

# Amateur Radio

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Number 8  
August 2017  
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# Amateur Radio

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Mick Hort VK2BZE



### This month's cover:

Liz VK2XSE is listening carefully to the radio whilst activating the Nombinnie State Conservation Area in the Riverina, surrounded by bush and wildlife. Read about the weekend of radio activity on page 18. Photo by Peter Billiau VK2KNV.

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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

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### Back Issues

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### 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.

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

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## Editorial

Peter Freeman VK3PF

### A busy few weeks

The last few weeks have been busy here. The main task has been preparing for the annual GippsTech Conference, which I Chair. The event is run by the Eastern Zone Amateur Radio Club Inc. (EZARC), a small Club of about 25 members. A small core of the membership, many who also hold Club Committee position, are the key contributors to organising the event. We also have a few other members who assist in the immediate lead up and during the actual event. The roles can vary from simple but none the less valuable tasks (helping to keep the tea and coffee supplies topped up, or selling Conference Proceedings volumes) through to the most important task of driving the minibus for the Partners' Tour – it helps that the family is happy over the weekend.

In addition to the Club contributors, we have some external suppliers that help to make it all happen. Of particular note are the providers that prepare the food for the meals.

Such a technical conference will only work if individuals are willing to volunteer to present at such an event. The whole idea of the conference has always been to share our experiences and learnings with our peers. The audience is very accepting: they wish to hear about the things that you have done and are very tolerant of quirks in presentation style. Why not give it a go next year?

On the weekend following GippsTech, I ran a Foundation training and assessment event on behalf of EZARC, with the assistance of two other Assessors.

It almost seemed like overkill: three Assessors/trainers and three candidates. Overall, the weekend was a success, with all three candidates reaching the required standard. So we can expect three new amateurs to join our ranks in the coming weeks. Thanks go to all involved in making the event a success.

### Your journal?

We regularly have promotions in *AR* magazine seeking articles and photographs for publication and for consideration for the cover of the *Callbook*. This is your Journal, although only a small number of regulars contribute articles. Of course, a significant number of contributors make the effort each issue, sending in our Columns and Club News items. We thank all of these contributors, most of whom appreciate that general and technical articles may have significant delays until we can include the article in the magazine.

How can you be published?

It is relatively easy: start by looking at the guidelines on contributing, found at: <http://www.wia.org.au/members/armag/contributing/>

Basically, first think about the structure of your article and then compose your text. Add brief annotations as to where you think any images might be best placed in the article, but do NOT embed the image in the file. Send the article document plus the individual image files in to the Secretary of Publications Committee for registration and processing. Be

Continued on page 5



# Board comment

*Justin Giles-Clark VK7TW*

Last time I talked about the magic of radio being demonstrated at the AGM and Convention weekend in Hahndorf in VK5. I experienced this wow factor again last month at my annual pilgrimage to GippsTech – the VHF and above Microwave and Weak Signal Conference held at Churchill in Gippsland and hosted by the Eastern Zone Amateur Radio Club. This was another event where the magic of radio was demonstrated on many levels albeit on higher frequencies.

At GippsTech, Peter Young VK3MV did a great presentation titled “The International Governance of Amateur Radio – The Role of the IARU”. Peter is a Region 3 Director of the International Amateur Radio Union (IARU) and has given this presentation throughout Region 3. He emphasised the international heritage that Amateur Radio enjoys with linkage all the way back to 1925 when the IARU was formed and the WIA was a Founding Member Society. Today there are a total of 167 Member Societies with 30 in Region 3 and the IARU is a Non-Government Organisation recognised by the United Nations.

What does the IARU do? It advocates internationally and regionally to protect existing spectrum and seek new allocations, it submits technical and information papers, coordinates the work of member societies, enhances the role of the amateur service and it trains regulators in emerging countries through the Support To the Amateur Radio Service (STARS) program and Vietnam is a recent success story. The IARU is funded through national radio societies with member societies paying dues to

the Regions who contribute to the central body. The WIA's contribution is about \$1 per member per year.

The IARU is a sector member of the International Telecommunications Union (ITU) who set the international Radio Regulations (RR). The Regulations are an international Treaty between member states of the ITU and Australia is a member. Australia attends the World Radio Conference (WRC) every 4-5 years where the regulations can be modified. These Regulations are critical to the amateur service world-wide.

Peter demonstrated this criticality by listing achievements at recent WRCs:

- WRC-1979 - WARC bands (10, 18 & 24 MHz)
- WRC-2003 - Elimination of the Morse code requirements, minimum standards and qualifications for the amateur services
- WRC-2007 - New secondary allocation for 2200 metres
- WRC-2012 - New secondary allocation for 630 metres
- WRC-2015 - New allocation on 60 m and 77 GHz with co-primary allocation due to the amateur service demonstrating they are responsible users through technical studies.

The WIA has a special linkage with member Dale Hughes VK1DSH being the Chair of Working Group 1 of ITU-R Working Party 5A which is the ITU ‘home’ of amateur issues and where any technical discussion on relevant WRC agenda items take place. (Details of WP 5A are given at [www.itu.int/en/ITU-R/study-groups/rsg5/rwp5a](http://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5a)) Having such a highly qualified and

well respected amateur as the Chair of this important working group brings enormous support to our cause. There are also some important historical linkages with the WIA: John Moyle gaining access to the microwave bands in 1947 and Michael Owen playing a large part in revising Article 25 of the Radio Regulations which covers the Amateur and Amateur Satellite Service in 1979 and was instrumental in the removal of the Morse code requirement in 2003.

There are a range of matters being worked on for WRC 2019 and you will certainly hear more about these in future communications. I thank Peter Young VK3MV and Dale Hughes VK2DSH for their time and continued involvement in this incredibly important aspect of our hobby.

The Board at its June meeting made some important decisions to start a process of change in the WIA. The first being the formation of a Strategy Committee. This committee will look at positioning the WIA for the near, medium and far future. It will advise the Board on a range of strategic development directions. The lead Directors are David VK4MZ and Brian VK2GCE and the committee will have a maximum of seven members and the committee terms of reference and an expression of interest (EOI) process will appear soon asking for volunteers to assist in this important committee. Many of the comments made at the Open Forum on the AGM weekend in Hahndorf will be considered by this committee.

The second Board committee

Continued on page 5

## ACMA re-sets US General Licence equivalency

Following a public review the Australian Communications and Media Authority (ACMA) has re-set the US General Class licence as equivalent to Australia's middle grade Standard licence. This change has been made to the ACMA 'Tables of Equivalent Qualifications and Licences' which lists Australian equivalents to overseas amateur qualifications. Visiting radio amateurs and those from overseas who are residents in Australia, are granted an Australian licence based on their overseas qualification identified on the ACMA website.

In another review, the ACMA in September last year re-set the US Technician licence to be equivalent to the entry level Foundation licence. It had ruled that the qualification equivalency of the US Technician licence granted after 22 September 2016, be that of the entry level Australian Foundation licence. Previously it had been granted the top class Advanced licence. Among those agreeing with the ACMA re-set was the American Radio Relay League that stated that the US Technician Class Licence was very close to the Foundation licence, but not higher. (It was downgraded in 1999.) Existing licensees who obtained their Advanced licence based on the US Technician licence were grandfathered and the ACMA would allow them to continue to operate at the Advanced level.

The ACMA, in the just completed review, said: "These changes are due to changes to the US licence structure which resulted in a misalignment between Australian and USA equivalent qualifications". The review received two submissions. One was from the WIA who was made aware of the issue by a US Volunteer Examiner

(VE) and others that there was concern the US General licence was inappropriate to Australian Amateur Licence examination standards. This view was supported by the WIA Board.

The WIA believed that the standard of some of the foreign country exams had changed in recent years, and no longer reflected equivalence to Australian Amateur Radio qualifications. The WIA Board had analysed the US General licence question bank in relation to where each question would fit into the Australian Amateur Radio Syllabus. Basically, the WIA found it had a single theory and regulations paper of 30 questions (21 needed for a pass), compared to Australia's Standard Licence 50 question theory paper (35), 30 question regulations paper (21), and a 20 question practical test with a 100% pass mark. The other submission received believed the US General licence was close to the Advanced examination, and the US Technician licence (re-set to Foundation licence equivalent in 2016) should result in the granting of a Standard licence.

The ACMA assessed both submissions in its US General licence review, and the one it held last year on the US Technician licence, on the relative levels of each qualification, and the outcomes related to the level of knowledge that was the best fit for each class of licence. While the ACMA held its recent review, it froze all US General licence applications and advised the WIA to not accept callsign recommendations after 26 April 2017 on that qualification.

Now that the ACMA review is complete, those people with a US General licence submitted to the WIA after that date (26 April 2017) will be eligible for the Standard licence. The issue of equivalency was first raised by the WIA with the

ACMA in late 2015, and has resulted in the two reviews involving a public consultation process. The ACMA consultation on the US General Licence may be read at: <http://www.acma.gov.au/theACMA/changes-to-amateur-equivalent-qualifications>

## ARISS to commemorate its 20th anniversary

The Amateur Radio on the International Space Station (ARISS) is to encapsulate its accomplishments over two decades by transmitting a set of 12 SSTV images from space. ISS Ham Radio Program Manager Frank Bauer KA3HDO has announced the initiative that is expected around the weekend of July 15, depending on the availability of the International Space Station. The SSTV images will depict the first ARISS meeting in November 1996, the joint operations on the MIR space station, and the extraordinary developments that have occurred in the past 20 years.

ARISS can be proud that it has touched the lives of many and inspired and educated countless students to pursue science, technology, engineering and math careers. It has had over 1,000 school contacts. More details on the SSTV image event will be known from ARISS in coming weeks as it develops.

## Future of 3575-3700 MHz - ACMA Consultation

The ACMA has released a consultation package outlining its considerations on the band, which follows on from the discussion paper "Future use of the 1.5 GHz and 3.6 GHz bands", released in October 2016.

Get the skinny at: <http://theacma.cmail19.com/t/d-l-kikkddy-xjditjkkku-t/>

You can see how this may impact the current 9 cm Band Plan at: <http://www.wia.org.au/members/bandplans/data/>

It is hoped that the two licensed repeaters within this band will be able to remain until the re-farming has been completed.

### WIA trial exams a big hit

In May the Wireless Institute of Australia (WIA) began its trial of theory and regulation assessments on-line that have proved to be very popular with about 230 people accessing them. As explained by WIA Trainer Fred Swainston VK4FE VK3DAC, the Institute had been working toward some on-line assessments for its candidates, and used the trial exam system as a 'proof of concept' exercise.

He advises that the trial has been now been completed and a draft process for future on-line exams worked out, to possibly be used by WIA Nominated Assessors with candidates needing a remote assessment. It is intended that the on-line exams will be available to all candidates.

The on-line development will then be explained in detail by the WIA to the Australian Communications and Media Authority (ACMA) seeking its approval for them to be used.

By the end of June, the suite of assessments now available will be joined by two trial Foundation licence

assessment papers - all similar to those used in the actual multi-choice exams. These exams will be converted into tutorials and remain on-line as an educational resource. Fred Swainston VK4FE VK3DAC says many thanks to the radio amateurs, upgraders, and those wanting to get into the hobby for giving the trial exams a try.

To assess the trials, which will remain and require the latest version of the flash player, are to log on to the website: <https://secure.iig.com.au/silvertrain/assessors/index.php?cmd=trialexam>

As part of the security process, you must first register by clicking on the Amateur Radio tab.



## Editorial

Continued from page 2

sure that your image files are at least 1 MB jpg files, having initially captured the images at the highest resolution possible with your camera/device. Keep the original image in its highest resolution – that way we can consider using the image in more demanding situations.

Our stock of stories, both general and technical, is running low. The number of articles supplied with very good high resolution images suitable for the cover is very low.

If YOU do not contribute, what happens to YOUR journal? We

will need to consider republishing material from other sources, such as from the journals of our sister societies that are members of the IARU.

What would you prefer? Locally generated material, or second hand material from abroad? I know that some excellent material is published in some of sister journals, but I would prefer to publish fresh material which relates to our local conditions. So seriously consider putting your thoughts into the keyboard and submitting them for consideration. Take some good photographs/images to accompany

the article.

Then send it in. After all, you have absolutely zero chance of being published if you do not put fingers to keyboard and submit the item for consideration, just as you have no chance of winning the lottery or raffle if you do not purchase a ticket!

Your magazine works just like the idea of the GippsTech conference: it will not work if you do not contribute.

Until next month,  
Cheers,  
**Peter VK3PF**



## Board comment

Continued from page 3

to be newly formed is the Audit and Risk Committee and this group will advise the Board on a range of business, financial, audit, risk, reporting and control matters. The lead Directors are Greg VK2GPK, David VK4MZ, Phil VK2ASD and Marcus VK5WTF and the terms of reference and EOI for volunteers will be advertised soon.

The thorny issue of a social media policy and engagement is also being considered by directors

Marcus VK5WTF and David VK4MZ, if you have any constructive suggestions in this area they would like to hear from you. Another important vacancy that the Board will move to fill is the Inwards QSL Manager and an EOI will appear shortly for this position.

At the time of writing this Board Comment, the Spectrum Strategy Committee was compiling the Spectrum Reform consultation information that was gathered from

the over 350 responses. Fortunately, the consultation period for the revised Radio Communications Bill has been extended and this will enable time for further consideration and research for the WIA submission. Stay tuned for more news on this important body of work.

**Justin Giles-Clark VK7TW** on behalf of the WIA Board.



# The 'Forty Thirty': a simple 40 metre 30 watt CW transmitter - receiver

Peter Parker VK3YE



Photo 1: Forty-Thirty on table.

Due to our distance from the rest of the world, working DX is a major achievement with a homebrew QRP transmitter. Major amateur population centres are typically 8000 or more kilometres away and our signal must over-ride interference from stronger, nearer stations. Extra output power often comes in handy. At other times a stronger signal helps to comfortably work nearer stations and have more pleasant ragchews.

The design brief for this project is different to that of the average portable QRP transceiver you often see. It was to develop the simplest possible home station that could give solid contacts out to 3000 km and a possibility of DX. 7 MHz was chosen due to the wide range of distances workable and the solar activity outlook for the next few years. Simplicity dictated a CW transmitter.

The 1930s was the first decade where large numbers of amateurs were able to work DX. Indeed this was when many international

contests and awards started. A modest station of the era comprised a 30 to 50 watt two or three valve transmitter, possibly crystal controlled. The receiver could have been regenerative with two or three valves; superhets largely then being for the better off. DX communication was very possible with such stations.

Could such a simple setup still work DX in 2016?

There was only one way to find out.

Spurred by having a suitable case and Vernier dial, the 'Forty-Thirty' is a 2016 implementation of a basic pre-war station. It comprises a 'straight' regenerative receiver and a no-conversion three stage transmitter of medium power. 30 watts is just 6 dB below our legal limit and significantly more would have complicated construction. Although in the one enclosure, the transmitter and receiver are separate and independently tunable as they would have been back then.

Like DXCC certificates, crystals first entered amateur shacks in the 1930s. They allowed excellent frequency stability with a simple transmitter. People would call on 'their' frequency and tune the band for replies. Except for the split frequency technique employed by sought-after DX stations, modern activity patterns make this impractical. Today frequency agility



Photo 2: Forty-Thirty front panel.

is essential to make contacts since you need to be able to meet calling stations on their frequency since they will only be listening there.

Amateurs have long added series inductance and/or capacitance to 'pull' crystal oscillators over a small frequency range. Hence there was no compunction against using the technique here. My concession to modernity was to substitute a ceramic resonator which allows much wider frequency excursions than is possible with crystals. I took a similar approach with the regenerative receiver, allowing crystal-like frequency stability in a novel design with no L-C tuned circuits.

The Forty-Thirty's separately adjustable transmitter and receiver make operation more like a vintage station than a modern integrated transceiver. This and the regen's lack of single signal reception, make it more suited to casual contacts than serious DXing and contesting. Nevertheless you will still get many excellent reports and sometimes work DX, even in contests.

Output power is continuously adjustable so it can be used for both QRP and QRO. Automatic transmit/receive switching is provided with the choice of full or semi break-in. Parts count is low for a 30 watt station and most components are widely available.

### Circuit description

The receiver section (Figure 1) is a variation of F5LVG's regenerative design described at <http://oernst.f5lvg.free.fr/rx/1v2-tran-2013/rx-1v1-2013-en.html> My main changes were substituting a 7.16 MHz ceramic resonator for the tuned circuit and adding a discrete transistor audio filter for better selectivity. The ceramic resonator can be made to cover about 130 kHz of the band but is here restricted to the lower 50 kHz to make tuning easier.

This design handles signals extremely well. With negligible frequency pulling it is hard to tell it is a regen. Stability is such that it can be switched off and on again while remaining on frequency. One can also tune across a wide span without touching the regeneration control.

The receiver's first transistor is an RF preamp. The second is the regenerative detector and the third an audio amplifier. By itself these three transistors could drive a high impedance crystal earpiece but there would be no audio filtering and volume will be low.

The next two transistors provide low pass audio filtering with an 800 Hz design cut off frequency. Op amp ICs could be substituted but discrete transistors better matched the design philosophy and saved few if any components. Subsequent audio amplification is provided by a standard LM386 circuit. A volume control could be added to its input but one was not thought necessary. Just remove your headphones if an incoming signal is too loud.

Diodes across the audio output operate as an audio clipper. This softens the click heard in the headphones when switching from transmit to receive. Audio output

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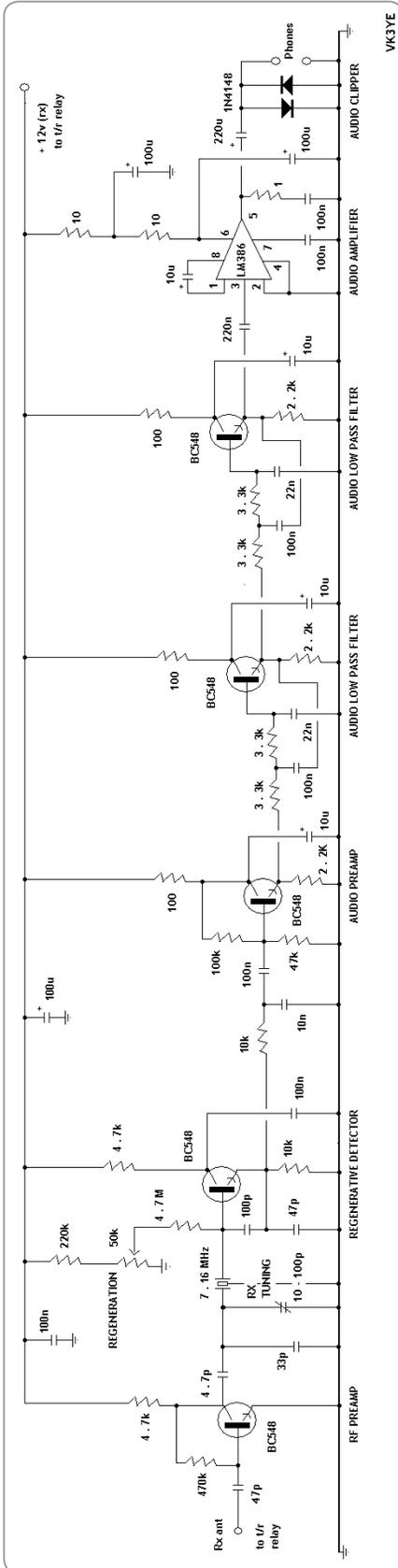


Figure 1: Schematic – receiver section.

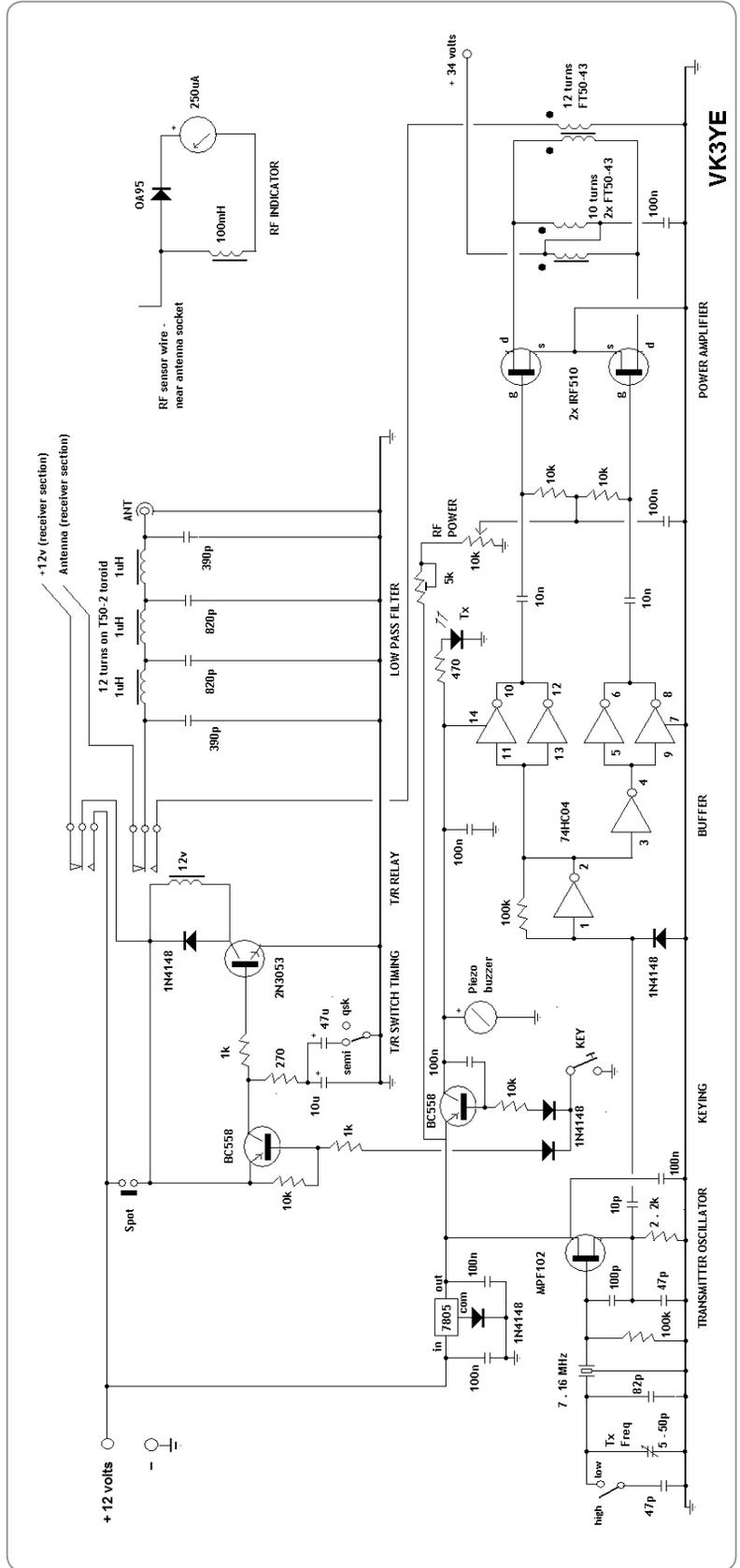


Figure 2: Schematic – transmitter section.

is sufficient for headphones or a speaker in a quiet room.

The transmitter (Figure 2) is largely borrowed from VK3XU's 1.8 and 3.5 MHz transmitter (Radio Projects for the Amateur Volume 3 page 29) with pi network values adjusted for 7 MHz. It comprises an MPF102 FET variable crystal oscillator, keyed 74HC04 IC buffer amplifier and a two IRF510 MOSFET power amplifier.

In this circuit a 7 MHz crystal with variable capacitor can provide about 5 kHz pulling range without an inductor and 10 to 15 kHz with one added. Since CW DXing with low to medium output powers is largely a 'search and pounce' game, frequency agility is essential to maximise contacts. Consequently I substituted a 7.16 MHz ceramic resonator to cover a 25 kHz span in the CW portion with acceptable stability. The 7.006 to 7.031 MHz range obtained should suit most DX and local CW activity. A larger variable capacitor and smaller fixed

capacitors could have allowed wider coverage but tuning would have been harder without a Vernier reduction drive.

The single IC buffer stage contributes greatly to simplicity. A solid state transmitter would normally employ several transistors of buffering and amplification between the milliwatts produced by the crystal oscillator and the watts required from the power amplifier. The buffer here saves about 3 or 4 transistors yet still delivers adequate drive to the final amplifier.

