

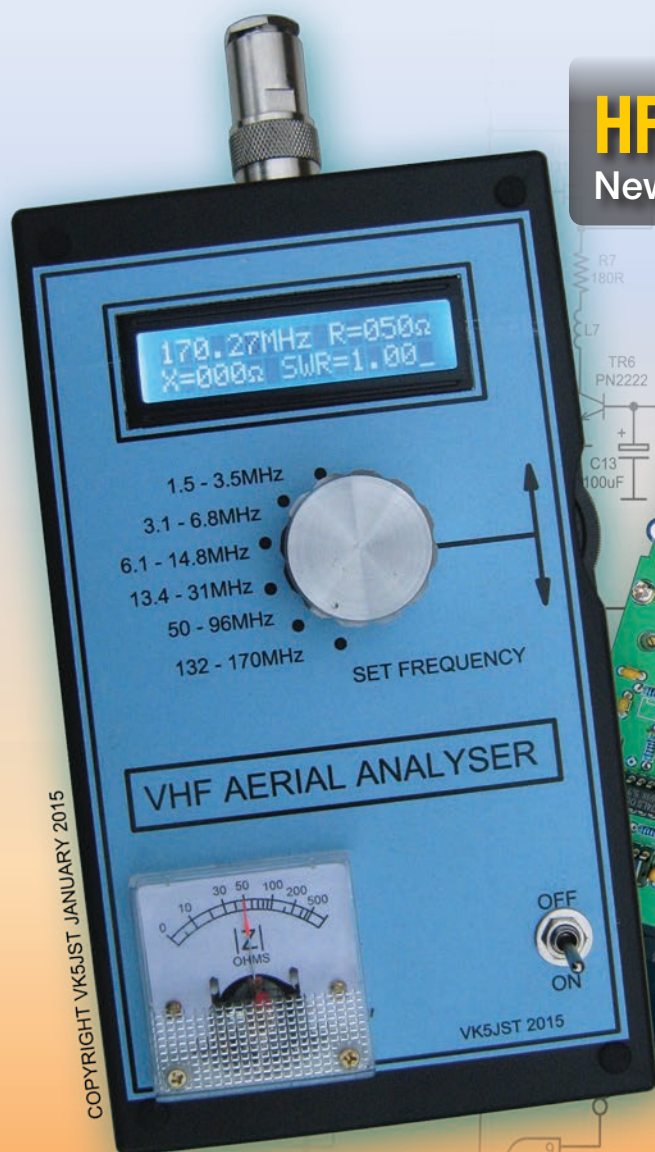
# Amateur Radio

Volume 83  
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December 2015  
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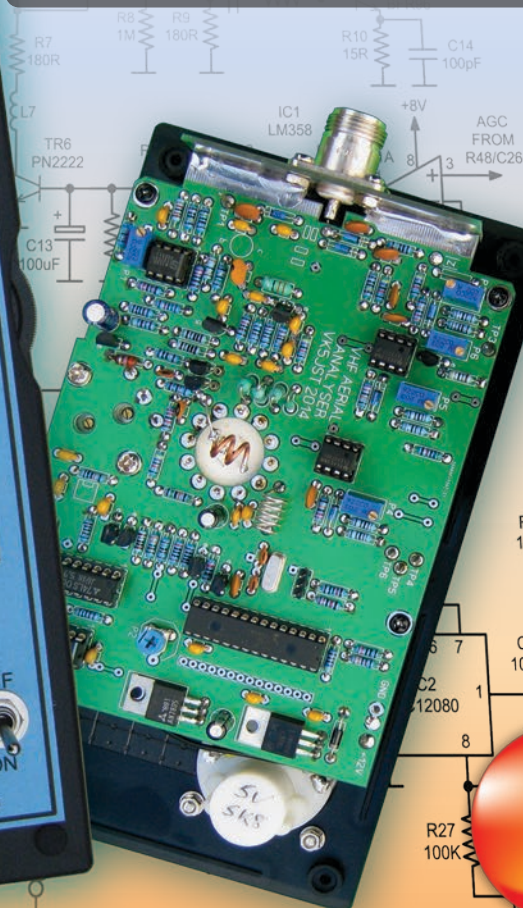


## HF/VHF antenna analyser

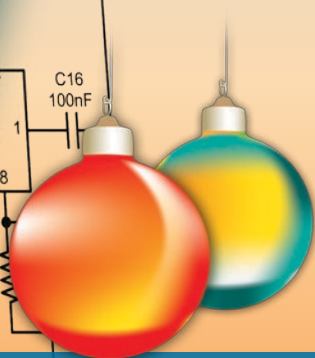
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*Season's Greetings*



► ANZAC Centenary closure ► ARDF report from Japan ► Are you being heard?

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# Amateur Radio

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## Technical

### A VHF/HF Aerial Analyser

Jim Tregellas VK5JST

6



### This month's cover

The latest offering from Jim VK5JST: a  
HF/VHF Aerial Analyser covering 160  
to 2 metres. The price of the kit will be  
attractive, so seriously consider building  
this project. Read the detail in the article  
commencing on page 6. Photos courtesy  
Jim Tregellas VK5JST.

## General

### NARSA Rally, Blackpool, NW England

Julian Sortland VK2YJS / AG6LE

### Are you being heard?

Graeme Scott VK2KE

### Japan ARDF Championships

Jack Bramham VK3WWW

### Closure of the ANZAC Centenary

Jim Linton VK3PC

### Summer VHF-UHF Field Day 2016: fun in the sun!

Roger Harrison VK2ZRH

### WIA navigates 'perfect storm' in the spectrum

Jim Linton VK3PC

### VIOANZAC to try again

Jim Linton VK3PC

## Columns

ALARA 38

Contests 47, 48, 50

CW Today 57

Editorial 2

Hamads 59

Over to You 50, 54

Silent Key 60

SOTA & Park News 55

Spotlight On SWLing 46

VHF/UHF – An Expanding World 43

WIA Comment 3, 5

WIA News 4, 5

VK2 News 30

VK3 News 28, 31, 39

VK4 News 36

VK5 News 41

VK6 News 23

VK7 News 32

## Contributions to Amateur Radio



WIA cannot be responsible for loss or damage to any material.  
Information on house style is available from the Editor.

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 are available directly from the WIA National Office  
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### Photostat copies

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### Disclaimer

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# Editorial

Peter Freeman VK3PF



## Apologies and Farewells

First up, I must offer my sincere apologies to Keith VK6RK and Justin VK7TW. Somehow I missed downloading their respective contributions for the November issue, so they did not reach the publishing house and therefore the magazine itself. Sometimes things just get very busy and I try to keep on top of magazine contributions, but this time I slipped up twice! Both were alerted very early after publication and have been able to incorporate the most germane of the missed content into their columns for December.

Three of our regular columnists have announced that this month will be their last contribution to *Amateur Radio*.

The first to advise me of his retirement was David VK3HZ. He has been compiling our VHF column *VHF-UHF – An Expanding World* for the last 12 years – a sterling effort. David has always endeavoured to deliver the latest news of happening to the magazine. At times, he has pushed the deadlines to the limit, but the column was always there. David sought expressions of interest for someone to take over his role and found an “old timer”. Welcome back David Minchin VK5KK! David compiled the column prior to David VK3HZ taking up the role.

Robin Harwood VK7RH is also stepping back, after 30 years of contributing *Spotlight on SWLing*. Robin has soldiered on with his updates on the activity on the shortwave broadcast bands despite a series of changes, not the least being a change of location and ongoing issues with his hearing. On top of these challenges, the number of broadcasters has undergone significant decline in recent years.

Contests columnist James Fleming VK4TJF has also announced his retirement. James took up the challenge a couple of years ago and ensured the continuance of our Contests column, giving his perspectives of the contesting arena along the way. He feels that he has run out of new things to say, so is stepping down. That means that he will now have a little more time to devote to preparing for and participating in the contests – good luck to you James. The result is that we are now looking for expressions of interest for a new identity to accept the challenge of providing regular updates about the contesting scene. Please flood our Inbox with emails and make our job a hard one to select the best candidate!

Sincere thanks go to all Club and Column contributors, but especially to those who are retiring: your ongoing and regular efforts help this magazine to maintain its character. It has been a pleasure to work with you all.

## Season's greetings

It is almost December again, which means that the Christmas – New Year period is rapidly approaching. That usually means time with family and friends, plus extra travel for many. Do be careful if travelling on the roads and remember that you need to drive for yourself and your passengers AND also keep a close eye out for all those other vehicles on the roads. Keep safe.

A merry Christmas and Happy New Year to all.

Until next time,  
Cheers,  
**Peter VK3PF**







## WIA comment

Phil Wait VK2ASD

### What have the Romans ever done for us?

In the November edition of this magazine, two "Over to You" letters were published that warrant a response from the WIA.

The first is from Rob Cummings VK3NBC. Rob shares his thoughts on why people do not join the hobby, breaking it down to three broad categories of "Difficulty", "Expense", and "Old Fashioned". When I was young, amateur radio had a very high entry barrier indeed; I can remember studying for my Z-call amateur licence in high school economics classes – "Samuelson Economics" was a very large text and could nicely hide the ARRL Handbook. Thankfully, all that changed with the introduction of the Foundation licence over 10 years ago. But, there is still more to do to make the hobby more accessible and attractive.

We would all like to see more youth attracted into the hobby, but my personal view is that they are unlikely to be attracted by the traditional aspects of amateur radio, such as contesting and chasing DX, etc. Rather, I think, they will come into the hobby when they see a benefit in using amateur radio as an educational or communications tool to enhance some other interest, such as space, satellites, robotics, ballooning, yachting, orienteering etc. – think SOTA-type activities. Also, I think there is a strong vocational and educational component to amateur radio which is yet to be fully recognised or developed.

So, if Rob reads my *President's Comment* over the past couple of years, and takes a look at the various WIA submissions in the "Hot Issues" section of the WIA website,

he will see that the WIA largely agrees with him. However, actually progressing these issues is much more difficult due to the rigidity of the legislation and regulations that control us, including the examination syllabi. Hopefully, the current Spectrum Review processes will enable us to have greater control over our own destiny.

As far as membership of the WIA is concerned, at 34% of the total amateur population the WIA does a lot better than most other societies, even the ARRL or the RSGB, which are both running at about 24%. I have always thought that, at any one time, about 50% of licensed amateurs are either not active, or for some other reason (such as their financial status, or something the WIA did many years ago, or maybe they would never join a member organisation anyway), are unreachable and would never join the WIA. If I am correct, the WIA's penetration of the available market would be at much higher levels.

The second item, on page 39, was a copy of letter from Stephen Ireland VK3VM, sent to the new Minister of Communications, Senator the Hon. Mitch Fifield. The crux of the letter was that amateur radio licensing fees should be abolished, or at least significantly reduced, and that the WIA is incorrect in suggesting that the level of service from the ACMA would be affected if fees were reduced.

I refer readers to both the OTY letter from Dale Hughes VK1DSH on page 32 of November, and my President's Comment, also in the November issue, discussing the long-term benefit amateur radio has derived as a licence fee-paying

service. Mr Ireland omits to say that the Commonwealth has in fact just reduced the cost of our amateur licence fees to \$51 – not an insubstantial cut.

Changes to the amateur service are expected to be an outcome of the review processes currently underway within the Department of Communications and the ACMA, but at this stage we don't have a clear view of what those changes will be, and the impact that they will have on the amateur service. The WIA remains opposed to any outcome which diminishes the relative status of the amateur service in relation to other radiocommunications services and, for now, that also involves licence fees.

Where I do have serious issue with Mr Ireland's letter is where he expresses the view to the Minister that the WIA no longer represents the interests of radio amateurs in Australia, and he states that WIA membership is declining at the rate of 100 members per month. This is deplorably incorrect. The WIA's membership declined slightly from 4,465 members at the end of last year to 4,425 members at the end of October 2015, i.e. less than six per month! The rate of new memberships, or lapsed members returning to the WIA, almost compensates for departing members and the increasing number of silent keys.

I think everyone would raise an eyebrow when Mr Ireland raises a view, though he carefully doesn't actually say he shares it, that the fees the WIA charges for reinstating accidental licence drop-offs and

Continued on page 5

## **Celebrate 90 years of the International Amateur Radio Union**

Ninety years is a good innings in anyone's book.

The International Amateur Radio Union (IARU) this year celebrates 90 years standing up for the interests of radio amateurs at the top level of world radiocommunications treaty development at the ITU – the International Telecommunications Union, headquartered in Geneva, Switzerland.

To celebrate this milestone, the IARU is promoting the use of the special callsign suffix '90IARU'.

As a member society of the IARU, the WIA has obtained the callsign VI90IARU to join in the global celebrations with other member societies around the world. So far, 40 stations, each with the 90IARU-suffix, have been heard and another 25 are expected to come on-air very soon. Expressions of interest to use VI90IARU opened last month through the WIA National Office. Both clubs and individual advanced licensees are encouraged to apply.

You need to nominate the date/s and time/s (UTC) you plan to use the callsign. Email your EOI to the WIA National Office at [nationaloffice@wia.org.au](mailto:nationaloffice@wia.org.au)

Give it a thought and get in quick. The sands of time are moving through the hourglass all the while. The IARU is offering a handsome diploma for contacting 90IARU callsigns from 10 different countries that are members of the IARU. Qualifying stations can get the free electronic diploma for QSOs up to 31 December 2015. Diplomas will be issued for contacts using CW, phone or digital modes, or mixed. The WIA will acknowledge all QSLs for VI90IARU contacts it receives through the QSL Bureau.

## **New position for the WIA office**

The WIA is looking for an Executive Administrator for the WIA Office in Bayswater, Melbourne. Candidates are being sought meeting the selection criteria. It's desirable they understand the WIA, amateur radio, have experience in a not-for-profit, community service, membership organisation, or the armed forces.

Ideally they would have strong communications skills, a commitment to excellence, strong analytical and problem solving, an ability to think conceptually as well as creatively, and work within a team environment. Proven administrative skills are required, including proficiency in using a range of software applications, such as Microsoft Word, Excel and PowerPoint, and databases. The full-time contract position which is being advertised answers to the WIA Board of Directors through the WIA President.

The tasks to be undertaken include supervise and coordinate activities of staff, payroll, training, budget and inventory control, review and answer correspondence, and provide executive services for the Board of Directors.

The full advertisement is on [seek.com](http://seek.com), applications close 4 pm (AEDT) on November 30.

More information about the position appears on the WIA website. Inquiries can be made to Fred Swainston on 03 9729 0400.

## **WIA representative on the IARU team at WRC-15**

During the recent International Amateur Radio Union (IARU) Region 3 meeting in Bali Indonesia (October 12-16), WIA representatives Phil Wait VK2ASD and Peter Young VK3MV informally discussed funding for the international work of Dale Hughes VK1DSH.

Dale is Chair of the ITU Working Party 5 (WP-5), which deals with issues concerning the amateur and amateur satellite services. He has attended a series of five meetings by the Asia-Pacific Telecommunity in the lead up to the current World Radio Conference (WRC-15), which is about to be held in Geneva (November 2-27), and which will be discussing a proposed new secondary allocation for the amateur service around 5300 kHz. The work of Dale as Chair of WP-5 has occurred mostly behind the scenes and has been half funded by the WIA members and half funded by the IARU.

The IARU and the WIA have now come to a new arrangement where the international amateur community, through the IARU, will provide a greater share of funding, and will also fund Dale's attendance at WRC-15. The financial load to WIA members is now significantly reduced.

The head of the Australian Delegation to WRC-15 said that Dale is valuable member of the Australian Delegation. He has been doing an excellent job, and both the IARU and the WIA are very appreciative of his valuable time, expertise, and ongoing commitment to the maintenance and expansion of our operating privileges.

Dale Hughes' VK1DSH international work follows that done by many others from the WIA, including David Wardlaw VK3ADW and the late Michael Owen VK3KI (SK). At the IARU Region triennial conference held in Bali in October were the WIA President Phil Wait VK2ASD, and delegate, now IARU regional director, Peter Young VK3MV.

## Emails from the ACMA not spam

Some misinformation has been spread via the internet that suggests emails from the Australian Communications and Media Authority's (ACMA's) Auto Mail system may be SPAM.

The AMCA has advised the WIA that it is using an auto mailer system with the email address [auto\\_mail@acma.gov.au](mailto:auto_mail@acma.gov.au) to send important correspondence and renewal information to licence holders. Amateurs are advised to keep a close lookout for emails from the ACMA with the email address [auto\\_mail@acma.gov.au](mailto:auto_mail@acma.gov.au)

Please be aware you will not be able to reply to ACMA using the auto mailer email address.

As usual, members are reminded to always remain vigilant and take the usual precautions when opening any email regardless of the sender address.

## Licence letters from the ACMA - what they mean

As a part of the new SPECTRA system, the Australian Communications and Media Authority (ACMA) will send revalidation letters to all radio amateurs 90 days before licences are due to expire. This letter, or email, has the ACMA licence number - however it does not include your callsign, or callsigns. You can easily confirm callsigns associated with licence numbers online via the ACMA website.

A Validation Notice is sent to all licence holders, and not just radio amateurs. The purpose of this is to allow licensees to check or change their details, or surrender a licence. If the details are correct, and you do not surrender a licence, then the ACMA wants you to take no action, until you receive a Renewal Notice, which is the time to pay for the renewal.

The ACMA sends an invoice for renewing licence holders, and after you have paid a Renewal Summary will be sent out. Is it worth also mentioning that the renewal notice will not contain your callsign so once again you may need to visit the ACMA website and lookup your licence number to confirm the callsign being renewed.

Now here is an important reminder. If the ACMA does not have your details correctly recorded, it cannot send these letters. For instance, you may have changed your postal address, or failed to update them with your current email address.

Renewal is always the licensee's responsibility. Please check now to avoid delays, or cancellation of your licence, and your callsign being re-assigned to someone else. The ACMA contact details are: Telephone 1300 850 115 and email [info@acma.gov.au](mailto:info@acma.gov.au)



## WIA comment

Continued from page 3

renewals (late payers) benefits the WIA, or persons within the WIA, and this could be the real reason the WIA goes soft on pushing licence fee reductions (i.e. a conflict of interest). Naturally, the WIA charges for the work it does under the Deed with the ACMA, and is independently audited with respect to costs and charges under the Deed. To include such an unsubstantiated view in a letter to the Minister begs readers to draw their own conclusions about Mr Ireland's intention in stating it.

At the end of 2015, there is a view circulating, particularly on social media channels, that the WIA has not been effective enough in its recent dealings with government

and the ACMA. I'm reminded of the scene from Monty Python's "Life of Brian" (said to be the motion picture destined to offend nearly two thirds of the civilized world, and severely annoy the other third), when Reg, aka John Cleese, says: *"All right, but apart from the sanitation, the medicine, education, wine, public order, irrigation, roads, the fresh-water system, and public health, what have the Romans ever done for us?"*

I do have some sympathy for those who think change in amateur radio is happening too slowly. However, as I said previously, we find ourselves in a period when the entire radiocommunications landscape in Australia is being

re-crafted, and amateur radio is only a very small part of that very big picture. The WIA has recently resubmitted to the ACMA our list of proposed changes to the amateur licence conditions (the LCD), first submitted in 2014 and recently updated for the latest submission. Change will come, but we must be patient, and we need to make sure it's compatible with amateur radio's longer-term objectives.

So another year has passed. As I always say, have a very safe and happy Christmas, and see you in 2016, whatever that year brings!

**Phil Wait VK2ASD**  
President, WIA



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[www.wia.org.au/members/broadcast/contribute/](http://www.wia.org.au/members/broadcast/contribute/)



# A VHF/HF Aerial Analyser

*Jim Tregellas VK5JST*

At long last, the 1948 show! No, seriously, I have had a lot of fun developing this analyser which covers all amateur bands from 160 to 2 metres, and won't entirely break the bank.

It features a 1602 LCD display which, like the previous HF analyser, is updated every 100 milliseconds, and shows frequency, SWR, load resistance, and the magnitude of the load reactance. An optional analogue meter is also provided,

which shows the magnitude of the load impedance ( $Z_{total}$ ).

This data has many uses, and as an example, allows impedance minimums to be very accurately located. So it will display the antenna load resistance, when the total load impedance of an antenna system has been minimized by careful tuning and also allows easy development of items like quarter and half wave stubs and measurements like velocity factor.

In combination with the analyser frequency data, it is a very powerful tool.

Readily available through-hole components are mainly used in the construction, and just five surface mount components have to be fitted. And like the previous analyser, a PICAXE processor is used, which is loaded with dear old BASIC through a very simple two resistor interface, allowing anyone to play with the code without having

*Photo 1: Inside the Analyser.*

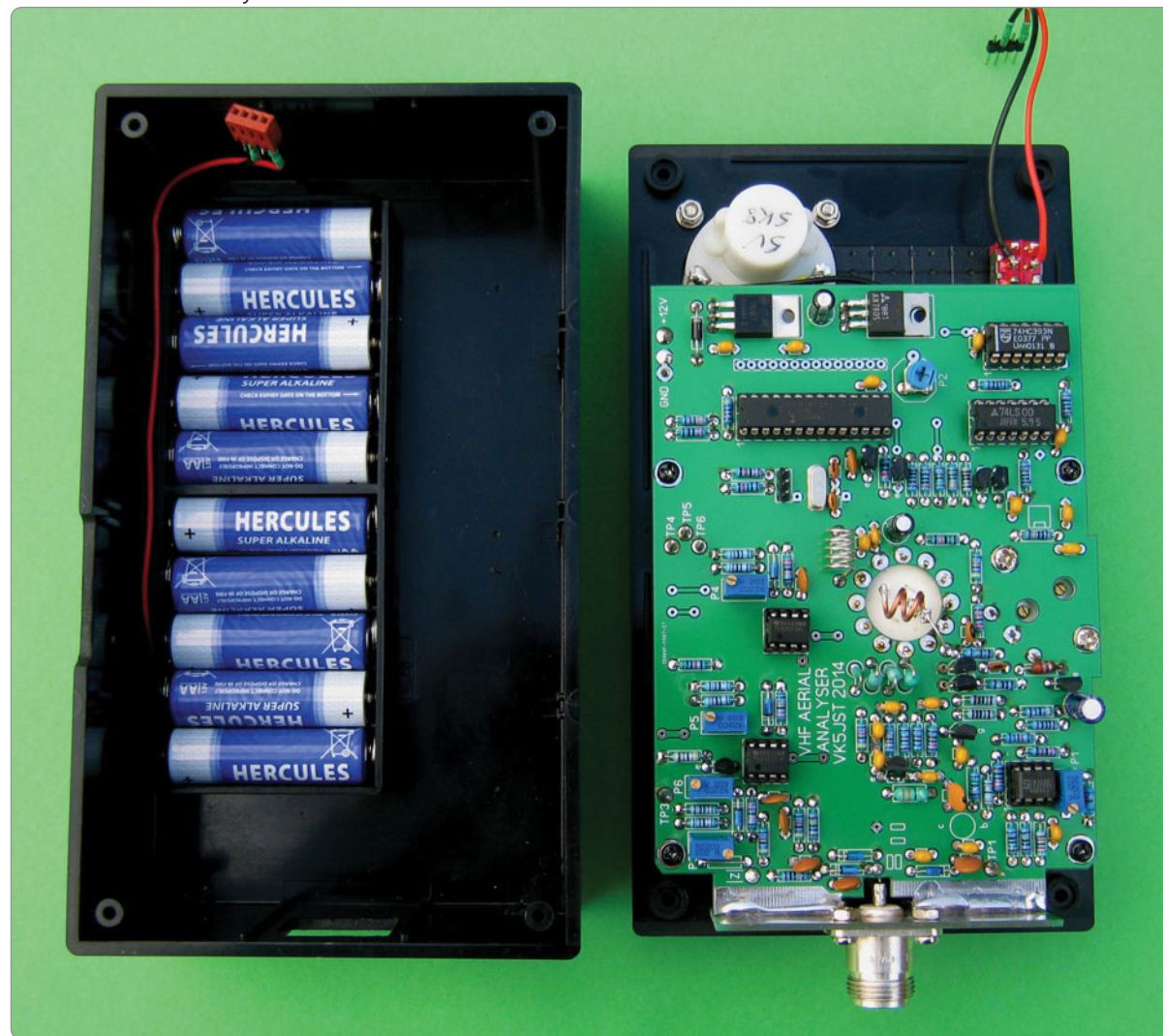




Photo 2: The front of the Analyser.

to buy special programming tools, or learn an abstruse language like C or assembler.

Finally, the analyser uses the best 50 ohm connector around, the type N which is both waterproof and constant impedance. Adapters can be purchased for other VHF quality connectors (BNC, SMA etc.) but please don't fit it with a type SO239. This so-called UHF connector (40 MHz at the time of design) is not constant impedance and simply does not belong on VHF test gear.

### The basic theory

As in the previous analyser, the SWR, load resistance, and magnitude of the load reactance are derived mathematically by measuring three voltages in a simple test circuit. First, the voltage across the load is measured, as is the voltage across a 50 ohm series resistor (from which load current can be derived).

Finally the voltage existing across both the load and 50 ohm series resistor is measured (test network input voltage). The moderately complex mathematics

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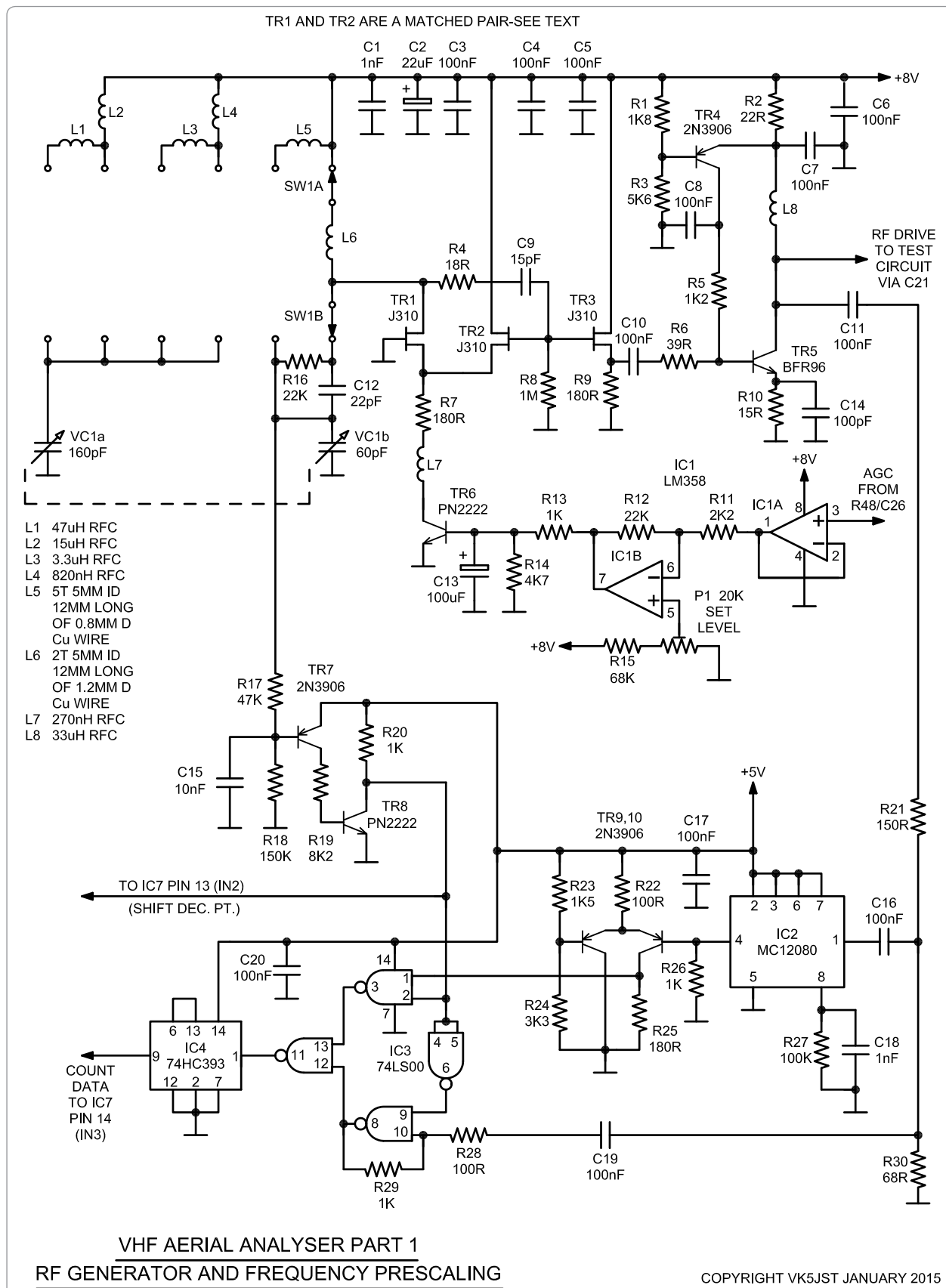


Figure 1: The circuit diagram of the RF generator and frequency prescaling.



for deriving SWR and load R and Z from these three voltages is up on my website, and in the previous HF analyser article, and will not be repeated here.

