Amateur Radio

Volume 83
Numbers 1 & 2
January/February 2015
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New World Record on 10 GHz

- A multifunction sequencer
- Antenna modelling Pt 2
- Chasing DXCC

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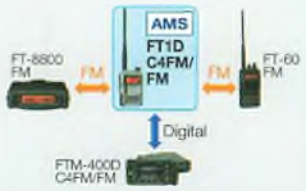

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42 Latitude Blvd, Thomastown, Victoria 3074
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E-mail: yaesu@jnb.com.au

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Editorial

Editor
Peter Freeman VK3PF
editor@wia.org.au

Technical Editor
Peter Gibson VK3AZL

Publications Committee
Peter Hartfield VK3PH
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Kaye Wright VK3FKDW

All circulation matters
nationaloffice@wia.org.au

How to submit material
Secretary
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *armag@wia.org.au*

Letters to Editor
Editor AR Magazine
PO Box 273
Churchill Vic 3842
or *editor@wia.org.au*

Hamads
'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

Advertising
All enquiries to
Advertising Manager
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *admanager@wia.org.au*

Registered Office
Unit 20 11-13 Havelock Road
BAYSWATER VIC 3153
Australia
Phone: 03 9729 0400
Fax: 03 9729 7325

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General

Technical

Columns

This month's cover

The New Year is always busy for VHF, UHF and microwave enthusiasts in Australia, with the Ross Hull Memorial VHF-UHF Contest and the Summer Field Day both occurring in January. We often see days with stable enhanced tropospheric propagation conditions. Such conditions were predicted for 5 January 2015. The map shows the approximate paths of the key contacts made on 5 January, including the new World Record contact on 10 GHz between VK6DZ and VK7MO over a distance of 2732 km.

The inset shows Rex VK7MO with his equipment in the field. Photo and graphic courtesy of Rex Moncur VK7MO, with thanks to Google Earth.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back Issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia), to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published

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

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Registered Office of the WIA
Andersson House
Unit 20, 11 Havelock Road
Bayswater, Victoria, 3153
Tel: (03) 9729 0400 Fax (03) 9729 7325
email: *nationaloffice@wia.org.au*
http://www.wia.org.au

All mail to
PO Box 2042 BAYSWATER VIC 3153
Business hours: 10am – 4pm weekdays

National Office staff

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Editorial

Peter Freeman VK3PF

Happy New Year

We are now well into the New Year. I trust that all is going well for you all. Already we have had significant fire events in Victoria and South Australia, with at least another two months of high risk potentially to come. The Victorian fires to date have seen only a small number of homes lost. Unfortunately, this is unlikely to be the case in South Australia with the large fire in the Adelaide Hills. As this Editorial is being prepared, we are seeing very heavy rainfalls predicted across the country as the tropical humid systems feed into low pressure complexes to the south. Whilst drenching rains would be welcome on the fire grounds with difficult terrain, elsewhere we are seeing flood warnings! Do maintain an appropriate level of attention to the environment around you, regardless of where you live and travel! Keep safe.

Two welcomes and a goodbye

The new publication year sees some changes in the Publications Committee and the *Amateur Radio* team.

The Publications Committee has a new Secretary, endorsed by the Committee at its December meeting. Kaye Wright VK3FKDW has volunteered to take on the role. Welcome to the team Kaye. Kaye had an easy December, as it is a quiet month for the committee. By now, the magazine email address should be working to send any queries, and all contributions, through to Kaye. Therefore, all contributors can expect to receive an initial response from Kaye.

Thanks to Evan VK3ANI who has filled in as Acting Secretary since September. Evan is also working on some enhancements to the Article Register, which are aimed at making article processing an easier task.

Our second welcome goes to Nick Hacko VK2DX, who joins the team of contributors to the magazine as the new DX columnist. I trust that you enjoy his first column.

And finally a goodbye: Bill Roper VK3BR has been a contributor and member of the Publication Committee for a very long time: he has been involved in several roles since 1963! Whilst he has not attended the regular meetings of the Publications Committee for some time, he has always contributed well-considered opinions whenever we have asked members any questions.

Of recent years, Bill has tweaked many of the images submitted for publication and has prepared many excellent line drawings and circuit diagrams. The need for both roles has reduced in recent times. At this time, I am not sure how we will deal with the issues of circuit diagrams in the future. We still occasionally receive hand-drawn diagrams. We may well need to call for someone to take on such tasks.

Bill has certainly done much more than his fair share of work to contribute back to the hobby. A key component of the success of technical articles published in *Amateur Radio* has been Bill's excellent artwork, giving a consistent style which is easy to read and comprehend.

On behalf of all readers, I offer my sincere thanks to Bill for his contributions over 52 years.

Until next month,
Cheers,
Peter VK3PF

WIA comment

Phil Wait VK2ASD

Who said home-brew is dead?

For years, my shack has consisted of a collection of eclectic bits and pieces ranging from some old Collins (valve) S-line gear, a home-brew Class-E (MOSFET) transmitter and Class-D (MOSFET) modulator for use on 40 metres AM, as well as an FT-857 that I occasionally use mobile. I also have a Barrett 550 marine transceiver on a sailing boat with some fixed amateur channels programmed-in. My home antenna is an 88-foot doublet with open wire feed line to an antenna tuner in the shack; on the yacht, it's a 15 metre backstay antenna.

Not very impressive by modern amateur standards, but I'm more of a constructor than an operator, and I get most of my fun from building things. My latest project isn't even amateur radio: a 60 watt Class-A stereo amplifier using six 6SN7s and six KT120s in a Wiggins Circlotron arrangement, with low turns-ratio output transformers mounted at the speakers. Tragic, I know, but it sounds **fantastic** and it would certainly make a great AM modulator, but a frequency response of 10 Hz to more than 100 kHz would be a little over the top!

For many years I've reconciled myself to the view that maybe I'm a bit out-of-step with the rest of the world and that, apart from antennas and ancillary equipment, home-brew in amateur radio was pretty dead. But, this Christmas I took a look at the "What's on your Workbench" discussion in the "General Discussion" section of the VK Logger on-line forum. Started by Peter VK3YE in April 2013, the thread is now 17 pages long with a wide variety of home-brew projects ranging across receivers, transceivers and transverters, antennas and amplifiers, and lots more. It's well worth a look at *http://www.vklogger.com/forum/viewforum.php*

Projects that particularly caught my eye were: a WSPR transmitter using an inexpensive Raspberry Pi computer; a hand-cranked CW transmitter (which requires the operator to perform the physical and mental feat of cranking a handle with one hand while tapping out intelligible Morse with the other); and a YouTube video of a home-brew phasing transceiver, all by Peter VK3YE - a very prolific forum contributor.

One thing is certain; the way an on-line construction project is developed and documented is very different to a traditional paper publication. What you won't find are fully documented projects like you would find in publications like Silicon Chip, the ARRL Handbook or in *AR* magazine – the on-line world is much more dynamic than that – but you are likely to find a project, or the seeds of an idea, that sparks your interest. By publishing on-line, a home-brew constructor can showcase their project right from the start and track how it develops, and there are always lots of people who are more than willing to offer comments, their own ideas or constructive criticism.

Home-brew also came to the fore very recently when VK6DZ and VK7MO cracked the world 10 GHz DX record on 5 January - with homebrew portable gear. Derek VK6DZ and Rex VK7MO have each assembled sophisticated communications systems for 10 GHz and accumulated an understanding of how to exploit long-distance tropospheric refraction; years of construction and planning have paid off magnificently.

So, I now believe home-brew in amateur radio is very much alive and kicking, it's just not so obvious. I'm sure *AR* Editor Peter Freeman would love to see a few of those great projects dressed-up a little and submitted to *AR* for publication to reach a wider audience, or maybe in the future our *AR* magazine may find a way to mesh with the on-line constructors.

Phil Wait VK2ASD
President

P.S. The WIA's next AGM will be held in Canberra over the weekend of 9th and 10th of May. The theme this year is celebrating 10 years of the Foundation licence and amateur radio to the future, and there will also be special activities associated with the ANZAC centenary.

Plan Ahead

EMDRC Hamfest 2015 | Sunday 29 March

WIA news

WICEN during South Australian bushfires

The bushfire that burned uncontrolled for many days since early New Year in the Adelaide hills blackened more than 12,500 hectares of land, destroyed numerous houses, sheds and at least four businesses. The bush and grass fires in temperatures about 40 degrees (Celsius) and winds over 90 km/h, sent 23 people, including firefighters to hospital. One man remains in a serious condition after being hit by a falling tree. It is sheep and cattle country with the loss of about 120 animals. Forecast cooler weather was to dampen the fire threat, but locals know they need to remain vigilant and prepared for the rest of summer.

WICEN President Nic McLean VK5ZAT reports that he has been at the One Tree Hill staging area assisting, including the issuing of handheld radios to SAVEM (SA Veterinary Emergency Management), a Response and Recovery agency for animals, and the Department of Environment and Natural Resources. WICEN has commercial UHF handhelds available and also set up an aluminium mast and antenna at the base station to give a more reliable range. Nic VK5ZAT says WICEN works very closely with SAVEM, enabling the veterinary community to effectively respond to any emergency incident involving companion animals, wildlife and livestock.

While SAVEM can't provide an evacuation service for pets and other animals, which should be in personal emergency plans, it helps any animals caught up in an emergency. An approach to WICEN by SAVEM in late 2013 resulted in an agreement of help being provided with communications. Nic VK5ZAT says SAVEM with its veterinarians and nurses has been doing good work triaging, treating and euthanizing animals, and where possible some emotional support to the farmers and owners of the animals.

Having WICEN South Australia support with communication facilities has made the vital humanitarian work a lot easier, and given radio amateurs a new worthy additional customer.

Amateur licence conditions re-make: what's happening?

Not a lot, yet. The Amateur Licence Conditions Determination – the LCD – will sunset on 1 October this year. For the Amateur Service to continue, the Australian Communications and Media Authority (ACMA) has to re-make the LCD before then.

The ACMA has quite a lot on its plate right now, with many other sun-setting regulatory instruments to be re-made, quite aside from the Spectrum Review report to be completed in conjunction with the Department of Communications early this year, and the consequent revision of the Radiocommunications Act. The Amateur LCD is not a high priority.

In response to the WIA's submission in July last year, which set out some 24 issues concerning the Amateur LCD, the ACMA has advised that it is considering which, if any, issues may only require minor or procedural amendments that might be incorporated into the remaking process. This would enable the ACMA to remake the LCD as a new instrument before the sunset date, ensuring continuation of the Amateur Service and early certainty for all licensees.

Those remaining issues raised in the WIA submission that would mean substantive amendments are likely to necessitate a Regulatory Impact Statement (RIS), the ACMA has advised, and a round of formal public consultation, which would be time-consuming and unlikely to be completed before the October sunset date. The opportunity to address outstanding issues remains open and the ACMA has advised that it will write to the WIA after contemplating policy and engineering considerations.

Exactly how the re-make of the LCD will proceed is not known at this stage. Given the limited time available, the WIA anticipates that that the ACMA will renew the current LCD with minor amendments and no significant change, and then later have a review and public consultation process to consider the raft of issues raised in the WIA's and other parties' submissions.

As the ongoing Spectrum Review process may opt do away with apparatus, class and spectrum licensing to implement parameter-based licensing, Amateur Service regulation may change considerably, possibly providing an opportunity to consider a new instrument holistically. However, considering the time necessary to develop a new Radiocommunications Act from the ground up, this isn't likely to emerge for a few years.

The ACMA has published on its website a list of instruments due to sunset this year, which are open for consultation currently, or where consultation has ended and the draft instruments are awaiting ACMA decision, along with instruments that have been remade as a result of consultation. See the list at this Link. The Amateur LCD is not currently on this list.

ANZAC 100 will be everywhere in 2015

The WIA has joined the community commemoration of the ANZAC 100 milestone with its own ANZAC Centenary Award, special callsigns and other activities. Also involved

are the NZART New Zealand and the TRAC Turkey, with some other IARU member societies showing interest.

The Australian Department of Veteran Affairs has approved the WIA's use of the word 'ANZAC' in its rostered special callsigns. These will be popular with on-air contacts made during the year.

Earlier, the start of World War 1, and the First Shot Fired by Australia movement invited participation on August 5 last year from the Geelong Amateur Radio Club at Fort Queenscliff on Port Phillip Bay, who used VI3ANZAC. Another event was the first ANZAC troop ships in November and Albany's role in Australia's ANZAC history, that had the Southern Electronics Group use VI6ANZAC.

However, the ANZAC 100 event officially opens on April 25 this year with a special WIA broadcast from Canberra. Clubs and groups can register on a roster basis for the WIA assigned ANZAC callsigns. Already registered are the RAAF Secret Mission, The Somme, Kokoda Track and the Evacuation of Gallipoli – among others.

The ANZAC 100 event in Australia runs until December 20, 2015, the day when ANZAC troops left the Gallipoli Peninsula. Suggested calling frequencies are made for Digital Modes, CW and SSB. An online log is provided to locate ANZAC stations, gauge propagation paths and enable eQSLing.

We remember the sacrifices made by our service personnel over the last 100 years. For details and to register please see the 'About The ANZAC Centenary' panel on the WIA website.

Aussie high altitude balloon flight heads home

The small Australian balloon circling the southern hemisphere in an easterly direction that left Melbourne Australia in late December, has been now tracked over the Indian Ocean. Andre

Pretorius V51B in Namibia, and Joe Geldenhuys ZS2JO in South Africa, both heard the balloon near Madagascar, at an altitude of 9500 metres and travelling at 43 km/h.

Andy Nguyen VK3YT, who launched the small solar-powered helium filled strong foil party-type balloon on December 27, has reported its movements since then. After leaving Melbourne it reached the southern tip of New Zealand, travelled across the Pacific and South America, over the Southern Atlantic Ocean, exiting the coast of Southern Africa and heading toward Australia.

PS-30 is the latest pico balloon launched by Andy VK3YT who has been described as the 'master of miniaturisation' and developed a skill in the technology. It includes a 13 grams payload with a 25 mW transmitter on WSPR and JT9, able of send locational and other data.

Andy VK3YT has thanked the new tracking stations involved. At several stages the flight went into circles, seemed to stall, and at one time was thought to be lost, until found by eager radio amateurs in South Africa. A joyous Andy reports: "Looks like it is straight to Australia from here."

The National Oceanic and Atmospheric Administration forward trajectory jet-stream forecast is across the Indian Ocean to Western Australia. The amateur radio community in many countries are trying to track the balloon flight.

Sadly PS-30 pico flight ends

The small pico party-type balloon from Australia has not made it home and crashed near Madagascar just east of Africa. Andy Nguyen VK3YT who put the balloon up in Melbourne on December 27, reports it went down early on January 16, just 25 hours short of three weeks in the air. Andy VK3YT says: "There was some bad weather in the region, but speculations also include the possibility it was brought down (attacked) by the naughty Penguins on the Island."

A number of radio amateurs from South Africa reported that PS-30 had stopped flying and was down. It had travelled easterly across to the southern tip of New Zealand, the Pacific Ocean to South America, then to Southern Africa, and had a forecast path to Australia.

Andy VK3YT says: "A big thank you to everyone that have assisted with the trip in many ways, from tracking, to sending feedback, words of encouragement, and getting help when needed. The level of interest from all around the world has been amazing. The trip would not have been so successful without the collective effort of the like-minded community built-up along the way."

It was latest pico balloon he had launched with it having a 13 grams payload including a 25 mW transmitter on WSPR and JT9, to send tracking and flight data. Already PS-31 is being planned, with Andy VK3YT saying: "See you at the next trip".

A modelling approach to antenna construction - Part 2
An example: the "Weekend Dipole"

Stephen Ireland VK3VM/VK3SIR

Photo 1: The "Weekend Dipole" in operation.

In the first of this series you may recall that I introduced basic terms, revised EMR and some of the issues associated with EMR, and introduced the concept of modelling as a way of coming up with a set of parameters that could be useful in helping us to construct a safe antenna system. *(Editor's note: Part 1 appeared in the October 2014 issue of this magazine.)*

In this article a set of basic steps will be provided to get you started with modelling antennas in 4Nec2. Note that this tutorial set is designed just as a start. You should view Rob's ("dx2hunt") excellent tutorials. These should have you well on the way.

This article documents an actual "in the field" project and how I went about its implementation.

The actual project

The actual project was implemented during a visit to Wallaroo, South Australia. All antennas are a compromise. Ideally a horizontal dipole for 40 m at an ideal minimum height of a quarter of a wavelength was desired. Yet in reality all I had available was a small, flat concreted treeless environment surrounded on one plane by high-tension wires. So an inverted V had to make do. Remember that in an inverted V configuration a dipole will have legs around 5% shorter.

Photo 1 shows that the central point was supported on a 10 m squid pole. Coax was terminated at the centre point using a LDG 1:1 balun. This example antenna also has a 2 m/70 cm GPI mobile antenna taped to the top to access

repeaters available on South Australia's "Copper Coast".

Some will pick a potential safety concern – cables draped on wires. Please note that these cables were not in use and in this case this would not provide safety concerns. **Never drape coax on live power or communication cables....**

The base design – the dipole for 40 m

The dipole that we will be starting with shall be set to operate on a frequency of 7.100 MHz. It shall be modelled at a height of 7.0 metres. Using a digital micrometer, the diameter of the wire (minus the insulation) to be used was determined to be 0.8 mm.

We will only model this antenna for nine segments. When working with linear wire centre fed antennas you should always model with an odd number of segments as the feed point needs to be located either within a particular segment or at the ends of a particular element that you are modelling.

Editing in the Parameters

- Start 4Nec2

One of the negatives of 4Nec2 is that is must be based on a model – so you must start with an Example model. Note that it is always best to start with a model that is close to your proposed design. In this case we will start with the "Example 1" model.

- Select "File" / "Open 4Nec2 In/Out File"
- Navigate to C:\Program Files\4nec2\models (or wherever you have installed 4Nec2 and its example files)
- Select a basic model → Example1.nec is recommended
- Click "Open"

This loads a "base" model to work with. Now make the basic changes to this model.

- From the "Main" application, Select "Settings" / "NEC Editor (new)"

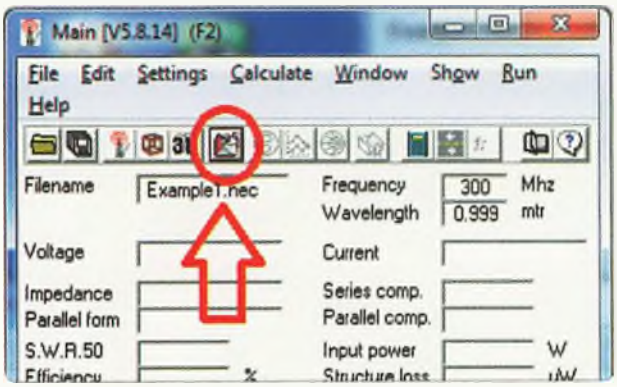


Figure 8: The "main" panel and the "Editor" icon.

- Click on the icon shown in Figure 8 to invoke the editor.

The "New" editor allows you to manually enter coordinates. Coordinates are set X-Y-Z on a 3D Cartesian plane that you may recall from Junior High School.

The base model is set for 300 MHz, whereas our model should be set to work at 7 MHz. From a basic knowledge of radio, a half-wave dipole on 40 m must be 20 m in length.

- Adjust Y1 to be -10
- Adjust Y2 to be 10

The wire diameter also needs to be entered.

- Adjust Radius to be 0.004 ← Half of 0.8 mm.

The view in the "geometry" window will now be way off.

- Highlight the "Geometry" Window. If the window is not displayed press F3.
- Select "View" / "Reset"

We now have a basic model "in free space".

- Select the "Editor" window if it is not focussed
- Select the "Source/Load" Tab

See Figure 11.

The base model was already a dipole so therefore it was already designed to be fed at the centre; as the antenna has been modelled as a 9-segment section of wire this means that the feed point must be on segment 5 (Figure 2.5). No changes are needed here.

We now have to change some basic data – setting the "Frequency" and "Ground Type".

- Select the "Editor" window if it is not focussed
- Select the "Freq./Ground" Tab

Change the Frequency to 7.1 MHz

- Change "Ground / Free Space" to "Fast Ground"

The antenna in question was developed at Wallaroo, South Australia. This is coastal and sandy.

Figure 9: The "New" Editor.

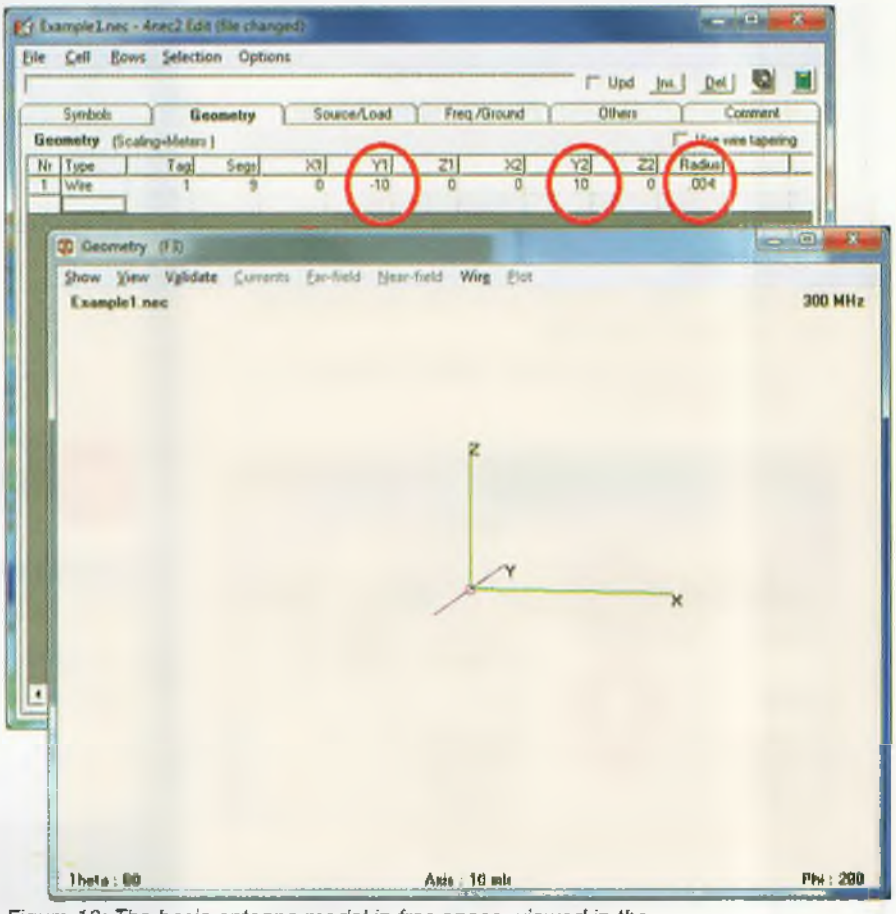


Figure 10: The basic antenna model in free space, viewed in the 4Nec2 software.

- Change "Ground Type" to "Dry, sandy, coastal"

See Figure 12.

We now have a model for a basic 40 m dipole. The only issue is that the "Example 1" model was for a dipole in "Free space". The dipole needs to be lifted for this location 7 m above the ground (note: I realise that the actual implementation is an Inverted V, but these figures will be used for approximation).

- Select the "Editor" window if it is not focussed
- Select the "Geometry" Tab
- Adjust Z1 to be 7 (start coordinate raised 7 m)
- Adjust Z2 to be 7 (end coordinate raised 7 m)
- Click on the "Geometry" window

See Figure 13.

You will now see a wire-frame ground with the antenna raised 7 m.

You will need to save the model now.

- From the Editor windows Select "File" / "Save As"
- Save the model as "40m Weekend Dipole". Click Ok.

Figure 11: Check the location of the Source in the antenna wire.

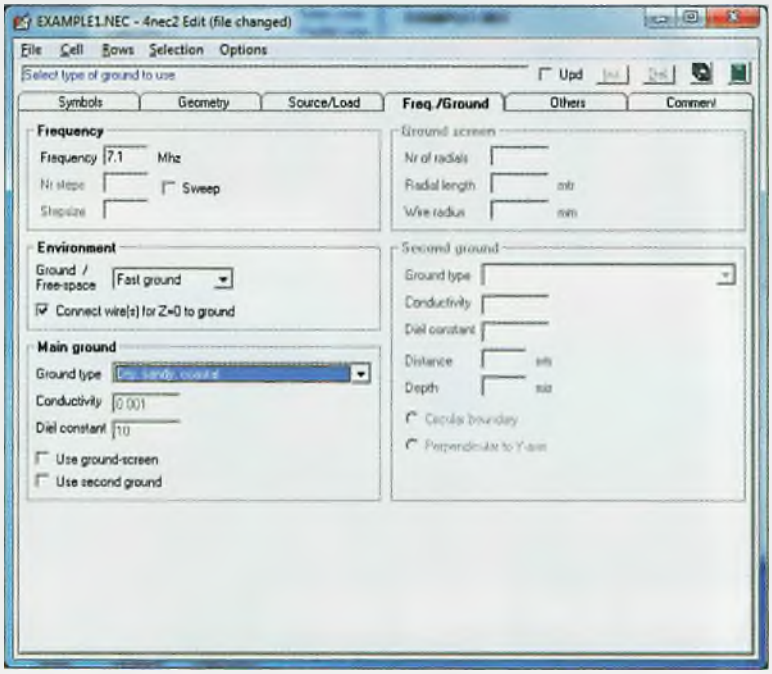


Figure 12: The window to change the Main Ground characteristics.

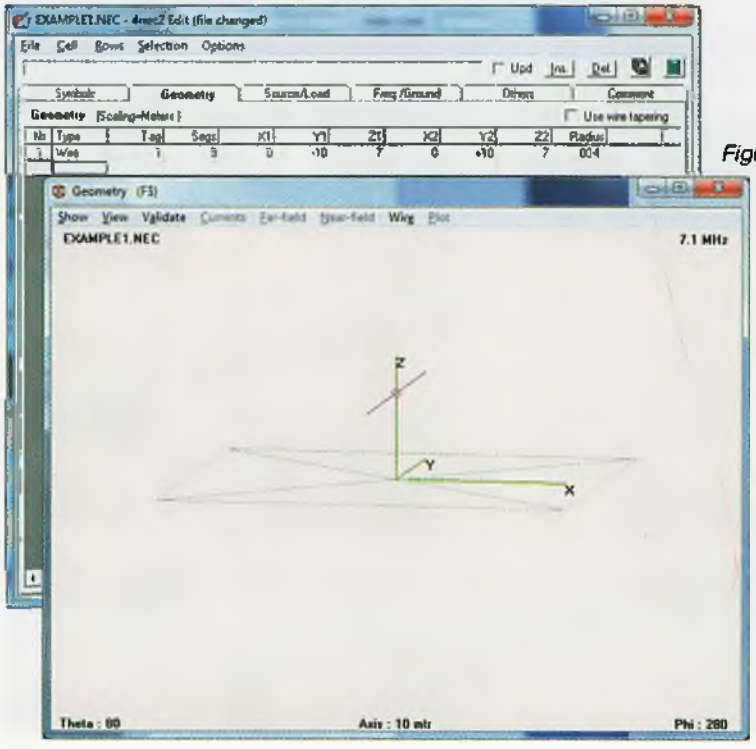


Figure 13: Adjusting the antenna to 7 m above ground.