The RF power amplifier uses a pair of IRF510 MOSFETs. QRPers commonly use them with a 12 volt supply rail but output is vastly better with 20 or 30 volts supply. Its bias voltage comes off the 6 volts regulated also used to run the previous transmitter stages. The bias setting sets the output power and is discussed in more detail later. Broadband transformers are used to feed DC drain voltage to the power transistors and carry the output to

the low pass filter.

Transmit/receive switching and keying is quite complex as several points of the circuit need to be switched in sequence. A failure to get it right can result in keying clicks and chirps. There may also be loud thumps when switching from transmit to receive. Two transistor switches (connected to the key but isolated from each other with diodes) are used control different parts of the circuit.

One uses a PNP transistor switch driving an NPN power transistor to control the transmit/receive relay. This handles the antenna changeover and power switching functions between transmit and receive. The series resistor and switched capacitor form a timing circuit which controls how long between letters the relay remains pulled in. The values of these components set the hang time, which is longer with a larger capacitor.

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A switch selects between short and long hang time. The former provides 'QSK' or 'break in' operation while the latter introduces a delay between letters. This reduces annoying relay clicking and transmitter frequency drift as its oscillator is not continually being keyed on and off. Substitute both transistors and associated parts with a manual toggle switch if you're happy with manual transmit-receive switching.

Another PNP transistor switch, connected to the key via another diode, gives 5 volts to key the buffer. This is essential to keying and cannot be replaced by the manual transmit/receive switch discussed above. Also keyed at this point is a panel-mounted LED and piezo buzzer for the sidetone. As this is audible outside the case even when wearing headphones a feed into these via the LM386 stage was not considered necessary.

As mentioned before there is little common circuitry between the transmitter and receiver. Exceptions are the low pass filter, which is in the antenna line at all times, and the relay. This relay switches both DC power and the antenna connection between the receiver and transmitter. The 'spot' button switches on the transmitter's oscillator when in receive mode. The purpose of this is to allow the transmitter to be set to an incoming station's frequency when preparing to call them.

A 12 and 30 volt dual voltage power supply is required for full output power. The 12 volt section is regulated and can be rated at about 1 amp. For lowest noise on receive it is the standard transformer-based linear design with bridge rectifier and three-terminal regulator. The 30 volt section needs to be rated at 2 to 3 amp but can be unregulated. It powers the transmitter power amplifier only. I used a 240 – 24 volt 3 amp transformer with a bridge rectifier and large electrolytic capacitor on the output. Both supplies are in the one case for

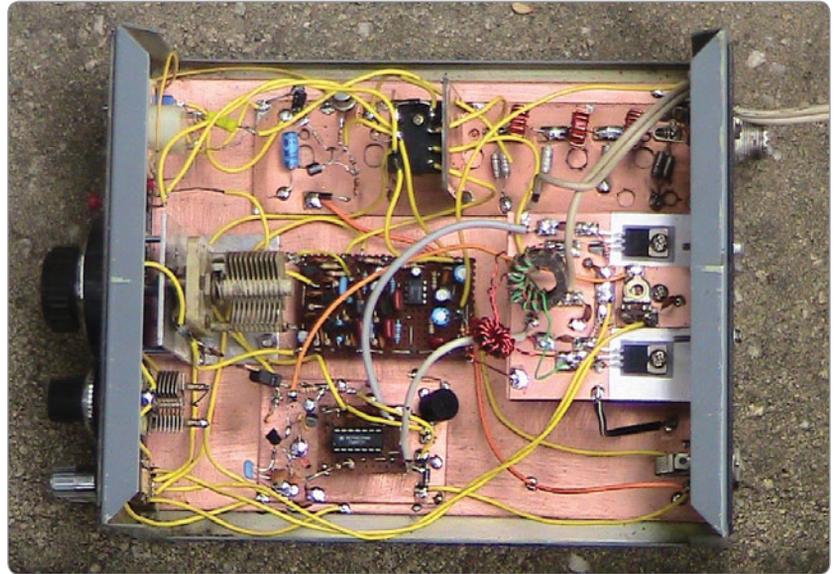


Photo 3: Inside the Forty-Thirty.

convenience.

If you only have 12 volts available the power amplifier will still operate but at about 10 watts output. This may be acceptable if you intend to use the rig portable in conjunction with one of the new lithium polymer or lithium ion batteries which can deliver the needed high current levels. Also worth experimenting with are 12 to 24 volt DC-DC switching converters available from some eBay vendors. While unlikely to be RF quiet, it may

be possible to use them if operating on transmit only. Again you will need a hefty 12 volt battery to deliver the current required.

### Parts

Most parts are widely available from the regular outlets. The main exceptions are the 7.16 MHz ceramic resonators and toroids which can be obtained from [minikits.com.au](http://minikits.com.au) You may also need to search for the mica or polystyrene capacitors which are

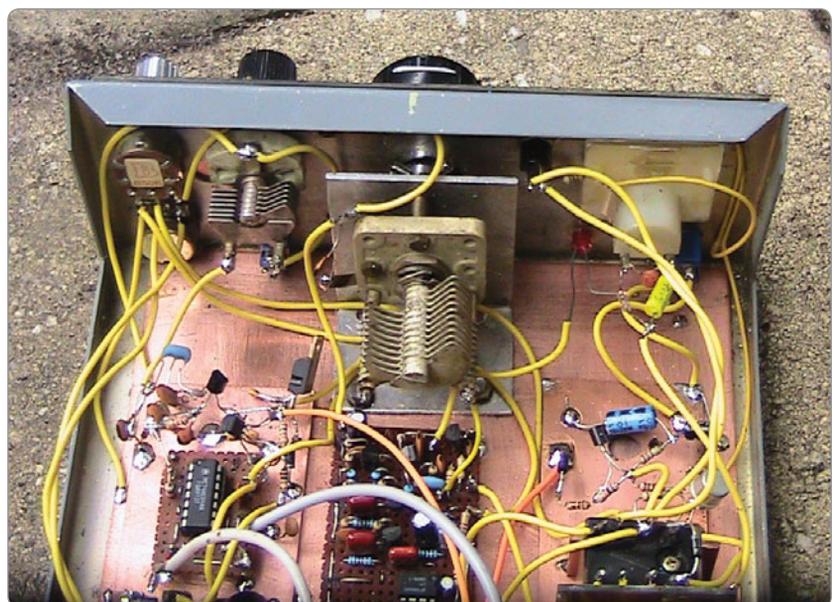


Photo 4: Behind the front panel.

recommended for the low pass filter. Another part which handles significant power is the transmit/receive relay. Use a medium to large type with a 12 volt coil for this since we are dealing with more than QRP power levels.

It should be possible to substitute plastic transistor radio variable capacitors with only a minor difference in tuning range. Vernier dials are desirable but not essential especially if the receiver tuning range is narrowed to match that of the transmitter. A large knob, or lever attached to a smaller knob, can greatly assist tuning if you don't have a reduction drive.

### Construction and testing

Several construction methods were used. Most of the transmitter section was built on pieces of unetched printed circuit board material. Pads, also of circuit board material, were glued to this to provide anchor points for components.

All receiver stages plus the IC transmitter buffer are mounted on blank matrix board material with holes every 2.5 mm. If you don't have any Veroboard can be placed in printed circuit board solution to etch away the copper.

RF-carrying wires need to be kept short. These include those from both panel-mounted variable capacitors and between various transmitter stages. Coax cable should be used for connections carrying significant levels of RF.

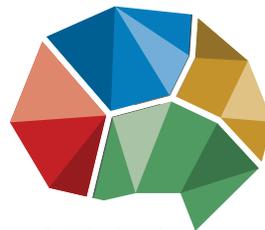
Plan where you want the stages in the enclosure, leaving sufficient clearance for each if troubleshooting or adjustment is required. Build the receiver audio amplifier, regenerative detector and RF preamp first. Don't build the audio filter until you have verified the basic receiver is working – this will give fewer stages to troubleshoot if it isn't.

With antenna connected advance the regeneration control to the point where the receiver breaks into a gentle hiss. It is here that the receiver is most sensitive and selective for receiving CW signals. I have not found a volume control necessary, but if you add one make it an RF gain control installed at the input of the RF amplifier to allow better handling of strong signals.

Experiment with capacitor values if required to get a suitable tuning range – this will vary with the value of your variable capacitor. Tuning range can be determined by generating a test signal from a 7 MHz RF signal generator (or transceiver) or finding the oscillating detector's signal on a nearby SSB receiver.

You will find selectivity quite poor when the band is crowded. Construct the audio filter stages to partly overcome this. Audio output will be lower but there'll be less extraneous noise. Volume will still be sufficient for headphones or a speaker in a quiet room.

Next tackle the transmitter, starting with the FET VXO. Again this uses a ceramic resonator. I had a smaller variable capacitor than in the receiver and as a result the tuning range is less. Also I had to have a switch to add a parallel fixed capacitor to gain adequate



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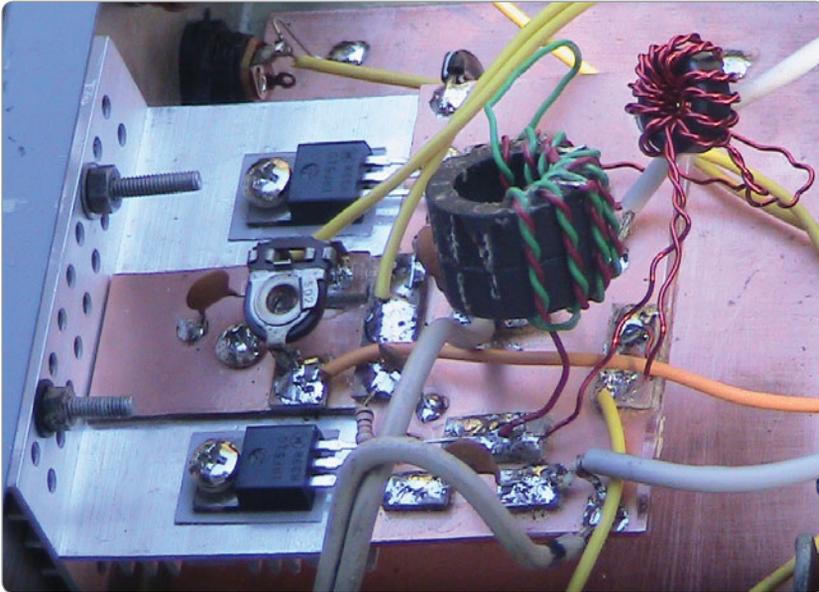


Photo 5: Close up of power amplifier.

coverage. If you have a larger value tuning capacitor you can omit these parts. Again experiment with capacitor values until you have a satisfactory coverage as heard on a calibrated external receiver. The prototype unit covers 7.006 to 7.031 MHz which is a good range.

The voltage regulator, keying and buffer can be built next. Use either matrix board or 'dead bug' style for the first two stages and matrix board for the IC buffer. If the keying circuitry is working correctly you will find that 5 volts appears on Pin 14 of the IC when the key is pressed. The effect of this is audible if you attach a short wire to one of the buffer's outputs and have it near the test receiver's antenna socket. The signal will be much louder when the key is pressed. Check that it sounds stable with no chirp.

Possibly the most mechanically difficult part of construction is building the transmitter's power amplifier. Leads need to be kept short because quite high currents start to become involved.

Those used to QRP construction also need to be aware that heat and its dissipation become more important at higher power levels. Use a generous sized heatsink and conductive paste to ensure heat is

carried away from the vulnerable final transistors. IRF510 tabs are connected to the drain lead which is at full supply potential. Sparks will fly if you don't use insulating washers since the heatsink will be earthed.

Good electrical connections, mechanical stability and good airflow are all important. Bolting the heat sink to the case's rear panel means more metal to take the heat generated. Holes in the case are helpful to aid air circulation. If the final transistors are still too hot (and you haven't forgotten the conductive paste) add a computer-type cooling fan, possibly running during transmit only.

Toroids are used extensively in this design. Those in the final amplifier are broadband ferrite – type FT50-43. The '50' refers to the size (50 = 0.5 inch, 68 = 0.68 inch diameter etc.) while the '43' refers to the material (type 43 ferrite). Note that the one that delivers the power to the drain leads of the IRF510s are used two stacked toroids for adequate power handling capacity. Enamelled copper wire approximately 0.5 - 0.7 mm in diameter (such as salvaged from power transformers) can be used for the windings, with a hand drill and

pliers (or vice) being used to twist both wires first.

The toroids in the low pass filter are different, being iron powder T50-2 types. Winding these is easier because only one length of wire is wound on each one. The windings should be spread out to occupy about two-thirds of the toroid. As mentioned before use either mica or polystyrene ('styroseal') capacitors in the filter since they are being operated at significant power levels.

When all transmitter stages are built (including the low pass filter) you can cautiously test them. I say cautiously because it is possible to apply excessive gate bias and destroy the final transistors. Not that they are very expensive but blowing your last pair when about to go on the air is a nuisance. To safeguard against this set the pre-set trimmer potentiometer to maximum resistance and the RF power output control to minimum (i.e. slider is at earth – or minimum power – end).

While monitoring on a receiver, and with a dummy load/RF power meter connected, press the key and note the RF power output. It should be zero. Now gradually turn up the RF power potentiometer (which also governs the FET bias). Some power should be indicated. If it's less than 30 watts set the pre-set trimmer potentiometer so that it is 30 watts when the RF power control is at maximum setting. The heatsink can get warm but not hot during normal keying. If it does reduce power and/or improve heatsinking.

Once happy with the receiver and transmitter operating in isolation seek to integrate them by adding the transmit/receive relay. If you want to get on air quickly connect the relay only and manually switch with a panel mounted toggle switch.

Alternatively build the two transistor switching/timing circuit and use the switch to control the delay before the transmitter reverts to receive. What was formerly the transmit/receive switch is used to control the keying delay to allow a

choice of full break-in (being able to listen between letters) and semi-break in (not being able to listen between letters but with automatic transmit/receive switching). Semi-break in is kinder on the relay (as it's not being switched as much) and provides better frequency stability since the transmitter's crystal oscillator is not being keyed when in transmit mode.

When satisfied tidy up construction and attend to any loose ends, such as making wiring neater and shorter. You may wish

to add features such as a keying LED, sidetone and metering if these were neglected before. Metering choices include received volume (as a crude s-meter by tapping off the headphone connection), PA drain current, PA gate current or field strength. I went for the latter since it provides a rough indication of RF power output.

### Results and conclusion

The transmitter-receiver was completed late on the weekend of the 2016 ARRL CW DX Contest.

Two US stations were worked. Except for its limited selectivity the receiver performed well and no overload was noted. Subsequent contacts were made around Australia, New Zealand, North America and the Pacific. Stations worked reported clean keying and negligible drift. Some chirp was noted in full break-in mode but largely vanished in semi-break in, the use of which is recommended once contact has been established.

The Forty-Thirty is suited to the casual operator who wants a leisurely old-style operating experience from an effective medium power homebrew station. The need to spot the transmitter each time frequency is changed and the audio image on receive give split frequency capability but make rapid-fire contacts in a crowded band a challenge. Nevertheless adequate performance to work DX is provided and such contacts will be found rewarding due to the greater dependence on operator skill.

A video of the Forty-Thirty in operation, including making a DX contact, can be found on the author's YouTube channel at [youtube.com/vk3ye](https://www.youtube.com/vk3ye)

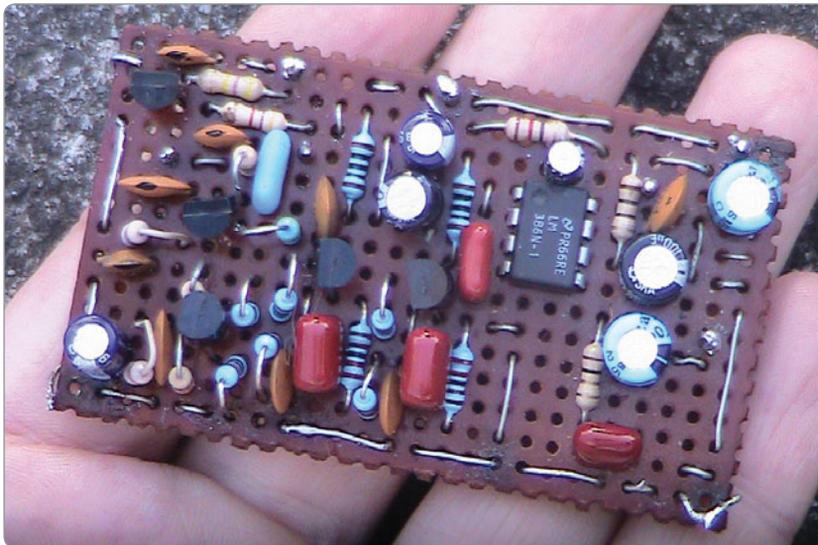


Photo 6: Receiver board.



## Promote our hobby



Have you considered using your unwanted *Amateur Radio* magazine to promote the hobby and the WIA?

Consider taking it to the office of the your local health professional (doctor, dentist, etc.). You never know, **you might stimulate someone** to consider taking up our hobby!

# An Essay: Behaviours in Amateur Radio

Steve Ireland VK3VM / VK3SIR

It's a wet, bleak Sunday evening. Yesterday "The Bulldogs" had a great win for their first flag in 65 years. Tonight "The Sharks" won their first flag. Sport is over - that means it is time to head to the radio and put out a couple of JT9 Calls at around 7078.6 kHz where I often sit nightly. Three great contacts, then one "elusive" one... a weak signal coming in at around the limit of the resolution of the software and this lowly Early 2009 Mac Mini Running Windows 10 Anniversary Edition - one that I cannot just grab - someone beyond the border of this nation transmitting LSB on 7080 kHz.

Grrrr.....

Thoughts run through the head... that slimy s.. of a b.... ..... Maybe I should crank up the amp and put out 120 W of automated long, full CQ Calls in CW on 7079.6 kHz. Will that annoy them so much as to encourage them to drift away?

[No... I can't crank up the Amp as I took out 2 x MRF455 ... possibly due to an excessive SWR fault; The Amp is with one of Australia's most respected Amplifier Engineers being "refurbished"]

Then I look around at a mirror in the corner of the room and think... hmmm... what made me think the last statement? Hmmm....

Yes we have all had those moments... A great contact, but having been swamped.... But what is it in our psyche that even leads us to think that we should disrupt someone's perhaps legal and lawful communication?

What is it in the psyche that causes us, as Amateurs, to think that way?

I look at the WIA band plan published at: [http://www.wia.org.au/members/bandplans/data/documents/Australian%20Band%20](http://www.wia.org.au/members/bandplans/data/documents/Australian%20Band%20Plans%20160211.pdf)

[Plans%20160211.pdf](http://www.wia.org.au/members/bandplans/data/documents/Australian%20Band%20Plans%20160211.pdf)

Hmmm... it is not a recommended protected digital segment. I check the recommended band plans for our nearest neighbour published by ORARI - The Organisasi Amatir Radio Indonesia - available at <http://www.orari-bali.org/bandplan-hf.pdf> Nope. No digital allocation in that region.... all phone recommendations.

The fact is that under recommendations set by our representative organisations and the IARU it is me that is in error.

Sometimes we all need to look introspectively.....

## Monday afternoon, drive time (one week earlier)

Its drive time (i.e. approx. 5:00 pm) in The South-Eastern Suburbs of Melbourne. I always have both a HF radio on - listening to the JT segment on 40 m - and another scanning the most popular repeaters in Melbourne. There is a conversation going on between two well-known Eastern Suburbs Amateurs - Mobile on the way home. Then a third Amateur calls in. Then BEEEEPP, Squeal... Gurgle... Click...Click Click... Flatulence.... Burp .... Gargle.....

The annoyance is so bad that eventually all present depart the repeater frequency.....

Hmmm.... I am annoyed ... As an Amateur we adapt the old Guinness-Advertising theme - "ahh... I Love to watch" into "I love to listen".

Later I tune the HF to 3590 kHz. There has been for a long time a group that gets on and has a great SSB chat. Then BEEEEPP, Squeal... Gurgle... Click...Click Click... Burp Gargle..... They do their best to ignore it.... BEEEEPP,

Squeal... Gurgle... Click...Click Click... Flatulence... Burp Gargle... Eventually someone breaks ranks and makes a comment. BEEEEPP, Squeal... Gurgle... Click...Click Click... Burp Gargle... BEEEEPP, Squeal... Gurgle... Click...Click Click... Burp Gargle...

The conversation is killed.

## Why the antisocial behaviours in AR?

I need to declare that I am well trained, but very rusty in, applied psychology. I have therefore consulted with people practising in the field to confirm some assessments.

The urge to grizzle at a "swamper" of a signal that we are chasing is just normal human nature - annoyance. You can breathe a sigh of relief... (As I did)...

Yet the "BEEEEPP, Squeal... Gurgle... Click...Click Click... Burp ... Gargle ... Flatulence" that we are hearing is not; it is well beyond reasonable social behaviours. It does not take anyone with the slightest background in psychology to work this out.

You realise that if you were to ask a practising psychologist to produce a "profile" on your average QRM-source, as I did, that such a profile would equate in many parts to the profile shared by a pyromaniac? They both enjoy the action; they enjoy the chaos; both enjoy and crave destruction. They both enjoy being a part of the destruction. They both feel empowered as they have changed someone else's behaviour. There are also other antisocial traits that were suggested in the profile that would be inappropriate to list here.

They feel important because they feel that they have taken charge and are in charge ... It is attention that is craved.

These behaviours could be as a result of forms of psychological, emotional and/or intellectual disorder. It is not just alcohol and/or substance abuse as many put it down to; it is more than this. In the past the community tended to hide these people away. In these modern times our far better methodology for managing people that may have psychological, emotional and/or intellectual disorders is with inclusion and tolerance.

Tolerance....

And then I think back to the time when I considered a big blast of CW on 7079.6 kHz....

Hmmm.... But as I stated my feelings here were judged to be a normal if not typical response.

### What works and what does not work

Some facts have to be acknowledged:

1. Our "Burpers", "Clickers" and "Flatulencers" on air will always be there.
2. They seem to never go away.
3. You appear to deal with one, and another pops up.
4. They get worse when ignored.
5. They often get even worse when acknowledged.
6. They definitely get worse when chastised.
7. There seems to be more of them, with longer episodes of their attacks on the airwaves these days as the resources to deal with this issues are very scant and have little gain and or teeth when enacted.

So what does work?

We must stop protecting them! We must stop making excuses to justify their atrocious social behaviours. I have heard on many occasions, at many radio clubs, "yes we know who it is but [Person X] has issues and we have to put up with it".

Bzzzzz... Sorry... Wrong Answer... This is the wrong attitude for the growth and survival of AR. We do NOT have to put up with

them. Neither should they be "protected". It is those that are protecting the miscreants that are really doing the most damage.

We have a right, through our licences, to utilise allocated radio spectrum within the restrictions available to our licence class. We also have a right for communication that we enter into to be deliberate-interference-free. These rights are afforded to us through the Radiocommunications Act of 1992.

Well known "problems" should be managed and the issues that they are causing must be addressed. As I identified earlier, the "miscreant" is craving is attention. So manage the attention - as a community we should attempt to offer them alternatives to take attention away from affecting others. The first point in the next section will present a philosophy.

Acknowledgement of interference should not be given. That is not argued with.

Yet there is an argument that can be put - an argument that I believe has been used successfully to defend those that should be dealt with. As Amateurs we have many varied forms of transmission and encoding modes available to us that are all legal within our allocated spectrum. So when does a signal on the Amateur Bands become "interference"? Unless a signal is identified to its source as disrupting other communication on the same frequency, how can that disruption be classified as interference?

Advice that I have been given suggests that only a single statement from one party in the conversation - advising that interference is being created and that it should cease - should be made. This is akin to advising operators that a frequency is in use or asking operators to move if you were on a frequency first. I personally have found this method to work very successfully on most occasions. This matter certainly needs clarification and specification at a legal level in the next version of

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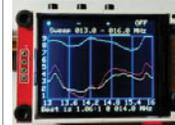
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"The Act".

The main issue is that the next part is not followed through - deliberate interference should never be tolerated and must be reported and dealt with.

From a regulatory point of view, there is a lot of work to do and hence cost involved for our regulator, The ACMA, and their Field Operations and Legal Branches. They have to track down, gain evidence, prepare briefs and prosecute miscreant operators. They then have to deal with the

complaints and abuse. They are grossly understaffed with restricted budgets; they have what they often consider to be more serious issues to deal with, that have greater chances of prosecutorial outcome and hence cost/revenue recovery (i.e. cellular blockers etc.).

