wavelength for three optical DX modes in clear air. All results have been referenced to blue light by subtracting off the blue (450 nm) SNR values.

highly variable scattering by aerosols and absorption by water vapour. This leads to heavy air losses over a 250 km path with a huge variation in SNR over the window, as for cloud bounce. The large air loss ensures that 1064 nm is again the best wavelength. Optical sky filtering could raise the SNR substantially by lowering the system noise but would not alter this conclusion for either cloud-bounce or line-of-sight DX.

Conclusions

Table 2 and Figure 3 show the expected variation in SNR over visible and near infrared wavelengths in clear air. Although these figures should be regarded as indicative only, they clearly show how operation in the visible band is handicapped by high air losses.

Recent record-breaking optical DX contacts have used 630 nm (red) light. DX capability can be enhanced and possible visual glare hazards to aviation can be eliminated by moving from the visible band to wavelengths such as 850 nm and 1064 nm in the near infrared band.

However, protective eye-glasses must be worn since 'blink' protection has been lost. Note that the practical implementation of near infrared operation is well outside the scope of this article which is limited to a discussion of the basic theory.

Acknowledgements

I thank Justin VK7TW and Rex VK7MO for raising the question of the best optical DX band. Thanks also to Adrian VK2ALF, Peter Zelman and Col Cochran for helpful discussions while transmitting single photons across chilly Canberra skies. None of the afore mentioned have any responsibility for the views expressed in this article.

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Spotlight on SWLING

My seasonal wish is better propagation

Robin Harwood VK7RH

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2010 is rapidly coming to a conclusion. It has been a rather depressing year for me on a personal level and I can hardly wait for 2011.

The exodus of shortwave broadcasters has continued and is likely to escalate further in the New Year. Already we have seen Radio Sweden leave shortwave for good and Radio Slovakia has announced that it is also departing shortwave. Major broadcasters such as Deutsche Welle and the Voice of Russia have also indicated that they see no future in continuing to air programs via shortwave. The audiences have shrunk especially in Europe, North America, Asia and Oceania yet Africa will remain the exception for quite a lengthy period.

As I have repeatedly reported, noticeable gaps are appearing within the allocated broadcasting segments, revealing smaller domestic outlets long submerged under stronger emissions. Yet there are still collisions on channels usually between

broadcasters who abide by the HFCC and those organisations that are outside the frequency coordination scheme. Iran, Cuba, North Korea and Serbia are some of the nations outside of the High Frequency Coordination Council (HFCC).

I do hope that propagation will improve during 2011. This year it has slowly improved yet is still far from even getting to the medium phase of the sunspot cycle. I do expect that the higher frequencies will significantly improve over the next year. The broadcasting allocation on 21 MHz is sparsely populated these days compared to the last peak of the Solar Cycle. However the amateur segment below 21.450 is expected to roar into life over the summer months.

Remember when the BBC World Service used to flatten the needle on 25640? I recollect easily hearing it from 0900. The senders were based at Daventry and were regular over the Spring and Summer. It has been silent

for many decades and the Daventry site was also decommissioned. The only remaining outlet was French and that too was turned off. This led to the 11 metre broadcasting segment being abandoned and I wonder if it will ever be resurrected at the peak of the Cycle.

I noted that another organisation has taken over the former BBC senders. Babcock has purchased VT Thomson and now manages Skelton, Rampisham, Thailand, Ascension Island and a site in the United Arab Emirates. The BBC is only one of the clients using these sites as there are other broadcasters also utilising these senders.

Well that is all for 2010 and I extend to you the best wishes for the Season and hope that 2011 will bring you health, happiness and improved propagation.

73

Robin VK7RH

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Foundation Corner 14

Homebrewing without the headache?

Geoff Emery VK4ZPP and Ross Pittard VK3CE

Sometime in our amateur radio journey we will get the temptation to put something together, as in a kit project, build something from scratch from materials gathered for the job or maybe modify some bits and pieces found lurking in the junk box. Ross has covered some of the test equipment and items which are handy and may become indispensable around the amateur shack in Foundation Corner, December 2009.

If you have been reading *Amateur Radio* magazine for a while, you will have met Drew Diamond VK3XU through some of his excellent constructional articles. One thing that you will gain from Drew's writings is good workshop practice. Being able to heat, bend, cut, strip, join and terminate are all words we become familiar with when homebrewing.

Being able to do these things safely and neatly is part of the reason that we start our licensed journey by doing a basic practical assessment. As we move on, as in all areas of skilling, training and practice help us get the tuned eye and the calibrated ear and so on.

One basic skill that is worth getting familiar with is that of soldering. In making copper wire antennas, we solder joints to maintain physical integrity but also to reduce 'electrical' noise. We may need an enclosure, a box, and we have some printed circuit board (PCB); to make the box 'RF' tight we solder the seams and joints (see Foundation Corner 8). We may have scored a treasure from the 'trash and treasure' table and on investigation it is obvious that a wire is floating in air without the support of some nice clean silver metal, a dab of solder can get you a cheap treasure.

Basically, the process of soft soldering is that of heating the surfaces to be joined sufficiently that the solder melts and flows, before cooling, to make a 'clean' joint. For electronics, this means that the resin flux is melted away and the cooled solder has a consistent shine over its visible surface.

The items to be soldered may have to be prepared by abrasion or alcohol wiping. One hobbyist electronics outlet was notorious for supplying plated fittings which defied all attempts at soldering until the surfaces were scraped, cleaned with wet-and-dry, otherwise treated. This was the price of buying hobby components rather than trade quality.

If you are not going to be soldering delicate electronic components, a basic iron will get you started. The important thing is that the tip can transfer adequate heat to the items to be joined

without cooling. Most better-quality irons have various interchangeable tips (Photo 1) – the ones shown have a number on the base indicating working temperature. Tip selection will vary according to the thermal mass of the job. It will take more heat to join a PL 259 to RG-213 than to join the pigtail of a component to a PCB. It will take more heat to solder your antenna wires at the insulators than it will to join strips of PCB material to make a box.

If you can stretch to one, a propane powered soldering iron (Photo 2) does not have any voltage on the tip and is safe to use on sensitive components. It has the other advantage that you can turn the wick up or down depending on how much heat the job requires. They are great for portable/field use....no long extension cables needed.

Recently there is another alternative in soldering iron selection, the Chinese copies of temperature controlled irons. These can be purchased new at amateur swap meets for a fraction of the cost of the 'real' item. For the occasional user, they are more than adequate (Photo 5).

If you have a mentor or belong to a radio club, try and arrange some training and practice with the soldering iron. If you are teaching yourself, remember that oxides on copper and ferrous metals generally do not permit making good electrical solder joints. I find the cheap snap bladed knife brilliant for these small clean-up jobs. Sandpaper, plastic and metal scouring pads can all be useful for cleaning prior to soldering. Always use electrical/electronic grade solder, that is, 60% tin:40% lead or learn to use the new lead free solder.

Remember, if the solder melts onto the tip of the iron and promptly balls up or worse still runs off like water, there is too much heat in the tip. Always ensure that the tip is

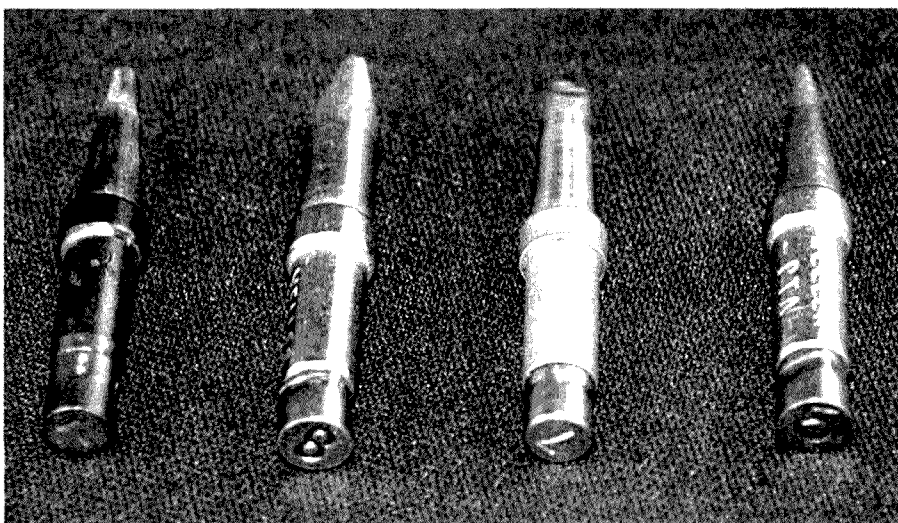


Photo 1: Different tips with numbers on the base indicating temperature.

'tinned' with solder and has no 'gunge' on it. I prefer to use a damp sponge for tip cleaning but others use the metal kitchen scourer as a dry tip cleaner.

Cutting things up is important. I have already mentioned the snap bladed knife. This is a versatile tool which is cheap. With practice you will quickly remove the insulation from cable by rolling the cable over the blade. You do not need to cut as deep as the wire but just obtain a complete circumference cut. Most synthetics or solid sheaths will stretch and break, at the cut, and the waste can be pulled off.

Thin metal, such as beverage container 'tins' can be easily cut with utility scissors bought for a couple of dollars. PCB material can be cut with a hacksaw or a rotary tool (Dremel™), but I find using the correct blade with a good back slope on my variable speed jig-saw is the easiest way to go. Please remember that phenolic and fibre-glass substrates produce dusts which should not be breathed in. Aviation snips are great for other metal cutting and trimming jobs. For those of us old enough to remember, a 'nibbling' tool (Photo 3) is a handy item in the shack as are some hole punches (Photo 4).

Now for some heresy; as a hobbyist I do not have a big budget or a proper workshop. As different jobs may require different tools, we have an option to go and buy one off and delay completing the project or compromise. Many of the basic hand tools that I use are strictly cheap Asian imports designed for the handyman market. Even many of my power tools fall into this category as well. Strictly speaking, files for ferrous metal should not be used on non ferrous materials – but I use what is at hand and they can be cheaply replaced. I may be working plastics, aluminium, copper and stainless steel and one tool can be used for the lot.

Similarly a selection of imported metal working high speed drill bits, HSS, in metric and imperial sizes combined with spur point woodworking bits manage to put neat holes in a variety of materials. This is made easier by using a variable speed drill. For hole cutting, I still have the original imperial sized chassis punches but these are supplemented by a hand nibbler and some rotary hole saws.

The caution in using the cheaper handyman range of tools is that for the price they are sold, they are brilliant and



Photo 2: Propane gas powered soldering iron.



Photo 3: Nibbling tool.



Photo 4: Octal Valve hole punch; who remembers them?

economical. However, greater care is needed as the quality of the steel tends to be lower than brand name trade tools.

Just remember that brand name manufacturers have a range of handyman products identified by price and often colour. Drill bits, files and hacksaw blades are good examples of this. However, used sensibly they are quite safe even though they wear and break more easily.

In the power tool range, the variable speed electric drill, a variable speed jig saw and a rotary tool (Dremel) used with an engineer's vice (metal working) and suitable clamps give the hobbyist panel basher a versatility unheard of in previous years.

The choice of tool and the price range is for the individual. My use is intermittent and light so the cheap imports are fine. The same applies to hand tools with small pliers and cutters being cheap. I have lifetime guaranteed side cutters that are gapped and the previous pair broke a jaw. I have discount store black steel 10 cm (4 inch) cutters that have served me for many years.

In the cheaper tool range, you do some of the quality control. Check for alignment and freedom of movement – hold pliers up to the light to see that the jaws meet properly. Rotate power tools to check for binding and trueness of action.

With drill bits and saw blades you might learn by experience which brands to buy and which to ignore.



Photo 5: Chinese 'Knock-off' temperature controlled iron

I have had drill bits that bent like pretzels and 'hardened' saw blades that shed teeth like confetti. Remember the old warning and shop carefully – caveat emptor.

Generally, a little bit of the 'fix it' gene seems to reside in most radio/electronics enthusiasts and so some of these tools will already be in the collection. The decision and choice of tools will take into account the versatility versus price and will govern how quickly you get the items together.

Experience will tell you when to replace a hand tool with a power tool both for ease of use and also increase the accuracy and speed of doing the job.

The aim is to enjoy this part of the hobby not just blow the cobwebs out of the money belt. For too many men, the hardware shop becomes the toy shop! Get your priorities right – are you a toy collector or a radio amateur? Let the YLs do the shopping if the OM cannot decide!

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Metal work at home

Jim Tregellas VK5JST

If, like me, you are into electronics and amateur radio seriously, you will regularly find yourself in the position of having to provide an enclosure for your latest project.

Now there are plenty of great enclosures available at the local electronics shop, but guess what? My projects never seem to fit them. The project is either too large (linear amplifiers, antenna tuning units, transceivers, power supplies, etc) or there are just too many knobs and meters to fit into the front panel space available.

Or there is some other subtle factor which makes the selected enclosure unusable, like too expensive, and so I usually end up rolling my own. Here is how I go about it, using a few simple tools.

Raw materials

Almost any enclosure for large amateur radio equipment can be made from 0.8 – 1 mm thick aluminium sheet. Careful thought must be given to the placement of large heavy items like power transformers. Such items should be placed next to an enclosure wall or near a right angle fold to obtain maximum strength and to avoid flexure. If necessary, this part of the enclosure can be beefed up with a piece of heavier sheet.

New aluminium sections and large sheets can be obtained from suppliers like Capral. Smaller sheets can be had from hardware outlets such as Bunnings, and suppliers of non ferrous metals in your capital city. See the 'Yellow Pages' or check the 'net'. Expect to pay around \$12- \$17 per kilogram. Capral has a complete catalogue of its products on the 'net'.

My favourite source for powder coated sheet is from the washing machine trade-ins at my local branch of the 'Good Guys'. Older large Hoover washing machines have a very big aluminium lid 1.6 mm thick which is excellent for constructing cases for heavy power supplies. So check out your local washing machine reconditioner or supply

house. You will need a Phillips screwdriver to whip out the two stainless screws in the hinges and the lid is yours. The saw described below removes the lid edges and you end up with a very nice piece of powder coated sheet around 400 mm square. Scrap metal yards are also good for

aluminium sections and sheet of all sizes and thicknesses too, and the price is usually right (around \$2 per kilogram).

Marking Out

The tools for marking out are very basic and should be a part of

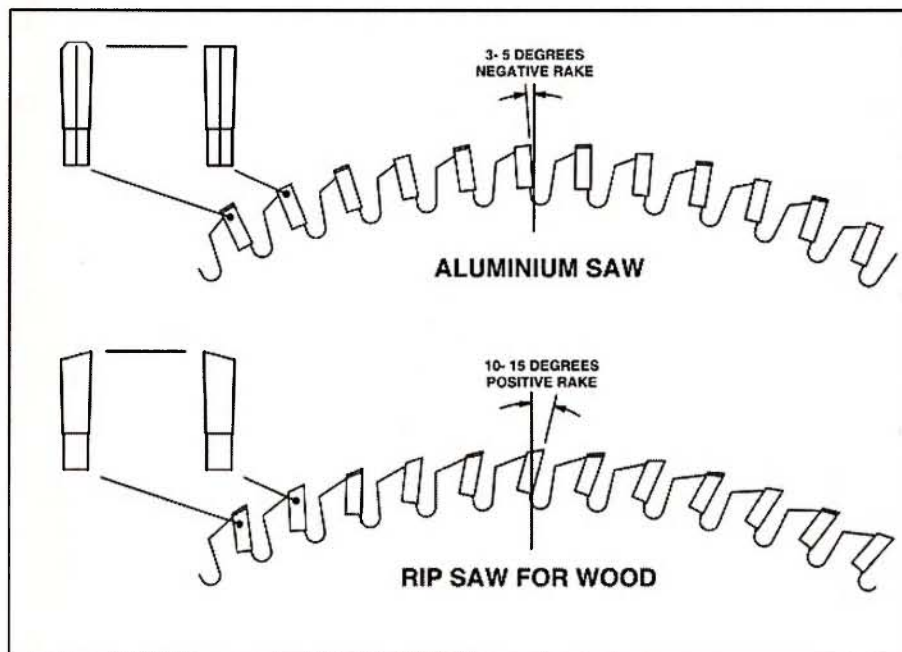


Figure 1: Details of wood and metal cutting circular saw blades.



Figure 2: A pin chuck and sheet metal nibbler.

the standard equipment in every workshop. The first essential tool is the simple scribe. The scribe I use is straight. One end is flat so that it can be tapped gently with a light

hammer to also serve as a precision centre punch when marking out hole centres.

The other end is carefully ground

to a long fine cone shape, with the end millimetre or so being ground to form a sharp 60 degree conical point.

Unlike the centre punches normally on sale for woodworking, a punch of this form can be used to feel for the intersection of two scribed lines on a metal surface and this makes drilling holes in the right place relatively easy.

Next item is the engineering straight edge. This should have a length of at least 500 mm, but preferably 1000 mm, and will find a myriad of other uses around the workshop. Buy the best you can afford in stainless steel. A 300 mm steel rule with a scale having zero mm at the scale centre is a very useful item too, as it allows symmetrical marking out on either side of a centre line. This makes the marking out of panel holes for items such as IEC power plugs almost a pleasure.

The third item is the engineering square, which should be checked for squareness directly after purchase and thereafter handled with kid gloves. An ordinary wood worker's square can be used, but for a few extra bucks, a toolmaker's square is a better investment.

Squareness can be checked with two methods. The first is to find a piece of sheet with a truly straight edge. The square is placed on this edge and a line is scribed at right angles to the edge using the square and a scribe. The square is then turned over and the process repeated. If the square is true then the two scribed lines will be parallel.

A second method is to place the square on a mirror (clean float glass is extraordinarily flat) and sight down the edge of the square at right angles to the mirror surface. If the square is true, the edge and its reflection will form a straight line.

I would suggest buying a square with a top edge length of around 250 mm. If you need to mark out a 1000 mm wide sheet, the upper arm of the square can be extended with your straight edge.

The next essential tool is a set of engineering dividers, used for scribing large and small circles on material. Most units on sale will scribe circles up to 200 mm diameter and this is fine for electronic

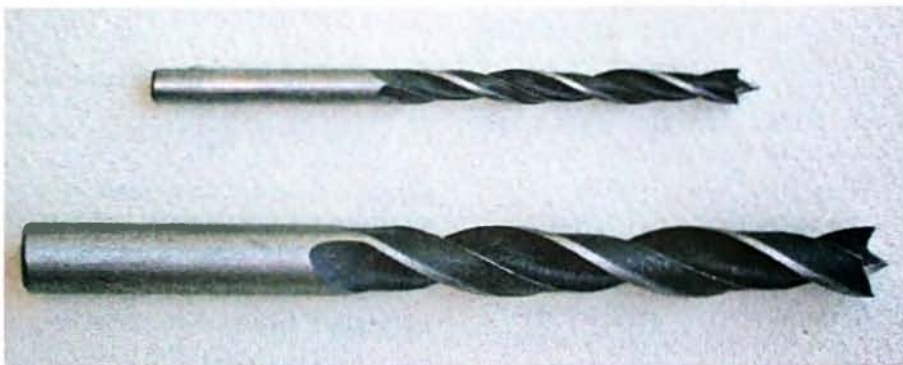


Figure 3: Sheet metal drills.



Figure 4: 3-12 mm and 10-25 mm jobbers reamers.