And, unlike the beliefs of some Internet "experts", only a series resistor is required to do this, and NOT a Wheatstone bridge. The balanced structure of this bridge adds nothing to the accuracy of these measurements.

Note that the voltage measured across the load also provides a non-linear representation of total load impedance and can be used to directly drive the analogue meter too.

### How it works

This test network is the heart of the instrument structure, and a very wide range frequency generator provides 1 volt RMS to drive it. This signal level has been selected to totally bury all but the most exceptional interfering signals on

the antenna being tested, without flattening the batteries too fast.

Unhappily, analogue meters display the absolute value of applied voltage, and so the generator and following test circuit detectors must have a stunningly good frequency response, remaining flat within 1% or so over the total frequency range, so that the analogue meter display of magnitude of load impedance is correct. The oscillator and following power amplifier consequently must have a first class AGC system.

(In a digital only instrument all calculations use the RATIOS of the various test circuit voltages and so this requirement is relaxed greatly allowing a simpler cheaper but less useful instrument).

The oscillator uses a differential amplifier containing a matched pair of VHF FETs (TR1 and TR2). A parallel tuned circuit in the source of TR1 maximises the gain of this transistor pair at a single frequency and the positive feedback path

to create oscillation occurs via the source follower action of TR2 which couples energy back to TR1 via the coupled sources of these two transistors. Another source follower, TR3, buffers the oscillator output from the tuned circuit and drives the power amplifier TR5. This amplifier has a special and unusual bias circuit TR4, which samples the current drawn by TR5 via R2 and sets the collector current of TR5 to the 57 mA required to drive the 50 ohm test circuit with 1 volt RMS, providing some design margin and very little waste. Note that this amplifier has a permanent load composed of 2@100 ohm resistors which are there to limit the amplifier voltage gain when the test circuit has no load. The generator must thus provide 1 volt RMS (with margin) into 40 ohms (+14 dbm) when the item being tested is a short circuit.

AGC to control this structure is developed from a DC voltage



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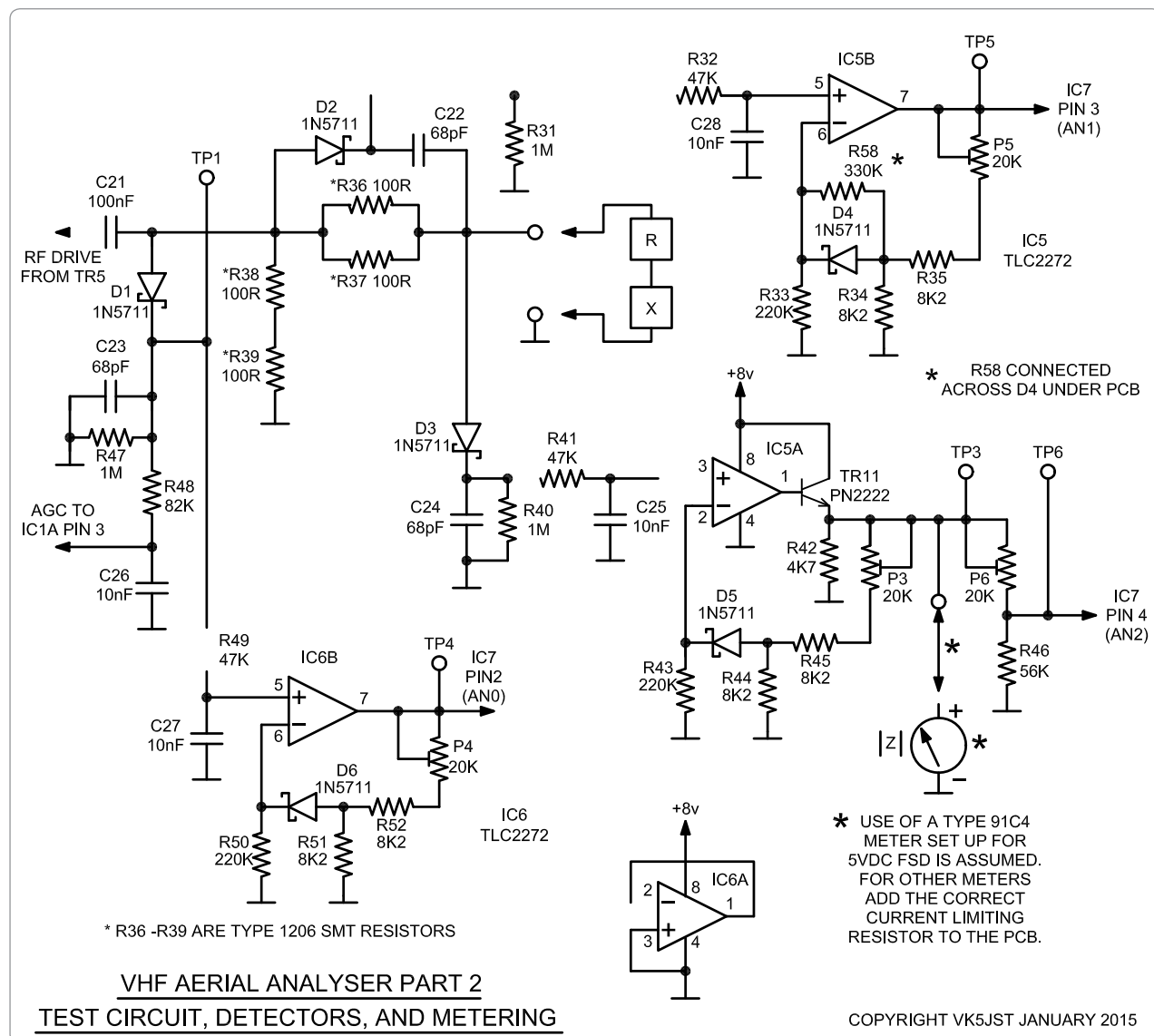
produced from envelope detector D1, C23, and R47. This DC voltage represents the peak value of the RF voltage being applied to the test circuit and is buffered by unity gain amplifier IC1A. The output voltage of this stage is compared with a DC control voltage appearing on pin 5 of the inverting amplifier IC1B (gain of 10). In turn the output voltage of this stage is applied to the base of TR6, which determines the total current flowing through TR1 and TR2, hence determining the total gain of the differential pair and the level of oscillation. The level of oscillation is adjusted with trim pot P1.

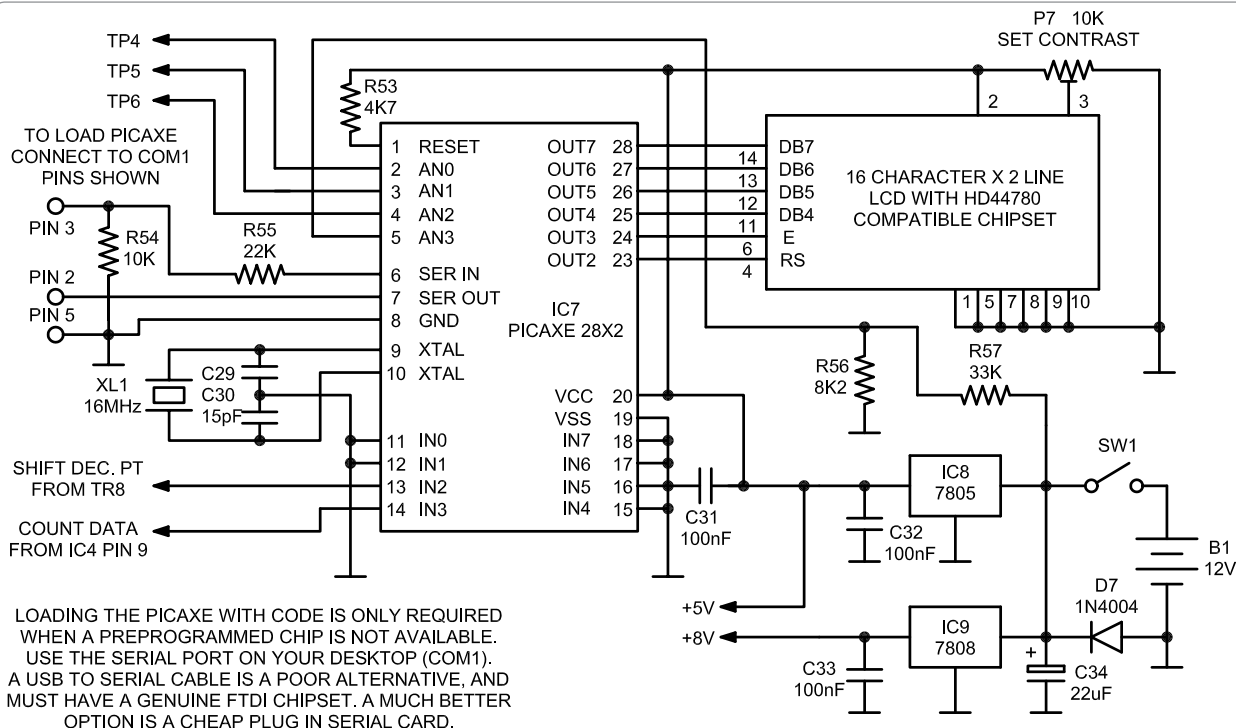
The entire detector outputs from the test circuit (derived from D1, D2, and D3) provide DC outputs which are in turn buffered and have their considerable non linearity's largely compensated for in some following op. amp. circuitry (IC5 and IC6). These three compensated DC output voltages then drive the analogue meter, and the A/D converter inputs of the microprocessor, from which SWR and load characteristics are calculated.

Finally, the generator frequency is calculated every 100 milliseconds or so by the microprocessor. For

frequencies under 30 MHz, a voltage sample from the input to the test circuit is directly routed to IC4 (74HC393) via an amplifying and steering circuit IC3 (74LS00) where it is divided by 256 before being fed to the microprocessor for counting and gating. For frequencies above 30 MHz, some extra high speed pre-scaling is required, and this is done using an ECL decade divider chip IC2 (MC12080). This chip is followed by a non-saturating ECL to TTL translator stage (TR9 and TR10) which in turn provides the second input to the IC3 steering stage. The pre-scaler structure in use is

Figure 2: The circuit diagram of the test circuit, detectors and metering.





### VHF AERIAL ANALYSER PART 3 MICROPROCESSOR CONTROL, DISPLAY, AND POWER SUPPLY

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Figure 3: The circuit diagram of the microprocessor control, display and power supply.

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determined by a logic level derived from the tank circuit of the oscillator. For the two upper frequency ranges, the 8 volt supply rail is connected to the base of TR7 via resistors. TR7 is thus off, as is TR8, and so pins 2, 4, and 5 of IC3 are pulled high via R20, connecting the output of IC2 to the input of IC4 via IC3 and adding the extra pre-scaling. Note that the logic level at TR8 collector is also supplied to the microprocessor to shift the decimal point in the displayed frequency.

## **Building the Analyser-mechanical work**

**Complete all work on the case first.**

Doing assembly in this order allows you to use the bare printed circuit board to check marking out. Marking out is probably most easily done by printing up the case drawings exact size, and attaching them to the correct surfaces of the UB2 box with thin double sided tape. A very sharp scribe can then be used to prick through the hole centres or corners into the plastic. Check the exact size of the LCD you have decided to use. The front panel drawing shows the 24 x 71 mm hole used by industry standard LCDs but yours may be different. For all circular holes, drill a small pilot hole first (around 1.5 mm dia.) using the pricking to centre the drill, and then slowly open out to final size using either a larger drill, or for larger holes, a step drill, fly cutter or hole saw. Using ordinary metal working drills in this sort of plastic is dangerous. Clamp all work and use slow gentle feed rates while drilling.

Use a grinder to reduce the rake angle on the drill leading edges to zero, which will stop the drill grabbing and trying to rip the box out of the holding clamps. The holes for the LCD and N connector can be roughly formed with a jig saw first or by drilling a series of nearly touching holes (around 5-6 mm dia.) just inside the borders of the rectangular hole. It is then carefully filed to final shape. The cut-out for

the tuning knob in the case lid is probably best formed with a half round file. Find something around 80 mm diameter (a tin can or cup) and use this to keep an eye on the circular shape as you file this arc to a depth of 4 mm. The arc can be smoothed off with fine sandpaper to finish it. The case bottom has two items to be formed, the cut-out for the tuning knob in the top surface of the right hand side, and the hole for the type N or BNC connector in the top end of the case.

Please see the relevant drawings.

## **Building the Analyser - initial preparations**

### **The Rotary Switch**

In past designs, the plastic rotary switch used for frequency range selection has caused much confusion because builders will not take the time to learn how to set them up properly. The 6 position 2 pole switch used in this instrument can be rotated through twelve possible positions, and so rotation can either start clockwise from position 1 or anti clockwise from position 12.

Just how many positions are available is determined by an adjustable travel limiting stop to be found under the main mounting nut. So you can make any 2 pole switch with from 2 to 6 positions, starting either at pin 1 or pin 12. To set up the switch in this instrument, first remove the adjustable stop entirely and then, looking at the front of the switch, rotate it fully clockwise to position 12. Then put the travel limiting stop into position 6 (between the L and P in the ALPHA brand). Done!

Note how it is placed into the printed circuit board with the central common terminals being placed at the 4 and 10 o'clock positions, looking at the back of the switch on the component overlay drawing, with the N connector at the top of the diagram.

BEFORE you solder it into

position, check with your ohm meter that the common terminal at 4 o'clock bridges to the 6 outer terminals between 12 and 5 o'clock. The common terminal at 10 o'clock will thus sweep through the switch positions from 6 to 11 o'clock.

Make a mistake here and you may very well wreck the PCB when you try to de-solder the switch from it. And finally make your soldering quickly. These switches go open circuit when exposed to excess soldering temperature/times.

## **The optional analogue meter**

The meter used is available very cheaply on the "net" and typically can be bought as a type 91C4 or 91L4 with a built in series resistor for 5 volt FSD. This meter just requires rescaling and here is how. Buy a single A4 Avery label sheet (80- 100 gsm) from your local stationer, and print the meter scale on to it from the PDF to be found on my website.

With a very sharp pointed hobby knife cut out the meter scale.

In a CLEAN environment, remove the meter face and scale. Remove the label backing, exposing the sticky back. The label goes on the back of the existing scale. Carefully align the top of the label with the top of the meter scale and then stick the two together, removing all air bubbles. Cut around the bottom of the assembly with the point of a very sharp hobby knife and then reassemble the meter.

If you cannot get a 91C4 meter with a 5 volt scale, note that any 91C4 meter with a voltage scale can be used. All you have to do is remove the internal series resistor (see the photo on my website) to convert the volt meter back to a current meter.

The correct resistor to give full scale deflection with 5 volts DC applied is then added to the PCB in the position marked "TEXT". Depending on exactly which meter you bought, this resistor could be anywhere from 2-100 kΩ. Start at the high value first. For 5 V FSD

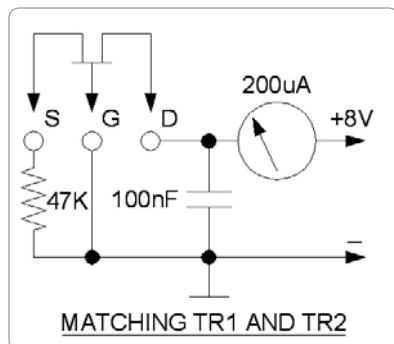


Figure 4: The circuit for matching the current characteristics of the FETs TR1 and TR2.

meters, the PCB "TEXT" positioned is bridged with a shorting link.

## Matching TR1 and TR2

It is vitally important that these FETs are carefully matched. Failure to do so will result in an oscillator/power amplifier which probably works correctly on the upper two frequency ranges but "squeggs" on all other ranges i.e. puts out short bursts of RF at a low audio frequency. This occurs because the AGC is unable to back off the oscillator gain enough, owing to the mismatched devices.

DO NOT mix brands when matching.

I bought a batch of 20 J310 FETs from the "net" and matched them up using the simple circuit shown in a standard prototyping whiteboard. The spread in current was from 50-92 micro amps over the batch. I matched up three pairs at 53, 73, and 94 micro amps within 1.0 microamp and experienced no problems with squegging in the analyser. I used the 73 micro amp pair in the final prototype. Note the bypass capacitor in the test jig. Without it the FET may oscillate at VHF, upsetting the matching. Make sure it is connected directly between gate and drain with the shortest leads possible.

## The coils

The coils for the two upper frequency ranges are wound on the shank of a 5 mm drill. The highest

range uses a 44 mm length of 1.2 mm dia. copper wire formed into two turns and quickly soldered between the two common terminals of the rotary switch.

Do this BEFORE mounting the switch on the main PCB. The other coil comprises 5 turns of 0.8 - 1.0 mm dia. copper wire. Carefully scrape and tin the ends of both coils before assembly.

## Final Assembly

First, solder the connector printed circuit board to the mainboard. Use the two alignment ears provided at the edges of the connector board copper pattern to exactly centralise it relative to the main board, and tack it into position using minimum solder. Check that the two boards are at right angles and then complete all soldering forming four strong bonds between the two boards. Use at least a 45 watt iron for this.

Next, add all small components to the PCB using the component overlay and circuit drawings as guides.

**ASSUME NOTHING!!!**

Use your DVM to check the value of every resistor before installation.

Depending on who made them, the PN2222 and 2N3906 come with two different pinouts and for this reason, the locating flats on these transistors are not shown on the component overlay. Check the pinout of your transistors using the current gain feature on your DVM. An indicated current gain of more than say 40 shows you have the correct pinout. The BFR96 is mounted on the track side of the PCB with its label facing the PCB surface. Trim the three leads to an appropriate length. The collector is the long lead.

USE IC SOCKETS. Note that the MC12080 and 4@100 ohm surface mount resistors are also mounted on the track side of the PCB. The lead lengths of all capacitors should be kept as near to zero as possible. Do not expect the analyser to work

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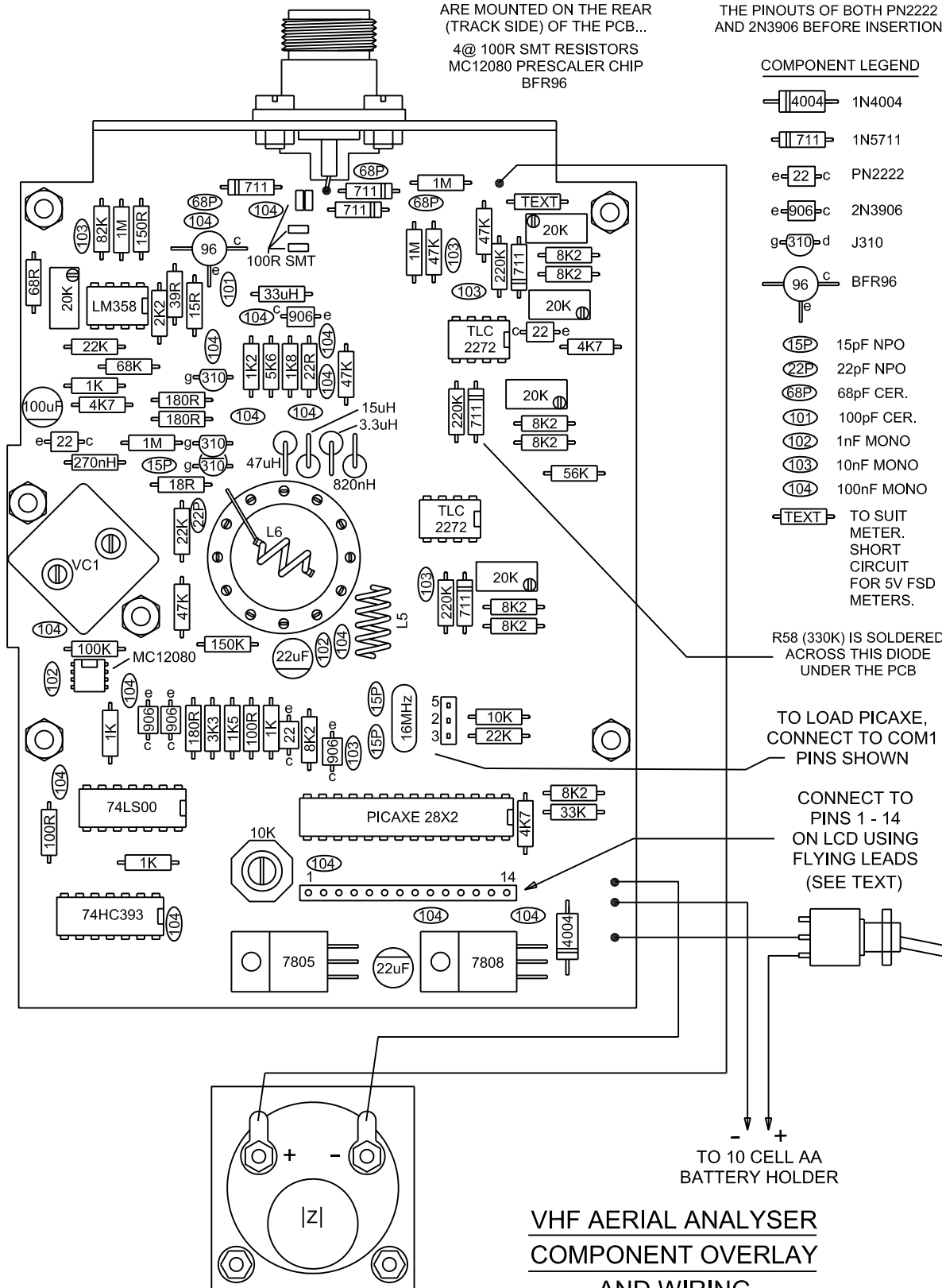
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properly if you have used anything other than the multi-plate monolithic bypass and coupling capacitors specified and/or have the capacitors sitting up in the air on the end of 4 mm long leads.

Mount all of the trim pots with their adjustment screws in the position shown on the component overlay. This will allow you to reduce each test voltage by rotating the screws in an anti-clockwise direction.

**\*\* USE YOUR DVM TO CHECK  
THE PINOUTS OF BOTH PN2222  
AND 2N3906 BEFORE INSERTION**

### COMPONENT LEGEND



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Figure 5: Component overlay and wiring diagram.



When adjusting a 25 turn trim pot, it is very easy to become totally confused if you do not take this simple precaution.

Do not plug in any ICs yet. Double check the orientation of all diodes and electrolytic capacitors. Leave the mounting of the tuning capacitor and rotary switch until last. Before you mount the tuning capacitor on its little daughter board, adjust the two trimmer capacitors at the back of the capacitor so that they are totally out of mesh. Attach the tuning capacitor assembly to the TRACK side of the main PCB using 12 mm long spacers. Last, mount the rotary switch assembly (switch and 2 turn coil) on the TRACK side of the pcb making sure that the two common terminals are positioned as shown on the component overlay at 4 and 10 o'clock (see also the earlier paragraph "The Rotary Switch").

Attach the N connector to its PCB with 3 mm screws and nuts, and connect the central terminal to the main board using the shortest length of wire possible.

Finally solder on all main board flying leads, using 180 mm lengths of multi-coloured hook up wire.

Assemble the front panel. Mount the meter and on/off switch.

Mount the LCD to the front panel using two thicknesses of 2 mm thick double sided foam tape at the display top and bottom (from your local "Cheap" shop). Add the four 30 mm long screws which support the main board to the front panel using 4@ 3 mm nuts. Use another 8 nuts to space and hold the main board away from the front panel by 21 mm.

Complete all wiring. Note that it is possible to interconnect the LCD and main board using 9 wires instead of 14, provided that you connect all of the earthed points together on the display. As both +5 V and ground are available at the display terminals, it is also a simple matter to add backlighting if your display has it.

To do this, ground pin 16 (if your display has a standard pin out). Assuming that the LCD has around 100 ohms of LED current limiting resistance built on to its PCB, battery life can be maximized by placing another 120 ohms between +5 V (pin 2) and pin 15.

Finally attach the 10 cell battery holder to the bottom of the box, again using 2 mm thick double sided foam tape.

## Testing and Setup

Select the lowest frequency range and insert IC1 only. Monitor the total current drawn with a DVM (2 amp range). Switch on. The total current should be under 100 mA if all is well and the upper line of the LCD should show a row of black squares after the contrast trim pot has been set correctly. Check TP1 with a DVM and adjust P1 until 1.17 volts appears there. Check the output with an oscilloscope for 2.8 volts peak to peak (1 volt RMS) of good clean sine wave that should now be present. Switch through all frequency ranges and then

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go back to the lowest frequency range. The voltage at TP1 should remain within 1% (1.16- 1.18 volts) indicating a very flat RF output level over the total frequency range.

Switch off and add all other ICs except the PICAXE processor.

Switch on.

Set TP4 to 4.40 V using P4. Then using P3 set TP3 to 5.00 V (no meters) or full scale on the "Z" meter. The voltage at TP3 to produce FSD on the meter should be within the limits 4.8-5.2 volts. If it is not, adjust the value of meter series resistance until it is. Note that many anticlockwise turns of the trim pots may be necessary to reduce this test voltage to 5 V.

Add a really good 50 ohm dummy load to the output (type N 50 ohms 0.5 W and good to 1 GHz). Adjust both TP5 and TP6 to 2.06 volts using P5 and P6.

Switch off and add the pre-programmed PICAXE 28X2.

Switch on.

At start up, after the contrast trim pot is further adjusted to give the best display, the LCD should indicate the battery voltage within 5%. A few seconds later, it will indicate the frequency, load resistance (50 ohms), magnitude of load reactance (zero ohms) and SWR (1.00). Now switch through all the frequency ranges and check that the SWR remains under 1.05 and the indicated resistance stays within the range 48-52 ohms.

The reactance  $X$  should remain at zero. If all is well, go back to the lowest frequency range and load the output with a 0.25 W 150 ohm metal film resistor. A resistance of 150 ohms  $\pm 10\%$  should be indicated with  $X=0$ . Also check using a 10 ohm resistor. Please note that the exact test point voltages required to produce the above results depend to a small degree on how well the resistance of the dummy load matches that of the internal 50 ohm current sensing resistor (R36//R37) and the relative matching of the diodes in the three envelope detectors.

Bluntly, you may have to play around very slightly with P5 and P6 to get the best compromise over the total frequency range. Note that the setup procedure forces the microprocessor to calculate and display a load resistance of 50 ohms, cancelling all tolerances in both the internal 50 ohms and dummy load, and so the analogue meter and LCD figures may not exactly agree. Tweaking P3 slightly can resolve this difference.

Both the indicated frequency and battery voltage may be slightly in error due to component tolerances.

See my website for the software tweaks to fix this.

### Final comments

Having just waded through what is quite a complex set up process,

builders will probably be wondering why at VHF, when there is nothing attached to the N connector, the analyser does not show infinite SWR and an open circuit.

