Amateur Radio

Volume 82
Numbers 1 & 2
January/February 2014
Price: $9.70 Incl GST
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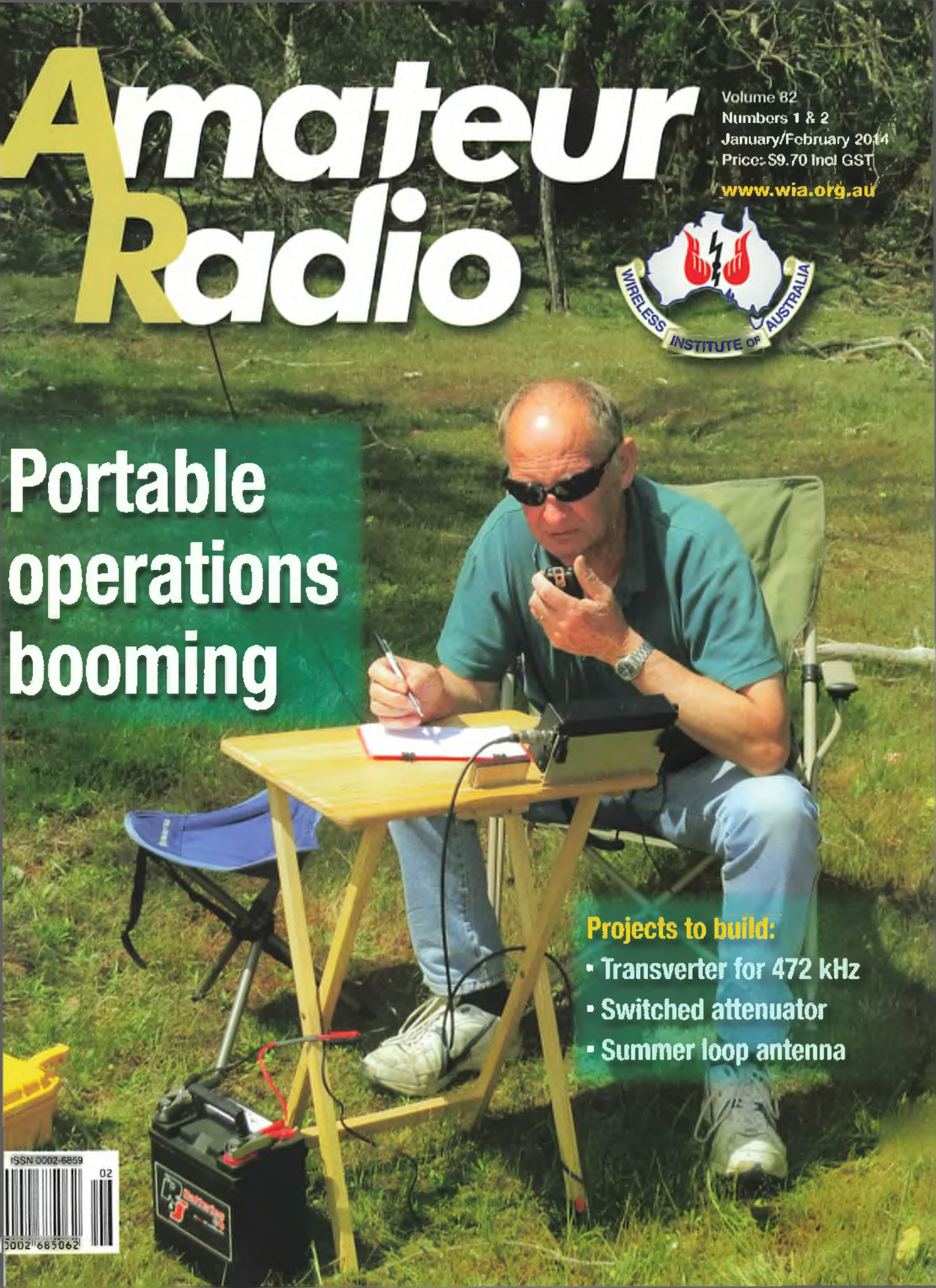
WIRELESS INSTITUTE OF AUSTRALIA

Portable operations booming



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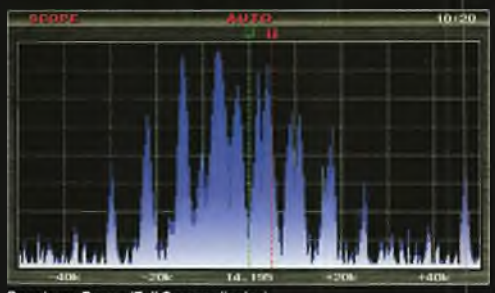

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Volume 82
Number 1 & 2
January/February 2014
ISSN 0002-6859

Amateur Radio

The Journal of the Wireless Institute of Australia

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Production Deadlines
All articles, columns, hamads and advertising booking by **first day of previous month.**

General

This month's cover

This month's cover shows Greg VK5ZGY operating from Gower Conservation Park in the south east of SA. Portable operations appear to be booming at present, helped by the increasing participation in SOTA and the Keith Roget Memorial National Parks Award and the South Australian National and Conservation Parks Award. Such operations are often also valid for other awards, including the WWFF, VKFF and awards for local government areas. Photo by Colin Huon VK5HCF.

Technical

Columns

Contributions to Amateur Radio

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

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

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

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

Amateur Radio Service

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

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The world's oldest
National Radio Society, founded 1910.

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Editorial

Peter Freeman VK3PF

Happy New Year to all

I trust that all had a safe and happy festive season and hope that all have a happy and prosperous New Year.

I ended up spending three weeks away from home, staying with family members in north east Victoria. The time was spent as a mixture of family time, some touring and some SOTA activity. I believe that regardless of your beliefs, one thing that most enjoy at the period at the end of the calendar year is reconnecting with family. In my case, the trip started earlier than expected with a trip to help celebrate a significant birthday. Given that the trip involves a drive of several hours, I decided to stay until Christmas and beyond.

From a radio perspective, there was plenty of SOTA activity following Christmas. For the Chasers sitting at home, there was a veritable feast of summits on offer. Many Activators feasted on the available Summit to Summit contacts. It really became a juggling act for those Activators who chose to activate more than one summit on a given day, often missing some activations whilst in transit from one summit to the next. I am sure that we will see a more detailed account of activity in the next issue – the action was still happening as the publication deadline loomed.

Possible changes for Amateur Radio

In the December 2013 edition, our President raised number of questions involving the future of this magazine, particularly around production costs and, more broadly around reviewing costs within the organisation.

Some of the issues were discussed at the December meeting of Publications Committee (PubCom). We were fortunate to have Phil Wait present at the meeting, and lively discussion occurred. PubCom is not against moving to an electronic magazine. All agreed that all costs and implications need to be identified. It was also noted that we must seek input from WIA members on the issues that were discussed. Other than confirming that a survey was needed, no definite decisions were made – it was decided to await the survey results. It is likely that the survey will be included in the March issue of *Amateur Radio*.

When collating the material for this issue, I raised the question of the Annual Index with PubCom members. All agreed that using 4 or more pages of the magazine for a printed annual index was a poor use of costly page space. We have therefore decided to NOT include the 2013 Annual Index in this issue. The index will be collated in the normal manner and will be available to download as a pdf file from the January/February 2014 *Amateur Radio* page on the WIA website.

Contributions please

Whilst not yet at a critical level, our stock of articles ready for publication is diminishing. Please do consider writing up your latest project or sharing an account of a recent personal or club activity for the magazine. As always, we prefer articles with good quality, high resolution images. Guidelines are available on the WIA website: *http://www.wia.org.au/members/armag/contributing/*

Continued on page 5

WIA comment

Phil Wait VK2ASD

Christmas Presents for Eastern States

Radio Amateurs in the Eastern States received two welcome Christmas presents this year – firstly, with the announcement of a new regulation amending the NSW State Environmental Planning Policy (SEPP) on exempt and complying development, which includes specific coverage of "Aerials, antennae and communication dishes", and secondly, advice from the ACMA that "amateur operations in the 50-52 MHz band will no longer need to be curtailed in order to avoid interference to Channel 0 stations."

Erecting amateur radio antennas in NSW has been a bit of a fractious affair for decades, with local councils often applying different interpretations of the development codes, even within their own local government areas! Announced on December 19th, the *"State Environmental Planning Policy (Exempt and Complying Development Codes) Amendment (Commercial and Industrial Development and Other Matters) 2013,"* now clarifies many development matters and imposes a single development code across the State for a whole range of specified minor development, including antennas, masts and dishes. The SEPP cannot be overridden by a local council.

Amateurs should carefully check pages 17-19 of the new Code before they think of putting up a mast or antenna, or perhaps even modifying an existing installation. Basically, and in the simplest terms, if your antenna/mast is located at the rear of a private lot not affected by a Heritage order, is no higher than 10 metres above ground level or no higher than 1.8 metres above peak roof height if attached to your dwelling, is 100 mm diameter or less for solid structures or 500 mm or less if an open-frame mast, is located at least five metres from the property boundary and is soundly constructed and anchored in accordance with relevant Australian Standards, your antenna/mast is deemed a Compliant Development by the Code and no development application is required. Even microwavers are catered for with allowance for dishes!

It seems that, at a later stage, more substantial antennas/masts will be subject to a fast-tracked development application and approval process limited to a period of 10 days.

All this is a significant advance on what prevailed in NSW previously, and comes after a keen – and effective – lobbying campaign from the State's amateurs and amateur radio clubs that began in October 2011 and led by the WIA. It's also good news for wireless hobbyists and budding radio amateurs – those people once universally known as "shortwave listeners". Grass roots action can work!

Although some amateurs will think the requirements are still too restrictive, they balance the right of radio amateurs to pursue their hobby from their home and the rights and expectations of the community. NSW has now been brought into broad alignment with the antenna/mast height requirements that apply in other States such as Victoria, South Australia and Queensland.

After several approaches to the ACMA by the WIA, just before Christmas we received notification that Advanced licensees could again use the 50-52MHz segment of the six metre band, without the geographic and power restrictions imposed many years ago in order to reduce the potential of interference to 45-52 MHz Channel 0 television services.

The good news is that all Advanced licensees can now use the first 2 MHz of 6 m, run powers up to 400 W Px (pep) or 120 Py (carrier power), and use any permitted mode as per the LCD.