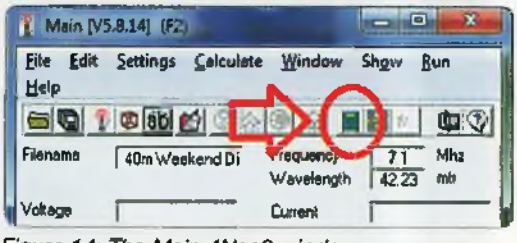


Figure 14: The Main 4Nec2 window.

2D Modelling the solution

We can model this now:

- Go back to the "main" 4Nec2 Window

See Figure 14.

- Click on "Calculate"

Figure 15: Selecting "Far Field Pattern" in the Generate/Calculate window.

- Click "Far Field Pattern"

All other settings at this point should be fine. For speed we will use the default 5 degree resolution. You could model future attempts at 1 degree to obtain greater accuracy, but this will be considerably slower. Remember – this is only a model.

- Click "Generate"

Ignore or close any error windows if they appear. This example is lower than 0.25 of a wavelength – and as a result the type of NEC calculation engine may not be the most optimal engine to use.

As you become more proficient with 4Nec2 and modelling you will develop ways to resolve these issues. See Figure 16.

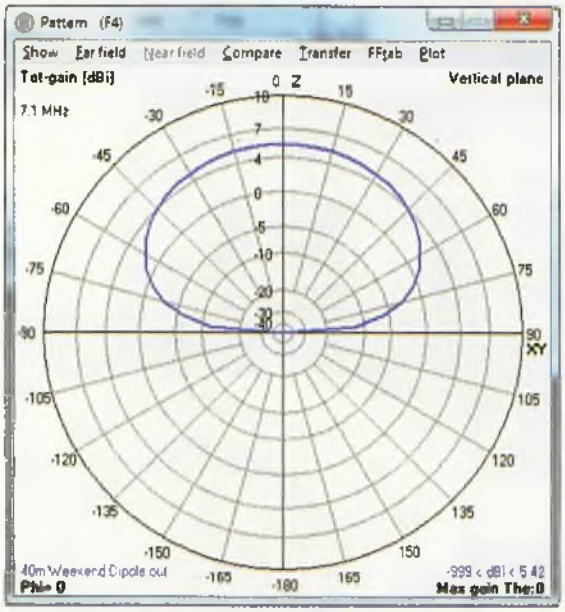


Figure 16: The Pattern window displays the vertical radiation pattern of the antenna.

A window titled "Pattern" appears. By default it displays the total gain in the vertical plane (Figure 2.10).

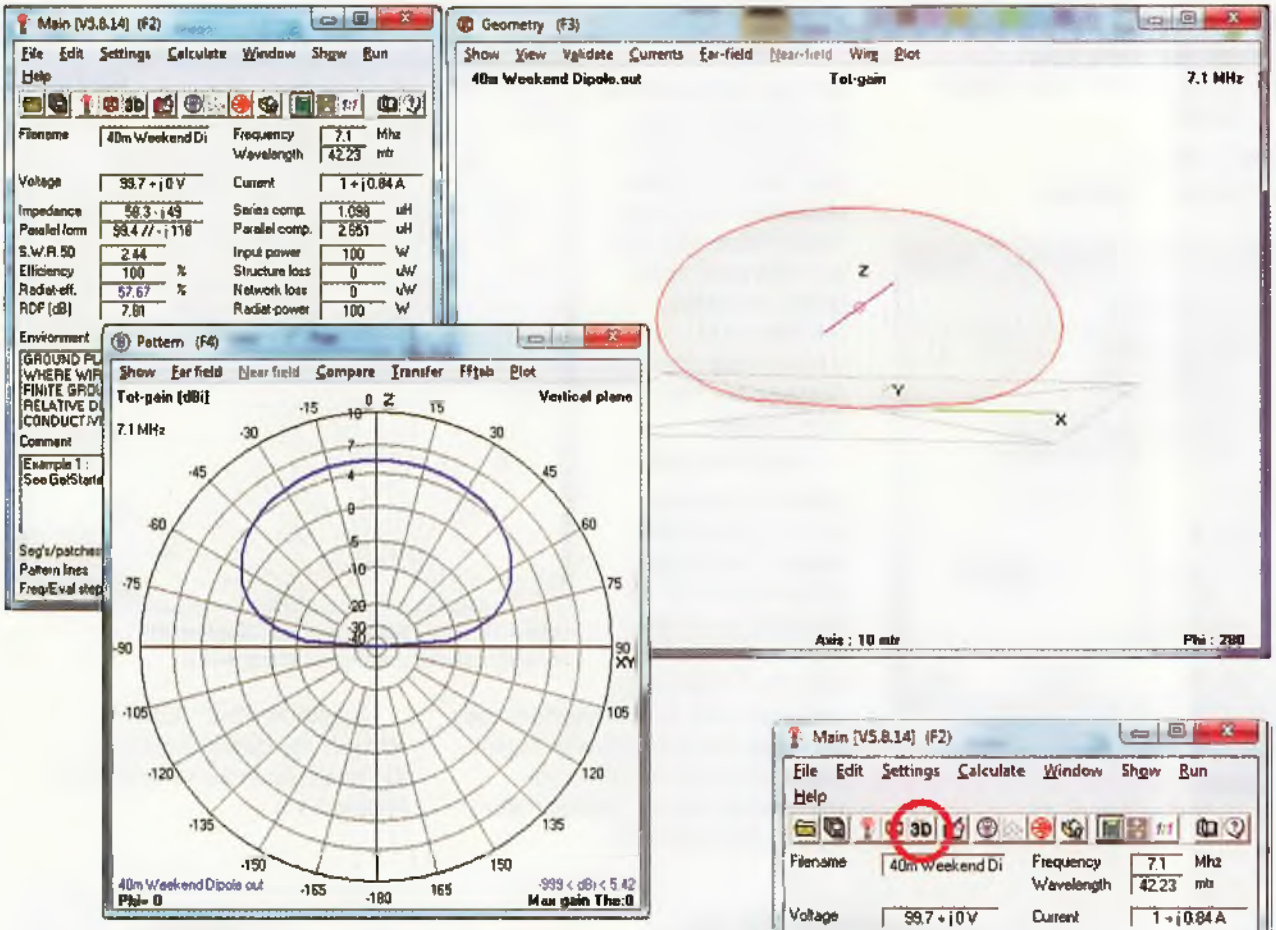


Figure 17: Examining the patter in more detail.

Figure 18: Selecting the 3D Viewer.

- In the "Geometry" window Select "Show" / "Near/Far Field"

This produces a wireframe image.

- Select the "Pattern" window again
- Press the space bar to cycle through "slices" at various planes.

See Figure 17. You will notice that the wireframe images will adjust accordingly as you scroll through the "Patterns", allowing you to view the model from different observation planes.

3D rendering

We are not finished yet.... As 4Nec2 incorporates a powerful 3D rendering engine that many products have yet to develop.

- Go back to the "Main" window

See Figure 18.

- Click on "3D" (Figure 2.12)

A basic model appears in the "3D Viewer" window with respect to ground (not shown as it is useless at this point).

Currently the pattern is "hidden" as "Hide pattern" is selected.

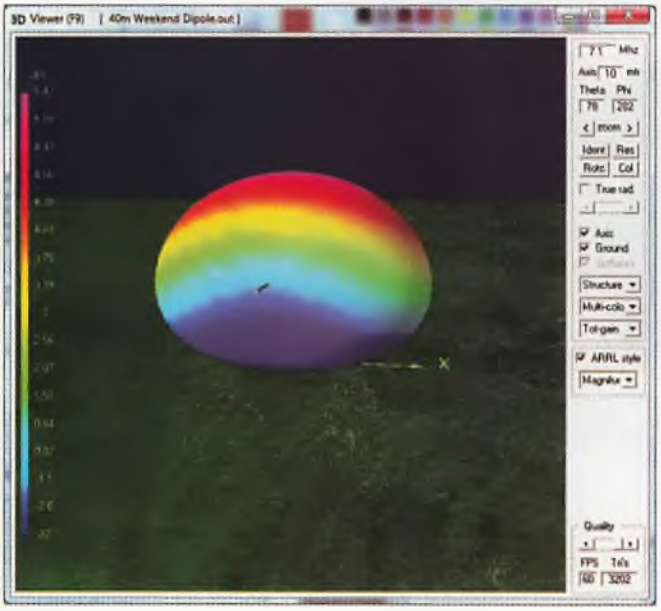


Figure 19: One view of the 3D antenna pattern.

The Ultimate in Portable Antenna

BUDDIPOLE

Dipoles, Slopers, Vees, Verticals or 'you name it' are just some of the antenna configurations possible with **Buddipole** components.

A Buddistick contains the following:

- 2 x 280 mm Anodized aluminium arms
- 1 x Stainless steel telescopic whip
- 1 x Multiband loading coil and coil clips
- 1 x 9.5 m radial wire on line winder
- 1 Mounting plate with SO239 adapter
- 1 x Compartmentalized portfolio bag
- 1 x Operating manual

The Buddistick deluxe kit also includes:

- 1 x Vertical antenna clamp
- 1 x Additional stainless steel whip

A basic Buddipole kit contains the following:

- 1 x VersaTee center section
- 2 x Stainless steel telescopic whips
- 2 x 560 mm Anodized aluminium arms
- 2 x Multiband loading coils and coil clips
- 1 x 7.6 m coaxial feed line with choke balun
- 1 x Black thermoplastic carrying case
- 1 x Operating manual

The Buddipole deluxe kit also includes:

- 1 x Portable 2.4 m mast and base tripod
- 1 x Rotating arm kit- change configurations
- 3 x Extra coil clips
- 1 x Additional telescopic whip
- 1 x Antenna system bag – padded nylon with shoulder strap
- 10 page modeling report

Accessories

Long (5.48 m) telescopic mast, Low band coils and extended whips, Shock cord whips and Shock cord masts, Light weight mini coils, Knurled whip protection sleeves, Switchable 1:1 2:1 4:1 baluns, Capacity hats.

All Buddipole components are available for purchase as individual parts.

Supplied by

tts systems

Phone **03 59774808**
Fax **03 59774801**
Email info@ttssystems.com.au

Visit us on: **www.ttssystems.com.au**

- Change "Hide Pattern" to "Multi Colour"

You are now presented with a 3D "render" of your model (Figure 2.14):

- By holding down the left mouse button over the image and dragging the mouse you should now be able to view the model from different angles.

If you leave the model for a few minutes the image will auto-rotate around 360 degrees from your viewpoint.

Experiment with these views further.

Next Time

In the third and final part of this we will go through an example of how to use 4Nec2 to evolve and optimise the model for minimum SWR at the modelled height. Once the model has been fully optimised and evolved we should be then in a position to estimate its performance on other bands and then produce a "Near Field Model" for EMR Modelling purposes.

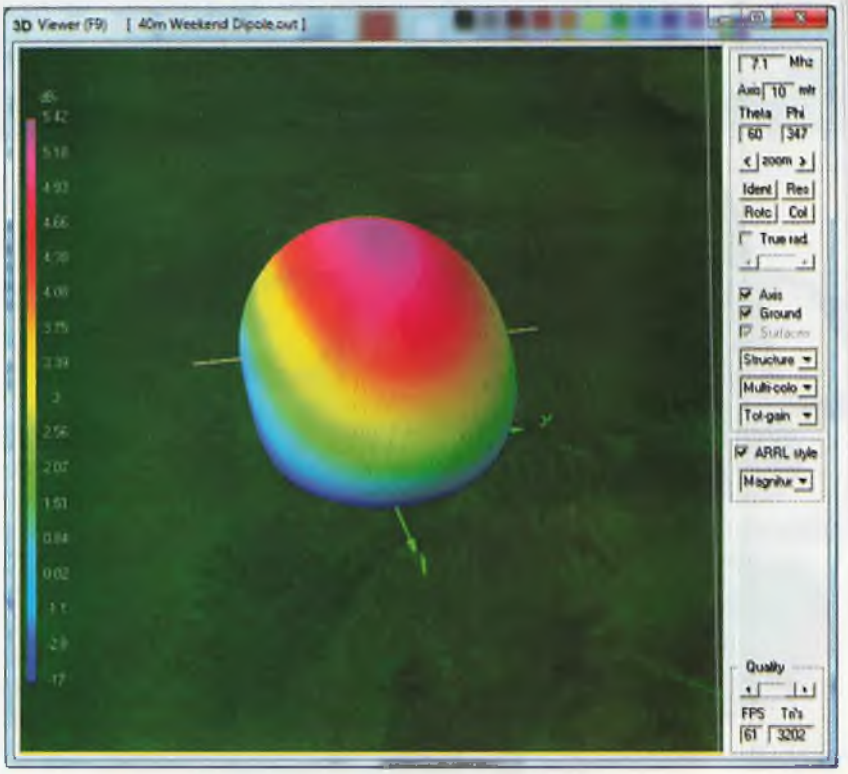


Figure 20: A 3D view of the antenna radiation pattern against ground.

How much do you want the DXCC?

Peter Pratt VK2TTP

Into the DX world

I obtained my licence in May 2004 and in June that year I purchased a very much loved FT-101E transceiver from a club member Ian Paterson VK2MW. I was immediately a fan of the HF bands and by early 2005 I had received my first QSL card from a JA station. This was a lot of fun to talk with folks you have never seen and from places you have never visited. I learned that another club member was a keen DXer, John Saunders VK2DEJ, so I went to visit his station and we sat and talked about his DX experiences and I gazed at his collection of QSL cards. The seed was sown – I was addicted – I needed more DX.

Keeping a log book

At first all went well with many contacts in the paper log book and trying to keep track of dispatch or receipt of QSL cards took a few hours each week. Now is the time to move up to a computer based logging system. I downloaded the free version of Ham Radio Deluxe 4.1.

It worked well to keep a record, quickly showing names and notes of previous contacts. I still ran a parallel paper log with notes about whom I had sent cards, what inducements I had included with them, together with dates sent and received.

It was now time to move up to another level, so I signed up with eQSL, an international data base with free sign up that matches the logs submitted by the many international hams on the system. I copied the data from my HRD log in the prescribed ADIF format and uploaded it to eQSL; I had instant matching on a number of my contacts.

We are going well so far.

Then I looked to the other, much touted data base, run by the ARRL. Called 'Logbook of the world' (LoTW).

The ARRL insist that their system should be of the highest integrity and as we know there are many people with some software knowledge and lots of spare time and they love to hack into these systems and screw around with the data. The ARRL insists on a level of proof regarding licence and address of the operator. So - a copy of the ACMA licence renewal form was scanned and emailed.

Then once I was verified I received an 'Encryption Key' which has to be used each time I upload a log. This confirms you are who you claim to be and the data sent has your unique code. Phuueel Not hard, just took some time and effort to get through.

eQSL then introduced a class of Authenticity Guarantee (AG) which told others that you had shown proof of identity and this could be applied for by reference to your LoTW approval. Now I have my log uploaded to two reliable online services.

Still with me?

In the meantime I am still sending and receiving cards. As is the way with so many online activities, the operators of one system refuse to recognize the existence of others, so if you want to qualify for any of the awards you need to generate all the points on that specific system.

How many QSLs?

In my case when I did a search on my HRD log it told me I had worked over 100 countries or DX entities, although only 78 had matched my entries to LoTW and I had another 70 matches on eQSL of which many but not all were identical to my LoTW matches and, of course, I also had a number of unique paper cards.

Some DX operators that did not want to spend their lives on those rotten computers and refused to

use online QSL matching 'only do paper cards'. I have around 20 or 30 unique DX cards and I am still getting replies from cards I sent out back in 2007. It was obvious to me it would take a very long time to get anywhere with paper QSLs.

WIA online awards system

What a blessing when the WIA came up with the WIA online awards system. The WIA awards committee had decided on an online system that would take credits from paper and other electronic systems. See the article in *Amateur Radio* magazine, November 2013 edition, page 27 by the software engineer Marc Hillman VK3OHM who has done a lot to design this system.

Now I understand the system has been through continued development, Alpha/Beta testing stages and still there are a few little bits to tweak. It can be a bit confusing at first but it is great once you get to understand it. This is where that famous word *but* comes in.

Online logging - the WIA system – as I see it

The first grind with the WIA system is that the ARRL and its LoTW does not insist you be an ARRL member to use it. The WIA system requires you to be a financial member and logged into the Memnet system that limits it to about 30% of Australian amateurs. I am a paid up member of the WIA and although I have visited the web site regularly regarding contests and general news, until now I have not found a need to sign up with the Memnet system. The real need for Memnet is still unclear to me.

Here comes the first confusion – in an effort to cover as many options as possible you are asked to sign up with either your call sign, your licence number or you can use your ACMA Client ID number. Why the options'? This may be convenient for some, but confusing for others. All this data can be cross matched and it is after all the one entity. Also you will need your WIA membership number.

Sign up for Memnet and the WIA software will do some homework and decide if the numbers you have entered add up. I picked the call sign option as I find it easy to remember - most of the time. Until this stage is passed you have had limited access to the many parts of the awards page. Once you have Memnet Login the world opens up.

Import your log in ADIF format

I have different levels of software and network access on different computers in my home and some operation may seem very clumsy to the IT expert, but it works and has been a real saving at some stages for me. I exported my log from my laptop to a memory stick and went to my main computer to upload to WIA. This is where the real interesting stuff starts. Make sure you have a pencil and paper handy. Remember we used to use these things before computers.

Log in, follow the prompts and upload the log file. It will take a few seconds to upload and it will say 'done' but really it is not done yet.

After a few more seconds, the WIA server will process your file and come back with some error messages such as incorrect DXCC country codes or incorrect band settings. This is where the pencil and paper comes into use. Don't try to fix everything in one pass; I fix the DXCC errors first. It shows DXCC country errors because some logging software may have inserted a different entity to what ClubLog has for the callsign prefix.

See notes on Verify DXCC page.

'The DXCC entity number will be checked at ClubLog.org. If your DXCC number does not match you will receive a warning message. You need to review your log, and correct any DXCC errors. QSOs cannot be used for award credit until DXCC numbers are correct. It is strongly recommended that you get a free Clublog.org account and upload your log to ensure all the DXCC numbers are correct. ClubLog has a Call Tester that will allow you to test individual call signs, and often gives reasons as to why it disputes your value.'

To correct this you will need to search the correct DXCC information. This can be done by using the Verify DXCC tab at the left of screen or through ClubLog. Once shown the erroneous entries, go back to your log and make the correction there. You will need a clean and correct log later.

Other errors like 'Wrong Band' can also show up.

I also have had repeat events where HRD drops a few errors into the ADIF file when it exports it. One example is that it drops the decimal point with the frequency field and a QSO on 7 point 190 MHz becomes 7190 MHz and the WIA error check tells us that 7190 MHz is not a legal amateur frequency. Just helps to keep you alert!

Make sure the data in your main log is correct and again output the entire log to the memory stick.

You can upload to the WIA system many times and the duplicate entries are ignored and only the corrections will take effect. Keep repeating the process until all errors are removed and the files on the WIA system, your memory stick and the PC are all good. Take your memory stick and have it mounted in a glass case.

Figure 1: The eQSL logo.

Things they never told me

Now I thought I would now be able to go to the data base and tick off the fields that identify whether the confirmation is paper, eQSL or LoTW – WRONG! This information has to come in from the HRD log. Never told me that.

Figure 2: The LoTW logo.

Figure 3: The basic WIA DXCC certificate.

Get your paper log book – go back to the beginning and make sure the 'Sent' and 'Received' QSL fields are complete and matched in the electronic log.

I am now at Week Six and I start to ask myself – 'How much do I need this?'

I contacted Marc Hillman to find out about the eQSL and LoTW data import and it is now I find that the HRD 4.1 I have been using is no value because it does not have the fields to record the electronic QSLs. I need to upgrade to HRD 5 or 6. I choose to outlay the US$100 for the latest version. Nobody told me that.

Load new software; learn how to drive new software. Import the old log into new software. Correct errors again. Thank you HRD! Discover how to populate with eQSL and LoTW Sent and Received data. HRD will download your matching QSOs and match them in your log if you follow the prompts correctly.

Getting closer and the pulse quickens

Find your favourite memory stick, remember, the one you used a week or two back, and download your revised log file, call it something different so the simple operator does not confuse himself.

Now is the time to export the ADIF file from HRD 6.1 and like so much of this process nobody tells you how. The pull down menus in HRD 6 have changed from HRD 4!

Now go through the upload to WIA process again, you're an expert at this by now, and can do it with your eyes closed.

Correct the errors that HRD has introduced again. Thank you HRD.

Run the Verify DXCC, Verify eQSL and Verify LoTW checks. You do have that pencil and paper handy to note the errors and go back to your HRD 6 log and make corrections! Repeat until it is all clear, at last.

Looking at the View QSOs display and it feels good to see all the matched contacts. Now take a wander through all the many menu options, looks good but what about the cards?

Paper QSLs

What is this Verify Paper QSLs. Read the fine print. If you select this option it is most likely you will get the message 'you are not nominated as a checker etc.'

You need two other WIA member, licensed amateurs to confirm (verify) your paper cards. This is when you find out who your friends are. Once you have established who you will use, you need to open up the side menu 'Profile' and enter the call signs of your two verifiers. At his stage the software will come back with the full listed name of the call sign holder, you know they are in the system.

Checking process

After you have nominated the two verifiers and the WIA software has searched and found them, they will click on "Verify Paper" and the system should display your call on the checker's screen. The checker clicks on the call sign and the software will go away and after a second or two it will display your entire log. The checker ticks off the matched cards you have provided.

Now to maintain the logic levels we are all used too, the log will show the cards to be checked as a tick and when the first checker is satisfied and clicks on the box it goes away to the WIA data base does a test and turns the tick to a cross.

Now you are not confused - the tick means it is not good and the cross means it is good. Right - got it?

Second checker logs into the WIA and opens the Verify Paper area and imports your log and again matches the cards to the log. As the second card checker approves the card details the entry disappears from the screen. Did you see that!

Now I can log into the WIA once again and my card entries have changed from grey to green. The world is at peace.

Process complete, the system tells me I am eligible for the DXCC with 110 confirmed DX entities. The process has taken about eight weeks and I cannot tell how many head aches and pots of coffee but I got there. The radio contacts are the easy part of the process, the confirmation and software wrestle puts you to the real test.

The satisfaction is to see that DXCC certificate on the wall.

Thank you to all the following:

HRD: Ham Radio Deluxe. Suite of ham related programs – *http://www.ham-radio-deluxe.com/*

LoTW: Logbook of the World, the DXCC system of the ARRL - *http://www.arrl.org*

eQSL: On line logging system - *http://www.eqsl.cc*

ADIF: Amateur Data Interchange Format - *http://www.adif.org/adif.html*

DXCC: DX Century Club, over 100 verified overseas contacts.

ClubLog: *https://secure.clublog.org/index.php*

WIA: *http://www.wia.org.au/*

Turning clutter in to a collection

Linda Luther VK7QP

Photo 1: Some copies of Amateur Radio from the archive.

'You'll have to get rid of some of this clutter if you want to sell this house!' This was the reaction of the real estate agent as he looked round our house to value it for sale. We have decided that maintaining this house and land is more than we wish to do and the time has come to downsize.

So we need to move some of the clutter. Much of this is amateur radio history. We have journals going back to the 1960s and papers from when we were involved in WIA in Queensland and South Australia. Let's give it to the WIA!

A number of people have come to the same conclusion. About a year ago when I visited the WIA headquarters I found that there was a lot of historical material there. However, it was growing like topsy. There was no rationale for what should be kept, or a system to discard material that duplicated what was already there. Everyone else's clutter was becoming a problem for the WIA.

It is important for the WIA to house its historical records and to document the history of amateur radio in Australia. Leading up to the Centenary of the WIA in 2010, it was decided to consolidate Institute records and establish an archive. Previously, historical documents were stored in a number of places and some were at the risk of being further damaged and lost forever. Peter Wolfenden VK3RV and David Wardlaw VK3ADW started gathering material to enable the history of the WIA to be recorded. Drew Diamond VK3XU, had already commenced consolidation of a library collection of amateur radio journals from Australia and internationally.

The Centenary has been celebrated and many people are aware that the WIA is collecting historical records. Many have generously sent their items of

historical interest to the WIA Office. So how do we turn the clutter in to a collection?

First of all we need to decide what the purpose of the collection is. What differentiates the WIA collection from other amateur radio archives around the world? The Collection Policy was approved at the WIA Board meeting in December 2013. It defines the scope of the collection as 'the history of amateur radio in Australia and its protectorates'. This narrows the clutter down to anything to do with Australia and not amateur radio in other countries. The Collection Policy is available on the WIA website at *http://www.wia.org.au/members/history/about/*

Photo 2: Plaques and trophies that have been donated to the archive.

The purpose of the archive is to collect and conserve important records and objects associated with the history of the WIA. This includes minutes of meetings, constitutions and other historical records. These may be relating to the central office, or to branches and divisions in all states. Photographs, newspaper clippings and articles about Australian radio amateurs are part of the historical record. The archive includes copies of call books, some commercially published and some published by the WIA.

In addition to these items, there are publications. There is *Amateur Radio* itself, published by the WIA, and also a number of other electronics magazines published in Australia. There are books that have been written by Australian radio amateurs or about the development of amateur radio in Australia. These are being held in the Library collection, being managed by Drew Diamond. Will McGhie VK6UU commenced scanning copies of *AR* prior to 2008 so they will finally be available to access via the internet. Will's early efforts are available on a CD entitled *'Amateur Radio Magazines 1933 to 1939'* from the WIA Book Shop online.

The WIA has also received a number of donations of plaques and trophies awarded to Australian radio amateurs.

The archive is primarily interested in the written record of the history of amateur radio. This being the case, equipment will not be collected, but exceptions may be made where items are of outstanding historical significance.