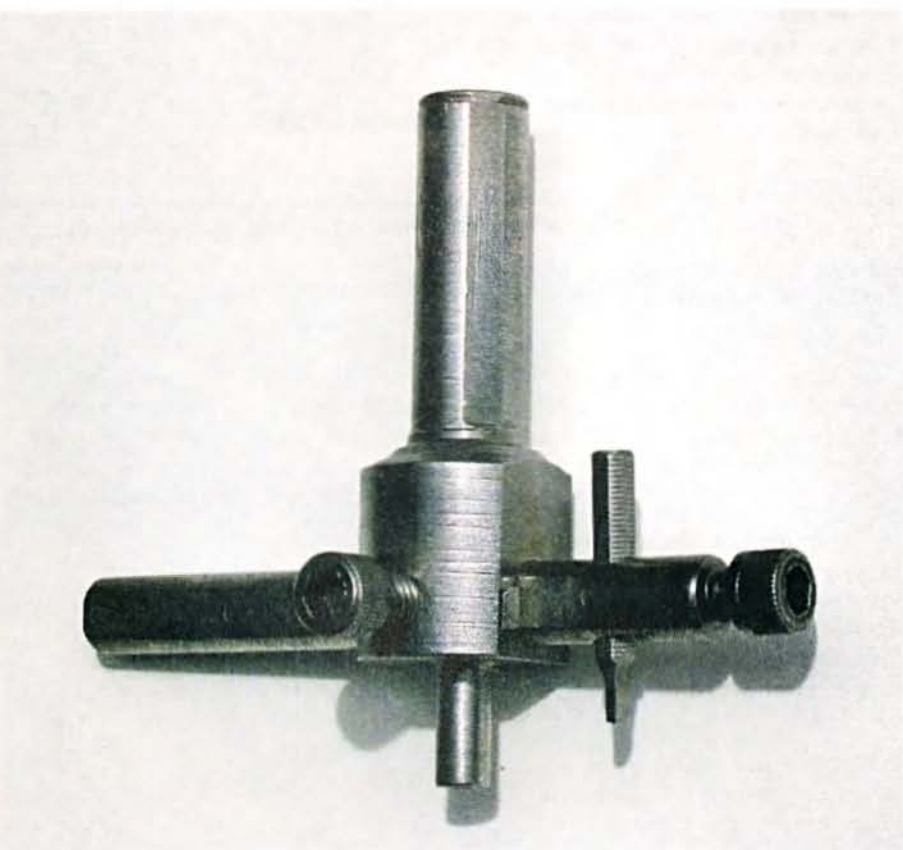


Figure 5: A homemade flycutter.

prototyping. A good quality set will be of rigid construction and have an excellent hinge. The overall utility of this tool can be checked by gently scribing a small diameter circle (say 6 mm diameter) on a piece of sheet. Poor quality will instantly show up, as the legs collapse inwards.

The last essential items for good marking out are a pin chuck and a well sharpened 1 mm diameter drill. Most large drill chucks will not hold small drills, and the pin chuck (Figure 2) overcomes this problem.

A one mm diameter drill fits very nicely into the hole formed by a centre punch, and will centre itself beautifully provided that most of the drill length is out of the chuck allowing it to flex sideways slightly and pick up the exact hole centre. Once you have an accurately centred 1 mm hole in your material, it can be used to precisely centre a larger drill to form a hole of the final desired size in your material. Attempts to centre a large drill on a centre punch mark without a guide hole usually fails dismally.

One millimetre diameter holes are also very useful where cut-outs are required in sheet material. Where a panel has edge flanges, small 90 degree cut-outs are required, and a 1 mm hole in the corner of the cut-out provides a nice stop to the motion of a hacksaw or tin snips. It also reduces stresses during folding, preventing tearing at corners.

Cutting to Size

There are several ways of reducing large sheets to a final size. The first method is to use a sheet metal guillotine but few people have access to these items.

What I use is an aluminium cutting blade fitted to my table saw. Details of this blade are shown in Figure 1. Such a saw will cut thin aluminium alloy sheet like butter due to its special tooth form. Note that all teeth have a negative rake, and that alternative teeth are either square or coffin shaped.

The coffin shaped tooth removes material from the centre of the cut while the following square tooth removes the remaining material at the two edges of the cut. In this way the load on each tooth is minimised.

Never use a wood saw blade on

a power tool to cut aluminium as the positive rake will cause digging in, which is extremely dangerous. During cutting, an aluminium saw blade should be occasionally lubricated to prevent small particles of aluminium from welding themselves to the leading edge and sides of each tooth. First, this causes rough cutting and, finally, will lead to the saw blade jamming itself in the material being cut.

The saw blade (and you) can be damaged permanently as lost teeth are a possible outcome of a saw jam. There are special lubricants sold in stick form to overcome this problem, but beeswax, or the stick lubricant sold at your local automotive parts outlet to lubricate car door locks, seem to work well.

Some people suggest reversing a conventional wood rip saw (so the teeth face backwards) to cut aluminium. This is a stupid and very dangerous practice for a number of reasons.

First, wood saws have few teeth and take out great bites of material, while metal cutting demands many fine teeth with each tooth removing a small sliver to reduce tooth load and give a good finish. Second, the weld which bonds the tungsten carbide tooth to the metal saw base is under tension, rather than the compression which occurs when the saw is used properly. So the saw is likely to shed teeth.

Further, if you look down at the edge of the saw, the teeth are wedge shaped and the long edge is supposed to face forward to cut clearance for the narrower rear of the tooth.

So a backward facing saw with backward facing wedged teeth is almost guaranteed to jam, shedding teeth and probably injuring the operator.

An aluminium saw blade generally has quite fine teeth. Both my blades have a tooth about every 10 mm of circumference (80 teeth on a 250 mm diameter blade). It is vital that the blade runs straight and true and is well balanced.

It must be mounted on good bearings so there is no side float. This makes the use of a saw with a ball bearing arbor almost mandatory.

Likewise, guides used to feed the material during cutting should be rigid, smooth in operation, and have no float.

The material must be well supported during cutting right up to the edge of the teeth. A lot of saw tables have very wide slots provided for the saw blade and gaps of 6 mm between the saw blade and table are not uncommon. These gaps are just plain dangerous whether you are cutting wood or aluminium. On fine cuts the waste material is likely to disappear into the gap, only to be flung into your face at tremendous speed.

If you have such a table, it is worth covering it with something sacrificial like a 6 mm thick sheet of Masonite and then raising the saw to cut a zero clearance slot in the Masonite.

Finally, the saw motor and electrics must be protected against the ingress of flying aluminium chips. I do not have much of a problem here because my table saw has a fully sealed induction motor, but I have been very careful to ensure that all switches and electrical wiring on the saw are well sealed.

The correct speed for these blades can be calculated from manufacturer's data, which generally recommends surface speeds from 1000- 1500 metres/min (3000- 5000 ft/min) for aluminium alloys. Check the data for your saw blade, but a 250 mm diameter blade will probably run best in the speed range 1300- 2000 rpm.

Last, I would recommend the use of a table saw, as distinct from a radial arm saw. There are a whole bunch of safety issues with the radial arm saw, not the least of which is that it tends to lift material off the table. This is extremely dangerous, particularly with thin materials. Further, if you happen to put any part of your body in the wrong spot, this type of saw will suck it inwards with no place for escape.

All of the above may sound troublesome, but the great advantage of such a saw is that, relative to a guillotine, it is very cheap and much more flexible. You can cut far larger pieces of aluminium than is possible on a typical one metre wide guillotine.

The cuts are dead straight and you can take off fractions of a millimetre

if you want, so the technique is suitable for final sizing as well as rough cutting. Unlike the standard guillotine, you can also cut sheets of considerable thickness with good clean right angle edges, and 6 mm of thickness is not a big ask.

There are other techniques for cutting aluminium sheet, and these include a jig saw with a well lubricated blade and, for sheets less than 0.8 mm thick, a Stanley knife with a well oiled blade, and a good straightedge. In this last technique, the material is scored through at least half of its thickness with the knife, and then snapped off by bending it back and forth along the scored cut.

In both of these cases, the edge of the material will have to be cleaned up, and this is best done with an ordinary metal framed wood plane which is sharp, has had its base well oiled, and is set up for a very fine cut. With a little care, and by using a straight edge for comparison, an edge which is clean and dead straight can be produced very quickly.

Note that ordinary wood tools can

be used on aluminium alloy sheet without any possibility of damage, because the steels used for cutting blades on wood tools are very much harder than aluminium. In fact, if the aluminium is clean, the tool will remain sharp for far longer than it would if used on wood, as many woods actually contain minute particles of sand distributed throughout the timber by the motion of sap from the plant roots.

If you are really desperate, then aluminium can also be cut with a hacksaw. Tin snips should never be used for cuts longer than about 20 mm. Each time a cut is taken over the full length of the blades, the material will vertically distort into a shallow half moon shape which is almost impossible to straighten out.

Making holes

Holes come in two shapes, circular and awkward, so let's deal with the circular hole first.

In thin sheet of 1 mm thickness or so, circular holes can be broken into three size ranges, which are diameters less than 6 mm, diameters

between 6 and 12 mm, and diameters over 12 mm.

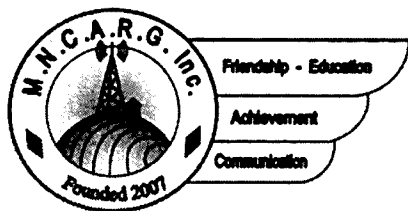
For holes below 6 mm diameter there is no problem, and all that is required to form an accurate hole is to first mark out and drill a 1 mm diameter pilot hole, and then enlarge it to size with the appropriate metal twist drill.

For sizes between 6 and 12 mm diameter, ordinary metal twist drills are readily available, but there is a problem. When drilling thin sheet, what happens is that the drill point breaks through the material thickness before the outside diameter of the drill has been able to contact the surface of the sheet to form a circular indentation to guide the drill through the rest of the cut.

The drill loses guidance and the result is that the two unguided drill flutes generate drill chatter. The typical outcome is a hole which is oversize and five or seven sided instead of circular. There are two solutions to this problem.

The first is to rigidly clamp the sheet being drilled to a waste piece of hard wood so that the wood holds

The Mid North Coast Amateur Radio Group Inc



Mid North Coast Radio Expo 2011

will be held on

Sunday, 30th January 2011

at

St John Church Hall, McLean Street, Coffs Harbour

Doors open at 8.30 am - admission \$5.00

There's still space for more traders and surplus equipment sales.

Exhibitors free entry!

For more information visit www.mncarg.com - for bookings contact

Jack VK2CJC on vk2cjc@wia.org.au or 02 6652 8989

the drill centred through the whole cut, and to drill slowly. The second and far more elegant solution is to use a sheet metal drill, of the form shown in Figure 3. Such a drill readily centres itself in the pilot hole previously drilled and cuts through at the maximum diameter first preventing chatter. Yet another method is to drill a small hole and then enlarge it with a jobber's reamer (Figure 4). Whichever method you use, always drill a 1 mm pilot hole first for accuracy.

For holes over 12 mm diameter, special tools must be used as normal twist drills are either not available, or, if they are, will require an extension to the house mortgage. If you are into pain and suffering, no special tools are required to make holes of any shape.

An ordinary small diameter twist drill can be used to produce a series of holes which almost touch each other just inside the outline of the hole required. The point where each hole nearly touches the next is then cut through, and everything is then finished off by filing, using either a half round file for circular holes or a flat file for rectangular holes.

There are less painful methods available, however. These include the nibbling tool shown in Figure 4, which is simple to use. A circular hole is first drilled in the sheet to just accommodate the square cutter on the nibbler. Then away you go, covering the floor and your trousers with little bits of aluminium about 1 mm x 6 mm in size which are the result of the nibbling operation.

These are almost guaranteed to end up where they can cause mega damage to any electronics, so be careful. The hole is then finished off as above by filing, and one of the skills you will acquire, apart from an extended command of the English language, is the ability to file a good rectangular hole.

A second tool which is most useful is the fly cutter (Figure 5) which, together with a bench drill, is used for rapidly making large circular holes.

These are singularly dangerous tools which are great for removing fingers or hands and so are not available through the normal electronic supply houses.

They can be easily made if you have access to a lathe, or readily bought from machine tool suppliers. This tool is shown in Figure 2. The sheet in which the hole is required is first placed on top of a scrap piece of three ply, and a guide hole is drilled through both the sheet and its backing. This guide hole must accurately accommodate the central spigot of the fly cutter.

The sheet and its backing are then very firmly clamped to the drill table having first been centred using the tool spigot. The drill is turned on and the rotating cutter is very slowly lowered to create the circular hole of required diameter. The drill shaft speed should be very low (100 rpm or less).

Under no circumstances should the material be hand held on the drill table. Fly cutters have a habit of jamming and when they do unclamped material will be torn from your grip to form a most effective circular saw which will cut through flesh and bone. Jamming can be prevented by lubricating the cut with the same lubricants previously specified for the sawing of aluminium sheet, and by working slowly.

Finally, it is worth describing how burr free holes can be easily produced in thin sheet (1 mm or less) so that cheap heat-sinks can be made for items like power transistors. Any burr is a no-no as it can puncture the mica or silicon rubber insulating spacer used, and drilled holes in softer materials like aluminium will always have a burr. The hole diameter needed for the mounting screws is generally around 3 mm.

In your workshop you probably have a bench (post) drill. In the old days these machines were referred to as a drill press, simply because they can be used for both drilling and pressing operations if they are of sufficiently rugged construction.

It is quite easy to make a simple press tool to punch 3 mm diameter holes in 1 mm sheet. Simply drill a 3 mm diameter hole in a piece of old flat black mild steel sheet or plate (thicker than 1.6 mm).

Remove the drill from the drill chuck and grind the non cutting end of the drill shaft so that it is dead flat and has sharp edges. Place the drill into the chuck backwards, so that

the flat end now faces downwards. Carefully lower the drill and centre the drill shaft within the hole in the mild steel plate. While the plate is so positioned, clamp it to the drill table.

You now have a press tool and can punch burr free holes in thin aluminium sheet - try it - you will be impressed.

If you have a very rugged post drill (say a 75 mm diameter post) and grind the end of the drill to a very shallow V shape instead of flat, this technique will easily punch holes of up to 6 mm diameter in thin sheet. Add three circular pegs to the steel base to locate one corner of the aluminium sheet and you have a super cheap press tool which can be used for low volume mass production.

Fabrication of an Enclosure

With the equipment outlined above, some very nice boxes can be made. All you need is some flat sheet and 90 degree aluminium angle cut to size, plus some countersunk aluminium pop rivets, and you are in business.

If you need an enclosure of great strength for a project such as a really heavy duty power supply, then this is probably the best way to proceed. The circular saw detailed previously will make mincemeat of 3 mm thick sheet, and 3 mm thick 90 degree angle too.

For a standard enclosure using 0.8 mm aluminium, however, it is probably far quicker and simpler to make up a box composed of a matching U shaped lid and bottom. So that the lid can be simply attached to the bottom using metal thread screws, the bottom will have to be fabricated with edge flanges of say 10 mm width.

Unfortunately, there are no simple methods or tools available to allow the accurate making of such a box. In fact, there is only one machine that does it well, and is flexible enough to be able to produce a panel with edge flanges, and that is a 'finger' folder. Please see my article on how to build your own cheaply in *Amateur Radio*, October 2007, or buy a second hand unit.

Good fabricating!!!

Calendar, courses, clean-ups, books and being portable

Jim Linton VK3PC

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

End of year arrangements

Season's greetings from the Council of Amateur Radio Victoria, Ross Pittard VK3CE, Peter Mill VK3APO, Terry Murphy VK3UP, Barry Robinson VK3PV, Keith Proctor VK3FT, Peter Cossins VK3BFG, Tony Hambling VK3VTH and myself.

We hope to see many of you at the Centre Victoria RadioFest on Sunday 13 February. An advertisement in this edition of Amateur Radio magazine has more details.

The office at 40g Victory Boulevard Ashburton will close for the summer break on Tuesday 14 December at 12.30 pm, and reopen on 15 February 2011.

Thank you to the team of volunteers who have provided administrative and other support in the office throughout the year.

If you are registered and have QSL cards for the VK3 Outwards Bureau please get these to the office immediately.

Urgent mail will be processed during the summer break, which also gives office bearers time to do a stocktake, and to compile the annual report and financial statements for the auditors.

Notice is given that the annual general meeting of the Wireless Institute of Australia Victoria Division (Amateur Radio Victoria) will be held on Tuesday 17 May, 2011 at Ashburton. The annual reports will be made available to members.

Notice of Motions requiring the signatures of three financial members, and nominations for positions on the board of directors (Council) 2011-2014 needing two such signatures, close on, and must be received by the Secretary no later than 22 February.

Standard licence bridging course

In response to a demand, mostly from those who obtained their Foundation licence through our

training and assessment weekends, a bridging course is being planned for early 2011.

These highly successful training sessions are held on a number of Wednesday evenings plus a revision Saturday. The quality training experience is available to those who have the Foundation licence, and the dedication to bridge the gap in their knowledge to that required under the Standard licence syllabus.

If you are interested in joining the latest Bridging Course, please contact Barry Robinson VK3PV 0428 516 001 or email vk3pv@amateurradio.com.au

VK3WI, VK3RAN & VK100GG

It has been good to see under the guidance of our Events Coordinator, Terry Murphy VK3UP, that Amateur Radio Victoria is engaging in portable operation more often. The past 12 months has certainly seen a growth in that activity.

Recently a team of members helped set up and run VK3WI from the Point Gellibrand Coastal Heritage Park at Williamstown for the WIA National Field Day, a public relations event aimed at introducing amateur radio to the public and emergency services.

In the week before that, the special event callsign VK100GG was activated by Terry VK3UP and Michele Grant VK3FEAT during JOTA to celebrate the Centenary of the Girls Guides Association.

Earlier in the year the callsign VK3RAN was put to good use on board the HMAS Castlemaine Museum Ship at Gem Pier Williamstown.

This included the afternoon of ANZAC Day, when the use of Amplitude Modulation is part of a new on-air activity. International Museum Weekend in June and the Victorian Military Vehicle Corps display in August.

Downsize your collection

Take the opportunity available to sell or otherwise get rid of unwanted or pre-loved equipment at the Centre Victoria RadioFest No. 4 on Sunday 13 February 2011.

How many more years will it just sit there, gathering dust, taking up space? This major event is an excellent chance to clear out the cluttered garage or spare room. For a sales table or car-boot space booking obtain an application from our website, or phone Tony Hambling VK3VTH 0423 635 152.

In recent weeks members have also donated unwanted equipment to the Amateur Radio Victoria office for it to sell at Victoria's biggest amateur radio event in February, thank you.

The 2011 Callbook

This latest updated edition is now available from Amateur Radio Victoria. It can mail ordered for \$30.50 or bought over the counter at 40G Victory Boulevard Ashburton on Tuesdays between 10.30 am and 2 pm for \$22.

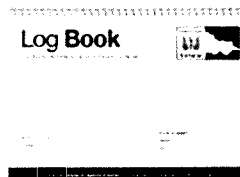
Foundation Study Guides

A new stock of the study and operational practice guide book for the Foundation licence can be mail order purchased for \$26 – an ideal gift for someone who may be interested in becoming a radio amateur.

The Log Book

The ever popular and best log book around proudly produced by Amateur Radio Victoria is still only \$10 over the counter + \$2.75 for posting in Australia.

Email orders to arv@amateurradio.com.au or phone 9885 9261 during office hours.



WICEN bridges the gap

And it will be doing it again on
6 February 2011

Roger Nichols VK7ARN

approaches to the Tasman Bridge. WICEN also provided a back up VHF network with WICEN operators stationed at the Start, Finish and two Aid Points along the way.

The event organiser expressed his gratitude for a job very well done.

Whilst undertaking their support for the event, WICEN took every opportunity to publicise amateur radio in the very public place.

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Stu VK7NXX at the finish line, with the helicopter overhead, both waiting for the first runner home.

Sunday, February 7, 2010 saw the inaugural Hobart 'Run the Bridge' run, with 1400 runners and walkers completing the 10 km course from Bellerive on Hobart's 'Eastern Shore' to Salamanca Place, home of the famous Saturday street market.