The WIA also asked for re-allocation of 50-52 MHz to the Amateur Service on a primary basis and access for Standard Licensees. The ACMA responded by saying that these requests will be kept in mind during a proposed review of the vacated segments of the spectrum between 45 MHz and 144 MHz following the closure of channels 0 - 5A VHF analogue television services; the so-called "Digital Dividend".

The ACMA went on to say that they recognise ". . . that one possible outcome of the proposed review of the VHF spectrum may be that changes are proposed to the amateur arrangements . . ." In other words, don't get too comfortable, because the WIA will still need to defend vigorously our full spectrum holding at six metres in that review.

More information on these two developments can be found in the News section of the WIA website.

Future Dreaming

The Foundation licence and the amateur licence examinations system are now nine years old. While a review of the Foundation licence examination syllabus

Continued on page 5

WIA news

50-52 MHz is open for business!

As the last channel 0 station closed on 27 November 2013, the ACMA has advised that "*amateur operations in the 50-52 MHz band will no longer need to be curtailed in order to avoid interference to channel 0 stations.*"

In the eastern states – VK1, VK2, VK3 and VK4 – this means Advanced licensees can once again use all of the first 2 MHz of 6 m, run powers up to 400 W and use any permitted mode as per the LCD.

Although the LCD will not be amended until sometime in the future, Sections 15, 36 and 43 – which restricted used of 50-52 MHz in the eastern states – may be ignored for the time being.

The WIA wrote to the ACMA in November. A reply from the ACMA, dated 13 December, was received on Monday, 16 December.

In the WIA's November letter, we sought clarification of the situation regarding access to 50-52 MHz and reiterated the three issues raised with the ACMA in 2010, namely:

(a) re-allocation of 50-52 MHz to the Amateur Service on a primary basis (with consequent changes to the Australian Radio Frequency Spectrum Plan);
(b) Standard licensees being permitted access to 50-52 MHz; and
(c) amendment of the Amateur LCD to reflect such changes.

The ACMA has responded in its latest letter to say that these requests will be kept in mind during the proposed review of what is to happen with the spectrum vacated by analog TV services in channels 0 to 5A, between 45 MHz and 144 MHz.

The ACMA recognises "... that one possible outcome of the proposed review of the VHF spectrum may be that changes are proposed to the amateur arrangements . . .", for which reason the ACMA does not propose to "amend the legislated amateur arrangements at this time . . . so that any proposed changes can be progressed at the same time."

Amateur Radio Antennas and Masts in NSW

From 22 February 2014, amateurs across NSW will have the freedom to put up masts, antennas and dishes unfettered by development restrictions previously imposed by local councils, which varied widely across the state.

On 19 December 2013, the Minister for Planning and Infrastructure, the Hon Brad Hazzard MP, announced a range of changes to the State Environmental Planning Policy (SEPP) on exempt and complying development, which enables minor developments that meet set standards to proceed without having to get development approvals passed through local councils.

The changes of interest to amateurs concerns aerials, antennas and communication dishes that can be put up as 'exempt development'. Highlights are summarized below.

If your property is not subject to certain environmental or heritage restrictions, you can erect up to three aerials, antennae and communication dishes on a lot.

A ground mounted aerial or antenna can be attached to a mast that is no more than 10 m in height and located at least 5 m from a side or rear boundary.

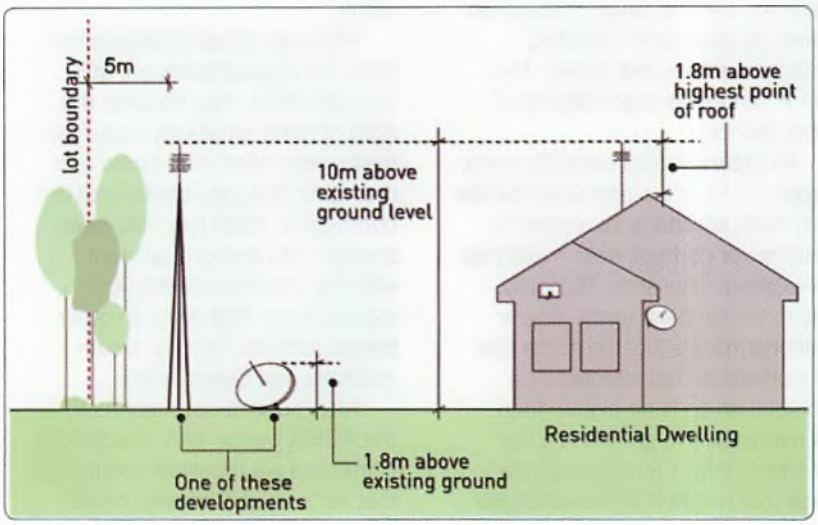
Any mast must be no more than 100 mm in diameter, or an open lattice frame 500 mm in diameter.

Any ground mounted aerial or antenna, including masts, must be located at the rear of the lot, except if in a rural zone or R5 residential zone.

Certain requirements of the Building Code of Australia may apply. Antennas, dishes and masts "*. . . must be structurally adequate and installed in accordance with the manufacturer's specifications, if applicable.*"

Amateurs wanting to erect masts and antennas outside the parameters of exempt development will be able to proceed through a streamlined, low-cost 'complying development' process, which we understand will become available later.

More details on the announcement are on the NSW Department of Planning and Infrastructure website at:



www.planning.nsw.gov.au/exemptandcomplying

The Department has published a series of Information Sheets on exempt development, which are online at: *www.planning.nsw.gov.au/exemptdevelopment*

The Information Sheet of interest is "2.1 Aerials, antennae and communications dishes", which you can download from: *http://www.planning.nsw.gov.au/Portals/0/BuildingInNSW/EC/EC_POLICY_2_1_AERIALS.pdf*

Unfortunately, the Information Sheet appears in places to be open to ambiguous interpretation (and that includes the diagram reproduced here). However, we expect to sort this out in time.

Once again, I must congratulate and thank everyone – individual amateurs and radio clubs alike – who went to the effort of making a submission during all the phases of the NSW Planning System Review over the past few years and also writing to your local members last year. All the effort has paid off.

Update

The regulation amending the State Environmental Planning Policy (SEPP) on exempt and complying development codes 2008 is now available online: *http://www.legislation.nsw.gov.au/sessionalview/sessional/epi/2013-706.pdf*

The full name of the amending regulation is "*State Environmental Planning Policy (Exempt and Complying Development Codes) Amendment (Commercial and Industrial Development and Other Matters) 2013*".

Pages 17-19 of the 216-page document specifically cover "Aerials, antennae and communication dishes". So that you have the exact wording, this section is extracted and displayed on the WIA website: *http://www.wia.org.au/newsevents/news/2013/20131228-1/index.php*

In 2014, the WIA will be seeking clarifications concerning the new regulation's application to a wide variety of amateur antenna installations.

Editorial

Continued from page 2

On-air activity

By the time this issue reaches readers in late January, the Ross Hull Memorial VHF/UHF Contest will be drawing to a close. There may still be time for you to participate, even if it only making a few contacts with some of the keen participants. John VK3KM will be starting his task of reviewing logs submitted from operators after the Summer VHF-UHF Field Day. Coming up in March will be the John Moyle Field Day – now is the time to start planning for your participation in this event.

The John Moyle can be a fun event. I have fond memories of weekends spent on the top of Blue Mountain near Trentham with fellow members of the Melbourne University Radio & Electronics Club back in the late 1970s, when we would mount a multi-operator, multi-transmitter station covering all bands from 80 m through to 23 cm for the event. The Rules for this year's event are included in this issue.

For those interested in SOTA, I am sure that operators in VK1 will be out and active on February 1 to celebrate the anniversary of the start of the VK1 Association. Many SOTA operators in VK3 will be gathering at the Moorabin & District Radio Club in Highett for a celebration and barbeque lunch – I guess that there may be many stations set up in the grounds to chase those VK1 stations that will be on-air.

Until next month,

Cheers,

Peter VK3PF

WIA comment

Continued from page 3

and licence conditions has been progressing for some time, the current examinations system has been in place generally without change.

While it has served the Institute and the Australian radio amateur community well to date, I know that many amateurs and would-be amateurs and assessors consider it over-burdened with procedure and paperwork. The WIA must ensure a robust audit trail of actions and responses, all meeting expectations and requirements of the ACMA and the Commonwealth Government. However, the WIA Board and our RTO believes the process can be improved significantly by placing much of the administration component on-line. This would speed the processing of materials, reduce costs and also avoid instances where the paperwork is filled out incorrectly and needs to be returned by post to the assessor.

What if? What if . . . a candidate could sit the licence examination and receive, if successful, a Certificate of Proficiency, their licence and a callsign. We are currently working on reaching that goal.

Phil Wait VK2ASD
President, WIA

The VK5 National and Conservation Parks Award – six months on

Paul Simmonds VK5PAS

Photo 1: Paul VK5PAS operating from Carribie Conservation Park on the Yorke Peninsula.

The VK5 National and Conservation Parks Award celebrated its six month birthday in October, 2013. To celebrate this event, a special activation weekend was held on Saturday 19th and Sunday 20th October, 2013.

A total of nine keen VK5 operators activated a total of 20 different National and Conservation Parks throughout South Australia. Activators were Larry VK5LY, John VK5BJE, Col VK5HCF, David VK5NQP, Ian VK5CZ, Paul VK5PAS, Steve VK5AIM, and first time activators Tim VK5AV and Greg VK5ZGY. Parks were activated in the south east, the Adelaide Hills, the mid north, the Clare Valley, metropolitan Adelaide, the Riverland, and the Yorke Peninsula.

John VK5BJE had planned on activating two parks in the Adelaide Hills on Sunday. However due to a severe fire warning, his plans were changed, and for the very first time three metropolitan parks were activated. This included the historic Fort Glanville Conservation Park (CP), which is one of the most complete examples of a 19th century artillery fort in Australia. It was constructed in 1878 to defend Adelaide from a perceived invasion from Russia. Steve VK5AIM activated Fort Glanville CP later that same day.

Larry VK5LY and his dedicated wife Di headed to the mid north of the state, and on Saturday activated three parks near the historic mining town of Burra. This was followed on Sunday by the Spring Gully CP in the wine growing region of the Clare Valley, and then Brookfield CP in the Riverland.