The answer is quite simple. Ordinary 50 ohm transmission line has a capacitance of around 100 pF/metre and an inductance of around 0.25 uH/metre, and the analyser has a permanently connected length of 50 ohm line (30-35 mm long) connected to its measurement bridge in the form of the N connector. So with nothing connected to the analyser the measurement bridge sees around 3-4 pF of connector and stray capacitance (250 ohms @ 160 MHz), while if you "short" the output, the analyser bridge sees around 8-9 nH of connector inductance (9 ohms @160 MHz). There are some small losses too which will also be indicated.

None of this really matters in normal measurements, because you used a nice 50 ohm N connector, instead of a horrible, anything but 50 ohm, SO239.

The 30-35 mm of connector length simply becomes part of the connecting transmission line and disappears. The connector length only becomes important in odd applications such as the making of phasing lines to connect multi antenna arrays together at VHF. In this case, you will have to make the phasing line 30-35 mm longer than

the analyser indicates.

Anyway, many congratulations.

You now have a piece of test gear which will conclusively demonstrate why the transistors in your transceiver final stage recently went pfffffft.

### And really finally

My profound thanks to my two very good friends Barry Williams VK5BW and Wolf Langmair VK5WF, who waded through my initial drafts of material for this project, and somehow, despite the many errors I made, managed to construct two working prototypes, and tactfully tell me about my blunders at the same time. If you do make one of these analysers successfully, it is in no small way due to the efforts of these two.

### References:

- VK5JST web site <http://www.users.on.net/~endsodds/> for printed circuit boards, software, photos and many more details.
- Adelaide Hills Amateur Radio Society website <http://www.ahars.com.au/> for a complete kit of parts.

*Editor's Note: The Parts list and mechanical drawings can be found in the Digital Edition and on the WIA website:*

<http://www.wia.org.au/members/armag/2015/december/>



### Contribute



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

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

# NARSA Rally, Blackpool, NW England

Julian Sortland VK2YJS / AG6LE

The largest amateur radio event in northern England is the Norbreck Radio, Electronics and Computing Exhibition held in Blackpool on a Sunday in early to mid-April.

It is also the largest single day show in the UK, and is organised by the Northern Amateur Radio Societies Association, NARSA. The next will be the 54th, held on Sunday, 10 April 2016, at the Norbreck Castle Exhibition Centre, opening at 10:30 am, with those with a disability allowed in 15 minutes earlier. Admission is £5, with free parking in the motel grounds.

It is held in the large ball-room, and a second hall, making it an all indoor event. There are around 50 traders and 40 clubs. These include the RSGB membership and book stands, Moonraker Antennas, SOTA Beams, BHI Ltd, Czech Morse Keys, Ham DMR (Digital Mobile Radio), major retailer Waters & Stanton, and Practical Wireless (a magazine). There are additional antenna, amplifier, and accessory companies. One interesting seller is Kanga Products, which markets a range of QRP kits, run by a former Australian resident. There is also a surplus market.

The hotel is located to the north of the major Blackpool attractions. There is a light rail which runs up the beach-front, between these and the venue.

Rally site: <http://narsa.org.uk/>

I attended the 2014 event and drove from Gladstone's Library (Britain's only residential library) in Harwarden, just inside NW Wales; with a break in Wigan, which has a canal and lock, now used by narrow-boats. See: <http://www.gladstoneslibrary.org/>

The other option to get there is rail, although Sunday morning services from London Euston are generally slow, totalling 3h 37m; and the first service does not arrive until

lunch-time. There is a change at Preston. Thankfully, April is before the peak season, and accommodation is affordable, with current web prices for the Norbreck at A\$80. B&Bs may be a little less. Weekday and Saturday services typically take around 2h 45m, with hourly services on Saturdays. Long distance rail services can be booked well ahead, at <http://www.nationalrail.co.uk/> or via a number of agency websites, with the tickets picked up by inserting the exact same card into the ticket machine at the station, or they can be mailed to an accommodation address. Off-peak fares are typically between £20 and £35.

The ocean view includes the two banks of wind turbines along the North Wales coast. A significant attraction is the Blackpool Tower, which has an enclosed observation deck (Blackpool Tower Eye) with a partial glass floor 148 metres above street level, this being "The Walk of Faith", and two outdoor levels above this. If handhelds are allowed on the tower, it would be easy to make contacts to Isle of Man (GD), Wales and perhaps to Ireland (assuming they are not all at this event).

I carried on to Lancaster, near Morecambe Bay, then to Lockerbie in Scotland and back to Ripon (visiting RADARS for a US exam) and finally Newcastle, for the DFDS ferry to IJmuiden. The Bergen ferry sadly no longer runs.

Advanced VK amateurs can operate using an M/ prefix in England, under our arrangement with CEPT, for example M/VK2YJS. In Scotland the prefix becomes MM/, in Wales MW/, and MI/ in Northern Ireland. The prefixes for the Crown Dependencies prefixes are, for Isle of Man MD/, for Jersey MJ/, and for Guernsey MU/. M is one of the UK prefixes, along with G

and 2. As a British amateur moves around the UK, they insert the second letter used above, or use none in England, except 2 stations use 2E in England. Club stations use a different set of second letters, or GB for special events. In the Republic of Ireland, use EI/ on the mainland and EJ/ on offshore islands, with the /M or "Mobile" suffix if mobile. /P is not required while Portable. France is F/, with variations for islands, extending as far as FK/ in New Caledonia. Netherlands (European component) is PA/, and Norway, LA/.

UK amateurs (and visitors) have access to the 4 metre band, covering 70 to 70.5 MHz. Many other Region 1 countries have similar permanent or test allocations. I ordered a Wouxun KG-UV6DL (aka D/L) from ML&S, and had it sent to my friend's address. These are well made, and easy to use, and mine has become my 2 m HT of choice. Note that the small size of the band dictates that narrow (10K1) FM is often used in this band, an option which the radio offers. See: <http://www.70mhz.org/>

A final location of interest is Caernarfon (then Carnarvon) on the Menai Strait in north-west Wales, from which Marconi sent the official direct message, from Britain to Australia. The transmitter was at Waunfawr and receiver at Tywyn (then Towyn). The historic 1' 11½" gauge Welsh Highland Railway (*Rheilffordd Eryri*) departs from Caernarfon. I stayed in a B&B at Rhôs-on-Sea, home of the Welsh Mountain Zoo, Bryn Euryn (a peak with great views – take your HT), Rhos Fynach (an ancient pub with great food) and the tiny St Trillo's Chapel; and close to Llandudno and the Great Orme, a large headland. Use Colwyn Bay (*Bae Colwyn*) station.





# Are you being heard?

Graeme Scott VK2KE

I've noticed over many years of operating (from 1958 actually) that amateur radio operators have good intelligibility and sometimes very poor intelligibility when operating in telephony.

So I've decided to write a piece that may be helpful for operators on air.

The male voice is divided into 4 categories – counter tenor, tenor, baritone and bass. So most operators will fall into one of these categories and so then thought needs to be put in to optimize the intelligibility of our voice when on air.

What we need to keep in mind is that the frequency range for communications is approximately 300 Hz to 3 kHz and so the bandwidth is very limited and thus cannot be considered HiFi! So we need to do everything we can to make our signal (voice) heard clearly when using telephony.

## Speakers

I recently came to consider the above when operating mobile on 2 metres and also on HF.

I had installed a small speaker in the car and this speaker was in use on the IC-706 transceiver on both 40 metres and on 2 metres.

I have two speakers in the car; one is connected to a scanner so I can hear aircraft channels and other services while I'm mobile. The other speaker is connected to the IC-706 which covers HF, VHF and UHF. The 2 speakers were quite different types, the one on the scanner was a cheapo and had very poor audio while the one on the IC-706 was a much better type that came from an old mobile phone installation and was in use before Bluetooth connection to the car audio system came into common use. The difference between both speakers was quite stark and it didn't take me long to get rid of the cheapo

and install a second mobile phone type speaker. The result was far better intelligibility of incoming signals.

I've recently found that 8 ohm speakers of the type I'm referring to are available from Jaycar shops.

I guess at my age (septuagenarian) we need everything going for us to hear an operator's voice clearly.

## Speech delivery

Some operators have good sharp, clear audio while others are not so clear and I began to think about the problem. Some operators also speak very rapidly and this does not help too. When I'm operating mobile, I'm contending with car noise and traffic noise as well as road (tyre) noise. Often the operator talking to you does not take into account the background noise that we have to compete with when mobile; however in a quiet shack it's a very different matter of course.

## Voice considerations

Once we know our voice and its characteristics, we can do things to make our voice as clear as possible when on air.

Some rigs and microphones are good and others leave a lot to be desired when it comes to the matter of clear, sharp audio. If you have a baritone or bass voice then your transmitted audio will seem rather 'bassy' and possibly quite muffled.

If you are a tenor then your voice will contain some of the higher frequencies and will thus be more intelligible. Besides the car noise that competes with your audio to mobile operators, you have to take into account band noise, fading, QRN and QRM that all adds to the job of the mobile operator to hear you effectively. (I've been known to keep some QSOs short when talking to an operator whose audio is pretty bad – it's just too hard trying to make out what he's saying!)

## Microphones

There are many microphones that are used on air and some are better than others believe me.

So we need to look at our voice type and use a microphone that suits our own particular voice type. There are some desk microphones that can provide some contouring of the audio so that the overall communications is optimized by rolling off some lows and maybe boosting the highs a bit. Muffled – 'woofy' audio is to be avoided if you want other operators to hear you clearly. So a bit of experimenting on air with a helpful operator can assist you in improving the intelligibility of your transmissions.

## Room acoustics

I recall many years ago talking to a mobile operator on 2 metres and the background noise on his signal was atrocious. I asked him if he had the window open in his car, he said "yes", and I said "close it and let's see what it's like then". The improvement in his signal intelligibility was quiet amazing - his wind and road noise was not helping one bit.

If we are operating from a shack or a room in the house we can do things to improve the audio we are transmitting. Some suggestions are: put carpet on the floor or a large rug. Also put some thick curtains on the windows and the echo and reverb will be greatly reduced thus leading to much better audio.

Sometimes I've been in QSO with an operator who has a TV, radio or another rig going in the background. It's a very good idea to switch them off while on air to improve your outgoing signal and improve the courtesy to the other operator with whom you are in QSO.



# Japan ARDF Championships

Jack Bramham VK3WWW



Photo 1: Team Japan another team full of tough competitors.

It is Friday 4<sup>th</sup> September 2015 and VK3TJN, VK3FDAC and I are waiting for the 0850 bus to pick us up from Kawaguchiko Train Station in Japan. From here we are off to Mount Fuji where we will attempt to make it to the summit. As the climbing season has just finished, many of the bus services have been cut back leaving us about seven hours to climb and up and down Mount Fuji. Some readers will be aware that on average it takes 5-8 hours up and 3-5 hours down. So, you can imagine our disappointment when the bus filled up and left us standing at the bus stop. What happened next you ask, did we make it - more about Mount Fuji later.

We are here in Japan representing the WIA for the 10<sup>th</sup> Region 3 ARDF Championships. Our team has five competitors and one International Referee. Team members are: Ewen VK3OW, Jenelle VK3FJTE, Bruce VK3TJN, Kristian VK3FDAC and myself VK3WWW. Our International Referee was Greg VK3VT. Before the event we were spread out all over Japan as most of

us decided to tour Japan before the competition rather than after. Arrival day was Sunday 6<sup>th</sup> September; this is the first time all of the team members were in the same place. Our accommodation was the Sanyo Hotel Shibukawa-shi Gunma-ken Prefecture about three hours north of Tokyo in an alpine area.

Societies attending the event are ARRL (USA), CRSA (China), CTARL (Chinese Taipei), JARL (Japan),

KARL (Korea), KFRR (Kazakhstan) and WIA – in all 111 competitors. For the event JARL enlisted the help of the Gunma-Ken ARDF group and other volunteers who organised all of the ARDF events and associated activities. Unfortunately weather conditions were not great with consistent rain every day except for the last day of competition when the sun came out and the humidity rose quickly. Running in the rain, trying to keep your 80 m or 2 m receiver dry is a difficult task, especially during the Sprint Event where the rain absolutely poured down. There were a few sessions of applying a hair drier to bring some 80 m receivers back to life. I must congratulate the organisers who soldiered on in the most adverse conditions. With all the rain came muddy shoes. As most would be aware the Japanese have a strict culture with shoes and 111 plus muddy pairs of shoes about to enter the hotel were a big problem. Quickly the organisers came up with a solution which was to hose down the shoes of every competitor and official just before they entered the hotel.

Did we do any good? You may remember my last report from the

Photo 2: Typical competition day: more rain.





Photo 3: Team China: so much youth in the team.

2014 World Championships in Kazakhstan where I mentioned that against the rest of the world we were not good enough to medal but if we were up against Region 3 only we would fare a lot better. Well I did not tell a lie, we had an excellent result: including the M60 team result: three Gold, four Silver and five Bronze Medals for a total of 12 medals. Not bad for a team of five competitors. Even better, each of the five managed to gain one or more medals. Our stand out competitor was Kristian VK3FDAC in the M21 Category managed two Gold medals and one Bronze medal.

Congratulations to the whole team on an excellent result in very trying conditions.

In a previous article I mentioned the possibility of Australia hosting the 2018 World ARDF Championships. Our local group had met many times discussing this event. Just before the Region 3 Championships, I informed the

Chairman of the Region 3 ARDF Committee that we were keen to host the 2018 World ARDF Championships. Region 3 now had two offers to host this event and after a democratic vote it was decided that KARL (Korea) would host the 2018 World Championships Event.

Lately there has been some discussion about attracting more youth into amateur radio. It is interesting to note that teams from KARL, JARL and especially CRSA seem to have no problem in attracting young competitors into the sport of ARDF. In Europe I have also noticed a similar trend. Locally the Victorian ARDF Group is constantly promoting ARDF in the orienteering community and from this association they have had very good success in getting orienteers not only interested in ARDF and in many cases obtaining an amateur licence as well. In his early 20s, Kristian Ruska tried ARDF

at an orienteering event and was hooked. He now holds the callsign of VK3FDAC and combining his orienteering background with ARDF, Kristian is right up there with many of the elite ARDF Competitors both in Region 3 and the rest of the world. Most Australian amateurs see ARDF as an active sport and shy away from it. Too much exercise I am told. Well most amateurs that try ARDF really enjoy it. But, even so it is difficult to get this part of the hobby to grow like it has in other countries.

Now back to Mount Fuji. Nearly all of the VK team arrived in Japan early to experience Japanese culture and see some of the spectacular countryside. Part of that experience was for three of us to attempt a climb to the Mount Fuji summit. Mount Fuji is part a World Heritage Listed Park (also a SOTA Summit). With a height of 3770 m and during the climbing season it is a magnet for thousands of daily tourists and locals as a must see and for many a must climb.

After missing the first bus from Kawaguchiko Station, a second bus was arranged for the remaining passengers. We arrived at Fifth Station (2200 m) 1005 and had a strict schedule which left us with about four hours of climbing time. Bruce and Kristian are very fit and in the four hours managed the 3770 m summit. My effort after 3.5 hours of climbing got me to 8<sup>th</sup> station at 3100 m. Before I descended, I had a little time to play radio but as I did not have a JA reciprocal licence, I was not able to transmit whilst in Japan. So with the aid of an iPad Mini, Wi-Fi Hot Spot and Communication Headset and with the aid of a Pig Remote, I was able to connect to my home station in Vermont Victoria, open a couple of local Melbourne repeaters and talk to some local amateurs. For those interested here is a link to one of the contacts I had: [https://youtu.be/nm4W8YSME\\_0](https://youtu.be/nm4W8YSME_0)

We all had a great time in Japan and attending an event

Table 1: WIA Team Results.

Competitor	Callsign	Category	2 m ARDF	80 m ARDF	80 m FOXOR	80 m Sprint	Total
Bruce	VK3TJN	M50	3	8	4	9	1
Ewen	VK3OW	M60	5 *2	6 *3	2	2	4
Jack	VK3WWW	M60	4 *2	4 *3	5	7	2
Jenelle	VK3FJTE	W60	DNF	DNF	1	3	2
Kristian	VK3FDAC	M21	1	3	1	7	3
			* Team				





Photo 4: VK3FJTE, VK3OW, VK3FDAC, VK3WWW, VK3VT, VK3TJN.

Photo 5: VK3FDAC 2m gold.

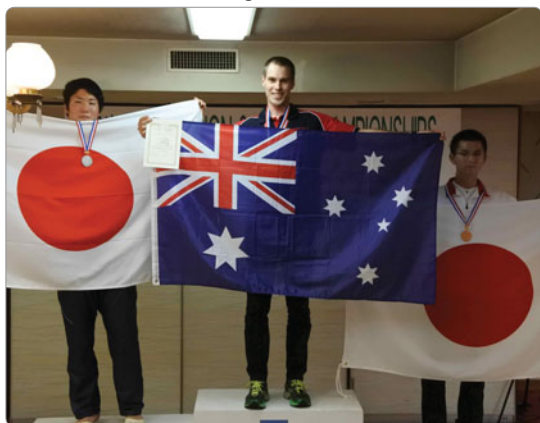


Photo 6: VK3WWW Remote Radio Mount Fuji.

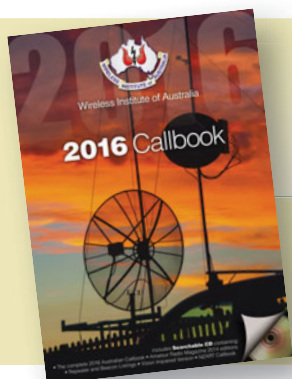


like the ARDF Championships is a great way to not only meet a lot of international amateurs but also sample the local food and culture (Not too fond of the futons and low tables though).

In 2016 the World ARDF Championships are in Bulgaria but at this stage I am not sure if there will be a WIA team attending. Our next Region 3 Championships will be in 2017 but the host society is yet to be announced. There are a couple of options but nothing confirmed so we need to wait and see.

For more information regarding ARDF in VK you can email me [vk3www@wia.org.au](mailto:vk3www@wia.org.au) or see the national ARDF webpage [www.ardf.org.au](http://www.ardf.org.au)

**Jack Bramham VK3WWW**  
WIA ARDF Coordinator



# WIA 2016 Callbook

**Available** now



# Closure of the ANZAC Centenary

Jim Linton VK3PC

The Wireless Institute of Australia (WIA) is inviting all to join the 'last hurrah' of its successful ANZAC 100 program, to be held over two weekends from December 12 to 20.

The end of the event is timed with the departure of Australians and New Zealanders from the ANZAC area of Gallipoli.

The last ANZAC to leave at 4.10 am on December 20 was Colonel J Paton, in charge of the 'rear-guard'. The Turks, then the enemy, were unaware that a major evacuation

had taken place.

The battle began on April 25, 1915, and that date is commemorated as ANZAC Day - when all war veterans are honoured by street marches and many remembrance services.

The WIA ANZAC 100 program had about 50 events with ANZAC-suffixed callsigns on air throughout Australia.

The 'last hurrah' already has VK100ANZAC, VI3ANZAC, VI4ANZAC and VI6ANZAC involved.

With two weekends in the closure, more applications are expected to be received.

The ANZAC-suffixed callsign events eQSL all contacts by uploading their electronic logs that are then handled by the WIA.

For more information about the ANZAC 100 program visit the WIA website at:

[www.wia.org.au/newsevents/anzaccentenary/about/](http://www.wia.org.au/newsevents/anzaccentenary/about/)



## WYONG FIELD DAY

# 28 FEB 2016

Flea market opens from 6:30 am

Traders & exhibitions 9:00 am

Lectures from 9:00 am

[www.fieldday.org.au](http://www.fieldday.org.au)



### Contributions to *Amateur Radio*

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

Manuscripts with drawings and/or photos are welcome and will be considered for publication.

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



## VK6news

Keith Bainbridge  
e vk6rk@wia.org.au

An unfortunate mistake by Editorial staff meant last month's column wasn't included in the magazine. As it happens, last month was a very bad one for contributions with just Bunbury and NCRG supplying any notes. So this month I've tried to combine the two where appropriate and I thank other clubs for their input as well.

I've been told that Norm VK6GOM won't let the meetings proceed until he has enough for the Notes each month, good on yer Norm; I wish more club publicity officers had the same approach.

So without further ado over to Norm and the **Bunbury Radio Club**:

### Bunbury RC

Firstly, the club is pleased to welcome new member, Geoff VK6SI from Peppermint Grove Beach.

The new Club Room at 26 Halsey St Bunbury at Richard Oxley's QTH was opened for use during the September 2015 monthly club Meeting. Mein host, Dicko, provided some nibbles and drink to launch the opening.

The BRC Experimenters' Net has been active on APRS Packet Radio over the last couple of months. Two members, Brian VK6TGQ and Richard VK6PZT have each built packet radio stations based on the Raspberry Pi (Model 2) hardware and the Direwolf software TNC. This configuration also provides APRS "iGATE" functionality.

An APRS iGATE takes APRS packets received via RF, and re-transmits them, via the internet, to the APRS-IS network servers. Various web sites then use the contents of these APRS packets to display APRS related activity.

Of special interest to Brian and Richard, is the map of stations that have been heard by the packet radio station in the International Space Station (ISS). This map is available at [ariss.net](http://ariss.net)

On the morning of 4<sup>th</sup> September, the ISS digipeated an APRS packet which had been transmitted by Mike VK8MA in Katherine, in the Northern Territory. VK6TGQ received this packet and successfully passed it in to the APRS-IS network. The result was that Mike's VK8MA call sign appeared on the map available at the [ariss.net](http://ariss.net) website. This was the first APRS packet, digipeated by the ISS that was successfully processed by Brian's iGATE. Our analysis suggests that the distance between Bunbury and Katherine (almost 2,700 km) is close to the maximum distance that two stations can communicate over, via the ISS. For both stations, the ISS was just a few degrees above the horizon.

More recently, Brian has been able to re-configure his Direwolf software to ignore the APRS Packets he receives directly from Richard. This means that only those packets transmitted by Richard which have been digipeated by the ISS are processed by Brian's iGATE. As a result, Richard's call VK6PZT has now appeared on the [ariss.net](http://ariss.net) map.

The next step is to re-configure Richard's Direwolf software to ignore Brian's direct packets, so that the VK6TGQ call will also appear on the map.

The Bunbury Radio Club continues to grow with the addition of new member, Mike Nix. Mike is a local "cockie" with skills in IT. Mike has the distinct achievement of sitting and passing his Foundation,

Standard and Advanced licences all on the same day. Membership of the club has now reached 42.

On 26<sup>th</sup> September 2015 at Peppermint Grove Beach Community Centre near Capel, four prospective amateurs were assessed for various licences. Of these, two passed Foundation, one achieved Standard and the other both Standard and Advanced licences. Congratulations to those four new hams. Anyone in the South West area interested in sitting for their Foundation or upgrading to Standard or Advanced licences please contact Norm VK6GOM on 0438 878 582. The next assessment session is planned for February 2016.

Our technical activities continue apace with Alek VK6AP demonstrating and discussing his home brew power amplifier. This drew not only great interest from the attendees, but also much admiration for the construction skills of Alek. The amplifier was most professionally made and could only be described as "a thing of beauty and a joy to behold forever".

At the November meeting the technical talk will be Fergie and Dicko covering the history of the Bunbury radio Club and its antecedents.

Technical matters aside, the club's "Christmas" party is planned for 9 January 2016, most likely at Yarloop. Any member interested in the function should contact Dicko VK6VRO.

As mentioned last month we are will be running a mobile contest called "Bunbury Dummies on the Air", a couple of hours before our regular meeting in November. It will involve getting points awarded for "activating" a registered BDTOA public toilet (by operating portable

without support from a vehicle within 50 metres of the toilet and making two or more valid BDOTA contacts) and for "chasing" a registered BDOTA public toilet being activated by someone else (by making a radio contact with them). The purpose of the contest is to have fun, practice portable operation, & promote radio as a hobby. (And stay out of gaol: Ed.)

We are still experiencing interference on the Harvey 70 cm repeater. Our UHF sleuths are on the job, trying to chase the problem down. However, it is being elusive due to its erratic nature and we are considering imposing tone access.

Ian VK6MIB has acquired a set of hi-vis jackets prominently labelled with the name of the club and promoting amateur radio. These are for both safety and promotional purposes.

Our December meeting will be held in Manjimup. The venue is yet to be confirmed.

Any South West based amateur (or anyone interested in radio or electronics) is more than welcome to join and participate in our activities. The annual fee is only \$25.00. Those wishing to join can contact the Club via our Secretary, Nick Evans on 0429 201 343, or [vk6brc@wia.org.au](mailto:vk6brc@wia.org.au)

## Peel Group

So there we have a double helping from the South West, cheers Norm!

Now it's over to the **Peel Group** with a JOTA report:

Thank you to those PARG members who managed to share some of their valuable time with the Scouts and Cubs for this 58th Jamboree On-The-Air.

Having done JOTA for the last ten years or so has left me with a thought or two. Starting with the usual doubts about if what we did was enough. The group set up the trailer at Rockingham Scout Hall with the Diamond X-200 on the mast extension, a Buxcom 40 metre OCF Dipole and an 80 metre dipole that had to be folded back

on itself because we just could not get the full length out due to the positioning of the trailer. The 40 Buxcom came from the Scout Group Leader who asked us to give it a try. Buxcom gave the thumbs up to all frequencies up to 10 metres with no tuner. It worked too. The SWR was between 1.5 and 1.7 to 1 across all bands. Not a bad thing at all. It was a little down on the 80 metre dipole that could be tuned with an Icom AH-4 from 80 metres to 6 metres. All in all both antennas seemed to perform well. That was confirmed with a 5x9 contact into a Kuala Lumpur non-JOTA station 9M4WSB on 20 metres by Terry VK6TTF who was able to switch between antennas with little or no loss of signal.

Could we have done better? This is the question that a lowly amateur must ask when there are no contacts; was my gear set up correctly; were the antennas OK; did my transmitter fail to perform. OK we can tune up with dummy loads, power meters, antenna analysers, all sorts of fancy gear and feed the signals into the antenna but does all of that testing mean little else than diddly squat if we get no replies? We called CQ JOTA on just about every Hertz between ground and heaven. Not a dicky bird. We heard some JOTA stations well down in the mud but they could not hear us. DITM means real hard copy for experienced amateurs and as we know around impossible copy for little people. There was also some sort of DX competition going and they would not talk to us or heaven forbid could not hear us. Around mid-afternoon on Saturday 40 metres opened up. The stations we heard from New Zealand and New South Wales had good communications between themselves and not a thing with us. Then the band became flooded with what seemed stations from Oceania in a language not understood by us but definitely oriental. We could not pick out anything resembling a callsign anywhere. It was just a

continuous jabber blocking out all other stations. The other thing that bothered us was noise. Generally, S7 to S9 with one burst for a short time at S9+ 20 dB. It's hard to beat that.

In my gear somewhere is a Noise Cancelling Signal Enhancer and whilst I have never tried it I have heard them in use at other stations. The theory is that the sense antenna it has will pick up the same noise as the main antenna, shift it out of phase and use it to null out the white noise. I have heard them work and well too. They are a bit fiddly to tune but worth the effort. Next JOTA, it will get a work out but very well tried at home first.

High frequency contacts were down, in fact, non-existent with incredibly fickle band conditions. The saving grace was our use of VHF and EchoLink and without that, things would have been dismal indeed. We still made it work. Notably we did cover a great area with our VHF signals so we can be sure that our coms trailer will give a good account of itself when the chips are down. Well done everyone.

Thanks to Tony VK6DQ for that update from Peel.

## Rottnest Island repeater

Mitch VK6FLEX has been busy annoying the Quokkas on Rottnest Island with excellent results. 17th October 2015 saw the Rottnest Island 70 cm amateur repeater VK6ROT go online.

After a long period of inactivity the site is once again an amateur repeater location. On the Island is a pair of Simoco SRM9000 Radios in repeater mode. Connected to the repeater is a custom interface box designed by VK6FLEX and this allows remote reprogramming of the site over the internet.