The archive has started by recording and sorting items that have been donated. Part of that requires dealing sensitively with material which has been donated but which is not required for the collection. This may be duplicate copies of material already held, or items outside the scope of the collection.

Once we have a collection, what happens next? Peter has spent many hours tracing information on particular radio amateurs for family history purposes. He has also assisted others who have been writing articles about amateur radio. We are also developing a database to enable WIA members to search for historical information. We also hope to gather together some material which could be made available for travelling exhibitions to clubs around Australia.


Photo 3: Jenny Wardrop VK3WQ/VK5ANW with the collection of books that she has recorded in the database.

So now we have a Collection Policy, we can start sifting through the clutter at the WIA Office and turn it in to an interesting and accessible archive recording the history of amateur radio in Australia.

If you have been sorting through your clutter and would like to make a donation to the collection, please have a look at the Collection Policy on the WIA website and contact the WIA Historian Peter WIA Wolfenden at *vk3rv@wia.org.au* or the national office to discuss your donation.

"Bill" Moore VK2HZ: Writer, WIA President & POW morale booster

Peter Wolfenden VK3RV

How often do you come across a name which sounds familiar, but you can't quite place it? One such name that haunted me for some time was Bill Moore. I felt I should know the name, then an old copy of *Radio, Television and Hobbies* came my way and of course there was Bill's name – the writer of *"The Ham Bands"*, a regular column which ceased in 1963 and was "taken over" by Pierce Healy VK2APQ. Sometime later I learnt that Bill had been a WIA Federal President – so I thought I "knew him". Wrong! I only knew a small amount about Bill and his involvement in radio.

This article is not intended to be the complete story of Bill's life in radio communications or even amateur radio, rather the story of some of the highlights I came across.

Born in 1911, William McInnes Moore was first licensed in 1931 as VK2HZ. In 1934 he was employed by the Sydney Water Board and was also the Publicity Officer for the *ARA*, the *Association of Radio Amateurs NSW*, established 1932. The ARA was a de facto NSW Division of the Institute, established at a difficult time for the amateur radio operators in NSW. They "lost" their own organisation, the WIA, which was effectively wrestled from their control by a group who had formed the Institution of Radio Engineers. Thankfully the situation finally resolved itself and the IRE handed back the legalities of the WIA in NSW to the experimenters, thus allowing it to again represent the radio amateurs of that State and be part of the national organisation. That aside, Bill must have been already interested in national

Photo 1: VK2HZ en route to Hobart 1935 WIA Fed. Conv. (Original photographic print. WIA Archive).

amateur radio affairs, because in December 1934, he was appointed as NSW delegate to the WIA Federal Convention to be held in Hobart during January 1935 (1).

A few years earlier, *Wireless Weekly* appointed Bill to write a regular column. John Moyle VK2JU joined the magazine at much the same time. Both Bill and John, largely followed in the footsteps of their friend and fellow amateur, Ross Hull VK3JU who became the Technical Editor in mid-1929, about eighteen months before he headed to America to become Assistant Editor of QST. In his *"AMATEUR NOTES by W.M. Moore"* for the January 11th 1935 column, Bill mentioned the agenda for the forthcoming WIA Federal Convention which he was attending in Hobart. This was followed by a report in the February Issue. He continued with *Wireless Weekly* for some years before writing a similar column, *"The Ham Bands with Bill Moore"* in *Radio and Hobbies* (which later became *Radio Television and Hobbies)*. Bill's last column was in March 1963.

Photo 2: Delegates and Observers at 1935 WIA Convention Hobart. (Original photographic print. WIA Archive).

Photo 3: VK2HZ Automatic keyer. (Original photographic print. WIA Archive)

Pierce Healy in his tribute to Bill in April 1963 *RTV&H* mentions that Bill *"is a life member of the NSW Division of the WIA, being Past State President, Past Federal President, Secretary of the Blue Mountains Section and member of a number of committees, gives some idea of the time spent in Institute affairs..."* There is little doubt that Bill was a very enthusiastic amateur, and a busy man. He was a keen and active experimenter capable of turning his hand to most things. The February 1938 issue of *Amateur Radio* magazine features an intriguing automatic Morse sender designed and built by him. It made use of a gramophone spring-driven motor, a set of rollers and a loop of 9.5 mm French home movie film in which he punched out the appropriate Morse characters for a repeatable message. The drive perforations in the centre of the film were too small for the spring loaded electrical contact to pass through, so it rode over the top and only completed the circuit at the larger cut-outs for the dots and dashes. Repetitive Morse messages could be sent at speeds from 9 to 32 wpm by adjusting the motor speed control. All in all, a successful device which was very handy for contests (2).

At some point Bill joined the RAAF. While seeking information about other early amateurs who joined the RAAF, I stumbled across a few lines on Bill in *A Saga of Achievement* by Group Captain E.R. Hall. This reinforced my opinion that he was a very skilled person who knew and understood what was going on around him. Further, Hall, the author, was with Moore in the POW camp at Batavia, so he had first-hand experience of Bill's activities with clandestine radio there. Bill made a receiver from Command parts quietly collected by him earlier from Kittyhawk aircraft at Tasik aerodrome in Malaya where Australian POWs were assembled prior to being moved to Batavia (3).

Bill was the camp's optician, so he was allowed a set of tools including a soldering iron, pliers and other small tools used for repairing glasses. Most of his skills involved prisoners'-of-war glasses and occasionally he repaired some for the Japanese guards. Consequently, he was not scrutinised deeply and the presence of tools, solder, etc. were of little or no interest to the guards! This made the construction of radio equipment a great deal easier for him and removed the need to totally clean up after each construction session. According to Hall, the first receiver used by Moore in the Batavia camp had a radio frequency amplifier, a detector and an audio amplifier all operating from torch batteries. During the day the receiver, headphones and other items were hidden under floor tiles. At night the equipment was removed from its hiding place, connection was made to an "aerial wire" which supported a mosquito net running across the barracks room, and tuning-in began!

By means of this, both Bill Moore and Eric Hall monitored various short wave stations on 49 metres for those all important news broadcasts from Australian Broadcasting Commission and the BBC which in turn, gave hope to so many of the POWs who worked on the Burma-Thailand Railway. When batteries became scarce, a small mains transformer was manufactured. The re-built equipment included the power supply mounted in a sealed compartment of a water bottle and a two valve receiver in another bottle.

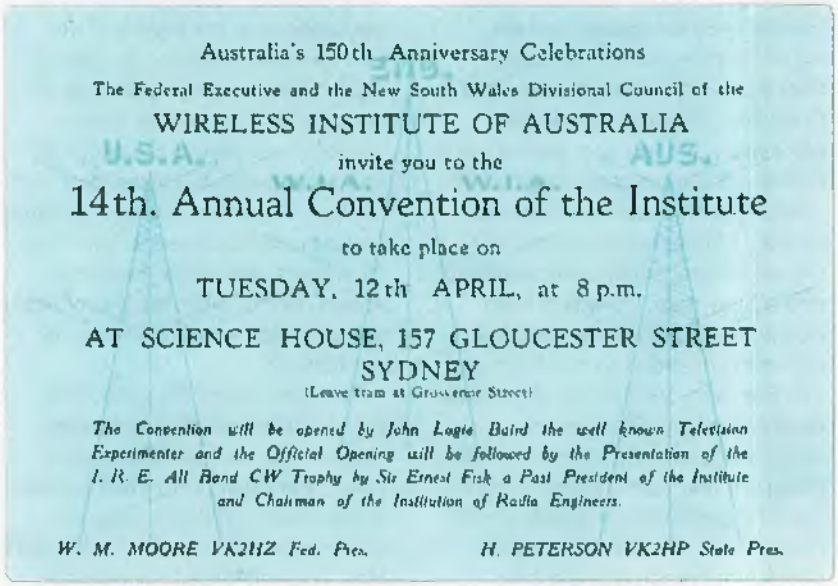
Photo 4: VK2HZ in his shack c1936. (Original photographic print. WIA Archive).

The bottles had a false bottom so that water could also be placed in them to minimise "potential guard inspection problems". According to Hall this radio set was used for some eighteen months and carried from camp to camp.

In an *AR* article about Bill during 1985, Ted Gabrial VK4YG stated that another person Corporal Arch Caswell was also involved in the monitoring and men were told that "The Nightingale Sings" tonight (from the popular song "A Nightingale Sang in Berkley Square") was code for broadcast interception that night. "Cockatoos" or "look-outs" were carefully located to ensure that guards would be detected before they got too close to the radio installation! The reason for the code was to minimise any talk about "radio" or "wireless" which guards were always listening for and seeking. After receiving the news broadcasts, the person monitoring them would pass on the news to a senior officer who in turn would pass it on to the officers in charge of the individual working parties. The information gleaned from the news broadcasts finally filtered down to the men, keeping them in touch with world developments and helping to lift their morale (4).

Before the war, Bill Moore was WIA Federal President from 1935 to 1938. He helped guide the organisation through many issues during that time. At the 1935 Federal Convention held in Hobart, locals organised many events in which Bill partook or visited including an inspection of the local broadcast stations 7ZL and 7ZR transmitters, the omni present Cascade Brewey, a local Field Day and meeting up with old timer, 'Pop' Medhurst XZD/VK7AH, one of the early Australian amateurs who contacted the escort ship for the Duke of Yorke's 1901 Federation Tour of Australia while in Tasmanian waters.

John Logie Baird, "the father of television", officially opened the last convention Bill presided over, the Sydney 1938 Federal Convention, the opening of which was broadcast on 40 and 20 metres. As usual, many issues were discussed and handled by the convention delegates. Some were resolved and others required further follow up with the regulatory authority. A few "hot topics" of the day were: the seeking of definite bands at 112 and 224 MHz, that investigations be made and appropriate steps taken to suppress the operation of commercial stations in the amateur bands, the need to unify operating conditions on 200 metres in all States and the establishment of a prize for the first interstate two way contact on 56 MHz over 200 miles (320 km). This upset the VK6 delegate, who felt it unfair because West Australian stations would generally have to work some 1500 miles (2400 km) to the nearest interstate station. The matter was finally resolved to being a trophy for an outstanding interstate communication with a proviso added that the bestowing of the



Australia's 150th Anniversary Celebrations

The Federal Executive and the New South Wales Divisional Council of the

WIRELESS INSTITUTE OF AUSTRALIA

invite you to the

14th. Annual Convention of the Institute

to take place on

TUESDAY, 12th APRIL, at 8 p.m.

AT SCIENCE HOUSE, 157 GLOUCESTER STREET

SYDNEY

(Leave tram at Grosvenor Street)

The Convention will be opened by John Logie Baird the well known Television Experimenter and the Official Opening will be followed by the Presentation of the I. R. E. All Band CW Trophy by Sir Ernest Fisk a Past President of the Institute and Chairman of the Institution of Radio Engineers.

W. M. MOORE VK2HZ Fed. Pres. *H. PETERSON VK2HP State Pres.*

Invitation to 1938 WIA Federal Convention in Sydney. (WIA Archive)

award was also at the discretion of the Federal Headquarters Contest Committee!

At the end of the Convention in Sydney, Bill said to all present: "..... *I have decided that now is the time to interrupt my Institute work in order to continue my studies. I am glad to be able to say that everything I have done, I endeavoured to do in the interests of Amateur Radio"* (5).

The advent of WWII changed many people's lives, often for ever – including Bill's. During those difficult times hidden talents came to the fore as they did in Bill's case. After spending many years before the war informing people about radio technologies through his involvement with magazines and executive positions in the WIA, Bill's "finest hour" was no doubt, providing the technical where-with-all to enable vital information to be passed onto depressed POW's whose morale desperately needed boosting. Flying Officer W.M. Moore was officially recognised and Mentioned In Despatches.

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1. New Ham Organisation for NSW – ARA, Radio Monthly magazine, May 25th 1932, p47
2. W.M. Moore VK3HZ, CQing a Pleasure, *Amateur Radio* magazine February 1938, p4. (Available on WIA CD *"Amateur Radio 1933-1939"*, WIA Melbourne)
3. Hall, ER, A Saga of Achievement – The RAAF Radio Story, ISBN 0 9595927 0 9, 1978, Self-Published, p166-167.
4. Ted Gabrial VK4YG, The Nightingale Sings, *Amateur Radio* magazine August 1985, p29
5. Wireless Institute of Australia Fourteenth AGM Federal Convention Minutes, 1938, WIA Archive, Melbourne

VK4news QTC

Les Neilson VK4FAEB

The *Brisbane Amateur Radio Club* is happy to report that that our membership continues to grow.

The Club has four business meetings per year, with 24 attending the Friday 22nd August meeting.

Twelve months ago we were lucky to get enough members to be to hold a business meeting: with nine members needed to produce a quorum, this resulted in three meetings having to be cancelled. However this year we had to find more tables and chairs to accommodate the 24 who attended.

Each time we have a meeting, which are twice a month, we get new people coming along and the majority join our Club. At the last business meeting we had three new members join on a very rainy night – I was pleasantly surprised to see the number who braved the rain.

We have also welcomed two amateurs from South Africa who have made the change to sunny Queensland.

One new member travelled from the other side of Brisbane by using the local public bus service which involved three changes of buses plus a kilometre walk in the rain to attend our meeting, now that is what I call keen! We sent him home with information to study in preparation for our next Foundation assessment class.

This year we have started to conduct Foundation licence courses at the club hall for new prospective members and five people sat for the exam, with four of them passing so the number of Foundation licensees continues to grow.

The Friday night before we started the last Foundation licence training we had another very keen visitor arrive at our venue. He got booked in to start the Foundation test assessment on the following day and one month later he has his licence and is now participating in our official Club net on Wednesday nights.

Another Foundation licensee who sat for the Standard licence assessment on the same day we did the Foundation course for the five members, now proudly has his Standard licence.

Two of our latest members who got their Foundation licences are senior members in the Scout movement and hopefully they will be responsible for creating more opportunities for Scouts to gain an interest in amateur eadio.

We are all now looking forward to a quieter but satisfying end to 2014.

73 Kevin VK4ZR
President BARC 2014 – 2015.

VK4news The Tableland Radio Group

Mike Patterson VK4MIK

The Tableland Radio Group, TRG, facilitated a display of Morse keys and ex-Military radios at Mareeba Heritage Centre on 29th November.

Martin VK4FMJR and Mike VK4MIK put on their military radios and Morse keys on display and once again it proved a success in educating more members of the public on the amazing history of radio communications.

Martin's display included the AWA Teleradio 3BZ, of Coastwatcher fame, and the Suitcase Radio that was provided to resistance groups in occupied territory by the British during World War 2. There were many other radios on display as well.

Mike had his key/bug/paddle collection on display plus some telegraph equipment. Once again the question was asked "why are there so many different designs?" – it is a valid question but showed that there are always people trying to carry out improvement on the existing items.

We had the WIA brochure "Calling CQ" which gave information on amateur Radio and how to join the hobby.

We set up around 9.30 am and packed up around 3 pm after an enjoyable and informative day.

The Mareeba Heritage Centre has permanent displays of a spark gap transmitter plus early telegraph and telephony equipment.

Discussions took place about further displays for 2015.

Photo 1: 65 Morse key bugs and paddles plus telegraph sounders.

Photo 2: Martin VK4FMJR with his military radios.

ALARA

Margaret Blight VK3FMAB – Publicity Officer

ALARA Meet 2014 took place at beautiful Nelson Bay, Port Stephens, NSW from October 24 to 27. Forty four radio enthusiasts took part in a well planned program and enjoyed wonderful warm sunny weather. Thanks must go to Anjes VK2GWI and to Dot VK2DB and Elwyn VK2DLT who assisted her. From the initial welcome and registration which took place in the Bowling and Recreation Club situated very close to the accommodation in Nelson Bay, the emphasis was on communication. It was an opportunity to catch up with old friends and to meet new ones. A friendly and relaxed environment existed throughout the entire Meet.

On the morning of Saturday 25th October, while the OMs had the option of a visit to "Fighterworld" near the RAAF base Williamtown, the YLs enjoyed presentations on Bletchley Park and the work done there during WWII. This covered interesting information on the history behind the development of the exhibition currently available as well as details of the machines used by decoders during the War.

In addition we were given some firsthand experience on building your own yacht and fitting it with appropriate radio equipment. The interesting speakers were Christine VK5CTY and Jenny VK3WQ who outlined their individual experiences at Bletchley Park, followed by Catherine VK4GH who explained how the yacht built by her OM was designed to be radio friendly. Details were given of the way they managed to achieve this successfully. The final result showed the radio desk contained both marine and amateur radio capacity with antennas for each being easily manoeuvred into place as required. After a successful launch earlier in the year, Catherine tested out DX

Photo 1: YLs at ALARAMEET.

stations and made an initial contact with the Canary Islands. In the following Oceania Contest, the two of them managed 492 contacts on all bands.

John Clarke a local historian gave a lively and entertaining talk on the history of the local area and its development into a fishing industry. He acknowledged the local Worimi people who still live in the area. He later accompanied a busload of interested amateurs on a tour around the bay including a visit to the Marine Rescue Radio base.

Later the same day there was a dinner cruise on the "Moonshadow" across the bay. The weather was still mild on the water and everyone enjoyed the trip. The entire lounge area had been reserved for the ALARA guests and a most enjoyable buffet meal was provided. Again there was plenty of opportunity to catch up with others at the dinner table and later on by moving around the various tables.

There will be more news of the ALARAMEET in the next edition.

Photo 2: ALARAMEET guests at Marine Rescue Radio Base

Photo 3: Participants at a recent ALARA VK5 lunch gathering. See text for details.

VK5 NEWS

BUY & SELL SALE - AHARS

As usual at this sale the ALARA members and other YLs provided the drinks and nourishment for participants to assist in the fundraising. Christine VK5CTY outlines the scene as follows:

"Jean VK5TSX, Tina VK5TMC and Jenny VK5FJAY worked their wonders with bacon and egg sandwiches for starters on November 2nd for the AHARS Buy and Sell. Later Marilyn VK5DMS, Myrna VK5YW, Christine VK5CTY with Deidre XYL to John VK5EMI and Lesley VK5LOL helped to sell pies, pasties, sandwiches and drinks.

Shirley VK5YL and Joy YL to David VK5KC were busy selling tickets as the VK5 amateurs flocked into the biggest ham gathering in the state, as usual.

Other YLs came for a while and sometimes came in to the kitchen to help. These included Sue VK5AYL, Susie XYL to Paul VK5PH, Somkith XYL to Graham in addition to Sally Parker, Bea XYL to Allan VK5MAK, an AHARS member. A visitor from VK3 Donna VK3FRET with her wee dog Carlos was a welcome sight. Donna is now ALARA's Treasurer but used to live in VK5. Sorry I didn't take any photos. I plain forgot even though I had the camera in my pocket all day."

Don't worry Christine, we all have those moments especially if kept busy elsewhere. So you can see some of the participants, here is a photo of a recent ALARA lunch in VK5. On the left side of the table are Lesley VK5LOL, Marilyn VK5DMS, Jeanne VK5JQ, Christine VK5CTY, and on the other side of the table, Tina VK5TMC, Meg VK5YG, and Myrna VK5YW.

VK5news Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

November was a busy month for AHARS with the Buy and Sell on Sunday 2nd, some excursions to National Parks and Summits On The Air, which the club is sponsoring, and a construction night on the normal meeting night of the third Thursday of the month. We also held a Symposium on the on Sunday 23rd November.

The Buy and Sell was a great success. Lots of items were bought and sold and many friendships were renewed. This particular morning each year is the one time some amateurs see each other, but somehow it doesn't matter that it is a year since the last time, as it seems to be just a little while ago.

The noise of all the conversations was as loud as usual but with a quieter area in the second hall where you could sit and chat and where you could find some refreshments was also welcome. By the end of the day some 'junk' has changed hands and some new toys had been bought. A good day all round.

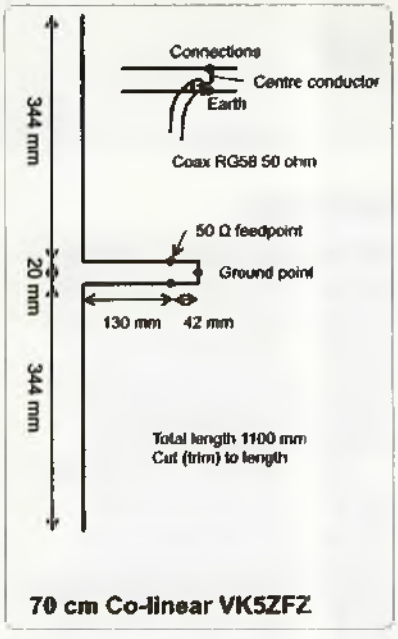
Paul VK5PAS organised the Symposium and also, with Ian VK5CZ and others, visited a number of Summits from which they were delighted to have a good number of contacts. The weather was kind and conditions were excellent. Do listen out for stations operating from different summits and National Parks throughout the summer season. There are awards to be earned and a lot of interesting contacts.

The construction night, run as usual by Graham VK5ZFZ, was a great success. The picture of everyone listening carefully to the instructions is evidence of the level of interest.

This time it was an antenna to make, so the enormous coil of copper wire was reduced by the end of the evening. Unfortunately the photo of the antenna was taken against the wrong background so it is invisible! However, the diagram Graham handed out shows the details.

The construction night attendees paying careful attention.

70 cm Co-linear VK5ZFZ.



A multi-function sequencer

Leigh Harrison VK6WA

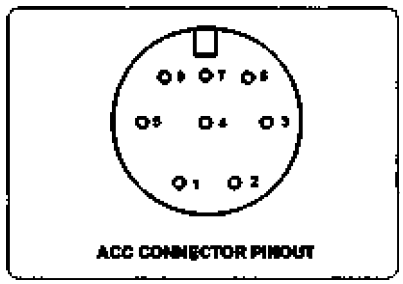


Figure 1: The ACC connector.

Introduction

This article describes a sequencer for controlling the timing of DC and coaxial relays used with various station configurations. It can be used to switch in or out power amplifiers for HF and VHF or UHF. In addition a preamplifier can be switched in or out if desired. It may also be used as a control system for transverters in the microwave bands. The idea for the Sequencer was based on an article in a German publication 'Funkamateur'(1). I wanted the Sequencer to be able to work with a Yaesu FT-817 which has an analogue band output as well other FT-8** series rigs which have a four-bit binary encoded band output. In addition it was intended to be also suitable for use with the Elecraft K3.

The three PCB mounted relays are controlled by the HF PA, VHF/UHF PA, preamp toggle switches and the rig's band setting.

If the rig is set to the 160 m - 6 m bands, the HF PA switch will close relay K3's contacts on transmit. If the rig is set to 2 m - 70 cm bands, the VHF/UHF PA switch will close relay K2's contacts on transmit. In addition, if the preamp switch is closed relay K3 contacts will close on receive and open on transmit.

Features

The sequencer has the following features.

Inputs:

- Push-to-talk from the rig, TX-GND signal.
- Band Data, either four-bit binary (FT-897 etc and K3) or analogue (0-5 V) (FT-817). Refer Table 2.
- Switches to select HF PA, VHF PA and preamplifier.

Outputs:

- Three 'floating' relay contacts available for switching linear amplifiers, a receiver preamplifier or transverters for the microwave bands.
- Four +12V pulsed outputs for driving two microwave relays used to switch VHF/UHF signals between preamplifiers, power amplifiers and microwave equipment as required. The pulse width is set at 10 ms. These outputs are only active on the two metre and 70 cm bands.
- TX-Inhibit signal to the rig. TX_INH is removed 100 ms after PTT is active. Voltage levels depend on the radio requirements. Yaesu uses +12 V and Elecraft K3 uses +5 V when TX_INH is active.

LED Indicators:

- PTT.
- TX-INHIBIT.
- HF PA relay contacts closed.
- VHF PA relay contacts closed.
- Preamplifier relay contacts closed.
- Band LEDs: HF, 6 m, 2 m, 70 cm.

Operating Voltage:

- 11-14 V DC (13.8 V nominal).

TX Inhibit function

When the TX Inhibit signal is active - Yaesu (+12 V) or Elecraft K3 (+5 V) no RF power is output from the rig. Pressing PTT or the key will result in no RF at the antenna connector(s). Conversely, when TX Inhibit is low (0 V) and PTT or the key is pressed, RF appears at the rig's antenna connector. The sequencer delays the removal of TX Inhibit for 100 ms after PTT or the key is pressed. This allows external equipment (power amplifiers or transverters) to be switched before the drive power is applied. The TX Inhibit signal appears on the rig's ACC connector - Refer Figure 1.

Band data

The band data is available from the ACC connector as four-bit binary code from the FT-897/FT-847/K3 or an analogue signal from the FT-817. Refer Table 1, below.

Typical Applications

See Figures 2a and 2b on page 30.

Circuit description

See Figure 3 on page 31.

Overview

The sequencer consists of a printed circuit board housed in a 130 x 100 x 50 mm ABS case. The board contains the 7805, 5 V regulator

Band	Analog level	* 4-bit binary	Band	Analog level	* 4-bit binary
1.8 MHz	0.12-0.48 V	0001	21 MHz	2.15-2.35 V	0111
3.5 MHz	0.5-0.84 V	0010	24.5 MHz	2.4-2.6 V	1000
7 MHz	0.87-1.1 V	0011	28 MHz	2.65-3.0 V	1001
10 MHz	1.15-1.4 V	0100	50 MHz	3.05-3.3 V	1010
14 MHz	1.45-1.67 V	0101	144 MHz	3.35-3.6 V	1011
18 MHz	1.75-2.1 V	0110	430 MHz	3.65-4.0 V	1100

Table 1: Band data.

*Note: Logic '1' is defined as +5V.