Ian VK5CZ also activated the Spring Gully CP in the Clare Valley on Sunday afternoon, while on Saturday, David VK5NQP, activated the Hale CP in the Adelaide Hills, which offers spectacular scenic views.

Paul and trusty wife Marija journeyed to the Yorke Peninsula, where eight parks were activated, including the beautiful Innes National Park which has spectacular coastal landscapes, rugged cliffs and sandy beaches. Ashley Walsh

from ABC radio telephoned Paul on Saturday morning and conducted an interview about the Parks weekend and the hobby of amateur radio.

Meanwhile down in the south east Col VK5HCF, Tim VK5AV, and Greg VK5ZGY with wife Gabi, activated the Gower CP, Telford Scrub CP, and Tantanoola Caves CP which features a spectacular cave set into a cliff face. The cave is believed to have been exposed by the constant pounding of the ocean. Over a period of time the sea retreated and this has left behind a cavern of shells, pebbles, and seal bones.

The weather over the duration of the weekend was hot, and the bush flies in the mid north and on the Yorke Peninsula were certainly out in force. Sadly, the band conditions on 40 metres SSB during the weekend were quite poor. However, a total of 214 contacts were made into VK2, VK3, and throughout VK5. Park Activators managed a total of 38 Park to Park QSOs. This is where amateurs operating portable in a park make contact with another amateur, operating portable in a different park. Five contacts were also made with Summits on the Air (SOTA) activators in Victoria.

Photo 2: Col VK5HCF operating from the Telford Scrub Conservation Park.

A collection of transceivers were used by activators, including the Yaesu FT-817ND, Elecraft KX3, Yaesu FT-707, Icom IC-703, and the new QRP rig on the market, the Wouxon X1M multiband QRP transceiver. And a variety of antennas, including linked dipoles, a 27 metre doublet fed with 300 Ω TV ribbon, and a 40 metre PAR half wave end fed configured as an inverted 'V'.

Thanks to all the Hunters that called over the weekend. Without Hunters, there would be no VK5 Parks program.

More information on the VK5 National and Conservation Parks Award can be found on the Adelaide Hills Amateur Radio website at *http://www.ahars.com.au*

There is also a Yahoo Group, which is free and easy to join, and can be found at *http://au.groups.yahoo.com/group/sanpcpa/*

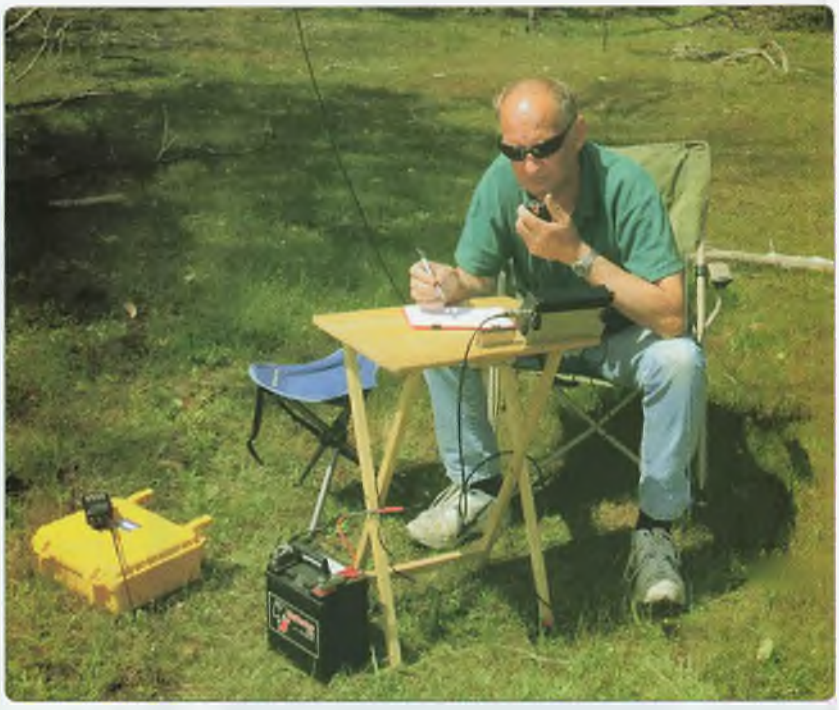


Photo 3: Greg VK5ZGY operating from Gower Conservation Park in the south east of SA.

WIA Annual Conference — Sunshine Coast May 16th, 17th and 18th, 2014

We are pleased to announce preliminary details for the WIA 2014 Annual Conference being held on the Sunshine Coast. The host club is the Sunshine Coast Amateur Radio Club, led by Richard VK4RY and Trent VK4TS.

Members who register for the event will be able to participate in a range of fascinating and memorable activities.

The Sunshine Coast is where you will experience a laid-back lifestyle centred around pristine beaches, freshwater rivers and lakes, subtropical forests and warm sunshine.

The weekend program will commence on Friday evening at the Alexandra Heads Surf Life Saving Club and there will be several breakout options for like-minded amateurs to get together. On Saturday morning the WIA Annual General Meeting followed by the Open Forum will be held in the Shed at Aussie World, with lunch provided for all registered attendees. There will be a range of technical presentations on the Saturday afternoon.

For partners, an alternate tour will be run on Saturday. On Saturday evening, the Annual Dinner will be held in the Shed at Aussie World. Sunday will feature a visit to the Sunshine Coast base of the RACQ Rescue Helicopter and various rescue venues on the Mooloolaba Spit culminating in a visit to Underwater World. For those not travelling back to their home QTH on Sunday afternoon and who will be staying on Sunday evening, then the host club the Sunshine Coast Amateur Radio Club would like to invite you to a relaxing evening BBQ at SCARC HQ. This cost for the Sunday evening BBQ will $10 per person, drinks will be BYO.

For travel details and accommodation options, browse the Sunshine Coast information site: ***http://www.visitsunshinecoast.com.au/***

There is no accommodation available in the immediate vicinity of the main venue, so you are free to make arrangements as you see fit.

We anticipate having more details available soon, so watch for updates and registration information on the WIA website and in future issues of *Amateur Radio*.

Is Riley Sebastian Kurtz VK3FRSK Australia's youngest amateur?

Tony Boddy VK2ADQ - President, Lake Hume Amateur Radio Group Inc

On the weekend of 12/13 November, 2013 my assessor colleague Stafford VK2AST and I had the pleasure of holding a Foundation course at which there was included a young gentleman just ten years of age. What can a couple of grisly old Assessors do with a ten year old boy? It was a little more akin to what a ten year old boy could do with us. We were taken by surprise by his knowledge and aptitude. Here was a young man who was full of radio knowledge, keen as mustard and raring to go. Even when we stopped for lunch he fired a barrage of questions at us; he wanted to know everything. We must have done OK in the answers department because Riley breezed through his assessment at top speed. We in turn were gratified to find that he had passed with flying colours.

Riley Kurtz VK3FRSK.

Congratulations to Riley who is now on the air as VK3FRSK. Riley's qualification is a tribute to the support of his very proud mum Samantha, dad Brandon and second dad Brenton VK3CM.

Riley did not come for a free ride; he worked hard to gain the knowledge to become an amateur radio operator. He is living proof that with a bit of hard work and a heap of encouragement, younger members of the community can take that first step into the finest hobby that anyone could wish for.

Congratulations to Riley VK3FRSK and best wishes for his amateur (and personal) future from the executive and membership of the Lake Hume Amateur Radio Group Inc.

See also the report on page 40.

SummerLoop II: an improved magnetic loop for 21 – 50 MHz pedestrian mobile

Peter Parker VK3YE

The March 2013 issue described the *SummerLoop*, a lightweight magnetic loop designed for HF pedestrian mobile. It was successful enough, though some efficiency was sacrificed by using coax braid for the main element rather than metal strip.

This article describes a SummerLoop II, using some parts from the original. The main loop is now formed from aluminium bar instead of coaxial cable, refer to Photo 1. A gamma-type feed arrangement replaces the smaller loop. And builders have the option of attaching a parallel capacitor to cover 14 and 18 MHz. The result has narrower bandwidth, which in magnetic loops is a sign of lower resistance and greater efficiency.

Construction

As in the first loop the trimmer is mounted on a 70 x 25 mm piece of fibreglass printed circuit board material. This must be single sided copper to lessen capacitance. A knife or hacksaw is used to separate the copper into two large pads, each connected to a terminal of the capacitor, refer to Photo 2.

Screws hold as much of each pad as possible against each end of the flat aluminium loop. Sand the facing surfaces to lessen resistance. If the loop is to be used permanently outside as a courtyard or balcony antenna, consider the risk of reaction between dissimilar metals and waterproof accordingly – this goes for any antenna project, not just magnetic loops.

Use 4 mm diameter screws to hold the loop ends to the circuit board. Install so their heads are pointing down. They should be long enough for there to be about 20 mm thread protruding from the nut.

This is so parallel capacitors can be plugged in for coverage of lower frequencies.

A square of kitchen chopping board material adds rigidity to the top of the loop and lessens stress on the circuit board. A nine mm hole allows a snug fit with the 9.5 mm vertical dowel that comprises the antenna's handle.

An insulated knob on the capacitor lessens hand-capacitance and makes adjustment easier. Again the hardware store came to the rescue, providing a pack of four rubber wall mounts used to hang items on brick walls.

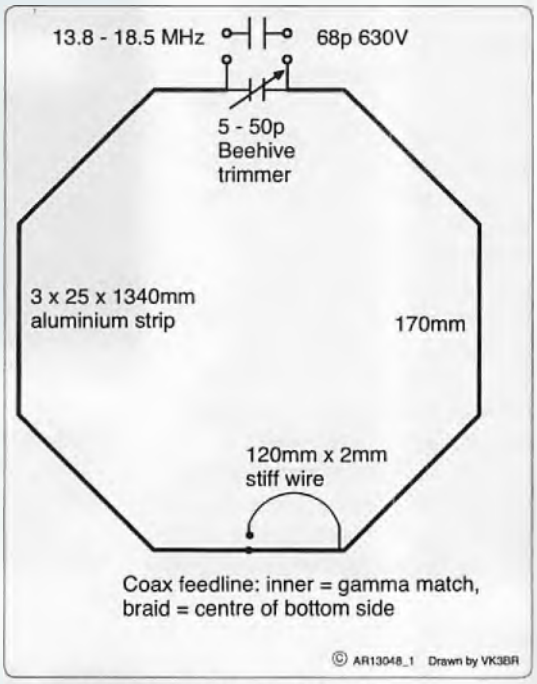


Figure 1: Diagram of SummerLoop II.