The site is also fitted with an IP controlled relay, allowing remote disable of the repeaters output.

Also the site is solar powered with enough capacity for additional linking systems.



What makes it unique is the fact it is located 25 km from the coast of Western Australia, 40 metres above sea level.

This gives a very interesting opportunity for VK6 amateurs to experiment with ducting up and down the Western Australian coastline.

There are future plans to enable the repeater as a Cross band 70 cm/2 m repeater.

At present it is operating on 70 cm on a frequency of 439.700 / 434.700 with no CTCSS required.

The site has a long history of amateur radio, dating back to the late 80s/early 90s when VK6 amateurs first decided to install a repeater on the island, when, due to issues with lack of remote control/ not easy access, it was decided to not go ahead.

More on VK6ROT Can be found on VK6UU's Website: <http://www.vk6uu.id.au/rotnest.html>

With much thanks to VK6FLEX, VK6UU and VK6AXB for testing, setup and advice.

Thanks Mitch, I'm sure this repeater will provide interesting results.

## West Australian Repeater Group

Taking of repeaters it's time for the WA Repeater Group, and an interesting milestone has been reached, Anthony VK6AXB writes on behalf of the **West Australian Repeater Group**:

On Sunday 25th October WARG celebrated their 40th anniversary with a successful event at Wireless Hill in Melville. A crowd of around 35 past and present WARG members and supporters gathered to enjoy a BBQ lunch and catch up, undeterred by threatening weather and the odd shower of rain.

WARG formed in August 1975, and we were privileged to have people at the BBQ who attended that first meeting, including VK6CU, VK6KW, VK6MS and VK6ZLT.

Several items and memorabilia from those times were on display,

including repeaters, controller boards and cavity filters hand-built by WARG members in the 1970s and 80s. The photo album documenting the first 20 years of WARG's history also generated a lot of interest and reminiscing.

One of the more unusual items was an original "pet rock" – dug from the foundations of the Tic Hill radio site in 1983, these small stones were cleaned, painted and sold to fund the site build – a simple and brilliant idea from WARG's then-Secretary Gill VK6YL, who was a driving force behind many WARG projects. Tic Hill still stands today, as one of WARG's key metro sites.

Following the BBQ and a short speech from Anthony VK6AXB paying tribute to WARG's founders and all who have built the group, those present enjoyed a slice of 40<sup>th</sup> Anniversary chocolate cake, arranged by John VK6JAH, and ceremonially cut by WARG President Ray VK6ZRW and past President Trevor VK6MS. Members of the West Australian VHF Group - founded in 1955 - also provided a cake to mark their 60<sup>th</sup> anniversary.

Thanks are due to all WARG members who attended on the day or helped otherwise, especially VK6AXB and VK6JAH for the food,

and Ray VK6ZRW for his expertise behind the BBQ. More information, including a report and photos of the day will be on our website, [www.warg.org.au](http://www.warg.org.au)

Congratulations to WARG on their work over the past 40 years.

## WA VHF Group

Now to Terry VK6ZLT with news of the **WA VHF Group**:

The WA VHF GROUP in the year 2015 has recorded a few milestones with the official opening of the clubs new radio shack now permanently situated at Wireless Hill, Ardross West Australia, after 60 years at various sites throughout Perth. Also the near completion of the GPS locked beacons for VK6RST Mt Barker and VK6REP Esperance. There are some questions about the VK6REP site which are yet to be finalised as the original site for many years has been sold. All in all, the aim is to be ready for the summer season of highs across the Great Australian Bight.

Increased interest in 10 GHz has been stimulated at the October club meeting recently by a discussion and demonstration by Wally VK6KZ who is also a founding member of the club. Wally's demonstration of modular design for different bands

was very impressive.

23 cm activity is on the rise with members and the AR fraternity looking to build transverters and converters on this band. Stimulation has been heightened with the activation of an experimental FM info

Photo 1: WARG 40th Birthday with L-R: VK6CU, VK6MS, VK6ZRW.





beacon by Will VK6UU along with the clubs VK6RPH beacon and also VK6RBS beacon providing a ready signal source to receive and align equipment. Certainly the 23cm Thursday evening net/chat can do with a few more members.

The Club goes into recess for December but activities start again in January 2016. The annual spring & summer field days notwithstanding.

This is Terry VK6ZLT President & Publicity officer for the WA VHF GROUP INC wishing you all lots of contacts over the festive season.

Thanks Terry, good to hear the group has been very active of late!

## HARG - The Hills Amateur Radio Group

Next we have this month's news from those folks in the hills, **HARG** - The Hills Amateur Radio Group:

On the weekend of 26 and 27 September, HARG were privileged to take part in the VK100ANZAC activation at HMAS Stirling on Garden Island. This was organised by John VK6AG, from Department of Defence assisted by John VK6RX with support from Defence Communications Station (DEFCOMMSTA) Perth, located on Garden Island. As well as commemorating 100 years since Australian troops landed at Gallipoli the event also paid tribute to Operation JAYWICK during which a group of Australian and British Z Special Unit members attacked Japanese shipping in occupied Singapore in 1943. John VK6AG said that Garden Island, where *Stirling* is located, was used as a training facility for Z Force, so the Navy thought it was appropriate to locate the event on the island on the 72nd anniversary of the operation. *"Many people who served and lost their lives in the various conflicts Australia has been involved in were amateur radio enthusiasts, and this is one way of honouring their sacrifices."*

A spider beam HF array was set up on high ground at Gilbert Point and a three-element HF beam was attached to a cherry picker about 13 m off the ground next to the comfortable shack which was an old canteen food van provided by NAVY Canteens, set up on the decommissioned Kalkara rocket launching site. This site was a largish area of concrete under laid with wire mesh to which the operators connected their earth. The basket of the cherry picker was one corner of a 160 m ladder line fed loop that VK6ZRW, VK6FJON and VK6PWD often deploy. The Navy also supplied two lighting towers that could also be used for the supply of mains power. Stuart VK6BG supplied a 15 kVA diesel generator which ran quietly for the whole weekend. Stuart also set up the VHF equipment. The HF radio was an Icom IC-7400 fed to the HARG linear connected to the MFJ tuner.

During the 48-hour event,

Photo 2: HARG at Garden Island Naval Base.



fourteen amateur radio operators, (of which more than half were members of HARG) made contact with over 1000 operators all over the world and then logged those contacts in a commemorative radio log. The participants were as follows: John VK6AG, John VK6RX, Ray VK6ZRW, John VK6FJON, Onno VK6FLAB, Daniel VK6WE (formerly VK6LCK), Al VK6PWD, Marty VK6RC, Stuart VK6BG, Pavel VK3NUT, Allan VK6AN, Rob VK6AAH, Ian VK6DW and Bruce VK6CX.

Particular thanks need to go to: Commanding Officer HMAS Stirling – Capt. Angela Bond (for granting permission) Operations Officer DEFCOMMSTA Perth - WO Peter Stephenson (Opening address) Base Support Managers - Mr Mark Sweetman / Mr David Marshall (for supporting the activity) Senior Ranger DPAW - Mr Steve Booth (facilitating access & support) Most importantly, thanks to

the Navy personnel from DEFCOMMSTA Perth who visited the site.

The preceding article was based on reports supplied by John VK6AG, Ian VK6DW and Ray VK6ZRW. Photograph supplied by NAVY Image Library.

HARG Meetings are held twice a month at our club rooms at the Paxhill Guide Hall near the corner of Brady and Sanderson Roads in Lesmurdie. Our Social and Practical meeting is held on the second Saturday of the month and our General Meeting, often with a technical talk, on the last Saturday of the month. Doors open at 1.00 pm for a barbecue lunch and the meeting starts at 2.00 pm. More information at [www.harg.org.au](http://www.harg.org.au)

Cheers from Bill VK6WJ Publicity Manager for HARG.

Very interesting Bill - sounds like a really worthwhile visit.

Our state is lucky to have a

very able News Service, so here is an update from Bob VK6POP.

## WA Amateur Radio News

WA Amateur Radio News produces the weekly NewsWest Amateur Radio news programme, which is faithfully broadcast and relayed twice on Sundays by members and associates. WAARN does more than produce a news programme. The club maintains the *VK6.net* website, which is a centralised one-stop shop of reference information for Amateurs in Western Australia.

At the time of writing, WAARN is preparing to conduct a training course to teach how to write and record an item for the news programme. Other training courses are in the pipeline and will cover interfacing a radio to the computer, contesting for beginners and using public relations and media to benefit your club.

WA Amateur Radio news welcomes new members either as "just members" or as participants in news production and broadcasting, and other club activities. Contact WAARN via email [newswest@vk6.net](mailto:newswest@vk6.net)

## Bob VK6POP President

Finally this month over to **NCRG** with their two month section:

The **NCRG** has been busy finalising antennas ready for the contest season starting 4<sup>th</sup> October with the Oceania DX Contest.

Our 20 m wide spaced long Yagi and its mate for 15 m are now up at optimal heights above ground thanks to much work being carried out by the lucky ones with time on their hands during the week.

Wayne VK6EH, Eric VK6FEDS and other helpers have been very busy weekdays as a few hours on a Sunday morning every week was not achieving the desired results.

It was also decided to complement our 160 m quarter wave vertical with a horizontal dipole for the same band at approx. 100 feet above our very poor ground in the Park.

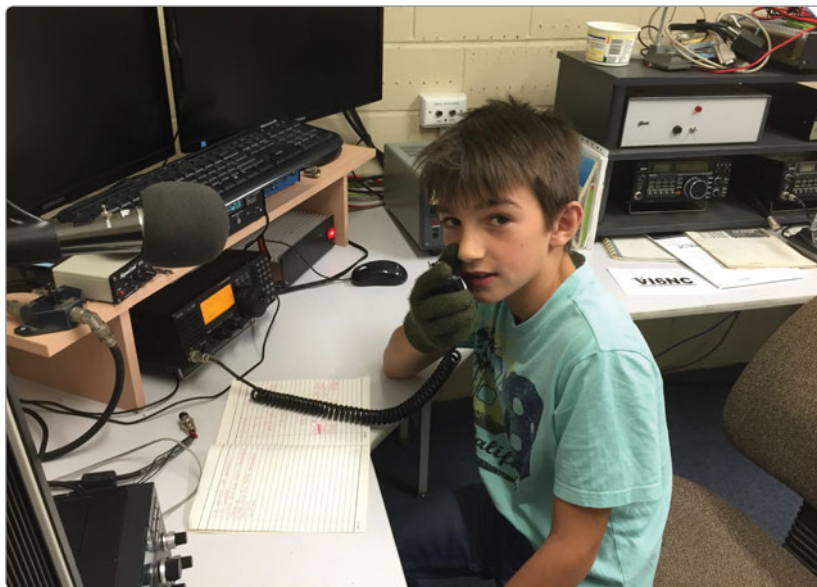


Photo 3: Liam VK6FLAL on the mic at NCRG.

Initial results seem very pleasing and hopefully will result in lots of top band contacts in the contests!

Lots of other club projects are finally getting to see the light of day, including Anderson Power pole break out boxes and associated hardware, inspired by other clubs activities.

Our AGM was held on Sunday 4<sup>th</sup> October and the new committee is VK6AL Anthony President, Bob VK6BD and Eddie VK6YA joint Treasurers, James VK6FJA Secretary and yours truly staying on as Vice Pres. The remaining positions are Larry VK6NOL, Equipment Officer and Stu VK6LSB as ex-President.

The Ellenbrook Scout Group used our facilities for JOTA this year, a new group, as previously the Herne Hill Troop had been our guests. They had an enjoyable and successful JOTA and we hope to be able to continue this relationship in years to come.

I did promise to list the winners of the Hamfest Homebrew contest this month but unfortunately the hastily scribbled note I made on the day has not surfaced so to those winners, my sincere apologies!

One of our members Dean VK6DSL has been working

hard with his son to achieve his Foundation Licence. Nothing too exciting about that other than the fact Liam is 10 years of age, and passed first time!

Our congratulations to Liam VK6FLAL and we know we will be seeing him at the club operating in future, especially as he has wet his feet in the Oceania DX Contest and had a ball.

On the contest scene, we have participated in OCDX and CQ WW SSB over the past month with interesting results in both contests.

Much antenna work has been carried out and soon there will be a Steppir DB18e antenna hooked up to the club remote station project.

This will give 40 - 6 m coverage and will progress our remote station considerably.

Our car boot sale was held on Sunday 22nd November and a report will follow in the next edition of VK6 Notes.

So with that I will say thanks to all my contributors over the past twelve months, may all readers have a Merry Xmas and a Happy, Safe and Prosperous 2016 and I will catch you all in the next edition in 2016.

Vy 73 de Keith VK6RK.







# VK3news Eastern & Mountain District Radio Club

Andrew Scott VK3BQ

Peter Hartfield VK3PH has resigned from the position of President, and from the EMDRC Committee. The Committee wishes to thank Peter for his time at the helm, but fully understand he needs a break from the role. Andrew Scott VK3BQ, Vice President, will take over as President effective immediately.

The November club meeting saw an interesting talk from Mark Tell at ACMA. The club holds its meetings the first and third Friday of the month. We always have an interesting speaker or club activity, for further information on the club, our well-equipped club rooms and the activities we undertake, have

a look at the club's website <http://www.emdrc.com.au/>

The club's Annual Christmas party BBQ will be held at our clubrooms in Burwood on Saturday 5th December 2015 from 10 am. Come along and enjoy a mystery bag in bread while catching up with old friends.

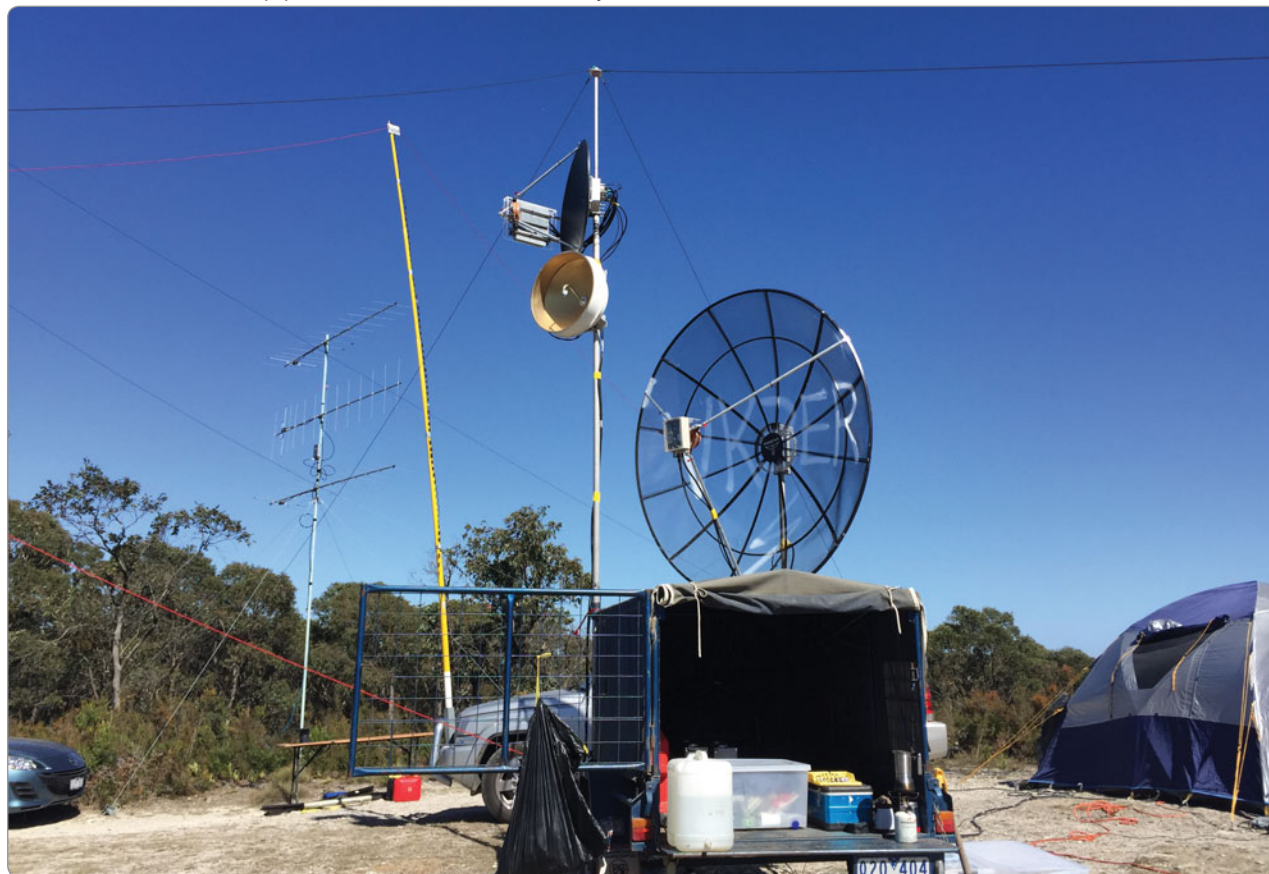
## World ARDF Championships

Our October Clubroom meeting saw an interesting talk from Jack VK3WWW who had recently returned from the recent Region 3 ARDF Championships in Japan. Jack talked about the event and an interesting week travelling in Japan,



Photo 1: The Australian team on the podium. Photo courtesy Jack VK3WWW.

Photo 2: EMDRC VK3ER/p portable station. Photo courtesy Andrew VK3BQ.





including his efforts almost making the top of Mt Fuji and operating his home station via remote from near the top. If you are interested in ARDF, and for more stories on the trip have a look at <http://www.ardf.org.au/>

### Spring VHF/UHF Field Day 2015

Two teams from EMDRC headed out to operate the contest portable. Both the VK3ER/p and VK3KQ/p teams had a great contest with many contacts made. Thanks to all the stations who we worked. We look forward to working many more in the upcoming summer 2016 VHF/UHF Field Day.

### JOTA

The club held a small JOTA event for the local Waverley Valley group. We had 15 keen operators spending a couple of hours playing radio and exploring communications and helped them obtain their JOTA badge. While pairs of Scouts operated the radio, the remaining Scouts explored Morse code using a hand key and writing secret messages to each other. They all had a great time and we look forward to JOTA 2016.

### EMDRC Hamfest 2016

The club's annual Hamfest 2016 is fast approaching. With Easter in March this year, the club has had to move the Hamfest date forward. The 2016 Hamfest will take place Sunday 28th February 2016 at the Great Ryrie Primary School, 46 Great Ryrie St, Heathmont. Doors open at 10 am. Entry is still \$6. For more information, and table bookings, please see the club's website.



Photo 3: Nathan Scott on the microphone at JOTA. Photo courtesy Andrew VK3BQ.



Photo 4: A view of the crowd at Hamfest 2015. Photo courtesy Andrew VK3BQ.

## 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)**



## VK2news

Tim Mills VK2ZTM  
e [vk2ztm@wia.org.au](mailto:vk2ztm@wia.org.au)

### Season's Greetings

Just got used to writing 2015 and the year is over.

### ARNSW

ARNSW had a busy month in November with an overflow of requests for Foundation training and assessments. It all starts again in January 2016 with the Foundation training and assessment weekend set down for 23rd and 24th January 2016 at the VK2WI site. Inquiries and bookings by an email to [education@arnsw.org.au](mailto:education@arnsw.org.au)

The first Trash & Treasure for the New Year will be on Sunday 31st January.

As has become the practice, VK2WI news will go into summer mode with three morning only transmissions on 27th December, and 3<sup>rd</sup> and 10th January. The evening sessions resume on 17th January 2016.

Improvements to the ARNSW Library have just been completed by lining the end walls and the ceiling. Air conditioners have been installed. New shelving with magazine holders replaces the original wooden units, most of which are in fair condition. An email to [library@arnsw.org.au](mailto:library@arnsw.org.au) may secure some for your shack or storage. Cataloguing of the magazines continues.

The area will also be available for larger Foundation courses and assessments.

### Central Coast Field Day

The annual Central Coast field day at Wyong is set down for Sunday 28th February 2016. The ARNSW AGM is on Saturday 30th April 2016.

### Xmas Celebrations

Many clubs have their end of year celebrations this month - like the Oxley Region ARC Christmas function on Saturday morning the 5th, at the Settlement Point Reserve, Port Macquarie; Hunter Radio Group Ladies night on the 10th and Waverley ARS Christmas dinner on the 16th. The holiday break is when many clubs hibernate for a couple of months without meetings. You need activities like your weekly on air nets to keep members involved, lest they drift off to other pursuits. You can also keep them up to date and remind them of the first meeting in 2016 with a news item on VK2WI by an email to [news@arnsw.org.au](mailto:news@arnsw.org.au)

### Magnetic Calendars

Before the end of the year ARNSW members will be receiving, by post, their 2016 magnetic calendar. There will be some missing out because they have let their membership of ARNSW lapse. If in doubt as to membership status, an email to [membership@arnsw.org.au](mailto:membership@arnsw.org.au) will get the answer. The expiry date is shown on the ARNSW membership card, most of which are in the American format of month, day and year.

### Albury Wodonga Amateur Radio Club

Frank VK2BFC advises the Albury Wodonga Amateur Radio Club recently commissioned the first stage of their multi band / multi-mode repeaters system on the VK2 / VK3 Border. The VK2RAY Repeater is operational on 70 cm on a frequency of 438.575 MHz with - a minus 5 MHz offset. No CTCSS tone is required at this stage to access the device. The repeater site is at the

Hume Weir, overlooking the Albury / Wodonga region and initial tests showed that coverage is excellent up and down the Hume Highway. The next stages of the AWARC project is the commissioning of a 2 metre Multi Mode repeater, with FM and D-STAR and later the commissioning a 6 metre repeater. It is expected that the 2 m repeater will be operational by the end of the year and the 6 m by early 2016. Once the 2 m repeater is commissioned, the VK1WIA Broadcast will be transmitted on the repeater every Sunday. At present VK1WIA is broadcast on 147.525 MHz from a site in Lavington which has a coverage of approximately 60 km.

### The Oxley Region ARC

The Oxley Region ARC for the period of Daylight saving have moved their Sunday morning net on 146.7 MHz to a 9 am start - a brief sleep in. The 2016 Jamboree is to be held in January to the south of Sydney at Cataract Scout Park.

### The Armidale and District ARC

The Armidale and District ARC - VK2IY - held their AGM in September with a good attendance. They now have 36 members and growing rapidly. They are well served with four Assessors at the moment. Several club members have developed an interest in 23 cm simplex modes, with plans for a repeater once they source some transceivers. They would welcome suitable equipment.

If you can help, please contact Rick VK4HF / VK2RP at [vk4hf@keylink.com.au](mailto:vk4hf@keylink.com.au)

73 - Tim VK2ZTM.



# VK3news Amateur Radio Victoria

Jim Linton VK3PC

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

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

The festive season will soon be with us and many will prepare for the summer holidays, relax and enjoy this time of the year. It has been a busy and productive time for the Council who all wish you the complements of the season and a Happy New Year 2016.

The office at 40g Victory Boulevard, Ashburton, will close at 1 pm on Tuesday 22 December, and re-open at 10 am on Tuesday 7 February next year.

On behalf of Council, a sincere thank you to the volunteers who run the office carrying out administrative functions and interface with the public. They, along with those involved with the QSL Bureau, do a marvellous job.

The Internet Project Development Officer, Gary Furr VK3FX, keeps our webpage current, with a lot of work behind the scenes including the bookshop and member subscriptions which are mostly done online.

While the office is closed for summer, urgent matters will still be handled. The end of our year is December 31, with financial statements, stocktaking and an audit to be done.

The Annual General Meeting will be at 8 pm on Tuesday, 17 May 2016, at 40g Victory Boulevard Ashburton.

This year the Council is elected by the membership, with each undertaking the responsibilities and duties of a Company Director. Election nominations are on a form only available from the Secretary, and must be signed by two financial members.

This form and Notices of Motion for the AGM must reach the Secretary by 2 pm on 17 February 2016.

## Are you a member?

It is a surprise to many that Amateur Radio Victoria (WIA Victoria) is spending a lot of money to the general benefit of amateur radio, but

not all Victorians contribute by being a member.

It costs \$30 for two years or \$25 concession for two years. This money helps pay for many of the services provided and seem to be taken for granted by non-members. Our regular spend on repeater maintenance is in excess of \$20,000 each year. This includes equipment maintenance, insurance, site fees and licences.

It funds a full service Inwards/Outwards QSL Bureau for our members as well as WIA members. Postage costs alone are in excess of \$900 per year. All outward QSL costs are paid by Amateur Radio Victoria.

We are the largest trainer of new radio amateurs with regular weekend courses held throughout the year - helping to make the activity grow. Many of today's active VK3 radio amateurs had their start through our training.

If in VK3, and you listen to the Sunday broadcast at 10.30 am and 8.30 pm through VK3BWI, use a repeater, or send cards via the VK3 QSL Bureau, these are provided as services, but are just a few of the activities membership subscriptions help to finance.

Membership of ARV costs \$30 for two years or \$25 concession for two years - that is less than five cents a day. Member forms are on our website, or can be supplied on request.

## Repeater maintenance work

The busy volunteers who look after the Amateur Radio Victoria repeater network report the following state of play at a number of sites.

Please remember these dedicated volunteers have full time jobs and families, so a little patience is in order. We do rely on accurate notifications from members when a repeater fault may occur.

Most 2 m, 70 cm and VK3RTV (the Melbourne-Geelong digital television repeater) are reported to be working very well.

A maintenance program is being worked through, and the following

details are provided:

VK3RWZ 2 m Mt William - off air awaiting equipment upgrade  
VK3RMM Mt Macedon 70 cm - deaf awaiting antenna upgrade  
VK3RMM 70 cm D-STAR - deaf awaiting antenna upgrade  
VK3RWM Mt Arapiles - antenna relocation intermod. greatly improved  
VK3RNU Mt Stanley - site works complete power connected waiting fit out  
VK3RMK Mt Kerang - OK, some pager interference. Awaiting antenna relocation  
VK3RNE Mt Big Ben - new mast, antenna upgrade due  
VK3RGS Mt Fatigue - off air  
VK3RGV Mt Wombat - new mast, antenna upgrade and hut refurbishment in progress  
VK3RWL Mt Warrnambool - awaiting fitting of new equipment  
VK3ROW Beech Forrest - off air waiting new tower  
Bendigo VK3RBO ATV - OK, latest information <http://vk3ce.homeip.net/>

## Looking to the future

Planning for possible events and activities is under way. There are basic things like setting the dates for the training sessions, and the popular Homebrew Construction group meetings.

Regular activities are the International Lighthouse and Lightship Weekend, the 6<sup>th</sup> Keith Roget Memorial Award activity period and the Digital Amateur Television World QSO Party.

Also being considered are mini-events to encourage portable activity, and thoughts on how to attract youth into Amateur Radio.

Many years ago there was a 'think-tank' exercise that not only confirmed current activities of the state-wide organisation, but it came up with new volunteers and their ideas.

If you have an idea, and are willing to actively lead a new activity in a hands-on fashion, then discuss it with the Council - you never know where it might lead.







## VK7news

Justin Giles-Clark VK7TW

[e vk7tw@wia.org.au](mailto:vk7tw@wia.org.au)

[w groups.yahoo.com/group/vk7regionalnews/](http://groups.yahoo.com/group/vk7regionalnews/)

### VK7 2015 RD Results

In the VK7 single operator phone section, congratulations to Steve VK7OO – first place, Vince VK7VH – second place and third place to Tony VK7LTD. In the VK7 single operator CW section, first place goes to Bob VK7RF, second place to Jerry VK7EE and third place to Greg VK7AD. In the VK7 single operator phone QRP, first place goes to the author VK7TW and first place in the single operator mixed section goes to Ian VK7IF. Congratulations to all, certificates are ready for downloading from the WIA website.

### VK7 Amateur Licences Increase

According to statistics for 2015, VK7 has gained 17 amateur licences

to be the best performing in VK and VK8 has two more, while all the remaining call areas lost licences.