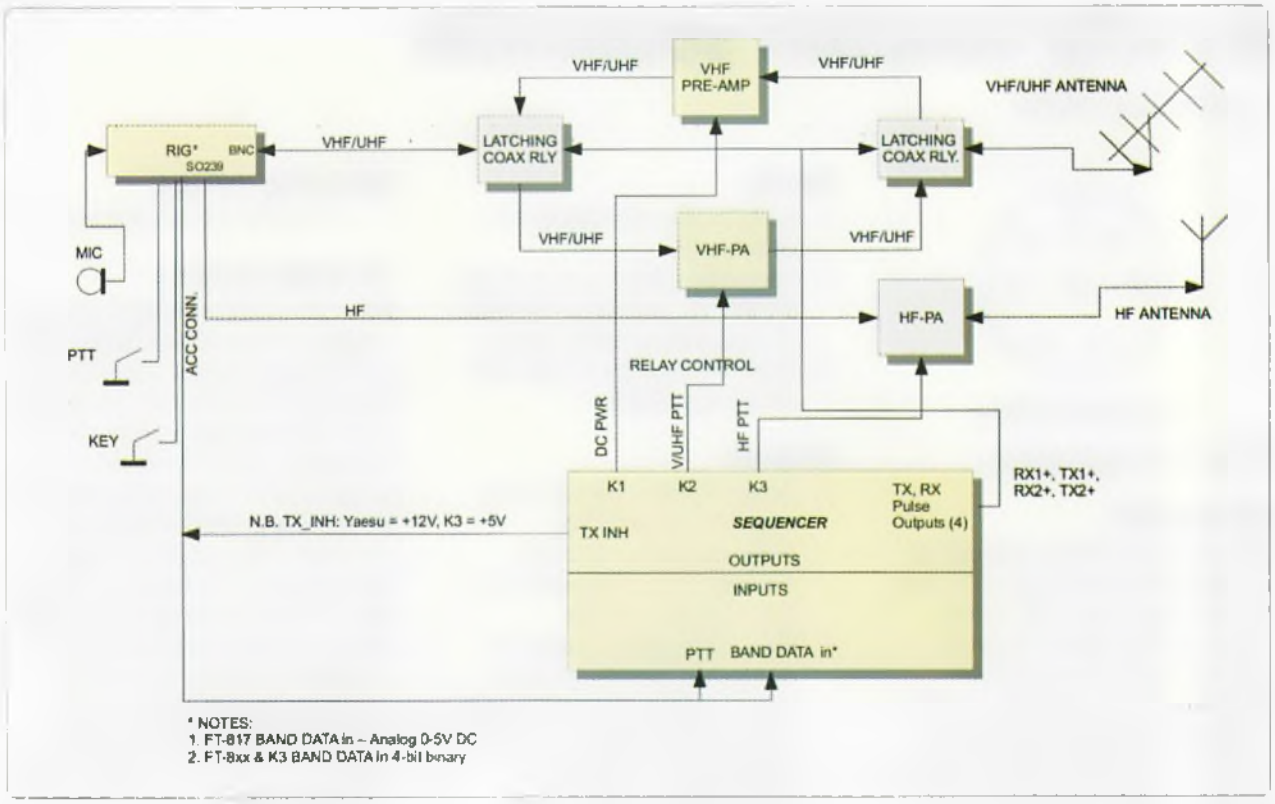


Figure 2a: Basic station configuration.

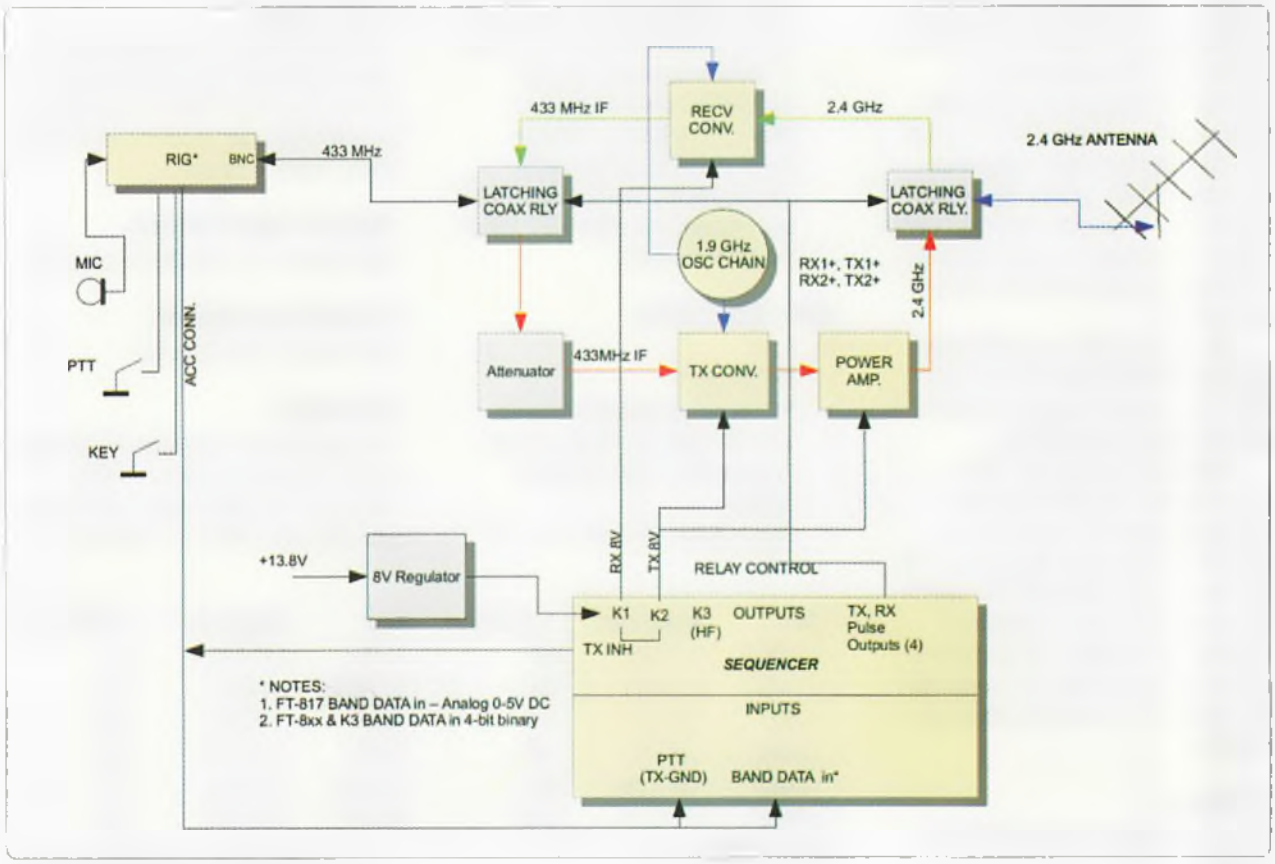


Figure 2b: 23 cm station configuration.

(IC1), the ATMEGA 32 micro-controller (IC2), the relay driver chip ULN2300 (IC3), the three PCB mounted relays and the four coaxial relay pulse driver transistors (Q2 – Q5). Some of the components on the PCB are SMD types apart from the ICs, relays and connectors.

The front-panel has the three toggle switches (S1 – S3) and the indicator LEDs (1-9) hard-wired to a 16-way ribbon cable (PL3).

Jumpers

- JP1 selects the rig type:
  1-2 selects the analog band data from the FT-817.
  3-4 selects the 4-bit binary data from the FT-897 etc and K3.
- JP2 solder jumper selects the voltage level for TX_INH at Q1 collector:
  1-2 selects +12 V (Yaesu only!)
  3-4 selects +5 V Elecraft K3.

The main board has the following connections to the back-panel -

PL4 10-way header to 9-pin DB-9 (f) radio connector (ACC from rig).
PL3 10-way header to 9-pin DB9 (m) relay contact outputs
SK1 6-pin DIN board-mounted connector – pulse outputs to coaxial relays.
J1 +13.8 V DC supply jack.

The board also has the following connections:

PL1 10-way flash programming connector for the ATMEGA32 micro-controller.
PL2 16-way front-panel ribbon connector to the front-panel assembly.

Schematic diagrams

The schematic diagram for the main board is shown in Figure 4.
I chose not to make a board for the front-panel to reduce cost and maximise the available space. The front-panel wiring is shown in Figure 5a.

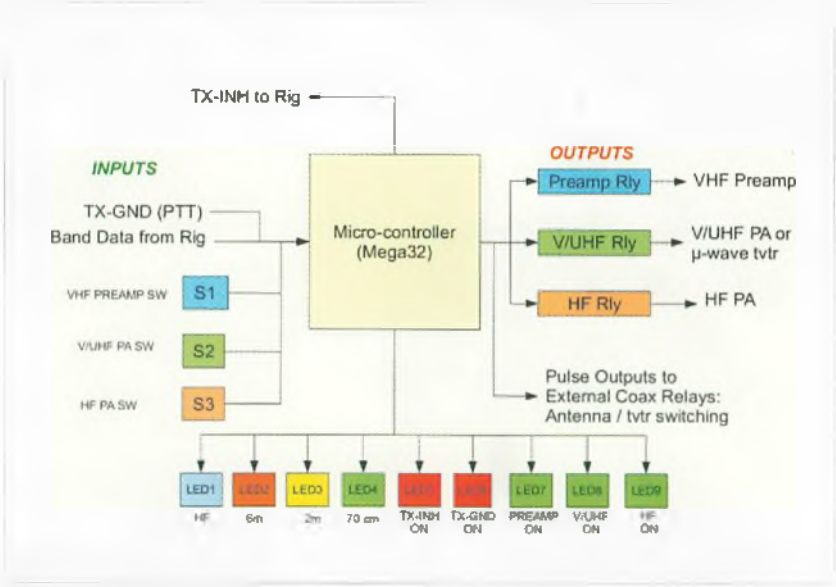


Figure 3: Sequencer block diagram.

Connections to the radio and DC relay contacts are wired to DB-9 connectors as shown in Figure 5b.

The sequencer cable connections are shown in the Tables 2 and 3.

The pin-outs for SK1 (the pulse outputs to the coax relays) are shown in Figure 6.

Indicator LEDs

The LEDs display the status of the sequencer as shown in Table 9.

Jumper settings

The sequencer can be configured to operate with either analogue band-data (FT-817) or 4-bit binary band-data (FT-897, K3, etc). The jumper settings are shown in Table 10, below. JP1 is a pin header, whereas JP2 is a solder type. JP2 was chosen as a solder link to avoid damage to K3 rigs.

Operation

At power-up the sequencer initialises the micro-controller. The rig type is then determined by JP1 setting, 1-2 (Yaesu FT-817, 2-3 FT-8** others and the Elecraft K3). The band LEDs are then lit once in turn (HF, 6 m, 2 m, 70 cm). The outputs to external coaxial relays are pulsed to initialise the latched contacts. The watchdog timer is set to time out in 0.25 seconds.

The program enters the main loop and the watchdog timer is reset.

Receive

The status of switches S1, S2 and S3 are read and stored. The rig type is read to determine the type of band data to be used, depending upon the JP1 setting above. If JP1 is 1-2, the band data is read as an analog signal which is converted to a 4-bit binary number. See Table 2. If JP1 is 2-3 the 4-bit band code is read directly from the radio.

144/430 MHz:

If the rig is tuned to 2 m or 70 cm, the TX pulse flag is set, ready for transmit. A pulse is sent to the coaxial relays to ensure they are latched in position 1 (receive).

The appropriate band LED is lit at this point. The rest of the processing is then done by the state-machine. This chunk of software (procedure) determines the necessary actions to perform for each mode, including switching the appropriate on-board relays and timing. It simplifies the main-loop

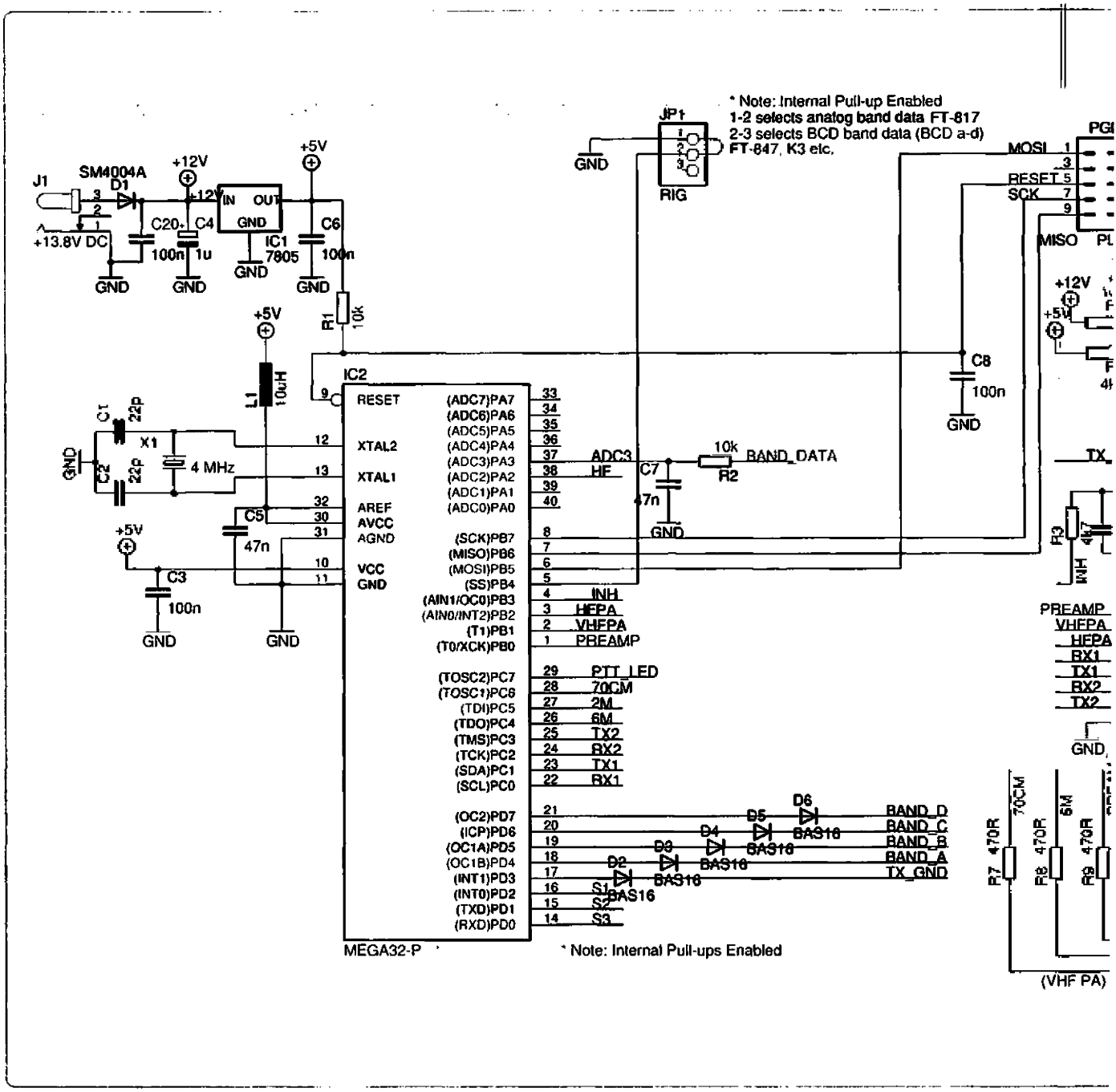


Figure 4: Main board.

code and avoids a lot of typing. See Figure 7.

HF and 50 MHz:

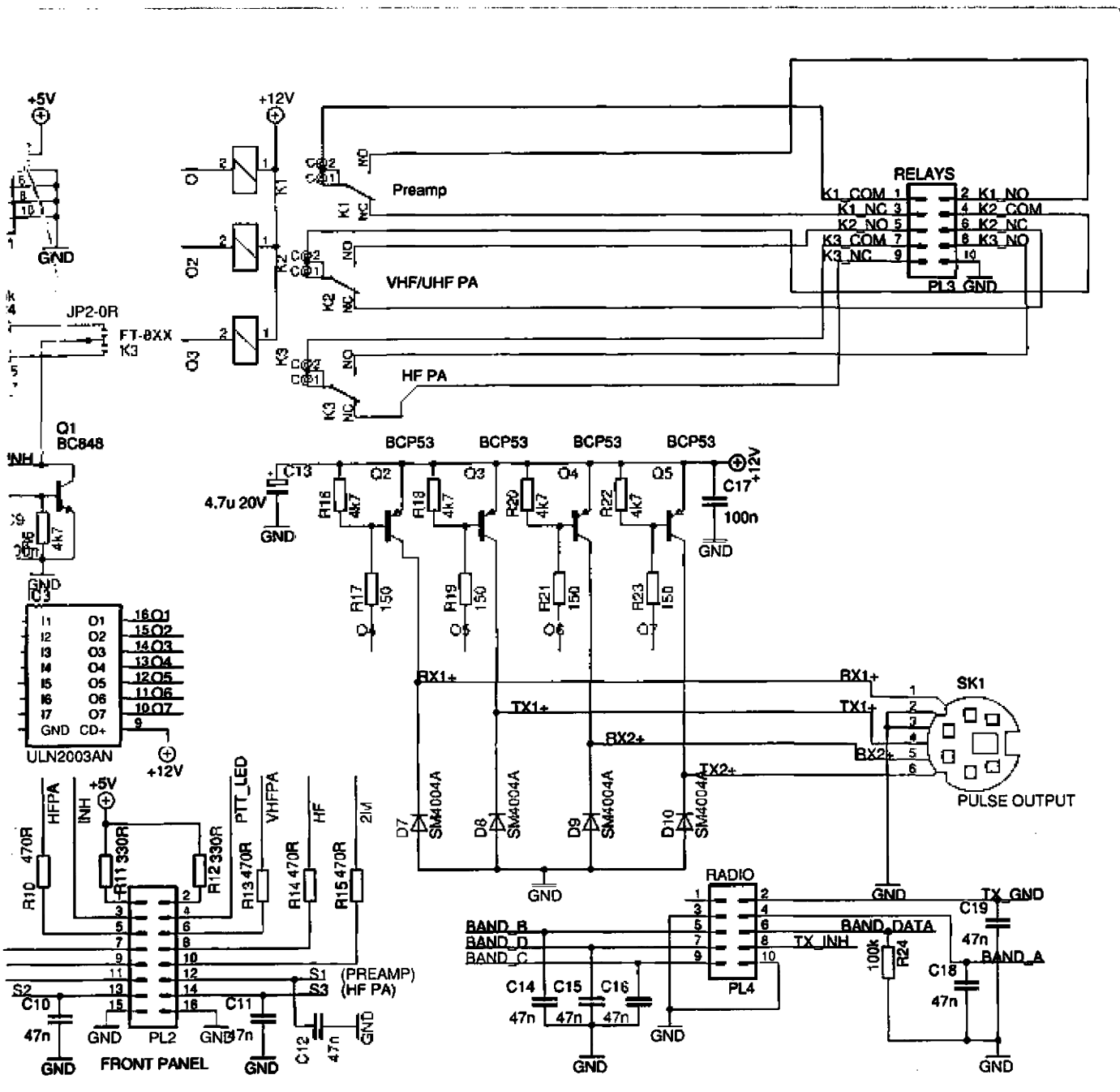
If the rig is tuned to the HF bands (1.8 – 30 MHz) or the 50 MHz band the TX pulse flag is reset. A pulse is sent to the coaxial relays to ensure they are latched in position 1 (receive) as above. The appropriate band LED is lit at this point. The rest of the processing is then done by the state-machine.

Transmit

If the rig is in transmit mode, the receive pulse flag is set.

144/430 MHz:

If the rig is tuned to 2 m or 70 cm, the PTT LED is lit, the coaxial relay output sends a pulse to place the contacts into position 2 (transmit). The state-machine removes the TX inhibit signal after 100 ms to ensure that all switching has occurred before applying RF drive to the linear amplifier or transverter transmit chain.



HF and 50 MHz:

If the rig is tuned to the HF bands (1.8 – 30 MHz) or the 50 MHz band the PTT LED is lit. The state-machine removes the TX inhibit signal after 100 ms to ensure that all switching has occurred before applying RF drive to the linear amplifier.

Software

The software was written for the AVR Atmega 32 micro-controller in C, using the AVR-GCC compiler. I used the Eclipse 3.8 IDE on a Linux platform (3,4).

The sequencer source code is freely available under the GNU Public License (GPL v3.). A copy of the software licence is included with the source code. A hex file is also available to program the micro (6).

Hardware

Voltage Regulator

The +13.8 V DC is connected to IC1 via D1 to prevent accidental reverse connection of the supply. IC1 (7805, TO220 package) runs without the need for a heat-sink.

Micro-controller

The MEGA32 micro-controller is housed in a 40-pin DIL package. I tried a QFP44 package in an earlier version but found that it was quite difficult to solder by hand and did not offer any great advantage. The micro-controller main clock is derived from an internal 4 MHz crystal oscillator. The +5 V supply (VCC) to the micro is decoupled by C3. The +5 V analogue supply (AVCC) and analogue reference (AVREF) are decoupled by L1 and C3.

Noise on the analogue BAND_DATA signal is filtered by R2 and C7. R24 provides a 100 k termination at PL4.

TX_GND, BAND_A, BAND_B, BAND_C and BAND_D are connected to PL4 via D2–D6. These signals are decoupled at PL4 by C14–C19.

JP1 pin header is connected to PB3. Linking 1-2 is detected as analogue band data input. Removing the link (or 2-3) is detected as a 4-bit binary input.

The INH signal is connected to Q1. The collector is connected via R4 or R5 to +12 V or +5 V depending upon the setting of JP2. The TX_INH signal appears at the collector of Q1.

Relay Driver

The relay driver IC (IC3, ULN2003) drives K1-K3 directly (O1-O3). The signals O4-O7 are connected to the pulse relay driver transistors (Q2-Q5). D7-D10 are used to protect the transistors from the back EMF from the external coaxial relays.

The parts list, including the suppliers (7, 8 and 9), are in Table 11.

PCB Data

The PCB layout was created using Eagle PCB CAD software. The Eagle PCB CAD files are freely available (6). The sequencer PCB measures 100 mm x 85 mm. Figure 8 shows the component layout, Figure 9 the top layer and Figure 10 the main PCB bottom layer.

Construction

The components are housed in a 130 x 100 x 50 mm ABS case. The front-panel drilling diagram is shown in Figure 13. The separate ABS front-panel measures 120 x 45 mm.

A front-panel label template is also included as shown in Figure 14. I used the template to mark out the front-panel for drilling. The drilling diagram is included for those who prefer this method. The label template is cut to suit the front-panel and the holes cut out using a craft knife or scalpel.

The assembly of the PCB is fairly straightforward but care is needed when soldering some of the smaller SMD components. A magnifier is a 'must' for the older generation such as myself!

If you don't feel that SMD is for you it is possible to build the sequencer using conventional leaded components on prototype boards. During the prototype test stage, I managed to fit most of the bits on the board and the pulse driver on a separate board within the ABS enclosure.

The switches and LEDs are hard-wired on the front-panel.

A note on mechanical RF relays

This project has been designed for two latching Dow-Key Microwave 401 Series RF relays (5.) See application in Figure 2b, above.

RF specification

The relays have a VSWR (maximum) of 1.35 up to 18 GHz and insertion loss of 0.35 dB at 18 GHz. The RF power rating at 150 MHz is 500 W, at 1 GHz it is 250 W and at 10 GHz it is 80 W.

DC specification

Operating voltage: 12 V DC (11-14 V DC).

Coil current: 230 mA maximum.
Switching time: 15 ms maximum.

Conclusion

I hope that you have as much fun as I did building this project and it proves to be a useful addition to the shack. Please direct any queries to the following email address: *vk6wa@wia.org.au*

Project update

At the time of writing, I have been unable to complete the final version of the PCB for testing, due to supplier problems. The original prototype built on 'Veroboard' has been running successfully for several months.

References

1. 'Komfort-Sequenzer für Elecraft und Yaesu-Transceiver', Oliver Dröse DH8BQA, Funkamateur 10, 2011.
2. Eclipse IDE: *http://www.eclipse.org/*
3. Eclipse AVR-GCC plug-in: *http://avr-eclipse.sourceforge.net/wiki/index.php/The_AVR_Eclipse_Plugin*
4. Eagle PCB CAD Software: *http://www.cadsoftusa.com/download-eagle/freeware/*
5. RF relays: *http://www.dowkey.com*
6. Leigh Harrison VK6WA: *vk6wa@wia.org.au*
7. Futurlec: *http://www.futurlec.com*
8. Altronics: *http://www.altronics.com.au*
9. Jaycar: *http://jaycar.com.au*

Editor's note: To conserve space in the magazine, we have published the article without many Figures and Tables. A complete version will be available for download from this month's AR magazine web page – look at the bottom of the web page: http://www.wia.org.au/members/armag/2015/january/

SOTA News

Allen Harvie VK3HRA

New Year's Day saw many SOTA devotees out on summits at a very special time in the SOTA calendar. The start of the New Year resets the activation period and presents opportunities to revisit summits that had been activated the previous year and gain points from them again. Locally, UTC rollover occurs at 1100 EADST. This is a much better time to hold New Year celebrations as opposed to non-SOTA activities that insist on middle of the night celebrations.

As the UTC year roll-over is at a convenient time, this means we can make double the chaser, activator and summit to summit points over a couple of hours at a civil time of day.

For the changeover to 2015 there were many SOTA activations planned, and with the prospect of so many summit to summit (S2S) contacts possible, more joined the fray.

Despite conditions being pretty ordinary there were 1400 QSOs post UTC recorded for 37 activators. This event certainly surpassed even the frenzy that planned major events bring. Just goes to show how far SOTA has come in this country in the past 12 months.

Quick summary from the reports and stats that have been posted show:

VK5FO Bob recorded 57 contacts with 10 S2S pre and 13 post UTC including 3 on 6 m.

VK3AGD Adam gained 11 pre and 15 post UTC contacts.

VK3BQ Andrew recorded 135 contacts including 61 S2S.

VK1MA Matt had 19 S2S pre then 46 S2S post UTC contacts.

VK3YY Glenn recorded 80 contacts with 19 pre then 27 post UTC over two summits. This does not include one close contact with a snake.

VK3ARR Andrew recorded 80 contacts including 22 straight S2S post UTC including 8 Andrew to Andrew contacts.

VK3HRA Allen recorded 32 contacts with 6 pre then 24 post UTC S2S across three summits.

VK6MAC Anthony recorded 26 QSOs with 9 S2S.

VK1DI Ian recorded 16 pre and 21 post UTC S2S contacts over two summits.

VK5PAS had 69 contacts overall with 21 S2S pre then 26 post UTC.

VK7TW Justin and son Reuben VK7FREU recorded 70 contacts over two summits with the majority being S2S.

VK3PF Peter recorded 109 contacts with 21 S2S pre UTC and 39 post for two summits.

VK1NAM Andrew 90 contacts with 16 S2S pre and 38 S2S post UTC.

VK1DA Andrew 75 contacts with 14 pre and 36 S2S post UTC.

VK3MRG Marshall 70 contacts with 19 pre and 16 S2S post UTC.

There were even several three way S2S recorded. Though what happens on the summit stays on the summit....

Not all activity was on the summits. We have a great bunch of chasers who are enthusiastic and appreciative of activators going out and operating from interesting places.

VK3FPSR Peter gained Super Sloth status with 10 k chaser points during the day.

VK2YW John logged 52 contacts (eight of those on CW) during the UTC frenzy.

VK3FQSO Amanda took the family out and chased from a park.