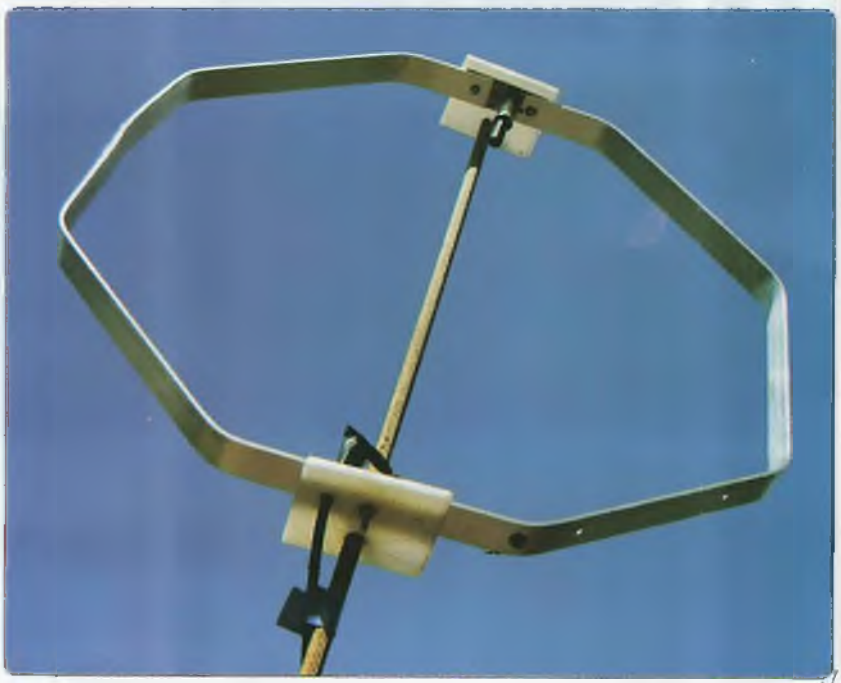


Photo 1: SummerLoop II.

The non-threaded end happened to fit snugly onto the rotating section of the trimmer capacitor. Flexible rubber or clear plastic tubing could be another option.

The feed arrangement is best described as a gamma match without a series capacitor. The feedline braid is connected via a screw-on solder lug to the middle of the aluminium strip at the bottom of the loop, refer to Photo 3. The feedline's centre is tapped approximately 80 mm from this point with about 120 mm of sturdy wire or strip. These dimensions may vary slightly for lowest SWR but once set they should be suitable for all bands.

Photo 2: Beehive trimmer assembly.

Optional extra bands

Being restricted to the 21 to 50 MHz bands, such as with the original SummerLoop, is a major limitation for those wishing to make contacts throughout the year. This is because for most of the time there is either no propagation, no activity or signals are unworkably weak on these bands.

During such times 14 and 18 MHz coverage is handy, even if at reduced efficiency. This is achieved by adding a fixed

capacitance across the trimmer. While not planned this way, a 68 pF polystyrene capacitor serendipitously allowed coverage of 14 MHz with the trimmer nearly meshed and 18 MHz with it nearly open.

A 630 volt capacitor is adequate for five watts. If you only have lower voltage rated capacitors, then two or more wired in series relieves voltage across each one. 120 and 150 pF in series will provide close to the required 68 pF.

Though desirable for low resistance, a soldered connection is impractical as the capacitor must be removed for higher band coverage. Instead I mounted it on a small scrap of chopping board. It has two banana sockets which mate with the 4 mm bolts that hold the beehive trimmer assembly.

Results

Results have been noticeably better than with the original SummerLoop. Ten metres was most successful with Europeans being worked around dusk one evening and interstate contacts over summer. Similar contacts were also worked on six metres, with pedestrian mobile CW proving its worth when ZL was worked. Videos of many of these contacts appear on the author's YouTube channel at *youtube.com/vk3ye*

Photo 3: Feed arrangement.

References

Peter Parker VK3YE, *The SummerLoop: an ultra-light magnetic loop for pedestrian mobile, Amateur Radio*, March 2013, page 7.
http://www.youtube.com/vk3ye

AMSAT-VK

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About AMSAT-VK

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

AMSAT-VK monthly net

Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. Check-in starts 10 minutes prior to the start time. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RBM Blue Mountains repeater on 147.050 MHz

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

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

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

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT or VK3JED conferences. Past experience has shown that the VK3JED server offers clearer audio. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Currently only SO-50 is available.

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

PSK31: The digital mode worth trying

Jim Linton VK3PC

High frequency amateur radio has greatly diversified from when Morse code stood alone as the technology of the era, followed by phone from amplitude modulation through to SSB, orbiting satellites, SSTV in its different forms, weak signal working and so on.

A big change has come more recently in the way some radio amateurs communicate on the keyboard and the personal computer used by most of us in our daily lives. PSK31 is a digital mode suitable for radio amateurs using low powered transmitters, smaller antennas and works in noisy environments.

This article is written using my experiences with the mode so as to encourage others at least to consider trying keyboard communication, and see how easy it is to join the digital world.

Keyboard mode suggested

At an end of year party a fellow radio amateur asked if I had ever tried PSK31, a digital mode using low power communications similar to RTTY of days gone by. My answer to the question was no, but the conversation certainly sparked my interest. It sounded very complex; a little reading on the subject however found it promised a low power mode, with signals often being pulled from the noisy conditions on the bands.

Sometime later I watched a video by Randy Hall K7AGE (1) on YouTube and he showed how to acoustically receive PSK31. I tried with limited success using the acoustic coupler but this didn't deter my interest in the mode.

In his video Randy K7AGE recommends the DigiPan 2.0 software (2), a Windows-based program which is easy to set up and by far the best choice for the new user. It took only a short time to download from the internet. I can highly recommend his well-viewed basic explanation of PSK31 that also covers some of the history of the mode and plenty of other reading that won't be repeated in this article.

Interface chosen

After continuing dabbling with acoustic PSK31 reception again without much success, another radio amateur friend suggested trying PSK31 with an off-the-shelf interface available from Tigertronics in the United States, called SignaLink (3).

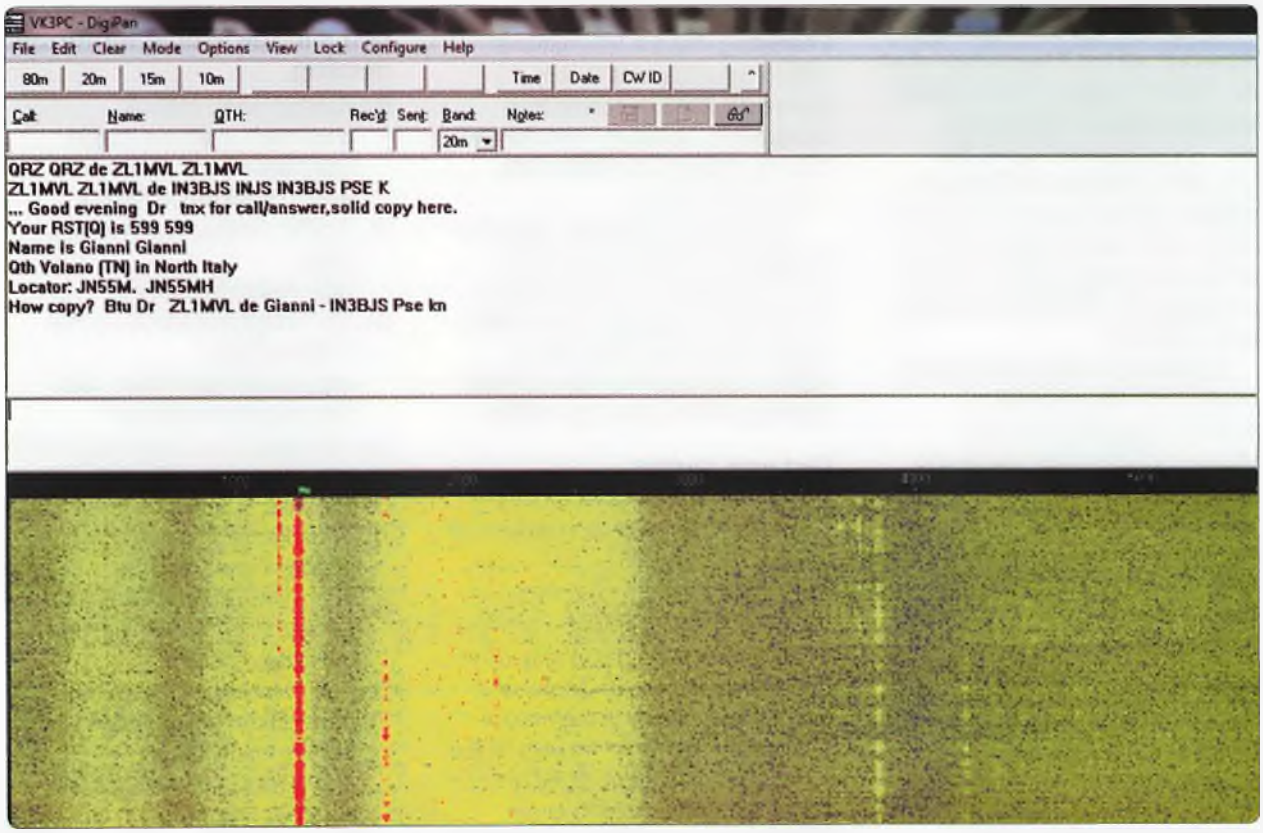


Figure 1: A PSK31 signal as it appears on the waterfall – and, as you may note, perfect decoding.

Being already hooked I immediately took my friend's advice and ordered a SignaLink. The parcel duly arrived and I opened it with both in trepidation and excitement. What Tigertronics has done is produce a professionally engineered unit that comes complete with interface cables, and a disk full of interesting digital mode programs.