The event's communications framework was provided by WICEN Tasmania (South). WICEN has commercial VHF and UHF licensed frequencies, which were used for the event. The event crew carried hired handhelds with headsets on the UHF network, extended by a repeater on Rosny Hill near the eastern

Team effort

MAJOR events like the 2010 Hobart Run the Bridge simply can't be staged without the support of many and a big thank you must go to the Hobart and Clarence city councils, Tasmania Police, DIER, Salamanca Place retailers, Cricket Tasmania, volunteers from the Clarence Football club, WICEN communications, Athletics Tasmania, our valued sponsors and the public for its understanding and patience during the event. It was a resounding success and we look forward to 2011.

Kerry Stubbs

National operations manager, T3 Events

Hobart Mercury, 9 February, 2010.



The WICEN vehicle at the finish line, with signage promoting amateur radio.

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10/11 m, 5/8 vertical, 60 mm base H/D	\$255
Triband Yagi, 6 element, 10/15/20m,	\$860
20m 5 element beam, 12.2m boom	\$895
20m 3 element beam, 4.9m boom	\$494
2m 10 element, 3.9m boom, balanced feed	\$190
2 ^{5/8} co-linear 2m vertical	\$135
Log periodic, 9 element, 13/30m, 8.5m boom	\$1,130
NEW 160m vertical (suburban)	\$355
Multiband vertical, auto switch, 10/80m,	\$360
40m Yagi, 2 element, linear loaded, cap hats	\$645
6m 5 element Yagi	\$310
26-29MHz Yagi, dual drive, 3 element	\$270
70cm Yagi, high gain, 3 metre boom	\$170
21.4 m mast, aluminium, stainless steel	\$4,500
13.5m mast, aluminium, stainless steel	\$3,275
9.5m fixed mast	\$1,250

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Rockhampton and District Amateur Radio Club

WIA President visits Rockhampton

Les Unwin VK4VIL

Sunday 14 November saw representatives of amateur radio clubs throughout Queensland converge on Rockhampton to attend the annual Wireless Institute of Australia National President's State Luncheon. This is the first time the luncheon has been held outside Brisbane and held further significance, forming part of the WIA Centennial celebrations in the district.

WIA President, Michael Owen VK3KI, was accompanied by WIA Director Ewan McLeod VK4ERM and used the occasion to inspect Rockhampton and District Amateur Radio Club's new radio museum and communications room at the Rockhampton Regional Council's Heritage Village complex.

During the previous luncheon in Brisbane in 2009, Michael invited radio club presidents, without

notice, to indicate what their club was doing to promote amateur radio. Reporting on a visionary initiative by local club member, Jeff Brett VK4NJB, Rockhampton Club President Jack Chomley VK4JRC indicated that plans were in place to build a museum and radio shack at the Rockhampton Heritage Village and that a suitable vacant building had already been allocated to the club.

Twelve months later, following a mountain of work by a number of club members led by stalwarts Mike Buchanan VK4LMB and Ray Dobinson VK4HOT, the museum is now operational, has already hosted numerous visitors and school classes and was used by the club to promote the hobby during the recent National Field Day.

While the museum boasts equipment dating back almost a century and includes a number of "living" displays, the radio room is fully operational with transceivers from the 70s to newly acquired rigs. The site is easily identified by the three



Jeff Brett VK4NJB and Bob Copeland VK4HRC at the Heritage Village promoting the WIA Centenary.



Michael Owen VK3KI, after delivering a heavy sales pitch (Hi Hi), accepts a WIA membership application from Ray Dobinson VK4HOT.

band, five element beam overseeing the village. Registered callsign VK4CHV (Capricorn Heritage Village) will be frequently heard during broadcasts and contests.

Meetings on Monday morning with Rockhampton Regional Councillors to discuss further developments at the Heritage Village completed

Michael's and Ewan's visit to Rockhampton.

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Rockhampton and District Amateur Radio Club President Jack Chomley VK4JRC doing presidential things.



WIA President Michael Owen VK3KI presents Mike Buchanan VK4LMB (responsible for much of Heritage Village site fit out) with Rockhampton Club long service medal.



Jeff Brett VK4NJB, Michael Owen VK3KI and Bob Copeland VK4HRC.

Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

In Geelong the UCI World Championships bicycle races were held late September early October which brought visitors from around the globe. One such visitor was Reinhard DF4TD.

Reinhard DF4TD contacted the club earlier in the year seeking advice and assistance with accommodation in the region, as he had been unable to book anything. The Club President received his email and was able to arrange something for him and his YL. Things worked out well as he was in town just in time for our Friday night meeting and he agreed to give us a talk after the meeting ended.

Reinhard showed us some photos and spoke about the 2002 ZL7C DXpedition in which he was involved with 11 colleagues to Chatham Island, off the SE coast of New Zealand. He recalled that there were around 70,000 contacts made on all bands and in various modes. It was a tremendous pleasure to have him visit our club and his talk was well received with many questions following. He spoke English very well and attributes his grasp of the language to contacts on amateur radio over many years. Reinhard is very keen operator on SSB on the 17 m band so keep an ear out for him.

A Virtual General Meeting

On one occasion it was not possible to hold a conventional monthly general meeting as President Dallas VK3DJ and Secretary Tony VK3JGC were both out of the country; the former being in the USA and the latter in England. However with the combination of IRLP and Skype, contact was established with the membership.

The Atlanta Radio Club and the GARC

Originally known as the "Atlanta Wireless Club," the Atlanta Radio Club, W4DOC, will celebrate its 100th anniversary in 2011. The ARC is one of the oldest and largest amateur radio clubs in the United States. With over 150 members, the Club sponsors numerous activities and services for its membership and for the Atlanta area amateur radio community.

The visit by Dallas to the USA and specifically the Atlanta Radio Club and his meeting with their President Bert Bruner KE4FOV and some of the Board of Directors of the club, is being progressed to explore the synergy that exists between the two clubs in both the technical and operational front. Because of the 15 hour time difference, it has been down to the GARC's IRLP node at VK3RGC to establish traffic between the two clubs.

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Dallas VK3DJ in Atlanta, USA.



Tony VK3JGC in Bedfordshire, England.



Reinhard DF4TD in the GARC Club House.

Seasons Greetings to all as our Centenary year draws to a close. One of the newer clubs in VK2 is the **Port Stephens ARC Inc.** Based on the lower North Coast, they meet monthly on the first Sunday at the 'Marine Rescue' station, formerly the Coast Guard Station in Whitbread Drive, Lemon Tree Passage. They meet mid morning, have a chat, lunch and the afternoon is training or a lecture. Their website is portstephensarc.org or contact President - Richard VK2FRKO at vk2frko@wia.org.au **St. George ARS** recently obtained a set of AWA RT85 VHF radios, reprogrammed to 10 watts, for their Foundation members. St. George was one of many VK2 clubs which put on a public display during their three days of VK100WIA operation.

The **Walcha Radio Club** in conjunction with the **Orana Region ARC** conducted assessments in early October at Dunedoo in the VK2 central west. The three candidates were successful. A reminder that the **Mid North Coast ARG** meet monthly for lunch, followed by a meeting, on the last Sunday. Each month is at a different location within the region. Their 2011 EXPO will be at the end of January – Sunday 30th – at the regular venue in Coffs Harbour. Details on their website www.mncarg.com or mail via PO Box 463 Toormina NSW 2452. They can be contacted for exam assessments. **Liverpool & District ARC** meet on the second Wednesday. The secretary is Garry VK2BR on 0427 063 553 or email vk2tsr@bigpond.com **Hornsby & District ARC** have changed their VK2RNS 7250 repeater tone to 91.5 Hz. Their meetings for the year have finished. www.hadarc.org.au The **Central Coast Hamfest** at the Wyong Racecourse Sunday 27 February. Phone contact 02 4340 2500. Web site www.ccarc-hamfest.org.au

While the annual RD Contest has been with us since 1948, the question of the starting time was raised recently by Grahame VK2FA who operates with a group as a field operation. They consider an earlier start and an earlier finish would be desirable. They could break camp in daylight. You may have an opinion on this which you could convey to Grahame at vk2fa@wia.org.au

The **Hunter Radio Group** conduct their Monday night news net VK2AWX at 1930 hours. Their final transmission for the year is Monday 6 December and the final meeting will be Friday 10 December. They resume the net on Monday 7 February and the first 2011 meeting is Friday 11 February.

Late December and through January the VK2BWI slow Morse session on Thursday evening, conducted by Ross VK2ER at Orange on behalf of ARNSW, takes a break. Additional operators are most welcome.

A new map service has appeared on the internet – similar in concept to Google Earth. It is provided by aerial photography and so far covers Australian capital cities and a few country locations. The clarity is excellent and for most areas there are regular updates. The old views remain available so you can check back on changes. You can even keep an eye on your neighbours, and they in turn on you. The site is to be found at nearmap.com

Amateur Radio NSW wound up its Centenary year with the November Trash & Treasure at the VK2WI Dural site.

There had been thoughts of having it as a Mini Field Day but this was deferred until a date to be determined in 2011. **VK2WI News** will move into the summer session, with morning only bulletins for three Sundays commencing on December 26. The evening bulletin resumes on January 16. The ARNSW Trash & Treasure dates for 2011 are scheduled as January 30, March 27, May 29, July 31, September 25 and November 27. Looking for some Xmas gifts? There are a few of the WI of NSW Centenary Plates and Mugs remaining. A photo of these appeared mid year in AR. Details and inquiries via the office phone 02 9651 1490 – leave a message and your contact details. They can also be obtained Sunday morning at VK2WI.

ARNSW Education Officer Terry VK2UX advises a training course will commence at the Dural site in March 2011, on a Monday evening. The library is still being set up. There is a lot of sorting to be done as the boxing of books and magazines in the move from Parramatta disrupted the former neat arrangements. There is a request for recent back copies of *Amateur Radio* magazine. Gaps have been identified since 2006 in the shelf copies and spares. If you no longer need your copies, the library would be grateful for them. They can be bought to a T&T event or to the morning broadcasts at 63 Quarry Road, Dural. Thank you.

In the early days of the Novice licence, the Education Service arm of the NSW Division produced a range of publications. The Service no longer operates but many of the publications remain. The publications include 100 Basic Electronic Projects; Novice Electronics; 500 Questions for AOCPC Candidates and Learning Morse Code which includes three cassette tapes. In limited quantities is 1000 Questions [for Novice candidates]. The material in these publications is still useful and has been made available to many of the VK2 clubs for giving to their Foundation candidates and others. If your club would like to obtain some - contact ARNSW via the office phone 02 9651 1490 or write to P.O. Box 6044 Dural Delivery Centre NSW 2158. They have to be collected from Dural. A set of the five books and tapes weigh 900 grams. Details can be found on the ARNSW web site www.arnsw.org.au if you look in the 'Morse Practice Transmissions' sub heading.

There are also a few copies of *Halcyon Days* by Alan Shawsmith VK4SS which covers the story of amateur radio in VK4, Queensland, Australia, published in 1987.

This year ARNSW opened its time capsule created at the 75th Anniversary in 1985 and the contents are now displayed in the Centenary Building at Dural. A new "Time Capsule" for the next 25 years – for 2035 – has been started and will be closed off in March 2011. Anyone who wishes to contribute something – eg a QSL card – should get it to VK2WI Dural by post or hand delivery.

On behalf of the **Committee of Amateur Radio New South Wales**, may I wish members all the best for the festive season and all the best for 2011 – may the bands and DX improve.

73 – Tim VK2ZTM.

Gridsquare Standings at 15 October 2010

Guy Fletcher VK2KU

144 MHz Terrestrial

VK2FLR	Mike	116
VK3NX	Charlie	106
VK2KU	Guy	102
VK3PF	Peter	88
VK3HZ	David	87
VK2ZT	Steve	81 SSB
VK2ZAB	Gordon	78 SSB
VK5AKK	Phil	78 SSB
VK2DVZ	Ross	77 SSB
VK3PY	Chas	73 SSB
VK3BDL	Mike	65 SSB
VK7MO	Rex	65
VK2EI	Neil	64
VK3QM	David	63 SSB
VK2TK	John	62
VK2MER	Kirk	61 SSB
VK3BJM	Barry	61 SSB
VK4FNQ	John	59
VK4FNQ	John	58 SSB
VK3II	Jim	56
VK3II	Jim	55 SSB
VK3WRE	Ralph	55 SSB
VK5BC/p	Brian	55 SSB
VK2AMS	Mark	54 SSB
VK3PF	Peter	54 SSB
VK5BC	Brian	53 SSB
VK3ZLS	Les	51 SSB
VK4CDI	Phil	49
VK3HY	Gavin	48
VK3VG	Trevor	46 SSB
VK7MO	Rex	46 SSB
VK4CDI	Phil	45 SSB
VK7MO	Rex	45 Digi
VK4KZR	Rod	43
VK4TJ	John	41 SSB
VK3PF	Peter	39 Digi
VK3EJ	Gordon	36 SSB
VK2TK	John	35 SSB
VK2KOL	Colin	34 SSB
VK3DMW	Ken	34
VK6HK	Don	34
VK2TG	Bob	33 SSB
VK3ZUX	Denis	33 SSB
VK1DA/p	Andrew	31
VK1WJ	Waldis	28
VK2TK	John	27 Digi
ZL3TY	Bob	24
VK1WJ	Waldis	23 Digi
VK3TLW	Mark	23 SSB
VK4EME	Allan	23
VK3BG	Ed	22 SSB
VK3II	Jim	21 Digi
VK4CDI	Phil	21 Digi
VK3ECH	Rob	20 SSB

VK6KZ	Wally	20
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK6KZ/p	Wally	16
VK4EME	Allan	12 Digi
VK2EI	Neil	11 Digi
VK5APN	Wayne	11
VK2KOL	Colin	9 Digi
VK2ZT	Steve	9 Digi
VK1WJ	Waldis	7 SSB
VK5APN	Wayne	6 SSB
VK5APN	Wayne	6 Digi
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 CW
VK2AMS	Mark	5 Digi
VK4AE	Denis	5 SSB
VK4JAZ	Grant	4 FM
VK2DVZ	Ross	2 Digi
VK3QM	David	1 Digi
VK4FNQ	John	1 FM

144 MHz EME

VK2KU	Guy	410
VK2KU	Guy	396 Digi
ZL3TY	Bob	373
VK3AXH	Ian	265 Digi
VK4CDI	Phil	218 Digi
VK7MO	Rex	156 Digi
VK2FLR	Mike	120
VK2KU	Guy	43 CW
VK3DDU	Paul	39 Digi
VK5APN	Wayne	34 Digi
VK2ZT	Steve	28 Digi
VK3HZ	David	19
VK3II	Jim	14 Digi
VK3NX	Charlie	5 CW
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 SSB
VK3PY	Chas	50 SSB
VK3QM	David	48 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3BJM	Barry	38 SSB
VK3HZ	David	38
VK5AKK	Phil	38 SSB
VK2DVZ	Ross	34 SSB
VK2ZT	Steve	32 SSB
VK3BDL	Mike	32 SSB

VK3WRE	Ralph	32 SSB
VK3PF	Peter	30
VK3PF	Peter	29 SSB
VK5BC	Brian	26 SSB
VK1DA/p	Andrew	24
VK2MER	Kirk	24 SSB
VK3VG	Trevor	20 SSB
VK5BC/p	Brian	20 SSB
VK7MO	Rex	20
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2AMS	Mark	17 SSB
VK2TK	John	17 SSB
VK3BG	Ed	15 SSB
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK4KZR	Rod	15
VK4CDI	Phil	14
VK4CDI	Phil	14 SSB
VK6KZ	Wally	13
VK2EI	Neil	12 SSB
VK2KOL	Colin	12 SSB
VK4TJ	John	11 SSB
VK2TG	Bob	10 SSB
VK3AL	Alan	10 SSB
VK3ECH	Rob	10 SSB
VK4FNQ	John	10 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK3DMW	Ken	6
VK4EME	Allan	6 SSB
VK1WJ	Waldis	5 SSB
VK3PF	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK4CDI	Phil	4 Digi
VK2ZT	Steve	3 Digi
VK4AIG	Denis	3 SSB
VK4JAZ	Grant	3 FM
VK2DVZ	Ross	1 Digi
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz EME

VK4CDI	Phil	30 Digi
VK4EME	Allan	23 Digi
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK3NX	Charlie	5 CW
VK3AXH	Ian	4 Digi
VK3HZ	David	4
VK4EME	Allan	4 CW
VK2ZT	Steve	3 Digi
VK5BC	Brian	1

1296 MHz Terrestrial

VK3PY	Chas	39 SSB
VK3QM	David	39 SSB
VK3NX	Charlie	37 SSB
VK2ZAB	Gordon	29 SSB
VK2DVZ	Ross	26 SSB
VK3ZLS	Les	26 SSB
VK2KU	Guy	25
VK5AKK	Phil	24 SSB
VK3PF	Peter	20
VK3BJM	Barry	19 SSB
VK3KWA	John	19
VK3PF	Peter	19 SSB
VK3BDL	Mike	17 SSB
VK3HZ	David	17
VK3WRE	Ralph	17 SSB
VK2ZT	Steve	12 SSB
VK3VG	Trevor	12 SSB
VK4KZR	Rod	12
VK3BG	Ed	11 SSB
VK5BC	Brian	11 SSB
VK7MO	Rex	11 SSB
VK1DA/p	Andrew	10
VK2TK	John	10 SSB
VK5BC/p	Brian	9 SSB
VK3TLW	Mark	8 SSB
VK2AMS	Mark	7 SSB
VK3AL	Alan	7 SSB
VK3DMW	Ken	7
VK2MER	Kirk	6
VK3ECH	Rob	6 SSB
VK3ZUX	Denis	5 SSB
VK4CDI	Phil	5
VK4CDI	Phil	5 SSB
VK4TJ	John	5 SSB
VK6KZ/p	Wally	5
VK6KZ	Wally	4
VK4EME	Allan	3 SSB
VK7MO	Rex	3 Digi
VK3PF	Peter	2 Digi
VK3QM	David	2 Digi
VK4AIG	Denis	2 SSB
VK4CDI	Phil	2 Digi
VK4FNQ	John	2 SSB
VK2EI	Neil	1 SSB
ZL3TY	Bob	1 SSB

1296 MHz EME

VK3NX	Charlie	52 CW
VK4CDI	Phil	51
VK4CDI	Phil	42 Digi
VK7MO	Rex	41
VK7MO	Rex	36 Digi
VK4CDI	Phil	12 CW

2.4 GHz Terrestrial

VK3PY	Chas	18 SSB
VK3NX	Charlie	17 SSB
VK3QM	David	17 SSB
VK3WRE	Ralph	11 SSB
VK3PF	Peter	7 SSB
VK3HZ	David	5
VK4KZR	Rod	4
VK6KZ	Wally	4
VK3BJM	Barry	3 SSB
VK1DA/p	Andrew	2
VK2AMS	Mark	2 SSB
VK2EI	Neil	2 SSB
VK3PF	Peter	2 Digi
VK2DVZ	Ross	1 SSB
VK2GG	Dan	1
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB
VK3ZUX	Denis	1 SSB

2.4 GHz EME

VK3NX	Charlie	36 CW
VK7MO	Rex	14
VK7MO	Rex	10 Digi

3.4 GHz Terrestrial

VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3WRE	Ralph	8 SSB
VK3PF	Peter	6 SSB
VK6KZ	Wally	4
VK2EI	Neil	1 SSB
VK2GG	Dan	1

3.4 GHz EME

VK3NX	Charlie	16 CW
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5.7 GHz Terrestrial

VK3NX	Charlie	14 SSB
VK3QM	David	12 SSB
VK3WRE	Ralph	9 SSB
VK3PY	Chas	8 SSB
VK3PF	Peter	7 SSB
VK6KZ	Wally	4
VK2GG	Dan	2
VK3BJM	Barry	2 SSB
VK3PF	Peter	2 Digi
VK6BHT	Neil	2 SSB
VK2EI	Neil	1 SSB
VK3ZUX	Denis	1 SSB

5.7 GHz EME

VK3NX	Charlie	23 CW
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10 GHz Terrestrial

VK3HZ	David	24
VK3PY	Chas	15 SSB
VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3PF	Peter	9 SSB
VK3WRE	Ralph	9 SSB
VK6BHT	Neil	9 SSB
VK2EI	Neil	6
VK6KZ	Wally	5
VK2EI	Neil	3 Digi
VK3TLW	Mark	3 SSB
VK7MO	Rex	3
VK2GG	Dan	2
VK3BJM	Barry	2 SSB
VK3DMW	Ken	2
VK3ZUX	Denis	2 SSB
VK4KZR	Rod	2
VK1DA/p	Andrew	1
VK3BG	Ed	1 SSB

10 GHz EME

VK3NX	Charlie	15 CW
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24 GHz Terrestrial

VK3NX	Charlie	4 SSB
VK3QM	David	3 SSB
VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK6KZ	Wally	2
VK2GG	Dan	1

47 GHz Terrestrial

VK3NX	Charlie	3 SSB
VK3QM	David	3 SSB
VK2GG	Dan	2

474 THz

VK3WRE	Ralph	3
VK3HZ	David	2
VK7MO	Rex	2
VK7MO	Rex	2 Digi
VK7TW	Justin	2
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 <http://vhfdx.radiocorner.net> - click on Gridsquares.