VK2IB Bernard has qualified as a shack sloth without even having a shack. This shows that you can certainly enjoy amateur radio without having a tower, a high power amplifier, the latest high tech radio(s) or even a shack.

However you do need a summit and the recent fires in SA has placed one of our favourites temporally out of reach.

Fires affecting Mt Gawler (VK5/SE-013).

Mt Gawler (VK5/SE-013) is a summit on land that is privately owned by a gentleman by the name of Noel. Once explained what amateur radio and SOTA were all about, he was more than receptive about activators coming onto his property. As a result this conveniently placed summit has become one of our highest activated with over 1300 QSOs recorded. The summit was in the middle of the fire ground of the early January firestorm in the Adelaide Hills. Paul VK5PAS reports that Noel's home was not damaged. Noel and his wife Anne evacuated their house in a hurry after being advised by the Police to do so, as a 'fireball' was approaching. Their house was spared. They were very, very lucky. But others were not. A total of 27 homes were destroyed along with a number of businesses. A total of 12,500 hectares were burnt. A number of us VK5 amateurs have offered their support in the form of manual labour to Noel. In the next few weeks we may have a working bee up at his property.

SOTA gathering in VK3

Ron VK3AFW reports on the upcoming Annual VK3 SOTA Conference, to be held on Saturday 7 February 2015 at the Moorabbin & District Radio Club, Highett Reserve, Highett. Entry is off Turner Road. The event runs 0930 until 1500, with a BBQ lunch and breaks for coffee and chasing any rare activation.

It should be an interesting day, with planned topics including:

The SOTA year in review, Activating away from your home base, Chinese rigs for SOTA, A proposal for a VK RBNGate network, Making LiPo batteries viable for activations, Antennas for field operations, Useful Software and apps, Homebrew gear and accessories, Preparing for the 10 m and 6 m SOTA Challenge, and a Show and Tell display.

All talks are to be published on line in a Conference Proceedings/ Compilation. All are welcome.

VK3 news Amateur Radio Victoria

Jim Linton VK3PC
e *arv@amateurradio.com.au*
w *www.amateurradio.com.au*

New Year 2015 begins

Hope we all enjoyed the holiday break. The hard working volunteers handling membership inquiries, public questions and general administrative duties are back on the job with the office at 40g Victory Boulevard Ashburton re-opened on 3 February.

Among the new office additions are flat screen displays for the computer network. Not only do they provide a clearer image, but save on electricity consumption.

A reminder that the WIA Victoria - Amateur Radio Victoria annual general meeting is at 8 pm, in the office on Tuesday 19 May. Notices of Motion for it must be signed by at least three members and be in the hands of the Secretary by 10 February.

KRMNPA activity bonanza

The recent road trip by Julie Gonzales VK3FOWL and husband Joe VK3YSP saw them travel 2500 km in seven days and activate 17 National Parks for the Keith Roget Memorial National Parks Award.

They divided Victoria into road trips or loops, all starting and finishing in Melbourne. Earlier they completed the Peninsula Loop, Bendigo Loop and a Western Loop and then on Boxing Day Friday December 26, set off for the 4th and final road trip on their Eastern Loop.

The couple said: *"This trip, which completes our activation of all 45 National Parks in Victoria over the past year, was the fulfilment of a little dream of ours inspired by a great man* (Keith Roget VK3YQ SK)".

"We couldn't imagine a better reason to visit some of the prettiest places in Victoria and amateur radio has enabled us to share the experience with so many of our friends. Thanks all those who followed our progress and called in along the way."

This trip resulted in them making over 350 contacts each with 150 stations, and the top qualification of the KRMNPA.

When the trip was over, Award Manager Tony Hambling VK3VTH began to receive new claims for certificates. Congratulations both to Brett McAliece VK3FLCS and Mick Geraghty VK3FAFK for both achieving 25+ Parks Worked on 40 m.

Brett began with a QSO to Terry Murphy VK3UP during the November 2014 KRMNPA activation weekend and ended New Year's Eve by contacting Joe VK3YSP in the Mitchell River NP.

Mick also started hunting on the same weekend. He finished 26 National Parks contacting John Dawes VK5BJE/3 who activated Port Campbell NP on January 4, during his latest road trip.

Tony VK3VTH said: *"This is great effort by Brett and Mick, relatively new radio amateurs who separately achieved 26 National Parks in six weeks."*

Congratulations also go to Peter Watkins VK3TKK for getting the KRMNPA Merit Award having worked 45 Parks on 40 m.

Tony VK3VTH said: *"On an eye-ball QSO late last year in a National Park, Peter VK3TKK then had one more to log, and met his goal thanks to the road trip."*

His hunting started with Tim Buckley VK3MTB (The Lakes NP) in January 2013, and finished logging the Alfred National Park during the VK3FOWL VK3YSP trip on December 30.

As a result we have another 45 Park Merit Plaque Award issued. More are expected this year.

The next KRMNPA Activity Period is November 13 to 16. Activations can be at any time, but be mindful of the Parks Victoria requirements, particularly during the bushfire season.

Secure online payments welcome

The bookshop facility on our website is very popular. This is a secure and convenient way to renew membership, purchase the logbook, 2015 Callbook and Foundation Licence Manual, plus claiming operating award certificates and plaques.

In the past 12 months lapsed members, some after many years, have re-joined.

Membership is affordable to most at less than 5 c a day.

Support is encouraged for the active state-wide body that offers services including a public interface that promotes amateur radio, the education of new radio amateurs, a modern mobile-friendly website and the online "shop" facility.

At $30 for two years, or $25 concession, real value is offered. While most things have gone up in cost, the subscription has not been changed. Join or re-join today.

Foundation licence weekend training

If you or a friend is interested in joining the world of amateur radio, then this month's Foundation licence quality training and assessments held at Ashburton are recommended.

Enrolments are now open for

February 14 and 15 held at the Amateur Radio Victoria office in Ashburton.

The entry level Foundation licence continues to be the most popular way of getting into amateur radio.

An experienced trainer patiently explains the theoretical and regulatory knowledge needed for the 30-minute written assessment paper, plus there's a hands-on demonstration of the equipment that is used by an assessor during the actual practical assessment.

Before the class each candidate is expected to have a copy and read the Foundation Licence Manual, available by mail order by the online 'shop' facility. Some hand-out notes and trial questions to test knowledge are provided.

To inquire or enrol please contact our Education Team Leader, Barry Robinson VK3PV at *foundation@amateurradio.com.au* or on 0428 516 001.

Morse Code for Radio Amateurs

By Roger Cooke G3LDI

50% larger than its predecessor, the 11th edition of RSGB's Morse Code for Radio Amateurs is essential for anyone looking to expand their horizons by adding Morse code to their skills. It has everything you need to get started in the fascinating hobby, to using computers and increasing your speed.

A CD containing nearly an hour of audio recordings of Morse code, audio files which can be run on a PC soundcard or downloaded to a personal MP3 player and Morse Software for learning Morse code and Morse contesting is included.

48 pages. 11th edition. © 2013.
Published by Radio Society of Great Britain

*** Plus postage and packaging**

Member Price: $25.00* Retail Price: $33.00*

AMSAT-VK

AMSAT Co-ordinator
Paul Paradigm VK2TXT
email: *coordinator@amsat-vk.org*

Group Moderator
Judy Williams VK2TJU
email: *secretary@amsat-vk.org*

Website:
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial amateur radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net
Australian National Satellite net

The net takes place on the 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 439.625 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.

VK3 news Eastern & Mountain District Radio Club

Andrew Scott VK3BQ

EMDRC Club Repeater VK3REC 147.175 MHz gets a timely update!

Ralph Parkhurst VK3LL, EMDRC Repeater Manager

A GPS Clock for the EMDRC 2 m repeater 147.175 MHz VK3REC has been constructed and is now operational. Based on a single microcontroller running at 10 MIPS, the unit provides automated GPS time synchronisation to the repeater's internal clock to keep it updated, without the need for any human intervention.

Previously, the repeater's internal clock has drifted around somewhat due to temperature changes – and required manual intervention to keep it in check or whenever a transition to daylight saving occurs. The repeater uses a 32,767 kHz crystal locked real-time clock. However the crystal is not temperature stabilised within a crystal oven, so the frequency tends to wander due to the harsh temperature extremes in the Dandenong Ranges where the repeater is sited. As a consequence, so too has the repeater's clock tended to wander.

So this new system should keep the repeater "on-time" from now on.

You may wonder why a repeater needs a clock. The primary reason is that the VK3REC repeater employs a sophisticated controller that provides a series of maintenance processes that are scheduled to run at specific times. The WIA broadcasts at 9:30 am each Sunday requires a particular configuration to prevent the 30 minute duration broadcast from timing out the transmitter, for example.

Some features of the new single-chip system design include:

- Automatic adjustment for leap years
- Automatic compensation for Daylight Saving on the first Sunday in October and May
- Built in day-of-week calendar will operate until the year 2089
- Generates all the necessary instructions as required by the VK3REC controller protocol to synch time
- Automatic unattended operation with an "Adjust Now" manual override
- 50 channel high-sensitivity UBLOX Neo-6M GPS positioning engine is capable of receiving a perfect GPS signal lock indoors!
- Control tones are software generated within the microcontroller using Direct Digital Synthesis (DDS) based on a Binary Divided Accumulator algorithm
- Supervisory program will restart the processor in the event of a lockup
- Draws less than 90 mA at 13.8 V.

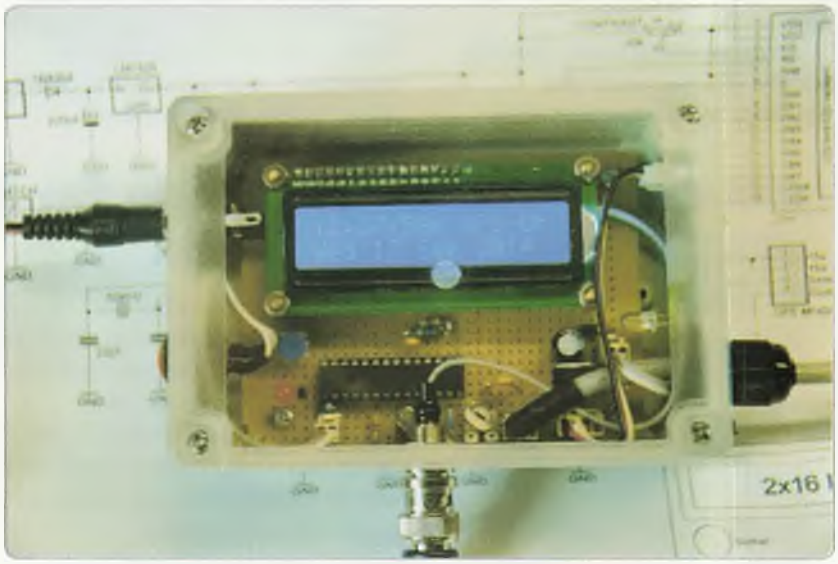


Photo 1: The GPS clock for the VK3REC repeater.

These photos show the simplicity of the hardware. The software is about 10 kBytes of code written code for a Microchip PIC18F2420 microcontroller – this one chip does everything.

By far the most difficult part of the code was the component that determines if Daylight Savings should be applied. After several of my own attempts that were reasonably successful but used about 40 lines of code, I am indebted to Geoff Graham from WA who emailed me a very elegant algorithm to do it in just 3 lines of code! Geoff is the brains behind the Micromite based GPS Clock published in the May 2014 edition of Silicon Chip magazine and it was a trivial matter to port his code to the Microchip PIC18F2420 chip.

The new VK3REC GPS Clock has been in operation running at the repeater site for a number of months now and is performing flawlessly.

Microwave Test and Tune morning

The 3rd Annual VK3 Microwave Test and Tune morning was held at the EMDRC clubrooms in early November. The attendance was a little down this year, but the interest and gear on display was

great, we had a number of people with little to no microwave experience attend eager to see some gear and understand what is required to become active on the higher bands, and those on hand were able to help answer questions and spark some interest. We tried to focus activity on the 3.4 GHz band given the recent ACMA call for submissions on this bands future, and a number of people were able to demonstrate and display their 3.4 GHz gear. Thanks to those in the VK3 microwave community who made the effort to attend the event and help promote and demonstrate higher band activity. See you in 2015.

Photo 2: Peter VK3QI demonstrating his 47 GHz gear to Ian VK3AXH.

VK3ER/P Spring VHF/ UHF Field Day 2014

With the high band gear dusted off at the microwave test day, The Club competed in the Spring VHF/ UHF as VK3ER/P at our location in the Wombat State Forest south of Blackwood around 80 km from Melbourne. We arrived Friday afternoon and setup our equipment, from 50 MHz through 47 GHz, a now well-rehearsed procedure and were ready to go Friday evening. The Spring contest always bring out the best in the weather, this year was no exception, we missed out on the heavy rain and thunderstorms others in the state experienced, but were buffeted by the very strong blustery winds as Saturday progressed. The winds took their toll on our equipment and we had some minor cosmetic damage to our microwave dish mast guying system, a quick repair with parts form the spare bolt jar and we were back in the air. Thankfully we weren't blown into the next grid square! The repair held and we had an uneventful remaining time on the mountain. Thanks to the club members who assisted and all the stations we worked, we look forward to working lots of stations in the upcoming Summer VHF/ UHF Field day 2015.

Photo 3: Peter VK3QI, Mike VK3AVV and Jonas VK3VF undertake some repairs due to the strong winds.

VHF/UHF - An Expanding World

David Smith VK3HZ
e *vk3hz@wia.org.au*

Weak Signal

So far this summer, conditions seem to be back to normal with tropo and Sporadic E openings between all the usual places. There's been too much happening in the last two months to report everything in detail, so I'll stick to the major happenings.

November 25th afternoon/evening from about 0200Z to 0800Z, there was a big tropo opening from VK4 to ZL1/2. Signals were up to S9+20 on 2 m. No contacts were reported on any higher bands.

December 11th, afternoon from about 0400Z to 0450Z, the first big Es opening occurred between VK4 and VK7/VK3. Many stations involved.

December 19th, evening, there were tropo openings from VK2 to ZL and from VK6 to VK3/5. Rob VK6LD/P's remote station in Albany is proving to be extremely useful. This is probably the way of the future, with weak signal operation in major cities becoming extremely difficult due to the QRM generated by modern living.

December 23rd, afternoon from about 0550Z to 0630Z, another big Es opening, this time from VK4 to VK5. Signals were reported to be extremely strong at times, but with very severe Es-type QSB.

VK1 to VK3 Microwave

Chas VK3PY reports on recent microwave activity:

Yesterday (Sunday 30/11), David VK3QM took his microwave gear to Mt. Ginini, hoping to work back to Geelong, which he did on all bands from 2.4 GHz through to 10 GHz. Charlie VK3NX, Ken VK3AKK and I were the "home" team operating from our usual field day QTH about 15 km west of Geelong.

There was clearly a sniff of tropo in the air as signals were very steady and we could work at will, without the need for aircraft reflections. The outstanding bands were 3.4 GHz and 5.76 GHz, both of which provided conversation-quality signal levels at around 5X5. Signals on 10 GHz were also quite steady but well down, at around S1-2 most of the time. Unfortunately, our beam heading to Mt. Ginini was straight over Melbourne's WiFi fog, making copy at our end extremely difficult. While David was reporting up to 5X8, we could barely copy him (there also remains the possibility of equipment malfunction at his end, as the signal strength discrepancy appears very large). Later in the day, Charlie ducked home to get another transverter that worked on 2.400 GHz which proved a tad quieter. That allowed us to make a difficult two-way contact, but by then David had shifted to the VK2 side of the border which runs through the mountain, so no VK1 to VK3 contact ensued on 2.4 GHz this time 'round.

There are several state records in that string of contacts, which no doubt David will apply for on his return. The distance was 503 km.

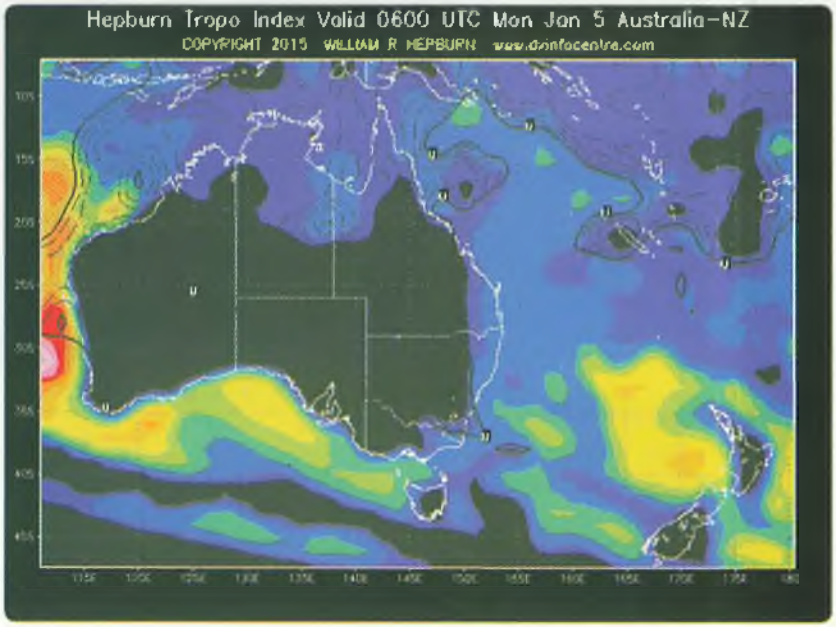


Figure 1: Hepburn Tropo Index at the time of the 10 GHz record contact.

10 GHz World Record returns to VK

A very late "Stop Press" - on the evening of January 5th at about 0825Z, Rex VK7MO/7 and Derek VK6DZ/6 set a new 10 GHz World Record of 2732 km. Rex was located at Cape Portland on the north-eastern tip of Tasmania while

Figure 2: 10 GHz Records – White 1994 (World), Blue 2013 (VK) and Red 2014 (World).

Derek was on Torbay Hill at the southern tip of WA. Their initial contact was Digital using JT65 with signals peaking to about –12. They then switched to SSB and exchanged reports of 3x1 / 5x1 – the difference due to Rex running 50 W and Derek 10 W. At the time, the Hepburn Tropo forecast was showing a massive band of enhancement spanning the entire south coast of Australia.

Following Rex and Derek's record contact, Colin VK5DK/P worked Derek on SSB from Mt Gambier to set a new VK5 10 GHz Record of around 2090 km. Reports exchanged were 52/57. David VK5KK near Adelaide was having a much harder time. He worked Derek on Digital with reports of -14/-15. Looking at Hepburn, it appears that David may have been a little way out of the duct making signals that bit weaker.

From 1994, for many years, the 10 GHz World Record was 1912 km, held by Roger VK5NY/5 and Wally VK6KZ/6. More recently this record was broken a number of times in Europe with the latest occurrence in July 2010 over a distance of 2696 km. In Australia, Rex and Derek set a new VK record of 2293 km in 2013. Well done to them for now bettering the World Record by 36 km.

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

Digital DX Modes

Rex Moncur VK7MO

Monitoring GPS-locked beacons with Spectrum Lab

The Spectrum Lab program, produced by DL4YHF, has a number of facilities that are useful for monitoring weak signals and is available at: http://www.qsl.net/dl4yhf/spectra1.html

Without GPS locking, one typically uses a waterfall program with a bin-width of around 2 Hz

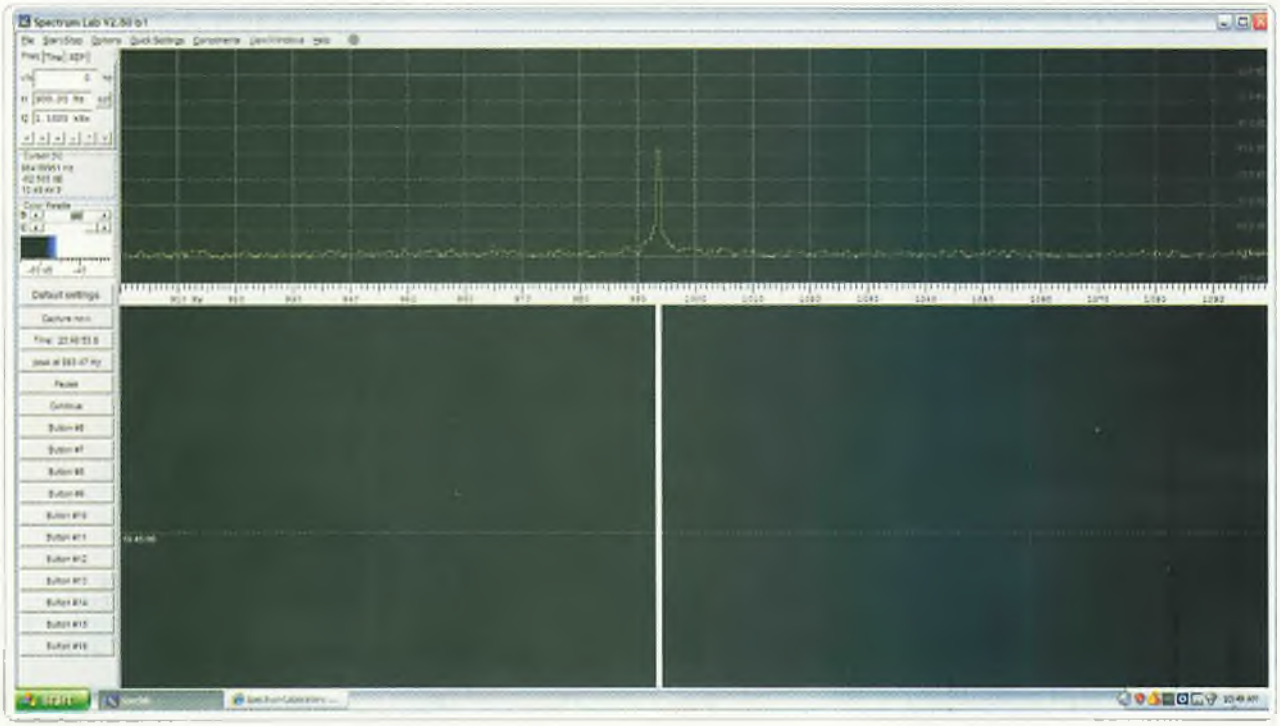


Figure 3: Spectrum and Waterfall on Spectrum Lab monitoring the VK3RGI 70 cm beacon in Hobart.

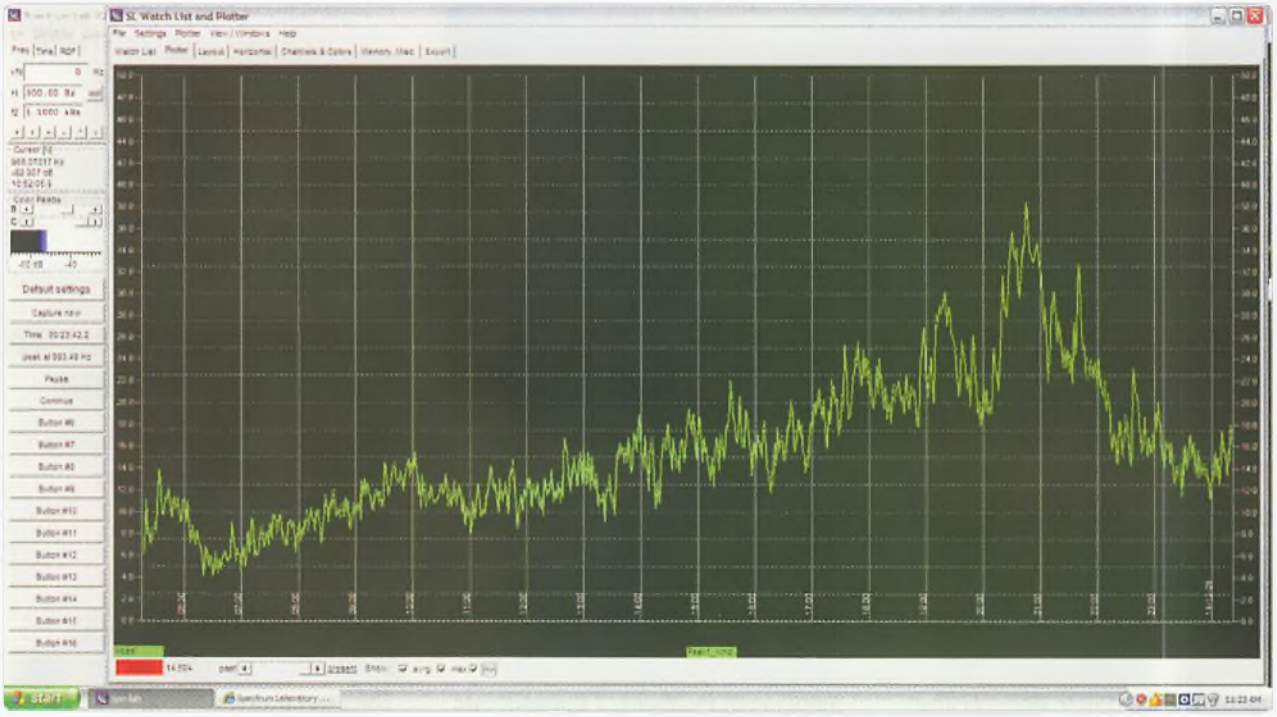


Figure 4: Spectrum Lab Chart Plotter measuring Signal to Noise over a 20 hour period.

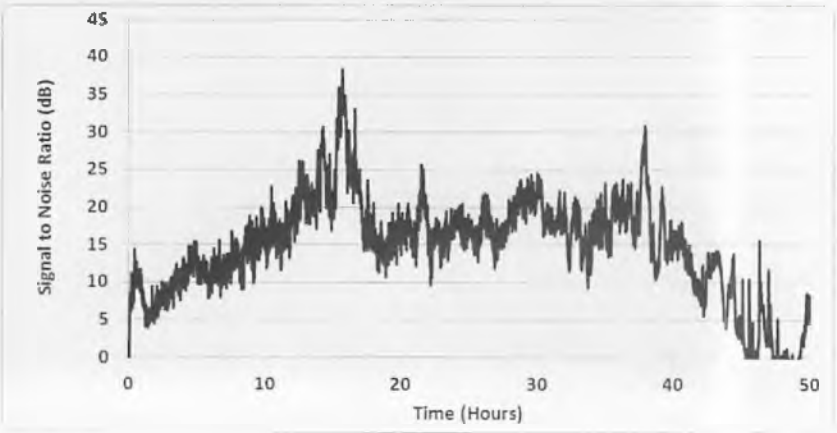
to monitor beacons. As more stations and beacons become GPS-locked it becomes possible to gain extra sensitivity by using even narrower bin-widths combined with averaging. Figure 3 shows the VK3RGI GPS locked 70 cm beacon as monitored in Hobart with a GPS-locked transceiver. The transceiver is tuned 1000 Hz below the frequency of the beacon to produce a 1000 Hz beat note on Spectrum Lab. In this case, the frequency is around 7 Hz low due to the resolution of the beacon PLL. The beacon has a long key down period of around 45 seconds each minute and transmits its callsign and grid locator in the remaining 15 seconds of each minute. With the signal being present for most of the time it is possible to use averaging over long periods without any significant loss. In the example in Figure 3 the bin-width has been set to 366 mHz (i.e. milliHz) and averaged over 100 periods. Reducing the bin-width from 2 Hz to 366 mHz picks up around 7 dB. Averaging picks up around 2 dB for each doubling of the averaging time or about another 13 dB when averaged over 100 periods. Overall there is a gain of around 20 dB on steady signals.