Setting up is easy as the SignaLink board has its own internal sound card and settings do not affect your computer's sound card. Another advantage with this unit over some of the homebrew designs is that you do not need a serial port to operate the radio's PTT (press-to-talk). The product worked out of the box once the supplied PCB links were fitted. It came with the ready-made lead for my transceiver, a USB lead to the PC and the previously mentioned disk.

Typing not a problem

The ability to type can be overrated and the average radio amateur who is able to use a computer can easily adapt. Typing is kept at a very slow speed, but even the two-finger hunt and pecker will find it easy after a short time. There is a series of user defined messages stored on the function keys. For example a CQ call, back to you (BTU) and sign-off signals are available. Also at a press of a button is a Brag, which can be programmed to contain your name, location, antenna, and equipment. This QSO information sound common?

A practice of using the macros, coupled with the answers to questions posed by the other stations including their name and signal report, appears to be used by many. As Randy K7AGE laments, even more stations should be typing in their responses to questions posed, instead of resorting to pure macro conversations.

A low power method

The journey is very much a learning curve as you explore the easy to use software. In the DigiPan 2.0 program is a spectrogram, or waterfall, that gives a visual representation of the spectrum used. You simply move the computer mouse over the wanted signal trace and click on it.

Low power of 20 watts or thereabouts is considered more than enough, and a modest antenna including a vertical or dipole, makes it ideal for all.

PSK31 can often overcome interference and poor propagation conditions but although relatively slow it does not give an error-free transmission, unlike some synchronisation or hand-shaking modes.

The mode is increasingly being heard on DXpeditions, special event stations, field days and with portable gear.

The traditional RST report was developed for CW communications for received signals in terms of its Readability, Strength, and Tone.

While still being used, others have adopted the International Amateur Radio Union accepted RSQ method (4), whereby Q is the Quality of the trace seen on the waterfall display. It is interesting that the International Telecommunications Union (5) in early 2013 endorsed the Telegraphic Alphabet, used for Data Communication by Phase Shift Keying at 31 Baud.

Commonly called the 'Varicode' it supports all ASCII characters, but those used most frequently in the English language have shorter codes occupying fewer bits in PSK31, and was the work of Peter Martinez G3PLX (6) in the 1990s.

Get into digital

In a short time of casual operating my log showed a dozen different DX entities, and is growing each week. PSK31 uses some of the same on-air terminology as CW. You can chat locally or with DX. Those already on the mode can be very helpful and friendly, particularly in the macro duplication and fumbling early stage.

There is a lot more to be learnt about the digital world beyond PSK31, including earth-moon-earth contacts, weak signal working, slow scan television image exchanges and digital voice.

Whether you are a dyed in the wool CW operator, have stuck with phone over the years, a DX chaser, dabbled in RTTY or packet radio (remember the old bulletin boards), or used image transfer in the past - a whole different digital world waits.

The skills and techniques developed over the years are easily transferred to the sound card based digital modes.

Increasingly radio amateurs throughout the world, thanks to readily available software and the common computer, are turning digital or adding it as an essential part of their operating.

Be warned - once you try the digital modes some don't go back to their old operating ways, at least in the short term.

Editor's note: And once comfortable with PSK31, you may like to try PSK63 and/or PSK125, the same mode but faster. Among other variations, that is!

URLs in the article for further reading

(1) Randy Hall K7AGE. A beginner's video on PSK31 *http://www.youtube.com/watch?v=jQpBGh9RMEQ*

(2) DigiPan Freeware Download page *http://www.digipan.net/*

(3) QST magazine article on the USB interface *http://www.tigertronics.com/files/slusbqstreview.pdf*

(4) Discussion and meaning of RSQ *http://www.rsq-info.net/*

(5) The International Telecommunications Union endorses the Varicode *http://www.amateurradio.com.au/news/itu-adopts-varicode-developed-psk31*

(6 Peter MartinezG3PLX. PSK31: A new radio-teletype mode with a traditional philosophy *http://det.bi.ehu.es/~jtpjatae/pdf/p31g3plx.pdf*

A transverter for the 472 – 479 kHz frequency band

Dale Hughes VK1DSH

On January 1st 2013 the ACMA allowed access to our newest frequency allocation, 472 – 479 kHz (subject to some power and geographic restrictions). Amateurs are allowed to use this frequency band on a secondary basis as a result of the 2012 World Radio Communications Conference. A secondary allocation means that amateurs must not cause interference to other services in the frequency band, nor may we claim protection from interference caused by other users of the frequency band. In general, the other 'users' are non-directional beacons used by the aeronautical radio navigation service. In Australia there are no mainland NDB's between 472 and 479 kHz and a protection zone was established by the ACMA to protect two Australian offshore NDBs and this information is contained in the latest amateur licence conditions[1].

There is a limited range of commercially available amateur equipment[2] for use on this band so most operators build their own equipment to experience the joys and frustrations of this fascinating new band. This article presents a transverter which will convert signals in the range 472 – 479 kHz to/from 10.472 – 10.479 MHz and thus allows the use of a transceiver which has 10 MHz band coverage, for example, a Yaesu FT-817 in this case. The transverter is a compact design and features a robust and sensitive 'front end' and a transmitter power output of 50 W. The transmit converter is optimised for power efficiency by using a Class D switching power amplifier as the design was intended for battery powered portable use. The Class D switching power amplifier means that only constant amplitude digital modes, for example, CW, MFSK, RTTY, WSPR and so on can be used and it is not suitable for any mode that requires a linear transmitter, for example, PSK31, SSB etc. All of these 'sound card' modes are easily generated by readily available PC software, a very good example of which is Fldigi[3].

Figure 1 shows a block diagram of the transverter. Audio signals to/from the PC USB audio interface[4] are connected to the rear panel 'data' connector of the FT-817 transceiver. The Press-To-Talk signal from the USB interface is routed via the PTT interface in the transverter to the transceiver to ensure correct TX/RX sequencing. The transverter contains a stable and accurate 10

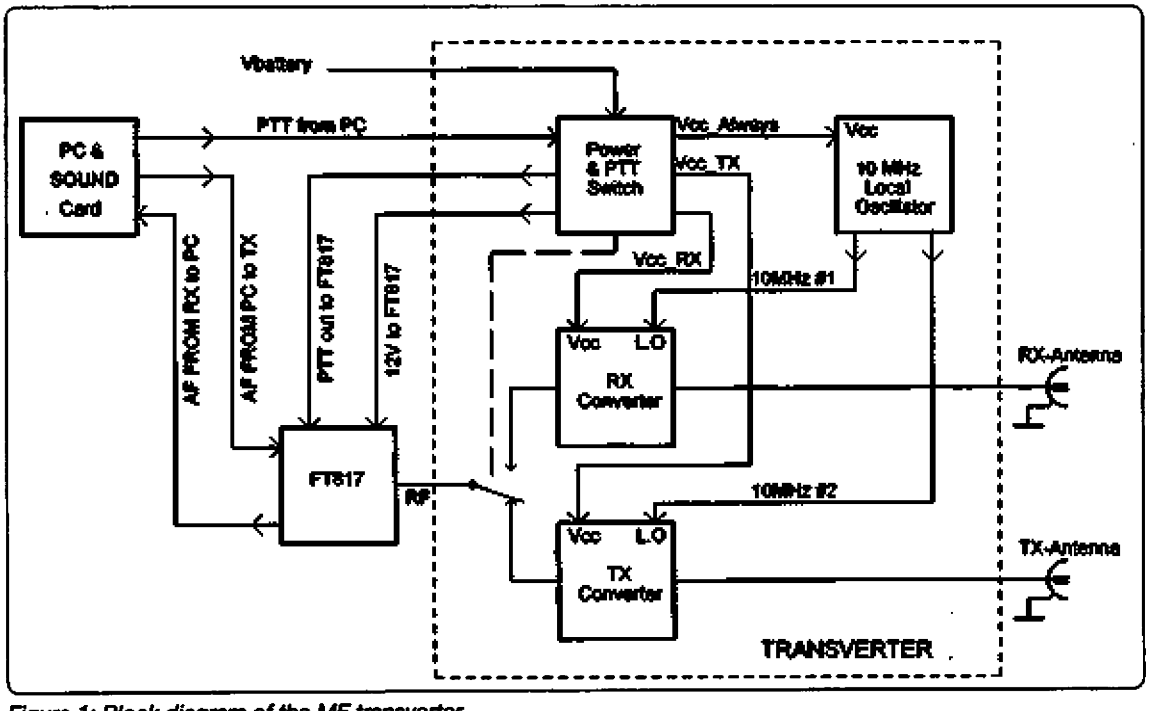
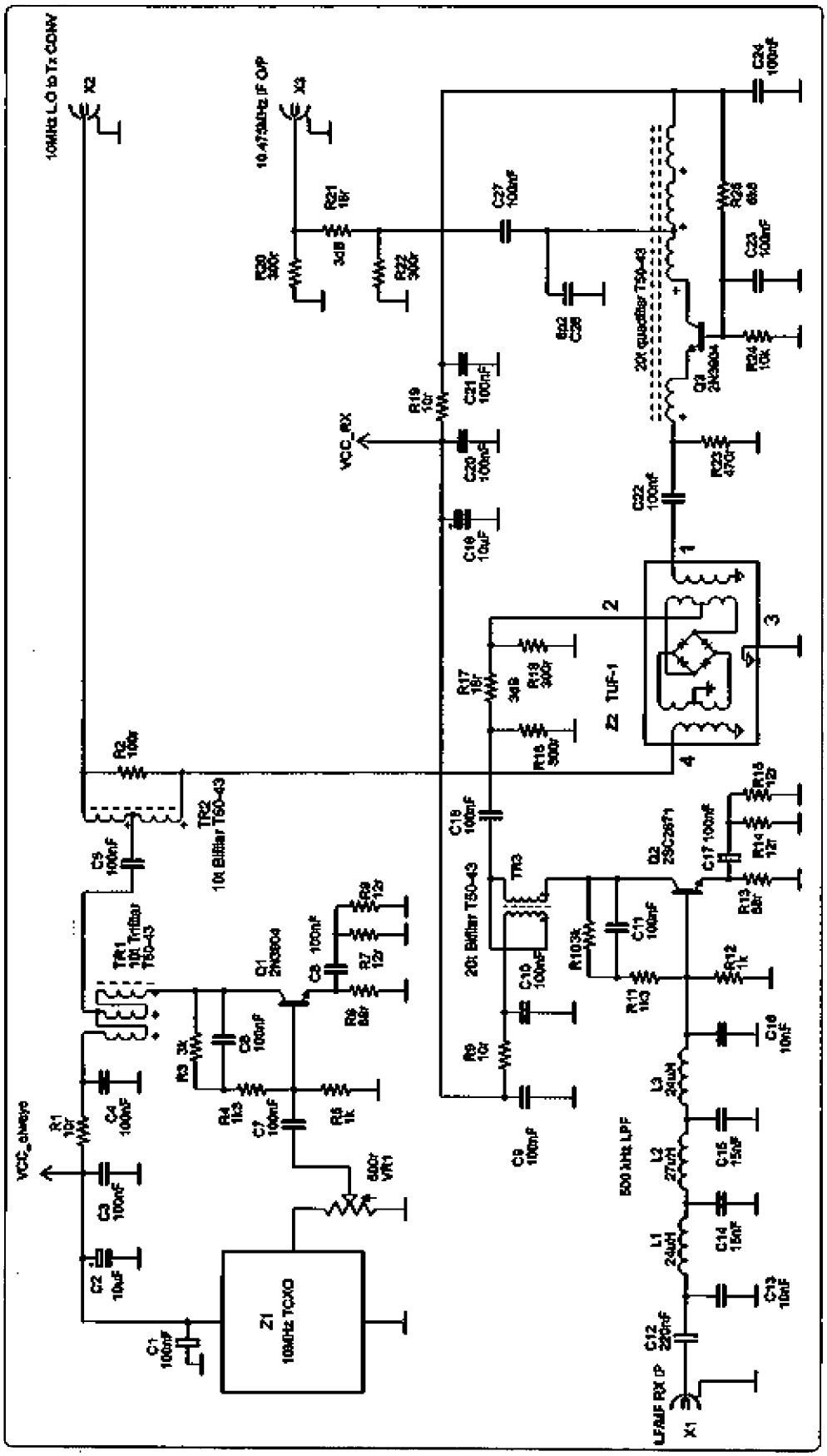