Note that “egging on” a QRM source under current guidelines also provides a defence for miscreants to worm their way out of prosecution. This is the reason why the WIA and the ACMA both recommend that Amateurs never engage with or acknowledge a QRM source. Yet the issue still remains.... is it “interference” if attempts are not made to identify the signal as “interference” to its source? Otherwise it can be classified as “an annoyance”.... In this situation, the quote referenced to many including Albert Einstein is appropriate:

*“If a tree falls in the forest and no one is there, does it still make a sound?”*

### **What should we, as amateurs, be doing?**

Many break the acronym “HAM” down to “Help All Mankind”. This should be our first course of action – socially engineering a solution. This may mean social calls; it may mean attempting to include these people in activities; it may mean dropping them a call to see how they are during known periods when they “act up”. Constructive and positive thought will need to go into this.

It may also mean speaking with families and or support people - suggesting whether these people should be operating equipment while the person involved is having issues.

We should be lobbying the Ministry for Communications and the ACMA, through WIA elected representatives, for a less “red tape” and cost-effective legal mechanism for the regulator to enforce and encourage regulation. In this modern age it is PROVEN that “hitting people in the hip pocket”

has a greater affect at changing behaviours than anything else. The model used to regulate road safety is the classic example of a system that works; it also provides a punitive model that could be explored, in my opinion. That is: The more you speed, the more you get fined. Eventually you lose your licence.

Current provisions within the current legal framework that do not allow unlicensed operators to hold transmit-capable equipment should be carried over to the new Act; these provisions should also be heavily enforced. Perhaps seizure provisions should be able to be enforced by sworn Commonwealth officers beyond the Ministry or Regulatory Agency?

The evidential requirements for our regulator must also be loosened-up. Paper logs, like Police with speeding fines, should be adequate for investigating officers. We know that the ACMA has facilities and resources to record spectrum real-time “From DC to Daylight”. Perhaps this equipment could be better utilised - especially with potential increased funding via the implementation and application of simpler, cost effective legal pathways?

This more “punitive” hip-pocket approach should only be applied to miscreants that float to the top of complaints systems. People can make mistakes with an odd “P or Q” that should not be said over the airwaves or they may have a transmitter fault that may jam a repeater. These behaviours do not have a pattern or consistency. These issues should NOT be subject to “punitive” actions – perhaps cautions – until a tolerance threshold (of complaints) that has been well-negotiated with the community is crossed. Serious matters of course should go straight to the top. Only when a “source” floats to the top of the complaints pile should punitive action be taken, in my opinion. The more a source plays up, the more they remain at the top of the

investigation pile and hence more they pay in fines. Eventually a points barrier is crossed; then possession of transmitting equipment during a suspension becomes an issue. Continued actions would lead to forfeiture and mandatory destruction of resources.....

All simple – using the “Speeding fines” legal framework. Organisations such as ASIC and the ACCC have systems in place that also deal with offenders/ organisations that “float to the top” – so systems are there and are well proven.

We are trying to attract people to AR; at last check our numbers were around 13,900. We are trying to and definitely need to grow AR. We are trying to make AR attractive not only to those under our own roofs – but also to the wider community when there are so many other distractions. We need a safe, attractive and fun environment. The deliberate human-QRM-factor is a huge hurdle against attractiveness of Amateur Radio.

I put these ideas into “The ether” for further development and discussion. I accept that this will create considerable discussion. That is the intent. Hopefully something better and more efficient than this can bubble up? To quote Richard Branson:

*“Any idea can be a great idea if you think differently and commit to seeing it realised.”*

The current system clearly is failing us...

### **What can we do now?**

These concepts, ideas and observations are “pie-in-the-sky” ideas and thoughts that I throw open for discussion. Discussion is different to criticism – as criticism is not always constructive and can get personal. Then it becomes bullying. There is too much nastiness in Amateur Radio already.

This is a valuable time for us all – a new Radiocommunications Act is being developed. Our input into this - with ways of solving our biggest

issues - is essential.

When there are calls for submissions for the new Act, we all have a right (and a responsibility???) to comment and to propose ideas for consideration. We should all avail ourselves of this necessary democratic right. The Government must know what we feel and want, and this is done via letters and drafting submissions. We should also make our feelings well known to WIA Board and Committee representatives too. That is the job of a committee-person or director – to represent us and our views. If these people refuse to listen or talk us down... we know how to deal with this under democratic conventions....

In the current climate, the best thing that we can do not is not to engage or acknowledge “QRM”.

But we should NOT stop there.

Digital recordings, along with reports of location, signal-strengths (preferably on reverse if repeaters) and accurate times that the “QRM” was heard (started/concluded if possible), should be made and noted.

Equipment used, antenna types and beam headings are also very useful. Remember that there is monitoring equipment available to The Government that our regulators can utilise as long as we provide

as much assistance to them as we practically can.

I would strongly recommend that anyone considering compiling evidence for investigation on QRM seek advice from the WIA office or organisations such as Amateur Radio (NSW) or Amateur Radio (Victoria) first before contacting the ACMA directly. Coordinated contact and advice should be sought first before approaching the ACMA directly - as we do not want to swamp and hence alienate the under-resourced ACMA and its staff. It is well known that The Government wishes to devolve functions from Government Agencies. Having a coordinated approach through the WIA or AR (NSW) or AR (VIC) may be just one way for providing evidence that we are capable to managing and assisting with services.

Advice on how recordings can be compiled and provided directly to the ACMA if that is your preferred option can be found at: <http://www.acma.gov.au/theACMA/ACMAi/Complaints/Interference-and-reception-complaints/to-make-a-report-or-complaint-about-interference>

There is one circumstance that I would urge no Amateur to ever tolerate – and that is matters that could in their perception

affect the security of this nation and its people. People close to me, including the now silent-key Peter Sutcliffe VK3ADO (SK) were subject to foreign-language audio “vocalisms” during the middle of the day in late 2015; such transmissions were also heard late at night/ early morning on local repeaters. Recordings of the transmissions were analysed; they were assessed as being “significant” within the current security climate. I have subsequently been informed that the source was dealt with “expediently”.

In these times we cannot take risks with the security of this nation or with the consequences that such could have on Amateur Radio if any matter even slightly involved Amateur Radio – whether it originated from a deranged colleague or otherwise. Think about this last statement and the context of this entire article a bit more... One moron could destroy it for all of us.

The National Security Hotline number is 1800 123 400.

Steve Ireland VK3VM / VK3SIR  
Assessor: 3-072

*The views presented in this article are those of the author. The WIA and Amateur Radio magazine do not necessarily endorse these views.*



## Plan Ahead

# JOTA/JOTI | 20-22 October



Plan ahead and contact your local Scout or Guide group. They may be unaware that you might be able to help their young people discover Amateur Radio.

The purpose of **JOTA-JOTI** is to enable and encourage Scouts around the world to communicate with one another by means of amateur radio and the internet, providing a fun and educational Scouting experience and promoting their sense of belonging to a worldwide Scout Movement.

# VKFF Activation Weekend: Nombinnie Nature Reserve

Liz Billiau VK2XSE

This magazine has a column devoted to SOTA and Parks; two separate but similar activities in which operators leave their shacks and venture out into the open space where the radiation hazards are in the infrared and ultraviolet parts of the spectrum. Once a year, the Parks operators have a big weekend, leaving their homes for many parks across Australia. It's the VKFF Activation weekend. The 2017 VKFF Activation Weekend will be held on Saturday 25 and Sunday 26 November 2017. So you can get an idea of what you can really do on a November weekend, here is the story of one of the 2016 activations.

Winter 2016 was a wet winter in New South Wales. Flooding started in July and spread through most of the Darling tributaries, as well as the Murrumbidgee and Murray valleys. Liz VK2XSE had an initial plan of a trip just up the road from home to the nearest National Park, but this was closed to vehicle traffic from July 2016 until January 2017. The other nearby Parks were in river valleys and also closed to traffic for a prolonged period. Starting to look further afield, it looked possible to reach a Park about two hours north. Planning this activation was dependent on roads being reopened as the route across the Lachlan River was closed until a few days before the actual weekend.

Nombinnie State Conservation Area (SCA) beckoned. This is close to the geographical centre of NSW, sitting on the transcontinental railway line and accessed by the Kidman Way. The park, together with three nature reserves, preserves a large expanse of mallee and some other woodland features. "The reserves support a rich array of

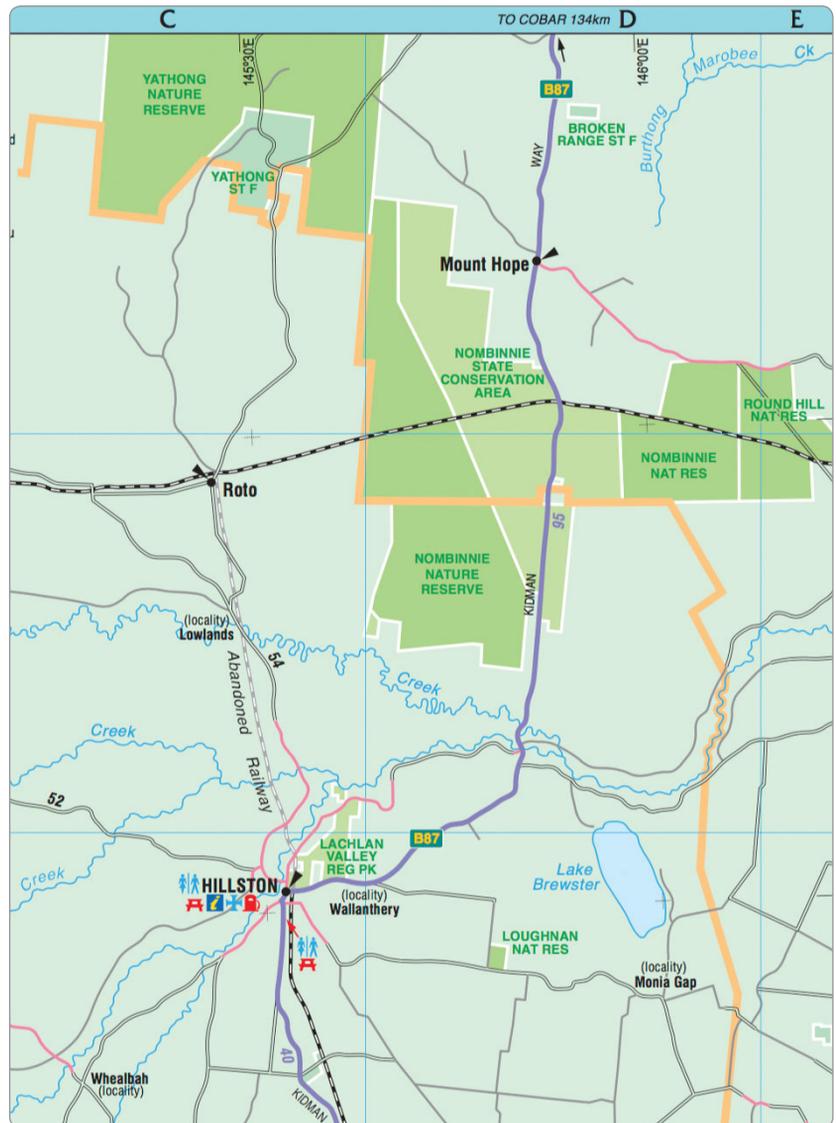


Figure 1: Map of the location of the park NSW LPI (i).

wildlife communities and are a major area of habitat for a number of rare and endangered plant and animal species" (ii, iii).

With about a month to go, Nombinnie SCA VKFF-1364 looked to be our best chance for a "local" park for the big weekend. November is usually hot, so we

planned to leave Griffith on the Saturday afternoon, camp in the park, operate in the evening and morning and drive home before the heat of the day.

The local office of the National Parks and Wildlife Service was approached about radio operation, including camping, in the park.



*Photo 1: Campsite and operating position.*



*Photo 2: Australian Magpie.*



*Photo 4: Sticky everlasting.*



*Photo 3: Moonrise.*



Photo 5: Buff-rumped Thornbill.



Photo 7: Transcontinental Railway.

Information about VKFF was provided and camping in the park was approved, on a minimal impact basis – no open fires, no pets permitted and remove all rubbish.

In the afternoon of the Saturday, Liz VK2XSE and Peter VK2KNV packed the car and set off north. The country was green and moist and the Lachlan River flood had abated to allow the main road to open with single lane operation north of the river crossing at Wallanthery. We continued north to the railway line at Matakana, crossed the line and immediately turned west on the fire

trail. About a kilometre from the main road we found a suitable camping spot in the mallee.

Mallee is low woodland, with plenty of space between the mature trees, as this area had been burnt in 2002. It doesn't assist with antennas. The country itself has no high spots for better QRP work, but the location is completely noise free. Two antennas were used; a Buddipole set as a V for 40 m and an Alex-loop for 20 m, both with the Yaesu FT-817, running 5 W.

It was soon obvious that every fly in Eastern Australia



Photo 6: Lachlan River, just below the road bridge.



Photo 8: Needle wattle.

was keen to join in the activation. The night shift was accompanied by a throng of mosquitoes, enjoying the breeding season allowed by the pools of water still lying by the fire-trails. While reception was fantastic at the location, 5 W was not really enough to be heard that evening, so most contacts were made from the car which has a Yaesu FT-857 providing up to 100 W through a multi-tap vertical antenna (Outbacker OB8). We took a spare battery to power the radio in the car. DX stations were heard from Eastern Europe in the morning

and South America in the evening with the FT-817.

The morning QRP operating session provided some more contacts to total the 10 to “qualify” the park for the VKFF award of which several were park-to-park contacts.

Over the activation weekend a total of 2,655 QSOs were made by 43 activators. It’s not contest style although there may be pileups. Many operators enjoy a short chat as they exchange the necessary signal reports. With over 1700 parks belonging to the VKFF program, there is plenty of space for more portable operators to join in for 2017.

It’s not all about the radio. Once in a park, there are great temptations to take photographs, walk through the bush and just enjoy some peace.

Photographs from Nombinnie by Peter VK2KNV and Liz VK2XSE.

### References

- i. Map NSW LPI <http://www.cartoscope.com.au/maps/riverina/riverinareg.pdf>
- ii. <http://www.environment.nsw.gov.au/resources/parks/pomFinalYathongNombinnieRoundhill.pdf>
- iii. Sass, S. (2006) Zoologist 33(4) The reptile fauna of Nombinnie Nature Reserve and State Conservation Area, Western New South Wales.



**Shepparton and District Amateur Radio Club (SADARC)**

## Hamfest/Comms day

### Sunday 10 September



SADARC is holding its famous annual Hamfest/Comms day at St Augustine’s Hall, Orr Street Shepparton.

**Vic Roads Shepparton map 673 Ref P8**

Call in on Mt Wombat Repeater 146.650 MHz.

This is our usual venue. The doors open for traders at 8:00 am and 10:00 am for the public. We are retaining our very reasonable \$5 entry fee and entry tickets can be purchased before 10:00 am. There will be quality food at good prices on site, with seating so you can both eat and talk in comfort. There will be a raffle and door prizes for lucky participants. The usual commercial vendors will be there plus many other tables of pre-loved equipment, with around 30 tables in total.

# WIA honours achievers with awards

Jim Linton VK3PC

Noel Ferguson VK3FI of Mildura and Graeme Scott "Scotty" VK2KE from Albury were made Honorary Life Members at the Wireless Institute of Australia (WIA) annual general meeting in Hahndorf South Australia.

Noel became a radio amateur in May 1958, was an avid homebrewer, very active in education, special events, promotion, and operating.

His enthusiasm was shown when he invited the WIA to visit Mildura and talk about the then expected Foundation licence. Later, in the first batch of WIA accredited Assessors, Noel embraced the opportunity to begin training and assessments.



Photo 1: Noel VK3FI (right) being presented with WIA Life Membership by Phil VK2ASD.



Photo 2: Graeme Scott "Scotty" VK2KE is now a WIA Life Member.

Frequently at WIA AGMs, he led the Sunraysia Radio Group to hold the very successful WIA 2012 annual conference.

His experimenting has included a home-built 630 m CW beacon, working through satellites, and in 2012 gained media coverage after receiving a signal bounced off the Moon by the NASA Jet Propulsion Laboratory.

This tireless but humble volunteer played a key role in revitalising Amateur Radio in northwest Victoria, has been involved in many special events stations, and a most deserving individual to be honoured.

Graeme, a radio amateur since 1957, was active in the field of education including for many decades a teacher and mentor of Amateur Radio throughout Australia.

The employee of TAFE colleges has been supportive of the Institute becoming involved with the WIA Federal Education Committee to play a key role, liaised with the Department of Communications (now ACMA) and provided annual reports.

He authored seminal text books based on his series of magazine articles. Scotty has written articles *Amateur Radio* magazine on the themes of education, operating techniques and to generally encourage others.

Graeme was most worthy of WIA Life Member recognition for his contributions, personal effort and support for our great communication activity.

In other recognition, the Amateur Radio on the International Space Station (ARISS) Coordinator and telebridge station, Shane Lynd VK4KHZ, received the prestigious Chris Jones Award.

He was overwhelmed at receiving the honour. His first ARISS contact was the Zeehan Primary School in Tasmania in March 2002. It was the first direct Australian ARISS school contact and a huge success.

Shane had earlier had several regular voice contacts with Astronaut Andy Thomas VK5JAT/VK5MIR aboard the MIR space station. "That sparked my interest," he said, in the opportunities for schools to link with space led him to join ARISS, and the rest is history.

Former ARISS Coordinator and still a telebridge, Tony Hutchison VK5ZAI, talked briefly about Shane before making a surprise presentation of an ARISS Certificate for his 10 years of involvement.

It was later learnt that Tony VK5ZAI, the Chris Jones Award 2009 recipient, also received a 20 year ARISS Certificate for his outstanding contributions.

The Ron Wilkinson Award went to Phil Moat VK4CDI for his 23 cm band moonbounce (EME) experiments focusing on digital modes, resulting in the world record distance contact of 18,918.3 km with Aleksandr EA8DBM on November 27, 2015.

This was one of the oldest WIA awards made possible through the generosity of the late Mrs Mary Wilkinson, widow of Ron Wilkinson VK3AKC.

He was a well-known VHF-UHF operator and homebrewer over the 1950s to 1980s. He made the first moonbounce contact from Australia on 1296 MHz, with a homebrew dish, transverter and power amplifier.

Summing up the philosophy of Ron Wilkinson VK3AKC, he once said: "Nothing great was ever achieved without enthusiasm."

This year's recipient Phil VK4CDI was interested in the VHF, UHF and microwave bands, particularly weak signal working and earth-moon-earth contacts.

First a radio amateur in 1976 was now retired and apart from travelling does enjoy pushing the boundaries and improving his station.

Johnno Karr VK3FMPB received the WIA Foundation Licence Award for taking part in ILLW, KRMNPA, being a WFFF VKFF Hunter, ANZAC Day events and writing in *Amateur Radio* magazine and club newsletters.

A number of WIA President's Commendations were then awarded: Peter Richardson VK2PR who compiles the WIA Contests Champion list, Kevin Mulcahy VK2CE for Amateur Radio & International Lighthouse and



Photo 3: Shane VK4KHZ (left) with his Chris Jones Award is presented by Tony VK5ZAI with an ARISS Certificate.



Photo 4: Ron Wilkinson Award winner Phil VK4CDI in his radio shack ready for the next contact.



<http://ncrg.info/WP/event/ncrg-hamfest/>

## NCRG HAMFEST WEEKEND

September 30th (QTH TBC)  
and October 1st  
(Cyril Jackson Community Hall,  
Fisher Street, Ashfield)



Raffle First Prize is a  
**Flex-6400**  
sponsored by  
Future Systems &  
FlexRadio Systems

### Saturday Program;

- Tech presentation and club open day
- Gala Dinner (TBC)

### Sunday Program:

- Swap meet
- Best Mobile Installation competition
- Homebrew competition
- retail vendors present
- Raffle

For tables and presentation reservations,  
Contact Us  
[hamfest@ncrg.org.au](mailto:hamfest@ncrg.org.au)

Northern Corridor Radio Group

Lightship Weekend achievements, Tony Falla VK3KKP a lifelong Amateur Radio enthusiast and computer professional who has led publicity and awareness activities, and John F. Drew VK5DJ who epitomised the term STEM before it was coined, being an avid homebrewer and repeater developer.

Bernie Lupinacci W1CDM and Terry Page VK2JTP received individual President's Commendations for 15 years as the only administrators worldwide of the EchoLink system.

The "Australian Travellers Net" controllers – Ross Cunningham VK5KMH, Noel Des Jardins VK4NL, Victor Stellan VK4WST, George Turner VK4HGT and Bob Lockley VK6KW – were also honoured.

The WIA Publications Committee Awards for 2016 for publication in *Amateur Radio* were announced by the Editor Peter Freeman VK3PF.

The Al Shawsmith Award for journalism for the best non-technical article went to Joe Gonzales VK3YSP and Julie Gonzales VK3FOWL for the article "ANZAC Day 2016 Amateur Special Event" in the September 2016 issue.

The Technical Award for the best technical article for a second year in a row was to Jim Tregellas VK5JST for "A \$10 Antenna for 2 m that anyone can build" in the August 2016 issue.

The Higginbotham Award for service to Amateur Radio: Christine Taylor VK5CTY for a long history of articles particularly focussed on Women in Radio and ALARA commencing in November 1995, and including ALARA columns and AHARS Club News.

The 30 WIA Assessors who reached the milestone of 10 years were given a Certificate and pin by the WIA Exam Service to mark the occasion.

Certificates of Appreciation also went to the WIA AGM weekend South Australian Organising Committee: David Clegg VK5KC, John Dawes VK5BJE, Jim Tregellas VK5TR, Shirley Tregellas VK5YL, Stuart Fillmore VK5STU, Roy Gabriel VK5NRG, Grant Willis VK5GR, Matthew Cook VK5ZM, David Minchin VK5KK, Iain Crawford VK5ZD, Joy Robins, Dan Flakelar VK5DF.



### Participate

## Oxley Region ARC Field Day - Port Macquarie

12-13 August

## ALARAMeet 2017 in Cairns

8-11 September

# 'Wireless Men and Women at War' book launched

Jim Linton VK3PC

The Wireless Institute of Australia launched its 'Wireless Men and Women at War' book at the WIA annual general meeting in Hahndorf.

WIA Historian, Peter Wolfenden VK3RV, explained that originally a few war-related articles were on hand for the ANZAC 100 commemoration, but after he made a call for any others he was overwhelmed.

The first article in the series was published in *Amateur Radio* magazine in August 2014, and many more followed. A summary of each was run by the VK1WIA Sunday broadcast. In early 2016 with some stories unpublished the idea of a compendium book was viable and interest in it had grown.

In the book there are 42 articles written by 19 authors, telling about 100 different stories of radio amateurs serving during wars and conflicts. He sincerely thanked all for their contributions.

Despite the diversity of the book, Peter VK3RV commented that one from Jim Gordon VK3ZKK with facts of Bert Billings XJP, was a stand out.

It traces the so-called 'First and Last ANZAC Wireless Operator' and his service in WWI and WWII.

Also a major contributor was Lloyd Butler VK5BR. It was really a great team effort by all.

The book contains real life stories of the war-time that have never been told before. The publication records individual



Peter VK3RV explains the historical book on the war effort of radio amateurs as told through numerous stories and images.

people faced with the adversity of war were able to use their self-education and hands-on experiences to make a difference.

It covers WWI, between the wars, WWII, the Vietnam War and modern communications, and how those who served this country were honoured during by today's radio amateurs.

The ANZAC 100 commemoration encouraged all to reflect upon and learn more about Australia's wartime involvement, the costs and its impacts on our nation.

The Australian War Memorial in Canberra was to get a number of copies. Other interest comes from war veterans, the radio industry, defence service personnel, academics and anyone interested in the development and use of communications.

There were 52 copies at Hahndorf that quickly sold out. Further orders for the 'Wireless Men and Women at War' are now being taken by the WIA online bookshop.

[http://www.wia.org.au/members/bookshop/page\\_data.php?id=258](http://www.wia.org.au/members/bookshop/page_data.php?id=258)



WIA Contest Website



To keep up to date with all of the major Australian contests, including rules and results, at the WIA Contest Website at:

[www.wia.org.au/members/contests/about](http://www.wia.org.au/members/contests/about)

# More about 2 m and 6 m Propagation

Mick Hort VK2BZE

This is further to my article back in 2006 (1) in which I claimed six (and 2) metres are ducted at around 15000 feet (4.57 km) and travel for thousands of kilometres. By studying reflections from aeroplanes, I have proved the above to be true and the methods are easily repeatable by anyone living close to airports. I am 60 km from Sydney. The effect is even more pronounced on 2 metres but readily observable on 6.