Next update of this table will close on or about 11 February 2011.

Stations who do not confirm their status for more than 12 months may be dropped from the table. **ar**

Silentkey

Colin Geoffrey Harvey VK1AU Group Capt. (Ret.)

Also ex VK3UO, VK2AQU, VS1AU, 74 years an amateur and 1st Class Radio Operator. RAOTC Member #303. Born 25 September 1920. SK 22 August 2010.

Col certainly lived a full and most distinguished life. He grew up in Armadale Victoria and spent his early working career at 3DB as a sound engineer and radio announcer. He enlisted in the RAAF on 1st May 1939 as a wireless operator. On 8th Oct 1941 he was commissioned at the age of 18. This started a career which spanned some 29 years and ended in his retirement in 1971. In June 1942 Col was posted to 30 Squadron (Beaufighters) as the Flight Commander's navigator. He also ferried aircraft between Australia and New Guinea. Colin completed seven 'strikes' before being hospitalised with malaria. On discharge from hospital, he joined 24 Squadron.

Colin was then re-posted back to 30 Squadron and served in Port Moresby and Milne Bay completing 85 sorties. Col was mentioned in dispatches in June 1944. From 1944-47 he worked closely with civil defence contractors including working on the SA rocket range. After the war Colin remained with the Air Force. In 1953, after training in Britain, he was part of the air crew that flew the first Canberra bomber to Australia as part of the London to Christchurch air race. They were winning until suffering a blow out on the coral runway of Cocos Island. In 1957 Colin was promoted to the rank of Wing Commander. By 1959 Colin had accrued some 2777 flying hours in numerous planes including the Canberra bomber, Dakota, Hasting, Lincoln, Neptune, Wirraway and Beaufighter. An entry in his Service record sums Col up to a tee *"He has carried out any task I have asked him to do efficiently. I am aware that his attitude is not always appreciated by others, but in fact I cannot recall when he has been wrong in his views."*

After retirement from the RAAF in 1971, Colin worked for Olims in Sydney managing a factory producing high quality tapes. After two years he returned to Canberra to work as a technician at Canberra radio station 2CA. He continued this work for four or five years until resigning to

ensure that another worker, nearly eligible for long service leave, was not terminated. That summarises the sort of man Col was throughout his life. Col also operated Southside electronics, selling and repairing sound equipment, tapes and TVs.

Col had a passion for sailing beginning during a posting to Singapore. Col purchased a Snipe class yacht and crewed for his son Peter. He brought the boat back to Canberra in early 1964 to a half-full Lake Burley Griffin. Col and Peter won the first ever race on handicap on 15 March 1964. Peter and Col also salvaged and repaired an old 505 yacht in 1965 and sailed it in the Australian and World titles in Adelaide in 1966. In 1967 they finished fourth in the Australian Titles held in Canberra.

Col sailed much of Australia competing in South Australia, Victoria, NSW and Canberra. At 48 Col gave up his sailing and put his efforts into race support at the Canberra Yacht Club. He became a rescue boat driver and maintained the boats and communication equipment for many years. Col's efforts were recognised when he was awarded Clubman of the Year in 1981-82, aged 61 years.

Col's amateur radio activity was similarly distinguished. I first met Col on the air when he was stationed in VS1 and maintained weekly contact for nearly 50 years. I initially knew his fist better than his voice. He was a qualified First Class Radio Certificate Operator who had a passion for CW and broadcast quality phone. He was never short of providing 'helpful guidance' to operators whose transmissions could be improved! He initially designed and built most of his equipment to exceptional standards.

He was one of the early pioneers of 'Donald Duck' (SSB) built with phasing type exciters and crystal filters. Col joined a pioneering group of SSTV enthusiasts and helped usher in the first 'fast scan SSTV'. This, in its day, was a huge advance from the long persistent P5 phosphor CRT displays.

Col had a strong interest in VHF and UHF and was one of the first participants in Aircraft Enhancement experiments between Canberra and

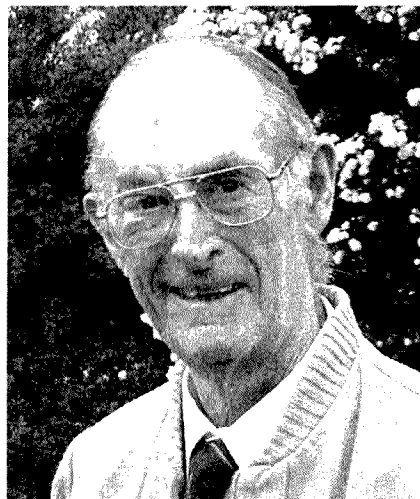


Photo by VK3UM.

Melbourne on 144 and 432 MHz. He was a regular operator on the Sunday CW net and always participated in the Old Timers Broadcasts.

Col also had a passion for research projects. He alone delved into the OTWIA members who 'got the chop', as he used to put it, and his research is the basis on today's WIA listing of amateurs that paid the supreme sacrifice. He was also accredited with the definitive history of radio traffic at the time of the sinking of the *Titanic*.

He was one of the foundation participants of the 7293 Group (stemming from the SSTV net) that has been running daily for over 35 years. This group consisted of VK2AIT (SK), VK2EE, VK2AS (SK), VK2APP (SK), VK4XV, VK2EAH, VK2ARZ and VK3UM (and the many others that dropped by over the years).

Col was a thorough gentleman, respected by all who had the pleasure to know him. You were never left wondering with Col; he said it as he saw it! A perfectionist in whatever he did, and a loyal friend.

He was married to Novar for 60 years (SK 2004) and later to Ruth for the last five enjoyable years of his life. He is the loved father of Christine (Chris Parks) and Peter and fondly remembered by Peter's partner Kerrie. He is the respected grandfather of Sallyanne, Michael, David, Karina, Cameron and Nigel.

SK Col, 73 de Doug VK3UM and Peter Harvey and his many friends of the ether.

Doug McArthur VK3UM

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

October was another busy month for AHARS. Our monthly meeting was a construction night. As usual, Graham VK5ZFZ produced an interesting kit for us to put together.

It was a reflectometer or SWR bridge. The whole device was constructed on a piece of printed circuit board no more than 3 cm long and 1.5 cm wide.

Members had the experience of using surface mounted components, if they had not done so before. Magnifying lights or head-mounted magnifying lenses were much to the fore. However, even though some people did lose the tiny component that was the heart of the device, and about which they were warned, all were retrieved and successfully mounted.

A test set confirmed that most of the finished products worked, too.

There were several visitors to the meeting that night, including one from Canada, Jason VE7JMR. He is featured in the photo, with his host for the evening, Gerard VK5ZQV on his right and John VK5EMI, our President on his left.

By the time you read this column the "resistor bagging" day will be over and there will be one hundred and fifty bags of 8500 resistors of all the main values, gracing the benches of the VK5 amateurs. This activity has had to be rescheduled several times due to the late arrival of the resistors and the many other activities in which AHARS has been involved this month, so it has been something of a saga. Each bag will have 100 of each value of resistor in it, so it should be a while before they are all used. We expect lots of interesting projects to appear.

For the WIA National Field Day, AHARS participated in the Strawberry Fair Day at an Adelaide Hills primary school. Unfortunately not as many contacts were made as was hoped because there was a great deal of noise on 40 m during the day; however we had a number of people ask about amateur radio as a hobby.

On the Tuesday, Wednesday, and Thursday of the week following the Field Day, AHARS had their turn to hold the VK100WIA station.

By the time you read this, the AHARS Buy and Sell will have been held. We may be able to add some notes in a future issue.

Season's greetings to everyone.

Christine VK5CTY.

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Helpers at the Field Day: Lesley VK5LOL, Barry VK5BW, and John VK5EMI.



Kim VK5FNET and Dan, two of the three who provide the strong, willing muscles at each meeting to bring the trestles and chairs up from under the stage, and put them back. Others help but these do the heavy work. TNX



Gerard VK5ZQV, Jason VE7JMR/VK and John VK5EMI at the Construction Night.

DXnews & views

John Bazley VK4OQ

E-Mail: john.bazley@bigpond.com

Well there has certainly been plenty of activity on all the HF bands during the recent creation of four new entities. If you missed one or two of them you will certainly have had another opportunity to work them during the CQWW SSB and CW Contests.

So this month let us start with the DXCC News:

The following operations have been approved for DXCC credit: 9Q50AR (Democratic Republic of the Congo, Club Station all operations), 9Q50ON (Democratic Republic of the Congo, 2010 operation), 9U1KI, 9U1RSI, 9U1VO and 9U4T (Burundi, 2010 operations); A51A (Bhutan, 2010 operation); T6MB (Afghanistan, 2010 operation).

Do not forget that The Microlite Penguins DXpedition team who will be activating the South Orkney Islands (DXCC VP8/O, IOTA AN-008) from January 27th to February 8th, 2011. Safe and reliable Antarctic transportation has been secured by the experienced RV Braveheart, and activity will be on all HF bands 160 m-10 m using SSB, CW and RTTY.

Operators will be K9ZO, ND2T, 9V1YC, K0IR, N1DG, N0AX, W3WL, N6MZ, I8NHJ, N4GRN, WB9Z, W7EW and VE3EJ. This will be the team's fourth time activating an entity in the Antarctic region and fifth DXpedition overall. You may recognize most of the call signs from the group's past operations, but we have also added several new members to the team, all of whom have been on DXpeditions to some of the world's rarest entities.

We hear that Christian CX2CC is working for the United Nations in Goma, Democratic Republic of the Congo for one year. He plans to operate SSB, digital modes and QRS CW as 9Q50AR on 80-10 metres. QSL via home call (Christian Cardarello, Avenida Italia 3319, 11600 Montevideo, Uruguay). Cards will be answered "after January 2012".

Celebrating the 50th anniversary of the independence of the Democratic

Republic of the Congo, Patrick ON4HIL, Theo ON4ATW, Marc ON6CC, Luc ON4IA, Wim ON4CIT and Ronald PA3EWP will be active as 9Q50ON on 3-13 December. They will operate SSB and CW on 160-10 metres. QSL via ON4BR, direct or bureau. Further information can be found at www.9q50on.be

Peter DG1FK (H40FK) and Sigi DK9FN (H40FN) will operate CW, PSK and RTTY from Nendo Island (OC-100) Temotu from 21 December to 3 January. They will have two stations with amplifiers, a wire pyramid for 160, 80 and 40 m and a 2-element beam for 30-10 m. QSL H40FK via DG1FK, QSL H40FN via HA8FW.

Rich 9M2MRS (PA0RRS) is back to Penang Island (AS-015) and will remain there until April 2011. He operates 99.9% CW. QSL via PA0RRS, whose new address is: Richard Smeets, Constance Gerlingsstraat 60, 5121 ZR Rijen, The Netherlands.

Stephen Welton G7BXU plans to go to Sierra Leone over Christmas and will have his FT-897 rig along and a G5RV. The operation is December 19-January 7.

Pacific DXers (<http://pacific-dxers.com>) was formed in September 2010 for anyone interested in Pacific DXing or DXing in the Pacific. "We already have a well stocked 'DXpedition Kit' available for members to use", says Eddie VK4AN. It will be made available on a booking basis for DXpeditions in the South Pacific area from 2011 onwards. They have also "negotiated a big reduction in price at a ham-friendly resort in Fiji for members staying at least a week, and are continuing negotiations with other resorts around the Pacific."

QSL 9J2CA: Phil, G3SWH says he is no longer the QSL manager for 9J2CA or 9I40CA, and he has no blank cards left.

Six Japanese ops will go to Christmas Island, VK9X, January 13-20. The group leaves Perth, Australia January 13th, operating on the island January

14-20 when they return to Perth. QSL to the JARL bureau or direct to each individual. <http://www.nakade.jp/vk9x.htm> The site is in Japanese but JA1ADN thinks the non-Japanese speaker will still be able to make some sense of it. Here are the call signs:

JH3LSS VK9XXY, JA3BZO VK9XA, JA3AVO VK9XO, JH3PBL VK9XL, JI3DNN VK9XN, JA3UJR VK9XJR, JA3HJI callsign not yet assigned.

World traveller Vladimir Bykov UA4WHX has been in Taiwan recently as BW/UA4WHX. He says it is not an expedition and radio operation is not his top priority this time; it was a very casual, not serious, operating. Vladimir has not finished the QSLing from his African/Indian Ocean DXpedition of May, 2005 through June, 2007. He hopes to be caught up with all the QSLing by around Christmas, and says QRZ.COM "gives a fair update of the status of our QSLing." QSL are listed as "answered," country by country. If you have not received yours but see your country listed as "answered", contact Vlad so he can figure out what went wrong.

C6APT on Abaco in the Bahamas will be Pete K8PT November 27 to December 10. Pete plans to be active on various HF bands. QSL to his home call.

Nick G3RWF will be back in East Africa starting next month. First stop will be Nairobi, Kenya, where he plans to be QRV between November 24th and 28th as 5Z4LS, a call he has held since 1968. He will be using a K3 and ARSK antenna. Next he heads to Uganda and expects to be operating with his 5X1NH call from November 30th to December 13th. While on this trip, Nick plans to get a licence (for the future) from Rwanda (9X). QSL all via G3RWF.

Marty W2CG vacations on Aruba again, January 10-24. He will use his normal P40CG callsign but will be at a different QTH and is not sure of the "operating conditions" there. He

will have a rig with tuner and 33-foot (10 m) vertical. He expects most of his operating will be in early evening before dinner, 80-10 m including 30, 17 and 12, mostly CW but Marty will go to SSB on request. The log will be on LoTW and he will QSL 100% if you send to him direct or via the bureau to W2CG. No eQSL. US stations send an SASE for direct.

VP5/W5CW will again be on from the "VP5JM Hamlet" on **Providenciales**, November 24-December 14. He will get into the CQWW DX CW November 27-28, the ARRL 160 December 3-5 and the ARRL 10 m Contest December 11-12. QSL to his home callsign, the QRZ.com address.

Don CP4DR (KV7Q) and Diana CP4DL (KD7TO) are in the mining business in southern **Bolivia** and will be living there full time the next year or two. Look for them 80-10 m SSB and CW. QSL via the bureau or direct to their home calls.

Martin DL5RMH will be in **Guatemala** and QRV as TG9/DL5RMH from December 16 to January 13, 2011.

Listen for him on CW on 7 through 28 MHz. 30 metres is his favourite band. QSL via DL5RMH.

Hiro JF1OCQ (ZL1WY, W1VX) is heading back to **Chatham Island** (OC-038). Plans are to be QRV as ZL1WY/ZL7 from December 2nd to 9th. Activity will be on CW, SSB and the digital modes on 1.8 through 50 MHz, with an emphasis on Topband and the Magic Band. He will have a breakable beacon QRV "around the clock" on 50.117 MHz. QSL via JF1OCQ.

8J1RL - **Antarctic**: Otani JE5XYT will be active with this call from the **Syowa Antarctic Station** on **Ongul Island** (AN- 015) until February

2011. Ask the Op for QSL route.

The **Cocos (Keeling) Islands** is the destination of DXpeditioners Phil Whitchurch G3SWH and Jim Kellaway G3RTE. The two plan to be QRV from the West Island as VK9C/G6AY on 3.5 through 28 MHz on CW only from February 22nd to March 5th of next year. There will be no 160 or 6 metre or EME activity. The Cocos (Keeling) Islands (OC-003) ranks number 75 world wide. "Propagation permitting, we plan to have two stations on the air for as many hours every day as is possible" says Phil. Their focus will be on Europe, North America and ROTW (rest of the world) and have a goal of 15,000 QSOs. Phil says "This will be a very expensive DXpedition. We are happy to meet the costs of transport to and from the islands, but are seeking sponsorship and donations from individuals, DX clubs and organisations towards our living expenses on the island, printing QSLs and the like". They have a web page with more details at www.g3swh.org.uk/vk9c-g6ay.html QSL VK9C/G6AY

via G3SWH either direct with SAE and "adequate return postage", via Phil's web site for a bureau reply or via the bureau.

Mark your calendar as the **Sable Island (CY0)** DXpedition has been rescheduled for next month. A very excited Randy N0TG tells us the group has "been able to put all the details together; the aircraft has been repaired and the Sable Island DXpedition is now expected between December 6th and 13th". More details are expected to be posted to their website at www.CY0dxpedition.com

So Seasons Greetings to all and good luck in the pile-ups.

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/trial.htm

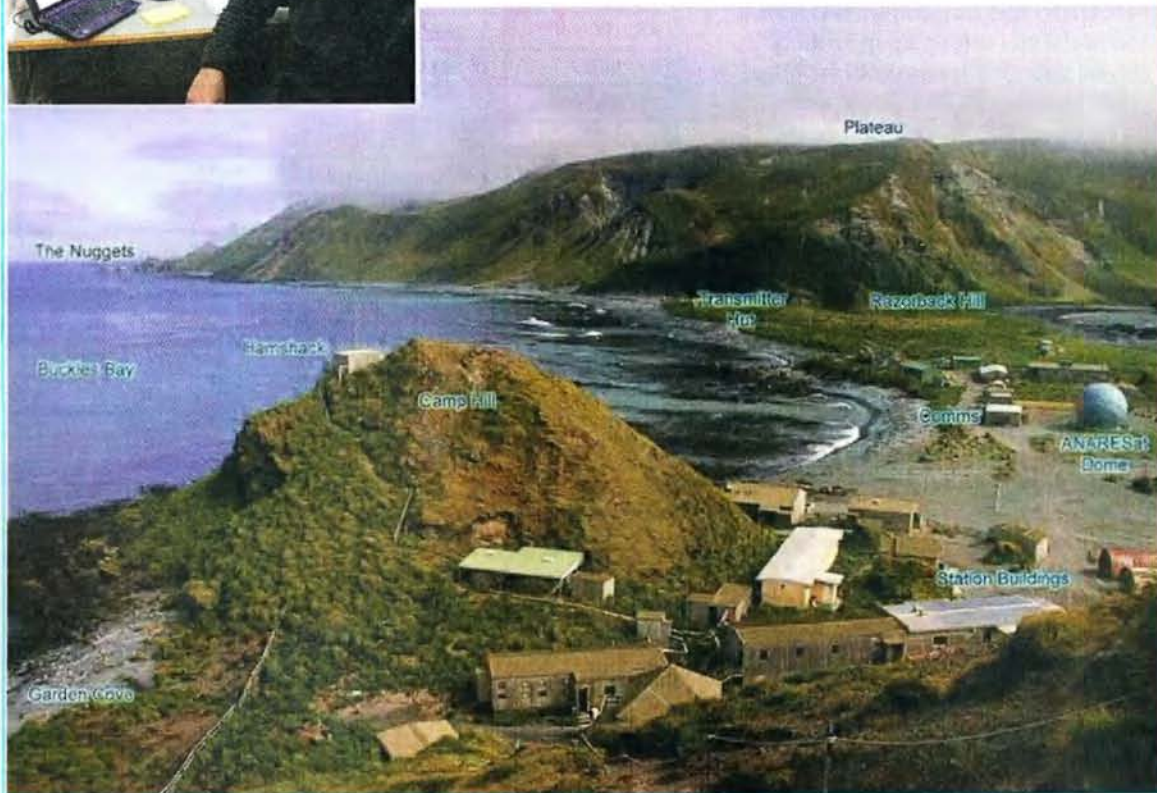
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Kevin VK4KEV is now active daily on 40 m SSB from Macquarie Island as VK0KEV. QSL via JE1LET

The shack is the building on the top of the hill in the near centre of the photograph below. What a location!