### SOTA First Birthday Party

The first of October 2015 saw the first birthday of the VK7 SOTA Association – the baby of the VK SOTA family! During the year there have been many activations and chaser points accumulating. Just prior to the birthday, there were 12 activators in the log with a total of 71 summits activated, some are duplicate summits, generating a total of 386 points. On the chaser side there are currently 13 chasers who have worked a total of 348 activations and have a total of 1962 points. The weekend of the 3-4th October 2015 was proposed as a weekend to celebrate the first birthday of the Association.

### VK7 Repeater News

The VK7RDR 70 cm repeater was installed on the Dazzler Range (NW VK7) on 12 September 2015. The RX Frequency is 434.775 MHz. TX Freq. 439.775 MHz with a -5MHz split and CTCSS tone of 186.2 Hz on both receive and transmit. The license is held by the N/West Tas. ATV Group and the equipment and site provided by Graeme VK7AQ of Rand Electronics. Thanks to Graeme VK7AQ, Adrian VK7AS, Tony VK7AX, Neil VK7NX, Paul VK7CC, Dion VK7DB and Matthew VK7ML who helped in the creation and installation.

Good progress is being made on the new Mt Arthur repeater with equipment arriving and being transported to the site. Solar panel mounts have been constructed and carried to the site ready for the

*Photo 1: Panorama from Hartz Peak looking toward Mt Snowy during the VK7 SOTA first birthday weekend (Photo courtesy of VK7TW).*



panels. Many trips have been made to the old Mt Barrow site to replace faulty tone encoders, antennas and preamps and keep things going, thanks to Joe VK7JG. Hopefully this will be the last until we leave Mt Barrow for good! The batteries and solar panels will be lifted into place with a helicopter later in the year. AirServices Australia has notified further delays in the riggers removing the amateur equipment from the Mt Barrow tower from November 2015 until February 2016 and this extension provides some rent-free breathing space. Thanks also to Peter VK7KPC for the donation of a 19 inch rack to mount the equipment in at Mt Arthur. From 26 October 2015 the Mt Barrow AirServices site has been handed over the contractors who are replacing the tower infrastructure. Antennas on VK7RAB have been replaced resulting in working about 4 dB better than the old one and the links to Hobart are noise free.

### **Cradle Coast Amateur Radio Club**

Congratulations to Marlene VK7LDY soon to be VK7FX and Dick VK7LDK soon to be VK7EZ who both passed their Advanced assessments. Thanks to Peter



*Photo 2: LtoR: Joe VK7JG and Al VK7AN on Mt Killacrankie (photo courtesy of Peter VK7PD).*

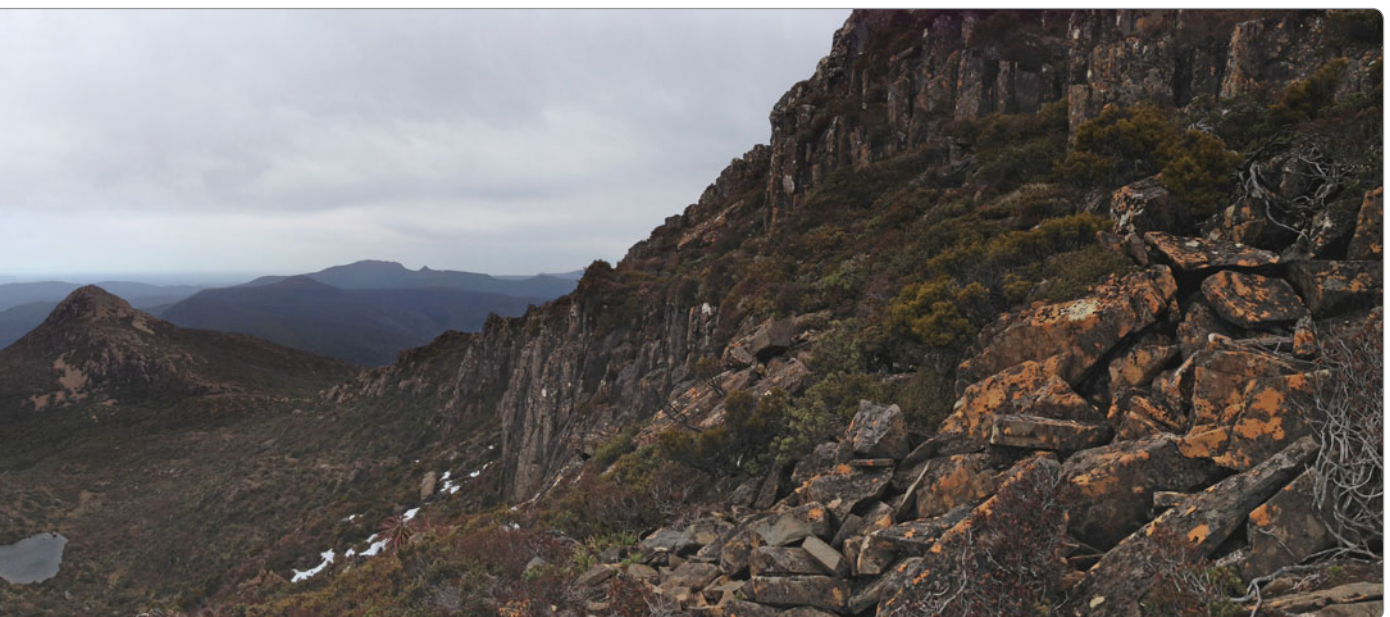
VK7PD for travelling to Burnie to assist David VK7DC with the exams. Anyone interesting in training or assessment in North West Tasmania is reminded to contact David VK7DC at [vk7dc@wia.org.au](mailto:vk7dc@wia.org.au)

### **Flinders Island Amateur Radio Club**

Between October 14-16, the itinerant FIARC members Al VK7AN,

Joe VK7JG, Peter VK7PD and Barry VK7BE gathered on Flinders Island for many activities. These included climbing Mt Killiecrankie to check out this SOTA summit.

There was much fishing and reconnaissance of potential SOTA summits on Flinders, Cape Barren, and Mt Chappell islands – watch this space! The proposed repeater site at Hays Hill was inspected with





welcome news that a concrete hut and tower was being offered for the task. Thanks to Gavin VK7VTX for organising this. Peter VK7PD organised future learning and assessments that would see six radio amateurs on Flinders Island – a fantastic result! Thanks for Peter VK7PD for the info for this report.

### **Northern Tasmanian Amateur Radio Club**

The NTARC September meeting saw a great roll-up for an enlightening presentation by Tammy Jones, who is a Counsellor with Alzheimer's Australia Tasmania. Tammy's talk covered all aspects of Dementia from the sufferer to carer and the services available. Reports from the meeting indicated it was an excellent presentation providing insight into this disease and its effects on society. The October meeting saw a presentation on how Raspberry Pi and Arduino micro-controllers are used for the RFID tracking for the equine endurance events from Norm VK7KTN, Andre VK7ZAB and Idris VK7ZIR.

NTARC assisted with course safety communications for an equine endurance event at Sassafras in September. There were 80 and 40 km rides covered and the RFID tracking system performed well. Thanks to Wayne and Meg Hodge, Norm VK7KTN, Idris VK7ZIR, Andre VK7ZAB, Peter VK7KPC, Ron VK7RB, xyl Jacinta, Bill VK7MX, Yvonne VK7FYM, Ron VK7RB, Roger VK7ARN, Bernie VK7BR and Joe VK7JG.

The JOTA/JOTI weekend saw 88 Scouts and Guides participating in and around the NTARC clubrooms with many VK contacts made and 80 & 2 m fox hunting. The BBQ was a big hit with food throughout the weekend. Thanks to Stuart VK7FEAT, Lachie VK7FJLH, Duncan VK7FLAK, Tony VK7YBG and harmonics, Idris VK7ZIR, Andre VK7ZAB, Kevin VK7HKN, Lyn VK7FROG, Norm VK7KTN, Bill VK7MX, Yvonne VK7FYM, Alvin VK7ADQ, Wayne VK7XGW, Anthony formerly VK7FAMH, Steve VK7BI, Bernie VK7BR, Lewis VK7FLPL and Liz, Kevin VK7KJL, Ros and a huge

thank you to the NTARC JOTA/JOTI Coordinator Peter VK7KPC and xyl Kay.

### **Radio and Electronics Association of Southern Tasmania**

We congratulate Ben Paetz and Anthony Goggins who both successfully passed their Foundation assessments in September and they are eagerly awaiting their licences. Congratulations also to Martin Richardson who passed his Advanced assessment in the same session. We look forward to some new callsigns on the air very soon.

REAST's September presentation was a Digital Modes Forum and we had a great roll-up and some great learning. There was a great deal of experience in the room that was freely shared. We looked at the modes on waterfall displays and listened to the modes with sound files. Steve covered off SSTV, Rex covered WSJT and highlighted there are currently 31 WSJT modes available, Bob VK7ZL

*Photo 4: Jackson VK7FJAX manning a safety checkpoint at the Fonthill Equine Endurance Event (Photo courtesy of Dale VK7FNE).*







Photo 5: The view from Murderer's Tier SOTA Summit VK7/EC-024 (photo courtesy of Justin VK7TW).

covered QRSS, DFCW and WSPR and the author covered WSPR and FreeDV modes. Many shared their experience with setting up the mode, interface and etiquette on using the mode.

The October presentation was something a bit different with a presentation by the author on family history research. The author completed a course at the University of Tasmania and the talk centred on the principles of family history research from his research project centring on his Grandfather. It included many humorous elements including the inevitable skeletons falling from the closet!

DATV nights continue to be popular with a look at Cold War Project West Ford, global fibre networks, pico-balloon updates, Sean VK7FAZE showed us a miniature Wi-Fi module, NDB Antennas & 630 m Marconi-T

vertical analysis with MMANA, FOX1A telemetry decoding with Tom VK7NTK, China's FAST telescope, Rex VK7MO actuators, VK5DJ Yagi calculator and MMANA, latest Lo-Key & DUBUS magazines, SOTA updates, Grote Reber, history stories, LHC music, LED lighting, QRSS transmitters thanks Richard VK7RO, early TV in Australia, etc. Our videos included GoPro HAB footage, conference presentations about hacking the wireless world and satellites, Ham College, Carl Sagan, Arthouse and Presentations from Dick Smith VK2DIK thanks to the Manly Warringah Radio Society.

### WICEN Tasmania (South)

WICEN South provided safety communications for the Southern Tasmanian Endurance Riders event at the historic property of Fonthill at Lemont in the Southern Midlands of VK7 in September. There was an

80, 2x40 and 20 km rides covered and the author even had time to activate, with some in trepidation, a nearby SOTA summit – Murderer's Tier VK7/EC-024 between rides. Thanks to VK7ARN, VK7CL, Alan, VK7FNED, VK7FJAX, VK7TPE, VK7JGD and VK7FCDW for a great weekend.

October 9-10, 2015 saw WICEN assist with safety communications for the Portland Equine Endurance riders 80, 40, 20, 10 and 5 km rides in and around the NE Tasmanian township of Pyengana. There were two checkpoints and base manned by the WICEN crew and all rides ran smoothly except for a few thrown shoes which were replaced by the attending farrier. Thanks go to Jackson VK7FJAX, Dale VK7FNED, Garry VK7JGD, Peter VK7TPE, Cedric VK7CL, Allan, Roger VK7ARN and the Author.



Plan Ahead

EMDRC Hamfest

28 February 2016

BARC members are pleased to welcome their new Committee members to lead us forward into 2016

President: Les Neilson VK4FAEB  
Vice President: Jim Kelly VK4HJK  
Secretary: Peter Forbes VK4ATC  
Treasurer: Kevin Dibble VK4ZR

We also are pleased to have two Training Officers undergoing training, and two more undergoing WIA accredited Assessor training.

For a full listing of club positions please view our website: <http://www.qsl.net/vk4ba/info/office.shtml>

## JOTA 2015

Our **JOTA** weekend was a roaring success, this time we really superseded our previous year's achievements, with seven stations setup and operating. We had them located in various positions out under the trees around and inside the Scout Hall.

### Preparations are key

Our preparations on the previous Saturday provided us with a good operating base for a great weekend.

*Photo 2: Bill VK4TWS explaining the how of radio communications while Jim VK4HJK does running repairs.*



*Photo 1: BARC 40 m Station: Scouts operating radios after supervised instructions.*

Ten members came along to put up some ropes in preparation for installing antennas for the JOTA afternoon. With the assistance of Steve VK4FSDC who did an excellent job with his antenna launcher we now have ropes over five trees located high in the branches.

The newish offset feed antenna

was reinstalled and was raised by quite a number of metres, and the coax feeder was run into the main building to be used next weekend.

The long wire antenna was also reinstalled with one end connected to a remote tree in the lower paddock.

The coax and rotator control cable were repositioned back to the main building in preparation.

Jim VK4HJK also brought along a telescopic vertical HF antenna to use for on weekend.

### On the Day

We had plenty of activity from the youngsters, asking lots of questions and making lots of calls. VK4ANB Norm had the longest conversation ever in his experience with a VK5 JOTA contact for around three hours, his borrowed Buddipole antenna performed superbly on the day, posing the question who wouldn't want one.

There was plenty of activity on 2, 15 & 40 m stations, with a lot less on the other frequencies and virtually none on 80 m.

Thanks to all the Members in attendance that were:





Photo 3: Len VK4FIAA instructing Scouts on their radio etiquette.



Photo 4: Les VK4SO introducing guides to 10 m contacts.

Bill VK4TWS, Jim VK4HJK, Norm VK4ANB, Les the Elder VK4SO, Shannon VK4FHEA, with his friends Carley & Alan, Gary VK4FGZA, Kevin the younger VK4WA, Kevin the elder VK4ZR, Les the younger VK4FAEB, Len VK4FIAA, Keith VK4FVKM, Malcolm VK4FAIA, Jan VK4EBP and Peter Forbes VK4ATC our photographer.

### Lesson Learnt

We took away plenty of notes on the things that worked and things that didn't which will go a long way to successful planning in time for next year's JOTA as an example: The buddy pole antenna proved very popular as once it was tuned it performed superbly, making a lot of the members murmuring about getting one for themselves. Have a great Day.

Les Neilson VK4FAEB  
Rosedale Sth Qld



Photo 5: Norm VK4ANB and Scouts having a long conversation with Western Australia JOTA.

## Participate

# ANZAC Centenary stations - last chance



The final push to celebrate the withdrawal of ANZAC troops from Gallipoli on 20 December 1915.

Stations with ANZAC suffixes will be on air 12 to 20 December 2015. Further details can be found on the WIA website.



## The new constitution

As you have been told in the last couple of ALARA notes, we have been involved in writing a new Constitution under the new rules. On Monday 2nd November 2015, we had a special General Meeting to vote for or against the changes and the acceptance of the new rules. The meeting was planned to be partly on air and partly on EchoLink so more people could be involved, but the QRM was terrible on 80 metres so it devolved to be entirely held on EchoLink.

There were twelve members present and between us we held another 40 proxy votes. The actual vote was unanimous in favour of the changes. Thanks to those of you who did send in your proxy votes. It made the difference although Jean VK5TSX had discovered less than a week before the SGM that the vote was legal if 70% of those present voted in favour, rather than 70% of the members.

## A special luncheon

When we heard that Jenny VK5ANW / VK3WQ had a serious health problem and that she was coming to VK5 to visit her family, the VK5 YLs decided to have a special luncheon while she and her OM Peter VK3RV were there.

This time the OMs as well as the YLs were invited and Jenny's daughter, Wendy, and granddaughter, Holly, made up the number. This time the luncheon was held at the Colonnades Shopping Centre which made it a little nearer for Jenny and Peter and for Meg and David, all coming down from Murray Bridge. Several others used the electric train service which stops right at the Shopping Centre.

All in all there were nine ALARAS members and five OMs. Jenny was presented with an "Eeny weeny yellow



Photo 1: Jenny, family and ALARA YLs at lunch.

polka dot bikini" in case she might need it – Jenny said the bikini would fit Holly in a year or so rather than fit her, but good fun was had all round.

It was decided on the day that this would be the ALARA lunch for October, but it was noticeable that there were four ALARA YLs at the AHARS lunch on the usual second Friday of the month. Normally this is where the OMs go on the day the

## AHARS Buy and Sell

At this event, the biggest ham gathering in VK5, ALARA runs a food and drink stall, with egg and bacon sandwiches for breakfast, followed by pies and pasties and whatever soft drink you want. It is usual to have more YLs together on that day than at any other time each year, so it is another photo opportunity. It was a great time to

Photo 2: Jenny and the bikini.



YLs meet in the city.

A final luncheon spot in the city has not yet been chosen and several others will be used as we head into Christmas but we will have our Kriss Kringle luncheon in December.

meet old and make new friends without everyone having to work too hard.

### Advance news about the YL International Meet in 2016

We now have an invitation for BYLARA to the next YL International to be held in Milton Keynes in the UK, from 3rd to 10th October 2016 - with tours to Bletchley Park and to Woburn Abbey proposed as part of the fun.

YL International Meets are very special and filled with joy and friendship. Think about planning in advance to be there, if you can.

More information and the full program will be included in this magazine in the New Year.

Season's Greetings – have a Merry Xmas and safe and prosperous New Year.

33

Christine VK5CTY



Photo 3: ALARA members at the Buy and Sell event. Tina VK5TMC, Diedre, XYL of John VK5EMI, Jenny VK5FJAY, Simkit, XYL of Graham, Myrna VK5YW, Shirley VK5YL, Jean VK5TSX (obscured) Marilyn VK5DMS, Meg VK5YG, and Christine VK5CTY.



## VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

### The 2014 WIA Oceania DX Contest

The aim of the Oceania DX Contest VK Club Award is for VK Club station members to make contact within and outside of the Oceania Region with as many other amateur radio stations as possible within the 24 hours on any of the 160/80/40/20/15/10 m amateur bands.

The plaque below, confirming the GARC 2014 award for the third successive year, was received shortly before the commencement of the 2015 Oceania Contest.

### The 2015 WIA Oceania DX Contest

Preparations for the 2015 contest included enthusiastic encouragement from the GARC's

more seasoned contesters with a revision session on the installation, configuration and use of VKCL logging software. GARC Club

President Lou VK3ALB and his wife Jenni VK3FJEN dropped in on the EMDRC to check on their preparations for the Oceania

contest. There is no doubt that these two clubs have had a friendly rivalry in the Oceania contest over the last few years and Jenni and Lou acknowledge the generous manner in which they were greeted to the club meeting.



Photo 1: The 2014 Oceania VK Club Award.



#### Club Achievements Summary Band Activity

2375 contacts across five bands  
Aggregate score - 908,038 points  
389 unique call prefixes worked  
569 unique call signs outside VK  
20 GARC members participated  
Four Foundation operators on the air

#### Club Achievements Specific Band Activity

**160 m:** 8 contacts & 4 call prefixes which was about the same as last year  
**80 m:** 36 contacts & 8 call prefixes which was down on last year  
**40 m:** 1552 contacts & 196 call prefixes which was an improvement on last year  
**20 m:** 409 contacts & 152 call prefixes which was down on last year  
**15 m:** 339 contacts & 159 call prefixes which was an improvement on last year  
**10 m:** 31 contacts & 16 call prefixes which was very much down on last year



Photo 2: Ken VK3NW and Peter VK3WK.

It was clear at the outset that although band conditions this year, overall, were not as favourable as in 2014 most of those participating improved on their effort from the previous year.

Once again 40 m proved to be the stand out band with 80 m, 20 m and 10 m being far less fruitful than last year. Above are the **provisional** Geelong Amateur Radio Club statistics for the **2015 Oceania Contest** provided by Club President and principal organiser of the event, Lou VK3ALB.

The club fielded four foundation operators and for one it was his first operation in a HF contest. The other three seasoned campaigners all improved on their individual tallies from last year.

Whilst the Clubs participation was down from last year, due to member's commitment to family

and work, those that did join in all reported a great weekend.

Most members worked from home this year with two exceptions; one member operating from the banks of the Murray River and another went Maritime Mobile.

Two of our newest members Alan VK3LCD and Robert VK3BYS got into the action this year and even though it was a little tough for them initially, they both thoroughly enjoyed the contest.

This year saw the emergence of new life member Rex VK3ARG submitting his log for the first time after being forced to "listen only" last year due to a lack of a suitable transmitting antenna.

Notable amongst the participants this year was the involvement of the two GARC contest giants, again, with Ken VK3NW and Peter VK3WK submitting scores of 438150 and

232825 respectively.

Subsequent to the contest the club held a **"Contest Review"** night to allow all the participating members to get together and exchange war stories and experiences from the contest weekend. The evening allowed the members to discuss tactics and explain their station setups and hear hints from the more experienced testers on how to get the best out of contesting.

Whilst the GARC may not be viewed as a "Big Gun Contesting Club" they continue to show both solidarity and commitment in the pursuit of contest targets, like the Oceania Award; which in turn helps strengthen both the club and the bonds between members.

#### Changing roles within the GARC

At the 2015 AGM two significant club roles were re assigned. The role of Training Coordinator was transferred from Jenni VK3FJEN, who has successfully run this function for over five years, to Rex VK3ARG, who also has an Assessor role within the club. The role of Maintenance Manager was transferred from Garry VK3FWGR to **The Wednesday Group** as a whole, with spokesperson Bruce VK3HAV reporting.

73  
Tony Collis VK3JGC



#### Plan Ahead

**MERC Hamfest**  
**John Moyle Field Day**

**13 February 2016**  
**19 - 20 March 2016**



Christine Taylor VK5CTY

## The October meeting

The October meeting was addressed by a police officer, Matt. He gave us much food for thought. He is involved in the traffic section and is very concerned because many drivers either are not aware of the consequences of their actions, or they just don't care. Every time we drive, we make choices about how we will behave behind the wheel, and for each of those choices there are risks and consequences.

The choice that is most responsible for deaths on the roads is the choice whether or not to wear a seatbelt. In the event of an accident more people are killed or injured if they are not wearing a seatbelt than if they are wearing one. Sometimes it seems a nuisance to fasten the seatbelt, especially if we are 'just going round the corner'. In fact there are statistics that show that more accidents occur within a short distance of home, than at anywhere else. So do make it a policy however long your trip, fasten up.

However it is on the open road and when we are travelling at speed that we face the greatest danger and the worst accidents. According to the information Matt gave us the five most significant causes of death and injury on the road, are Speeding, Seatbelts, Distraction, Dangerous driving practices and Impairment.

Recently there has been a crackdown on people using mobile phones while driving, especially 'texting' (or reading texts). Surely there is nothing so important to say that cannot wait till we have stopped driving. These days we are so 'controlled' by our mobile phones we have forgotten what it was like not to have instant communication with our friends. We used to have to find a phone

box or to wait until we got to our destination. Yes, mobile phones are marvellous in an emergency, but not when they cause the emergency.

I am sure we can all understand the significance of the last two items on the list, dangerous driving and impairment. One point made to us is not to be critical when we see a police car outside a bakery. That is almost a rule of behaviour for policemen. To stop at a bakery means that they get out of the car, walk around a bit and they have a sugar 'hit' to boost their energy level.

Well that is what we were told!

Of course it is a very good idea to break any long journey every couple of hours, change drivers if you can, and walk around the car to stretch your legs. All these actions will help you to remain alert.

## Other activities

On Saturday 24<sup>th</sup> October, AHARS was allotted the VK100ANZAC station. That day was, in particular, to recognise the VC given to William Henry Kibby in WW1. Six club members participated on either the Saturday or the Sunday and over 70 contacts were made. There would have been more if there had not also have been a DX contest on but as there is some sort of contest



Photo 1: David VK5KS.

almost every weekend, that is to be expected.

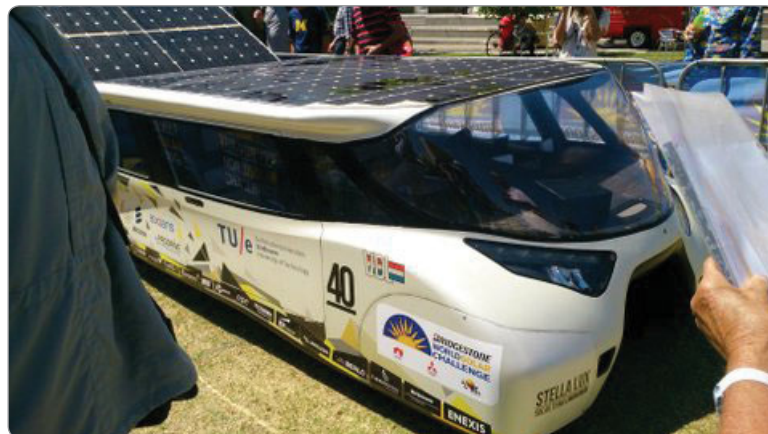
## Examinations

These are still held regularly at the Shack and recently a couple of members upgraded their qualifications. For more information contact Sasi VK5SN or Barry VK5BW.

## The Solar Challenge Race

David VK5KC, our Immediate Past President, participated in this year's Solar Challenge in the Touring car section. He had a marvellous time

Photo 2: David's solar power vehicle.



and will tell us about some of his experiences at a later meeting, but a photograph of him and the car in which he was a passenger accompanies this article.

The touring section is a recent addition to the Solar Car Race as the requirement is that there are passengers, not just a driver, so the cars are quite different. Glad the weather was kind this year as it has not always been as sunny.

## Buy Swap and Sell

As always this Buy and Sell was a great place to meet the amateur friends you haven't seen for a while. It was a perfect day, not too hot, not too cool, and as always there were wall-to-wall people in the hall.

Several retailers were there, including Strictly Ham, Aztronics, and TET Emtron Antennas.

ALARA's "coffee shop" kept everyone well supplied with 'cooked on the spot' egg and bacon sandwiches, freshly made sandwiches of all sorts along with pies and pasties and almost whatever you wanted to drink. Do you realise how many different varieties there are of Coke, and Pepsi?

The tea and coffee was as popular as ever and so were the little cakes and the diabetic fruitcake.

To complement these goodies NERC ran a sausage sizzle outside the hall to add to abundance. No one should have gone home hungry.

There were fourteen door prizes including a toolkit from Aztronics and a Yeasu dual-band hand held FT-60, plus a number of antennas and baluns and an advanced AHARS SWR meter that covers from 1 to 160 MHz which is to be available as a kit sometime in December.



Photo 3: The "wall-to-wall" people at the Buy and Sell.



Photo 4: One of the SOTA awards on display.

Our thanks to all the sponsors and to the 'hams' that came to buy or browse.

Paul VK5PAS and his friends had a marvellous display of equipment and awards associated with the "Summits of the Air" they

had accumulated.

Wishing all VKs a Merry Xmas and a safe and prosperous New Year.

73

Christine Taylor VK5CTY.



## Participate

# Summer VHF/UHF Field Day 9 - 10 January





# VHF/UHF - An Expanding World

David Smith VK3HZ

e vk3hz@wia.org.au

## Weak Signal

Hello again to what will be my last column for AR.

I've been doing this for more than 12 years (since May 2003 to be exact) and things have certainly changed a lot in that time – SDR, digital modes, frequency-locked radios and greater access to hardware for the upper microwave bands to name just a few significant areas. We've seen a new World Record set across the Bight on 10 GHz (my favourite band) and, no doubt, the path to NZ will be crossed on that band before too long. Relatively modest stations now have EME capability, thanks to the wonders of WSJT. Distance records on all bands are regularly being pushed out further as equipment, modes and operating techniques improve.

This column was first named way back - I can't tell you a date but at least 50 years ago. At the time, the VHF/UHF region was one of pioneering technology where people were regularly pushing the envelope – hence the column title. These days, the envelope has been pushed well up into the microwaves bands, touching the 100+ GHz regions, where the pioneering work continues. I believe this is one of the few areas in amateur radio where people can still experiment with things that have never been done before (e.g. Digital modes on 76 GHz). It's exciting times and hopefully you're all enjoying yourselves.