Another useful feature of Spectrum Lab is the chart plotter which is the equivalent of the old pen chart recorder. This can be set up to measure signal to noise ratio and plotted over any period that one might wish to monitor changes in propagation. Figure 4 is an example of a plot of VK3RGI 70 cm beacon in Hobart over a 20-hour period. The vertical scale is 50 dB and the vertical lines are 1-hour intervals. The signal is primarily tropo-scatter but some of the shorter spikes (around 5 minutes or less) relate to aircraft.

It is also possible to use Spectrum Lab to record the raw data in a file and transfer this to Excel for plotting as shown in Figure 5. By this means one can monitor a beacon and propagation over days or even weeks.

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

Figure 5: S/N data from VK3RGI 70 cm beacon monitored over a period of 2 days.



Meteor Scatter

Dr Kevin Johnston VK4UH

The period since the last Meteor Scatter report, leading up to Christmas, included the predicted dates for both the Leonid (18th November) and the Geminid (14th December) meteor showers, both being Class 1 Major Meteor events for the year. The Leonids occur as the Earth's orbit passes though debris remaining from the Temple-Tuttle comet (P55). This shower is very variable with a predicted ZHR of around 20/hour although showers of epic proportions have occurred in previous years.

The Geminid shower is the result of debris from Asteroid 3200 Phaeton, arguably the best shower of the year, with a predicted ZHR of 120/hour with a very broad peak across many days.

The ZHR (Zenith Hourly Rate) is an astronomical term related to the number of "visual" meteors seen by a single observer. If we assumed that each visual meteor trail produced a significant radio return on 2 m, then a ZHR or 120/

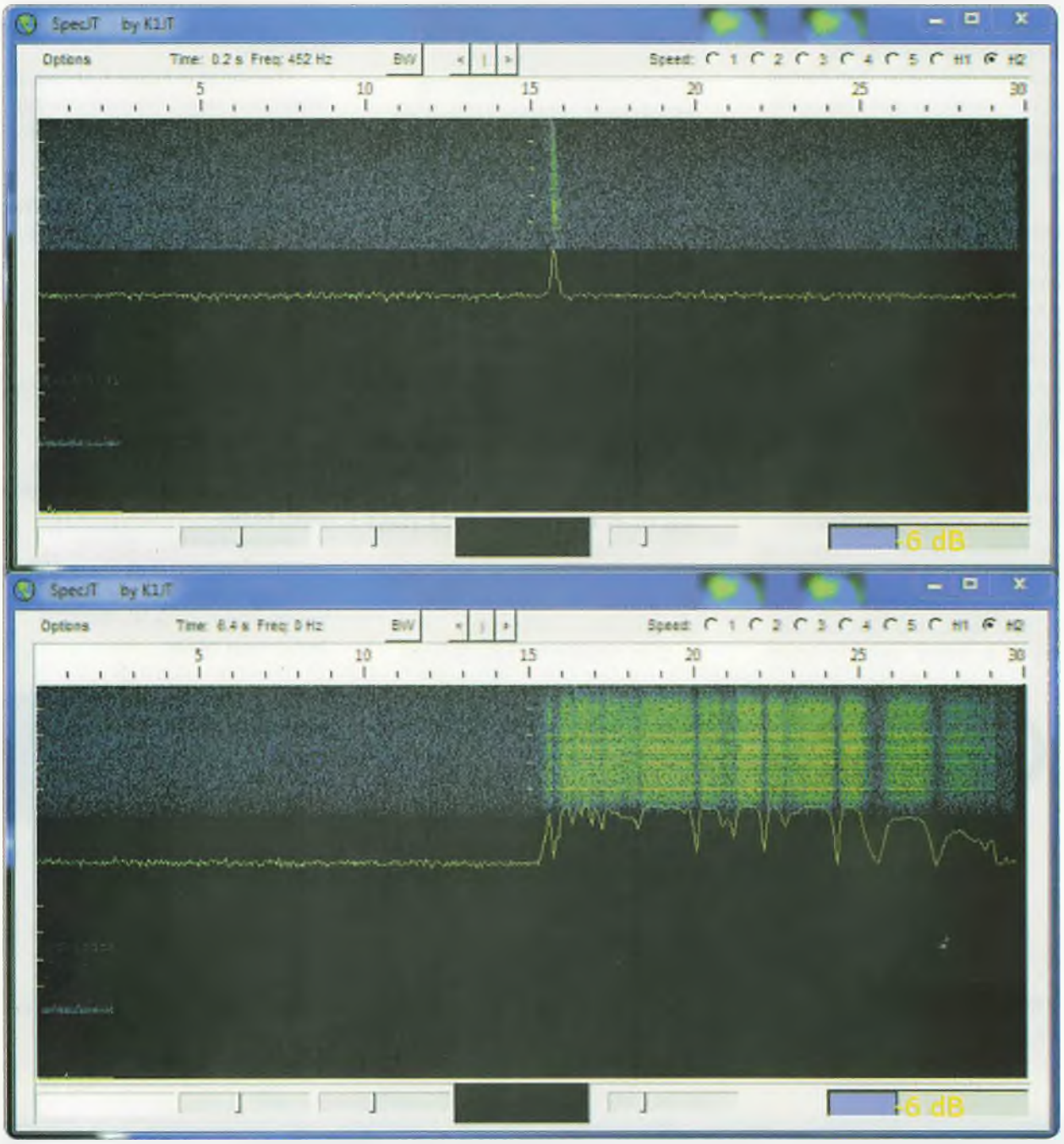


Figure 6: Concurrent MS signal on 70 cm (upper) and 2 m (lower)

hour would imply one reasonable ping or burn every 30 seconds (one per period) and could be filling our receive screens for almost half of the time!

Well the Leonids came and went. The peak was mid-week when few operators were active and the closest weekend activity period coincided with the VHF Field day but the universal opinion, from those who were active, was that the shower was a great disappointment. Here in VK4 the return rate appeared little better than normal random levels for that time of the year. Not much more can be said - the Leonid shower 2014 followed the egregious pattern of 2014.

The Geminids were a little different. Although the predicted ZHR of 120/hr was not even approached, there was a period of some enhanced meteor scatter propagation from this shower. Not everyone was happy. John VK4JMC reported:

"My report on the MS this weekend is that it was one of disappointment.

Saturday 13/12. This I would classify as a disappointment at this QTH with normal 'ping' intensity well below "normal" although I did complete with several stations.

Sunday 14/12. This could only be classified as much worse with only a few 'pings' seen in the first hour and no 'burns' were seen at all in the early part of the session.

Some improvement was observed in 'ping' strength during the later parts of the session but still no observed 'burns'. Nothing was seen on 70 cm"

On 12th December however, Arie VK3AMZ (QF22FE) reported that the observed Geminid ZHR, reported from the Canadian Radar site, was climbing and had reached 39/hr. He calculated that the optimum timing for the near NorthEast to SouthWest Path between us would occur between 1700-1800 UTC (0300-0400 local VK4 time) on 13th December, and an hour earlier for East-West paths. On the evening of the 12 December, as the constellation of Gemini was rising in the Eastern sky at the VK4UH QTH multiple visual meteor trails were seen apparently radiating from "The Twins" that form Gemini.

For three days across the shower Arie VK3AMZ and I VK4UH (QG62kp) operated from before 1700 UTC (0300 local) on 70 cm only from VK3AMZ and with concurrent transmission of FSK441 on both 2 m and 70 cm from VK4UH. 70 cm pings were decoded in both directions on 12th and 13th December but neither day provided a completed QSO via the Geminids on 432 MHz.

2 m conditions at the VK4UH end were enhanced with some very impressive burns extending across entire periods and beyond. Two-way QSO were completed with VK3KH VK3HY VK5PJ VK5APN VK1WJ VK3II and VK2BLS during these times.

On 14th December, the third day of attempting a 70 cm MS contact, the final 73 was received at 1937 as Gemini was setting on the horizon. The best signal received on 70 cm was a ping of 420 ms at 9 dB above the noise.

The image in Figure 6 shows an impressive recording made during the shower on 13 December. This shows the concurrent reception of FSK441 signals from a single meteor between VK3 and VK4. The lower trace shows a hyper-dense meteor burn on 144.230 MHz, extending beyond 15 seconds duration at over 15 dB above noise. The upper trace is the corresponding ping received on 432.230, 9dB above the noise floor and of 110ms duration.

An article on strategies for dealing with poor Meteor Scatter conditions is being held over until next month.

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*

GippsTech 2015

The annual GippsTech conference is coming. GippsTech has a reputation as a premier amateur radio technical conference. It focusses primarily on techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts.

GippsTech 2015 will be happening on the weekend of the 11th and 12th of July, at Federation University Australia Gippsland Campus in Churchill, Victoria, about 170 km east of Melbourne.

Call for papers

Anyone wishing to share information with others is invited to submit a title and brief summary of your planned presentation to the Conference Chair Peter VK3PF as soon as possible. Please be sure to indicate your expected length of presentation: it could be a short 10 minute item through to a detailed presentation of up to an hour.

We look forward to seeing you at GippsTech in early July.

Those wishing to present at this year's conference should contact the Chair as soon as possible:

vk3pf@wia.org.au

Peter VK3PF
Conference Chair

Further details will be available from the Eastern Zone Amateur Radio Club website: *http://www.vk3bez.org/*

DX Talk

Nick Hacko VK2DX
e *vk2dx@wia.org.au*

"Amateur radio is dead," proclaimed my fellow club member the other day.

"There is no excitement, we are losing membership and the last time I checked the bands, I could not hear anything but a noise."

Tell that to the seven Frenchmen who just returned from Tromelin Island!

Operating as FT4TA, they logged almost 90,000 contacts in just 12 days. The pile-up was massive, 'thick and wide' with thousands of amateurs from every corner of the world fighting hard to make it into their log.

Yes, Tromelin Island ranks as the 8th most wanted DXCC entity and a large pileup was not a surprise. But there are many smaller activations every week, all year long, keeping the enthusiastic chasers busy. Actually, there are now more entities to chase than ever, and the 'good old days' of amateur radio are today! Thanks to the Internet there is an abundance of valuable information to enthusiastic amateurs and finding the 'DX' is really easier than ever.

Of course, putting up a small tribander as a replacement to that piece of wire you stretched 20 years ago would make a huge difference to what you can actually hear - and work. The old saying is that DX comes to the deserving - and by 'deserving' we mean to those who are willing to put some effort and time into their hobby.

There is no better time than now to make your New Year resolution. Here is my suggestion: clear your shacks of no longer needed or wanted stuff, put up a new antenna, unbox that new radio, setup a PC with logging software and start working those rare ones! Spend at least a few hours every week tuning the bands and making contacts. Brush up your Morse. Be persistent and systematic. Print some QSL cards. Share your achievements with fellow chasers and you will have the time of your life.

Ham radio is not dead. It's alive and kicking and we are looking forward to seeing you on the band, cracking the piles.

DXing is FUN

Yes, we still chase DXCC.

A note to old-timers: there are now 340 entities and you need 331 of them to make it to the Honour Roll list. If you are really an old-timer, then you have probably worked them all. Or have you? I bet you still have that shoe box filled with QSL cards labelled 'DXCC'. Get it out of the closet, dust it off, and count them once again. Welcome back to the game!

If you are relatively new to amateur radio and to the concept of 'chasing' then just a brief overview: DXCC (country list) consist of real countries, territories, islands and bunch of entities which are none of the above.

Trying to find a logical reason why Tasmania is not a DXCC and Lord Howe is or why a Month Athos, Sovern Military order of Malta and UN headquarters are separate entities will only make you confused. The truth is – no one knows*. Simply, DXCC is our religion, and one is not to question his religion too often or too hard.

Working your first 100 is easy, even with very modest power and a simple antenna. It can be done over a contest weekend. Most chasers would hit the 200 mark in less than 12 months. And this is where the fun really begins.

Passing the 250 means that you have made a serious commitment and investment - either in time or hardware, or both. From then on it is all a matter of persistence. I have started chasing my DXCC four years ago and while I've missed a number of expeditions due to 'real life commitments', I am very pleased with my score of 303 - with the last one being Tromelin Island.

Keeping the logbook is fundamental. Being well organized and systematic is the name of the game. Download the latest DXCC list and take time to study it. Then get on the air and work them all - it's that simple!

My job and purpose of this column is to keep you on track, motivated and active.

2015: Here we come!

According to my research, there are around 150-200 semi-serious DXCC chasers in Australia. Some of them have already worked them all, or just need a few more to tick off the list. Others are working at a steady pace to achieve their goal and then there are always a few newcomers who have recently discovered the joy of the chase and have enthusiastically joined the game.

There is, however, one thing that all chasers have in common: they like to know how they compare with fellow DXers. This is why rank lists are so popular!

While we all have our individual goals and while we are all at different levels of 'DX expertise', sharing your standing and totals is highly beneficial to all. It helps us all to stay focused and motivated. Surely, a chaser blessed with a quiet rural location and an all-band antenna farm would work a new one easier than someone with a

vertical antenna in the middle of the city. However, as with everything in life, it is not the destination but the journey itself that counts the most.

Here is the proposal: make 2015 the year of a new start. As of January 1, start afresh and do your best to work as many DXCC as you can. Please report your DXCC count monthly and see how you compare with fellow VK chasers. The monthly list will be published here, so watch this space and stay tuned.

Good luck and above all, have fun!

The islands chaser: IOTA

January is the busiest month for IOTA chasers: it is a time to get your QSL cards in mail, on the way to your local IOTA check point. Our VK check point is the reliable, trustworthy and efficient Roger Conway, VK2RO. The deadline for Annual submission is approaching fast.

IOTA is one of the most exciting programs you can 'sign up' for. The name of the game is to work and confirm as many islands (or island groups) you can. There are over 1200 islands which count and no one has yet worked them all!

Created in 1964 by Geoff Watts, a leading English SWL, and taken on in 1985 by RSGB, "Islands on the air" is an amateur radio activity program that is regarded amongst DX chasers as the ultimate challenge.

There are two lists which recognize your standing: the Honour Roll list and The Annual listing. To be included on the Annual list you need to have a confirmed minimum of 100 islands. The Honour Roll lists the 'top chasers' – with approximately 700 participants.

The highest-ranked casher for 2014 is I2YDX with 1105 islands, followed by I1JQJ (1104), VE6VK (1101) and G3KMA (1100).

Are there any VKs on the list? You bet!

124. VK4MA 1018
236. VK3UY 925
340. VK7BC 852
567. VK4BUI 668
648. VK8NSB 602
953. VK2DX 317
1047. VK4CAG 254
1401. VK2HOT 105

In order to stay on the list, one is required to submit their total every year, so there are a few more VKs who are active chasers yet for some reason have not submitted their most recent scores. We all hope to see more VKs making it either to the Honour Roll or at least qualifying for the Annual Listing.

There is something magical about 'working' a snow-covered, ice-stranded, remote island in Arctic or a tiny atoll in the middle of Pacific Ocean. Such contacts are among the most memorable ones and the pinnacle of your DX activity. IOTA QSL cards are highly prized possessions of any chaser. Some islands are incredibly hard to work. It takes lots of patience, persistence, experience and time to work a 50 W station transmitting into a portable antenna located on the other side of the globe!

For us, the most difficult ones are South American and African islands. The piles are often large and the band propagations are often short. Timing is everything, but knowing who is going where and when is a key factor in working a new one.

As in the previous years, this column will continue to focus on all things IOTA related. If you are an Australian island activator, then please keep us informed of your plans.

Once again, the IOTA chase consists of four distinctive steps: making a contact, obtaining the QSL card, uploading QSO data to the IOTA online database and sending the cards to the checkpoint for final verification / inclusion to the list.

There are a number of tools and aids which will make the hunt for islands amazingly interesting. A good starting point is the *www.rsgbiota.org* website.

IOTA DXing starts in your backyard

While the general format of the DX column will remain unchanged, the intention is to place more emphasis on IOTA related matters. In a series of monthly articles we intend to talk about VK IOTAs, starting with the overview of the VK2 islands.

There are three IOTA islands (groups) located in New South Wales: Broughton Island OC-212 located just off the coast of Nelson Bay, Montague Island OC-223 near Narooma and the Solitary Islands, OC-194 near Coffs Harbour.

Broughton is the easiest one to access and over the years there have been many activations. A letter to NSW National Parks and Wildlife Service is all it takes to obtain permission to stay on the island. Montague is a bit trickier and a special permit is required to land, stay and operate, but at least four activations took place from Montague in the past 10 years.

The OC-194 group is one of the most difficult Australian IOTAs! There was just one recognized and accepted operation: VK4CRR/p who was there in 1994 – over 20 years ago!

Needless to say, demand for Solitary Island is very high and only 10% of chasers have this one ticked-off. The main challenge with this group is access to the island, which is only permitted by air. A 10 minute helicopter flight is said to cost in excess of $5000. Also, the NSW NPWS only permits day stay on the island. There are, however, talks about some commercial arrangements to be approved by 2016 which would allow overnight stay once the light house is restored/redeveloped. The alternative logistic arrangement would be to land on one of the smaller islands in the Solitary group but so far this option has not been possible either. If you do have a QSL card from OC-194, consider yourself lucky – and well done!

You cannot afford to miss...

KP1 Navassa Island is the most wanted DXCC entity, ranked #1 on the Most Wanted list. The last major operation from Navassa was in 1993. Finally, after years of negotiating access to the island, a large group of American amateurs lead by Bob Allphin, K4UEE will land on Navassa at the end of January 2015.

This is the one you cannot afford to miss, so plan your time and schedule accordingly.

As one would expect, the team will be active on all bands, 24/7 for two weeks with 8 radios. The DXpedition of such importance and magnitude does come with a price tag of hundreds of thousands of dollars, so our contribution is required. Visit the K1N website at *www.navassadx.com*

EP6T, Kish Island [AS-166], Iran. A country with a population of 80 million and only 13 licensed amateurs, Iran is ranked #33 on the most wanted list.

However, the last activity from Kish Island was in 2002. So this is another one you can't afford to miss. The Belgian Rockall Group team is expected to commence operation mid-January. Securing permission to operate from Kish is an astonishing success and result of many months of preparation.

Recently logged

For the deserving, a Christmas present came in the form of unexpected activity of BA7CK from Woody Island, AS-143. Che was running low power into a simple vertical antenna. Also known as Yongxing Dao by China and Phu Lam Island by Vietnam, this tiny island is one of the few disputed territories in the South China Sea. Both Vietnam and Taiwan make their claims to the Paracel Island group, but China has occupied Woody Island since 1956 and has established a number of facilities, including a military garrison, coastal defensive positions, the runway, four large aircraft hangars, a communications centre, and a Municipal Headquarters. Definitely a rare one but fairly close to home, so a number of VK chasers got BA7CK in the log, mostly on RTTY! QSL via BA4TB.

K6REF/KC4 Ron was running 100 W into dipole from Yesterday's Camp, Antarctica. Ron's report: "Temp -20C, feeling bit cold, some back pain, cold hands and generator is generating more FRI than AC". He also said that he believes that no humans ever been at this particular spot before. 79S 180W. Ron's QSO total is around 60 QSOs.

VP8ROT Rothera Base on Adelaide Island in Antarctica, AN-001. Another unexpected activation by Mike, GM0HCQ who is on board Royal Research Ship James Clark Ross. Mike spent just a few hours on dry land at Rothera. The window of opportunity for Australian amateurs was an extremely narrow one but a few managed to snatch this rare opportunity and log AN-001.

The RTTY Logbook 12/2014: FT4TA, VU4KV. 3W3B, FO8AA/p, FG5LA, TF5B, 5R8M, XX9R, VK9DLX, PJ2/PF4T, TX5Z, E51XIW, 8J1RL, P4/W6HGF, VK9AN, HI2DX.

How many QSOs have you made over the years with Vlad Bykov, UA4WHX? Since 2002 Vlad operated form over 50 DXCC countries, including a few rare ones. His logbook contains over 400,000 QSOs! After extensively touring South America, Vlad is finally back home and ready to answer your QSL requests.

Please be kind to him: include the sufficient postage and be patient! Vlad is an asset to the DX community and a small donation would be seen as your token of appreciation.

Well, this is all we have room for this time. Once again, I welcome your feedback and on-air reports. Stay tuned for more, and good hunting!

Cheers,
Nick VK2DX.

Silent Key

Myles McGinniss (Formerly VK7MF)

It is with regret that we let you know that Myles McGinniss formerly VK7MF became Silent Key on 18 December 2014. David Johns VK7DJ joined the PMG with Myles and recollects the many things that engineer Myles was involved with which included: piano, ice hockey & badminton player, yachts, rc planes and boats, go kart racing, amateur radio, snow skiing at the age of 46!, wood turning, and training in wood turning and training motorcyclists.

During his time with the PMG he was involved in many projects including undersea cables and the first microwave link across Bass Strait. The system operated in the 2 GHz band; it was an analogue system with 960 channels with two bearers. The system used both frequency and space diversity. It went from Juliana St in Launceston to Mt Dismal, then Waterhouse Point, Mt Tanner on Flinders Island and across to Mt Oberon in Victoria. It carried voice and TV programs but it did fade significantly. When this happened the TV was kicked off to give priority to the telephony - "you would hear hiss rise up in the background, then "click" and the diversity path would switch in".

Myles was involved in the communications provided by radio amateurs following the 1967 bushfires. He provided HF communications to the mainland from his home station passing messages on behalf of government instrumentality and private individuals. He was very proud of the service he provided and the efficient way he conducted the traffic, even though he received a "rap over the knuckles" for what he did. Things where a little more regulated in those days and he often used to mention the fact when recalling the events.

Our sincere condolences to his family and friends, the world is poorer for the loss of Myles McGinniss.

Vale Myles.

(Sourced from David VK7DJ, Richard VK7RO. Phil VK7SS, Dave VK7DM and Brian VK7TX.)

Contests

James Fleming VK4TJF
e *vk4tjf@wia.org.au*

Hello and welcome to a new year of fun filled contesting on the airwaves. This year promises to bring a lot of good contests. The sunspot cycle has reversed polarity and is on its way back down, making 20 metres and 40 metres the bands of choice this year. I hope everyone had a good New Year and great holidays that brought them plenty of amateur radio gifts to get their stations contest ready. The 10 metre contest for me in December was a blast. Results for the 2014 Oceania DX contest should be well on their way. I'm eagerly checking the website for updates. This month in February the concentration is on CW, with two great contests out there to help hone the CW skills of every operator. The first is a sprint, only 2 hours on the 20 and 40 metre bands. It is a simple straight forward contest that is begging to be worked. This is an easy contest to get your feet wet and start the New Year. Everyone is on the same footing with power output and it's a single operator shoot-out. The second contest is to work as many North American stations as possible. It is put on by the ARRL. This classic contest is friendly and open for everyone to join. Who doesn't like to get a bunch of Americans in their logs? So here is a brief rundown of both contests.

On the 14th of February from 1100 to 1300 UTC is the Asian Pacific spring sprint CW. This is an opportunity for stations outside of Asia-Pacific to contact as many Asia-Pacific stations as possible within two hours and for stations within Asia-Pacific to work as many stations world-wide as possible.

Contest Calendar for February 2015 - April 2015

Month	Date	Starts at	Spans	Name	Mode
February	7th – 8th	1800 UTC	24 hours	Mexico RTTY International contest	RTTY
	14th	1100 UTC	02 hours	Asia Pacific Spring Sprint	CW
	14th - 15th	0000 UTC	48 hours	CQ WW RTTY WPX contest	RTTY
	21st – 22nd	0000 UTC	48 hours	ARRL International DX contest	CW
	27th – 1st	2200 UTC	48 hours	CQ WW 160 meter contest	SSB
March	7th – 8th	0000 UTC	48 hours	ARRL International DX contest	SSB
	14th - 15th	1000 UTC	24 hours	RSGB Commonwealth contest	CW
	21st – 22nd	0100 UTC	24 hours	John Moyle Field Day	SSB/CW/Digital
	21st – 22nd	1200 UTC	24 hours	Russian DX contest	SSB/CW
	21st – 23rd	0200 UTC	48 hours	BARTG HF RTTY contest	RTTY
	28th - 29th	0000 UTC	48 hours	CQ WW WPX contest	SSB
April	4th (tbc)	1000 UTC	02 hours	QRP Hours contest	SSB/CW/RTTY/ PSK31
	11th - 12th	0700 UTC	30 hours	JIDX CW contest	CW
	18th - 19th	2100 UTC	20 hours	YU DX contest	CW
	25th - 26th	1300 UTC	24 hours	Helvetia contest	SSB/CW/Digital
	25th - 26th	1200 UTC	24 hours	SP DX RTTY contest	RTTY

The bands are 20 and 40 metres and the power limit is 150 watts output. There is only one entry category single operator single radio. This is a CW showdown. The exchange is simple RST and serial number. No duplicate contacts and multipliers are for WPX prefixes only once not once per band. Email logs in Cabrillo format to: apsprint@jfsc.org

The ARRL international DX CW is on the 21st and 22nd of February. 48 hours of fun that starts from 0000 UTC Saturday to 2359 UTC Sunday. Bands are the 160, 80, 40, 20, 15, and 10, all HF bands except for the WARC bands. There are many entry categories, single operator, single operator unlimited where you can use spotting assistance or a skimmer, single op single band, multi-operator with either single or two transmitters, or multi-transmitter. Power options are related to the entry category. So for example single operator or (SO) for short can be QRP - 5 watts or less, low power - 150 watts or less, or high power- up to 1500 watts or your licence limit which is 400 watts. SOU is only low and high power. SOSB has no power sub category so use what you can. MOST has high and low power, MOTT and multi-multi both have no power sub categories. Contest exchange is DX stations giving signal report and power and W/VE stations giving signal report and state or province. Scoring is W/VE stations count 3 points per QSO. Multipliers are the U.S. states and the Canadian provinces/territories. The final score is the points times the multipliers. Email logs in Cabrillo format to: *DXCW@arrl.org*

Participate **John Moyle Field Day** | 21 - 22 March

John Moyle Field Day Contest 2015

Presented by Denis Johnstone (VK4AE/VK3ZUX)

21 - 22 March, 2015
0100 UTC Sat - 0059 Sun

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

N.B. new Email address: *jmfd2015@wia.org.au* will be set up close to the event for entries and you can check out latest info at *http://www.wia.org.au/contests/*

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.
2. The contest takes place on the 3rd full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 21 - 22 March 2015.
3. The contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.
4. Single operator portable entries shall consist of ONE choice from each of the following (e.g. 6 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. Phone, CW, Digital or All modes;
   c. HF, VHF/UHF or All Bands.
5. Multi-operator portable entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. Phone, CW, Digital or All modes;
   c. HF, VHF/UHF or All Bands.
6. Home and SWL entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. All modes;
   c. HF, VHF/UHF or All Bands.