The following was written about another magazine article.

I was just reading your primer article on 6 metre E propagation. As with all E articles the theory is very malleable and ridiculous short and long distance are claimed for contacts in this magical mode. I have studied 6 metres in Australia and New Zealand for many years. It is a vast area of some 7000 km in length and 5000 km in height so it gives a good sized mix of distance and terrain.

My observation, using aeroplane bounces, is that most 6 metre propagation is done in a layer around 15000 ft (4.75 km) (around 0 degrees C). It first started with analogue TV video carriers on 45 MHz from ZL, as planes came in thru this level into Sydney. I would get a bounce down rising to S9 at

my QTH (Wollongong 70 km south of Sydney) day after day.

ZL analogue TV shut down so I lost interest for a while. Many years later I noticed bit of beacon from Adelaide some 1200 km away. This I traced to a new phenomenon of planes at 38000 ft (11.6 km) and above the 15000 ft (4.75 km) duct bouncing down signals from 300 km to 400 km out to my QTH. Then I looked east to ZL and sure enough beacons that had travelled 2400 km from ZL leaving the duct in an upwards direction were bouncing off planes 300 to 400 km east of me and landing at my QTH. I use this information to read synoptic and infrared greyscale weather maps to predict openings and get very good results enabling me to pick up Perth and ZL beacons and contacts on a regular basis.

In the USA, with 4500 planes in the air at any one time, can you imagine the confusion this would cause a poor old sporadic E believer? I can assure you it is what the name says, very sporadic if at all. I will attach a couple of articles for your perusal that I wrote on ducting. It is a good method of prediction. Last week I put on the VK logger to look out for the America's, sure enough a ZL worked the USA that day. These

ducts can be extremely long in stable atmospheric conditions. It is in line with Hepburn charts but they are too vague and this is an hour by hour exercise. If anyone is prepared to get their head out of the 1930s box and use their own intelligence I will be happy to discuss my theories with them. In the mean time I will keep making 400 km 6 metre contacts.

A chance event this morning led me to discover that the events I described to you in my article on six are even more dramatic on 2 metres. The bounce from the plane is much stronger and lasts longer and on the Sydney Auckland flight path are very repeatable. It confirms that signals entering the duct in ZL are above us in Sydney most of the time and need an event to bring them down, in this case an aeroplane. Can't be Es as the E layer clouds are 75 km above the plane. This is an addendum to the six metre article.

Cheers VK2BZE.

## Reference

Hort, M., 6 metre propagation, *Amateur Radio*, September 2006, p. 6.



## WIA DX & operating Awards



WIA offers a range of operating awards, including DXCC, VHF & UHF and many other awards.

Details can be found at: <http://www.wia.org.au/members/wiadxawards/about/>



# VK2news

Tim Mills VK2ZTM  
e vk2ztm@wia.org.au

August is shaping up to be a busy month for many as have been the recent months. There were no VK2 notes for July when other circumstances delayed a submission within the input window. On the long weekend in June, the Oxley Region ARC held their 42<sup>nd</sup> Field Day over two days. While it was a wet time in Port Macquarie, it did not dampen the activities at the Tacking Point Surf Lifesaving Club hall. There were 93 registrations with a head count of at least 105 coming through the door. The Fox Hunt Champion for the weekend was Gerard VK2IO with Chris VK2YMW runner up. Planning is again underway for next year's event – same time slot, same venue.

There has also been some additional text added to the VK2WI Morse training transmission on 3699 kHz. It runs about 35 watts into a half wave dipole. Reports or comments may be given by an email to [callbacks@arnsw.org.au](mailto:callbacks@arnsw.org.au)

In May HADARC held their AGM with little change in the committee and the positions. They also released a draft of a proposed new constitution. In July the Westlakes ARC scheduled one of their regular car boot sales. ARNSW held a Foundation Course weekend and a regular Trash & Treasure. St. George ARC advised the restoring of

VK2WI News through the Mt. Bindo VK2RDX system in the Western Blue Mountains after a link receiver developed a problem.

As we come into August, there is something for everybody. The annual Remembrance Day Contest over the weekend of 12 and 13 for 24 hours with a 0300 UTC start. VK2WI plans to transmit the opening address a little before the formal start. The following weekend will be the Lighthouse & Lightship weekend. Again this year it is fortunate that both are not on the same weekend.

The Blue Mountains ARC is planning a Foundation weekend on 12 & 13 August. Manly Warringah RS lecture night on 16 August has a theme of 3D Printing, the Flag Pole event on the weekend of 19 & 20 and a Foundation weekend yet to be advised. Central Coast ARC is planning in August for the Shahzada event and advises that the club rooms at Kariiong are open from 10 am Saturday. St George ARS have a Foundation weekend scheduled for 19 & 20 August.

WICEN NSW have their AGM set down for Saturday afternoon on 26 August and communications for the annual VH-MDX lost aircraft search from 15 to 17 September. Trek for Timor 7/8 October and the Hawkesbury Canoe Classic towards

the end of October. Summerland ARC in the Northern Rivers has a Show & Tell SARC FEST planned for Sunday 27 August.

In September, Waverley ARS have a Foundation weekend planned on 16 & 17. They held their annual auction on Saturday 8 July. ARNSW has a Foundation weekend planned also for 16 & 17 – inquiries by email to [education@arnsw.org.au](mailto:education@arnsw.org.au) with the Trash & Treasure on Sunday 24.

The Illawarra ARS provides a relay of VK2WI News through some of their 6 & 2 metre repeaters. They also have an EchoLink on Saturday mornings at 0930 EST on 2 metre repeaters VK2RMP and VK2RUW. Look for VK2BGL-R and VK2MT-R. I have had the opportunity recently to look at a half year collection of 1935 Wireless Weekly – a most interesting look back at our early radio industry. I will try and cover in more detail in future notes.

Steve Ireland has recently sent out a request to all repeater providers for any updates to their repeater listings in the next Call Book. It is important that the information is up to date both there and on the WIA web site. Please check your entries and update any changes.

73  
Tim VK2ZTM.



## Participate

# Remembrance Day Contest

# ALARA Contest

## 12-13 August

## 26 August



# AREG Members go Fox-Hunting at SERG Convention

Adrian Waiblinger VK5ZBR

I thought I would share our weekend at SERG Australian Fox Hunting Championship 2017.

Team Moose (aka VK5ZBR) had four members:

- Mike VK5AGI – driver, ARDF
- Adrian VK5ZBR – DF & ARDF
- Kerry (XYL) – navigator & ARDF
- Alayna (harmonic) – ARDF, navigator and playground critic

Kerry, now with last year's hunts under her belt, is the navigator. This year, a child seat was also fitted to the team Moose car, with Alayna a full time member this year!

There were two other VK5 teams also participating:

- VK5TV Bevan and his wife and
- VK5FAB (Ken and Paul Burns with extended family).

The VK5FAB team this year was competing in all hunts.

## Our equipment

This year we were not sure how we would go with one navigator as it is quite a difficult task. Kerry would be dealing with paper maps, Ozi Explorer and Google Map Pro for the first time.

I also decided to try the SDR play on my new 12 inch (30.5 cm) Chuwi tablet, this was a carry on from last year's 10" (25.4 cm) tablet. The SDR was only used for detecting the fox when we were in close proximity. I had no antenna on the SDR, so the signal had to be extremely strong. Again the SDR is not very useful for direction finding because of the processing delays. It's great to identify the signal you are listening to though.

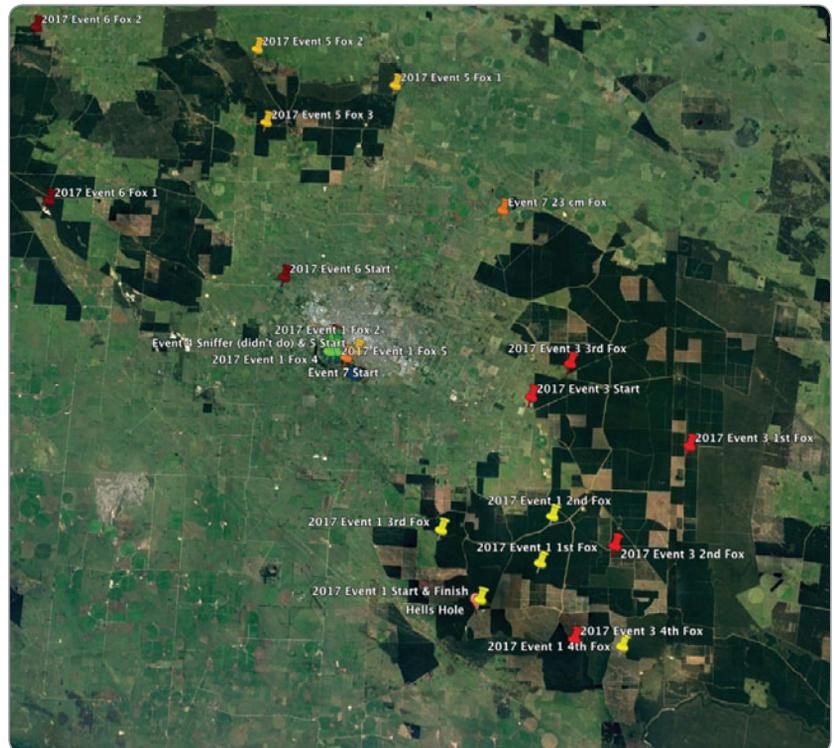


Photo 1: The locations used by the Fox over the weekend.

I again used my Icom R10 and trusty ammo box home brew DFing radio I built in 1994.

## Saturday

### Event 1

This event was the 10 Leg ARDF in Marist Park (crater), very hilly and great to hide foxes. Our team split up into two groups, Mike alone then Kerry, Alayna and I the other. I was teaching Alayna and Kerry ARDF. We had two hours to complete the hunt. We did the hunt at a pace Alayna could do. Surprisingly we got as many foxes as I did last year on my own.

### Event 2

The 4 Leg CW FM transmitters on the same frequency with CW IDs in any order. They come up at 30 second intervals. We learnt our lesson last year and Mike made two timer boxes with 4 colour LEDs on it. We would know each fox by its colour. This hunt is in the Caroline Forrest near Hells Hole. We finished all the legs just on time. The last leg being the yellow colour took us nearly 1 hour. It was located very high and clear giving a massive signal that always appeared to be closer than we thought. Yes we got bogged once on the blue leg but



Photo 2: Adrian and Alayna Hunting Transmitters on Event 1.

we recovered in 5 minutes with a shovel.

### Event 3

This was the famous Wayne Kilpatrick Night Hunt (5 Legs): this was Alayna's first night hunt. She was a bit scared of the forest at night. This hunt is fun and can break you or your car (both which has happened in past years). Just to finish the night is a success. This year we saw plenty of kangaroos, and even a wombat. No UFOs this year, however.

Leg 1 the 2 m fox was surprisingly easy, Kerry had a bit of an orientation problem for the first 5 minutes but got her bearings after that. Remember she's using a topographic map and driving a PC with Oziexplorer and Google maps pro. We actually drove straight to the fox, which was just over the border in Victoria, with only one way in.

Next was Leg 2. Oh damn, we can't hear the signal! We switch to SSB and I can just make out something and head in the general direction. Lots of radio chatter about the fox not transmitting. After quite a few km the signal went from in the noise to s9 plus.

The fox announced his coax was

faulty, NO JOKE! Lucky we were heading in the right direction. Thank you again R10 in SSB mode!

Leg 3 we could hear with no problem but when we got closer we had issues with many reflections. I was becoming a bit concerned so began to get out of the car with the sniffer antenna to get bearings. This took a lot longer but it all made sense when we found the fox

hidden in a bush. The railway line was next to him and re-radiating his signal. I hate railway lines!

Having found Leg 3, it was on to Leg 4. This is a nasty 6 m band hunt! I had fixed up the loop days before and re-calibrated it. I was amazed how well it was working again. I could work out the direction within 10 degrees. The trick that worked was stopping in line with the road and taking bearings. Kerry would plot this on the paper map and we drove nearly right up to the fox. The time was 9.30 pm and I thought "wow were doing very well with one leg to go". Alayna, however, checked out for the night, so Mum lost her helper.

Leg 5 10 m. One of the most difficult bands to hunt on in a pine forest! Why, oh why didn't I check the loop before we left!! We could hear the piccolo signal and I was having issues determining the direction. This loop has a better peak in one direction, and it didn't feel right! So we did some driving to determine which way was correct. Kerry plotted my directions and we ended up in Piccaninnie Ponds Conservation Park near the beach. Kerry said "how far do you think it is?", I said "far".



Photo 3: Teams at the start of Event 2.



Photo 4: One of the fox transmitters in Event 2.

She said well it's not in the ocean. We realized my bad gut feeling my DFing was 180 degrees out had come true. So, back the other way north through to the township of Donovans.

This is when it got interesting, some nutter in a car coming the other way drove down the centre of the road with his high beams on. This car then proceeded to come over to our side and Mike had to drive off the road not to hit him. This woke us up and we forgot about the hunt for a while.

Eventually, we got to the location that Kerry wanted to get to far north on the intersection of the Princes Highway. The signal was still north but not getting stronger. I made up my mind something is still wrong. I got my test transmitter out and tested the loop. Sigh, it was still wrong! When I looked up the loop had slipped 45deg at some stage. Damn! A bit of bending and the loop was re-aligned. The direction was now pointing back towards Mt Gambier....

Kerry determined this was logical for the last leg and I knew it was high up after all these kilometres. So we just drove back that way and quickly the signal got

stronger and stronger. It ended up being at Potters Point. I wish I checked the loop on the start of this leg. It was now 11.30 pm and time to get back to the room for a hard Scottish drink. We were wrapped we finished and we weren't the last team either, although we would have finished at 10 pm I think, if that loop was aligned. Poor Alayna was dead to the world.

## Sunday

### Event 4

This is a 10 leg ARDF event hunted on foot. Hmm, we tried but Mike and Alayna had issues with waking up after Saturday night's effort. It started to drizzle too, and we didn't like the idea of getting wet. So, off to the SERG hall for breakfast and bargain hunting instead.

### Event 5

This was another Triple leg Hunt – another tough one. This hunt is fast, you need to change antennas fast, the first leg 70 cm was straight north, driving past the airport to Telford Scrub Conservation Park. All the teams were very close.

The next leg was on 2 m, but none of us could hear it! Oh no, what now. We drove back out to the Riddoch Highway and headed north. The signal then finally comes up. Bigger its bearing is 9 o'clock, so we dive for the next main track to the left. We all follow each other and this fox is tricky. We find him but only after driving on both sides of his location to discover a track in-between. If we had waited longer before we started this leg, Kerry said we could have driven nearly



Photo 5: Kerry & Alayna on the night hunt.



Photo 6: Mike VK5AGI in the driver's seat.

straight to him saving many km.

The next leg was 70 cm again. Kerry got a bit confused and we ended up following our Yagi for a while. This leg we got close and I did the rest on foot with the sniffer. We found it.

### Event 6

This was another triple leg hunt, but this time with a twist. This hunt requires quick antenna changes again. 2 m and 70c m we can do with a switch but the inclusion of 80 m in this event means a manual antenna change to the loop antenna mid charge. The 80 m loop is Rod VK5UDX's and I'm not familiar with. It is not set up for my side of the car.

### Leg 1

2 m fox was quite straightforward, we ended up behind a quarry on west side of the Mt Gambier forest, and it was so close half the teams were within seconds.

### Leg 2

70 cm this again was straight forward as we drive North West to a forest near Glencoe West.

### Leg 3

80 m this is when it got interesting, our in-car 240 volt power supply decided to put up noise on the fox frequency. It never does this

normally! Each time I needed to stop for a bearing we had to kill the 240 volts in the car. Because of this and the loop being very vague we drove around all over the place just trying to work out which direction the signal was. I got quite confused and Kerry could not get any clear direction of where to go. I tested the loop with my test signal and I found the car body was really affecting the pattern of the loop. In the end, we pulled out, as we had not much time

to get to the next hunt. Bummer! I should have used my original loop that was back at the house.

### Event 7

This is the 23 cm hunt and is another favourite as the fox can do tricky stuff with reflections. They use a tin can radiator and can beam the signal to appear in totally different places. However, our Yagis are like a torch, nice and sharp and are great to DF with so we were in with a fighting chance.

The hunt started at the top car park near the caravan park on the lake. We headed off and I could not hear anything. I was on SSB 1296 MHz, tuned down to 1295.996 and there was the fox very weak and fluttery. Not good as I didn't get a decent direction, the next signal was a bit better and I determined the direction. Kerry got a line out of town possibly on the edge of the Myora forest. We still didn't not know how far it could be. We got to the roundabout near the show grounds and the bearing was not changing much. I determined with Kerry's navigation the signal was far away. So we broke from the pack and head east to get into the 80 km zone sooner. First left we headed north to get to Kerry's bearing line. The signal started to really pick



Photo 7: Getting ready for the 23 cm hunt.



Photo 8: An overview of the SERG dinner.

up and getting much cleaner. We had a give way sign to deal with then a near straight run. What do we see, the hound pack leaders approaching the same intersection as us. We ended up having to give way to them. A sharp right hand turn onto a track and there is the 23 cm fox lying in the tall grass out of sight. We got fourth position. So close! And we were very happy with this result.

Back to our rooms to clean up and relax then back to the SERG Hall for David's WENET talk and fox hunt presentations. VK3FAST won the weekend again. SERG put on a great dinner again and we sat

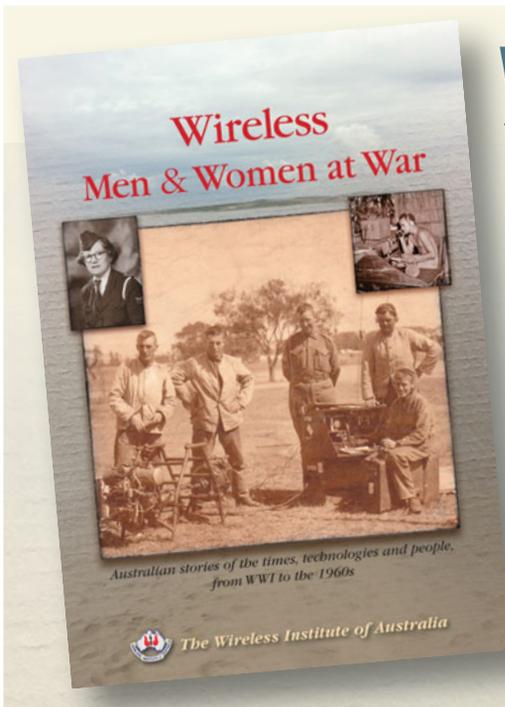
down with the VK3AI team. We had a great time talking about the action over the weekend. We even got tips on the next 80 m loop design to try, I will try and build it for 2018.

The use of Google Earth Pro was invaluable. The old topo maps are so far out of date and you need Google photos to get the real story. The GPS server software work flawlessly. Next year we may get another tablet PC and have both map systems running together. Two new GPS receivers needed, as the one I had stopped working on Windows 10, long story! Mike had to write some code and got his Auduino GPS bits getting the

day before Mt Gambier. Well done Mike. The Commodore did well and nothing broke this year. Alayna's bottom still has feeling. Kerry wants a pencil holder and I want to make more room in the car. We also want to log our track with signal strength. Time to get coding!

We had lots of fun and did better than we thought. Alayna has plenty of things to talk about and I'm not sure if she had any wow moments. Only time will tell. This year we had plenty of people asking what we were doing and we explained it is amateur radio hobbyists looking for hidden transmitters.

Regards Adrian VK5ZBR.



## Wireless Men & Women at War

Young men and women who behind the scenes, were able to successfully use their developed skills in such a way as to make a difference – sometimes a big difference brought about largely by their interest in private radio communications.

In the eyes of the general public today, more than likely these individuals would be thought of as 'electrical nerds' but it was the skills they possessed, mainly through 'self-education' and 'hands-on experiences', skills which allowed them to step outside their normal responsibilities and make their substantive and often unusual contributions to their colleagues and country.

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## Over to you

### Marconi

Dear Sir,  
I always like to read the *Amateur Radio* magazine. It is interesting to read what is on offer, old and new, in technology.  
It came to my attention that on page 24 *Amateur Radio* July 2017 is an article about Marconi. We have to be very careful not to distribute 'fake news', as the article implies that Marconi was the inventor of radio. This is

factually incorrect, as there were countless legal and patent violations of Marconi over Nicola Tesla.

Marconi died in 1937. Tesla died in 1943 and six months after his death the US Supreme Court ruled that all of Marconi's radio patents were invalid and awarded the patents for radio to Tesla. So, for the past 64 years, we still believe that Marconi invented the radio. Few actually

know of Tesla's radio inventions.

The Supreme Court rulings are on hand and can be followed with ease. Marconi was involved in further development of radio transmissions and the practical application of the usage of radio waves but most definitely did not invent the radio.

Greetings,  
Gordon Y. Land VK1FGYL



## Over to you

### Marconi

Hello Peter,  
The article 'Marconi legacy 80 years after his death' in the June 2017 *Amateur Radio* did acknowledge in its very beginning that there were many claims of who started 'radio'. It named nine other people including Tesla as being involved in its early development.

Later the article said: "In the late 19th century

Guglielmo Marconi was among a few keen people experimenting with radio waves."

Further it said: "Marconi had been an avid reader of popular scientific journals where there were reports of Hertz and experiments by Tesla, and he saw that the waves could carry communications."

No-where in it was the word 'inventor' used

and this had been deliberate. The purpose was to historically look at Marconi 80 years after his death, and not get into discussion on the claims and counter claims that will be with us for ever.

Regards,

Jim Linton VK3PC



## Over to you

### Marconi

Dear Jim,  
I liked your article on Marconi in *Amateur Radio* and draw attention to two other dates of interest. The first distress call was in 1899 off the Kent coast, and the second date credited for saving lives at sea was when RMS Republic collided

with another ship in 1909. I hope that you find this information useful.

Peter Mahoney VK2JTV.

(*The Telegraph* newspaper reports on those

distress calls. It also has a history of CQD, SOS and the telephony distress Mayday. The newspaper article is at: <http://www.telegraph.co.uk/technology/connecting-britain/first-ever-radio-distress-call/>)



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# VHF/UHF - An Expanding World

David K Minchin VK5KKK

## Introduction

This month the column is being written "on the go" from JN33pq (Villefranche-Sur-Mer) close to the French/Italian border prior to the first part of the EU mmWave DXpedition. There is a short report included in these notes; there will be a full wrap up next month. We have Leigh VK2KRR's regular WSPR Propagation report as well as details of a record breaking 3.4 GHz VK7 intrastate contact. Also the outline of a new proposed grid square challenge as well as Kevin VK4UH's regular Meteor Scatter Column.