The inset photo shows Mac the Penguin in the temporary shack, that's Mac at the left of the photo.



Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

December	5	Kiwi Digital Modes Group Twin Sprint Digital Contest	PSK31 & RTTY
	11-12	ARRL 10 metre Contest	CW & Phone
	17	OK DX RTTY Contest	RTTY
	18-19	Croatian DX Contest	CW
January	1-31	Ross Hull Memorial VHF/UHF	All
	8-9	ARRL RTTY Round-Up	RTTY
	15-16	Summer VHF-UHF Field Day	CW & Phone
	22-23	UK DX RTTY Contest	RTTY
	29-30	CQWW 160 m	CW

IT'S GROUND HOG DAY!!! Oh no, the Monday morning after CQWW RTTY I was finalising the November column to send and now the Monday morning after CQWW SSB I am doing the December issue! And in between all that there was an IOTA DXpedition to Fitzroy Island OC-172 for seven days operating as VK4LDX/P. I am surprised my wife has not killed me yet, especially as I will be off to Magnetic Island on OC-171 for a quick activation on December 10-12. Lucky there is no major contest event for me to do in the next few weeks until the ARRL RTTY Round-Up on January 8-9. Take note of the upcoming Summer VHF/UHF Field Day and the Ross Hull Memorial all coming up in January. Have a great festive season, may the QSOs, beer and QSLs flow freely.

2010 VK Shires Contest Results

Trent VK4TI has released the results of the 2010 VK Shires contest. Full results are available at <http://vkshires.cqcontest.org/Results-2010> and you can also find out about applying for the VK Shires Award at www.vkshires.info. Here is Trent's summary:

The second VK Shires contest saw high activity and some very pleasing results. Congratulations are in order for the award winners:

Catherine VK4GH won both the Single op and the Single Rover categories - Catherine and John went to a remote Northern NSW shire and gave out a new one to many from a portable location. As they did not move to a new shire Catherine qualified for both the Single op and the Single Rover category - a great effort.

VK2IM for the second year has won the VK5NJ Trophy for the most CW

contacts. Vlad seems to have the knack of rattling the key at the right pace to

2010 VK Shires Contest Results

Single Operator			
VK4GH	62913	0	SO
VK6NC	53580	0	SO
VK2IM	52962	102	SO
VK8PDX	48692	0	SO
VK7FWAY	30600	0	SO
VK5PO	29172	10	SO
VK3LDR	21840	0	SO
VK5LSB	20172	0	SO
VK3AVV	18000	0	SO
VK2IO	15762	0	SO
VK2HBG	15194	0	SO
VK2VVV	14985	0	SO
VK4MIT	13493	0	SO
VK4SN	10998	8	SO
VK2ACC	10647	0	SO
VK4BL	7896	0	SO
VK3FEMT	7533	0	SO
VK2WAY	7392	0	SO
VK2AR	6935	2	SO
VK3ZPF	6660	0	SO
VK4FREQ	6532	0	SO
VK3TDX	4950	0	SO
VK7JGD	4154	0	SO
VK2VJE	4140	0	SO
VK2TTL	2576	0	SO
VK2HV	2322	0	SO
VK4FABD	1880	0	SO
VK1MA	1710	0	SO
VK7AD	1512	0	SO
VK4FPDW	1188	0	SO

VK2MER	992	0	SO
VK3XEM	870	0	SO
VK2ACD	756	0	SO
VK3AJ/8	728	0	SO
VK6QM	528	0	SO
VK3AFK	400	0	SO
VK2WL	289	1	SO
VK4GF	270	0	SO
VK4PJC	270	0	SO
VK2GCE	255	0	SO
VK2XJG	208	0	SO
VK2UVP	154	0	SO
VK8HPB	36	0	SO
VK5OQ	36	0	SO
VK2NRA	36	0	SO
VK6DT	27	0	SO
Multi Two			
VK4ZD	71165	0	M2
VK2FFG	49068	0	M2
Single Rover			
VK4GH	62913	0	SO
VK4ADX	24360	0	SO
VK7GN	552	0	SO
Multi Op Rover			
VK2GR	1443	3	M2
Foundation			
VK7FWAY	30600	0	SO
VK3FEMT	7533	0	SO
VK4FREQ	6532	0	SO
VK4FABD	1880	0	SO
VK4FPDW	1188	0	SO

pile up those contacts and for the DX stations he must have been a pleasant surprise - the 40 m Moxon seemed to have been the big winner.

VK7FWAY Wayne put in a stellar performance to take top honours in the Foundation category. It must be in the water in Tasmania as there is always good activity from VK7 in the Shires contest but even more Wayne must have a pipeline to great signals.

VK4ZD (VK4HH) powered off with the Multi Two category - well done Bill and Dianne. That loop worked well on the low bands - after hearing Bill from VK2ATZ during the RD Contest, I understand why the multi contacts - the VK4ZD signal was awesome and a credit to the station owner - looks like

some of the other stations may have to challenge Bill and Di in 2011.

Mark VK4ADX went bush and set a new activation record for shires as well as second place in the Rover category. Overall Mark operated from nine Shires with both a mobile installation and an inverted V at a caravan park

The rules make this an interesting category as you are able to make repeat contacts from a new location. Mark saw the opportunity to activate many shires without much grief. Another who took the same option was Martin VK7GN who gave out some of those rarer Tasmanian shires.

Well done all and thanks to everyone who entered and submitted a log. See you all in 2011. VK4TI Trent

ARRL 10 metre Contest

I mentioned this time last year about the possibility of this being a good event with improved solar conditions, hmmm, ok let us try again this year. It is on the second weekend of December and runs for 48 hours. The full details are at www.arrl.org/10-meter

CQWW 160 m Rules

The CQ World Wide CW contest will be held on the last full weekend of January. At press time, the rules for 2011 are not out yet so please visit www.cq160.com/ for the 2010 version.

**Deadline for Jan/Feb
issue: December 29 to
vk4idx@yahoo.com.au**

ARRL RTTY Round Up 2011 Rules

1. Object: Amateurs worldwide contact and exchange QSO information with other amateurs using digital modes (Baudot RTTY, ASCII, AMTOR, PSK31 and Packet -attended operation only) on 80, 40, 20, 15, and 10 meter bands.

Any station may work any other station. Stations may be worked once per band, regardless of mode.

2. Date and Contest Period: Begins 1800 UTC Saturday January 8, ends 2400 UTC Sunday January 9.

- 2.1. Operate no more than 24 hours.
- 2.2. The six hours of off time must be taken in no more than two blocks.
- 2.3. Stations are allowed only one transmitted signal at any given time.

3. Entry Categories:

3.1. Single Operator:

- 3.1.1. Low Power.
- 3.1.2. High Power.

3.1.3 Single Operator entrants may not use any form of spotting assistance such as from nets or packet. Single Operators that use assistance will be changed to the Multioperator, Single Transmitter category.

3.2. Multioperator, Single Transmitter:

3.2.1. This category also includes single operators that use any form of spotting assistance such as from nets or packet.

3.3. Power.

- 3.3.1. Low Power
- 3.3.2. High Power

3.2.3. Includes those that receive assistance with logging or relief operators, etc.

3.2.4. Multioperator stations are limited to 6 band changes (maximum) in any clock hour.

3.2.5. The clock hour is from zero through 59 minutes.

3.2.6. Band changes are defined so that, for example, a change from 20 metres 15 metres and then back to 20 metres constitutes two band changes.

4. Exchange:

4.1. United States: Signal report and State.

4.2. Canada: Signal report and Province.

4.3. DX: Signal report and consecutive serial number, starting with 001.

5. Scoring:

5.1. QSO Points: Count one point for each completed QSO.

5.2. Multipliers: Each US state (except KH6 and KL7) plus the District of Columbia (DC), Canadian provinces/territories: NB (VE1, 9), NS (VE1), QC (VE2), ON (VE3), MB (VE4), SK (VE5), AB (VE6), BC (VE7), NWT (VE8), NF (VO1), LB (VO2), NU (VYØ), YT (VY1), PEI (VY2) and each DXCC country. KH6 and KL7 count only as separate DXCC entities.

5.2.1. Count only once (not once per band).

5.2.2. The US and Canada do not count as DXCC entities.

6. Reporting:

6.1. All entries are must be postmarked or emailed by 2359 UTC Tuesday, February 8, 2011.

6.2. Entries in electronic format may be submitted to RTTYRU@arrl.org or submitted on 3.5" diskette to

RTTY Round-Up, ARRL, 225 Main St, Newington, CT 06111.

6.3. All logs that are created electronically are required to submit their electronic log file in Cabrillo file format. A print out of an electronically generated log is not an acceptable substitute. A hand-written log that is later entered into a logging or other electronic program is considered an electronically generated log and must meet electronic file requirements.

6.4. The Cabrillo entries include the header and the complete QSO list.

6.5. Submissions may be made using the web applet at www.b4h.net/cabforms

6.6. Hand-logged entries may be submitted to RTTY Round-Up, ARRL, 225 Main St, Newington, CT 06111.

Miscellaneous:

7.1. Packet radio contacts made through digipeaters or gateways are not permitted.

7.2. All ARRL Contest rules and forms may be obtained from the Contest Branch by sending an SASE with 2 units of postage.

7.3. For contest information contact contests@arrl.org or (860) 594-0232

8. Awards:

8.1 Certificates will be awarded to:

8.1.1. Top high power and low power Single Operator and Multioperator scorers in each ARRL/RAC Section.

8.1.2. Top high power and low power Single Operator and Multioperator scorers in each DXCC country (other than W/VE).

SUMMER VHF-UHF FIELD DAY 2011 Contest Rules

Contest manager: John Martin VK3KM

The rules for this Field Day are the same as for the previous event.

MICROWAVE CHALLENGE

One "optional extra" for the Summer Field Day is a special Microwave Challenge. All entrants in the 2011 Summer Field Day will receive certificates of the normal type, covering all bands as usual. However operators on 1296 MHz and higher bands are also eligible for special "Microwave Challenge" certificates.

These certificates will include details of the rank order of stations on 1296 MHz and higher bands, but they will also provide special recognition for DX contacts on the microwave bands.

For the special "Microwave Challenge" certificate, please include with your score sheet a list of the greatest distances you worked on each band 1296 MHz and above. Distances can be calculated using downloadable software that is on the WIA web site.

Dates: Saturday and Sunday 15 and 16 January 2011

Duration in all call areas other than VK6: 0100 UTC Saturday to 0200 UTC Sunday.

Duration in VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Please note there is now a 3 hour difference between the eastern states and Western Australia, as daylight saving time no longer applies in WA.

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.
- F: Rover station, 24 hours.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours, and nominate which 8 hour period they wish to claim for scoring purposes.

Entering more than one section: A portable station operating for more than 8 hours, may enter both the 24 and 8 hour sections. If the winner of a 24 hour portable section has also entered both sections, this log will be excluded from the 8 hour section.

If a portable or rover station spends part of the contest period operating from his home station, he may also enter the home station section.

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: Portable stations with more than two operators must enter Section C or D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

Rover stations: The Rover section is for all portable or mobile stations that operate from more than two locator squares or change locator squares more than twice.

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. Portable 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 either 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 4 digit 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 callsigns of all operators; postal address; station location and Maidenhead locator; the section(s) entered; the scoring table; and a signed declaration that the contest manager's decision will be accepted as final.

Please use the following format for your scoring table.

Continued on page 47

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

ROSS HULL MEMORIAL VHF-UHF CONTEST 2011 Contest rules

John Martin VK3KM, contest manager

The Ross Hull Contest will run through the month of January 2011. Logs will be due by Monday, February 14.

If you participate in the Summer VHF-UHF Field Day, remember that you can count Field Day contacts (one per station per band per day) in your Ross Hull Contest log.

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, 2010 to 2400 UTC January 31, 2011. 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 claim one contact per station per band per UTC day. Repeater, satellite and crossband contacts are not permitted. No contest activity is permitted below 50.150 MHz. 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 plus a serial number. Serial numbers need not be consecutive. *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.

While not an essential part of the contest exchange, Maidenhead locators may also be exchanged as an aid to distance calculations.

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.

Approximate location or grid locator of station worked.

Separate scoring columns for each band would be helpful.

Scoring

Scoring will be based on the best 7 UTC days nominated by the entrant.

For each contact, score 1 point per 100 km or part thereof

(i.e. up to 99 km: 1 point, 100 – 199 km: 2 points, etc.)

Multiply the total by the band multiplier as follows:

6 m	2 m	70 cm	23 cm	Higher bands
x 2	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 the contest manager's ruling will be accepted as final.

Please use the following format for your scoring table. If you wish you can cross-check by adding the daily totals across the table, but please make sure that you include the separate band totals.

Date	6 m	2 m	70 cm	23 cm	etc	
Day 1	xxx	xxx	xxx	xxx	xxx	
Day 2	xxx	xxx	xxx	xxx	xxx	
Total	xxx +	xxx +	xxx +	xxx +	xxx =	xxx (GRAND TOTAL)

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. Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, MDB, PDF, or any Open Document format.

Logs must be received by **February 14, 2010**. Early logs would be appreciated.

Note on Calculating Distances

Absolute accuracy is not required. You just need to know whether each station is above or below the nearest multiple of 100 km, so you can use a compass to draw 100 km circles around your location on a map. A more accurate method is to use six-digit Maidenhead locators and a computer program that can be obtained from the WIA web site.

2010 Remembrance Day Contest Results

Peter Harding VK4OD

I received a total of 261 Logs compared to 312 last year, with two logs for the receiving section, one log in the WWII Equipment Rx only, and one in the VHF Rx only.

The overall points totalled 41,111 compared to last year's total of 42,453. This year I believe that we can attribute the slight drop in the number of logs to the Lighthouse Event and the RD Contest NOT falling on the same weekend this year. Unfortunately, this is going to occur from time to time.

This year, 190 of the logs were created electronically, the remainder that were posted, were either hand written or on the pre-designed forms that I made available. This made my task a lot easier and enabled a quick result.

Amongst this year's entrants were logs from eight "F" calls, compared to 21 "F" call logs in 2009. Well done to those "F" calls who participated. Next year we look forward to more and more "F" calls taking part.

Although many ZL contacts were made this year, we had only one log in from the "Land of the Long White Cloud". The Certificate will be posted to the ZL ASAP.

Prior to last year's contest, I received a few requests for a section to be made available for operators using WWII Radio Equipment. Disappointingly, we received only two logs for Transmit /Receive and one operator submitted a WWII Receive Only log. This year some of the entrants were from club stations running Single and Multiple Operators, Multi Modes and Multi bands.

It is no surprise that VK6 once again will be engraved on the RD Trophy as the Winning State for 2010, although the amateurs in VK5 really improved the points from last year. I am investigating a method to balance out the overall winning state for next year's contest.

Well done to all those who took the time and effort to enter the contest and also posted or emailed in their logs.

Below is a table of the breakdown of Logs and points, State by State for 2010 versus 2009.

State	2010		2009	
	Logs	Points	Logs	Points
ACT	12	2467	19	1934
NSW	30	5385	31	5498
VIC/0	30	3254	37	5373
QLD	38	4715	33	4414
SA/NT	45	8126	56	5981
WA	76	12,410	100	14,715
TAS	29	4754	36	4360
PNG	0	0	0	0
ZL	1	74	3	178
Totals	261	41,185	312	42,453

In order to balance out the winning State by State Scoring points, I am looking at ways to achieve this. Once I have worked it out I will get them published in AR well before the next RD in 2011.

Before the next RD rolls around I will have posted to those operators who hand wrote their logs several copies of a computer generated log sheet and cover sheet, as some of the hand written sheets took a fair amount of deciphering (but we got there).

By the time you read this in AR, all the certificates will have been sent out, to all the first, second and third place getters.

Should any questions arise from this year's contest, please email them to Peter Harding at vk4od@wia.org.au and I will do my best to answer your query.

Until next year.

Peter Harding VK4OD

HF Multi Open	VK3TX	35 ±	VK7JGD	244	VK1WX	136	VK3KYF	88
2-0-2-3	VK6AFW	24	VK7LG	238	VK3HAU	136	VK6HRC	84
Call Sign	VK2RJ	12	VK1OO	235	VK4ADC	135	VK5SIG	83
Score			VK4GQ	231	VK4NH	132	VK5LOL	82
VK4IZ			VK3YXC	222	VK4JRO	132	VK4GLC	81
VK2AMW			VK1JA	202	VK2YW	131	VK6ADI	79
	HF Single Phone		VK7VKV	200	VK2EI	125	VK4ION	79
	2-0-1-1		VK3WZ	200	VK1DW	124	ZL4RMF	74
HF Multi Phone	Call Sign	Score	VK2VJE	194	VK6QM	122	VK5KMK	74
2-0-2-1	VK4ZD	634	VK6YS	190	VK5DB	121	VK6CG	73
Call Sign	VK4GH	631	VK7KC	182	VK5FPAS	119	VK7FM	73
Score	VK1HW	591	VK5OQ	181	VK3YC	116	VK1EY	72
VK2AWX	VK7FWAY	574	VK5KBJ	177	VK6CLL	115	VK2XDL	70
VK2ATZ	VK2HBG	508	VK6DT	171	VK7DIK	114	VK4ZW	67
VK3BJA	VK1PAR	505	VK4MON	166 ±	VK4BAY	110	VK7HW	66
VK4WIS	VK1MJ	388 ±	VK3ASU	167	VK2GX	106	VK6AB	60
VK7OTC	VK5CB	395	VK3DET	160	VK5YX	105	VK4FLR	59
VK4IZ	VK3AVV	377	VK2HZ	159	VK5RV	102	VK2AR	57
VK2AFY	VK6BJ	368	VK1LW	155	VK3LM	101	VK3JK	54
VK5GRC	VK4KRX	330	VK2BOR	144	VK5ALX	100	VK6CSW	52
VK6SH	VK4ATH	330	VK2AOJ	144	VK7VH	100	VK5WO	52
VK6AHR	VK5BWH	319	VK2AOA	298	VK3HFS	98	VK6SO	50
	VK2AOA	298	VK3AFK	257	VK2IG	93	VK2UVP	48
	VK3AFK	257	VK3ADW	140	VK2VTH	93		
	VK2ACC	248						
HF Single CW								
2-0-1-2								
Call Sign								
Score								
VK5UM		78						

VK6AR	45
VK4RY	44
VK3LRE	44
VK7AD	42
VK6YD	41
VK5SE	40
VK6DZ	39
VK7HDM	37
VK6FDX	37
VK2EXA	35
VK6JDM	35
VK3CTN	35
VK7OO	34
VK3MDX	32
VK5ZIG	32
VK4FK	32
VK6JP	32
VK3HV	30
VK7RM	30
VK2CKP	29
VK3YAZ	29
VK6MM	27
VK7ZGK	27
VK7BYL	26
VK5KLV	25
VK6WJ	25
VK3FDI	24
VK3AKT/4	24
VK3DY	24
VK6GD	23
VK5UE	21
VK4BW	18
VK3JWT	18
VK1CM	17
VK6FBDV	17
VK6GG	16
VK3KTM	16
VK4AR	16
VK4UD	16
VK2DCR	15
VK2WG	14
VK5DJ	12
VK7KZ?	10
VK4MAX	10
VK5VCO	9
VK5NE	9
VK4AJL	8
VK6AXB	7
VK6IW	5
VK5AKH	3