   Multi operator stations are not permitted in the Home Category.

   If a Home Stations works the same station more than 5 times on any band or any mode they must submit their log to verify those contacts. (See sect. 17 Below.)

Scoring

7. Portable HF stations shall score 2 points per QSO. CW only contacts to score 4 points per QSO for contacts with either home or portable stations.
8. On VHF/UHF portable stations for Phone and Digital each contact scores 2 points per contact, and CW contacts score 4 points. In addition the VHF/UHF Portable stations shall add a distance score of the following on 6 m:
   a. 0-49 km, 2 points per QSO;
   b. 50-99 km, 5 points per QSO;
   c. 100-149 km 10 points per QSO;
   d. 150-299 km 20 points per QSO;
   e. 300-499 km 30 points per QSO;
   f. 500 km and greater, 2 points per QSO.
9. Portable stations shall add an additional distance score on 144 MHz and higher:
   a. 0 to 49 km, 2 points per QSO;
   b. 50 to 99 km, 5 points per QSO;
   c. 100 to 149 km, 10 points per QSO;
   d. 150 to 299 km, 20 points per QSO.
   e. 300 km and greater, 30 points per QSO.
10. For each VHF/UHF QSO where more than 2 points are claimed, both the latitude and longitude of the station contacted or other satisfactory proof of distance such as the 6-figure Maidenhead Locator must be supplied.
11. Home stations shall score:
    a. Two points per QSO with each portable station.
    b. One point per QSO with other home stations.
    c. For VHF/UHF QSO Home stations shall add as a distance score on 6 m:
       i. 0-49 km, 1 points per QSO;
       ii. 50-99 km, 2 points per QSO;
       iii. 100-149 km 5 points per QSO;
       iv. 150-299 km 10 points per QSO;
       v. 300-499 km 15 points per QSO;
       vi. 500 km and greater, 2 points per QSO.
    d. Home stations shall add as a distance score on 144 MHz and higher:
       i. 0 to 49 km, 1 points per QSO;
       ii. 50 to 99 km, 2 points per QSO;
       iii. 100 to 149 km, 5 points per QSO;
       iv. 150 to 299 km, 10 points per QSO.
       v. 300 km and greater, 15 points per QSO.

Log Submission

12. For each contact: UTC time, frequency, station worked, RST/serial numbers sent/received and claimed score. (VHF and above location of other station and distance showing the Lat/Long or Maidenhead Locator to 6 figures for the station worked.)

13. Logs must be accompanied by a summary sheet showing: call sign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, and equipment used, and a signed declaration stating "I hereby declare that this station was operated in accordance with the rules and spirit of the contest and that the contest manager's decision will be accepted as final". For multi-operator stations, the full names and call signs (legible) of all operators must be listed.
14. The Email address for this year's JMMFD contest should be setup a few days before the contest, and I would suggest to those who will be sending in your Logs electronically, to send in a test email with the words "TEST JMMFD 2015", in subject the line and also set the "READ REQUEST RECEIPT flag. Your call sign can then be added into the database for this year's contest. When actually submitting your log, if you do not receive an e-mail acknowledging receipt, then the log has not been received.
15. Paper logs may be posted to "John Moyle Contest Manager, 27 Laguna Ave, Kirwan 4817 QLD". Alternatively, logs may be e-mailed jmfd2015@wia.org.au, vk4ae@wia.org.au, or snail mailed via the WIA Contest Manager, JMMFD, P.O. Box 2042 Bayswater, VIC 3153. Club stations must forward in the first instance an electronic version of their log. Club Stations who submit only a paper log will have that log returned as unreadable, due to the very large amount of work involved in entering and checking large paper logs.
16. The following formats are acceptable: Microsoft Excel or Word, ASCII text or the print log output from electronic log programs such as VK Contest Log (VKCL). Logs sent by disc or e-mail must include a summary sheet and declaration, but the operator's full name (legible) is acceptable in lieu of a signature. Logs must be postmarked no later than 17 April 2015.
17. If any station works the same station more than 5 times on any band or on any mode, both stations should enter a log to verify the contacts. This rule has been introduced to overcome a problem experienced in previous contests where a portable station worked a significant number of home stations, but those home stations did not enter a log, so there were a very large number of unverifiable contacts.

Certificates and Trophy

18. At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Additional certificates may be awarded where operation merits it. Note that entrants in a 24 hour section are ineligible for awards in a 6 hour section.
19. The Australian portable station, with the highest overall score will be awarded the President's Cup, a perpetual trophy held at the Executive Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

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

Definitions

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

the contest. Offenders may be disqualified, and at the discretion of the Contest Director, may be banned from further participation in the contest for a period of up to three years.

33. Phone includes SSB, AM, Simplex FM and Simplex D-Star.
34. CW includes CW hand or computer generated. Fully automatic CW operation is not permitted. CW contacts will score 4 points for HF and 4 points for VHF & UHF contacts plus the distance points.
35. Digital modes such as PSK31, RTTY, and packet may be used in the contest, but if they are, they shall be classed as Digital. Other modes such as ATV may be used and will be classed as Digital for scoring. Digital contacts will score points at the same rate as Phone.
36. All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 MHz. Note: On 50 MHz, the region below 50.150 has been declared a contest free zone, and contest CQs and exchanges may only take place above this frequency. Stations violating this rule may be disqualified.
37. Cross-band, cross-mode and contacts made via repeaters or satellites are not permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency where a repeater is not used for the actual contact.
38. Stations may make repeat contacts and claim full points for each one. For this purpose, the contest is divided into eight consecutive three-hour blocks: 0100-0359, 0400-0659, 0700-0959, 1000-1259, 1300-1559, 1600-1859, 1900-2159, 2200-0059 UTC. If you work a station at 0359 UTC a repeat contact may be made after the start of a new block providing they are not consecutive, or are separated by at least five minutes, since the previous valid contact with that station on the same band and mode.
39. Stations operating on Phone must exchange ciphers comprising RS plus a 3 digit number commencing at 001 for each band and incrementing by one for each contact.
40. Stations operating on CW must exchange ciphers comprising RST plus a 3 digit number commencing at 001 for each band and incrementing by one for each contact. Where the CW contact is with an overseas station that is unable or unwilling to give a valid serial number, the serial number shall be assumed to be 001.
41. Portable stations shall add the letter "P" to their own cipher, e.g. 59001P.
42. Multi-operator stations are to commence numbering on each band with 001.
43. Receiving stations must record the ciphers sent by both stations being logged. QSO points will be on the same basis as for Home Stations, unless the receiving station is portable.
44. The practice of commencing operation and later selecting the most profitable operational period within the allocated contest times is not in the spirit of the contest, and shall result in disqualification. The period of operation commences with the first contact on any band or mode, and finishes either 6 or 24 hours later.

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

Denis Johnstone VK4AE/VK3ZUX

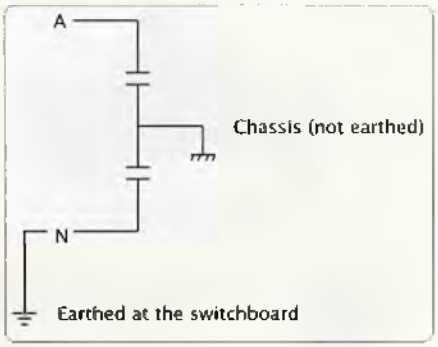
Over to you

Boat anchors with bite

Back in the August issue of AR there was an interesting article entitled "Boat anchors with a bite".

I have received a shock from an old oscilloscope under similar circumstances were the earth in the IEC plug had become disconnected.

In the article Frank mentioned that he though the capacitors were faulty. If fact they may have been fine; he probably received the shock as he touched the chassis which was sitting at 120V. With the earth lead disconnected the capacitors form a voltage divider with 240V / 2 = 120V on the chassis:



There is a potential of 120V between the chassis of the amplifier and ground, as the capacitors form a voltage divider.

I sent this to you as I thought it might be worth expanding on the point in Frank's article to help others understand the potential risk the circuit behind this risk.

Happy Christmas,

Richard VK3 ZCL.

VK3 news 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, of 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.

Over the past two years the GARC has been fortunate in winning the VK Club Award, fielding up to nine participants, each acquiring at least the 50 contacts required during the contest.

Buoyed up by the successes of the previous two years, the challenge for the Club in 2014 was to significantly raise the number of members participating, to increase the possibility that the Club might secure the VK Club Award for the third consecutive year.

To galvanise the membership required preparation over several months, involving presentations on the installation, configuration and use of VKCL logging software and continuous reminders both via the club mailing list and discussions with the more active operators in the club that the contest was approaching. The weeks leading up to the contest saw an enormous amount of Club activity with the building and repairing of antennas, construction of station accessories and preparing computers for electronic logging.

On the actual contest days some members worked from home, others took to portable operation by the sea shore; one group took to the bush in central Victoria, one member operated from the banks of the Murray River and one member even went portable in the back yard setting up an array of wire antennas supported with squid poles.

Photo 1: Five of the six Foundation Members that participated in the Oceania DX Contest

Those members that were unable to fully participate in the contest, due to family and work commitments, took the time, where possible, to get on the air and provide contacts and generally join in the activity.

For the GARC a very significant feature of this contest was the enthusiastic participation of six Foundation licensed members on the air, for majority it was their first HF contest. They all performed

Photo 2: The First Shot QSL Card

outstandingly, each achieving the 50 + contacts requirement, albeit running only 10 watts.

100th Anniversary of The First Shot of WW1 by Australia

A special QSL card, was designed by Courtney VK3FGIR and Chris VK3ACG in conjunction with Barry VK3SY for use by the GARC stations on 5 August 2014, that operated as **VI3ANZAC** out of the Queenscliff RSL, on a **24 hour Special Licence** granted to the GARC by the ACMA (See October's *AR* magazine VK3 Column from the GARC). The back of the QSL card gives QSO contact details and also a brief historical background to the 'First Shot' that was fired by Australia in WW1, on 5 August 1914 from Point Nepean, Victoria.

The Christmas edition of the **RSL** in-house magazine *"Mufti"* arrived with *The First Shot* article attached, provided by Barry VK3SY, it had a particular emphasis on the role of the Queenscliff RSL, the organising committee and the active involvement of the Geelong Amateur Radio Club in the proceedings.

Please note that all non WIA members contacted on that day requiring this special QSL card should send a stamped addressed envelope to The Geelong Amateur Radio Club at Box 520, Geelong, 3220, VIC.

LUMEG microwave successes

Ken VK3NW and Charlie VK3NX together with Chas VK3PY set up their microwave gear in the Barrabool Hills, late in 2014, in an attempt to work David VK3QM who was on vacation, travelling around southern VK1/2. David took his gear to Mt. Ginini, near Canberra, to see if they could establish communications on the bands 3.4 GHz through to 10 GHz.

As it turned out they able to work David on 3.4 GHz ,5.7 GHz, 10 GHz and also on 2.4 GHz. The distance covered was 503 km. As a result (and subject to confirmation) they broke three VK1 microwave records, for 3.4 GHz, 5.7 GHz and 10 GHz.

Since the VK1/VK2 border goes right over Mt. Ginini, David took the opportunity to move his station into VK2 re-establishing contact with the Barrabool group and thereby allowing them to also lay claim to two further VK2 records (again subject to confirmation), for 3.4 GHz and 5.7 GHz.

This will add to the tally of several other State microwave records held by the Lara UHF and Microwave Experimenters Group (LUMEG), a specialist interest group within the GARC.

Silent Key — Bryn Warrick VK7FBAW

NTARC is saddened to report the passing of member Bryn Warrick VK7FBAW of Georgetown, on Saturday 11 October 2014. Born in 1927. He joined the RAF around the end of WWII hostilities and saw service in the India and Burma theatres – as a member of a RAF Air Sea Rescue squadron, engaged in the recovery of downed airmen at sea. Bryn clearly took to heart the motto of the Air Sea Rescue service, 'The Sea Shall Not Have Them'. He lived and breathed it for the rest of his life.

Bryn migrated to Australia from Wales and settled in Georgetown, working thereafter for over 40 years at Comalco, Bell Bay. He became an amateur radio operator several years ago, but had long been the ears and voice of Tamar Sea Rescue since 1994 and well known to the maritime communities of Tasmania and Victoria. Bryn earned his Marine Radio Operator's licence in July 1994. He then proceeded to carry the brunt of Tamar Sea Rescue's radio service over the ensuing years. He was appointed to the Service's rank of Lieutenant and was their weekday operator, with the headquarters being manned only on weekends. Co-ordinating rescues, broadcasting weather reports and warnings, conducting safety skeds or relaying messages to those beyond mobile phone range were all in a day's work for Bryn and nothing was too much trouble. He regularly clocked up 96 hours each week on radio watch, often up to 12 hours at a sitting, which is certainly a very significant voluntary effort. He also had a HF marine and local VHF radio at his George Town residence. He also handled considerable traffic for Victorian boats, given the absence of a similar service on that side of the Strait.

We extend our heartfelt condolences to Diane, Kevin, the rest of Bryn's family and to his extended family both at Tamar Sea Rescue and on the broader seas. It was an absolute privilege to have known him and we are all the poorer for his passing.

"Those who go down to the sea in ships and do works in the great waters."

Vale Bryn.

Yvonne Maxwell VK7FYMX

Plan Ahead

2015 WIA Conference Canberra | 9-10 May

VK2 news

Tim Mills VK2ZTM
e *vk2ztm@wia.org.au*

Hello 2015. This is the big month in Eastern Australia or perhaps the whole of Australia with the annual Central Coast Field day at the Wyong race course on Sunday the 22nd February. On average, 10% of Australia's amateurs attend. The CCARC will have a one day Foundation course on Saturday the 21st and all grades assessments on the Sunday during the Field Day. For details go to *www.fieldday.org.au* WICEN NSW will have a stand at the Field Day.

In March ARNSW will commence their upgrade course at the VK2WI site on Monday evening the 2nd which, except for public holidays, continues until mid-November. Late last year all financial members of ARNSW were sent a 2015 magnetic calendar. A few remain, available on application to the office. With the ARNSW AGM scheduled for the 2nd May 2015, committee nominations will close on Saturday the 21st March. The next Foundation and assessment weekend at ARNSW is on the 21st and 22nd March. The January weekend booked out early and it is likely that March will also have heavy bookings. Inquiries to *education@arnsw.org.au* The March Trash & Treasure at VK2WI will be on Sunday the 29th. Major items on offer are placed on the ARNSW web site with inquiries only available by email. The ARNSW library team last year catalogued the magazine collection. This month they start on the books with a working bee on Monday afternoon and evening. Anyone wishing to assist should contact the Team by email *office@arnsw.org.au* The VK2BWI operator provided CW training on 3550 kHz resumes on Thursday 5th February advises co-ordinator Ross VK2ER. Ross has been finding a reduced interest in the session and thinks it might be its final year in the present format.

In 2014 ARNSW introduced a Development Fund to assist clubs and groups with small projects. Four clubs took up the offer. It will be on again this year for applications received during the months of February and March from VK2 clubs and groups who are an incorporated body, registered company or association. An application form and guidelines will be downloadable from a link on the ARNSW home page at *www.arnsw.org.au*

February is also the month when many clubs commence their meetings for the year like HADARC, Hunter Radio Group with VK2AWX News and St. George. Mid South Coast ARC have their first quarterly meeting on Saturday the 14th. Waverley ARS has a Foundation and assessment weekend on the 14th & 15th. Inquiries to *education@vk2bv.org*

Before we know it - the Oxley Region ARC 40th Field Day will be on over the June long weekend. With renovations planned for the regular surf club venue, the event this year will be at the Hastings Public School Hall in Waniora Parkway, Port Macquarie. The two day event across 6th and 7th June will follow the usual format with the Field Day Dinner at the Port Macquarie Golf Club on the Saturday evening. Port is a busy place and early accommodation bookings are highly recommended. Oxley Region ARC has put out an annual 2015 photographic calendar of all club members in addition to one of the year's events which is to be found on their web site. There is a Fox Hunt and Antenna Shootout scheduled for Sunday 15th February.

Waverley ARS had a D-STAR repeater under test at the Rose Bay club rooms. Late last year it was relocated to a building in the Sydney CBD at 270 metres above sea level giving it a view of the entire Sydney basin and beyond. It is operating under the call of VK2RBV in the D-STAR mode on 438.775 MHz with a -5 MHz offset. Waverley ARS has a events calendar for 2015 on its web site *www.vk2bv.org* Waverley ARS holds a "Shack Night" on the first Wednesday evening of each month for members to gain experience in using their own or the club's modern radio equipment on air as well as getting "hands on" experience in other fields such as repair or construction of equipment.

HADARC has a 70 cm repeater operating from an elevated location at Chatswood on the North Shore. VK2RHT - in either FM or APCO P25 with the transmitter on 438.350 MHz with a 5.4 MHz negative offset and a 91.5 Hz tone. For P25, the NAC is 293. There is also a 23 cm repeater at the same site –VK2RWC 1273.200 MHz.

In November 2014 Dick Smith VK2DIK was a guest at the Manly Warringah RS monthly meeting. Dick's talk was recorded and can be viewed at *www.eevblog.com/2014/11/21/dick-smith-amateur-radio-and-adventure/* Manly Warringah meet every Wednesday evening at the 1st

Terrey Hills Guides Hall, Beltana Avenue, Terrey Hills. Repeater on 146.875 MHz *www.mwrs.org.au*

Summerland ARC in the north east corner of VK2 has an Advanced course planned for early February with a WICEN NR meeting and training day on Sunday the 8th. SARC subscriptions became due on the 1st January. SARC is on Facebook and Twitter. *http://sarc.org.au/*

The re-established Armidale District ARC is now a little off a year old and has made big advances in that time. They have access to a well-equipped club room and shack. Set up repeaters on 146.725 and 438.650 with EchoLink VK2RAD-R with node 872907 They have regular weekly get together including the sausage roll morning tea on Saturday. *www.adarc.keylink.com.au*

WICEN NSW was involved in a two week search in the western Blue Mountains in late 2014. They were able to demonstrate their flexibility in field operation. They were also placed on standby but not activated for the siege in Martin Place.

73 – Tim VK2ZTM

Silent Key

Ken Whitmore VK2AKK

Ken Whitmore VK2AKK passed away on Monday morning 22nd December from a major stroke.

As a young man Ken would tinker with radios and such, in his Dad's garage on weekends. A lifelong love of new technology started back then. He would go to work and save up for a valve for a new radio receiver at this early age.

Ken attended Fort Street Boy's High, Petersham.

During his career, in the Public Service, Ken was instrumental in paving the way between Cowra City Council and The Japanese Government, setting up the now famous Japanese Memorial Gardens in Cowra.

Ken was the first person in his street to have a TV. This was mainly due to the fact that he built it himself from parts collected all over Sydney. OK it wasn't brilliant on initial turn on, with the picture back to front, but that was fixed within minutes.

It was around 1982 I first became aware of Ken. He needed a hand obtaining a model 15 Teleprinter. I helped him obtain one through ANARTS, and we immediately struck up what was to become a lifelong friendship.

His neighbours in Bundeena were also quite aware of Ken's nocturnal, and sometimes not so nocturnal interests, when the ANARTS RTTY broadcast was on, with Ken's model 15 Teleprinter clunking away in the garage on auto start.

On top of that, I was the one sending out the RTTY broadcast which created so much noise in the tiny sleepy hamlet of Bundeena on a Sunday morning!

He later got a VZ-200 computer going on RTTY and Bundeena went back to being a sleepy hamlet on Sunday mornings.

He then progressed to Packet Radio and a number of equally challenging areas of

the hobby like satellites etc. He made many projects related to the hobby, including some quite complicated ones, such as Antenna Analysers, etc. He also built a number of antennas for 1.2 GHz.

He finally moved to Cherrybrook in the 1990s. Unbeknown to Ken, at this stage, I also moved to Cherrybrook in January 1995. Ken used to walk around the suburb in both the mornings and afternoons to keep fit... Anyway, as an avid amateur he noticed these antennas sprout up at my place and walked in and began to introduce himself until he realised who it was. From that day forth, while living in Cherrybrook, Ken would pop in every morning and most afternoons for a cup of tea and a chat.

We did many projects together, sometime me catching up to him and other times me dragging him into the 20th century and finally getting him on the Internet. From there he never looked back, and finally had to admit he should have got the internet years ago.

Ken and I spoke on radio just about every morning, either from home or while he was walking over for a cuppa. It was on one of those occasions he got on the air but sounded different. I rushed over and took him straight to the doctor and then hospital with a stroke. He had another stroke, a couple of months later, but miraculously bounced back to normal.

It was also around this time his wife Joyce needed a lot more care and with regret we moved them into the nearby Anglican Retirement Village (ARV). Ken was worried that he wouldn't be able to stay on air at ARV and was quite visibly upset at this prospect.

I set up a couple of small antennas to get him on air and see what the response was from ARV. They didn't bother about it for a while, but thought the many coax cables going under the door to the balcony was unsafe for their OH & S. So they had their maintenance guy install some ducting to keep it neat and safe for Ken to remain on air. He couldn't have asked for a better response from the ARV staff.

Ken and his wife Joyce celebrated their 60th Wedding Anniversary on 29th March 2012, with well wishes from friends, local Parliamentary members, The NSW State Premier, Prime Minister Gillard and Opposition Leader Abbott and of course The Queen. The occasion was celebrated at ARV Castle Hill, with a large number of friends and guests.

Even though he was 86, his sudden passing was a shock to everyone. He was just appointed President of the local residents' committee, mainly due to him, probably being the most switched on resident there.

A service for Ken VK2AKK was held at the Rookwood crematorium on Tuesday 30 December 2014.

Ken was also a long time member of HADARC, and as such, he was still proudly wearing his HADARC T-shirt during his funeral.

Ken VK2AKK was a great friend as well as a very keen amateur radio operator, and will be very sadly missed.

Rod Gamble VK2DAY.

VK6news

Keith Bainbridge VK6RK

Greetings one and all and welcome to another year of VK6 Notes from yours truly.

I hope you all had a merry Christmas and wish you all a happy and prosperous new year. May it bring everything you want, including good DX :)

We will start this year with the latest from **WARG.**

Work continues on the Cataby repeater site. As of early December it is now back on air with an upgraded transmitter and higher gain dipole array. The repeater is now being heard in the northern suburbs of Perth and will serve the North West Coastal Highway surrounding Cataby well.

Will VK6UU gave an interesting presentation on the Yaesu Fusion Repeater at our December meeting and a decision was subsequently made to purchase a repeater for use as a spare repeater and with a number of WARG members offering to donate funds to purchase another to use in Yaesu's new digital mode as a parallel alternative to D-STAR. This presentation also resulted in a lively discussion on digital communications and was well received by all. Perhaps this could serve as a precursor to an ongoing feature of our meetings in future to present various topics of interest to our goals for the group?

Work will be carried out at Roleystone on early January to reinstate the D-STAR repeater and the NCDXF VK6 HF Beacon.

A working bee at the Tic Hill repeater site in early Dec resulted in the replacement of one damaged solar panel as well as upgrading the DC cabling from the solar array to the equipment room. Special thanks go to Trevor VK6MS for the use of his truck mounted Hiab crane to carry out the work. Trevor continues to be one of our stalwarts of the group – providing a professional standard for work at heights and tower construction at many of our sites; which also happens to be his profession in his working life.

A small working group at WARG is also now looking at the entire backhaul between each of our sites with a view to providing a platform for the next generation of repeaters and the infrastructure to support our current and future requirements. Our goal is to have the new backhaul designed and installed by June 2015, along with a number of other small projects that we wish to present in time for WARG's 40th birthday celebrations in August; more on this in the coming months.

Our first meeting for 2015 will take place on Monday 2 February, there being no scheduled meeting in January. Meetings are held at the Peter Hughes Scout Communications Centre, corner Gibbs St and Welshpool Rd, East Cannington. All are welcome to attend. Doors will be open at 7, for 7:30 pm start. Tea & coffee is available, and there's usually time for socialising before and after the meeting.

WARG's Technical and General net continues every Sunday at 1030 local time, on VK6RLM Roleystone, 146.750. More information is available on WARG's website which is *www.warg.org.au, or email secretary@warg.org.au*

Thanks to Steve VK6SJ for the update.

Next we move south to the **Bunbury Radio Club**.

The previous month has been fairly quiet down in the South West, with members mainly pursuing their own interests.

The only significant activity was the conduct of several licence assessments for Foundation and other licence upgrades. We had five people sit for their Foundation licence, with four of those passing. Among those passing was 11 year old Andrew Sharpe who conducted his study through the Scouting movement. Andrew's dad also sat and passed his Foundation licence so there should be no trouble for the young fellow in convincing his father to purchase suitable equipment. We also had two members upgrading to Standard and one to Advanced licence.

Over the calendar year we have assessed ten (10) people for their Foundation licence. These are potential amateurs who probably would not have attempted the more advanced licences; so it's quite clear that this level of licence is playing an important role in attracting new amateurs.

Finally, one of our members, Richard (Dicko) Oxley VK6FSDU, was successful in upgrading to a Standard licence via a remote assessment. This is particularly noteworthy in that Richard is completely blind. He has worked hard over the last six months to studying for his upgrade and the club is thrilled that he managed to achieve his goal.

Any South West based amateur is more than welcome to join and participate in our activities. The annual fee is only $25.00. Amateurs wishing to join can contact the Club via our Secretary, Brian Andrews, on 0403 975 953 or vk6brc@wia.org.au. Also if passing through put out a call on our repeaters 146.650 or 438.650.

Cheers Norm VK6GOM for the latest from down south.