## WSPR June 2017 Propagation Report

Leigh Rainbird VK2KRR reports on WSPR activity for June 2017: *"Sporadic E activity improved during June, particularly the latter half toward the Winter Solstice. Tropospheric Ducting has been relatively quiet with a good winter opening at the start of the month, but little else due to little variance in the weather with very weak to non-existent cold fronts moving through with very little moisture coming in from the Indian Ocean, currently with a neutral to positive Indian Ocean Dipole reading. The El Nino Southern Oscillation Index is currently Neutral."*

*"The most distant path on 50 MHz was via Sporadic E between VK4TVL and ZL4LV at 3661 km. The most distant path on 144 MHz Tropo was between VK1KW and VK5GF at 945 km."*

*"50 MHz WSPR: 7 June, VK4TVL to VK2FAD @ 1618 km.*

*8 June, ZL3TKI to VK2EFM @ 2162 km.*

*9 June, VK2EFM to ZL3TKI,*

*ZL3PX @ 2158 km, ZL2IT @ 2375 km.*

*12 June, VK4TVL to VK2EFM @ 1633 km, VK2FAD. VK2EFM to ZL2IT, ZL3PX.*

*17 June, VK4TVL to VK3WE @ 2058 km.*

*18 June, VK4TVL to VK2FAD, VK2KRR @ 1775 km.*

*19 June, VK4TVL to VK2KRR.*

*20 June, VK4TVL to VK2KRR, VK1KW @ 1779 km.*

*21 June, ZL2IT to VK2KRR, VK1KW @ 2496 km.*

*22 June, VK2EFM to ZL3PX @ 2158 km.*

*25 June, VK4TVL to ZL4LV @ 3661 km, VK2KRR. ZL2IT to VK2ZMT @ 2361 km, VK1KW, VK2KRR. 26 June, ZL2IT to VK1KW.*

*28 June, VK7HH to VK2KRR @ 1387 km."*

*"144 MHz WSPR: 1 June, saw a good tropospheric opening occur through inland VK1, VK2, VK3 and VK5. The longer (rarer) paths happening for stations such as Rob VK1KW in Canberra, Mark VK2EMA near Dubbo; we also had Wayne VK2XN on watch, but nothing made it that far. Mark VK2EMA had some huge signals on his paths into VK5, many stronger than +10 dB. VK1KW to VK5LA @ 782 km, VK5GF @ 945 km, VK5PJ @ 914 km. VK2EMA to VK5GF @ 888 km, VK5PJ @ 816 km, VK5LA @ 676 km, VK5ACY @ 785 km."*

*"2 June, saw many of the paths from VK2EMA into VK5 as per the previous day, and included a path from VK2EMA into Melbourne to Alan VK3DXE @ 684 km, Grant VK3ZTE @ 653 km and Jim VK3II @ 712 km. Along with this Peter VK5PJ had a path with VK3II @ 717 km,*

*VK3DXE @ 672 km and managed to get to VK3KKP @ 542 km, which is rare at this point."*

*"19 June, Tropospheric conditions were improved, mostly VK5 to VK3 and southern VK2. Improved paths noted between VK5ACY / VK5PJ / VK5GF and VK3WRE, VK3DXE, VK3ZYC, VK3ZTE, VK2KRR".*

*"KH6HME 70 cm WSPR beacon: Running from Mauna Loa Volcano site, KH6HME 70 cm WSPR beacon has been heard on consecutive days from 19 to 28 June (except the 22<sup>nd</sup>). Two very strong openings occurred, one on the 26<sup>th</sup> June, between 2100 Z and 2310 Z, peaking +0 dB with Chris N3IZN @ 4074 km. The second very strong opening occurred on 27 June between 0500 Z and 0630 Z, peaking at +11 dB with N3IZN. The beacon runs 20 watts output. Only four stations have been able to decode the beacon during June, these are N3IZN @ 4074 km, W6IT @ 4021 km, WA6MEM @ 3979 km and WA6M @ 3739 km."*

In other news, on 25/6/2017 there was a mid-Winter Es 144 MHz opening between VK2/4 and ZL1/2. From around 0330 to 0500 UTC VK2ZT (QF57WF) worked ZL1RQ (RF64sx), ZL1AKW (RF82cg) and ZL1IU (RF64vr) with 55 to 59 signals on SSB. VK2BCC (QF56di) also worked ZL1IU with 59 signals and ZL1RQ worked VK2BZE (QF55kk) with 53 signals. Further north, VK4KAY (QG61at) also decoded the ZL2ZHO/b beacon at -15 dB. VK2MAX copied the same beacon on CW at 599. Whilst summer Es openings from VK to ZL tend to get lost amongst the Tropo openings, mid-winter Es over this +2000 km

path is certainly rare!

Peter VK7PD reports on a mid-winter VK7 "North/South" contact on 3.4 GHz using those ubiquitous GARC panel transverters.

"On June 9 Joe VK7JG and Peter VK7PD made an SSB contact between the north and south of VK7. This event might sound unremarkable except it was using two of the converted panel transceivers, modifications for which were designed by members of the Geelong Amateur Radio Club (GARC). Details of this project can be found on the GARC website."

"The panels are of Canadian manufacture and were originally used to provide a WIFI network in Shepparton Victoria. NBN rendered them obsolete so they would have been discarded had members of the GARC not salvaged them and very cleverly designed modifications to turn them into transverters with a tunable IF on the 70 cm band."

"The modification requires very little financial outlay; the only additional components needed are those to populate a 'switcher' board that is available from the GARC. This includes an IF attenuator to ensure the unit is not over driven on transmit and it also facilitates the R/T function. The units have a remarkably sensitive receiver; the transmitter produces just less than 1 watt. The panel antenna is claimed to have a gain of 18 dBi."

"Joe VK7JG and Peter VK7PD purchased three of these units from the GARC in 2015 and initially modified two of them. Contacts were made over distances up to 40 km during 2016 but circumstances have, at the time of writing, still not permitted a trans-Bass Strait contact."

"The north-south contact was over a distance of 153.4 km from the north face of Mt Wellington above Hobart where Peter was ably assisted by second operator Michael

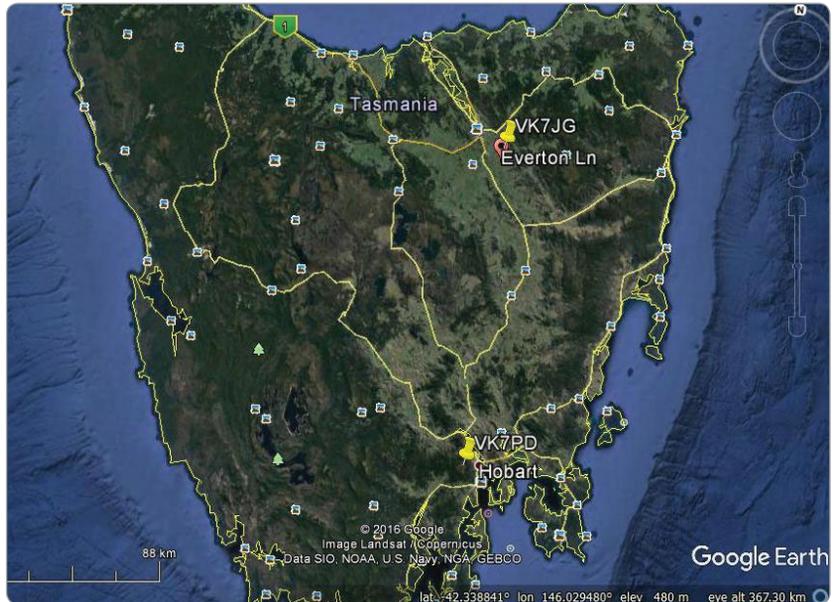


Photo 1: Map showing the VK7 3.4 GHz path.



Photo 2: Joe VK7JG and his 3.4 GHz system.

Pope, to a high point at White Hills near Launceston where Joe was assisted by Ross VK7ALH."

"As can be seen on the map, the path is definitely not LOS! The signal reports exchanged were both 5-by-1. Joe used an FT-857, on reduced power, as the tunable IF and Peter an FT-817."

"JT65 was also tried, and although the data could be heard in both directions, decodes did not take place due to a timing issue in one of the computers. Another shortcoming of the panel transverters is drift in the VCXO. Although adequate for voice modes it leaves something to be desired for digital. Fortunately the units have a master oscillator on 10 MHz, so the next modification will be to add GPS locking. As the original article suggests, there are many possibilities like increasing power, using a higher gain antenna etc. Joe has already begun assembling a 2 W MiniKits amplifier for one of his units."

"Thanks go to members of the GARC especially David



Photo 3: Peter VK7PD and his 3.4 GHz system.

VK3QM, who first designed the mods and Lou VK3ALB who designed and supplied the switcher boards and more.”

### 2017 EU mmWave DXpedition

This year, four Australians (VK3XPD,

VK5KK, and VK5ZD & VK5ZT) have travelled to Europe for the third “Microwave DXpedition”. This time the focus is on mmWave operation on 10, 24, 47, 76 and 122 GHz. Activity will be between 8/7/2017 and 22/7/2017 in Italy, Switzerland, Germany, Austria and the Czech

Republic border. As always our “Tour guide” is Wolfgang OE4WOG.

As I write this, all four are in EU but in various countries heading towards the “Ham Radio” convention in Friedrichshafen on 14 to 16 July. At last count, there are something like 10 Australian amateurs that we know of attending; five from VK5 alone! VK5ZD and VK5ZT will do the “Box Trifecta” going to three conventions over three consecutive weekends; GippsTech, Finningley Microwave round table and Friedrichshafen!

Transporting equipment half way around the world is an interesting logistical operation where size, weight and customs regulations are the limiting factors. Customs are always a bit of a challenge. The pelican case containing VK5KK’s 24, 47 and 76 GHz drew some friendly curiosity this year from the Australian outgoing X-Ray security people. I would have loved to have a copy of the 3D X-Ray; great cross sectional presentation of the 3 die-cast boxes and the modules inside!

Batteries and your favourite tripod are two things that get left



Photo 4: F/VK5KK 10 GHz - Mont Ventoux JN24.

behind. Luckily Wolfgang OE4WOG fills in for the items we don't have so we can just focus on equipment. Whatever is settled on for equipment and antenna needs to be a bit of a compromise but to be able to work some decent distances you can't go too basic or QRP! And trying to minimise the damage done to equipment in transit is the last challenge. Special attention this year with custom foam-filled transport cases!

A fair amount of disassembly and reassembly of equipment is required as well as a complete check of the mechanical safety of equipment before powering up. Airline baggage gets a pounding; last year Alan VK3XPD had a broken DC feed-through lead to a terminal cloud of smoke from his 47 GHz transverter. A complete set of tools, soldering irons, spare FETs, DC components etc. is in the kit just in case. Luckily for VK5KK, everything checked out OK and is currently working!

VK5KK's travels so far have been along the Southern part of France as the holiday part of the trip progresses. These areas are fairly low in microwave activity. However there are a number of 10 and 24 GHz propagation beacons dotted around the area in Spain, France and Italy that you can look for. The UK Microwave Groups "Beacon spotter" is an invaluable resource to locate and confirm which beacons are operational and on what frequency. Just go to <http://http://www.beaconspot.eu>

The last spotted frequency is important as some beacons have been in operation on a remote hill top for some time and may have drifted a few kHz. In some cases that could be 10 or more kHz! Other details include the power and type of antenna used. Whilst most beacons are use an omnidirectional slot antenna some beacons do use a horn antenna aimed in a particular DX direction.

On 30/6/2017, VK5KK travelled to Mont Ventoux, 1890 m ASL JN24pe in the Provence region of France. The mountain is accessible

by car and is internationally famous as the long hill climb stage of the Tour de France. The tour de France has just started and this stage was still three weeks away, so I thought it the mountain should be fairly quiet. Wrong, there were hundreds of cyclists doing the ascent! The drive to the summit was very slow as you have to pass cyclists every 20 – 50 metres. In some cases you can only travel in the middle of a barely wide enough road with cyclists climbing at 10 km/h to the right of the car and with those descending at 60 – 70 km/h of the left! The car cam makes interesting watching!

Cycling aside, the mountain would also have to be the best accessible microwave location in Southern France! Unfortunately our schedule was such that we couldn't be on the mountain during a contest as Friday was the only day free. Still the 10 GHz transverter was set up on its tripod and six beacons were received. F5ZIR on 10368.804 MHz was the closest at 41 km, the furthest was 268 km to F5ZAE (JN33pq) on 10368.858 MHz. The F5ZAE beacon is close to the French/Spanish border but there was clearly some Tropo over the Mediterranean Sea as the signal was massive 599+. This same beacon has been received all the way along the Coast from Barcelona to Mt Ventoux so it is in a good location. It just runs 10 watts EIRP with a slot antenna.

The next stage of the DXpedition is in Italy with Alan VK3XPD in the Comerlati area near Verona in Northern Italy. Wolfgang OE4WOG will team up with some Slovenian (S5) microwave operators about 220 km to the east. VK5KK will join the activities after Sunday from Monte Penice south of Milan. More next month!

### **Annual VHF and above Grid Square Challenge**

Leigh VK2KRR has proposed a new grid square challenge for VK and ZL as an incentive for more stations to be active from more grid squares during and outside of contest. As a

bonus, we hope it will give everyone a bit more of an idea of who is currently active on which bands to help boost new activity.

The idea is not to create a new contest but a friendly 'challenge' to see how many grid squares can be worked over a 12 month period on different bands including Summer/Winter Tropo and Equinoxial seasons.

Activity is inclusive of all bands above 50 MHz, all modes, home station or portable. Contacts made in any VK/ZL contest, club activations etc. all count so long as they are not via a repeater, satellite or EME.

The first VHF and Above Grid Square Challenge will run from 1 July 2017 until 30 June 2018. At the end of the 12 month period, all scores will be set to zero and we start again for the following 12 month period.

Through this column we will regularly post the progress in a simple table that maps callsign vs. band with the number of grid squares worked as the point score. Home and portable stations are listed in separate parts of the table. As an incentive for more portable work, the grid square activated will also count towards your score. Yes contest Rovers will have their own section! At the end of the 12 months we may do some grid activation maps to put things in perspective.

We are still working on the method to submit claims but the aim is to keep it simple. The time/date/band/mode/callsign and grid details from popular logging or contest software will be fine. Next month we will have more details on this.

### **In closing**

Feel free to drop me a line if you have something to report. Contributions regarding club projects or proposed activities are always welcome. Just email me at [david@vk5kk.com](mailto:david@vk5kk.com) and I'll include in the column.

73

David VK5KK

## Meteor Scatter Report

Dr Kevin Johnston VK4UH

As we are now into the winter season, we can reasonably expect a steady improvement in Meteor Scatter (MS) conditions. On an annual calendar, we expect a “peak” in background conditions, in terms of the numbers of usable meteors, during the Spring Season of the year and a corresponding “trough” during the autumn months. Superimposed on this regular cycle are the meteor showers which also occur on highly predictable dates each year. Having now passed into winter, things should therefore improve steadily through until Christmas and the New Year. We may have not seen much improvement during the early-morning weekend activity sessions however as the number of stations on-air during the last month or two has been low. Plenty of northern stations have been making their shacks before dawn but not so their southern counterparts.

In a similar cyclical pattern, Sporadic E propagation (Es) peaks during the summer months in each hemisphere. As this column was being written, our European and US colleagues are experiencing magnificent propagation all around their respective regions on VHF and above. Less well known perhaps, is that there is often a corresponding mini-peak in Es in the opposing hemisphere driven by pockets of intense ionisation in the E-layer spreading out and crossing the equatorial regions. During June there was evidence of bursts of Es propagation, the so called “Winter-Es”, enhancing propagation on 50 MHz at least. This has led to some interesting observations of dual mode Sporadic-E/ Meteor Scatter propagation occurring (Es-MS) on 50 MHz. During June and July

there were several brief openings around VK and also into ZL, Asia and even into Europe on that band.

On June 25 (UTC) there was evidence of just such a winter-Es event with stations in the southern states working into ZL on SSB and JT65 on 6 m. In VK4 however, none of the usual 50 MHz ZL beacons were detectable and the JT65 calling frequency was silent. At around 0300 UTC (local afternoon in VK4) we started to receive meteor pings of JT65 from the south-east. In general, meteor pings destroy any chance of decodes when using JT65a and WSPR modes, due to the Doppler shift that occurs with this mode of propagation. Consequently, the stations could not be identified. Using the logger, skeds were quickly set up with several ZL stations that were around at that time, using MSK144 mode. Using the new mode, strong meteor pings were detected in both directions across the Tasman. As in Figure 1, solid decodes were received, at good strength, from Geoff ZL3PX in Christchurch (RE66HM) at 2522 km and Dave ZL2MQ in Napier (RF80km) at 2598 km. Both of these paths well-exceed the normal maximum possible distance for MS propagation and most likely resulted from “Es-MS” dual-mode propagation. This was a particularly valuable observation as this occurred during the afternoon “lull” in meteor numbers. There was no suggestion of any tropo occurring across the Tasman at that time as judged by the Hepburn charts for

that day. No QSOs were completed on that occasion, however it was a clear demonstration of what is possible.

Meteor Scatter contacts between New Zealand and mainland Australia are not at all uncommon, at least from the southern states, due to the shorter path lengths but these paths do not extend into VK4 unless there is a second mode of propagation in play. From this QTH in QG62 only a handful of MS to ZL contacts have ever been completed despite years of failed attempts. Of the few 2 m MS contacts achieved from here to ZL, all were with stations high on the North Island and all when there was clear evidence of Tropo propagation at one or both ends of the path. This was the first occasion I had ever decoded ZL on MS on 6 m or from stations on the South Island. Had either of these contacts been completed, this would have represented my best-DX on this mode of propagation.

Earlier in the month, another episode of winter-Es was opening paths between VK4 and the southern states on 28 MHz. On June 18 at around 0200 UTC (local afternoon), using JT65a on 28.076 MHz, contacts were being completed with difficulty with Matt VK1MA in Canberra (QF44mt) and then Steve VK2NS in Murrumbateman (QF54ma). The difficulty was not inadequate signal strength; rather the decodes were being destroyed by superimposed meteor pings. A call was put out

on the logger for any stations equipped to run MSK144 on 28 MHz to attempt an MS contact on this band. A sked was set up with John VK2FAD in Budgewoi (QF56ss). A 2-way MS QSO was easily completed using the new MSK144 mode over a difficult path distance of only 665 km and where there was no evidence of constant

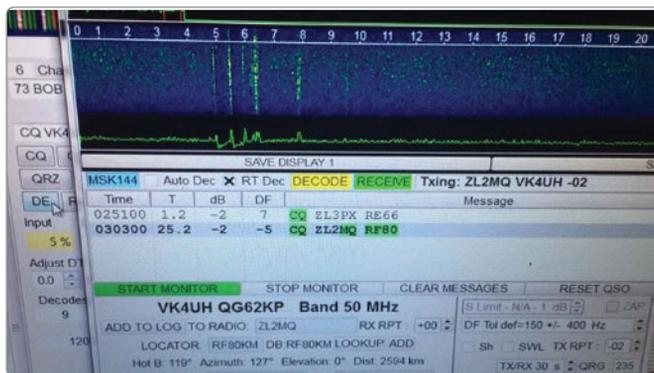


Figure 1: 6 m MSK144 decodes from ZL-VK4 June 2017.

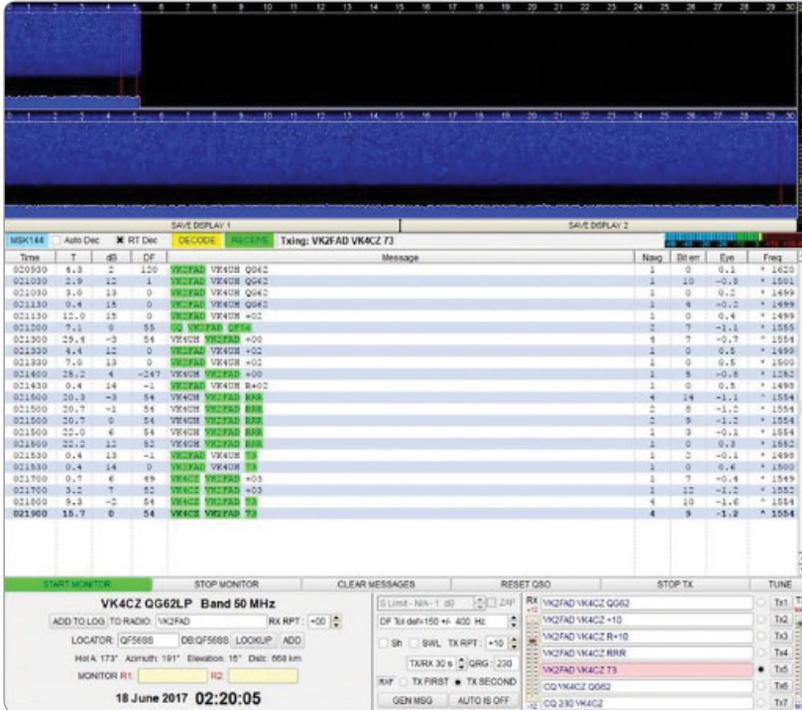


Figure 2: 10 m MSK144 decodes June 2017.

signals over the path. Scott VK4CZ in QG62lp also completed with VK2FAD on MSK144 at the same time. Interestingly the MSHV platform does not accommodate 10 m MS contacts and has not have tick-box to allow reporting on this band. The MSK144 mode itself however works extremely well.

Discussions regarding the pros

and cons of the two competing MS digital modes and the “crowd-move” from FSK441 mode in favour of MSK144, during the weekend Meteor Scatter activity periods, is continuing on the I-Chat and on the MS Facebook facilities. Most operators appear to consider the trade-off between improved decoding of weak

flexibility and the option to be in QSO with multiple stations at the same time to be favouring MSK144 over FSK441. As indicated before, I still think this is probably true for 144MHz MS, particularly at this time of the year. However, I still wonder if FSK441 may be a better option for 50 MHz MS, where pings are longer and louder.

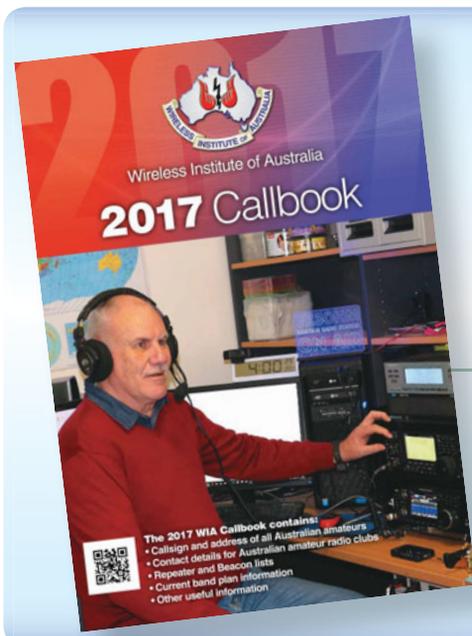
To complete this month, the International Astronomical Union has rewarded eminent Space Physicist and Radio Amateur Astra Pellinen-Wannberg SM3UHV by naming a celestial body after her: *Asteroid 11807 Wannberg*. Prof. Pellinen-Wannberg heads the Department of Physics at Umeå University. She has made a ground-breaking effort to use scattering radar when studying meteors that are activated when small particles penetrate the atmosphere.

### Meteor Showers

The next major Meteor Shower event for 2107 will be the Perseids Meteor Shower expected to peak around 13 August.

Contributions for this column are as always welcome. Please e-mail to [vk4uh@wia.org.au](mailto:vk4uh@wia.org.au).

Kevin Johnston VK4UH  
Brisbane



# WIA 2017 Callbook

Available now



**ALARA**  
Diane Main VK4DI

### ALARA Contest

The 37<sup>th</sup> ALARA Contest will take place on 26 - 27 August 2017.

The rules have not changed from last year and are now on the website.

Please read them thoroughly as last year some YLs did not realise that the (A) in the exchange meant you are a member.

The purpose of the contest is to allow YLs to contact other YLs and to encourage activity by YLs. It's not a hard contest to enter and is a good one to try your hand at contesting.

You do not have to be an ALARA member to enter and it's a great way to meet ladies with similar interests. Last year we had

Check if you are in the Log:

Log to search:

120 QSOs logged between 2017-07-02 01:27Z and 2017-07-05 06:01Z

Callsign to check:

Band	CW	Phone	Data
20	<input type="checkbox"/>	2	<input type="checkbox"/>

Log search provided by [Club Log](#)

Photo 1: Club Log screen shot.

many OMs supporting us looking for YL Contacts and they were disappointed with the low numbers of active YLs.

All contacts will help to qualify for the ALARA Award as well.

This year I will be running VI4ALARA in the contest as a Check Log.

### ALARAMEET 2017

Registrations will close shortly for the ALARAMEET in Cairns and we have many YLs and partners attending, including some from over the pond in ZL.

### VI4ALARA

The special event callsign was activated on 2 July and will be operational until 30 September.

The first 24 hours of operation saw a total of 120 QSOs made and uploaded to Club Log.

The best part was hearing from one ZL YL who decided to attend after having a QSO with the station.