**HF Single Open
2-0-1-3**

Call Sign	Score
VK7GN	798
VK7ZE	772
VK3VWW	61

**HF Single RX
2-0-1-4**

Call Sign	Score
VK6ABM	70

**HF WWII Single
Phone 2-1-1-1**

Call Sign	Score
VK2ABN	129
VK4AAT	58

**HF WWII Single
RX 2-1-1-4**

Call Sign	Score
VK2VEL	16

**VHF Multi Phone
1-0-2-1**

Call Sign	Score
VK5LZ	582
VK6RRG	327
VK3BJA	222
VK5GRC	66
VK4WIS	64
VK6AHR	36

**VHF Single Open
1-0-1-3**

Call Sign	Score
VK5AIM	329
VK5ZW	15

**VHF Single Phone
1-0-1-1**

Call Sign	Score
VK5NE	799
VK6BDO	691
VK6PIG	684
VK5ZT	671 ±
VK6NAH	660
VK5AKH	535
VK6USB	517
VK5VCO	460
VK6KHZ	460
VK6FMON	435
VK5NI	387
VK5HZ	375
VK6KYF	354
VK6GO	354
VK6FIVE	338
VK6SAA	338
VK6SCS	337
VK6LZ	311
VK6CSW	302
VK7OTC	280
VK6GG	268
VK6KTV	265
VK6AXB	265
VK6NU	245
VK5ZD	242
VK5KBJ	240
VK6ST	237
VK6FDX	230
VK7HDM	224
VK6YS	220
VK6YD	211
VK6HAD	209
VK6JP	202
VK5AR/M	201

VK6MM	184
VK6CLL	184
VK6GD	178
VK7OO	177
VK5FXYL	158
VK6OTN	134
VK6WJ	134
VK5KLD	134
VK6HDX	131
VK3JK	130
VK6WIA	127
VK6KMC	117
VK5FSKS	106
VK7RM	103
VK6CN	101
VK6ZKO	100
VK4ADC	83
VK5APA	76
VK6ZLZ	75
VK5LD	73
VK6AR	69
VK7ZGK	65
VK6AB	62
VK6OE	59
VK4OE	59
VK6AAL	58
VK6HRC	58
VK4ZA	54
VK6KG	53
VK4ZW	50
VK6ZSB	50
VK6AN	42
VK7JGD	40
VK6YF	39
VK1DW	38
VK7PAH	36
VK5ZKK	35
VK3JWT	35
VK4AR	31
VK6ZMS	27
VK5RV	26
VK6TS	26
VK6FJA	23
VK7VKV	21
VK4RY	15
VK7HW	13
VK7VH	11
VK4GLC	8
VK3KTM	6
VK2EI	6
VK4ION	6
VK2YW	5
VK1EY	4
VK5CB	4
VK4UD	4
VK4HJE	4
VK2ZCW	3
VK4BW	3

**VHF Single RX
1-0-1-4**

Call Sign	Score
VK5FPAW	361

The Westlakes Contest Cup Results

Another one has gone by for the Westlakes Cup Contest. Sorry I was not present for the occasion and operating the Station. Many thanks to those who held the reins for me: Paul VK2HV and Dave VK2RD.

Overall first place to Bill VK4ZD.

Foundation first place to Leonie VK2FHRK.

Congratulations to the winners.

Please note that last year's winner for the Foundation category has upgraded and there were no bonus points allocated for Foundation in this year's 2010 Westlakes Cup Contest.

Note: If I could have been present at the preamble I would have nominated last year's Foundation runner-up callsign for the bonus Foundation callsign.

All logs received for the contest that did not win will receive a participation award. Trophies for the winners will be sent by post.

Allan Brown VK2JED

Westlakes Contest Coordinator 2010.

Continued from page 44

SUMMER VHF-UHF FIELD DAY 2011 Contest Rules

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. Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, MDB, PDF, or any Open Document format. Logs must be received by **Monday, 7 December 2010**. Early logs would be appreciated.

FIELD DAY WEB SITE – <http://www.wia.org.au/members/contests/vhfuhf/>

This site includes the rules for the next Field Day, rules and results of all past VHF-UHF Field Days, cover sheets and scoring tables, and other information.

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Shires Contest winners



Mark VK4ADX went bush and set a new activation record for shires as well as second place in the Rover category. Overall Mark operated from nine Shires with both a mobile installation and an inverted V at a caravan park.

The rules make this an interesting category as you are able to make repeat contacts from a new location. Mark saw the opportunity to activate many Shires without much grief.



VK7FWAY Wayne put in a stellar performance to take top honours in the Foundation category. It must be in the water in Tasmania as there is always good activity from VK7 in the Shires contest but even more important Wayne must have a pipeline to great signals.

Fourth overall and with more than four times the points of the next Foundation licence holder is a great effort.

Keith Bainbridge VK6RK

As I write this at the end of October, December and Xmas seem a long way away and my upcoming trip to VK7 is still in the distant future. However time seems to fly by these days and the monthly task of assembling the input from the states groups comes around once again. Input has been a bit light on this month, probably because everyone has had such a hectic time with the Royal Show, JOTA, National Field Day and, of course, the peak of the contest season.

PARG at the National Field Day.

Rex VK6SN reports:

We set up in the rotunda on the Mandurah foreshore and caused quite a stir with our trailer and mast. It was perfect weather, wall to wall blue sky and 28 C temperature. We had a good response from the public with a lot of enquiries on obtaining a licence; luckily we had the Foundation handbooks available showing what was involved. More people showed interest when they found that morse was no longer part of the exam. We also had the WIA CQ brochures to hand out.

Our HF contacts included NZ, Spain and the US, plenty of 2 metre contacts and also worldwide contacts on ILRP and Echo link, with members of the public operating on all the bands.

If all the people who enquired about our club meetings turn up we will have to move into a larger building. Overall it was a very good and a lot of people suggested it became an annual event. 73 de Rex VK6 SN

Sounds like it was a good turnout Rex; and the pictures are good too.

HARG's National Field Day activities from Wireless Hill.

23 October saw the inaugural WIA National Field Day. The Hills Amateur Radio Group (HARG) set up at Wireless Hill park, in Perth's southern suburbs. The Hill is the site of one of Australia's first Morse stations, built 1912 to communicate with shipping. It now serves as a very popular picnic and BBQ location and it also hosts a telecommunications museum.



Members of PARG with the Mayor and SES.



HARG: Christie VK6XCJ in the background relaxing, Barry WD4MSM/VK6 on the microphone, Martin VK6ZMS logging. Photo by Bill VK6WJ.

HARG opted for a solar setup with Heath VK6TWO kindly donating his solar trailer consisting of a number of panels, regulators and a heavy duty battery. The sun stayed out all day so the battery voltage never dropped below 13 volts. With plenty of space and trees, several long-wire and dipole antennas were strung up. A nine metre squid pole with an SGC auto tuner and radials was also swung into action. HF conditions were not as good as was hoped for

but contacts were made. HARG had a few radios on display, including two Icom IC-7000s, a Yaesu FT-847 and an Icom ID-1.

A number of visitors to the park were curious about the contraptions in the sky and wandered over for a chat. One young visitor in particular was fascinated by the radio technology on display. The 'Calling CQ' brochures

Continued on page 62

ALARA

Margaret Blight VK3FMAB

Publicity Officer

YLs are out and about

Not only the flowers are blooming in our spring this year, and what a season it has been for a marvellous amount of colour, texture and perfume in our gardens. There have also been many occasions where amateur radio operators have been out of doors demonstrating their hobby to the wider public. With some success, I might add.

A huge weekend of radio for the ladies of VK3

Every year the City of Box Hill runs a Spring Festival providing an opportunity for a large number of organizations and interest groups to set up their own individual marquee in which they may provide information about their group's activities and demonstrate some of their skills.

Many groups provide some form of community work or support. Most consist of volunteers. There is a multi-cultural element demonstrated too which helps make it such a colourful event.

Many hundreds of people attended, young and old, who walked around

the large area communicating with the various representatives of clubs and organizations and enjoying the free entertainment provided throughout the day.

The Eastern & Mountain District Radio Club set up their tent in their usual location and this year extended an invitation to female club members for ALARA to have its own table.

This opportunity enabled the ALARA table to be front and centre and hopefully catching the eye of all who passed by. The radio demonstrations and video projections were further inside the tent and many stopped by to view them.

A number of enquiries were made of the ALARA representatives, many of which were fielded by the State Representative Jean VK3VIP who put in a sterling performance for most of the day. A number of membership application forms were given out, so hopefully we will see some more members sign up.

The previous day saw Jean VK3VIP representing ALARA at Scienceworks Museum at an information stand

operated by Melbourne's Eastern and Mountain District Radio Club. She managed to introduce a few young people to amateur radio and was assisted by Emily VK3FEG, who is pictured demonstrating amateur radio to Erin, the granddaughter of WIA president Michael Owen VK3KI. The girls were ably supported by Robert VK3DN, Lino VK3EI, Matthew VK3VIL and John VK3DQ.



Margaret VK3FMAB and Jean VK3VIP with Michelle VK3FEAT in the background at Box Hill.

Best wishes for the season

The coming weeks will bring pressure and joys. May I wish you all a happy and peaceful time. So a seasonal bonus for you...The answer to a question many still ask! How did 33 originate as a sign off for YLs?

The start of the YL 33

*Clara had her ticket
She also had a rig
Because she was just starting
It wasn't very big.*

*She slowly tuned the crystal,
And watched the meter drop.
Then tapped the key a couple times
To be sure it wouldn't stop.*

*Now everything was ready.
She called a short CQ
And received an answer
On thirty-six sixty-two.*

*They chewed the fat 'bout stuff and things.
'bout dresses, work and dates.
They finally called it QRT.
The girl sent eighty-eights.*

*Clara thought it mighty funny
Whether it be Miss. or Mrs.
To end a perfect QSO
By sending "Love and Kisses"*

*It sounds too sentimental;
Just a little too much "goo"
To be sending "Love and Kisses"
To a girl the same as you.*

*For an entire week she pondered;
Wouldn't even touch the rig.
She pushed her slide rule by the hour,
Employing "logs" and "trig".*

*She added and subtracted.
What could the answer be?
To reach a happy medium
Twixt eighty-eight and seventy-three.*

*Clara finally looked up from her work
All smiles and not forlorn.
Twas July in Nineteen Forty
That thirty-three was born.*

*There's no real definition
But it's meaning is known well.
It's how a YL says good evening
To another friend YL.*

By Clara W2RUF



VK5 activities

On Saturday 23 October, like many other amateurs, some of the ALARA YLs were involved with stations participating in the WIA National Field Day.

Lesley VK5LOL and Christine VK5CTY were both part of the AHARS group. The station was set up at a Strawberry Fair at one of the Primary Schools in the Adelaide Hills. Eden Hills School has run this Fair for many years and they always have a very good roll-up. One of the members of AHARS, Patrick VK5FMPJ is a pupil at the school and suggested it as a venue for the Field Day Station.

At the same time, Meg VK5YG, as a member of the Lower Murray Amateur Radio Club, was at the local Bunnings store with a radio station which provided a great interest for a number of onlookers.

As Saturday seems a particularly busy time at any Bunnings store, this seems a very good location in which to set up a station.



At Scienceworks Museum

Above:
Matthew VK3VIL, Robert VK3DN, Emily VK3FEG, Lino VK3EI, Jean VK3VIP and John VK3DQ.

At left:
Emily VK3FEG demonstrating amateur radio to Erin.

YLs contribute to the community in many ways – Christine VK5CTY

On Saturday 16 October, Meg VK5YG and Christine VK5CTY, along with several hundred others, attended a medal ceremony at Government House Adelaide. The special reason for Meg and Christine being present was to witness Jenny VK5FJAY being presented with a medal for 32 years of volunteer service with St John Ambulance Service. Her medal was presented by the Governor of South Australia.

We can only marvel at the level of commitment of many of our volunteers who freely give up their spare time to help the community. Congratulations Jenny "we take our hat off to you", 32 years is a wonderful record of service. Well done VK5FJAY!

The photo shows Jenny, resplendent in her St. John uniform, standing beside a rather special motor bike. This motor bike was ridden to emergencies in the very early days of St John Ambulance Service and has been lovingly restored by the son of the man who rode it. Jenny tells us that only the men rode the motor bikes in those days. The women wore



white dresses and nursing caps or veils, not very suitable on a motor

bike although they carried out the same duties as the men.

VK7news

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au

Regional Web Site: <http://reast.asn.au/>

Tasmanian Radio; Ulverstone, The Domain, Myrtle Park — and the Milky Way

A quick reminder that by the time you receive this edition of AR we will be in full swing with the VK7 Central Highland Hamfest that happens every two years in the small central highlands town of Miena. This event is hosted by the Central Highlands Amateur Radio Club of Tasmania in the fantastic venue of the Miena community hall. Many of our regular traders are coming across to make this another memorable event. December 4 2010 from 10 am to 2 pm and you can purchase lunch at the venue.

A big Remembrance Day Contest congratulation goes to Martin VK7GN, Laurie VK7ZE and Wayne VK7FWAY. Martin topped the HF Single Open category with 798 points and was closely followed by Laurie VK7ZE with 772 points. Wayne was the only VK7 Foundation licensee entrant and came fifth in the VK list for the HF Single Operator category with 574 points – a fantastic effort!

A reminder that you only have until 30 January 2011 to claim your WIA Centenary Certificate and there are many VK7 who have enough contacts and points to claim their award.

Cradle Coast Amateur Radio Club

The National Field Day saw a great VK7 public activation from CCARC at "Otto's Grotto" in the WWI Naval Memorial - HMAS Shropshire Park in Ulverstone. There was HF and VHF active along with a BBQ and a great time was had by all. Thanks to Wayne VK7FWAY, Keith VK7KW, Scott VK7FTTT, Mike VK7MH, Dick VK7FORF, Steven VK7FXXX, Steve VK7ZSJ and the club's newest member, Steven Terris.

North West Tasmanian Amateur TeleVision Group

JOTA was alive and well in NW VK7 with NWTATVG providing assistance and equipment for three Scout camps on October 16. The camps covered were Paton Park in Ulverstone, Camp Boomerang at Port Sorell and Burnie Scouts. A big thank you goes to Bob VK7MGW, Ursula VK7FROO, Graham

VK7FGAA, Lucas VK7FLSB, Ross VK7WP, Neil VK7ZNX, Jim VK7JH and Tony VK7AX who supplied time and equipment.

After approximately 35 years of operation, Tony VK7AX has closed the Packet Radio BBS known by the SSID of VK7AX-6. Over time RF users have decreased and running costs have increased and the decision was taken to close the BBS. Tony thanks the many amateurs who have provided support to this service over the years.

Radio and Electronics Association of Southern Tasmania

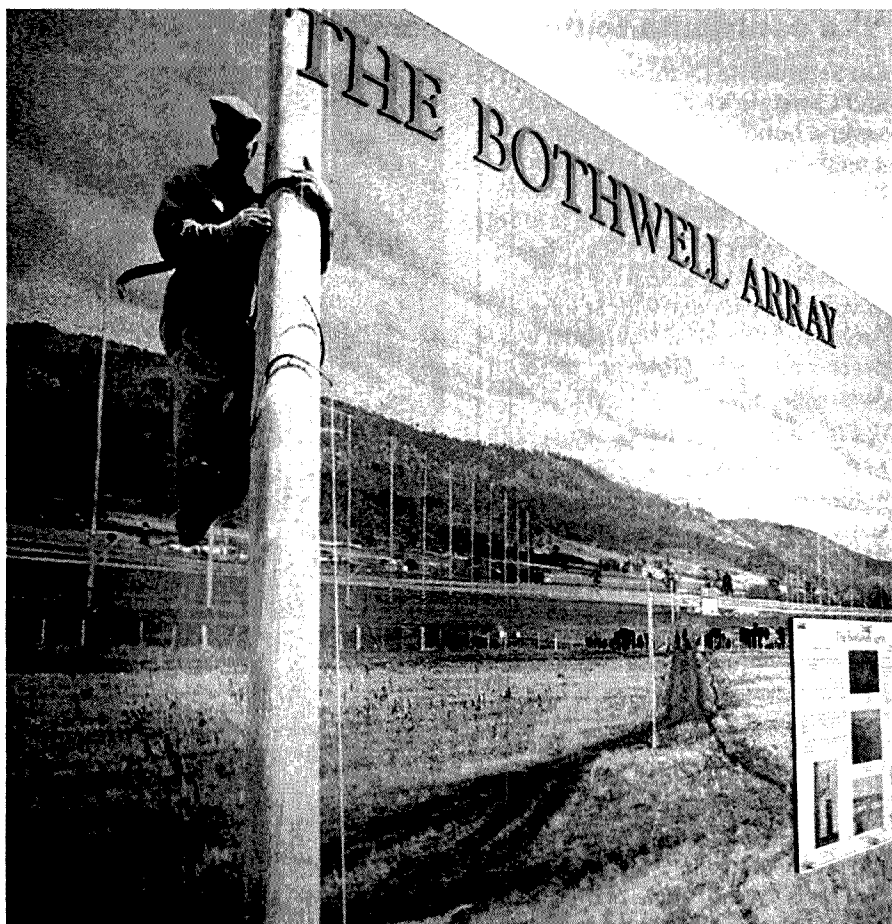
We have started transmitting DVB-T on 446.5 MHz from the Queen's Domain Studios on a Wednesday night from around 7:30 pm. If you have a set top box that can frequency tune to 446.5 MHz and a high gain antenna pointed toward the Domain

then we would love to hear a signal report of signal intensity, signal quality, your location and antenna. The callsign used is VK7OTC and we have had some great reports so far.

October 16 saw about 40 people from around VK7 and about 10 kids visit the Grote Reber Museum at the Mt Pleasant Radio Observatory at Cambridge.

The museum has many wonderful artefacts and information about amateur radio operator Grote Reber (SK) and his experiments mapping the Milky Way using HF from his square kilometre array about five miles north of Bothwell.

We toured the museum, the 26 m radio astronomy dish, looked at sun spots through a solar telescope and finished off with 3D movies in the 3D Virtual Reality Cinema.



Grote Reber (SK) at his Bothwell antenna array.

A great time was had by all who attended. A big thank you to Karen Bradford and Dr Stefan Deiter, the curator of the museum and Phil Watkins who all made this visit a memorable one.

The November presentation to REAST was given by David Hay and David Long from the Field Operations Section of the ACMA. They covered the management of complaints,

HF monitoring at the Quoin Ridge facility, compliance activities, supporting major events like the grand prix, conducting technical investigations and the Digital Switch-Over field surveys along with some interesting experiences and anecdotes. A big thank you to Dave Hay and Dave Long for their time and presentation and providing an insight into the activities ACMA undertake.



David Long and David Hay from the ACMA Field Operations Section.

Northern Tasmania Amateur Radio Club

NTARC lets us know of the recently upgraded 6 (50.057 MHz) and 2 (144.474 MHz) metre beacons at Don Heads (VK7RAE) which are now locked to a highly stable GPS disciplined clock.

A big thank you to Joe VK7JG for construction and installation, Rex VK7MO for the GPS receiver, Peter VK7PL for the Philips chassis and power amps and David VK3HZ for making the GPS locked exciters.

The October meeting saw Tony VK7YBG demonstrating his Ukrainian RigExpert antenna

analysing hardware and software. The audience came forward with a few examples including a dual band whip, UHF/VHF/GPS and 3G antenna combinations, half-wave 2 m vertical dipole, and 2 m/70 cm Yagis.

The analyser did a great job of showing the RF characteristics of each of these antennas. A reminder that the December NTARC meeting occurs again at Myrtle Park on December 8 and of course we are looking for the first to catch a fish and receive the slippery trout award!