By the way, if you want to look back through the columns over the years, the archive is at [http://www.vk3hz.net/vhf\\_column/index.html](http://www.vk3hz.net/vhf_column/index.html)

From the next (January/February) issue, David Minchin



Photo 1: ZL1TPH Portable north of Auckland.

VK5KK will be taking over as columnist. Those with a long memory may recall that David was the previous author of this column, having taken over from Eric Jamieson VK5LP (SK) who had written the column for some 30 years. So, it's really "Welcome Back" to David.

So, on with the column:

## ZL Opening

The opening that I reported in detail last month was just winding down as I finished the report.

**Steve ZL1TPH** sent a photo of his portable 2 m and 23 cm station. He uses an Icom IC-9100 into a 100 watt PA and VK5EME preamp feeding a 1.1 metre dish.

**Chris VK2ACD** reports:

*"On 6 October around 1010Z to 1030Z, an opening occurred from NSW North Coast to ZL, on a*

*hot evening. I made a good 5x4 FM contact via the ZL Mt.Climie repeater to Ken ZL2KJ mobile - distance 2377 km. I then copied the beacon ZL2WHO at S4-S5.*

*My station - Elecraft K3 driving TE Systems amp to about 100 W into an M2 dual polarity beam, 7 el. each way."*

**David VK4KSY** reports:

*"Using 80 watts into an 8-el Yagi, stations worked on 2 m:*

*4/10 ZL2ADU JT65B -18 from RF60WN 2506 km*

*5/10 ZL2ADU SSB 5X9 2506 km*

*6/10 ZL2ADU SSB 5X9 2506 km, ZL1TU SSB 5X2 2283 km, ZL1AKW SSB 5X1 2593 km and ZL3TY JT65B -13 from RE57OM 25434 km".*

**Kevin VK4UH** submitted the following report about his activities during the opening:



"The first indication of the massive 3-day tropo opening between ZL and east coast VK occurred around dawn on Sunday (1946 UTC) on 3rd October when Ron VK4CRO (QG62nl) reported 5/5 SSB signals to Harry ZL2ADU (RF60wn). This was immediately followed by a similar QSO between VK4NWH and ZL2ADU. Shortly afterwards (2010 UTC) VK2DVZ in (QG68gd) reported hearing the 2m ZL2WHO/b (RF70om) beacon at S9 and worked Harry on SSB at 5/9. Harry ZL2ADU went on to work VK2MAX (QF68jv) and Mick VK4NE (QG62nj).

At 2019 3.10.15 UTC, VK2BCC (QF56di) reported working Nick ZL1IU (RF64vf) at 5/8 and VK2DVZ worked ZL1AVZ at 5/2. At 21:20 UTC conditions improved further. I made contact with Mark ZL2WHO and then again with Nick ZL1IU and Ray ZL2TAL on 2 m SSB. At 2133 UTC the path was successfully tried on 432 MHz SSB between myself VK4UH (QG62kp) and Nick ZL1IU (RF64vr) with reports of 5/3 in both directions.

Over the next few hours several more VKs reported hearing the 2 m ZL2WHO/b beacon, which had just gone back on air and was now equipped with JT4D encoding. These stations included VK2BCC (QF56di), VK4CZ (QG62lp), VK4UH (QG62kp), VK4REX (QG63le), VK2ZT (QF57wf) and VK4ADM (QG63mg). The 2 m/70 cm Logger started to light up between each of these stations on either side of the Tasman.

The tropo duct remained present throughout the Sunday afternoon with the 2 m ZL2WHO/b beacon remaining stable and strong for many hours at a time and more stations joined on either end of the path including VK4WR (QG62jv) VK2MDC (QF56pm) who reported his first ever 2 m DX QSO to ZL1IU.

Propagation continued throughout Sunday afternoon.

At 0745 4 Oct UTC I again worked ZL1IU on 2 m and then 70 cm SSB.

At 2155 4.10.15 UTC (Monday morning) Rex VK4REX (QG63le)

**ZL1TPH**  
Stephen HAYMAN  
New Zealand  
See QRZ.com *2298 km on 1296.1*

Confirming our QSO

To Radio	DATE			UTC	MHz	2-Way	RST
	DAY	MONTH	YEAR				
<i>VK4UH</i>	<i>06</i>	<i>10</i>	<i>2015</i>	<i>20:39</i>	<i>1296.1</i>	<i>✓</i>	<i>51</i>

ITU 60 CQ 32

☐ Pse QSL Tnx ☐ *73,*

Photo 2: ZL1TPH QSL Card for 2297 km 23 cm contact with Kevin VK4UH.

reported copying the 23 cm beacon VK4RBB in Brisbane. Contacts were then made on 23 cm to Rex by Scott VK4CZ and I VK4UH, all stations using an apparently backscattered path beaming QTF 100."

On Tuesday, the duct remained stable throughout the day with multiple contacts being reported on the logger. Rex VK4REX (QG63le) and VK4ADM (QG62mg) reported decoding the JT4 ident from the 23 cm ZL2WHO/b beacon from 2114 5.10.15 UTC at -17 dB level. Work stopped play for VK4UH until late afternoon. From 0730 6.10.15 UTC onwards I (VK4UH) worked ZL1IU (RF64lr), ZL1AKW (RF82cg), ZL3TY (RE57om) and ZL2ADU (RF60wn) on 2 m SSB, all at good signal strengths. Finally at 0822 UTC I worked ZL1IU again on 70 cm SSB at 5/1 in both directions. That evening VK2MAX (QF68jv) and VK2ZT (QF57wf) reported working Steve ZL1TPH/p (RH73hm) on 23 cm SSB. I also reported receiving the 2 m and 70 cm ZL2WHO beacons throughout that evening.

On Wednesday, alerted by a phone call from Scott VK4CZ, I came on air again before departing for work. VK4REX had been reporting from 1900 6.10.15 onwards decoding the ZL2WHO beacons on 2 m, 70 cm and 23 cm.

Both Rex and Scott had worked Steve ZL1TPH/p (RH73hm) on 23 cm SSB with 5/6 5/7 reports. Not expecting a result from my tiny 10-element Yagi on the end of 30 m of RG213, I made a call at 20:39 to ZL1TPH/p and was rewarded with a contact with 5/1 reports in both directions. This was my best DX at 2297 km on 23 cm and first contact out of the local area. The path remained open until the Wednesday evening. Let's hope this was just a taste of more tropo openings to come this season."

Kevin has already received a QSL card from Steve ZL1TPH for his 23 cm contact.

That's it from me. Thanks to all those people who submitted items for the column over the years. It helped out a lot and was very much appreciated.

So, in the words of Douglas Adams, so long and thanks for all the fish!

## Meteor Scatter

Dr Kevin Johnston VK4UH

It's been hard not to feel underwhelmed by the distinct lack of meteor shower enhancement this year. The Orionid shower came and went around the 22nd October with more of a squeak than a fanfare.

The Orionid Shower occurs on this date each year as the orbit of the Earth around the Sun takes us across the trail of debris left behind by the Halley's Comet. In fact we cross this trail twice each year at either side of the earth's orbit. Even though this shower favours paths in the northern hemisphere it has still produced spectacular meteor scatter enhancement in previous years with a Zenith Hourly Rate (ZHR) of 25/hour.

Even before the predicted peak Arie VK3AMZ reported:

*"The current ZHR is pretty well down at the moment for the Orionids. I must confess the shower is not living up to expectations of previous years; in fact it has been getting progressively worse. I would imagine that's a function of celestial mechanics, or just running out of rocks. I suspect the former. These things move into and out of range so to speak of the Earth's path around the Sun. Jupiter has a very big influence on the dynamics of the whole thing. I can say with some confidence conditions will not be suitable for 70 cm M/S. 2 & 6 should see elevated levels of meteors but nothing that I would consider outstanding. In the past few years the shower that has been the most consistent in terms of intensity is the Geminids (expected to peak around 15 December). Now that is worth considering if anyone wants to try 70 cm. M/S. My predictions are based entirely on my 'feel', no science behind it. Sometimes it's great to be human!!!"*

Again this year, professional commitments took me away to Sydney during that week and I missed the shower completely. Reviewing the reported MS activity from the VHF Logger showed little enhancement over random meteor activity. The "usual suspects" were on-air over the UTC weekend (23-24 October) activity sessions including VK2DVZ, VK2AMS, VK2XN, VK3AMZ VK3II, VK3HY, VK3DUT, VK4CRO, VK4LHD, VK4NE, VK4CDI, VK4CZ, VK5PJ and

VK5APN and ZL3TY on 2 m. Arie VK3AMZ reported "Little Orionid activity" on 23 Oct. Bob ZL3TY in Greymouth (RE57om) did complete with Ross VK2DVZ at Cundletown (QF56gd) and Mark VK2AMS at Taree (QF68fc) on 2 m.

**Gavin VK3HY** reported his impressions:

*"In a word - disappointing. Conditions experienced here were about average. Perhaps, I missed the peak. It will be interesting to hear what others who may have been more active over the period have to report".*

On 6 m MS, Scott VK4CZ (QG62lp) completed with Norm VK3DUT (QF32vf), Peter VK5PJ (PF95mk), Andrew VK3OER (QF23db), Jim VK2FAD (QF56ss), Jim VK3II (QF21rn) and Mark VK2EMA (QF37qs) on 23 Oct. Phil VK5RM (PF95gc) completed with Norm VK3DUT and Gavin VK3HY (QF22pd). Mick VK4NE (QG62nj) was also decoded by Andrew VK3OER – all on 23.10. Similar MS propagation and contacts also occurred on 24 Oct. but with nothing spectacular being reported. The VK4-ZL MS path was still not achieved.

Over that last few months I have reported in this column the upsurge in activity on 50 MHz MS and have made reference to the two parallel weekend activity sessions now occurring on 2 m and 6 m. On 2 m there are two designated meteor scatter frequencies or "centres of activity" to be correct; the primary operating frequency being 144.230 with a secondary frequency 100 kHz up at 144.330. Most activity, particularly using FSK441 mode during the Saturday and Sunday morning activity sessions, occurs on the .230 the primary frequency. The secondary .330 has been used for the de-facto VK-ZL MS activity session on Saturday mornings, for special activities including the VK9NA VHF/Microwave DX-peditions to Norfolk Island and at other times when testing alternative and incompatible new digital MS

modes or when trying incompatible timings or reversed periods etc.

On 6 m the primary designated operating frequency is 50.230. With the current increased activity and interest there is a clear need, for all the above reasons, for a secondary MS frequency on this band too. I have made a number of references to this over last few months suggesting 50.330, i.e. 100 kHz above the primary, to parallel the 2m activity, as the secondary MS frequency. On reviewing the revised WIA VK 6 m Bandplan however it is apparent that the recent amendments place 50.330 in the newly expanded section proposed for "future beacon use" (50.320-50.400 MHz). Although there are no VK beacons currently licenced for this frequency, clearly it would be better for the MS community as a group to avoid this frequency and try to comply with the bandplan for the future. 50.330 is, in reality, already problematic for operators around Adelaide due to de-sensing from the VK5VF beacon at Crafers on 50.320 MHz. As we know the new bandplan has moved away from allocating specific frequencies to specific modes in favour of allocation by bandwidths in order to facilitate new developments, while still recommending "centres of activity" rather than spot-frequencies. By its nature Meteor Scatter is one of the few propagation modes that still needs a spot frequency.

In looking for a suitable secondary frequency to suggest it is again apparent that 50.430 MHz, 200 kHz above the primary activity centre will also clash with the revised band-plan as this frequency is now within the section proposed for "Propagation Studies" (50.400 – 50.500 MHz). It is also clear that small frequency changes of 5, 10 or even 20 kHz from the primary provides insufficient separation between two closely located "high performance" 6 m Meteor Scatter Stations i.e. running legal power, high gain antennas and

preamplifiers. So where could we consider for a secondary operating focus frequency? After careful review my suggestion at this time is for the use of 50.530 MHz as a Secondary Meteor Scatter frequency. This frequency, 300 kHz above the primary, provides adequate separation even for closely located stations running cross modes, periods or timings, and also complies with revised bandplan placing it in the "All

Modes" section of the band. I would welcome any feedback on this suggestion.

Finally in closing I would like to acknowledge, with gratitude, the long-term efforts of David VK3HZ who is coming to the end of his stewardship of the parent "VHF/UHF – An Expanding World" column in *AR*. David has been its author for many years and has made this the must-read section for all of us interested in this aspect of our hobby.

The next significant Meteor Showers for the calendar will be the Leonids expected to peak around 18th November (ZHR 20/hour) and then the Geminids peaking around 15th December (ZHR 120/hr)

Please send any reports, questions or enquiries about Meteor Scatter in general or the digital modes used to Kevin VK4UH at [vk4uh@wia.org.au](mailto:vk4uh@wia.org.au)



## Spotlight on SWLing

Robin L. Harwood VK7RH  
e [vk7rh@wia.org.au](mailto:vk7rh@wia.org.au)

Another year is drawing to a close and I can see that the shortwave scene has rapidly imploded from what it was only a couple of years ago. The broadcasting allocations no longer are congested as they were only recently and all that remains is noise and hiss. I am finding utility services are increasingly grabbing these unused channels. There are plops and beeps, whether they are from radio signals, or from other electronic gadgetry in your own home or neighbourhood. Broadcasters have increasingly abandoned HF in favour of streaming their content over the Internet. There are a few stations still remaining, hoping that **Digital Radio Mondiale** (DRM) will eventually take off, yet it hasn't simply because DRM receivers have not been manufactured in huge quantities to be commercially viable. India seems to be the only nation where there has been some effort to mass produce suitable receivers. India has been installing senders capable of DRM on both MW and SW.

When I first started listening to shortwave stations with my first Kreisler Beehive radio, one of the first stations that I came across was

HCJB from Ecuador on 11915. It was naturally in English around 0700 and I dispatched my first SWL report off to South America. It took over a year to receive a reply, primarily because I naively posted it by surface mail. The signal from Quito was beamed to the South Pacific. Fast forward to 24<sup>th</sup> October 2015 and HCJB's successor, Reach Beyond Australia from Kununurra in WA, ceased broadcasting to the South Pacific after 75 years of broadcasting to the region. HCJB closed down their Pico senders because the site was required for the expansion of Quito International Airport. They are still operational but only for locals on 6050 and a local ministry took over the sender, which was separate from Pico. I believe that it has been heard signing on at 1000 in Spanish and Quechua, a local language widely spoken in the Andes. However this channel is swamped by other regional broadcasters such as Radio Havana, making it hard to hear.

Propagation of late has been very patchy with auroral displays the result of solar storms. It is no wonder that usage of HF has dramatically declined, although you would not think so, if you go by HF amateur allocations, especially during a worldwide contest.

I note that SAQ in Grimeton, Sweden, will again be transmitting on Christmas Eve, probably around

0900 and 1200 UTC. I can only monitor it on the web using various SDR sites. It is on 17.2 kHz. This alternator is running 200 kW and can be heard primarily in Europe.

My deafness has not improved and I now have a major hearing disability. This has made it impossible to monitor shortwave and have decided to give up compiling this column. I have been writing this for over 30 years and I no longer have the motivation nor enthusiasm to continue. Friendships have been forged through this, especially the past decade with giants in the hobby such as Victor Goonetilleke and Andy Sennit. I remember hearing them via Radio Netherlands Media Network and reading their articles in the *World Radio Handbook*. One person I really would have liked to meet in person was the legendary Arthur Cushen. I have a personally autographed copy of his book and he was aware of me, just as I was starting out writing in this journal.

The editors of *Amateur Radio* have been very kind and helpful over these three decades and now it is time to relax and move on. To Peter VK3PF, and the team at the Publications Committee, the WIA Executive, and for all of you who have contributed information to keep this going, my sincere gratitude.

Merry Christmas and a Happy 2016.

Robin L. Harwood VK7RH







# Contests

James Fleming VK4TJF

e vk4tjf@wia.org.au

Well the year is just about over. All that is left is the month of December.

The contest for this month is the ARRL 10 metre contest that runs for 48 hours on the second full weekend of December starting 0000 UTC Saturday going till 2359 UTC Sunday. December 12-13<sup>th</sup>. However you can only operate up to 36 hours.

Off times must be at least 30 minutes in duration, plenty of time to have some BBQ. There are multiple modes High, low and QRP power. You can do either phone CW or mixed.

There are now two divisions: single operator and single operator unlimited, where use of spotting assistance or automated multichannel decoders are permitted. You can also team up with other amateurs and run a multi-operator station. DX stations give their RST and serial number and stations from W/VE give RST and province or state abbreviation. Mexican stations give their RST and state. Scoring is two points for phone and four points for CW. Multipliers are many, each US state, Canadian province, Mexican state, ITU region and DXCC country. The easiest way to log the contest is the VKCL logging program and sending in your log electronically, via email.

## Contest Calendar for December 2015 - February 2016

Month	Date	Starts at	Spans	Name	Mode
December	4th - 6th	2200 UTC	42 hours	ARRL 160 metre contest	CW
	5th	0000 UTC	24 hours	Ten-metre contest	RTTY
	12th - 13th	0000 UTC	48 hours	ARRL 10 metre contest	CW / SSB
	19th	0000 UTC	24 hours	OK DX RTTY contest	RTTY
	19th - 20th	1400 UTC	24 hours	Croatian CW contest	CW
	19th	0000 UTC	24 hours	RAC Winter contest	CW / SSB
January	1st - 31st	0000 UTC	Month	Ross Hull Memorial VHF-UHF	ALL
	2nd - 3rd	1800 UTC	30 hours	ARRL RTTY Roundup	RTTY
	9th - 10th	0100 UTC	24 hours	Summer VHF/UHF Field Day	SSB / CW / FM
	16th - 17th	1200 UTC	24 hours	Hungarian DX contest	CW / SSB
	23rd - 24th	1200 UTC	24 hours	BARTG RTTY Sprint contest	RTTY
	30th - 31st	0600 UTC	36 hours	REF contest	CW
February	13th - 14th	0000 UTC	48 hours	CQ WW RTTY WPX contest	RTTY
	20th - 21st	0000 UTC	48 hours	ARRL International DX contest	CW
	27th - 28th	0600 UTC	36 hours	REF contest	SSB
	27th - 28th	1300 UTC	24 hours	UBA (Belgian) DX contest	CW

Rules for most international contests may be found at [www.hornucopia.com](http://www.hornucopia.com) courtesy of WA7BNM.

So that is the contest in a nut shell. It may help some people to get Monday morning off work to make more contacts to North America. It may also help to know that during this time of year trans-equatorial propagation with signals from Japan to New Zealand is common. I hope to hear everyone on the 10 metre contest.

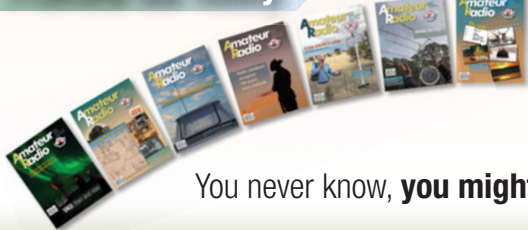
I wish everyone a merry Christmas and a Happy New Year! And hope that this year has brought everyone lots of fun contesting.

I'm looking forward to next year. Over the past couple of years I have put forward my own stamp and uniqueness to this column. As it is, I feel that I have no more to refine and contribute. Thus I'm stepping down as Contest columnist and wish to hand in to the next person as to keep the column fresh and exciting.

Cheers and 73.  
James Fleming VK4TJF



## 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!

# Ross Hull Memorial VHF-UHF Contest 2016

Contest Manager: John Martin VK3KM

The next Ross Hull Contest will run through the month of January 2016. Logs will be due by Monday 15 February.

If you participate in the Summer VHF-UHF Field Day, remember that you can count Field Day contacts (one per station per band per day) in your Ross Hull Contest log. There is no need to exchange separate serial numbers for the two contests.

## The Contest

The WIA maintains a perpetual trophy in honour of the late Ross A. Hull and his pioneering achievements in VHF and UHF operation. The contest is open to all amateurs. Certificates are awarded to all entrants, including certificates for the top scoring amateurs in each licence class.

## Duration

0000 UTC January 1, 2016 to 2400 UTC January 31, 2016.

In Eastern Summer Time, that is 11 a.m. on 1 January to 11 a.m. on 1 February.

## Sections

- A: Best 7 days, analog modes.
- B: Best 7 days, digital modes.
- C: Best 2 days, analog modes.
- D: Best 2 days, digital modes.

Digital modes are defined as those in which the decoding of the received signal is done by a computer.

Entrants may submit logs for more than one section.

## General Rules

One callsign and one operator per station. Stations may operate from any location. You may claim one contact per station per band per UTC day. Repeater, satellite, EME and crossband contacts are not permitted. Split frequency

operation is allowed, for example on 50/52 MHz. Calling frequencies should be kept as clear as possible so as not to interfere with other stations making or listening for calls. If contact is established on a recognised DX calling frequency (i.e. 50.110, 144.100 etc), stations should QSY up to .150 or higher to make the contest exchange. All rulings of the contest manager will be accepted as final.

## Contest Exchange

For Section A or C, Entrants must exchange RS (or RST) reports plus a serial number. Serial numbers need not be consecutive. *NOTE: For propagation modes such as meteor scatter or short-lived sporadic E openings, it is sufficient to exchange callsigns plus two further digits that cannot be predicted by the other station.*

For Section B or D, exchange callsigns plus two further digits that cannot be predicted by the other station.

While not an essential part of the contest exchange, Maidenhead locators may also be exchanged as an aid to distance calculations.

## Logs

Logs must contain the following for each contact:

- Date and UTC time.
- Frequency and callsign of station worked.
- Reports and serial numbers sent and received.
- Approximate location or grid locator of station worked.

Separate scoring columns for each band would be helpful.

## Scoring

Scoring will be based on the best seven UTC days nominated by the entrant.

For each contact, score 1 point per 100 km or part thereof (i.e. up to 99 km: 1 point, 100 – 199 km: 2 points, etc.)

6 m	2 m	70 cm	23 cm	Higher
x 2	x 3	x 5	x 8	x 10

Multiply the total by the band multiplier as follows:  
Then total the scores for all bands.

## Cover Sheet

Logs must be supplied with a cover sheet containing:

- Operator's callsign, name and address.
- Station location (if different from the postal address).
- Section(s) entered.
- A scoring table set out as the example below.
- A signed declaration that the station has been operated in accordance with the rules and spirit of the contest, and that the contest manager's ruling will be accepted as final.

Please use the following format for your scoring table on page 55. If you wish you can cross-check by adding the daily totals across the table, but please make sure that you include the separate band totals.

A cover sheet and scoring table is included in the postings on the WIA web site. Copies can also be obtained from the e-mail address given below.

## Penalties

Minor errors may be corrected and the score adjusted. Repeated use of recognised DX calling frequencies (especially when the reports indicate strong signals) may lead to disqualification. Inclusion of any false log entries will lead to disqualification.

Date	6 m		2 m		70 cm		23 cm		etc		
Day 1	xxx		xxx		xxx		xxx		xxx		
Day 2	xxx		xxx		xxx		xxx		xxx		
<b>2 Day Subtotals</b>	xxx	+	xxx	+	xxx	+	xxx	+	xxx	=	<b>xxxx (2 DAY SUBTOTAL)</b>
Day 3	xxx		xxx		xxx		xxx		xxx		
Day 4	xxx		xxx		xxx		xxx		xxx		
etc.											
<b>7 Day Totals</b>	xxx	+	xxx	+	xxx	+	xxx	+	xxx	=	<b>xxxx (7 DAY TOTAL)</b>

## Entries

Paper logs may be posted to the Manager, Ross Hull Contest, PO Box 2042, Bayswater Vic 3153. Electronic logs can be e-mailed to [rosshull@wia.org.au](mailto:rosshull@wia.org.au) Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, MDB, PDF, or any Open Document format.

Logs must be received by **February 15, 2016**. Early logs would be appreciated.

## Note on Calculating Distances

Absolute accuracy is not required. You just need to know whether each station is above or below the nearest multiple of 100 km, so you can use a compass to draw 100 km circles around your location on a map. Alternatively, you can use contest logging software that can calculate distances. If so, you will need to exchange 6-digit

Maidenhead locators to get an accurate distance measurement. You can also calculate distances from six-digit Maidenhead locators using a computer program that is available on the Ross Hull Contest page of the WIA web site.

**Contest web page:** <http://www.wia.org.au/members/contests/rosshull/>



## 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 net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. 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. 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

VK4RIL Laidley repeater on 147.700 MHz  
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

#### In South Australia

VK5TRM, Loxton on 147.175 MHz  
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, EchoLink node 399996

#### In Tasmania

VK7RTV Gawler 6 metre repeater 53.775 MHz IRLP node 6124  
VK7RTV Gawler 2 metre repeater 146.775 MHz IRLP node 6616

#### In the Northern Territory

VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT 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

# Ross Hull Memorial VHF-UHF 1st - 31st January



# 35<sup>th</sup> ALARA Contest 2015 results

*Lesley R. Smit VK5LOL ALARA Contest Manager 2015*

(Contest always held on the last full weekend in August)

With only 20 logs submitted, this was a small but enjoyable contest

with all states participating and a variety of operational modes – HF, CW and EchoLink.

Diane Main VK4DI has emerged

out of the woodwork to become our top YL overall with a total of 1227 points. Leonie VK2FHRK took her usual place as top Foundation licensee and Shirley VK5YL was our top EchoLink YL.

It's a hard slog for the Oms, so my congratulations go to Chris VK2ACD as our top VK OM. We always appreciate our menfolk giving us a call.

We only had two DXers: Ngaire ZL2UJT and Elizabeth VE7YL but it was great to touch base with them both.

Lyn VK4SWE is our CW champion and it was great that she had two contacts with Elizabeth on CW.

As this was my last as Contest Manager, I would just like to thank once again all those who take time to participate. A new Contest Manager may be able to generate some new ways for ladies to come up on the airwaves and thus spark up some more interest.

73,  
Lesley R. Smit VK5LOL



Diane VK4DI	1227	Top YL Overall Top VK4 ALARA Member
Leonie VK2FHRK	600	Top ALARA Foundation licensee Top VK2 ALARA Member
Chris VK2ACD	382	Top VK OM Top VK2 OM
Rosanne VK7NAW	329	Top VK7 ALARA Member
Jenny VK3WQ	328	Top VK3 ALARA Member
Lesley VK5LOL	230	Check log (EchoLink 68)
Shirley VK5YL	185	Top VK5 ALARA Member Top YL EchoLink (EchoLink 110)
Mike VK3JV	164	Top VK3 OM
Linda VK7QP	143	
Christine VK5CTY	133	
Bev VK6DE	107	Top VK6 ALARA Member (EchoLink 107)
Lyn VK4SWE	107	Top VK YL CW (CW 68; EchoLink 39)
Ngaire ZL2UJT	79	Top ZL ALARA Member
Elizabeth VE7YL	77	Top Canadian ALARA Member Top DX YL CW (CW 20; EchoLink 57)
Jenny VK5FJAY	72	(EchoLink 26)
David VK2JDR	70	
Hans VK5YX	65	Top VK5 OM (EchoLink 55)
Jim VK2ZMC	40	
Dot VK2DB	38	
Bob VK6POP	20	Top VK6 OM

## Over to you

### Licence fees

On WIA News Broadcast on 11 October, there was an article about writing to politicians and media people to lobby these people with a view to having a zero licence fee.

There were a number of reasons for NOT doing so, an important one is: The reduction of fees would undoubtedly reduce the level of service.

In the 1980s, the fees were being proposed to be raised to approximately \$300 per year. Many amateurs wrote to politicians, outlining their opposition. In the end the fees were

increased by \$3.00, which was the usual increase per year, (going back), for a number of years.

The Postal and Telecommunications Authority then accepted a payment of a five-year licence, this had the effect of reducing the administration fee component and as a result the fee was cheaper by about \$4 overall.

I then paid for a five-year licence from then on.