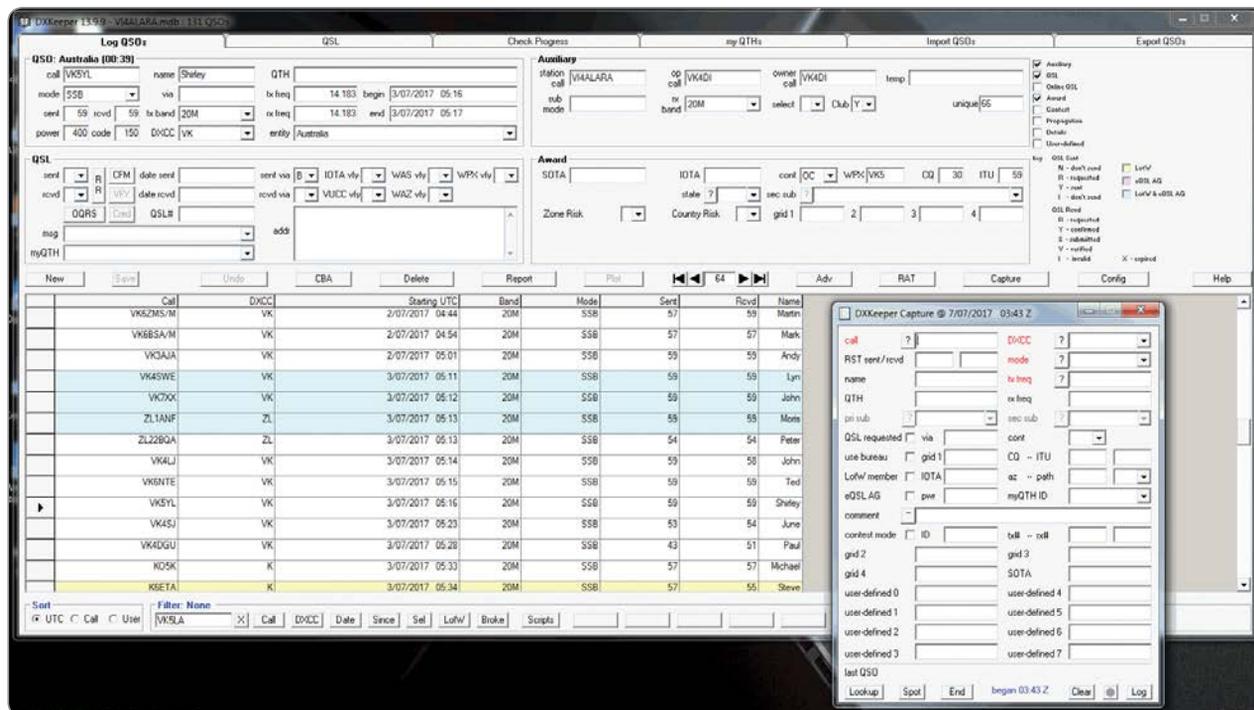


Photo 2: Shot of the VI4ALARA log.



Photo 3: In Jim's Shack.

The purpose of the special event is to encourage more YLs to attend and raise awareness of ALARA as a group. A number of VK YLs were worked in the first 48 hours including Lyn VK4SWE, Shirley VK5YL, Linda VK7QP, Shirley VK7HSC, June VK4SJ and Marija VK5FMAZ.

The QRZ page has been updated and the logs are uploaded after every day's activation. QSLs will be able to be requested via OQRS.

Shirley VK5YL operating as E51XYL on Rarotonga

Well, what a mouthful my special call sign is - E51XYL after such an easy one for so long.

Our 50<sup>th</sup> wedding anniversary celebrations were spent on Rarotonga in the Cook Islands and I was lucky to have access to a couple of operators' shacks, surrounded by all that wonderful salt water, great for propagation.

I operated during the ANZA net on 12 June at 0515 UTC from the

shack of Andy E51AND. Andy's antenna system was way more sophisticated than my G5RV at home and he also operated on 1 kW power with a rotator to boot. My thanks go to Andy for organizing my special licence (valid for 12 months) ready for our trip. I've never been involved in a pile-up before so was flat out scribbling on bits of paper while making QSOs from everywhere. Sadly I was told that there was an Italian calling but I couldn't hear him but I had lots of contacts during the one hour and a bit during the net.

The following week I was operating from Jim's shack E51JD. I've known Jim for quite a few years when he used to come up on the DX YL 222 net. We had five YLs on the ANZA net that day, June VK4SJ, Lesley VK5LOL, Di VK4DI, Lyn VK4SWE, who was net control, and I. Don't think the guys have had to deal with so many YLs in one go. I was able to work Jim's rotator which was a lot of fun especially as I made a fantastic contact with a

guy in the US, much clearer than at home.

ALARA has a Facebook page as well and one of the points of interest is the YL Related articles that are shared on the page. They come from various sources and showcase the number of women who were involved in STEM projects long before it became an education focus. One interesting link is from the AR magazine of November 1999 with the ALARAMeet in Brisbane on the front cover and lots of YL related stories inside.

Amongst the stories is a comprehensive list of YL Awards that were available, including YL DXCC: now that's an award I'd love to get, as I'm sure many others would as well!

I have included the link to the archived copy thanks to Will VK6UU:

<http://armag.vk6uu.id.au/1999-november-AR.html>

Diane Main VK4DI  
ALARA Publicity Officer



# SOTA & Parks

Allen Harvie VK3ARH

## Parks activations

Those that read the July issue of *AR* would have seen brief reports on the Parks activations that occurred on the Sunday morning of the WIA AGM Weekend plus news in this column of the new iOS ParksPeaks app launched at the Dinner. There were many activators at the weekend and we gained some new activators as a result of the Sunday morning Come and Try activity.

Five official teams ventured into different Parks, led by Paul VK5PAS, John VK5BJE, Peter VK5PET, Les VK5KLV and Chris VK5FR. Several other VK5 amateurs were also out to support the activity. Peter VK3PF/5 was another participant, as was Allen VK3ARH/5. Several amateurs have been heard activating Parks following the event, including Robert VK3DN and Gerard VK2JNG. Read more about the WIA AGM Park activations plus more about activity

in VK5 by reading “*Out and About in VK5*” issue 32 June 2017, available at: <http://www.wvffaustralia.com/out-and-about-in-vk5-newsletter.html>

Gerard VK2JNG appears to have used the AGM Weekend as the start of a long road trip. As this column was being prepared, Gerard had activated at least 15 Parks, with Alerts posted on ParksPeaks for several more to come. Gerard’s activations have been on 40 m SSB. Like many Activators, Gerard has reported the frustrations of not being able to find a route to access a new Park. Despite the frustrations, Gerard has managed to move on to another Park nearby, some of which have been first activations. It appears that the Portable Bug has struck once again.

Stef VK5HSX has also been travelling and has activated several Parks in outback NSW, whilst Ian

VK5MA has been travelling in VK6.

At the start of July, several activators participated in the GippsTech conference in Churchill in Victoria. Not content with having undertaken a major role in organising and running the Conference, Peter VK3PF took advantage of the fine weather on Sunday afternoon to undertake a road trip to near Foster to make the first activation of the Corner Inlet Marine & Coastal Park VKFF-1768. The Park had been added back in April but the addition to the VKFF list had not been promulgated, so most activators were not aware that the Park was now valid.

All states except VK4 and VK6 had a long weekend in early July – the Queen’s Birthday weekend. There was plenty of activity by portable activators, both Parks and SOTA.

Gerard VK2IO undertook a

Photo 1: The VK1AD/p 23 cm set up at Booroomba Rocks.





Photo 2: The VK1AD/p homebrew Yagi on Mt Coree.

significant road trip incorporating the Oxley Region ARC Field Days at Port Macquarie. Starting a few days before the long weekend, Gerard activated at least 14 Parks and 13 SOTA summits. As if that is not enough, Gerard also won the Fox Hunting contest at the Field Days. What an effort!

## SOTA

The weather is decidedly cooler in southern states, but activators are still venturing out. Many are taking advantage of the Winter Bonus season, with higher summits gaining an additional three points for the Activator only.

David VK3IL managed to fit three summit activations around a visit to his daughter's School Camp Open Day in the middle of June. He arrived near Eildon on Saturday afternoon to climb Mt Torbreck VK3/VN-001 after having climbed to Barnewell Plains below the summit to set up his campsite. The following morning, he returned to his vehicle and drove to the start of the approach to Pyramid Hill VK3/VN-005 for a quick activation. He then visited the School Camp Open Day before heading to Mount Matlock VK3/VC-001 for a late afternoon activation prior to driving back to Melbourne. A busy but rewarding weekend for David, with 26 Activator

points plus 9 bonus points, making 35 points from the weekend. Read all about the weekend on David's blog:

<http://vk3il.net/three-summits-around-eildon-1718-june-2017/>

The core activators in VK1 have also been out in the hills. Of particular note has been Andrew VK1AD, who has been activating with 2 m, 70 cm and 23 cm gear in addition to some HF operation. Four of the VK1 group have purchased the 23 cm transverter from SG Labs. The transverters have a quoted power output of 2 W and a receive Noise Figure of less than 1 dB.

Andrew VK2UH chose to chase VK1AD/p on Mt Coree from the relative warmth of the shack (0° C) with a hand-held 4-element

Yagi (Photo 3) pointed through the window. The Yagi was built by Ed VK1VP (SK), made from brass and soldered together, with a gamma match.

During June, Gerard Hill VK2IO claimed his 25000 points Chaser certificate – an impressive score Gerard. Anthony Vickers VK1VIC claimed his Mountain Hunter Bronze certificate. The 23 cm activities in VK1 saw Andrew Moseley VK1AD claim three Microwave Awards: 100 km 23 cm, 50 km 23 cm SSB and 50 km 23 cm FM.

## Plan ahead

Dates to note and consider participating in the events as an Activator:

**VK1 SOTA Winter QSO Party, 6 August 2017**

**SOTA Anniversary VK4 & VK6, 1 September 2017**

**SOTA Anniversary VK5 & VK7, 1 October 2017**

**VKFF Team Championship, Sunday 22 October 2017**

**KRMNPA Activation Weekend, 10-12 November 2017**

**VKFF Activation weekend, 25 & 26 November 2017**

Also check the SOTA Calendar maintained by Andrew VK1AD: <https://vk1nam.wordpress.com/vk-sota-calendar/>



Photo 3: VK2UH working VK1AD/p on Mt Coree through the shack window.

## Victorian online mapping

Many Victorian operators have made use of the online mapping service known as Forest Explorer. The old service has now been closed, with a new service in place. The new site has some different characteristics and more options, so will take a little time to find your way to the desired features. The new URL is: <http://nremap-sc.nre.vic.gov.au/MapShare.v2/imf.jsp?site=forestexplorer>



## Ham College

Ham College ran a Foundation course on Saturday 17 and Sunday 18 June and held a busy assessment day on Saturday 25 June. Congratulations to those who obtained their Foundation, Standard and Advanced Certificates of Proficiency and shortly their licences from the ACMA.

The annual Standard course will be completing shortly and the students will be sitting for their assessment with them all having successfully completed the Regulations section some time ago.

The College will not be running an Advanced course this year.

So far this year the College has run over 40 assessments and is very pleased to report a high success rate. The next Foundation course is Saturday 19 and Sunday 20 August with assessments on Saturday 26 August.

73

Andrew VK6AS

## Northern Corridor Radio Group (NCRG)

Lots of activity again at the NCRG with work on the 4-square 80 m array continuing. Unfortunately, between the erection of the array and when we fitted conduit to the guy wires, a kangaroo found one

guy wire and brought down one of the antennas. This is expected to be fixed over the next month (hopefully in time for the RD).

The remote station is now in full use to the extent that we have put an online calendar in place to manage use.

The training room and equipment rooms are also in use and we are almost ready for our first Foundation course at the club. We are also looking to run an Advanced course for our Standard licence holders. Any one is welcome to sign up for the course.

By the time of this magazine coming to print, a number of the membership will have travelled to

Photo 1: Al VK6PWD, Marty VK6RC, John VK6FJON and Ray VK6ZRW installing the repaired antenna.





Photo 2: HARG members being shown a 20 kW valve FM transmitter.

Friedrichshafen for this year's Ham Radio event and Stu VK6LSB has promised me a write up on the event for the next issue.

In addition to the 80 m array, we are refurbishing our 10 m Yagi and all our rotators. The SteppIR is 100% operational and works are planned on the 40 m and 15 m monoband Yagis in time for the contest season.

Planning has started in earnest for this year's Ham Fest weekend. We are taking a fresh look at the 28<sup>th</sup> edition of Ham Fest to keep it as the premier ham event in WA; with an informal evening on the Friday, an open day at the club, special interest presentations and gala dinner (all invited) on the Saturday and the Ham Fest event on the Sunday. The raffle this year will include a FlexRadio 6400! Tickets

will be sold only on the Sunday for \$5 each. A number of vendors will be supporting the event so it will be a good opportunity for WA and visiting hams to pick up quality equipment at bargain prices. This year the event will be held on the weekend of 29 September to 1 October with the first activity being an informal gathering at NCRG for any interested amateurs or SWL. In addition to our regular features such as the raffle and the Homebrew contest, we will also open up a challenge for the best mobile radio installation at the Sunday event with a prize to be determined but rumoured to be worth \$300-\$400) and judged by Stu VK6BG.

With an action-packed weekend planned, this is a great opportunity for interstate hams to make the trip across and sample the delights of

WA as well as what we expect to be one of the best ham events in the country.

### **Hills Amateur Radio Group (HARG)**

It's been a busy month at the club, with activities ranging from camping trips to high powered TV site visits as well as our usual days in the shack.

The last long weekend saw a group of members head off on a camping trip with the aim of getting away and hopefully making some contacts. The contacts proved a bit difficult as we picked a spot which proved rather popular with others. We were surrounded by generators, invertors and solar controllers. The noise levels were atrocious. At least we had fun. We did notice a 4WD camper bus



Photo 3: Peter VK6LB, Martin VK6ZMS & Marty VK6RC comparing HF antennas at the North Mole in Fremantle.

with a damaged Codan auto tuner. After chatting with the owners, we discovered that they had never used it; it just “came with the bus”. A short round of negotiations later, we were clambering on and in the bus, removing the antenna & radio. Our best bush skills were then put to the test as we repaired the damaged auto-tuner and installed it on one of the member’s vehicles. Later that evening some contacts were made with it. You never know when a bargain will pop up.

Following our successful tour of a high-powered broadcast site last month, this month we completed the set, visiting a high-powered TV and Radio site. Again, we were shown the entire chain from program source to RF getting into the air. A real treat were the redundant analogue television transmitters that were able to be opened up for a good look inside. It was interesting to see that the valve amplifier was the same as any other; HT transformer, choke filter, diode rectifiers, capacitors, and a filament supply. Sure, everything was bigger, but the circuit diagram

looked as similar as any valve amp you may have in the shack. The advancement in technology and the resultant size differences between the old and the new was evident when comparing the analogue and digital transmitters. The 6 1/8 inch (15.6 cm) OD coax cable that runs over 200 metres into the air was quite special. I don’t think my house block is big enough for the bending radius, hi.

A small group from the club have started trying their luck from their mobile shacks, setting up on the North Mole at the entrance to Fremantle Harbour. They have been dubbed the “North Mole DX Group”. This is where the club normally sets up for the ILLW. Being almost completely surrounded by water really makes a difference to signals and if there is just a hint of propagation, then contacts are usually made. This has become a regular Sunday afternoon event.

By the time you are reading this we will, weather permitting, have activated the Korung National Park (VKFF-0716) as part of the WFFF. Other activities coming up

at the club are the International Lighthouse & Lightships weekend, where we will again be set up near the North Mole lighthouse and the RD contest. Look out for VK6AHR on air. It would be great to work you.

HARG has 2 officially set meeting days each month on the second and last Saturdays. We have access to the shack on most other Saturdays in the month as well. The last Saturday of the month contains the general meeting with all other occasions left open for social and practical activities. Even the Saturday with the general meeting is a social event. Doors officially open at 1:00 pm but you’ll usually find someone there a little earlier. We usually kick off with a sausage sizzle. Visitors are always welcome. Get some more information at our website [www.harg.org.au](http://www.harg.org.au)

73  
Ray VK6ZRW

### Bunbury Radio Club

Our next meeting will be held on Saturday, 12 August 2017 from 2:00 pm. at 21 Halsey Street, Bunbury. Following the business meeting,

Steve VK6MSB will give a talk on antenna developments at his QTH.

Alek VK6AP continues to organise monthly “ham and Cheese” social gatherings. These are gathering momentum with a steadily increasing number of members attending. The gatherings are not limited to Bunbury but will be held at various regional locations in the South West.

At long last we have some licence assessments and upgrades scheduled for Sunday 17 September. The assessments will be held at the Busselton Masonic hall in West Street. On the preceding day (Saturday 16) we will be conducting a crash revision activity for those thinking of upgrading to the Standard licence. Anyone interested in sitting for a licence, or upgrading, please contact Norm VK6GOM on 0438878582.

### West Australian Repeater Group (WARG)

Since our last update, WARG has a new Committee and a new meeting venue. At the May AGM, Ray VK6ZRW was re-elected as President with Barry VK6SP as Vice President, Anthony VK6AXB as Secretary, John VK6JAH back as Treasurer and Membership Officer and Bob VK6ZGN continuing in the Technical Officer role. Martin VK6ZMS, Peter VK6PM and Trevor VK6MS continue to serve as Committee members and we welcomed Matt VK6ML to the Committee, also filling the job of Digital officer.

The meeting congratulated all who were elected and three members who elected to stand down: Chris VK6PII, Duncan VK6GHZ and Steve VK6VHZ/FTOW

were thanked for their past work on Committee.

The May AGM was WARG’s last meeting at the Peter Hughes Scout Communications Centre which we have used for many years. The venue is being redeveloped by Scouts and while WARG will be welcome back once the work is done, we need to meet elsewhere for at least the next 12 months. Thanks to the efforts of Scouts WA, Kevin VK6HKP and several WARG members including Mac VK6MM, WARG is now meeting at the Pelican Point Sea Scouts facility in Crawley – located at 12 Australia II Drive, adjacent to the Royal Perth Yacht Club. All future WARG meetings will be held at this venue until further notice. Upcoming meetings are Monday 7 August and Monday 4 September.

Maintenance work continues on the repeater front, with several outstanding jobs still to be organised. Also, WARG is pleased to report that, thanks to the efforts of Walt N6XG and others at the Northern California DX Foundation, we now have received replacement equipment for the VK6-based NCDXF HF beacon VK6RBP. This has been a project some years in the making for NCDXF, with the previous beacon hardware becoming increasingly difficult to support due to the age of the equipment and VK6RBP has suffered recent outages and periods of erratic operation. The new platform is based on the IC-7200 radio and, hopefully by the time you are reading this, the new beacon will be on-air.

In addition to voice repeaters, WARG also maintains some packet radio services, including a network of APRS beacons on the usual 2 m

frequency of 145.175; with Craig VK6FLAM and Martin VK6ZMS doing much of the support work. The VK6BBS 2 m packet bulletin board also remains on air from Wireless Hill on 144.725 and is daily used for a number of broadcasts, including satellite bulletins. WARG appreciates the support of the WA VHF group in hosting VK6BBS and also the hard work of Glen VK6IQ and Eddie VK6YA in keeping it running.

WARG’s regular on-air technical and general net continues every Sunday, at 10:30 local time, on VK6RLM 146.750. New members are welcome, contact WARG at [secretary@warg.org.au](mailto:secretary@warg.org.au)

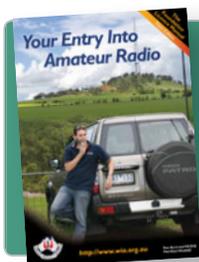
73 from Anthony VK6AXB

### Capes Lighthouse Radio Group

The Capes Lighthouse Radio Group plans to be back again, operating VK6CLL at Cape Leeuwin and VK6CNL at Cape Naturaliste lighthouses on the weekend of August 19-20 for the International Lighthouse and Lightship Weekend. This radio group was initially formed by Wally VK6YS (SK) and a few stalwarts such as Anthony VK6AXB (who also refurbished the AXB HF transmitter now installed at Cape Leeuwin display centre), Nigel VK6NI and Shaun VK6PAL. The group in one form or another has activated the lighthouses for the last 6 or 7 years. Wally’s last trip was for the 2013 RD and Lighthouse weekend where we came ninth overall in the RD.

Visitors are welcome; or if you can’t make it to WA’s southwest that weekend, consider activating a lighthouse closer to home. More information is at [illw.net](http://illw.net)

AR



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# DXTalk

Luke Steele VK3HJ

June saw a number of IOTA expeditions including TE8DX Chira Island (NA-116), VK9MAV Marion Reef (OC-267), VK9MAV/4 Whitsundays (OC-160), B7CRA Yongxing Island (AS-143), TX5EG Ahe Atoll (OC-131) and Huahine Island (OC-067), and V6J Mokil Island (OC-226).

The most active bands for DX from VK3 have been 40, 30 and 20 m with little happening on other bands. John G3RCG comes up on 30 m most afternoons and some other Europeans can also be heard on the long path. On 20 m, Europe can be heard on the long path in the afternoons along with Asian and Pacific stations. In the evenings, 40 m is fairly active with Asia/Pacific and North America heard.

David ZS8Z from Marion Island has been recently reported on 20 m SSB. He has been appearing just before 1200 Z around 14.198 – 14.200. This will not be likely to favour VK but hopefully he will be able to spend a bit more time on air over winter.

Solar and geomagnetic conditions remain mostly very quiet.

Recent activations: VU4YC Andaman Islands, 5A5A Libya and E31A Eritrea have been approved for DXCC.

## Upcoming DX

DXpedition activity scheduled for August includes the following:

HC8 **Galapagos Islands**, August - October. Geoffrey G8OFQ plans operation from Isabela Island (SA-004) on 160 - 6 m SSB. QSL via LotW, or G8OFQ direct.

TX5EG **French Polynesia**, 15

August - 5 September. F6BCW, F6DTZ and F1TCV continue from Moorea Island (OC-046) on 80 - 12 m CW and SSB. QSL via LotW or F6BCW Bureau or direct, Club Log and eQSL.

WW6RG/KH9 **Wake Island**, 17 August. Randy WW6RG plans operation from Wake Island between 0330 z and 0730 Z around 14.205 MHz on SSB with 5 watts QRP. There is a chance we may hear him in VK. QSL only via WW6RG, no LotW or eQSL.

## Other news

### Pirate

Activity from a station signing 3B9DX (Rodrigues Island) for a few days in late April/early May on 20 and 15 CW was most likely a pirate. No licence has been issued for Rodrigues by the local telecom authority, according to Jacky 3B8CF, Secretary of the Mauritius Amateur Radio Society.

### Niue DXpedition

Grant VK5GR is planning a family holiday to Niue in September, including some radio activity. He plans operation between 14 and 25 September on 40 - 6 m and maybe 80 m using mainly digital modes at night so he doesn't disturb his family and some SSB. Grant plans activity in the CQ WW RTTY Contest on 23 - 24 September. He'll be using an Elecraft K3 with KPA500 and KAT500 to a folded monopole designed and built by Steve VK5SFA. A website is under construction and will appear at [www.e6ag.net](http://www.e6ag.net)

## Bouvet Update

The Bouvet Island DXpedition – 3YØZ

Press Release #6

June 27, 2017

In consultation with our new transportation partner Aerovias DAP, we continue to refine our plans for our Bouvet DXpedition. We expect to depart from King George Island, in the South Shetlands Islands on January 13, 2018. Our transit time to Bouvet will be between 9 and 11 days depending on weather and the sea state.

Upon arrival at Bouvet we will conduct reconnaissance flights to the island and select a campsite free of crevasses. As weather permits we will begin building our radio city on the ice and secure our infrastructure. Then antennas will go up, our equipment will be assembled and we will begin non-stop operations. We are planning to be at Bouvet for 21 days and, depending on weather and other factors, we hope to be on the air for 14-16 days. Then we will return to either King George Island or Punta Arenas, Chile. All in all, we will be away from civilization for 6-7 weeks.

Final preparations continue this summer and we still have a lot to do:

Equipment will be tested under simulated harsh conditions at the QTH of K9CT. Antennas will be assembled, tested and packed for transit at the QTH of WB9Z. The Sea Container will be packed and shipped from Atlanta the first week of October.

A team meeting will be held in Atlanta on Sept. 7-10. Topics to be discussed will include:

- Safety
- Helicopter operations
- Site selection
- Shelter erection and quick deploy plans
- Weather
- Escape plans and rescue.
- Medical considerations
- EME set-up and testing
- Familiarization and operation of Flex Radios and Amplifiers
- Propagation and our strategy
- Operator scheduling
- And....more.

Our fund-raising continues. We are pleased with our progress toward our goal of \$740,500. The team has committed \$400,000 cash as well as paying for their own transportation, food and hotel expenses. DX Clubs have stepped up and some have added additional contributions as have many individual DXers. However, we are still about \$200,000 short. Please help if you can. We have a large payment due for the vessel and helicopters in several months.