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SilentKey

George Thomas Bruce VK2GT

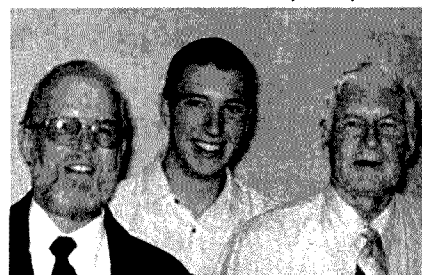
It is with sadness that we advise the passing of George Thomas Bruce VK2GT. George passed away peacefully on Sunday morning (17/10/2010) at Carrington Centennial Care after a short illness. George was first licensed in 1932 at the age of 17 and held that licence until his death at 96 years, just two weeks short of his 70th wedding anniversary. He attained his licence at the same time as his neighbour and lifelong friend Ross Weeden VK2PN (SK) of Tumut. He was very pleased when his son Lloyd attained his licence in 1981 and his grandson Lachlan VK2LGB also gained his licence, making three generations. He was a member of the Mid South Coast Amateur Radio Club for many years, until poor health made it impossible for him to get to the meetings. George was also very involved with the early years of the WIA transmitting station at Dural and worked for the Department of Civil Aviation for most of his working life. He will be sadly missed by all who knew him.

Submitted by his son Lloyd VK2ELB.

Silent key

A silent key we mark today
It's VK2GT
While active on the airwaves past
No Morse Code will there be
The valves and aerials no more
Will find a contact free
The skeds and shacks and home made gear
Beside that cup of tea.
Repeaters will no longer buzz
With friends across the sea
No broadcasts Sunday morning
And dials tuned constantly.
For almost 80 years there's been
A voice both strong and free
But now it's time to say goodbye
To another silent key.

By Terry Bruce



The ham radio boys, Lloyd, Lachlan and George.

SilentKey

It is with a very sad heart that we report that VK7AJ Lin Williams passed away peacefully in his sleep on 25 October.

Lin was passionate about two things: his radio hobbies including amateur radio and motor bike racing. Lin was involved in all aspects of wireless communication in Northern Tasmania and raced on many of the tracks around Tasmania.

Lin Williams VK7AJ

Lin always held a wonderfully balanced view on all aspects of life, had a tenacious never-give-up attitude that was truly humbling to all who met him, and his thoughtful on-air nature will be missed by those who knew him.

Our thoughts and condolences go out to XYL Jean.

Rest in peace, old friend.

Jason VK7ZJA

VHF/UHF An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

No sooner had I pressed "Send" to dispatch last month's report to our trusty Editor than the bands opened and the first VK to ZL 2 m tropo contacts occurred.

On the evening of October 12th, the Hepburn tropo forecast was showing a stripe of enhancement from the VK2/4 border southeast to the northern tip of the South Island of New Zealand. Bob ZL3TY reported hearing the Newcastle Ch 5A TV at 5x5 and rising (this "beacon" will be a big loss when they shut down analogue TV). At 0945, on 2 m, he worked Adrian VK4OX (5x1) and Grant VK2MAX (5x4). By 1005, signals had risen to S9 and he worked Steve VK2ZT (5x2), John VK4TJ (339) and Roland VK4VDX (519). The VK2RSY 2 m beacon rose to 5x1. Unfortunately, the opening did not extend far enough south for Norm VK3DUT.

The next morning, the band was still open, and there was a repeat of the contacts of the previous evening. Joining them were Ross VK2DVZ (5x4), Ron VK4CRO (5x4), Ron VK4DD (5x5),

John VK4MJF (5x4) and Mick VK4NE (5x4). The opening continued on-and-off for the whole day, seeming to favour VK4 more as it went on.

The following morning (October 13th), remnants of the opening were still present with the last contact between Bob and Adrian VK4OX (559) at 2000Z before the band finally closed.

VK9NA Team EME Tests

Alan VK3XPD reports on some recent activities in preparation for their DXpedition:

For our forthcoming VK9NA DX Expedition in January 2011, our primary focus is on the microwave bands from 1296 MHz through to 10 GHz. However, due to the unpredictable and fickle nature of the tropo as it applies to microwave propagation, we had also considered expanding our horizons to include 2 metres EME.

Rex Moncur VK7MO kindly offered us a suitable homebrew portable Yagi for the purpose. It is a rather large antenna with 19 elements and a full 6 wavelengths (12 metres) long.

With the ARRL EME Contest on Sat-Sun 30-31 October, Michael VK3KH suggested we set up a "portable"

station to determine if 2 metres EME was possible with this single Yagi combined with the RF gear we were taking.

As most of you will no doubt be aware, the logistics in managing such a long Yagi can be quite challenging, especially in windy weather. To get an idea of the task involved, prior to the contest we laid out Rex's comprehensive "kit of parts" on some flat ground at Michael's QTH in Mt Eliza in order to work out how it all went together.

Finally, after an hour or so, we had the basis of one very long Yagi. Due to its physical size and the fact that it was originally designed to be light and transportable (via aircraft) for portable use, there are multiple longitudinal and lateral bracing ties to maintain the overall rigidity.

Our operating window for the contest commenced Sunday at 0200 AEDST for moonrise with the Moon setting about 12 hours later at 1400 AEDST.

To allow us some level of comfort, we decided we should try to setup the antenna on the roof of Michael's business premises and operate from his first floor office in Cranbourne.



Photo 1: Michael VK3KH tames the long Yagi.

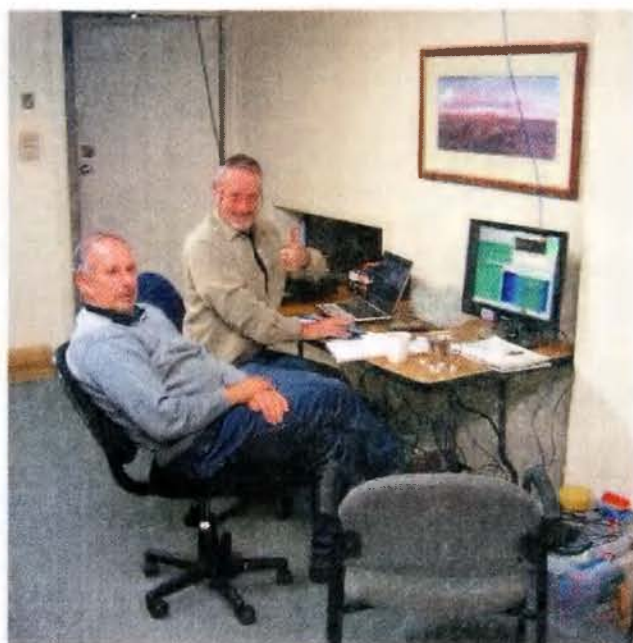


Photo 2: Colin VK5DK and Mike VK3KH working EME.

Driving down to Cranbourne with Colin VK5DK in tow on Sunday morning, it was pouring rain with a very heavy sky. We met Michael at 0100 AEDST (yes, 1 am) and set the laptop up in his office with a connection to a large video monitor.

We then initiated sessions for WSJT7 (JT65B) and a link to the Weak Signal Bulletin Board - NOUK - that gave us information on who was EME-active at any given time.

At 0220 AEDST we had moonrise from the North East (USA) and to our great delight the first QSO we achieved was with Joe Taylor K1JT, the designer of the WSJT weak signal package we were using, and the main mode on EME worldwide.

With the rain continuing and the moon not visible, we quickly worked four more USA stations, and one JA station. Then nothing for the next two hours.

As the moon climbed up to its apogee of +38 degrees, we tracked it with fairly regular manual AZ/EL adjustments at intervals of about 30 minutes. Along the way we had several very bad periods of rain static which swamped the receiver front end with very high noise levels preventing any EME ops.

The USA window closed and the EU window progressively opened around dawn. Colin had gone home and Peter VK3TPR visited us for a few hours.

What a nice surprise it was when we worked Guy VK2KU with an impressive -20 dB signal. Guy had heard us from Norfolk Island in January 2010 but we were unable to complete.

Over the next six hours, with a few more rain static interruptions, we worked many more stations, and had a few "misses" until the moon finally set in the north west at 1400 hours.

Our final tally for the 12 hours was 22 stations, for 12 countries.

We had clearly proven that our setup was "very" EME capable! So we are taking it to Norfolk Island in January, 2011.

We are looking forward to a busy schedule of microwave ops and 2 metres EME during the middle two weeks of January 2011.

Cheers from the VK9NA Team of Michael, Kevin, Andrew and Alan.

See also page 59

10 GHz home operations

There are a number of stations now capable of operating on 10 GHz from their home QTH at virtually no notice, which opens up new possibilities.

Alan VK3XPB writes:

I am hoping to inspire a bit of interest in 10 GHz operation via Aircraft Enhancement from those of you in Adelaide, Canberra and maybe Tasmania.

From this QTH here in Camberwell, my 10 GHz Home station up about 10 metres has an excellent "shotline" for the MANY aircraft going to/from

Adelaide, to/from Canberra/Sydney and down south to Tasmania. Anyone with 10 GHz gear in this line, or even slightly off to the sides, will benefit from this enhancement.

To give you an idea of what is possible, even in the middle of winter, Colin VK5DK in Mt Gambier some 375 km away to my west is workable using WSJT on troppo on most bad weather days. Aircraft Enhancement gives us many dB of additional lift over 2-3 minutes duration.

continued next page

The Magic Band – 6 m DX

Brian Cleland VK5BC

October was another disappointing month for 6 m. Very little reported in VK except odd TV carriers in the 40 MHz range from the north, mainly China.

More activity though in the Philippines where Willem DU7/PA0HIP reports the following:

October was relatively good, propagation-wise, with several very good F2 openings to JA in the late afternoon and early evening. Nearly every day there was propagation in the direction of JA, UA0 (inband TV) and BY in the 3000 to 4000+ km range, sometimes for only minutes, but on many days also extended to hours. A big problem in this part of the world though is activity, on most days it was low or non-existent.

Good days to JA/BY were October 1, 3, 6, 8, 9, 10, 15, 17, 18, 19, 20, 22, 23, 30. On October 17, I even worked a JA2 with 50 mW in a whip antenna, his RST 599 on a slow s-meter, hi. On a couple of days I was working them on a 40 m dipole, because of the damage to my 2 x 7 array. All JA districts were worked, with many JA8s (4000+ km) and also BY4, 7, 8, 9 districts and the occasional HL.

Night time TEP (Spread F) happened on several days of the month, especially in the beginning of the month, with Mark VK8MS worked on many occasions with S9+ signals, but no other activity unfortunately. The VK6RSX beacon was heard weakly on several occasions and so was the YF100/B beacon, which peaked 599 at times (but same story about activity). An especially good day for Spread F was October 1st with propagation to VK4, VK8 (MS)

and VK6 (RSX). The VK4s TL, ABW, FNQ, and ZFC (new grid loc for me) were worked with signals up to an incredible S9+25 dB, with the characteristic flutter QSB.

On the 15th October Brian VK4EK in Sapphire reported working JA2DDN.

Good opening to JA on the 6th November from the Harvey Bay area when Glen VK4BG and Harvey VK4AHW worked JG1TSG. Glen also worked JA1NPD, JK1OXU and JE1BJT.

Another good opening from northern VK4 to JA and DU7 on 11 November. Opening extended from John VK4TL in Cairns area, south to Brian VK4EK in Sapphire and Ray VK4BLK in Yeppoon. Several JAs were worked along with Willem DU7/PA0HIP.

From the Es perspective there was nothing reported during October. Early November saw a few contacts reported, 5 November Brian VK4EK worked Rob VK3XQ, 6 November Gary VK4ABW worked Brian VK5BC and on 11 November Joe VK8VTX in Darwin reported the Townsville beacon and worked John VK4FNQ in Charters Towers. Hopefully the Es really come to life later in November.

Hope everyone has a very safe and Merry Xmas and Happy New Year. Maybe the sun will start showing more signs of activity in 2011.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com

Unfortunately for Colin and I, we do not have many flights on this east-west path. We only get lift from some of the Perth flights and a few other irregular services.

However, when we do get good lift, we often hear our tones and some of the Doppler trails are absolutely stunning to see on screen.

VK7MO to VK3PY on 10GHz

Chas VK3PY writes about a recent long-distance 10 GHz QSO:

Following an exchange of emails on 20 October with Rex VK7MO who was about to come over to the mainland for some extensive 10 GHz portable operations, Rex indicated he would be available for a quick test from Devonport prior to boarding the ferry. We arranged a sked for the next day (Thursday, October 21), in the late afternoon. The distance between our respective locations would be about 380 km, albeit pretty much over water.

For my location I chose a hilltop about 15 km west of Geelong at an elevation of 210 m ASL with a clear view to Bass Strait about 20 km away. The weather was calm and sunny, the temperature around 25°C.

I arrived on site at 4:00 pm (local EDST) and was set up within 15 minutes. On switching on my 10 GHz transverter I immediately found a JT65 signal (possibly from Michael VK3KH or Alan VK3XPD, both of whom were hoping to work Rex).

Shortly after this, Rex phoned to advise he too was set up and ready to transmit. As soon as he keyed his transmitter I copied his carrier and peaked my dish on it. Imagine my elation at hearing it S9!

We went to SSB and exchanged signal reports. I gave Rex 59 and received 57 in reply, with some deep QSB at times. Nevertheless the contact was "armchair copy" all the way. By this time Ken VK3NW had joined me on the hill.

Since Rex was on a tight schedule there was no point in Ken setting up a separate system (pretty much identical to mine, as it happens) so he just picked up the microphone and made an easy contact too.

For the record, my 10 GHz station consists of a converted MITEC data link driving a 3 W DEMI PA and a 600 mm circular dish. Rex uses a DB6NT transverter with a 10 W PA to a 640 mm offset-fed dish.

Several of us also recently worked Rex VK7MO across Bass Strait when he was visiting northern Tasmania.

David VK3HZ has 10 GHz operational at home by appointment.

Russell VK3ZQB in Port Fairy is also QRV and Michael VK3KH will

hopefully be QRV by appointment from his upstairs balcony (to the west only) very soon.

So how about it? Is anyone keen to try 10 GHz Home station ops? It's a whole lot of fun and it puts your microwave gear to good use between contests!

VK3NX 47 GHz Gear

Following on from last month's report, Charlie VK3NX submitted some photos of the gear used by him for the record-breaking contacts with David VK3QM.

That's it for another year. Best wishes to all for the season. Here's hoping for a bumper summer of DX on the bands and in the modes that you most prefer!

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



VK3NX 47 GHz transverter



View from the operating location.



VK3NX 47 GHz horn antenna.

Digital DX Modes

Rex Moncur VK7MO

This month's column focuses on 10 GHz terrestrial operations using the digital mode JT65c. The key to long distance tropo-scatter operation where signals may be too weak to hear is to reduce the number of variables that arise from the six basic ones of frequency errors at both ends, azimuth errors at both ends and elevation errors at both ends:

Accurate frequencies at both ends avoid the need to search for a weak signal, which may only occasionally rise above the -28 dB threshold of WSJT. This is generally achieved by locking to a 10 MHz GPS or rubidium reference and typically results in frequency errors of less than 10 Hz at 10 GHz. Short-term frequency stability is also important requiring a good quality single or double oven OCXO and a drift of less than 10 Hz over a minute.

Accurate alignment of antennas is required in both azimuth and elevation at both stations. With a typical 60 cm portable dish, the 3 dB beamwidth is around 3 degrees, so a 1.5 degree error in either azimuth or elevation at either station puts you 3 dB down.

Desirably one would seek less than one dB loss which requires both stations to be aligned to better than half a degree. The most accurate technique we have found for alignment is to use a rifle scope (readily available at gun shops for less than \$100) that has been set to the same direction as the antenna beam based on sun or, better still, moon noise.

Sun noise should be around 3 dB for a 60 cm dish and moon noise around 0.05 dB. While sun noise is easier to detect, the difficulty is that one cannot look directly through the rifle scope at the sun and one needs to put thin paper, marked with a cross, across the scope to form an image. If moon noise can be detected, this can be more accurate as one can align the rifle scope graticule directly on the moon.

The best way to measure moon or sun noise is to use a wide bandwidth detector at the IF. Once the rifle scope

is aligned one can align directly on the station in azimuth by using some feature such as a farm house that one can see on Google Earth or alternately use some marker such as a flag, the position of which has been established by GPS over a distance of at least 500 metres to achieve the required 0.5 degree accuracy.

Elevation can be set by aligning the rifle scope on or just above the horizon. The spreadsheet at the following URL is useful for alignment

on objects that are not directly on the path if your system includes a protractor or other means of accurately measuring relative angles:

http://reast.asn.au/2010/Great_Circle_Bearing.xls

10 GHz Rain-scatter

See Figure 1

Colin VK5DK has provided an interesting image of the results of rainscatter on 10 GHz signals from Russell VK3ZQB as shown in Figure 1.

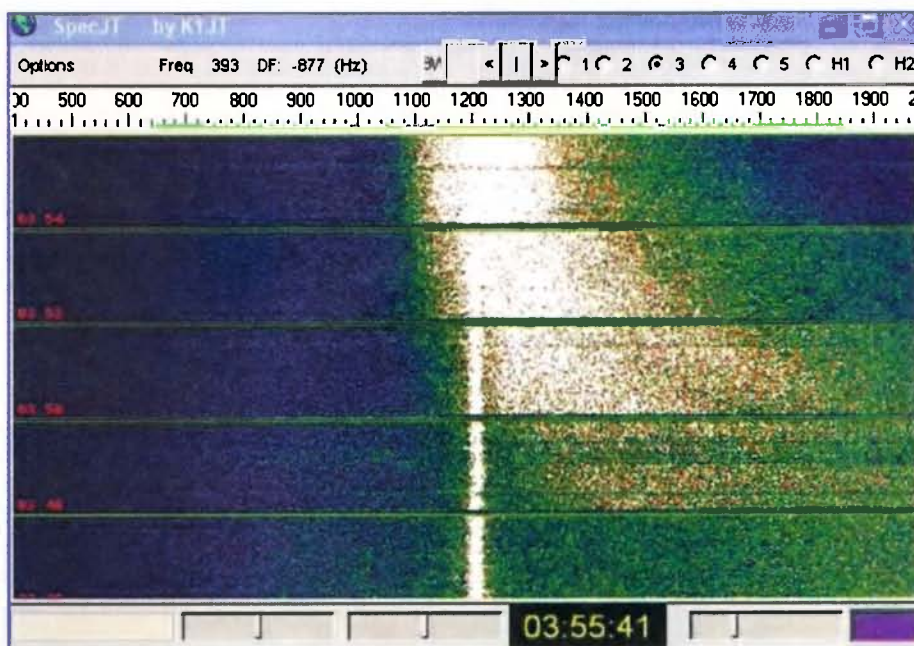


Figure 1: VK3ZQG 10 GHz rainscatter signals.



Figure 2: From left, Peter VK3TPR, Rex VK7MO and David VK3HZ's dish.

VK9NA 2011

Get your gear ready for mid January

Following a successful season last January, the VK9NA team of Alan, Kevin and Michael will be joined by Andrew VK1DA, for a return to Norfolk Island in January 2011.

We will be operating from about the 8th of January through to about the 20th which includes the Summer VHF/UHF Field day weekend in Australia. Here is an opportunity for those who missed adding VK9NA to their log!

With the VHF-UHF Field Day falling in the middle weekend of this DXpedition, this will give many more the chance to get into a great location to work Norfolk Island. Get your gear ready!

This year the team will have a particular focus on the Microwave bands from 2.4 GHz to 10 GHz, as

we have unfinished business in this part of the spectrum. This does not mean the lower VHF bands will be neglected, as we will be operational on all bands from 50 MHz to 10 GHz. Modes operated will include SSB, CW, FSK441 and JT65.

Also, after successful tests, we are pleased to announce:

VK9NA will be on 2 metre EME this year.

We have added a 12 metre long Yagi (courtesy of Rex VK7MO), and look forward to extending participation to VHF stations around the world.