Figure 1: Block diagram of the MF transverter.

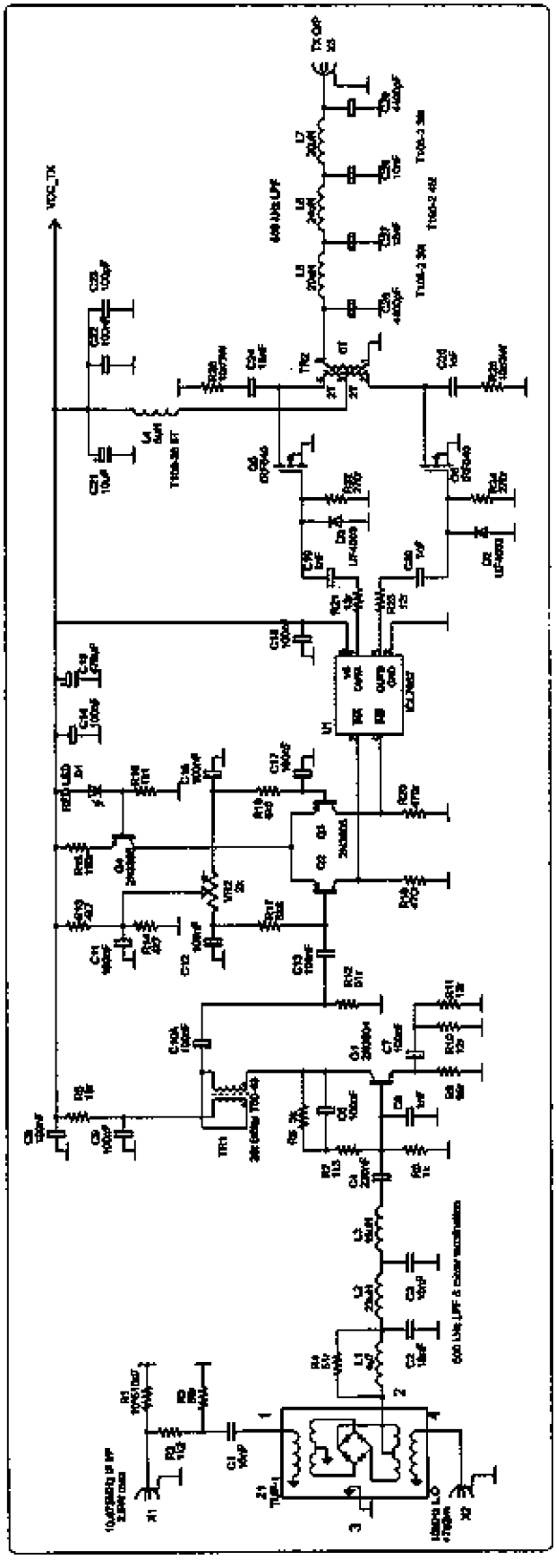


MHz local oscillator which generates the local oscillator signals for the separate receive and transmit converters. Separate transmit and receive antenna connections are provided as independent transmit and receive antennae are often used on this band. (Note: an active whip design known as the 'Mini-whip[5]' is commonly used for receiving on the LF and MF bands.)

Circuit description

Figure 2 shows the schematic diagram for the receive converter. The 10 MHz Temperature Compensated Crystal Oscillator output is buffered by amplifier Q1 and then split into two paths by a 3 dB divider which provides a LO signal of approximately 7 dBm for each mixer. Potentiometer VR1 is used to adjust the local oscillator amplitude and the TCXO is powered whenever the transverter is energised. The 10 MHz TCXO was removed from surplus equipment but suitable alternatives should be readily located; even ordinary crystal oscillators are suitable if you don't intend to use the very slow transmission modes (known as QRSS modes) that require very high levels of oscillator stability.

Figure 2: Schematic diagram of the receive converter.



The receive converter is fairly conventional with a front end consisting of a seven element 500 kHz low-pass filter[6] followed by a low noise amplifier that has excellent strong signal handling capability. While a low-noise receiver front end isn't essential for MF use (especially if using an active whip) it is desirable when using other types of low gain receive aerials, for example, loops or non-active verticals. The 2SC2671[7] transistor may be replaced by the more common and somewhat noisier 2N3904 if desired. The filtered and amplified MF signal is then fed to the double-balanced mixer and the mixer output is passed to another low noise amplifier[8] that has a wide dynamic range. Mini-Circuits TUF-1 double balanced mixers are used as they work well, are readily available and relatively inexpensive. The feedback amplifier and two 3 dB attenuators provide a very good 50 Ω match for the input and output ports of the mixer and for the transceiver. The up-converted and filtered signal is then passed to the external transceiver through a coaxial changeover relay. Diode switching of MF signal paths was avoided to minimise the possibility of intermodulation problems due to local MF broadcast stations. An advantage of this design is that it has a wide bandwidth and works down to about 20 kHz and many LF stations (mostly navigation and time signal) and NDB's can be heard.

The transmit chain is shown in Figure 3: the 10.472 – 10.479 MHz output from the transceiver is attenuated by a 50 Ω attenuator which also provides a good termination for the FT-817 output. The attenuator has an output of a few milliwatts which is then connected, together with the 10 MHz local oscillator, to the TUF-1 mixer. A diplexer (which is copied from another[9] transverter design) on the mixer output provides a wideband termination and a means to extract only the wanted MF signal. The diplexer inductors are small axial chokes which are oriented to minimise mutual coupling between them. The wanted MF signal is then amplified by Q1 and fed to a 'long tailed pair' (Q2 and Q3) which acts as a limiter and phase splitter. Transistor Q4 is a constant current source which provides approximately 10 mA of current for Q2 and Q3. The signals at the outputs of Q2 and Q3 are 180 degrees out of phase and are square waves with a fast rise time. All amplitude variations are supressed, which is why linear transmission modes will not correctly work with this design. Potentiometer VR2 is used to adjust the duty cycle of the output waveform so that it is 50 %, although subsequent testing of the transmitter indicates that the operation and efficiency of the power amplifier is relatively insensitive to duty cycle variations.

The anti-phase outputs from Q2 and Q3 are fed to a FET driver (U1) and a current-mode[10] push-pull class D amplifier.

Figure 3: Schematic diagram of the transmit converter.

The output transformer TR2 is made from eight 3E25 ferrite toroids, some brass tube and scrap PCB material[11] and Figure 4 shows the construction style.

The square wave output from the amplifier is passed through a seven element low pass filter to remove harmonics that might cause interference to broadcast band receivers. Note that the filter capacitors are high voltage silver-mica and polystyrene types, not because of the voltage requirements, but because the high frequency current is significant; ordinary ceramic capacitors will heat up and ultimately fail in this application. The transmitter output is available through a coaxial connector for separate connection to the transmit antenna.

The circuitry which ties everything together is the power switch and PTT control which is shown in Figure 5. This circuit provides polarity protection for the transverter and attached transceiver (assuming it is powered through the transverter) by means of FET Q1 which will only conduct when the power polarity is correct[12]. The RF relay which switches the transceiver output is configured so that the FT-817 transmitter output is connected to the transmit converter attenuator when it is not energised; this is done to prevent damage to the transverter if the transceiver transmits while the transverter is unpowered. The RF transmit/receive relay is powered by transistor Q3 which is biased on by a resistor connected to the +12 V rail. The transmit state is entered by grounding the PTT input which turns Q3 off, in turn releasing relay RL1 so that the transceiver is connected to the transmit converter. This also forces a FET driver chip (U2) (configured as a simple power switch) to remove power from the receive converter. The transceiver PTT control is switched by Q5 which turns on and pulls the PTT line of the transceiver to ground when the input PTT line is grounded.