Please check our website <http://www.bouvetdx.org> at periodically for updates and additions as

we progress toward departure. You can also join our Facebook group <https://www.facebook.com/groups/639362206232014>

For the 3YØZ team,  
Ralph-K0IR  
Bob-K4UEE  
Erling-LA6VM

Please email me with any DX related news for inclusion in this column. I am particularly interested in hearing about DX worked or heard in other states. [vk3hj@wia.org.au](mailto:vk3hj@wia.org.au)  
73 and good DX,  
Luke VK3HJ



## AMSAT-VK



AMSAT Co-ordinator  
Paul Paradigm VK2TXT  
email: [coordinator@amsat-vk.org](mailto:coordinator@amsat-vk.org)

Group Moderator  
Judy Williams VK2TJU  
email: [secretary@amsat-vk.org](mailto:secretary@amsat-vk.org)

Website:  
[www.amsat-vk.org](http://www.amsat-vk.org)  
Group site:  
[group.amsat-vk.org](http://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 Australian National Satellite Net is held on the second Tuesday of the month (except January) at 8.30 pm eastern, that's either 9.30 or 10.30Z depending on daylight saving. Please note we will be taking check-ins from 8.20pm-ish. Check-in starts 10 minutes prior to the start time. 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. Operators may join the net via EchoLink by connecting to either the \*AMSAT\* or \*VK3JED\* conferences. Past experience has shown that the VK3JED server

offers clearer audio. The net is also available via IRLP reflector numbers 9558. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

**In New South Wales**  
VK2RBM Blue Mountains repeater on 147.050 MHz

**In Queensland**  
VK4RRC Redcliffe 146.925 MHz -ve offset IRLP node 6404 EchoLink 44666

**In South Australia**  
VK5TRM, Loxton on 147.175 MHz  
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278,  
EchoLink node 399996

**In Tasmania**  
VK7RTV 2 m. Repeater Stowport 146.775 MHz. IRLP 6616

**In the Northern Territory**  
VK8MA, Katherine on 146.750, CTCSS 91.5, IRLP Node 6800

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT or VK3JED conferences. Past experience has shown that the VK3JED server offers clearer audio. 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. Currently only SO-50 is available.

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.

## Participate

### International Lighthouse Lightship Weekend - ILLW

Details at: <https://illw.net/>

Remember to Register if you plan to activate a Lighthouse or Lightship venue.

0001 UTC  
19 August  
to 2400 UTC  
20 August



## VK7news

Justin Giles-Clark VK7TW

e vk7tw@wia.org.au

w <https://groups.yahoo.com/neo/groups/vk7regionalnews/info>

### 10 years and 100 thousand images

Steve Leeper VK7OO has been running an SSTV Cam webpage for the last 10 years receiving SSTV images and posting them to the internet. There have been over 100,000 images shared. Steve started in 2007 using MMSSTV, an Icom IC-730 and Pentium 2 laptop that are still running reliably today! Steve lets us know he has tried various antennas and has always returned to the trusty G5RV listening on 14.230 MHz. Steve also ran a SSTV Cam on VHF for

a while tracking pictures from the ARRISAT-1 satellite during its short life. The URL to access the SSTV Cam can be found at: <http://vk7oo.tasme.com/sstv20m/index.html>

### VK7 Records News – 9 cm Contact of 153.4 km

Thanks to Peter VK7PD for the following information:

June 8 saw Joe VK7JG assisted by Ross VK7ALH who made a 9 cm (3.4 GHz) voice contact with Peter, VK7PD assisted by second operator Michael, between White Hills in Northern Tasmania and Mt

Wellington in Southern Tasmania over a distance of 153.4 km. Each end used converted WiFi 'panel' transceivers, a brainchild of the Geelong Amateur Radio Club members who designed modifications which turn them into 9 cm to 70 cm all mode transverters. SSB signal reports were 5/1 in both directions. Congratulations.

### Cradle Coast Amateur Radio Club (CCARC)

The VK7RMD repeater on Mt Duncan has been returned to

Photo 1: Michael Second Operator with Peter VK7PD on Mt Wellington talking with Joe VK7JG in Northern VK7. (Photo courtesy of Peter VK7PD.)



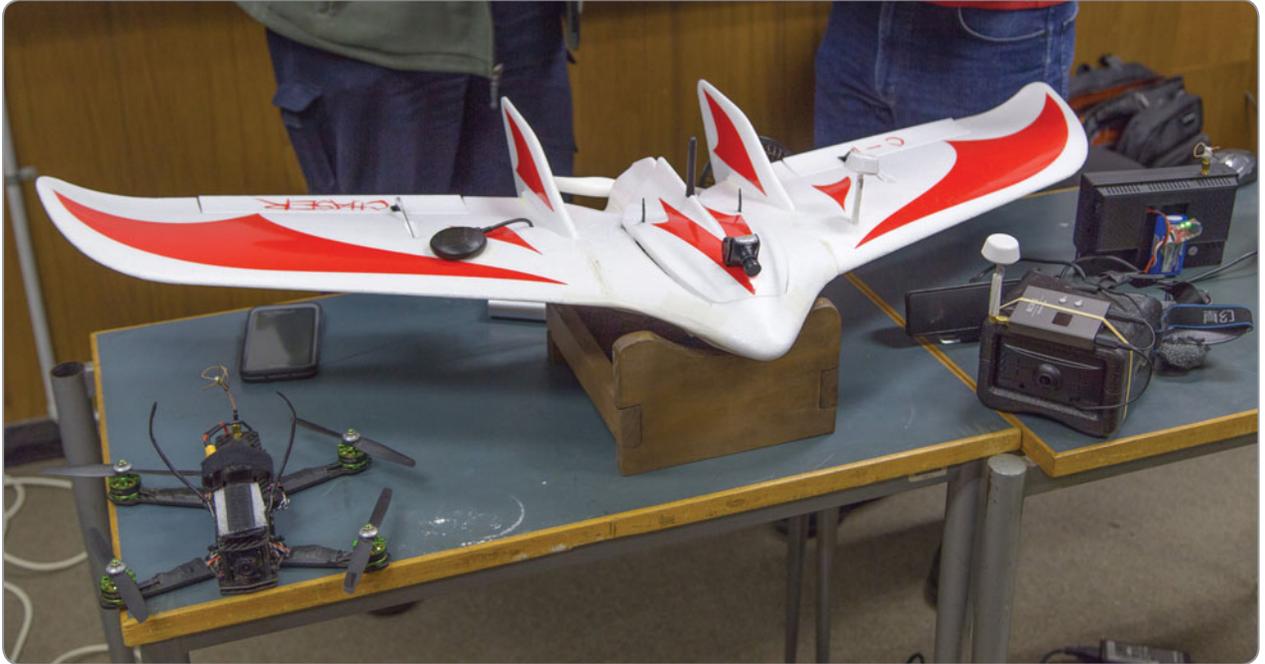


Photo 2: Impressive Radio Controlled kit that Ron showed at the presentation at REAST. (Photo courtesy of Ben VK7BEN.)

service with both 2 m (146.625 MHz) and 70 cm (438.600 MHz) both using a 141.3 Hz CTCSS tone. Plans are being made to include APRS for battery monitoring and other functionality. The site also houses the North West St John Ambulance repeater.

### North West Tas. Radio & TV Group (NWTR & TVG)

The June club meeting saw discussion of the JOTA/JOTI participation in October 2017 at Paton Park and was then followed

by two presentations – the first was from Peter VK7PD and Joe VK7JG who talked about their propagation experiments on 1296 MHz including the showing of the equipment they use. This included the 1296 MHz Yagi, 23 cm GPS Locked Bulgarian Transverter and FT-817. They encouraged the group to become active on 23 cm during the presentation. Thanks to Peter and Joe.

The second presentation was by Aaron VK7AGR on the new D-STAR repeater on Table Cape.

He demonstrated how to digitally access the repeater using a DV-mega, Raspberry Pi and Wi-Fi, then used an Icom ID-51 Dual Band for an RF connection to an Australian reflector. Thanks Aaron.

### Northern Tasmanian Amateur Radio Club (NTARC)

NTARC participated in the Lebrina Equine Endurance event at the end of May and supplied Safety Communication and checkpoint duties for the 2017 Lockhart Endurance Challenge. The ride saw 50 riders start across 80, 40 and 20 kilometre rides. Thanks to VK7s Alvin VK7ADQ and Roger VK7ARN at the Eagles Nest checkpoint, Ron VK7RB and Wayne on Virginia Rd checkpoint, Ken VK7KKV and Stuart VK7FEAT at the Emu Rd checkpoint. Base was run by Idris VK7ZIR, Andre VK7ZAB and Peter VK7KPC and the RFID and database technology worked seamlessly.

The NTARC June meeting saw a presentation by the Mt Arthur VK7RAA project team of David VK7JD and Paul VK7KPA and was a detailed tutorial on DMR which is



Photo 3: Ron presenting his radio control journey to a packed clubroom at REAST. (Photo courtesy of Ben VK7BEN.)

now active and working on the Mt Arthur repeater. There are now 47 VK7 DMR registered users. The next repeater installation will be the Yaesu Fusion (C4FM) system. All is ready for the multi-mode DR-1X repeater to be commissioned once licencing is approved. These repeaters will respond to either C4FM or analogue FM signals. The 5.8 GHz internet link between Mt Arthur and Lilydale is operating well. The current project is a comprehensive repeater controller system using dedicated 32 bit ARM based micro-controller and Raspberry Pis. Thanks to David and Paul.

## Radio and Electronics Association of Southern Tasmania (REAST)

Huge congratulations go to Simon Firth and Dani Streets who both sat and passed their Foundation licence assessments recently and we look forward to hearing them on the air very soon.

Please note that the VK7RST 6 m Beacon on 50.297 MHz will be off air from Friday 16 June 2017 for at least

a month whilst it is upgraded to a GPS locked CW/JT4/WSPR beacon. This upgrade will include the currently off-air VK7RST 2 m Beacon on 144.470 MHz which will also become a GPS locked CW/JT4 beacon. Once licence changes go through we will also be adding a 70 cm GPS locked beacon on 432.470 MHz.

The REAST June presentation night was a fascinating look at Radio Control Technology and much more by member Ron Cullen. Ron went through his RC journey starting in 1979 in the Air Force right up to the present day. Ron is currently experimenting with a rear-engined plane using VR goggles with On Screen Display of the many aircraft parameters. The plane is remotely launched using a ramp and bungee cord. The First Person View goggles, flight computer and telemetry transceiver, on screen display, video transmitter and GPS feeding the flight transmitter complete the technology now installed in the plane. There are five different frequencies used – 5.8 GHz, 2.4 GHz, 900 MHz, 1575 MHz and 433 MHz. Ron went

through the very impressive software and many modes available. Thanks Ron for a fantastic insight into this very impressive kit and your experience coming to grips with it. This presentation was also the first to be streamed to the REAST YouTube Channel and is currently available for viewing on the REAST channel.

The REAST Experimenter's Night are going strong each Wednesday night with a broad array of interests: Larry VK7WLH with microwave equipment, shrinking Near Field Devices and cell phone tracker units. The author with PCB designs and Raspberry Pi projects, Rex VK7MO with a tutorial on Microwave Transition tuning, Winston VK7WH and Warren VK7WN with Winston's remote station setup, Murray VK7ZMS brought along the IOT equipment that TasmaNet is installing currently and there were beacon controllers and microwave amplifiers as well.

Ben VK7BEN and Scott VK7LXX completed the network change over to our new TasmaNet NBN connection and a huge thank you to TasmaNet for this service.



# DX Awards

Marc Hillman VK3OHM/VK3IP

Below are listed all New awards issued in June 2017, plus all updates to DXCC awards.

Go to <http://www.wia.org.au/members/wiadxawards/about/> to use the online award system.

## New awards

### 2017 AGM

#	Call	Name	Category
21	VK5BJE	Maurice Dawes	Gold Award
22	VK5BJE	Maurice Dawes	General Award
23	VK1DI	Ian Sinclair	Gold Award
24	VK1DI	Ian Sinclair	General Award
25	VK3TKK	Peter Watkins	General Award

### DXCC Multi-band (5)

#	Call	Name	Mode	Band	Count
73	VK3GA	Graham Alston	Open	40-20-17-15-10m	788

### DXCC Multi-band (7)

#	Call	Name	Mode	Band	Count
36	VK4CAG	Graeme Dowse	Open	40-30-20-17-15-12-10m	1161

### DXCC Multi-mode (CW)

#	Call	Name	Count
250	JS30SI	Toshiyuki Tanaka	136

### Grid Square

#	Call	Name	Mode	Band
289	JS30SI	Toshiyuki Tanaka	Phone	HF
290	VK2ZQ	Michael Ramsay	Open	6m
291	JS30SI	Toshiyuki Tanaka	Open	6m
292	JS30SI	Toshiyuki Tanaka	CW HF	
293	JS30SI	Toshiyuki Tanaka	Digital	HF
294	VK2TTP	Peter Pratt	Phone	HF
295	VK2IUW	Hilary Bridel	Phone	HF

# DXCC updates

## DXCC Multi-band (1)

#	Call	Name	Mode	Band	Count
43	VK7CW	Steven Salvia	CW	20m	270
97	VK6WX	Wesley Beck	CW	20m	123
54	VK3EW	David McAulay	Digital	20m	185
162	VK3AWG	Christopher Belmont	Digital	20m	119
20	VK3SX	Bob Robinson	Open	20m	320
41	VK7CW	Steven Salvia	Open	20m	306
51	VK2FR	John Sharpe	Open	20m	277
61	VK4CC	Colin Clark	Open	20m	237
75	VK2TTP	Peter Pratt	Open	20m	135
76	VK3JLS	John Seamons	Open	20m	202
91	VK2ZQ	Michael Ramsay	Open	20m	230
108	VK3AWG	Christopher Belmont	Open	20m	183
138	VK4CAG	Graeme Dowse	Open	20m	258
160	JS30SI	Toshiyuki Tanaka	Open	15m	120
21	VK3SX	Bob Robinson	Phone	20m	320
52	VK2FR	John Sharpe	Phone	20m	267
62	VK4CC	Colin Clark	Phone	20m	184
92	VK2ZQ	Michael Ramsay	Phone	20m	213
139	VK4CAG	Graeme Dowse	Phone	20m	248
153	VK2TTP	Peter Pratt	Phone	20m	135

## DXCC Multi-band (3)

#	Call	Name	Mode	Band	Count
24	VK3EW	David McAulay	CW	30-20-17m	879
37	VK7CW	Steven Salvia	CW	30-20-17m	735
66	VK3EW	David McAulay	Digital	30-20-15m	477
30	VK3SX	Bob Robinson	Open	20-15-10m	679
36	VK7CW	Steven Salvia	Open	30-20-17m	778
44	VK2FR	John Sharpe	Open	20-15-10m	644
63	VK2ZQ	Michael Ramsay	Open	40-20-10m	528
91	VK4CAG	Graeme Dowse	Open	20-17-15m	641
31	VK3SX	Bob Robinson	Phone	20-15-10m	672
43	VK2FR	John Sharpe	Phone	20-15-10m	624
64	VK2ZQ	Michael Ramsay	Phone	40-20-10m	491
92	VK4CAG	Graeme Dowse	Phone	20-15-10m	590

## DXCC Multi-band (5)

#	Call	Name	Mode	Band	Count
21	VK3EW	David McAulay	CW	40-30-20-17-12m	1361
35	VK7CW	Steven Salvia	CW	40-30-20-17-15m	1121
34	VK7CW	Steven Salvia	Open	30-20-17-15-10m	1190
42	VK4CAG	Graeme Dowse	Open	20-17-15-12-10m	950
47	VK3SX	Bob Robinson	Open	40-20-17-15-10m	936
41	VK4CAG	Graeme Dowse	Phone	20-17-15-12-10m	874
52	VK3SX	Bob Robinson	Phone	40-20-17-15-10m	918

## DXCC Multi-band (7)

#	Call	Name	Mode	Band	Count
10	VK3EW	David McAulay	CW	80-40-30-20-17-15-12m	1748
14	VK7CW	Steven Salvia	CW	40-30-20-17-15-12-10m	1470
15	VK7CW	Steven Salvia	Open	40-30-20-17-15-12-10m	1562

## DXCC Multi-band (9)

#	Call	Name	Mode	Band	Count
12	VK3EW	David McAulay	CW	160-80-40-30-20-17-15-12-10m	2062

## DXCC Multi-mode (CW)

#	Call	Name	Count
225	VK4CC	Colin Clark	180
245	VK4CAG	Graeme Dowse	145

## DXCC Multi-mode (Digital)

#	Call	Name	Count
20	VK3EW	David McAulay	279
33	VK7CW	Steven Salvia	137
47	VK3AWG	Christopher Belmont	143
48	VK2ZQ	Michael Ramsay	116
61	VK4CC	Colin Clark	125
63	VK4YMB	Andrew Burns	102
66	VK3JLS	John Seamons	110

## DXCC Multi-mode (Open)

#	Call	Name	Count
62	VK4CC	Colin Clark	280
350	VK4CAG	Graeme Dowse	323
375	VK2TTP	Peter Pratt	160
394	VK3JLS	John Seamons	228
397	VK3AWG	Christopher Belmont	224
401	VK2IUW	Hilary Bridel	118
419	VK3GA	Graham Alston	303
448	VK4YMB	Andrew Burns	102

## DXCC Multi-mode (Phone)

#	Call	Name	Count
554	VK4KEE	Robert Hollis	327
556	VK4CAG	Graeme Dowse	318
572	VK2TTP	Peter Pratt	160
591	VK4CC	Colin Clark	223
602	VK3AWG	Christopher Belmont	170
616	JS30SI	Toshiyuki Tanaka	117



Participate

# ALARA Contest

## 26 August



# Contests

Trent Sampson VK4TS  
e vk4ts@wia.org.au

## Contest priorities for August 2017

Contest	Date (UTC)	Rules	Difficulty	Software	Modes
Remembrance Day Contest (RD)*	12 and 13 August	<a href="http://www.wia.org.au/members/contests/rdcontest/">http://www.wia.org.au/members/contests/rdcontest/</a>	Easy	VKCL	CW/RTTY/SSB
ALARA Contest	Start Time 1600 26 August 2017	<a href="http://www.alara.org.au/contests/">http://www.alara.org.au/contests/</a>	Easy	VKCL	SSB/CW

\*Of interest: the RD was known as the RD from the very first year - probably as a hangover of codes associated with WW2 e.g. VE Day Victory in Europe or VP Day, Victory in the Pacific.

### RD Contest 2017

This year the 2017 RD contest falls on the 2nd weekend of August. The contest kicks off at 0300 Z on August 12 and finishes 0300 Z August 13. Categories include Single Operator, Multi Operator Single Transmitter and Multi Operator Multi transmitter. Phone, CW and RTTY modes are allowed. The exchange given is the signal report followed by the number of years you have been licensed. For clubs the exchange is the signal report followed by the number of licenced years of the longest licenced ham present at the start of the contest. Repeat contacts can be made three hours after the previous contact with that callsign. If you wish to create a team please notify me prior to the contest. And above all, remember to send in your log within the fortnight after. All information is available for download from the WIA contest web pages. Good luck and hope to work you during the contest. 73, this is Alan VK4SN, RD Contest Manager.

### Contesting Tools

#### Six Pack antenna switches

The Six pack and derivatives allows automation of the station to very useful levels. The Six pack and its relatives are a two input six output relay that has very good isolation

between the ports.

In more advanced installations, the control of the switch is determined by the band selected on the rig or even driven by the computer network. Being able to select any of the stations antennas on the rig and standby rig allows for fast reaction to changing band conditions. While Array Solutions were one of the originators of the device there are many copies and very good spec items are coming out of Russia, Brazil and 4O3A Stores. These units are the core

of a well setup station and can be utilised in a Single operator station or a Multi operator two desk operation.

Google will find the answers - however look for isolation figures between ports to determine suitability.

### Contester of the Month

#### Doug Hunter VK4ADC

Doug has been a licensed amateur for 50 years - and a 'would-be' contester for maybe 49 of those,



Photo 1: Doug Hunter VK4ADC in action.



Photo 2: The antenna array at VK4ADC featuring Tribander and 6 m Yagi.

less a few absence periods when work commitments and a growing family prevailed. He says he still enjoys the thrill of making those quick contacts during contests about as much as he did way back at the beginning.

**What is your favourite Contest?**

*Internationally, it would have to be the WPX Contest held in March each year. The John Moyle Field Day is undoubtedly the best within-Aussie contest and I really try not to miss that one. I occasionally manage to hit the Oceania Phone Contest but usually family circumstances seem to inhibit that.*

**What is your favourite Rig?**

*I use predominantly Icom brand radios and my current shack workhorse is an IC-7400, an oldie but a goodie, typically 100 watts 160 - 2 m without needing to use a linear. I used an IC-7000 for my Norfolk Island / VK9NU HF operation in April 2016 and it proved to be a very capable unit under contest-like conditions.*

**What modes do you contest in?**

*SSB in the main, but occasionally I will fire up some digital modes like FSK or RTTY. I regard my CW skills as "rusty", so I don't usually run in the CW mode, although I can still read a good CW fist up to about 20 wpm by ear.*

**What is your favourite contest band and why?**

*In reality I have three: 20 m for DX operations with 40 m and 6 m for VK and ZL-based contests. You don't have to have high power on 20 m - but it does make life easier. You do need to have antenna directivity and gain though and a tri-bander as a minimum for any success with contesting on 20 m. I have two dipole arrays that cover 40 m and a coax switch to quickly select N-S or E-W thus maximising signals.*

**What is your preferred Contesting Software?**

*N1MM is undoubtedly the best option for international contests, with VKCL for the JMFD, RD and the VHF/UHF Field Days. It takes*

*a while to get used to using N1MM after using VKCL more but refresher practice immediately prior to the contest takes the pressure off during it.*

**What is your preferred Mic and Key?**

*I use a homebrew headset combination when I need to but shack-based operations usually end up with the Icom SM20 desk mic in play. I only have a very old PMG series hand key for CW, or make the logging computer generate it for me.*

**What is your "not so secret" weapon?**

*Preparation. I suspect that the old 'Prior Preparation Prevents Poor Performance'*

*idiom was created with contesting in mind. If the gear isn't set up conveniently or working correctly then you need to do a re-think about your contesting station and be prepared to make changes. The second item in the arsenal is making sure that you are operating in a low external noise environment with good antennas. I often hear stations clearly where they keep asking for repeats and my semi-rural location typically has minimal noise plus it allows for full size and efficient antennas even on 160 m, a far different experience than from my previous suburban QTH.*

**What is your best tip to a newbie contester?**

*Pick the right contest and section to enter. Many contests have different sections available: multi-band and single band, multi-mode and single mode, high power, medium power and QRP, 6 or 8, 24 or 48 hours. Decide which section you are best suited to prior to the contest and then maximise your time in front of the radio. Experience as many contests as your free time permits:*



Photo 3: The whole deal with VHF UHF arrays at VK4ADC.

there is no substitute for developing a good ear to extract those faint call signs and exchange details from the noise and if you can't be there for the whole contest period, don't despair – it is all good practice.

**What are your aspirations in contesting?**

More wallpaper? I actually participate because I enjoy the competition. Realistically, I like to see my call sign fairly well up in the results, preferably top of the section, but that only happens occasionally.

**What would you like to improve in either your skills and/or station?**

My home and field day station setups are working pretty well these days and between them, I cover all bands from 1.8 MHz to 10.368 GHz. I know I should do more operating in the multi-mode contest sections, on digital and/or CW but SSB allows me to cruise and enjoy it more. Maybe enhancing that type of operating should be part of my next New Year's resolution.

**Who is VK4ADC?**

Originally I trained as a radio tech in DCA back in the late 60s and early 70s but then for another 18 years I worked as Technical Officer / Radio Inspector in various roles in the P&T/DOC/SMA prior to the name change to ACMA. I moved into sales and support in the home and small business computer environment before starting Oz Gear in 2004, selling Icom, Yaesu and Kenwood amateur radio transceivers, accessories plus general electronic parts into the Australian market. I closed that business and nominally retired in 2008 then worked as a casual with a hardware chain until mid-2016 to keep busy and be socially active. I am still an ardent homebrewer in everything from software to antennas to SMD-based microwave as well as undertaking WIA Assessor duties. When convenient, I try to operate in most VK contests and VHF/ UHF Field Days, whether portable

or from home, plus a few selected international HF contests.

Part of my time is also directed towards administering the OzLogger.net forum I started in September 2016 upon the demise of the forum component of VKLogger. Visit <http://www.ozlogger.net> to keep across VK-oriented amateur radio discussions.

**Contest Terms**

**M2:** Multiple operators Two Transmitters

**MM:** Multiple Operators Multiple Transmitters

**Lockout:** A device that stops multiple transmitters keying at once outside contest rules

VK4TS Trent is the admin of VK Contest Club (VKCC) web ([www.vkcc.com](http://www.vkcc.com)) and Facebook pages and has been an active contester since the 1970s.