I mentioned, these facts, to the 160 metre amateur "Call back group" on Sunday

11th October last. One of the callers was unaware of the five-year licence and was very interested in taking up the offer.

I thought if anybody was unaware, then perhaps others may also be interested in this option.

ACMA may be contacted by Phone 1300 850 115 or email to: [info@acma.gov.au](mailto:info@acma.gov.au)

Sincerely,

Mervyn Millar VK5MX.



# Summer VHF-UHF Field Day 2016: fun in the sun!

Roger Harrison VK2ZRH

## Summer 2015 Event Dates

**Saturday 9 and Sunday 10 January**

Duration, all call areas other than VK6  
0100 UTC Saturday to 0100 UTC Sunday

Duration in VK6 only  
0400 UTC Saturday to 0400 UTC Sunday

## On summertime

Summertime  
And the hilltop is breezy  
The bands are jumpin'  
And the feeling is high  
The DX is callin'  
Up twenty from one-five  
So CQ field day  
See who will reply.

– after George Gershwin

Exuberance seems to drive many amateur radio activities carried on in summer. Particularly on the bands from 50 MHz on up. There's a general anticipation – even an expectation – that *things* are going to happen. Summertime is considered the traditional 'DX season', with tropospheric inversion and ducting creating DX openings, while ionospheric sporadic E also offers surprise DX opportunities. However, Greek philosopher and scientist, Aristotle, cautioned that "One swallow does not make a summer, neither does one fine day". How come he knew about the

vagaries of DX openings in 350 BC?

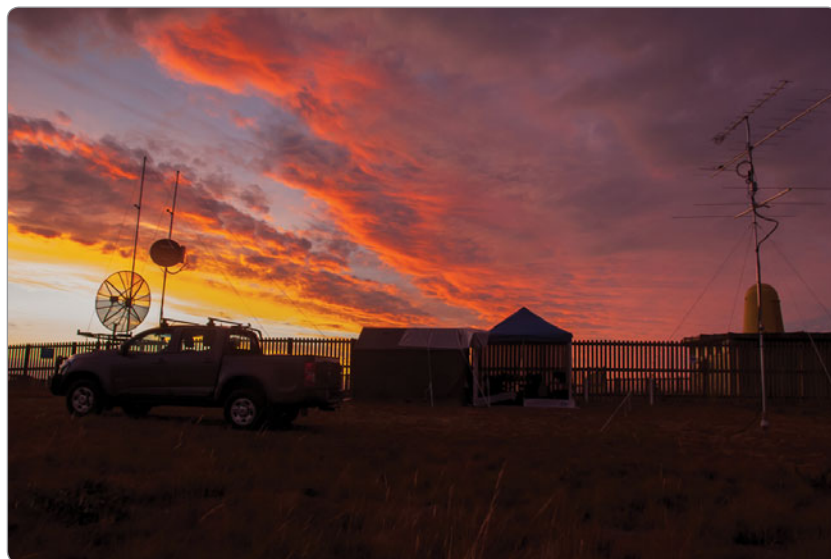
Philosophy and science aside, the first VHF-UHF Field Day for 2016 continues the developments introduced for the 2015 Winter event – the revised categorization of Sections and Sub-sections, the two-hour re-work period and the exchange of 6-character locators for all contacts. The two Divisions are retained for this event – grid-square scoring and distance-based scoring.

As many readers would be aware, in 2014, the WIA Board decided that the VHF-UHF Field Days should be run with two parallel

sets of rules for the two scoring systems, to "let the market decide" a preference, and further, that the Board wished to see development of the contests. Curiously, participants since the Winter 2014 event have by and large had an "each way bet" on Division 1 versus Division 2 scoring. As can be seen from the contest rules beginning with Winter 2015, there has been some development of the rules to reduce the barriers to entering the Field Days, especially for newbies, and to encourage more operators to submit logs. So, by the time you read this, the WIA Board will have launched a consultation process to canvass views about the rules for, and conduct of, future VHF-UHF Field Days.

The events since Winter 2014 have seen some interesting contest developments. In the January 2015 event, Justin VK2CU and Matt VK2DAG raised the bar for everyone by adding 76 GHz to their station arsenals. How soon before 122 GHz appears in contest logs? I also hear tell that some testers are working on automating their beam and dish pointing technologies, to steal a march on competitor stations. Four stations took up the "digital challenge" with the Winter event, the first time the Digital Sub-section appeared in the rules. Here's hoping that digital contesting

*The VK3KQ multi-operator station deployed for the Summer 2015 Field Day at QF12. Operators were Damian Ayers VK3KQ and Ralph Parkhurst VK3LL.*



develops further. Foundation stations from three states are now appearing in logs and it is hoped that this trend will continue, with more Foundation operators participating over future events. West Australian stations appeared in logs in 2015, after some years' absence. When will we see VK6s submit logs?

From late 2014, Mike VK3AVV has developed log-checking software to ease the burden on this aspect of managing these VHF-UHF events, and done a sterling job, indeed. Grateful thanks to Mike. Thanks are also due to Colin Hutchesson VK5DK and Michael Binz VK3ALZ for sharing the management of the events over 2014-2015.

Let's get on with it!

## Strategies

The introduction of the **Single-band only** Sub-section is designed to encourage newly-licensed operators, those new to the bands above 30 MHz, those returning to the hobby after a period of absence, or any operator who takes it in mind to join in casually.

If you're in this group, but have your stuff a bit more together, consider entering the **Four-bands Sub-section**. At a minimum, you can operate on any two of the bands 6 m/2 m/70 cm/23 cm, or three, or the whole four.

A founding principle of the Field Days is to go out and have fun, so the Single-band and Four-bands Sub-sections meets that philosophy and provides a taste of that for newbies. Look out, you might get hooked!

For those who are 'old hands' at VHF-UHF Field Day shenanigans, why not invite an F-call or Standard to join you in the field. Or, invite an F-call or Standard to your home QTH for a few hours of the contest. Likewise, if you know someone returning to the hobby, get them involved and mentor them through the process of making contest contacts. Light blue touch paper and retire!

Acquaint yourself with the **Contest Radar website** ([www.contestradar.com](http://www.contestradar.com)) Enter your planned portable location (4- or 6-character locator), or your home QTH, along with other salient station details. The website will display your details on a map – along with the fleet of other stations doing the same. You can see at a glance who is where. Notably, the website is integrated with the VKCL logging software.

## Sections

**A:** Portable station, single operator, 24 hours (A1) OR 8 hours (A2).

**B:** Portable station, multiple operators, 24 hours (B1) OR 8 hours (B2).

**C:** Home station, 24 hours (C1) OR 8 hours (C2).

**D:** Rover station, 24 hours (D1) OR 8 hours (D2).

Note that 8 hours means **any period up to 8 hours** (*but the period must be contiguous*); i.e. you can submit a log for a few contacts (even just one!). Likewise, 24 hours means any period from 8 hours up to 24 hours.

## Sub-sections

- Single-band only: any single band permitted on the operator's licence.
- Four-bands: 6 m/2 m/70 cm/23 cm – any two, up to the four – only.
- All-bands: all bands 50 MHz-up permitted on the operator's licence.
- Digital: contacts using non-voice digital modes (e.g. FSK441, JT4, JT65, MAP65, PSK31, RTTY, etc.) are encouraged for any Section-Sub-section, but entries must be submitted in a separate log, scored separately. Operators may submit a log for any other section in addition to their digital log entry. 'Digital' means those modes where the received signal is decoded by a computer.

Stations entering the all-bands sub-section cannot enter additional logs for the four-bands or single-band sub-sections.

A station operating on any number of bands cannot enter the single-band section for each band they use. *That's not in the spirit of this section!*

## General Rules

*There are two Divisions:*

Division 1 scores contacts on the basis of Squares (4-character locator) worked; Division 2 employs distance-based scoring. Operators may enter either Division 1 or Division 2, or both. See the scoring rules below. A Square refers to the Maidenhead Locator system definition – as denoted by the 4-character locator. To facilitate scoring for Division 2, all stations are required to exchange Sub-Square locations (i.e. the 6-character locator).

*Operating periods:*

Stations may elect to enter either a 24-hour section or an 8-hour section, but not both. Those stations entering the 8-hour sections may operate for more than eight hours, and nominate which 8-hour period they wish to claim for scoring purposes, but **the 8-hour (or lesser) period submitted has to be contiguous**.

*Rover stations:*

The Rover section is for all portable or mobile stations that operate from more than two Squares or that change Squares more than twice; i.e. Square A to Square B to Square C, etc., or A-B-A-B etc. However, a station may move from Square A to Square B and return to Square A, without having to enter as a Rover.

*Entering more than one section:*

If a Portable or Rover station spends part of the contest period operating from their home station, they may also enter the Home station section.

*Two operators:*

If two operators set up a joint station with shared equipment, they



may choose to enter Section A or C as separate stations under their own callsigns, or Section B under a single callsign. If they enter as separate stations, they may not claim contacts with each other.

#### *Multi-operator stations:*

Portable stations with more than two operators must enter Section B under one callsign. Operators of stations in Section B may not make contest exchanges using callsigns other than the club or group callsign. Home stations may enter as a multi-operator station, but only one callsign can be used.

## Operating Rules

One callsign per station. Operation may be from any location. A station is portable only if all of its equipment is transported to a place that is not the normal location of any amateur station.

You may work stations within your own locator Square.

Portable stations may change location during the Field Day, provided that the station is dismantled and reassembled at each move.

Repeater, satellite, EME or crossband contacts are not permitted.

Except for CW, no contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for contest activity. Suggested procedure for SSB stations is to call on .150 or higher on each band, and QSY up to make the contest exchange.

Stations may enter either Division 1 or Division 2, or both.

## About Contest Exchanges

RS or RST reports, a serial number, and your **6-character** Maidenhead locator (the Sub-Square). The Maidenhead locator is optional if it has already been exchanged in a previous contact during the Field Day and neither station has moved since then.

Note that Squares must be used for Division 1 scoring calculations.

For digital contacts, as RS or RST reports plus serial number make for a cumbersome exchange, it is sufficient to exchange callsigns and 6-character locators, plus two further digits that cannot be predicted by the other station. This is similar to the practice used in the annual Ross Hull contest. However, when compiling your log to enter the contest, include a unique serial number for each successful contact.

## Repeat Contacts – Re-work Period

Stations may be worked again on each band after **two** hours have elapsed.

If either station moves to a new location in a different Square, repeat contacts may be made immediately. If the station moves back into the previous locator Square, the re-work period limit of two hours still applies to stations worked from that Square previously.

## Your Log

Your log should cover the entire operating period and include the following information for each contact: UTC time, Frequency, Station worked, Serial numbers and locators exchanged.

- All-band stations cannot submit a separate log for a single-band or four-band entry.
- Logs for a single-band operation must not include any contacts on other bands.
- Logs for a digital operation must not include any contacts using non-digital modes.

- Logs for a four-band operation must not include any contacts on other bands.

## Division 1 Scoring

For each band, score 10 points for each **Square** (4-char. locator; i.e. the first 4 characters of your 6-char. locator) in which your station operates, plus 10 points for each Square worked, plus 1 point per contact. Multiply the total by the band multiplier, as follows:

6 m	2 m	70 cm	23 cm	Higher
x 1	x 3	x 5	x 8	x 10

then total the scores for the bands used. Thus, the score is based on totalling the number of locator Squares worked and the number of contacts made.

## Division 2 Scoring

All contacts are scored on the basis of one point per kilometre, multiplied by the scoring Multiplier for each band in Table 1, with points/100 km applied after 700 km for 6 m, 2 m and 70 cm, to 'flatten' scores for DX experienced under enhanced propagation conditions on these bands. A 200 km contact on 432 MHz would be  $200 \times 2.7 = 540$  points. A 1000 km contact on 50 MHz would be  $703 \times 1.7 = 1195.1$  points (1).

The distance error of using Sub-Square (6-character) locators is small and accuracy is sufficient for the purposes of this event. Distance is calculated from the Sub-Square centre.

Band	Multiplier	Distance Scoring
50 MHz	1.7	1 point / km to 700 km; thereafter 1 point / 100 km or part thereof
144 MHz	1	1 point / km to 700 km; thereafter 1 point / 100 km or part thereof
432 MHz	2.7	1 point / km to 700 km; thereafter 1 point / 100 km or part thereof
1296 MHz	3.7	1 point / km.
2.3/2.4 GHz	4.4	1 point / km.
3.4 GHz	5.4	1 point / km.
5.7 GHz	6.4	1 point / km.
10 GHz	7.4	1 point / km.
24 GHz & up	10	1 point / km.

Total the scores for the band or bands used.

## Submitting Your Logs

Only electronic logs in ASCII text (.txt) format are being accepted now. **Note:** If any operator participating in the contest has a genuine disability or other impediment preventing submission of a digital log, a paper log will be accepted, provided it reaches the WIA National Office by post or fax by the deadline time and date.

The free VK Contest Log (VKCL) software, from Mike VK3AVV, caters for the VHF-UHF Field Days (including Division 1 and Division 2 scoring) as well as a host of other contests. You can download it from: [www.mnds.com.au/vkcl/](http://www.mnds.com.au/vkcl/)

A **Cover Sheet** must be included with your log, which clearly states:

- the Contest event (i.e. Winter 2015 VHF-UHF Field Day) and its date;
- Division 1 / Division 2 (as appropriate);

- the relevant Section-Sub-section and the Period (24 hr or 8 hr);
- Name and Callsign of operator submitting the entry; Names and Callsigns of other operators for Multi-operator stations;
- contact email address; mailing address, and
- a declaration that the operator/s have abided by the rules.

**Upload** your logs via the WIA website Field Day Log File Uploader, at: [www.wia.org.au/members/contests/upload/](http://www.wia.org.au/members/contests/upload/)

**Logs must be received by midnight, Monday 25 January 2016.** Early logs would be appreciated.

## Certificates

Each top-scoring station in every Section-Sub-section will receive a colour certificate in .pdf format, sent to the contact email address on their log cover sheet.

In addition, colour certificates will also be sent to all second and third place-getters and top-scoring Foundation stations.

## Check for Updates

Check for any updates or advisories on the VHF-UHF Field Days website at: [www.wia.org.au/members/contests/vhfuhf/](http://www.wia.org.au/members/contests/vhfuhf/)

## The Next Event

The Winter 2016 event will be over Saturday 18 and Sunday 19 June (being the weekend nearest the southern hemisphere Winter solstice).

## References

- Roger Harrison VK2ZRH, The basis of distance-based scoring for the VHF-UHF Field Days, *Amateur Radio*, June 2014, pp 11-13. Also posted on the VHF-UHF Field Days web page.



# Over to you

## An urban myth

Dear Peter,

Dear Sir,

In the November 8th edition of the WIA News Broadcast, the following appeared, as part of a longer article by VK6AS on the alleged "bullying" of Foundation Licences:

"It would appear that a vociferous minority would really rather not have had the Foundation licence introduced 10 years ago. They have the opinion that only the Advanced call should allow individuals to get on the air, forgetting that many of them became Advanced licensees by a stroke of a bureaucratic pen." (Ed: Bryan's emphasis.)

This previously appeared in the VK6 News, and has popped up elsewhere, achieving something of the status of an Urban Myth.

"F" calls may have a genuine grievance, but it will not be addressed by attacks upon other grades of licence.

Before January 2004, an AOCp needed a pass in Full Call Theory and Regulation, plus the Morse qualification.

An AOLCP had the same requirement less the Morse requirement.

When the Morse test was removed, all the AOLCPs became AOCps, so "Limited Licences" immediately changed to "Full Call" (Advanced) status.

To deny full privileges to (now) fully qualified people would have been a denial of natural justice.

No favour was given to "Z" Calls, as is implied by the comment quoted above.

If there was a "bureaucratic pen", it was the very same one that produced the previously non-existent Foundation licence.

When the current "F" calls pass the Advanced exam, as many may, to be consistent, will they refuse that grade because they don't have Morse?

Bryan Wheeler VK6ZGO

*(Editor's note: Opinions expressed in Over to You pieces are those of the author and do not reflect any position held by the WIA or the magazine team.)*



# SOTA & Park News

Allen Harvie VK3HRA

The VK1 SOTA dinner was held on 27 October, where the presentation of a certificate and a trophy was made to Andrew VK1NAM, celebrating his achievement of Mountain Goat. The trophy was designed and 3D printed by Adan VK1FJAW and consisted of a goat atop a model of the Mt Gingera topography, engraved with Andrew's details and the achievement of MG.

A photo can be seen on [vk1nam.wordpress.com](http://vk1nam.wordpress.com)

Rob VK4AAC is continuing to activate VK5 parks as he slowly travels through the area. He is keeping the logs coming and we are all looking forward to the blog of his trips. Keep your eye on his alerts for many opportunities to work new parks.

## Activating parks and peaks on the way to Wagga

The weekend of 24<sup>th</sup> October saw the inaugural Summits and Parks seminar event.

Wagga Wagga in central NSW was selected as the venue. With several travelling big distances to attend, they took the opportunity to activate parks and summits as well as meeting amateurs on the way.

Paul VK5PAS Picked up 2 x Victorian National Parks, 4 x NSW National Parks, 2 x NSW SOTA peaks, and 1 x SA Conservation Park, with a total of 484 contacts for the trip. Details at: <http://vk5pas.org/2015/10/28/trip-to-wagga-wagga/>

Coming the other way, VK4DD combined travel with an activation of Mount Kaputar (VK2/NW-001 in WWFF Park VKFF-0353).

Warren VK3BYD activated 3 VK8 WWFF parks taking the long way to Wagga from Wangaratta whilst Peter VK3PF maintained a more direct route picking up two parks.

All converged at Wagga Amateur



Photo 1: Mike VK2DAI, Paul VK5PAS, Peter VK3PF and Warren VK3BYD.

Radio Club (WARC) Saturday morning for introductions and lunch. The highlight for the weekend was meeting people that I had talked to weekly for several years but never actually meet.

Introductions over, it was time to start presentations. We had

to maintain discipline to start the presentations, as the room was full of talk and an abundance of portable equipment to investigate.

With projectors configured and computers sorted, we kicked off the afternoon:

Photo 2: Warren VK3BYD being introduced by John VK2YW.





Warren VK3BYD - CW Activations

Peter VK3PF - Showing different options for Portable Antennas

John VK2YW - Demonstrating Log4OM

Allen VK3HRA - Updating all with the latest tools from Parks n Peaks

VK5PAS Paul - Discussing Portable DX

Peter VK3PF - An overview of some Mapping Tools.

As the afternoon moved on, it was time to finish up at the club rooms to join more local amateurs for dinner. Tall tales of activations, both good and bad, and access issues, whilst the aspects of the different radios were discussed.

Wagga Wagga had come up with excellent evening weather allowing walks back to hotels ready for a big Sunday.

Sunday was an up and out-there operation: an early meeting to confirm the various destinations, then head off to avoid the mid-day heat.

Paul VK5PAS headed for Livingstone National Park VKFF-0292, Allen VK3HRA headed to local SOTA summit The Rock VK2/RI-026, whilst Dave VK4DD and Marcus VK3TST headed for Wheel of Fortune VK2/RI-031. The remainder joined John VK2YW heading up to Mt Flakney VK2/RI-025. Mt Flakney is an excellent site for radio activations and on private land. John had arranged access.

With S2S a plenty, a new summit being activated on VK1 and several participants gaining Completes, it was time to move to the next round of activations

Peter VK3PF travelled on to Mt Burngoogee VK2/RI-016 and unnamed and new summit VK2/RI-051 as he made his way back to Wodonga.

Allen VK3HRA travelled back to activate Mt Flakney VK2/RI-025



Photo 3: The group gathered on Sunday morning prior to heading out to activate some local peaks. L-R: Marcus VK3TST, David VK4DD, Peter VK3PF, John VK2YW, Warren VK3BYD, Ian VK5CZ and Allen VK3HRA.

before heading to Berrigan. Berrigan is across the plains, so no more summits for rest of the weekend.

Despite low numbers, the inaugural Summits and Parks seminar in Wagga was successful, and those that didn't come missed some great presentations. Also nice to meet everyone and great to see four states represented. Thanks

to those who attended and many thanks to John VK2YW, James VK2NKJ, and Mike VK2DAI (supplied the Internet via a donation of gear from Advance Communications) and the guys at the Wagga Amateur Radio Club for their preparations ensuring the day was a success.

73

Allen VK3HRA

Photo 4: John VK2YW/p on Mt Flakney joining in the fun.



AR

Plan ahead

GippsTech 2016 | 9 & 10 July 2016



# CW Today

Louis Szondy VK5EEE

e vk5eee@wia.org.au

In the September issue of *Amateur Radio* we published the results of a CW Survey of 100 active CW operators. In October we looked at the benefits of CW and some of the reasons it is making a comeback in amateur radio. In last month's issue we looked at how newcomers can easily learn CW and how returning Old Timers and newcomers alike can make easy going on-air CW contacts.

For those who are serious and passionate about either learning CW or increasing their speed and ability or knowledge of the art of CW, I can recommend nothing greater than the downloadable book *Zen and the Art of Radiotelegraphy* in PDF format by Carlo Consoli IK0YGJ. If you do so and like the book, please be sure to send him a QSL card as this great work of his is "QSL ware".

This month we'll take a look at some little known history of Morse code, some of the clubs and nets you may like to join as well as how to keep up with the latest CW news and activities.

## Samuel Morse

Morse was an artist supporting his religious philosophy, mathematics and science studies at Yale where he graduated, by painting. In 1825 New York City had commissioned him to paint a portrait of Lafayette in Washington, DC. While Morse was painting, a horse messenger delivered a letter from his father that read "your dear wife is convalescent." The next day he received a letter from his father detailing his wife's sudden death. Morse immediately left Washington for his home in New Haven, leaving

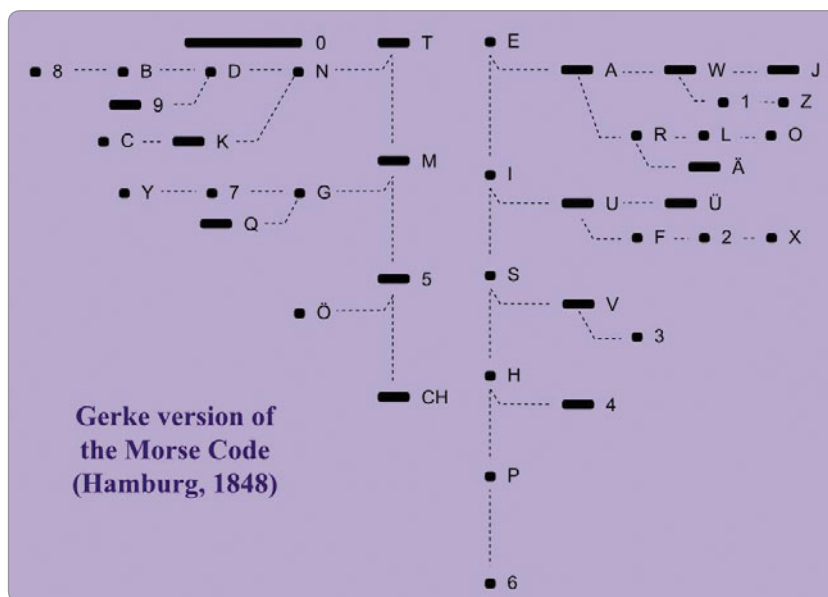


Figure 1: The Gerke code.

the portrait of Lafayette unfinished. By the time he arrived his wife had already been buried. Heartbroken that for days he had been unaware of his wife's failing health and her death, he decided to explore a means of rapid long distance communication.

Although controversy surrounds history regarding Morse's inventions, it is very clear he did not invent "Morse code" as we know it, but was acknowledged to have invented the telegraph. Some historians claim that his assistant Alfred Vail not only was the force behind the telegraphic inventions becoming practical, but also that the original American Morse code was devised by Vail. Vail also designed the first straight key in 1844. No matter who did devise the code, Vail or Morse, one thing is certain: American Morse code is a

far cry from the International Morse code we all know, which was largely the invention of a German named Gerke.

## Gerke code

We owe our great thanks to Friedrich Clemens Gerke for many things. One, we thank him for not insisting that the International Morse code we are using today be called Gerke code. But mostly we thank him for further improving the logical and beautiful form of interrupted carrier wave (ICW) which we most commonly refer to as Morse code or CW still in widespread use today.

*Gerke (22 January 1801 – 21 May 1888) was a German writer, journalist, musician and pioneer of telegraphy who revised Morse code in 1848. It is Gerke's code which was further modified to that which is still used today, and is*

often called *International Morse code* to distinguish it from (the now obsolete) *American Morse code*.

Gerke perceived the disadvantages of American Morse code which consisted of four different hold durations (the amount of time the key was held down), and some letters containing inconsistent internal durations of silence. In Gerke's system there are only "dits" and "dahs", the latter being three times as long as the former and the internal silence intervals are always a single dit-time each. His new code was first adopted by the Deutsch-Oesterreichischer Telegraphenverein (German-Austrian Telegraphic Union). See Figure 1.

## 1865 International Telegraph Convention

Our thanks continue, this time to whoever they were who decided on the almost-final version of International Morse which was yet a further improvement upon both Morse and Gerke code. (See Figure 2 for a comparison of all three). What we generally use today for CW was declared at the International Telegraph Convention held in Paris in 1865 which also formed the International Telegraph Union which was later renamed as the International Telecommunication Union.

Interestingly the original 1865 Convention declaring the International Morse code we use today had a rather impractical spacing: between letters the official duration was three dits as it still is, but spacing between words was decided to be only four dits, an almost indistinguishable difference between letter and word spacing. These days the recommended spacing between words is seven dits duration.

Otherwise all letters and numerals decided upon in Paris in 1865 are the same as we use today. Only a couple of punctuation signs have changed since. For example, di-dah-di-dah-di-dah was later changed to be a full stop,

	American (Morse)	Continental (Gerke)	International (ITU)
A	· ·	· · · ·	· ·
B	· · · ·	· · · · · ·	· · · · · ·
C	· · · ·	· · · · · ·	· · · · · ·
CH	· · · ·	· · · · · ·	· · · · · ·
D	· · · ·	· · · · · ·	· · · · · ·
E	· · · ·	· · · · · ·	· · · · · ·
F	· · · ·	· · · · · ·	· · · · · ·
G	· · · ·	· · · · · ·	· · · · · ·
H	· · · ·	· · · · · ·	· · · · · ·
I	· · · ·	· · · · · ·	· · · · · ·
J	· · · ·	· · · · · ·	· · · · · ·
K	· · · ·	· · · · · ·	· · · · · ·
L	· · · ·	· · · · · ·	· · · · · ·
M	· · · ·	· · · · · ·	· · · · · ·
N	· · · ·	· · · · · ·	· · · · · ·
O	· · · ·	· · · · · ·	· · · · · ·
P	· · · ·	· · · · · ·	· · · · · ·
Q	· · · ·	· · · · · ·	· · · · · ·
R	· · · ·	· · · · · ·	· · · · · ·
S	· · · ·	· · · · · ·	· · · · · ·
T	· · · ·	· · · · · ·	· · · · · ·
U	· · · ·	· · · · · ·	· · · · · ·
V	· · · ·	· · · · · ·	· · · · · ·
W	· · · ·	· · · · · ·	· · · · · ·
X	· · · ·	· · · · · ·	· · · · · ·
Y	· · · ·	· · · · · ·	· · · · · ·
Z	· · · ·	· · · · · ·	· · · · · ·
1	· · · ·	· · · · · ·	· · · · · ·
2	· · · ·	· · · · · ·	· · · · · ·
3	· · · ·	· · · · · ·	· · · · · ·
4	· · · ·	· · · · · ·	· · · · · ·
5	· · · ·	· · · · · ·	· · · · · ·
6	· · · ·	· · · · · ·	· · · · · ·
7	· · · ·	· · · · · ·	· · · · · ·
8	· · · ·	· · · · · ·	· · · · · ·
9	· · · ·	· · · · · ·	· · · · · ·
0	· · · ·	· · · · · ·	· · · · · ·
0 (alt)	· · · ·	· · · · · ·	· · · · · ·

Figure 2: A comparison of American, Continental and International codes.

rather than a comma, replacing the original full stop which was identical to III (di-dit di-dit di-dit). What we now use as comma (dah-dah-di-di-dah-dah) was an exclamation mark. In the maritime radio service this continued in use as such and some nation's ship's radio officers, certainly in the Mediterranean Sea area such as Italy and Greece, used it as an insult, to swear at someone [insert insult here!] especially when sent as dah-dah dit dit dah-dah for emphasis.