Accommodation and airfares are

VK9NA 2011



NORFOLK ISLAND
SOUTH PACIFIC

booked, and planning is advanced.

This year we should have 240 volts. This, along with an expanded team, will mean there will be more bands operational at more times.

Do not miss out this year!

For updates and schedules, keep your eye on: <http://www.vk9na.com>

The VK9NA team

VK4news

JOTA in Far North Queensland

Mike Patterson VK4MIK

The Tableland Radio Group operated its third JOTA station on the Atherton Tablelands again this year.

After last year we 'de-briefed' the event with a view to improving 2010. Co-ordinator, Pat VK4MUY, did a great job in this department.

Just prior to this year's event, we contacted local Scout Leader Peta, who facilitated all that was necessary between her organization and TRG.

National JOTA coordinator Bob Bristow VK6POP gave invaluable advice about registering for the event and on numerous other issues.

The format for our pre JOTA information training sessions ensured Scouts and Guides were taught about radio history, what we were planning, personal safety while operating around radio transceivers, masts, antennas and cabling. The sessions over a three week period were interactive with practical CW sessions and were "icebreaker".

Immediately prior we settled on equipment and back up, to allow for the inevitable "Murphy Effect".

Bill VK4WL took charge of the digital side with transceiver, power supply, computer and a specially designed squid pole light weight antenna with

inverted Vee and open wire feed.

SSB and CW was catered for by Mike VK4MIK with responsibility for two HF/VHF/UHF rigs, tuner, BHI DSP speaker, PSUs and bits and pieces.

Wilf VK4ZNZ had designed the CW trainer with 30 metres between.

Ross VK4AQ produced the logs and a comic book design on radio.

Pat VK4MUY and Dave VK4FUY did some watching/reading and quality assurance and clarifying of proposals.

Stan VK4MFA and Keith VK4BKS volunteered to be operators.

On Friday the inverted Vees were set up with Scout assistance and the tri-element beam and rotator tested again. The workstations were set up.

We went to air about 1715 on the Friday and had local/national and overseas contacts with good openings to Norway/Finland/Poland.

On Saturday we started at 0600 as the youngsters were keen. No microphone fright in these youngsters!

Pat VK4MUY/Dave VK4FUY,

Stan VK4MFA, Wilf VK4ZNZ, Terry VK4ATY and Keith VK4BKS gave the full time crew a break.

The groups set up tents behind the Malanda Scout/Guides Huts; quite a community with over a hundred children under canvas. Groups took walks with leaders while more senior members, including Venturers, did other planned exercises

All operators were presented with JOTA/JOTI badges at the final parade and thanked for their involvement in the event. We will do it again in 2011. **ar**



Wilf VK4ZNZ demonstrates JOTI.

More on Doppler

In the July-August 2010 issue of The AMSAT Journal, AMSAT-NA Secretary Alan Biddle WA4SCA presented an article on updating the "One True Rule" of computer Doppler tracking. This month we look at an example of Doppler shift and how Alan's ideas can be used.

Doppler example

For those who are not used to operating through a linear transponder here is a description of the Doppler shift of a typical satellite pass. The satellite is VO-52 (HAMSAT) and the pass happened on the evening of 4/11/2010 (orbit number 29747). It was travelling from south to north over the Tasman Sea. Table 1 is a summary of the times of Acquisition Of Signal (AOS), Time of Closest Approach (TCA), Loss Of Signal (LOS), maximum elevation and total Doppler shift (in kHz) of VO-52's 145.900 MHz downlink (middle of transponder passband). Three locations were chosen to give full usage of the pass in our part of the world. All times are in UTC.

Location	Hobart	Sydney	Cairns
AOS (UTC)	10:37	10:39	10:44
TCA (UTC)	10:43	10:45	10:50
LOS (UTC)	10:49	10:52	10:57
Max. Elevation	29.1	50.2	39.7
Doppler +/- kHz	3.10	3.28	3.23

Table 1.

There was a mutual window for all three stations between 10:44 and 10:49. Table 2 gives the elevation angle and Doppler shift near the start, middle and end of this five minute period when all three stations could contact each other. During the mutual window the Hobart station will experience a change in Doppler shift of ~2 kHz as the satellite moves down towards the northern horizon. The Sydney station has to cope with a change of almost 5 kHz as the satellite rapidly moves overhead. The Cairns station only has to allow for 700 Hz of Doppler shift during this period. Also for a given time each of the receivers will be tuned to a different frequency. At 10:44 the Hobart station will listen to 145.8990 MHz, Sydney to 145.9021 MHz and Cairns to 145.9032 MHz.

All the above means that at any point in time (apart from exceptional circumstances), all stations will be experiencing different Doppler shifts, different rates of change in Doppler shift and if they just stuck to the same frequency throughout the pass then few contacts would happen.

Time	Hobart		Sydney		Cairns	
	Elevation	Doppler	Elevation	Doppler	Elevation	Doppler
10:44	27.3	-1.02	35.5	+2.13	1.1	+3.23
10:46	15.8	-2.49	47.4	-0.96	9.6	+3.08
10:48	5.9	-2.99	23.2	-2.80	23.0	+2.51
ΔDop (kHz)		1.97		4.93		0.72

Table 2. Mutual window.

That was just for the 145.9 MHz downlink. VO-52's transponder has a receiver centred on 435.250 MHz which makes the ground station's uplink Doppler shift three times larger (Doppler shift is proportional to frequency). So the Sydney station's transmitter would have to shift almost 15 kHz in five minutes. If VO-52 used a 1268 MHz receiver then the Doppler shift would be about 42 kHz for the uplink. Also if VO-52 had a 2.4 GHz transmitter the Doppler shift would be 16.4 times the 2 m downlink (81 kHz). That is a fair bit to keep up with in the space of five minutes. So how do stations keep on frequency?

One True Rule

In 1994 Paul Williamson KB5MU wrote "The One True Rule for Doppler Tuning" [2]. The key paragraph is this:

"There is a simple rule that works. Well, it is simple to state, but not simple to use. The One True Rule: tune both the transmitter and the receiver to achieve a constant frequency at the satellite. If everybody did this, there would be no problem with everybody staying together on the same frequency, and there would be no drift through the passband. Nobody would drift off the end of the transponder. Unfortunately, the only way to perform this kind of tuning is by computer control. The computer can use the same Keplerian orbit model that predicts where to point the antennas to predict the Doppler shift for his/her location. The computer can then make continuous small adjustments to both the transmit frequency and the receive frequency, to compensate for the predicted Doppler."

Someone must have taken note of this because modern computer satellite tracking and tuning software can make the calculations and tune the radios.

Alan's question

"With full implementation of the One True Rule, we have largely taken the busy work out of satellite communications. There is one question we have not made it easy to answer yet: 'What frequency are we on?' [1]. Alan also provides the answer: "However, in the case of full Doppler tracking, every station will be listening to the same frequency at the satellite. No matter how many are in the QSO, this will be an invariant all operators can agree upon." [1]

Alan points out that tracking programs usually display the frequency at the radio and some also display the amount of Doppler shift correction but none display the frequency at the satellite. Alan suggests, "The primary tuning reference would move by necessity to the computer screen rather than the rig. One could tune the rig dial, but watch the

'Spacecraft frequency' on the screen, or presumably enter it manually. With the steady progress toward software defined radios, or at least control software, this will soon seem natural, and already is for many" [1]. This method is ideal for scheduled contacts where you can just go straight to the frequency at the satellite without having to hunt around or mentally add the Doppler shift to the scheduled frequency. This would also be very useful with DX stations with short mutual windows. If you only have 30 seconds to make a QSO then you don't want to waste time tuning around when you can go straight to the same frequency at the satellite the other station is listening to.

One final quote from Alan, "If this option is added into existing and future programs, it will become a true 'HF mode' in terms of simplicity". How convenient it would be when you have just walked into the shack and turned everything on to find the satellite pass has already started (instead of just finished if Murphy had his way) then going straight to the scheduled frequency?

References

[1] Biddle, Alan "Bringing The One True Rule of Doppler Tuning into the 21st Century (Or, "What frequency is the DX on?!)'" The AMSAT Journal July/August 2010

[2] http://www.amsat.org/amsat/features/one_true_rule.html

Final Pass

It all looked so easy four months ago when I started building the new shack. As I type it is still not completely finished but should be ready by summer. I wish you all the best of the holiday season and look forward to more satellite enjoyment in 2011.

ar

FO-29 silent

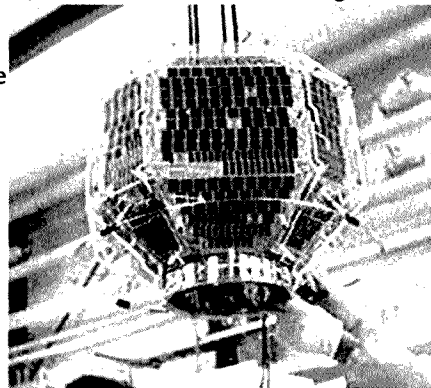
FO-29's transponder was turned off by the JARL command station on 14 October. Power levels were low despite good illumination.

Since then, attempts have been made to turn the transmitter on, but without success. The JARL believes the satellite's high internal temperature is affecting its ability to receive commands. A long eclipse period started at the beginning of November so this will lower the temperatures and hopefully FO-29 will respond.

Unfortunately this also brings less illumination and FO-29 was unusable during the darker times of the last eclipse period in 2009. The peak of the next eclipse period is expected during mid 2012. FO-29 has been in space for over 14 years and its batteries have gone through tens of thousands of charge / discharge cycles, so it remains to be seen how much more life we will have out of this bird.

Mineo Wakita
JE9PEL has
posted an article
about FO-29's

illumination for the next few years on his website at <http://www.ne.jp/asahi/hamradio/je9pel/fo29illum.htm>



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Website

www.amsat-vk.org

Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK 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-VK 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-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 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: 146.850 MHz
VK4RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404,
EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC Mt Terrible on 439.825 MHz IRLP node
6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz
IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz.
IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

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 9558. 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. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

came in handy to help explain to both him, and his father, what amateur radio is about. His dad is now going to contact Perth's amateur radio training group, Ham College to enquire about the foundation course.

Despite average propagation the day was a great success with members of the public seeing amateur radio in action and the HARG members having a fun day out. Many of Perth's already licensed hams called past at various times during the day so it was also a great opportunity for old friends to catch up. If the event becomes an annual one HARG will again be out and about engaging the public and promoting the hobby.

Thanks to Martin VK6ZMS for the report and picture.

The only JOTA report I have to hand is from the NCRG



Sundown at the NCRG corral.



Soldering Practice at NCRG.

who hosted the Herne Hill Scout & Guide group. One of the organisers from the scouts is a current NCRG member, Dean VK6DSL and the other main organiser was a former member, Greg VK6ED, who is returning to the hobby and the club. Both have children in the group and were keen to stage an all weekend event at NPSARC, Whiteman Park. They arrived early Saturday morning and set up tents and cooking facilities of their own and began all the planned events for the day. These included a soldering lesson with kits being built to make a flashing red led light unit, which proved interesting after dark that night. Several club members turned up to help with the HF side of things but conditions were not favourable on the Scout HF frequencies, along with competition from contest stations taking part in several other events over the same weekend. IRLP and EchoLink were set up in Shack 2 and the meeting room and I was intrigued to see one young Guide glued to the microphone, chatting away like mad. I have to personally admit the evening BBQ on Saturday night was definitely worth being there for!

There were talks on radio and what was available before the internet, something these youngsters seem to find hard to grasp, no Twitter or Facebook! Everything was packed away by midday Sunday and the club premises and surrounding area were left cleaner than they had been for months.

This is the height of the contest season for NCRG members and things are in full swing with the addition of a new wide spaced five element Yagi from Tet Emtron in the Swan Valley up at 23 metres, something that has been missing for the 'money band' in most contests from WA. This will soon be followed with a wide spaced Yagi for 10 metres in the next few weeks.

I heard from Chris about VK6TNC-3 which is a new APRS Digipeater now installed in Wundowie to pick up stations coming into WA on the Great Eastern Highway. He can receive stations from just west of Northam to Sawyers Valley. Have a listen.

I also heard from John VK6ZN about activities up the west coast at Carnarvon. John comments 'Miles VK6CBA is active on HF and I have a scout leader studying for her foundation licence. I have had permission to put a VHF beacon at Carnarvon for the past 18 months, but finding a suitable donated beacon without too many rules attached has been difficult. The GARG will look at supplying a beacon in the near future as part of their interest in propagation along the west coast. 73, John VK6ZN'.

I have not received an entry for the shack photo section this month so please take a picture of your pride and joy and send it to me for the February edition. Any other input is always welcome. I will take this chance to wish all amateurs, SWLs and their families the very best wishes for the festive season, I hope you all have a happy and peaceful Xmas and a healthy and DX full new year. See you all in February!

73 Keith VK6RK

vk6rk@wia.org.au

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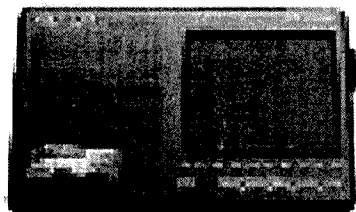
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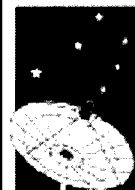
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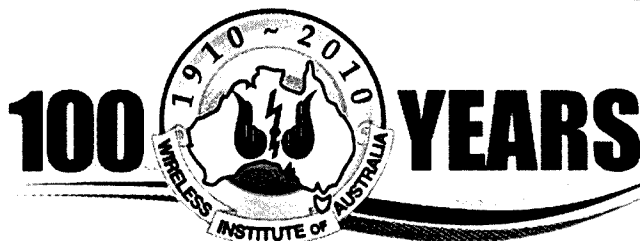
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HAMADS

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Icom IC-781 HF all band (including WARC bands), all modes transceiver, SN 1809, excellent condition, purchased from local Icom dealer. Twin VFO, dual watch, optional FL-103 wide SSB filter fitted, 150 watt PEP output. Original manuals, accessories box items unused, CRT screen spectrum scope, dual frequency readouts. \$2850.
Email David VK2AVZ at 33edsa@gmail.com or phone 02 9486 3083.

Amateur Radio Gear -

4 way N switch, Filter, Mag. bases and mobile whips, negotiable.

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Satellite package -

2.4 m Mesh dish on polar mount, Chaparral C Band Polarator feed, Norsat Gold 15K C Band LNB, 24" actuator, Winersat WR920 Rx (dish controller), \$220.

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Other satellite parts -

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Dynalink C Band LNB "One Cable Solution", \$15.

California Amp C Band LNB 25K, \$25.
Chaparral Model C Ku LNB, 9.75/10.75 GHz LO's, \$15.

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DX Antenna DSA527N Ku LNB, \$5.

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Zinwell SAB-09C coax relays, \$15 each.

4xIrdeto CAMs, not CI, various ages and S/W, \$20 ea.

Many other miscellaneous satellite parts.

Contact Roger VK2WW by email at VK2WW@Hotmail.com or phone 02 9546 1927.

FOR SALE - SA

'Oscar's Amateur Radio Adventure'. A short ham radio adventure book written for children and teenagers but suitable for people of all ages.

Details at www.VK5SW.com or \$20, delivery included, to Rob Norman VK5SW, 6 The Parkway, Paradise. SA. 5075.

The VK5JST Antenna Analyser kits are still available. See AR article, May, 2006 for details. Beat the 2011 price rise and get this great kit now 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

Erratum

RF voltmeter for Transceiver Testing

Jim Tregellas VK5JST

An error in the component overlay for the "RF voltmeter for Transceiver Testing" article published in the November 2010 AR has been brought to my attention. Could you please urgently publish an Erratum as follows:

Erratum: Component Overlay and Wiring Diagram for RF Voltmeter AR November 2010 page 20 (Figure 2).

Please note that diodes D2 and D4 have been drawn incorrectly and should have their polarities reversed. These diodes appear on the left hand side of the left most CA3140 on the diagram.

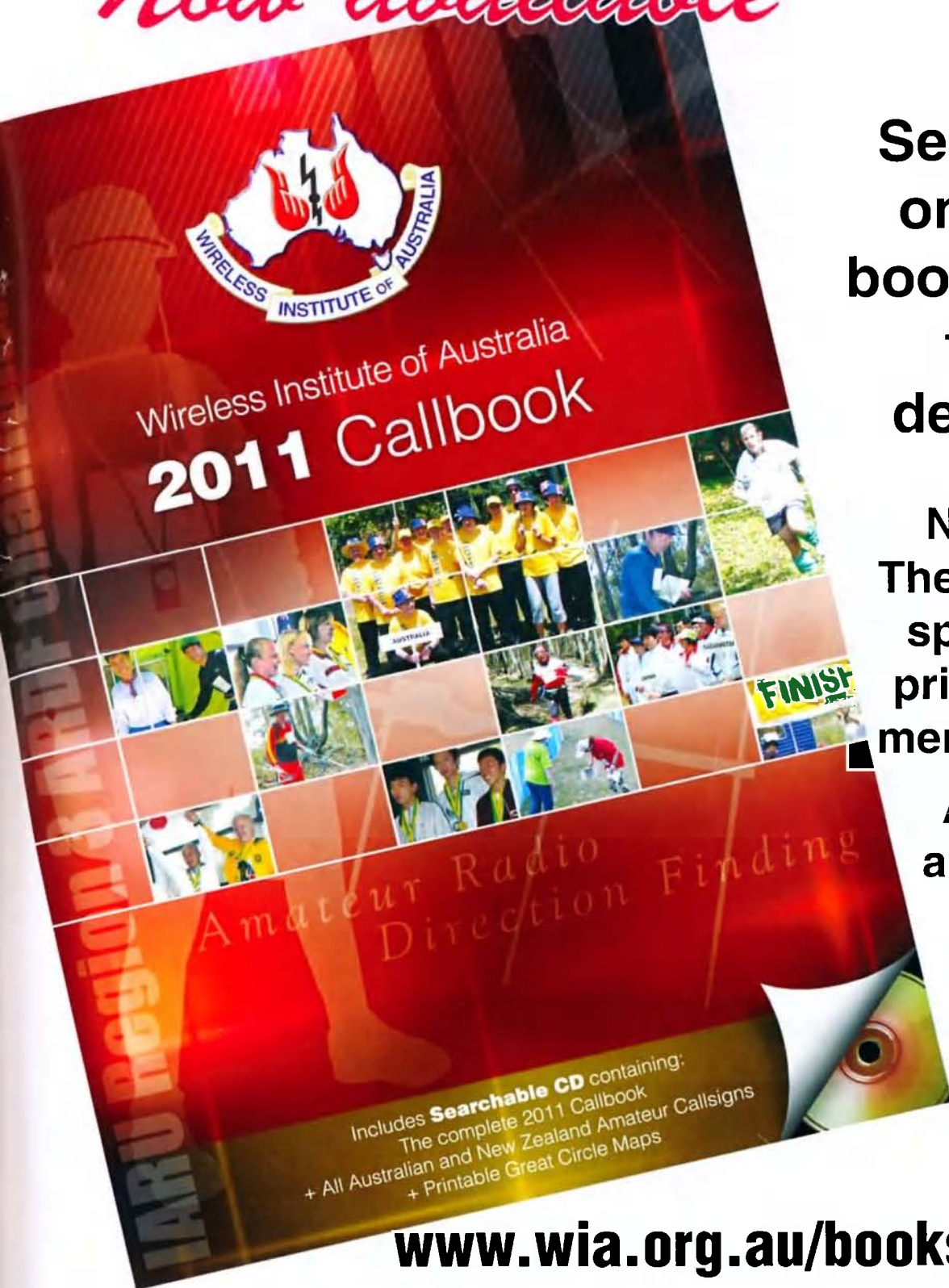
Yours in embarrassment,

Jim Tregellas VK5JST.

Editor: We have updated the diagram with the correction included, and published this revised article on the AR web pages of the WIA website.

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