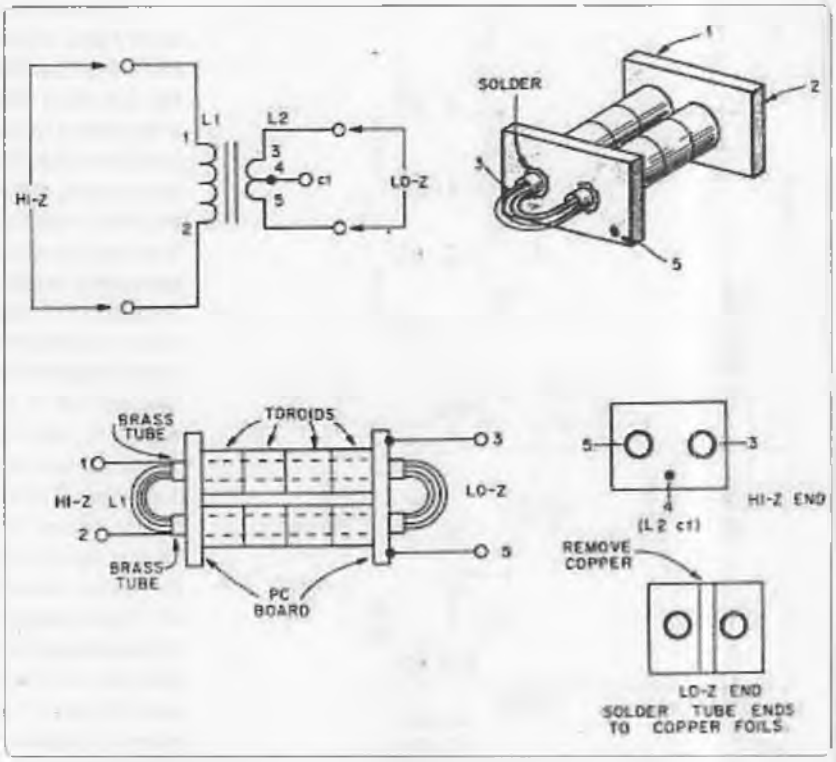


Figure 4: General details of the transmitter output transformer TR2. Note that for this design, the transformer has two primary turns on each side of the centre tap, so the second turn is wound through the brass tubing, as are the six secondary turns. The diagram is extracted from an ARRL publication[16], and is reprinted with their kind permission.

After a short delay a small DC-DC converter with an isolated output (Murata Type NML1206S[13]) turns on and applies 9 V to the gate-source junction of FET Q2 which turns on and provides power to the transmit converter.

General construction

One of the joys of working at LF and MF is that construction techniques can be very simple and point-to-point wiring is quite acceptable. The transverter components are soldered directly to sheets of blank PCB laminate which results in a very simple layout which more-or-less follows the same layout as the schematic diagram. Figure 6 shows the internal layout of the completed unit.

The 10 MHz local oscillator and receive converter are built on one sheet of laminate and the transmit converter is built on another. Hook-up wire and coaxial cable link the modules. The power switch and PTT control board is built on veroboard and its construction is not critical. The transmitter power FETs (Q5 and Q6) are bolted to a heat sink which is bolted to the top of the diecast box. As the transmitter efficiency is greater than 75 % a large heat sink in not required and all components fit inside a 170 by 270 mm diecast box. Connections to and from the PC and transceiver are by means of connectors and terminals on the front edge of the enclosure. Figure 7 shows the general idea.

None of the components should be particularly difficult to obtain; a well-stocked 'junk box' will yield many suitable parts and substitution is possible for most of the semiconductors and many other parts. All of the transformers (except for the main power output transformer TR2) are wound on Amidon FT-50-43 (½ inch diameter) ferrite cores,

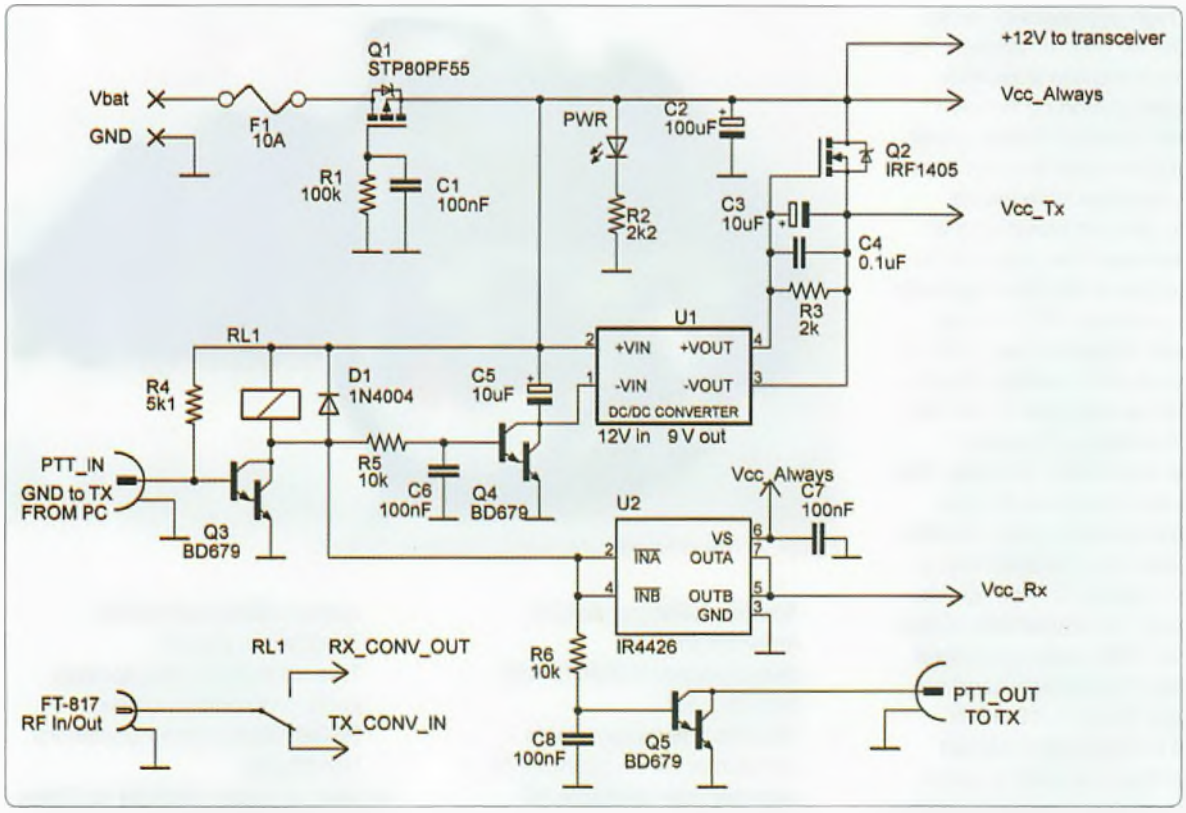


Figure 5: Schematic diagram of the power switching and PTT circuitry. It is important that throughput from DC-DC converter U1 is floating and isolated from the input.

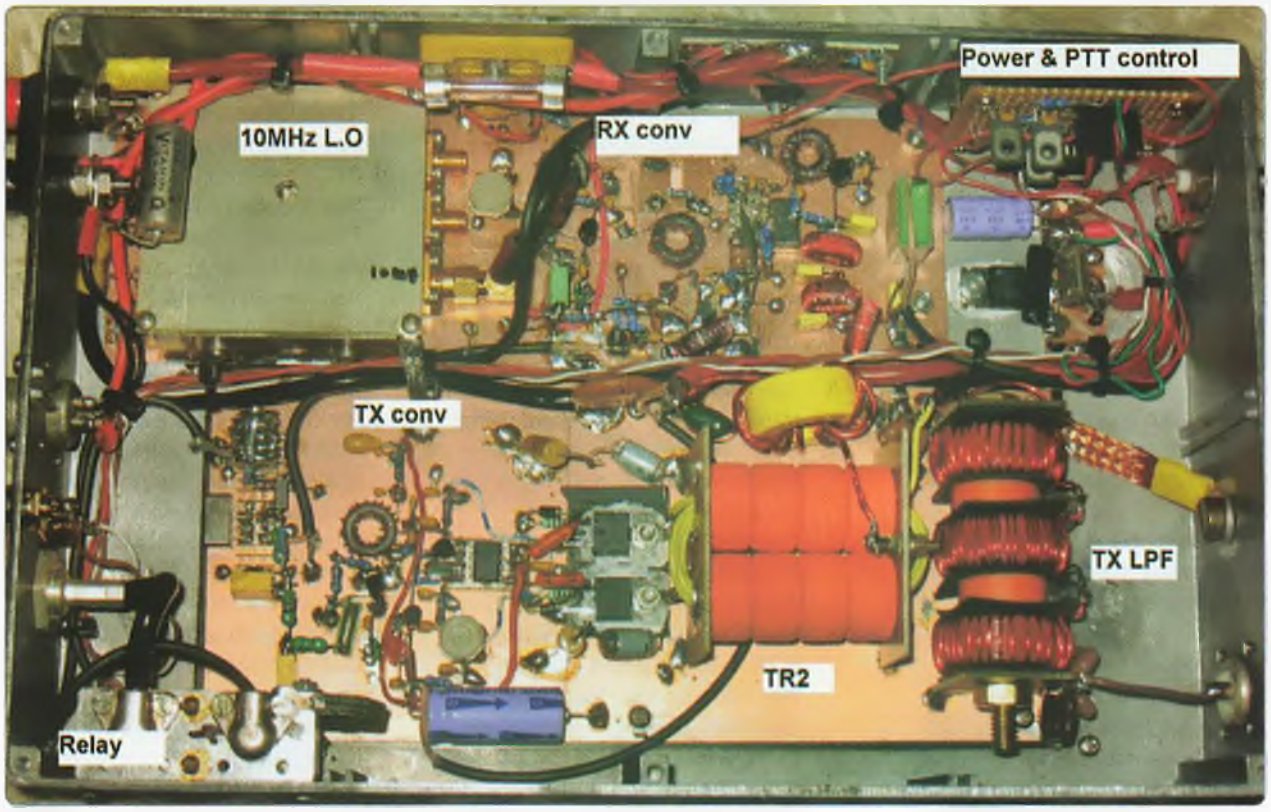


Figure 6: Internal construction of the transverter.

but other high permeability ferrite cores could be used if desired. The receiver front end low pass filter inductors are wound on Amidon T-50-15 iron powder toroids; small axial inductors could be used here if desired, however care would have to be taken to avoid mutual coupling between the inductors in order to preserve the filter response. The more common T-50-2 cores can be used instead of the T-50-15 type; however the number of turns will need to be adjusted to suit the lower permeability of the mix 2 cores. The transmitter low pass filter inductors are wound on Amidon T-106-2 iron powder cores. Amidon toriodal cores are available from a number of suppliers[14]. The toroids used to make the transmitter output transformer (TR2) were purchased from Rockby Electronics[15] and are Phillips type TN19/11/10-3E25 cores, but in retrospect it would have been much simpler to use a ETD-49 or similar transformer core with the appropriate ferrite material.