Emails can be sent to [vk4ts@wia.org.au](mailto:vk4ts@wia.org.au)



Jim Linton VK3PC

e [arv@amateurradio.com.au](mailto:arv@amateurradio.com.au)

w [www.amateurradio.com.au](http://www.amateurradio.com.au)

## Standard & Foundation Licence training

Both a regular Foundation licence and a Standard licence Bridging course will be held in September at the Amateur Radio Victoria office, 40G Victory Boulevard, Ashburton.

For those wanting to join this fantastic hobby an entry level Foundation licence session is on the weekend of 9-10 September 2017. Do you know someone who could make a good radio amateur?

There is a lot to learn. But we make it easier with the experienced trainer covering the basics of electronics, radio communications, several safety aspects, the regulations and topics covered in the multi-choice written assessment.

Then a practical test is held on regulations, symbols, antennas, band plans, hands-on ability with a typical radio station, engaging in its set up, testing of power and SWR and on air use.

Candidates are expected to read the operational practice guide book that is available on-line for \$35 from our online shop <https://shop.amateurradio.com.au/>

Take the step now to become a radio amateur, or encourage a friend to do so via the Amateur Radio Victoria quality course.

A targeted Standard licence Bridging Course will be held on

the six Wednesday evenings of September 6, 13, 20, 27, October 4, 11 plus Saturday 14 for revision and assessments on Sunday 15.

Attendance on all days is expected. The training bridges the knowledge gap between the Foundation licence (a prerequisite to enrol) and the Standard licence. An experienced and knowledgeable instructor will help you on the path to upgrade.

Some study is needed in between course sessions. Those needing a Regulations assessment will be accommodated but it needs self-study as the subject is not covered in the course.

To enrol in either the Foundation licence, or the Standard licence Bridging Course, please contact Barry Robinson VK3PV, the Education Team Leader at [vk3pv@amateurradio.com.au](mailto:vk3pv@amateurradio.com.au) or 0428 516 001.

## Portable for the ILLW

The International Lighthouse and Lightship Weekend 19-20 August will have the blue-stone Time Ball Tower at Gellibrand Point Williamstown active and looking to make many contacts.

The structure has had a number of incarnations as a Time Ball and a lighthouse. Today, the tower is operated by a computer which drops a round metal ball each day at 1 pm.

Originally it was a way in which captains in Hobsons Bay could accurately set their chronometers used for navigation of their ships.

The noise floor can be a problem at the location but with persistence and experience, past activations have logged contacts Australia wide, some DX and other lighthouses.

Under a Parks Victoria permit any Amateur Radio Victoria member is welcome, but please contact the organiser Tony Hambling VK3XV first by email on [vk3xv@amateurradio.com.au](mailto:vk3xv@amateurradio.com.au)

## Support through membership

Many are surprised that Amateur Radio Victoria spends a lot of money to the benefit of Amateur Radio but not all contribute through being a member.

It costs \$30 or \$25 concession for two years. This helps pay for many repeaters and beacons, the Sunday broadcast VK3BWI network at 10.30 am and 8.30 pm, the training of new radio amateurs, the VK3 QSL bureau and the homebrew construction group monthly meeting.

Membership is less than five cents a day, with application forms on our website or supplied on request.



## Training

### Foundation course 9-10 September

Standard bridging course Wednesday evenings 6 September - 11 October

Standard revision and assessment 14/15 October

Contact Barry Robinson VK3PV [vk3pv@amateurradio.com.au](mailto:vk3pv@amateurradio.com.au)



# VK5news Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

## From the June meeting

A group of AHARS members will be going to an evening at the ABLAB. From the information given to us, this should be a most interesting evening. Many new ideas are being developed there and a stimulating evening can be expected. The reports should be presented at a later meeting.

## The Mid-Year Dinner bookings

As usual the attendance at the Mid-year Dinner is expected to be over fifty. This year we will be gathering at the Lobethal Hotel. Lobethal is in the news every Christmas time because the residents there go to a great deal of trouble to create Christmas light displays. The whole town celebrates for most of the month of December. It is only a little over an hour from the city and the lights go on as soon as it is dark enough so families with young children can enjoy them.

The dinner was on Sunday 16 July, so expect a report in the September notes.

## Show and Tell Night

This year there were fewer entries but they were full of interest. Rod VK5UV had the first offering. He has been involved for some years in EME (Earth Moon Earth) activities. This is followed around the world and Australia has been much involved over the years. Recently, some of the most successful QSOs have been on 2-metres.

Rod discussed some of the particular switching problems which have to be addressed. There have to be careful time delays built into



Photo 1: Reuben's boxes.

the equipment to allow for the length of time it takes for the signals to go to the Moon and back. When you are listening for a returning signal you must not also be sending a signal.

Rob was involved, particularly in a station in Spain that is producing 1600 W of transmitter power. It was an insight into a segment of radio activity we do not often hear about.

Reuben VK5FE has been

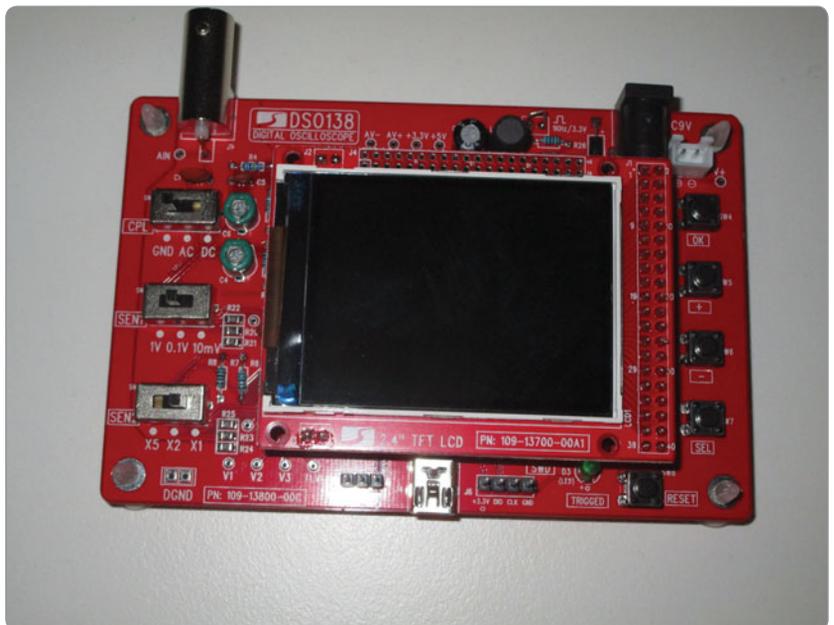


Photo 2: Lyle's miniature Oscilloscope.



Photo 3: David VK5AA and his folded dipole.

interested for many years in building from kits available through the internet. Many of these kits come without 'boxes'. Reuben brought along a whole collection of containers of all sizes that he has had to make for his projects; during the supper break he opened the boxes to display the beautifully neat layouts of the finished kits.

Lyle VK5LW brought along one of the amazingly tiny oscilloscopes available through the internet. He has tried it out and it works beautifully although it is only 100 mm by 20 mm. Lyle also brought along some "dots" he had found at one of the local Electronic shops.

If you are constructing something on Vero-board or suchlike, these dots are useful as a locator for drilling holes or for locating components. They can be soldered to and they can be used to isolate components. They come in strips so they can be used together or used separately and come in different sizes. What a shame they do not seem to still be available.

Trevor VK5ATQ has been busy building a number of regulated power supplies for specific voltages. He has 18 V, 12 V and 5 V devices on display. Rather than have a variable power supply which, because it is trying to be all things, it is not always as accurate at each of the voltages it has available.

David VK5AA brought along a folded dipole for 2-metres he had built to use for WICEN exercises. It packs up like a bundle of welding rods so is very portable. He had it mounted on a simple tripod and it easily packed into a small space.

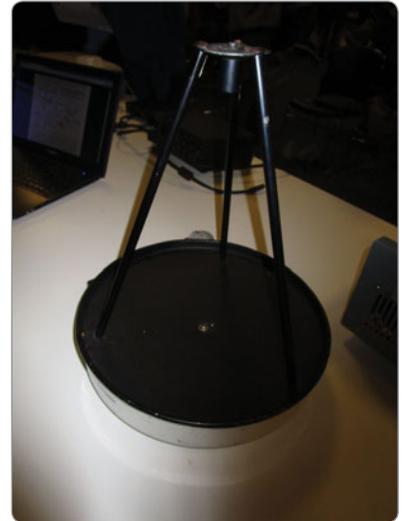


Photo 4: Mark's spark detector.

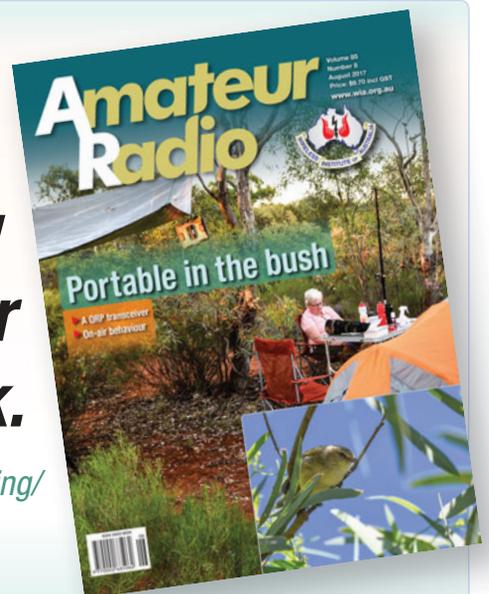
Mark VK5AVQ had an ultra-sonic detector. It was originally used by ETSA to detect sparking insulators where it was able to identify an individual problem insulator in a long string and at quite a distance. The device is simply pointed in the appropriate direction when it makes a sound whenever there is a problem. Mark has used it in the shack to find any noisy devices or components. It is a parabolic dish with a reflector mounted in front, and because of the frequency used, is hand held.

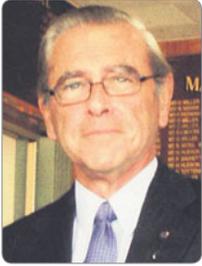


## Wanted

# Articles and high quality photographs for *Amateur Radio and Callbook*.

See <http://www.wia.org.au/members/armag/contributing/>





# VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

## Considerations when building an FM Broadcasting Station

Donald VK3IT wanted to build a local broadcasting station and the following illustrates the issues that he faced in achieving the end goal, without using elaborate equipment with a big price tag, for those with similar aspirations.

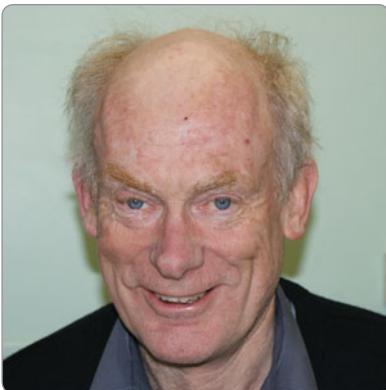


Photo 1: Donald VK3IT.

## The Regulations governing these activities

The Broadcasting Services Act 1992 - Section 18 deals with Open Narrow Casting services

- (1) Open narrow casting services are broadcasting services:
  - (a) whose reception is limited:
    - (i) by being targeted to special interest groups
    - (ii) by being intended only for limited locations, for example arenas or business premises or
    - (iii) by being provided during a limited period or to cover a special event or
    - (iv) because they provide programs of limited appeal or
    - (v) for some other reason; and
  - (b) that comply with any determinations or clarifications under section 19 in relation to open narrow casting services

The ACMA itself may determine additional criteria or clarify existing criteria to those specified in sections 14 to 18A.

Donald had to go to the ACMA website to check the Applicant Information Package for 87 - 88 MHz LPON auctions to make sure his proposal complied with the LPON check list, fill out the Deed of Acknowledgement then send off the

forms with a cheque for \$394.

The Licence Issue, for a low density area, was \$289 but the Annual Licence Fee is about \$44.

## Options Considered

The first consideration was to go AM or FM. As the Narrow Area Services on AM around Melbourne had already been taken up, the only option left was to focus on an FM approach.

The Low Power Open Network ( LPON ) FM channels 87.6 - 87.8 MHz and 88.0 MHz utilising 1.0 watt within 20 km of a populated area or 10 watts in remote areas had already been allocated in Geelong; whereas all three LPON channels were available in Gordon, which is considered a low density area.

The frequency selected was 88.00 MHz.

## Licensing Costs

The licence cost around Melbourne or Geelong would be in the region of \$2,000 whereas Gordon, being a low density area, the cost is around \$600, which also includes the first year's licence fee.

## The Transmitter

- The LPON requirements require an EIRP of 1.66 W from a 1 W transmitter.
- The received signal field strength must not exceed 48 decibels

Photo 2: The main transmitter.





Photo 3: The antenna system used.

above 1 microvolt per metre at 2 km from the LPON transmitter site ( 250 mV/m).

- In respect of audio, both mono and stereo is allowable in the application form and mono was the choice of preference as most station of this nature seems to be mono.

The main Transmitter , Photo 2, was round 17 years old and had problems with a faulty BGY32 module which initially only generated 100 mW output; also the VCO coil went open circuit after initial warm up and had to be replaced and finally there was an intermittent fault with the SWR alarm.

### The antenna system for the FM transmitter

The antenna was donated by Calvin VK3ZPK and was vertically polarised with four radials made from tubing with flexible stainless steel guy wires; there are plans for a higher 13 m set-up with some form of deterrent to stop the birds sitting on the radials!

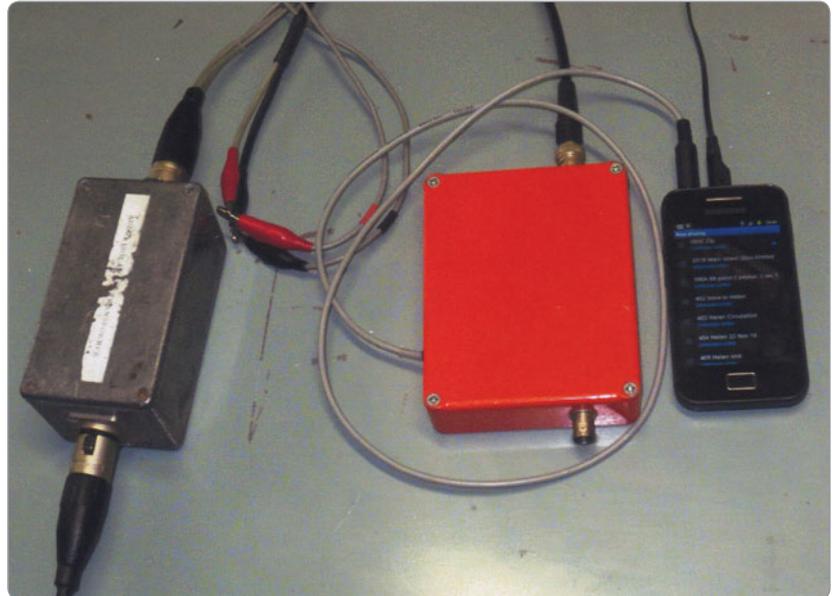


Photo 4: The Audio Storage and Replay equipment.

### Program Input equipment

The audio storage and replay equipment were derived from a retired mobile phone and charger with an isolation transformer coupling to the transmitter.

### Coverage

With the 1 watt output, the signal is blocked a few kilometres away by the hills surrounding Gordon on the North, South and West; however the signal can be heard, albeit weakly, around Elaine. To the East the signal is quite acceptable in the car for over 10 km.

### Broadcast content

The content being broadcast is limited, in the music area, by The Australian Commercial Recordings which are copyright, limiting the output to "The National Anthem, Advance Australia Fair"; the major content being commentaries on local events.

At this juncture, there is no specific plan to commercialise the broadcasts, although some thoughts have been given to possible charges for local advertising and interviews.

### Listeners

Donald has found that his broadcast presence on 88.0 MHz in Gordon has not been recognised by the entire community. However, there is an awareness of its existence by a number of listeners, but it is early days yet.

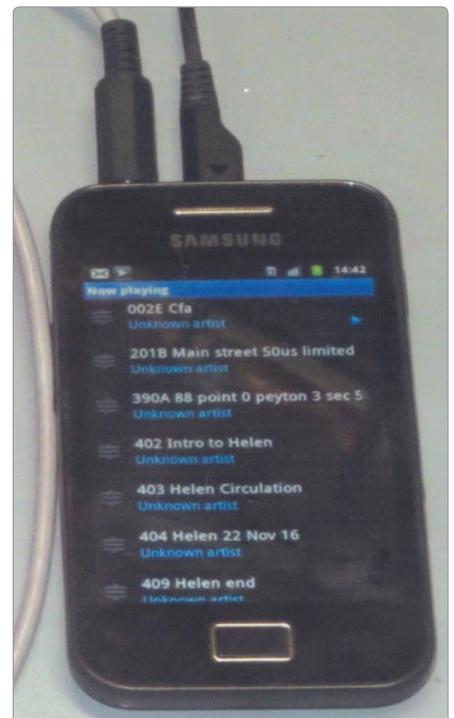


Photo 5: Program Schedule coverage.

# Silent Key

Ken Jewell VK3AKK/VK3NW

13/08/1942 – 24/05/2017

It is with great sadness that the amateur radio community and the Geelong Amateur Radio Club mourn the loss of Ken Jewell VK3AKK/VK3NW. Ken passed away peacefully after a protracted battle with cancer during which he stoically faced medical treatment and surgery, never allowing it to keep him from pursuing his life-long passion for amateur radio.

Ken was first licenced as VK3ZNJ in 1962. He soon became a keen and successful VHF DX operator with a particular emphasis on the 6 m band, an interest he retained throughout his life. Ken never lost his passion for the band and amassed an impressive list of DX contacts including the current Australian short-path distance record to GJ4ICD on Jersey in the UK Channel Islands.

In 1976, Ken passed his CW and was granted the call sign VK3AKK, obtained from his old friend Ken Nisbett who had just become a VK2. He immediately unleashed this new call sign onto the world, taking to HF DX operation with his characteristic zeal, both with a microphone and Morse key. Ken went on to receive many operating awards including 5 Band DXCC, 5 Band WAS (USA), WAZ on 20, 15 and 10 m, ARRL DXCC Honour Roll (Phone), headed the WIA DXCC standings with 340/358 countries and was just four short of working all current countries on CW before he passed away. His on-air presence was recognised the world over, particularly amongst the many friends he made across the USA. He also remained



a familiar voice during the many 6 m and 2 m summer openings right up and down the East VK Coast, as well as across the Tasman, making several friends in ZL and some notable contacts on 6 m, 2 m and even 70 cm along the way.

More recently, as VK3NW, Ken became a keen VHF/UHF and microwave operator with many achievements in his own right; as an equipment constructor, as a member of the Geelong Amateur Radio Club's very successful Field Day teams and when in the company of David VK3QM, activating rare grid squares on the microwave bands in VK3, VK5 and VK7. He was a competent and prolific builder of equipment and had constructed several transverters for the microwave bands that he used to great effect. In 2012 he toured northern Tasmania with David, establishing a number of VK7 microwave distance records, some of which

remain intact to this day. As recently as January of this year, Ken joined the GARC's VK3UHF Field Day team for the VHF/UHF Field Day in what was to be his final field outing.

Ken was also a valued member of and active contributor to the Geelong Amateur Radio Club. He served the Club as Secretary for many years and was elected President in 1997 and 1998. In 2012, Ken was awarded a Life Membership in recognition of his enduring commitment and dedication to the Club. In subsequent years he held a number of Committee appointments including Training Coordinator, mentoring prospective amateurs with his unique style of one-on-one training and as an Examiner, coaching many student foundation members through their practical exams. Ken also held the role of the Club's Repeater and Beacon Coordinator where in his words, he kept "... the repeaters repeating and the beacons beacons..." and took an active role in the refurbishment of the Club's VK3RGL Mt Anakie repeater site.

Ken is survived by his son Christopher, his three grand-children, his sisters Jan and Debbie, and his brother Robert.

Ken also leaves behind a legacy that serves as an inspiration to all new amateurs and to all the OTs alike. He truly was the epitome of the complete amateur operator and he will be sorely missed by all who became acquainted with him, but not forgotten.

Vale Ken, 73 OM.

Bert VK3TU, Peter VK3WK, Chas VK3PY and Barry VK3SY.



## Hamads

### FOR SALE – NSW

Icom AH-4 HF + 50 MHz Automatic tuner. Never used, with handbook. \$200. John Colliton VK2AYC. Ph. 02 9583 2056 Mob. 0419 421 116.

### FOR SALE – NSW

CTCSS Encoders. The Hunter Radio Group has produced another batch of CTCSS Encoders, 91.5 Hz - 123 Hz Switchable, Crystal locked,

which fits most VHF/UHF Transceivers.

Cost \$18.00 plus postage. Rodney VK2CN. 02 49448393 or [raprout21@gmail.com](mailto:raprout21@gmail.com)

### WANTED – NSW

Programming software and cables for Motorola HT1000 and Motorola Astro mobile.

John VK2HA. Email: [johnbutcher4080@gmail.com](mailto:johnbutcher4080@gmail.com)

### WANTED – VIC

An AWA AT5 transmitter in good to great condition to match my AR8 receiver. Let me know what you have. Damien VK3RX Ph 03 5427 3121 or 0400 070 443.

Email: [vk3rx@wia.org.au](mailto:vk3rx@wia.org.au)



## AR magazine Media Sales



The WIA is seeking a passionate, motivated and energetic volunteer to assist with the sales and management of advertising space in *Amateur Radio (AR)* magazine.

### THE ROLE

This is a consultative and relationship-focussed role, reporting to the WIA Communication Committee leader and being a member of the Publications Committee.

### THE CANDIDATE

The ideal candidate would be a marketing manager or salesperson with experience in print and media sales. The role is focused on prospecting, cold calling, presenting, negotiating, selling advertising space with new *AR* clients as well as maintaining the relationships with existing advertisers. The successful candidate will manage advertisement bookings, ensure the supply of appropriate artwork to the WIA's magazine production company, provide invoicing details to the WIA National Office, and follow up client payments as required.

### EXPERIENCE

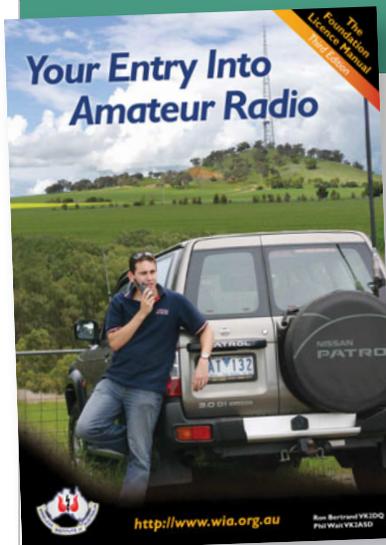
The ideal candidate would possess:

- 5+ years' sales experience.
- Ideally having worked in the print and media sales industry (past or present) or have had experience working for a company where the role and responsibilities included marketing and advertising.
- A good track record of securing new business and achieving sales targets.
- Outstanding business acumen.
- Excellent presentation and communication (both written and verbal).

All applicants should have read and agree with the draft WIA Volunteer Charter.

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## Silent Key

**John Van Galen VK7ZJV**

It is with sadness we inform you of the passing of John VK7ZJV on 26 May 2017.

John first worked for Nichols Radio in Launceston in the 1960s, which is how Peter Dowde VK7PD and Joe Gelston VK7JG met him; he then got a job in the Hydro Electric Commission (HEC) Communications Department and was based at Gowrie Park for a while before moving around with the HEC.

Joe VK7JG first worked with John in 1969 and he was active on 6 m and 2 m in early days of his licence.

John lived at Clifton Beach Southern Tasmania for many years and was involved with Surf Life Saving at Clifton Beach.

Our thoughts are with the family.  
Vale John.  
(Peter VK7PD and Joe VK7JG)



## Silent Key

**Arthur McNarry VK2NE**



It is with much sadness I announce the passing of my good friend Arthur McNarry VK2NE and formerly VK2AAM of Young in NSW.

He was admitted to hospital on 12 May to have a routine surgery, but sadly an infection contracted whilst in hospital took his life.

He passed peacefully on 9 June. A gentleman of radio, a great Amateur and good friend, taken from us too soon.

De Bill Yeomans VK2KT





## Contributions to Amateur Radio

AR is a forum for WIA members' amateur radio experiments, experiences, opinions and news.

Your contribution and feedback is welcomed.

Guidelines for contributors can be found in the AR section of the WIA website, at <http://www.wia.org.au/members/armag/contributing/>

Email the Editor:  
[editor@wia.org.au](mailto:editor@wia.org.au)

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