The Peel Group is up next and I've received a report from Steve VK6SMK on his visit to the RSGB National Hamfest, here it is:

UK National Hamfest – Newark and Nottinghamshire Showground

It is not often we get the opportunity to represent our radio clubs overseas. I had that chance recently whilst in the UK to visit a sick relative. When preparing to go, my wife asked if there were any hamfests I could attend. I said I didn't know and forgot about it,

until I watched an online episode of TXFactor. It's an online show dedicated to amateur radio (*txfilms.co.uk*) To my delight Mike Marsh G1IAR mentioned the UK National Hamfest would be on when I was in the UK.

I had not been to a hamfest of this size in over 20 years and looked forward to the experience.

I was not disappointed. The venue was easy to get to and well organised, from allotted parking to easy entry into the hamfest. The flea market outside was well set out and well attended. Great idea to open it to the public before the hamfest starts to tempt a few customers. The bring and buy stall was set up in a marquee outside, again a great idea. It had ample room and stopped the crowding inside the hall we often see, as you try to get that bargain.

All the major players were in attendance as you would expect, from manufacturers of equipment to the main UK suppliers. The manufacturer's stands were well set out with all of their new product lines on show. It was great to speak to the guys hosting the stands as they were licenced radio amateurs with a wealth of experience and the odd freebie thrown in for good measure.

The main UK suppliers were very busy selling their wares and I was surprised at the extent of the products on sale, I managed to get all of the small items I was looking for.

The Royal Signals Amateur Radio Society was also in attendance with a very busy stall. I even managed to get club member Rex VK6SN, who is a member of RSARS, a small memento.

I proudly wore my Peel Amateur Radio Group's shirt, with my callsign on it. Some of the comments received were, "Are you lost mate", and "Are you flying home or going to dig straight down?" It's good to see radio amateurs have a quick wit and enjoy a laugh.

I met quite a few people and enjoyed sharing experiences,

Photo 1: RSGB National Hamfest.

including the Practical Wireless Editor Don Field, G3XTT.

I also had the chance to meet the complete TXFactor Team, tell them what a great show they produce and personally thank Mike for the heads up on when to visit the UK National Hamfest.

Overall it was a great experience and one to remember. It certainly gives you a taste for large hamfests, hopefully Dayton one day.

73 Steve Koncz VK6SMK

The photo shows left to right Steve VK6SMK, Bob G0FGX, Nick 2E0FGQ, Mike G1IAR.

Now we move on to **SOTA** activity in WA with a report from John VK6NU.

SOTA Summits on the air in VK6

SOTA started in VK6 on 1st September 2014. There have been 26 activations from 8 different summits, all in the SW Region. Around 450 contacts have been made so far. Contacts have been made mostly on the higher HF bands 10-40 metres and there has also been some activity on 2 metres FM. Some good DX has been worked during this period with excellent conditions on 20 metres long path around 0700-0900 UTC into Europe during September and October. There have also been some excellent 10 metre openings into Europe around 0800 UTC leading up to Christmas. Activity in eastern VK continues to grow and it is a little frustrating seeing all the 40 metre spots on SOTAwatch, that we just can't hear in VK6.

With this in mind we have to see what works best for us from the West. Using VOACAP online it looks like 15 and 17 metres are the best bands for us to get into the Eastern States for the next few months. I can confirm this to be the case as when I operated from Cape Leeuwin VK6/SW-060 just before Christmas, I worked some great signals from VK1, 2, 3, 5 and 8 on both 15 and 17 metres. I also managed some excellent contacts on 40 metres into Perth using 5 watts from the FT-817. A few guys are also using CW, so brush up on the CW skills it will get you a contact when you can't on SSB.

So what do you do if you want to get into SOTA. It is very easy to become a Chaser as you don't even have to leave the shack. Go to *sotawatch.org* and you will see a list of the latest spots and the Upcoming Activations, if you click on >>more alerts you will find the upcoming activations for the next few days. Just work and log the station and keep note of Summit reference. You can then add your logged contacts into the SOTA database and collect points towards various awards.

As an Activator, you will need to find some SOTA approved Summits to activate, Mt. Dale is the easiest one to get to from the Perth CBD. You must operate from battery power and not use any part of your vehicle to support antennas or for power. Please register with the SOTA_Australia Yahoo Group and download the VK6 ARM (Association Reference Manual) from the VK6 files area, it has all the information about becoming an Activator. Have a look at the Summit Tab on *sotawatch.org* and scroll down to VK6, you will find a list of the regions and clickable link to that region with all approved SOTA Summits listed. Clicking on any Summit will bring up detailed info about the summit and previous activity etc. You may also find info posted from previous activators about the summit and best route there etc.

If you are planning an activation, PLEASE put an Alert on SOTAwatch a few days earlier or you might have a lonely time on the summit. You can also Self Spot from the summit if you have coverage by using various apps such as SOTAGoat for I-phone, Rucksack Radio Tool for Android or using SMS or direct via SOTAwatch web page.

For antennas, a squid pole supporting a linked dipole for the bands you intend to operate on, also end-fed antennas and portable Buddipole type vertical antennas are popular. 5 watts will work but if you can run 20-50 watts it will make a big difference. As you will be hiking with a rucksack to most summits the less weight the better. I use a FT-817 with a small linear and usually a linked dipole antenna on a 7 metre heavy duty squid pole from Haverfords and a 10 amp hour LiPo battery. I can usually keep my total weight including food and water down to under 10 kg. You can find an excellent link dipole calculator here: *http://www.sotamaps.org/extras.php* I can vouch for linked dipoles, they are very good and lightweight too.

So PLEASE give *sotawatch.org* and check for the VK6 activation alerts and you should get some summits in the log on 40 metres. If you plan on Activating please download the VK6 ARM as there are a couple other things you need to be aware of regarding activation zones that I haven't gone into here. It has all the info you require. SOTA have just introduced a new Challenge for 2015-2016 for 6 metres and 10 metres so look for more activity on these bands. If you require any more info contact me at jcbus@7388s.com John Coleman VK6NU VK6 Association Manager.

Thanks John for the info, SOTA has definitely taken off here in WA recently.

News from **HARG** - The Hills Amateur Radio Group.

Happy New Year to everyone from The Hills Amateur Radio Group.

We are recovering well from our recent burglary and loss of all our equipment. VK6AHR is back on air thanks to generous equipment donations and long term equipment loans from both members and non-members. Our November illustrated talk by Mal VK6LC on the subject of his DXpeditions to North and South America was very well attended with 23 members and visitors enjoying the day. Morale is high and we are busy organising new security measures and deciding which transceiver to buy to replace our FT-1000. The Christmas barbecue was a great success with members enjoying T-bone steaks, salads and drinks kindly donated by our Technical Officer, Craig VK6FLAM. Thanks Craig.

Now for the really exciting news. In December the members of **NCRG** (Northern Corridor Radio Group) generously took up a collection to make a substantial donation to HARG to help us replace our equipment. The NCRG committee then added extra money from the club coffers and we were delighted to officially receive a cheque for $1000 at an NCRG meeting on Sunday 4th January. Thank you NCRG! Whatever equipment is purchased will carry a plaque recording your generosity. What a wonderful illustration of the camaraderie of amateur radio!

What's on at HARG for 2015? On Saturday 28 February Chris VK6FCGB will give a talk and demonstration of satellite communication. Thanks to Martin VK6ZMS for organising this. In March we will go bush for the John Moyle Field Day and in April we will hold our popular HARGfest white elephant sale. For the remainder of the year we are organising some interesting technical talks on subjects such as radio to computer interfacing, AllStar Link Network and JT65-HF weak signal mode. We are also planning several practical days on antenna building. The club will provide suitable antenna designs and members will be able to purchase kits to assemble the antennas at the club rooms.

Thanks to everyone for helping make this club even stronger than what it was before the break-in. Membership is growing and there is a great feeling of optimism and enthusiasm at the club.

The committee is keen to hear suggestions from members and others for practical activities and technical talks at future meetings. The official contact point for the club is *secretary@harg.org.au* or PO Box 367 Kalamunda WA 6926.

HARG Meetings are held twice a month at our club rooms 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 12.30 pm for a barbecue lunch and the meeting starts at 2.00 pm. More information at *www.harg.org.au*

Cheers and 73 until next time from Bill VK6WJ Publicity Manager for HARG.

Thanks for the update Bill and as an NCRG member, we were only too happy to help you out under the circumstances.

Now this month's input from the **NCRG**.

The past couple of months have been busy at the club. The 15 metre tower has been lowered ready for antenna changeovers, the new 15 metre tower is ready to accept it's three stacked 6-element beams and major work has been carried out on the club's tower trailer with the purchase of new crank up towers (four of them) by club members. One of which was bought for club use and will make our portable operations considerably simpler and a lot lighter in mass!

We hosted some members of HARG at our January business meeting and, as previously reported, were delighted to present them with a donation for $1000 to help them rebuild their club shack.

New video surveillance equipment has been installed to improve further the security at the club and I'm pleased to report the recent major bushfire in Whiteman Park didn't come anywhere near the club premises :)

That's it from the NCRG at the NPSARC.

Finally I've received this article from Andrew VK6AS, the new holder of a very famous callsign, who put together this short history of the previous holder's activities over many years.

So here is the history of "Boulder Bill SK"

Current ACMA rules allow the reallocation of call signs two years after a holder has become SK. To take over a previously held call can have a few delightful discoveries.

Andrew, now VK6AS, recently obtained his full call and this started him thinking; after a bit of research he was able to find out some of the history of the call. VK6AS, Boulder Bill, as he was affectionately known, became Silent Key in July 2011, was a very well-known radio amateur both nationally and internationally and was a most likeable man.
He ran the Icom franchise in the southwest of WA, based in Boulder, hence the nickname, and also from Kalgoorlie for many years and was

Photo 2: NCRG presentation of $1000 to HARG.

said himself to have acquired a rig for each of the bands. He had a 160 m vertical with a huge radial system that the local broadcast station would have been envious of. He was also a huge signal on 160 m from his Boulder QTH.

In later years he retired and re-located to Esperance. He established a beacon just north of town, VK6REP, for the WA VHF group. He chose a QTH on a narrow strip of land, between two lakes, with high salt content.

His antenna array was renowned and even featured as an inset picture on the cover of amateur radio magazine in February 2000. Apparently the system consisted of 8 times 16-element home brew 2 m Yagis for a total of 128 elements and with a boom length of 9.2 metres, a gain of 22 dBd and was both azimuth and elevation capable for his VHF work and a 3-element Yagi for his 40 metre band work for which he was well recognised internationally.

He shunt fed his 40 m 3-element Yagi tower with a 83 foot lattice tower alongside the Yagi tower. He also laid down an extensive radial field there. Bill never did things by halves, his antennas and towers were built to professional standards, but even so, a severe storm brought down the 40/160-metre antenna. The structure was so heavy that the boom of the Yagi was buried 15 feet into the sandy soil! It took him a while to re-build it.

However his abiding interest was long distance VHF; He also was a pioneer exponent of EME on 2 metres using his array. His various exploits have been preserved, amongst other places, on "You Tube", with contacts across the Australian Bight to VK5 with many, over 1500 km contacts on 6 metres and one to VK2KRR of 2,313 km, and on one memorable occasion he worked VK2TWR in Nimmitabel, New South Wales, on 2 metres. This is astonishing as the distance over water is less than half the distance over land.

Phil, VK6GX remembers:

"Just out of interest, to see if it was possible, we once worked at midday in mid-summer on 160 m, from his Esperance QTH, needless to say he was S9. I could also hear the 2 m beacon he operated with my paltry 6-element Yagi at about 20 ft (6 m).

Whatever band he chose to operate on, Boulder Bill was loud!"

Andrew is very keen to find out more, so if you have more information on Bill Hockley VK6AS SK, please let Andrew know on *VK6AS@wia.org.au*

That is it for this dual month's offering so until March, 73 and HNY from Keith VK6RK.

VK7news

Justin Giles-Clark VK7TW
e *vk7tw@wia.org.au*
w *groups.yahoo.com/group/vk7regionalnews/*

A reminder for VK7 amateurs and expats that the WIA National News is broadcast at 9:00 am followed by the VK7 Regional News at 9:30 am every Sunday morning on the VK7 6 m, 2 m & 70 cm FM repeaters – VK7RAD/RAF, RAA, RTV, RMD & RTC and HF SSB frequencies on or about: 3.57 MHz, 7.14 MHz, 14.13 MHz, 28.525 MHz and 52.125 MHz. These broadcasts are repeated on Tuesday night at 8:00 pm on repeaters VK7RMD in NW and VK7RTC in the South.

Repeater News

The VK7RCR – 70 cm D-STAR repeater is up and going in Hobart. A big thank you to Clayton VK7ZCR, who has spent many hours getting this up and operating. Clayton is happy to help anyone with a D-STAR capable radio to configure their radio to use the repeater.

Good news in relation to VK7RAA on Mt Barrow – Air Services Australia have extended the time that the repeater can stay on Mt Barrow due to rigger availability at no further cost! The repeater can remain on Mt Barrow up until November 2015. This provides some much needed breathing space whilst negotiations and preparations on the replacement Mt Arthur site takes place.

A reconnaissance party including VK7s JG, PD, JJ, ZIR, ZAB, MX, NDQ, YUM and FTAZ trekked up Mt Arthur on the weekend of 21 December 2014. Temporary antennas were erected for radio checks whilst Joe VK7JG went about another maintenance task on a wind generator. Congratulations to Peter VK7PD who did manage his first SOTA Activator points with many 40 m contacts made. Unfortunately Idris VK7ZIR broke his ankle which lead to him being air lifted off the mountain via Police Rescue helicopter. All in all, an eventful day, with greater understanding of the difficulties confronting the club with the new repeater site.

Photo 1: NTARC end of year celebrations at Myrtle Park. (Photo courtesy of Alvin VK7NDQ).

Photo 2: Ken VK7DY on Banjo (Left) and Brendan VK7VIP on Guitar (Right) entertaining the Saturday night BBQ at Myrtle Park. (Photo courtesy of Alvin VK7NDQ).

Northern Tasmania Amateur Radio Club

NTARC provided communications for the Equine Endurance State Championships at Scottsdale over the weekend of 28 & 29 November 2014. This included a 160 km course starting at midnight and 91 km course starting at 5:00 am through 12 checkpoints. The day temperatures were higher than expected and saw many horses vetted out and the finishing time extended. Those involved included Norm VK7KTN and XYL Lorraine, Rick VK7RI, Ken VK7KKV and XYL Bett, Stuart VK7FEAT, Andre VK7ZAB, Idris VK7ZIR, Peter VK7KPC, Bill VK7MX, Yvonne VK7FYMX, Wayne and XYL Meg.

NTARC extended its end of year gathering at Myrtle Park for the whole weekend of 13-14 December 2014 and it was by all reports a great success. Myrtle Park is short drive east from Launceston and is a wonderful recreation ground with its own river and camping grounds. The entertainment included singing, banjo, mandolin and guitar provided by Kay XYL of Peter VK7KPC, Ken VK7DY, XYL Wendy VK7FWJS and Brendan VK7VIP. Food flowed all weekend and reports about the desserts were not exaggerated... HIHI. The river hosts the annual Slippery Trout award, which was not won this year although I was told Ken did try!

Photo 3: The author VK7TW operating SOTA on Mt Marian (VK7/SC-003) at UTC year changeover. (Photo courtesy of Reuben VK7FREU).

Radio and Electronics Association of Southern Tasmania

REAST celebrated the end of 2014 with two BBQs and a pre-loved equipment sale. Thanks to Barry VK7TBM who organised the antenna aluminium sales. There was a room full of pre-loved equipment and aluminium which was quickly traded. Everyone then retired to the hot BBQ plate for a snag or three and a purely medicinal cider or two! President Tony VK7VKT and Treasurer Christina then repeated the event for the Wednesday afternoon crew and I understand this was very much appreciated.

The UTC first of January 2015 saw the author VK7TW and son Reuben VK7FREU on Mount Marian (VK7/SC-003) along with many other VK SOTA stations taking advantage of the UTC year rollover and doubling their points before and after the New Year clicked over.

December DATV Experimenter's nights saw Rex VK7MO taking the audience through his GPS locked 10 and 24 GHz test signal source. Rex was interested in the stability and phase noise of GPS locked sources and over a few DATV nights showed and demonstrated the differences with four different types. The author also showed an interesting ribbon cable multiband dipole and some of the difficulties of tuning these antennas. This turned into an outside broadcast with the antenna setup in the clubroom compound and the use made of Warren VK7FEET's YouKits FG-01 1-72MHz antenna analyser to show the influence that close coupling has on the different dipole segments. The conclusion reached was that you need to fan each dipole segment with the ends being at least one metre apart and preferably radially move the dipole segments away from each other and this improved the bandwidth of each segment.

We also saw a demonstration of a 4States QRP club QRPometer kit and a homebrewed ICOM CI-V interface for programming the ICOM T-90A tri-band handheld and Paul VK7PAH showed a great little German FM radio kit. Our videos included the very professionally produced UK amateur program – TXFactor, tour of an SR-71 Blackbird cockpit and navigator's position and a variety of interweb sourced amateur material.

Closure of experimental and amateur stations WWI & WWII

Peter Wolfenden VK3RV

Not only does the WIA Archive hold copies of official closure letters and telegrams sent to amateur stations at the outbreak of both WWI and WWII, it also holds some other interesting wartime documents.

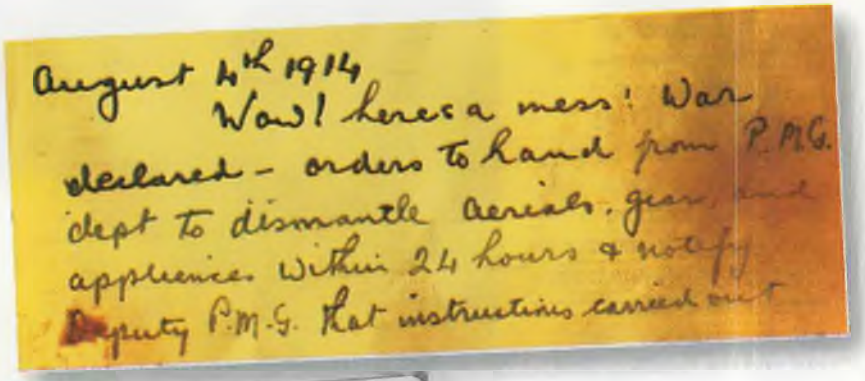
One was the sketch plan for a portable man powered generator (WWI vintage) by David James Garland – see *The Garlands of Brisbane: an interesting father and son, AR* September 2014.

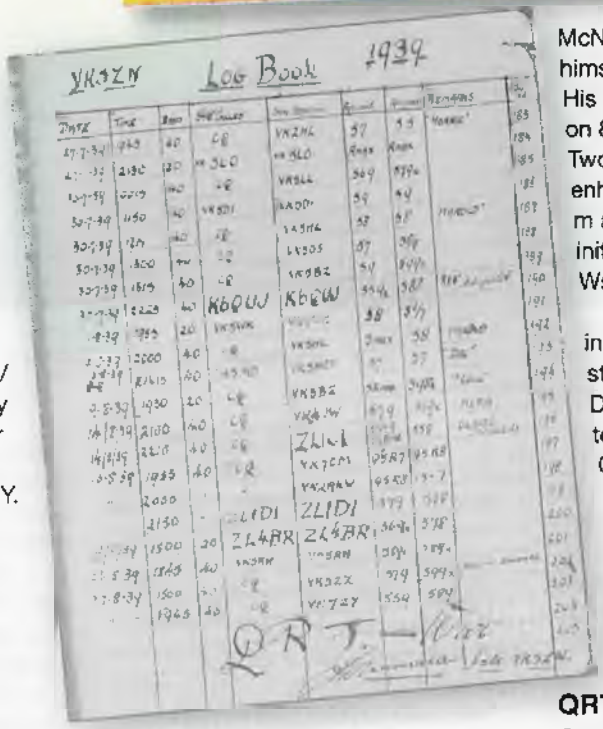
Recently, Christine Taylor VK5CTY, donated two documents which covered the outbreak of both wars to the Archive. She had previously loaned them for scanning purposes, but we now hold the complete originals.

The first book covered from late 1913 to about mid-1927 and was in effect a diary/notebook prepared by an early South Australian experimenter and State WIA executive, Arthur Cotton XVS/5HY/VK5HY. This book drew heavily on his original log books (now lost), and also contained working notes about experiments he conducted. It also contained comment on other points of interest.

Of relevance to us at this time is an entry dated 4th August 1914:

Wow! Here's a mess! War declared – orders to hand from PMG dept. To dismantle aerials, gear and appliances within 24 hours and notify Deputy PMG that instructions carried out. Instructions follow to lodge aforementioned gear and appliances in local post office (in this case Semaphore).





Along similar lines is a logbook originally belonging to Staunton McNamara VK5ZN who referred to himself as "The Voice in the Night". His station commenced operation on 8th December 1938 on 40 m. Two months later Staunton had enhanced his station to work on 20 m and was in amongst the "DX": initially ZLs, but then VUs, Js, ONs, Ws, VK9s, SMs etc.

Other interesting notes included in June 1939, a spot station inspection by the PMGs Department followed by Phone tests involving the Vigilance Committee. He passed both.

VK7ZY was Staunton's last contact on 28th August 1939, just before the official closure of amateur stations on 1st September 1939.

The logbook has an entry:

QRT – War
S. McNamara late VK5ZN

VK5ZN was not heard on the bands after the war.

In the 1979 callbook, Staunton McNamara was listed as holding VK5ZH.

Hamads

FREE – NSW

Disassembled 4 section 40 ft. galvanised steel "Southern Cross " antenna tower. The steel work is complete but needs some more nuts and bolts! Original construction details are included. Pick up at QTHR. David VK2IX. Note amended phone number 02 4751 6124.

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

About Hamads

- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from those who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising on these pages Contact admanager@wia.org.au
- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
- Separate forms for For Sale and Wanted items. Include name, address STD telephone number and WIA membership number.

'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

Or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a $5.00 joining fee plus $18.00 for one year or $32.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to **RAOTC**
PO Box 107, Mentone
VIC 3194
Ian Godsil 03 8707 1177

or Bill VK3BR on 03 9584 9512, email *raotc@raotc.org.au* for an application form.

ADVERTISERS INDEX

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 VK3BB (Broadcast), Roger VK2ZRH (Director) Publications sub-Committee (AR Magazine, Callbook etc): Peter VK3PF (Editor AR), Peter VK3PH (Editor Callbook), John VK3PZ (Treasurer), Emie 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, ARISS sub-Committee: Tony VK5ZA

- All activities associated with actual radio operation, such as: contests, awards, distance records, QSL services, ARISS, 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.

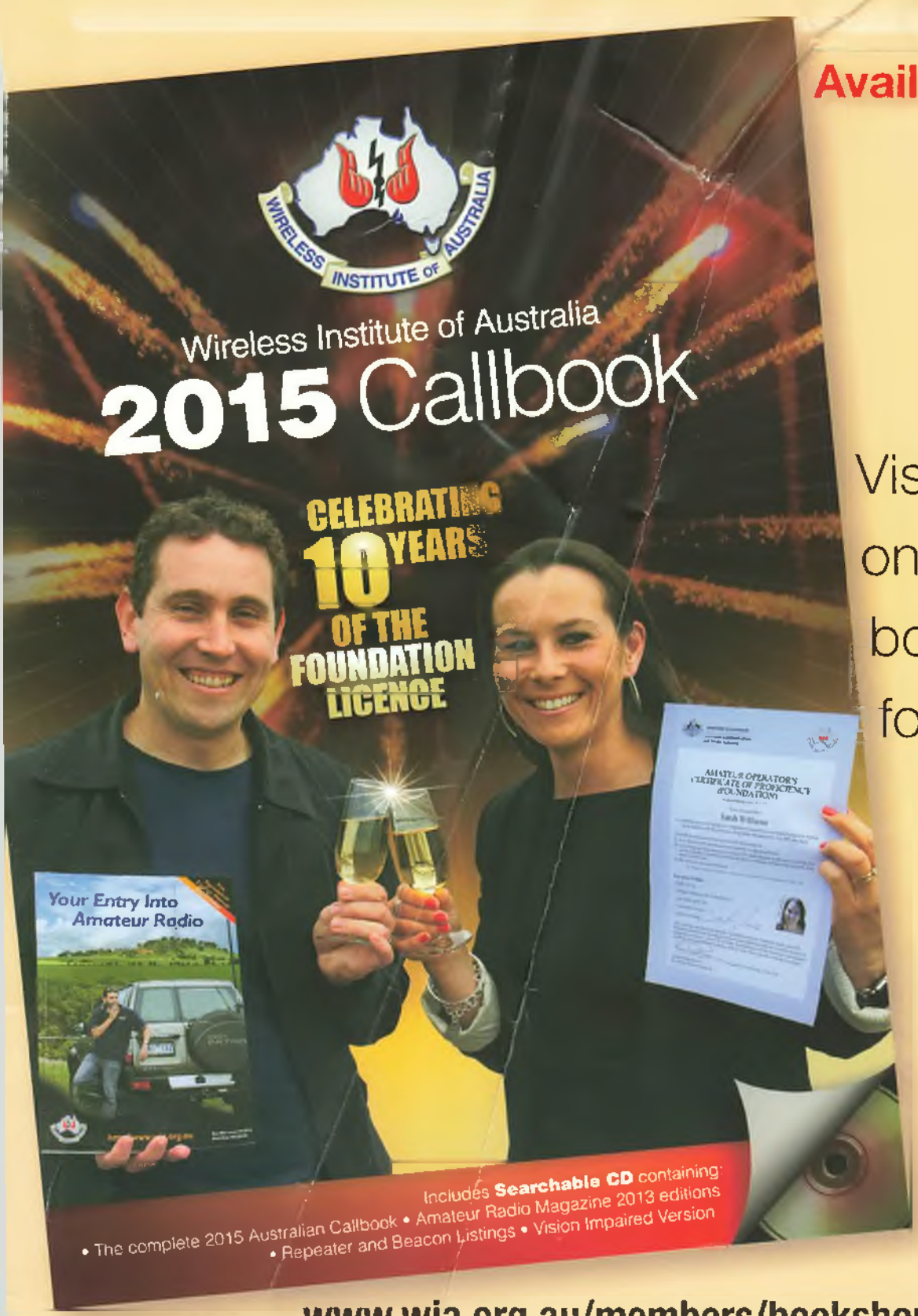
Affiliated Clubs Committee

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.

WIA **2015** Callbook

Available now



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Introducing the new ID-5100A multi-function UHF/VHF digital transceiver.

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