Of course there is also Morse for other languages such as Russian, Japanese, Korean, Arabic and many more besides. CW continues to be an evolving and international language, and could even be called the "Esperanto" of the third millennium, as explained in *Zen and the Art of Radiotelegraphy* by Carlo IK6YGJ, available online at <http://www.qsl.net/i1ik0ygg/enu>

## Clubs and activities

FISTS is a CW Club with three aims: Further the use of Morse code; Engender friendships among members; Encourage newcomers to use Morse code. Registered as the International Morse Preservation Society, you can find information about the club and how to join it at [www.fists.co.uk](http://www.fists.co.uk)

Membership of the High Speed Club founded in 1951 is a goal many aim for. Good operating practice and ability to have

a rag chew in CW without use of decoder aids, for at least 30 minutes at 25 wpm or more is required with five existing members to sponsor your application. Even today HSC has less than 2,000 members world-wide.

Many other CW clubs exist that you may like to join, with various activities, publications and membership requirements. See the VKCW.net website for some further clubs and activities you can become involved in.

## CW nets

There are a number of CW nets that you can participate in here in Australia. The most famous is the 43 year old 40 m CW net on Sunday mornings at 10 am Eastern time which is open for two hours. You can come and go at any time, check in with "QNI" and ask to leave with "QNX". Net control will pair you off with another station and assign



you a frequency for the QSO. At midday the net closes with a list of participants. For those who are unable to reach net control on 40 m, try the 20 m CW net which takes place after the Sunday morning 2200 UTC CW Broadcast repeat has finished and call backs have been completed, around 2230UTC (during Summer) on 14022.5.

Col's CW net takes place every Saturday and Sunday at 3.30 pm Eastern time on 7115 kHz in SSB and CW after a quiz which starts at 3.15 pm for 15 minutes, with answer given afterwards. Another good place for beginners is the nightly "CW Bash" hour at 8 pm Eastern time. For up-to-date details of these and other nets and activities see [www.VKCW.net](http://www.VKCW.net).

### CW broadcast

Every Saturday afternoon at 0400 UTC, Sunday morning at 2200 UTC and Monday evening at 1000 UTC, a CW news bulletin (QST) is broadcast on three frequencies simultaneously, covering not only all of Australia but beyond. Frequencies include 7022.5 and 14022.5, with a full schedule available on the QST menu at [VKCW.net](http://VKCW.net). In winter, transmissions may be an hour later. QST is a

good way to keep up-to-date with the latest CW news of interest to VK CW operators without even the need for the Internet. Call backs and reception reports from listeners are always appreciated.

### Getting a Morse key

For those who are starting out – or returning to – CW, or wishing to upgrade their Morse key, there are many options available.

Whether or not you are a beginner, everyone should have a "straight key" which is the traditional Morse key most people are familiar with and which is reliable at speeds up to 20 wpm or so. Most modern rigs have an inbuilt electronic keyer, so you could also find a "paddle" for sending CW at higher speeds, with practice. For the more adventurous, bug keys and other mechanical types are also available. The above mentioned e-book by Carlo IK0YGI will run you through the various types of keys.

Morse keys are still in abundance from the 1930s and 1940s, many sitting around unused in storage and can often be found free of charge via members of your local radio club.

Australian-made keys can be ordered at [MorseKeys.com](http://MorseKeys.com) while

other options include *MorseExpress.com*, internet searches, ham fests, posting in the Help Forum at *VKCW.net*, placing an ad in *vkclassifieds* or even making one yourself.

### Go on air!

CW is fun, and easier to learn than often imagined, as is riding a bicycle. These *CW Today* articles in *Amateur Radio* should have shown you the many ways you can get started. If you find the band quiet, or are looking for some on-air practice, try putting out a call on the 7050 CW calling frequency where many CW operators listen and then QSY up or down after establishing contact.

Future editions of *CW Today* may cover news and issues of interest in the world of CW. If you have anything to report, please do contact the online CW community via [VKCW.net](http://VKCW.net) or even pass on your news in CW after a CW news bulletin (QST) so that news of short-term value can be included in future broadcasts and news and events of interest longer term can also appear in this column.

Hoping to see you in QSO and until next time.

73 & 77 de Lou VK5EEE.



## Hamads

### WANTED – VIC

Relay for 2 metre linear amplifier model ELH 230. Battery valve type 3A5 twin triode. Copy of circuit for Kenwood 2 metre hand held transceiver model TH-205A. Any information on I.C.E. (Electronics Communications Equipment Corp.)

for 6 metre transceiver circa 1968 model FDAM – 3. Word processor Citizen Model CPM 10wp, working or not but the LCD screen must be complete and undamaged. Phone Brewster on 03 9527 2661 after 6 pm, if no answer, please leave a message. B Wallace VK3YBW.

### WANTED – QLD

Copy of Handbook and circuits for VICOM FDK Multi2000 Synthesizer Transceiver. Price to Brad Booth VK4CDL/VK2BTB, 48 Gregory Street, Cardwell, 4849 Queensland. Email: [bradtimmy@hotmail.com](mailto:bradtimmy@hotmail.com)

Don't forget



Don't forget to register for **MEMNET**.

# Silent Key

Warren McLeod Thompson VK2BWT (ex VK2EY, VK3BWT)

On Sunday 6 September 2015 at his home in Emma Ville, Warren McLeod Thompson VK2BWT (ex VK2EY, VK3BWT) became a silent key. He was 82.

Warren was born at Belmore, NSW on 3 July 1933 and grew up at Beverley Hills.

After high school in January 1950, Warren obtained an apprenticeship with Qantas Empire Airways Limited (QEA) and commenced a five year course in the airframes and engine trade at Sydney Technical College's School of Automotive and Aircraft Engineering. Practical training was also received at QEA's Rose Bay Flying Boat base. Warren graduated in 1955, was licensed as an Aircraft Ground Engineer and transferred to Lae in (Papua) New Guinea to commence his career.

In 1958, Warren resigned from QEA, married and relocated to Port Moresby where he joined Papuan Air Transport. He rejoined QEA in May 1959 but remained in Port Moresby until QEA internal services ceased in 1960. They returned to Sydney and Warren spent several years at various stations including a posting to Avalon. Following training in London to learn jet engine maintenance, Warren had postings in Darwin and San Francisco. He transferred to Flight Operations in January 1966 and was initially checked-out on the Boeing 707 aircraft before moving to B747 Jumbos in 1977. In October 1988, after 12,107 hours as a Flight Engineer, Warren retired.

Apart from his fascination with aircraft, Warren developed an interest in amateur radio. He was licensed in April 1969 with call sign VK2BWT. He changed QTH several times and when he was living at Bigga, circa 1985, Warren was a member of the Goulburn and Southern Highland Radio Society.

Warren changed his callsign to VK3BWT when he moved to Mallacoota on the eastern



tip of Victoria. From there, his station was first to hear the ZLs whenever there was an opening on VHF. He was very keen on 2 m SSB operation and was well known to devotees around Victoria, southern NSW and across Bass Strait. He was a member of the East Gippsland Amateur Radio Club and provided the local SES with emergency communications when required. His assistance with communications during the Victorian Bushfires was recognised in the International Year of Volunteers, 2001, by the Victorian Government and by the Australian Red Cross.

Warren had a love of music, particularly classical music, and he played the violin. During the period at Mallacoota, he joined the local community radio station 3MGB and presented a program Light Classical and Concert Hall for five years.

In 2001 he relocated to Emma Ville, a village on the Northern Tablelands in the New England region of New South Wales. From this location he enjoyed both HF and VHF operation.

Warren changed his callsign to VK2EY (previously held by a good friend from Goulburn) and was captured meeting friends at the Wyong Field day in 2005.

Some fellow AM enthusiasts saw Warren (then VK2EY) for the first time when they met in Dorrig in March this year to farewell a fellow AM operator.

Warren's concern about health issues increased and he contemplated relocating to be near his family in Sydney. He also decided to downsize his collection of amateur radio paraphernalia. Warren said that "ham radio has supplied me with so much enjoyment over the years". Inside his shack there was relatively modern solid state HF and VHF equipment mixed with classic Collins and Drake boat-anchors.

He was particularly proud of his 4-Valve Home-Brew transmitter "Built by a newcomer, myself, to the hobby - but it works". He would regularly receive compliments regarding how well his modulation sounded. Warren did not receive formal training in radio communications but was obviously exposed to technical matters in his role as a flight engineer. He used this little rig and a Wells Gardner BC348 vintage receiver on 40 m AM until recently.

During his visit to Sydney he received medical treatment which restored his vision and gave him a new zest for life. He returned to Emma Ville but in the meantime his licence and VK2EY callsign lapsed. He reapplied for a licence, was issued his original call sign, VK2BWT, and was back on the air in July.

Warren will be missed by many operators and was remembered by friends on the 40 m Boat Anchor AM Net. In Emma Ville, he will be missed for his volunteer and musical contributions.

His life was celebrated by his family at a funeral at Sutherland on Wednesday 16 September and at a memorial service in Emma Ville on 1 October.

Our thoughts are with his family and his many friends. Farewell Victor Kilo 2 Echo Yankee.



*The Wireless Institute of Australia extends to all  
radio amateurs very best wishes for the festive season.*



# WIA navigates 'perfect storm' in the spectrum

Jim Linton VK3PC

The pace of reform to radio communications in Australia is staggering. Together with other factors in play, particularly the political agenda of the Australian Government, it can be described in the language of ocean fishing as being like a 'perfect storm'.

The Radiocommunications Act 1992, all the subordinate legislation (regulations) and related technical standards set up under other Acts, even tax and finance legislation, will undergo significant change from the program of reform now under way.

Taking each part separately is a real challenge, but these are interlocked in an overall reform agenda which aims to position Australia's Radiocommunication sector to face the storm of technological, economic and societal challenges emerging now, and well into the future.

Every stakeholder is paying attention to the reform process in a collective effort to get some gauge on the future landscape of access to, and usage of, the radiofrequency spectrum, including the Wireless Institute of Australia – focusing on matters that may impinge on the Amateur Service and Amateur Satellite Service.

The Institute has a long-standing relationship with the Australian Communications and Media Authority (ACMA), other stakeholders who rely on spectrum access, and is also a member of the International Amateur Radio Union (IARU). Decisions of radio spectrum access and regulation don't stop at our borders.

The WIA has gathered its specialists to look what is ahead, and has gone a step further by constantly reporting its activities in the 'Hot Issues' section of its website.

The WIA Board has been fully



involved for more than a year, drawing on the past and current knowledge of the President, Phil Wait VK2ASD (Standards and Radiocommunications industry), Vice President Fred Swainston VK3DAC (Education and Licensing), Director Roger Harrison VK2ZRH (Legislation and Government Liaison) and Board Advisor, Peter Young VK3MY (Regulatory).

There are many others involved giving their expert input to the tasks ahead. These have been summed up in a recent presentation to the 2015 GippsTech Technical Conference "*Australian Amateur Radio beyond 2015: Challenge and Change*", by Roger VK2ZRH, as a WIA Director.

In it, he talks about the remake of the Licence Conditions (Amateur Licence) Determination or LCD, the World Radiocommunications Conference in November 2015 (WRC-15), along with the converging reforms of the Radiocommunications Act rewrite and the review of the ACMA. These will mean radical licensing reform, with the current Apparatus, Class and Spectrum licensing to be abolished and likely to be replaced with "*parameters-based licensing*".

What is this new type of licensing? Well, it is anticipated that it will set out an overarching group of specifications to better align licences with the purposes, applications, place in and use of spectrum. In this new paradigm, spectrum access is viewed as an enabler of new technologies; even those not yet developed.

It likely means more sharing of the finite resource of spectrum, the use of which is growing as new applications are constantly developed. Most of the products providing these new applications will arrive on our shores with new technology solutions, which will have been manufactured offshore. This digital age is turning to spectrum applications to make things more efficient, more interconnected and easier for growing numbers of consumers.

Every industry has the potential for greater uses of the spectrum; take one example of cars that are computer controlled and promising to even become driverless in years ahead. There are many other examples in agriculture, aviation, transport, utilities distribution, and smart appliances for the home.

What does it mean for amateur



radio? Well, Roger VK2ZRH reminds us that sharing of spectrum has been practiced by the Amateur Radio Service in Australia, indeed worldwide, for decades, with plenty of success. This includes sharing some allocations with users in the Defence services, Industrial Scientific and Medical users, and Land Mobile services.

Over decades, the Amateur Service has had the exclusive use of some spectrum bands. But this may change in future, with new services and existing partners looking around for more spectrums, which can lead to increased pressure for sharing in some parts of the spectrum.

Based on what's happened with the spectrum review process so far, it is clear that the demand for, and use of spectrum, is underpinned and driven by 'three pillars': Economic – spectrum as infrastructure for commerce; Defence – communications and surveillance; and Societal – not-

for profit use, but of community or personal value: safety and emergencies, education, science and innovation.

While not dismissing the impacts of the Economic and Defence pillars, it is the Societal pillar where amateur radio readily fits and which must be embraced by today's and tomorrow's amateur radio community.

That is a view also widely shared by other stakeholders and industry. The future of amateur radio faces changes and challenges. The WIA has gained the support of others by being a receptive, flexible, workable player in the reform process.

Now we turn to reform of the ACMA itself. It is a matter of the review looking at the ACMA core versus non-core functions, and the question has been put – can spectrum users assume some of these functions?

Looking at what is proposed raises questions of the ACMA

retaining its statutory roles of being the umpire on matters to do with standards, regulation and compliance; leaving industry stakeholders to take up outsourced roles, or delegation for operations.

So what does the reform mean for the WIA? It wants to keep inputting to the reform process, talk to others, gain more support, and get the best result overall for amateur radio in Australia.

A lot of time has already been put in by the WIA preparation to the re-make of the LCD, the outsourcing options, and the future need of retraining of the army of accredited WIA Assessors.

A lot of work is still ahead as the reform process is expected to be completed in 2016. Implementation of the accepted reforms will follow over subsequent years. The WIA needs to be ready and able to meet the challenges and opportunities that will arise from this reform.

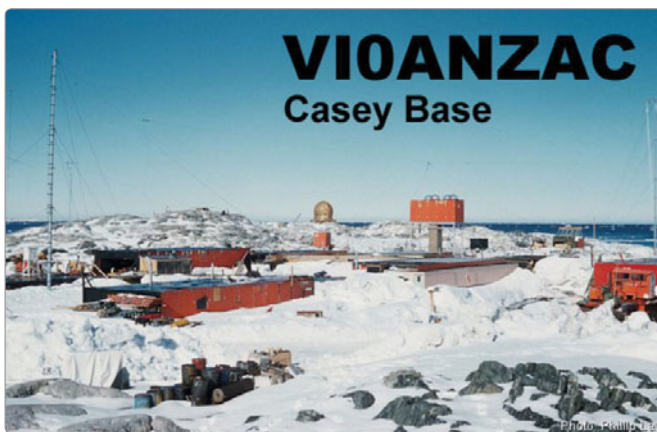


## VIOANZAC to try again

*Jim Linton VK3PC*

VIOANZAC from Casey Base in the Antarctic will try to hold another activation this month as bad weather caused the event, part of the Wireless Institute of Australia (WIA) ANZAC 100 program to be postponed in August. Despite the adverse Antarctic weather the station made it to air on the weekend of August 29-30. However, blizzard conditions and poor propagation resulted in only 56 contacts logged.

The WIA is delighted that VIOANZAC will try to reactivate the station and expressed sincere thanks to Doug VK0DMV and the Australian Antarctic Division.



The WIA repeats that this is not a DXpedition, and only possible during available spare time. There can be no pre-arranged skeds and please no direct or indirect contact with the operator of this WIA commemorative event station.

At this stage, depending on the weather and availability, VIOANZAC is trying to re-activate on Sunday November 22, starting at 1 pm (AEDT) local time or 0200 UTC. It will start on 14.250 MHz and QSY if necessary. Other possible frequencies are: 40 m 7.135, 7.100 and 7090, 7.105, and 15 m 21.250, 21.255, 21.260, 21.265, 21.270 USB.

Casey Station is located in a World Wide Flora and Fauna (WWFF) site VKFF-0571.

QSL via the Bureau and eQSL. More details will be issued on VIOANZAC and see it listed on [qrz.com](http://qrz.com)





## 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)

## About Hamads

- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
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- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
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## ADVERTISERS INDEX

Cookson Controls	63
Ham Radio House	13
Icom	Back Cover
Jaycar	7
KUHNE electronic	15
TET-Emtron	11
TTS Systems	9, 63
Yaesu	Inside Front Cover

# WIA Functional Committees

The WIA is a membership organisation with a very wide range of complex functions and member services. Core functions and services are administrative in nature (general administrative functions, membership services, examination and callsign management, financial etc...) and are performed by salaried staff.

Volunteers perform a diverse range of highly specialist functions (ACMA liaison, Frequency Co-ordination, Standards liaison, Interference issues, technical support and training and assessment etc.). These volunteers provide the majority of member services, however they have been loosely organised and often overstretched.

The new committee system attempts to structure the WIA's non-core activities into 10 broad functional areas, each comprising a team of volunteers under the direction of the WIA Board. This structure is intended to spread the workload on our volunteers, improve communications between members and the WIA Board, improve services to members, and encourage more people to become involved in the WIA.

## WIA Committee Charters

### Spectrum Committee

- (Regulatory, ACMA, ITU, IARU, Repeaters & Beacons, Standards, Interference & EME, Monitoring Service)
- Geoff VK3AFA, Phil VK2ASD (Director), Peter VK3MV, Roger VK2ZRH (Director), Brian VK3MI, Dale VK1DSH, Peter VK3APO, Richard VK2AAH, Gilbert VK1GH, Rob VK1KRM, Noel VK3NH, Doug VK3UM
- Perform all ITU and IARU liaison activities.
  - Liaise with, and act as the 1st point of contact for, the ACMA.
  - Advise the Board, and enact Board policy in relation to all radio communications regulatory issues and the LCD.
  - Represent the WIA to State and Local Government
  - Represent the WIA to Standards Australia
  - Provide specialist technical advice and coordinate repeater and beacon licence applications and frequency allocation.
  - Develop responses to significant and prolonged harmful interference issues affecting amateur radio operations.
  - Provide an information resource for EMC/EMR issues.
  - Administer the IARU Monitoring Service in Australia
  - Provide a technical resource to other committees and the WIA Office.

### Technical Advisory sub-Committee (Tech support, Band plans etc.)

John VK3KM, Doug VK3UM, Rex VK7MO, Paul VK5BX, Walter VK6KZ, Barry VK2AAB, Bill VK4XZ, Peter VK3PF, Paul VK2TXT, Peter VK1NPW, John VK1ET, Peter VK3BFG, Eddie VK6ZSE, Peter VK3APO

### Administrative Committee

John VK3PZ (Treasurer), Greg VK2SM (Assistant Treasurer), David VK3RU (Secretary), Mal VK3FDSL (Office Manager), Phil VK2ASD (President), Chris VK5CP (Vice President)

- Responsible for the efficient and correct operation of the WIA office.
- Responsible for staffing and workplace safety.
- Provide a specialist administrative resource to the WIA office as required.
- Manage contractual agreements.
- Manage business relationships.
- Ensure compliance with the ACMA Business Rules
- Prepare yearly budgets
- Prepare quarterly financial reports for the Board
- Prepare independently reviewed YE financial reports and balance sheets for circulation to the membership prior to each Annual General Meeting.
- Manage insurances and to be responsible for currency of insurance policies.
- Maintain a complaints register.
- Ensure complaints are handled in accordance with WIA policy and any contractual agreements.

### Communications, Marketing, Publications and AGM Committee

- Robert VK3DN (Director), Phil VK2ASD (Director), Jim VK3PC, Graham VK4BB (Broadcast), Roger VK2ZRH (Director) Publications sub-Committee (AR Magazine, Callbook etc): Peter VK3PF (Editor AR), Peter VK3PH (Editor Callbook), John VK3PZ (Treasurer), Ernie VK3FM, Peter VK3AZL, Evan VK3ANI, Ewan VK3OW, Bill VK3BR
- Communication with members and the public:
  - Communicate with the membership.
  - Publicise WIA activities and initiatives.
  - Develop strategies and resources for the promotion of Amateur radio to the public.
  - Develop strategies and resources for the promotion of WIA membership to the Amateur community.
  - Supervise and/or perform promotional activities.
  - Co-ordinate the yearly AGM activities

### Education Committee

- Fred VK3DAC (Director), Owen VK2AEJ, Ron VK2DQ, Mal VK3FDSL (Office Manager)
- In association with the WIA's RTO and affiliated clubs offering training services, develop and administer the WIA's training and assessment systems.
  - In association with the Spectrum Strategy Committee, develop and maintain the various licence syllabi and associated question banks.
  - In association with the Community Support Committee and the RTO, develop and maintain the Emergency Communications Operator scheme.
  - Ensure the confidentiality and security of all personal information, question banks and examination papers.

### Radio Activities Committee

Chris VK5CP (Director), Geoff VK3TL

### Contests sub-Committee

Alan VK4SN, Denis VK4AE/3ZUX, John VK3KM, Tony VK3TZ, Kevin VK4UH, Colin VK5DK, James Fleming VK4TJF

### Awards sub-Committee

Bob VK3SX, Marc VK3OHM, Laurie VK7ZE, Alan VK2CA, Alek VK6APK, David VK3EW, Paul VK5PAS, ARDF sub-Committee: Jack VK3WWW, ARIS sub-Committee: Tony VK5ZA

- All activities associated with actual radio operation, such as: contests, awards, distance records, QSL services, ARIS, AMSAT, ARDF etc.

### QSL Card sub-Committee

Geoff VK3TL, Alex VK2ZM, John VK1CJ, Max VK3WT, June VK4SJ, Stephan VK5RZ, Alek VK6APK, John VK7RT, Craig VK8AS

### Historical and Archive Committee

- Peter VK3RV, WIA Historian, (Leader), Drew VK3XU, Linda VK7QP, Martin VK7GN, Ian VK3IFM, Will VK6UU, David VK3ADW, Jennifer VK3WQ/VK5ANW, Roger VK2ZRH (Director)
- Develop, maintain and preserve the WIA's historical and archive collection
  - Encourage access to the collection by WIA members and those seeking historical material for publication.

### IT Services

- Robert VK3DN (Director), Tim VK3KTB
- Provide an IT resource to other committees and the WIA Board.
  - Be responsible for the off-site data back-up of all IT systems information.
  - To update and maintain the WIA website as required.
  - Advise the Administrative / Financial committee in relation to the MEMNET Cloud Service contract.

### Community Service Committee

- Fred VK3DAC (Director), Greg VK2SM (Assistant Treasurer), Ewan VK4ERM (Director), Paul VK5PH
- Develop, promote and co-ordinate all WIA community support activities

### New Initiatives

- Phil VK2ASD (Director), Robert VK3DN (Director), Roger VK2ZRH (Director), David VK3RU (Company Secretary)
- Think-tank ideas and initiatives to advance amateur radio and WIA membership.
  - On approval by the Board, run proof of concept trials.

### Affiliated Clubs Committee

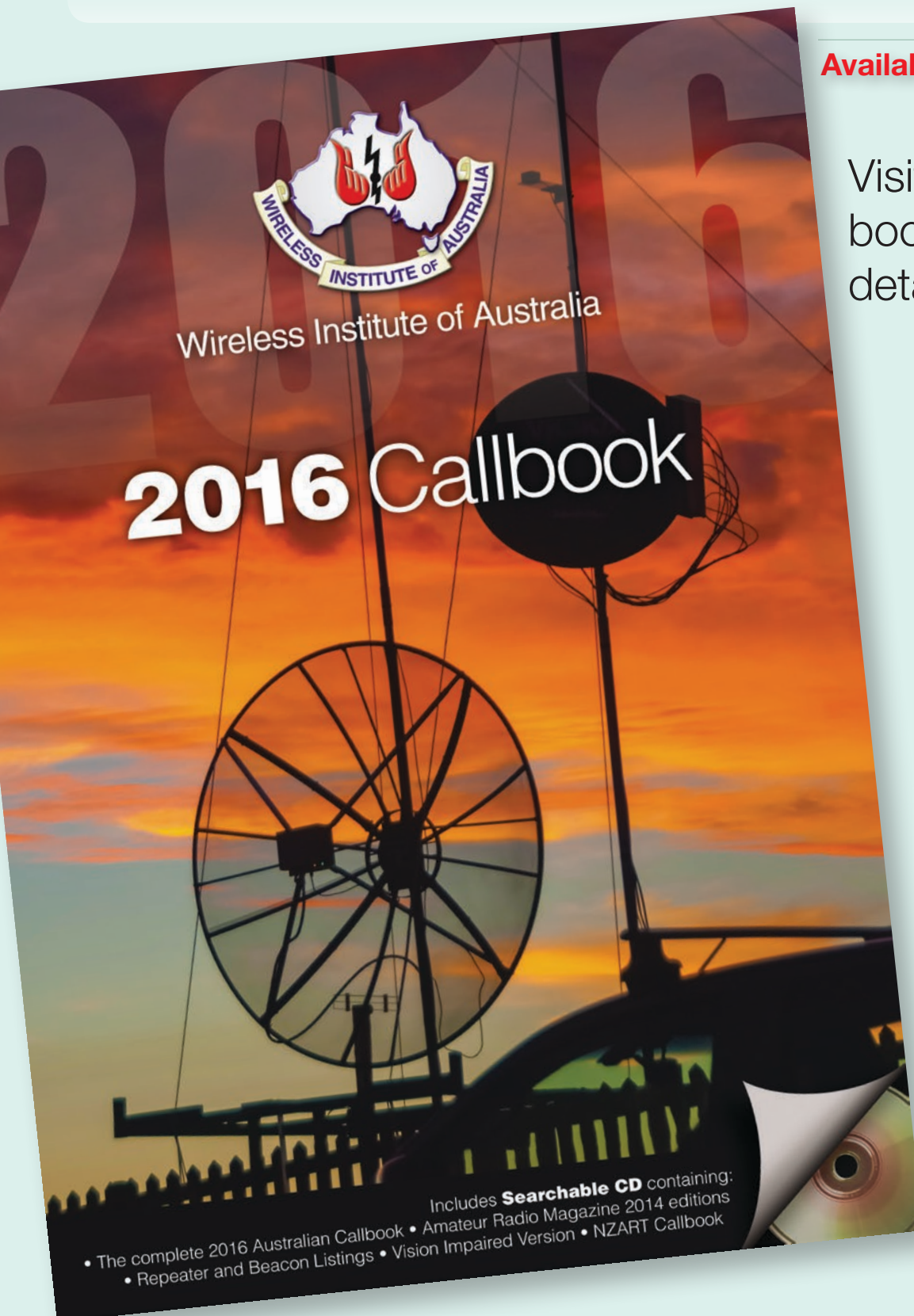
- Ted VK2ARA, Mal VK3FDSL (Office Manager), John VK3PZ (Treasurer), Phil VK2ASD (Director)
- Manage all arrangements between the WIA and WIA Affiliated Clubs
  - In cooperation with the Administrative / Financial committee, manage the Club Insurance Scheme
  - Encourage stronger relationships and communications flow between the WIA and WIA Affiliated Clubs
  - Encourage increasing WIA membership ratios in Affiliated Clubs
  - Manage the Club Grants Scheme
  - Identify and bring regional Affiliated Club issues to the attention of the WIA Board.



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