Conclusion

A design for a MF transverter has been presented. The receive side is very sensitive yet robust, with excellent signal handling capability and it has the useful feature of covering the LF band as well. The transmitter is optimised for efficiency to maximise battery life, but only allows the use of constant amplitude modes. This is not a significant handicap as most of the modes currently used on the MF band fall into this category. While the design is more complex than some, it offers high performance and features that make it easy to use.

I wish to thank Dimitris VK1SV for reviewing this article and for his useful suggestions.

Figure 7: The complete unit with companion FT-817.

Footnotes

1. See *http://www.acma.gov.au/~/media/400%20MHz%20Implementation/Regulation/pdf/Radiocommunications%20Licence%20Conditions%20Amateur%20Licence%20Amendment%20Determination%202012%20No%201.pdf*
2. See *http://www.jumaradio.com/juma/* for an example of commercially available MF equipment.
3. Fldigi can be obtained from *http://www.w1hkj.com/Fldigi.html*
4. For example see 'A transceiver control and audio interface using USB components', *Amateur Radio*, July 2012, Volume 80, No 7. Standard commercial devices are also available, for example, SignaLink *http://www.tigertronics.com/slusbmain.htm*
5. Mini whip details can be found at *http://dl1dbc.net/SAQ/miniwhip.html*
6. The filters used in this transverter were designed using SVC Filter Designer software which is available from *http://www.tonnesoftware.com/*
7. The 2SC2671 transistor was purchased from Futurlec *http://www.futurlec.com.au/*
8. See 'Experimental Methods in RF Design' (ARRL) for full discussion on the feedback amplifiers used in this transverter.
9. A high performance linear transverter is shown here: *http://w4dex.com/projects/EER_Transverter_v2.pdf* This transverter also appears in the 11th edition of the RSGB 'Radio Communications Handbook'.
10. See 'LF today' (RSGB) for Class D amplifier design details.
11. For more details of transformer design see P 60 of 'Solid State Design for the Radio Amateur' (ARRL) and also Motorola Application Note AN749 'Broadband transformers and power combining techniques for RF'
12. See 'Power FET Polarity Protection Scheme' *Amateur Radio*, January/February 2011, Volume 79, No 1 & 2.
13. See *http://www.murata-ps.com/en/nml1209sc.html* for technical details of the DC-DC converter.
14. Amidon cores are available from TTS Systems *http://www.ttssystems.com.au/* and Mini-Kits *http://www.minikits.com.au/* Mini-Kits also stock Mini-circuits mixers.
15. *http://www.rockby.com.au/*
16. The diagram is from 'W1FB's Design Notebook' (ARRL). This book contains a wealth of practical RF construction information.

A homebrew switched attenuator for radio amateur applications

Erich Heinzle VK5HSE

Attenuators, terminations and dummy loads

From time to time, radio amateurs find themselves needing to turn energy in the form of RF into heat with a great deal of precision. To the uninitiated, this may seem to be an unnecessarily complicated way to heat a shack, but there is a method to this madness.

Before proceeding, an interesting historical figure deserves a mention. Count Rumford was the first chap to understand the equivalence of heat and work while observing cannons being bored underwater in 1798. His observations led to our modern understanding of thermodynamics, and form the theoretical underpinnings of dummy loads, terminations and attenuators in the shack.

Converting RF energy into heat in a transmission line termination absorbs power and can prevent reflected signals interfering with other devices. Those old enough to remember 10Base2 Ethernet networks will remember the 50 ohm terminating caps for the ends of RG58 Ethernet segments.

Converting RF to heat in a resistive dummy load can be used as a means of determining output power, by measuring the temperature rise in an insulated mass in which the dummy load is immersed (usually fluid) over time. The Joules delivered to the mass per unit time can then be established, and thereby the power of the RF source.

Similarly, measuring the voltage across a load of known resistance with power applied allows power to be established, subject to diode voltage drops and other measurement errors.

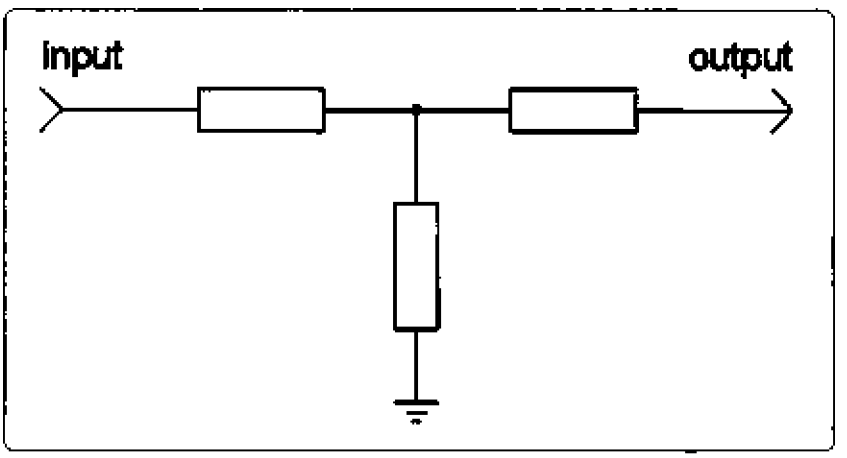


Figure 1: T-network attenuator topology.

Converting RF to heat via a resistive dummy load can also be useful when a power amplifier is being tested or prototyped and radiation of RF via an antenna is undesirable.

Sometimes, measurement devices will be destroyed by high power or voltage levels, and a resistive attenuator is used to provide a known attenuation of input power and voltage, shedding the excess power as heat before RF makes it to the measurement instrument.

Similarly, a QRP operator may need to attenuate the output of a QRO rig to give five watts out, or a receiver may be overloaded by nearby strong signals, necessitating an attenuator in the signal path from the antenna to the receiver.

Step attenuators are, by extension, a series of attenuators designed with DPDT switches in-between which allow a range of attenuations to be provided by switching attenuator networks in and out of the signal path.

Step attenuators can therefore be of use when testing radios, homebrewing or foxhunting. It is no surprise that various step attenuators are commercially available and homebrew versions have been designed and published over the years in amateur radio magazines.

Design considerations for a step attenuator

A step attenuator should ideally provide a purely resistive range of attenuations over the frequency range of interest at the system impedance, which in radio work is usually 50 ohms, thereby minimising SWR. Ideally, additional parasitic capacitance and parasitic inductance should be minimal.

The length of the attenuator should be a small proportion of the wavelength of interest, the attenuation steps should accurately attenuate the amount claimed, and insertion loss should be as low as possible.

Homebrew designs have usually relied on bulky DPDT switches and dead bug style wiring with discrete components and some

associated metalwork to fabricate an enclosure. The performance of such attenuators cannot be reliably predicted owing to the customised nature of construction on each and every unit, and the compromises in resistor value selection for the attenuator networks, which usually employ the E12 resistor value nearest to the ideal value. Switches are often the most expensive part of the device.

When a bulk lot of DPDT switches became available very cheaply, a step attenuator was conceived and designed with a custom PCB allowing it to be reliably reproduced with fairly predictable performance. Parallel resistors were to be used for each of the attenuator networks elements making the resistances very close to the ideal values.

Bearing the aforementioned considerations in mind, a step attenuator was designed with seven stages allowing 1 dB, 2 dB, 3 dB, 5 dB, 10 dB, 10 dB, 10 dB steps to be switched into the signal path, using BNC connectors for input and output, a two sided 1.6 mm FR4 PCB with 1oz/ft^2 copper cladding, and the cheap DPDT switches.

Excessive attenuation in a stage can invite unintended coupling with adjacent attenuator stages, which led to 10 dB being selected as the maximum attenuation any given stage for the presented design.

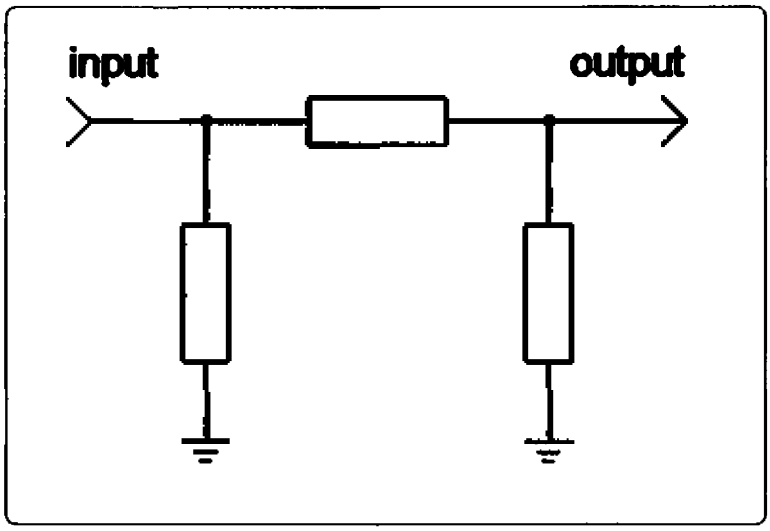


Figure 2: Pi-network attenuator topology.

The chosen attenuator steps allowed an attenuation of anywhere between 1 dB and 41 dB to be selected.

Required resistances – derivation from first principles

Attenuators are usually in a 'Tee' or 'pi' configuration.

T-network and Pi-network topology

A pi network topology was chosen for this project.

Source impedances in amateur radio work are usually 50 Ω and terminating loads usually have a characteristic impedance of 50 Ω.

This requires us to make the input and output impedances of each pi-network attenuator 50 Ω.

If we consider a source with a characteristic impedance (RG) of 50 Ω, and a load with characteristic impedance (RL) of 50 Ω, we need to establish values for R1, R2 and R3 in the pi network which will provide the needed reduction in voltage from V_{in} to V_{out} for the level of attenuation required.

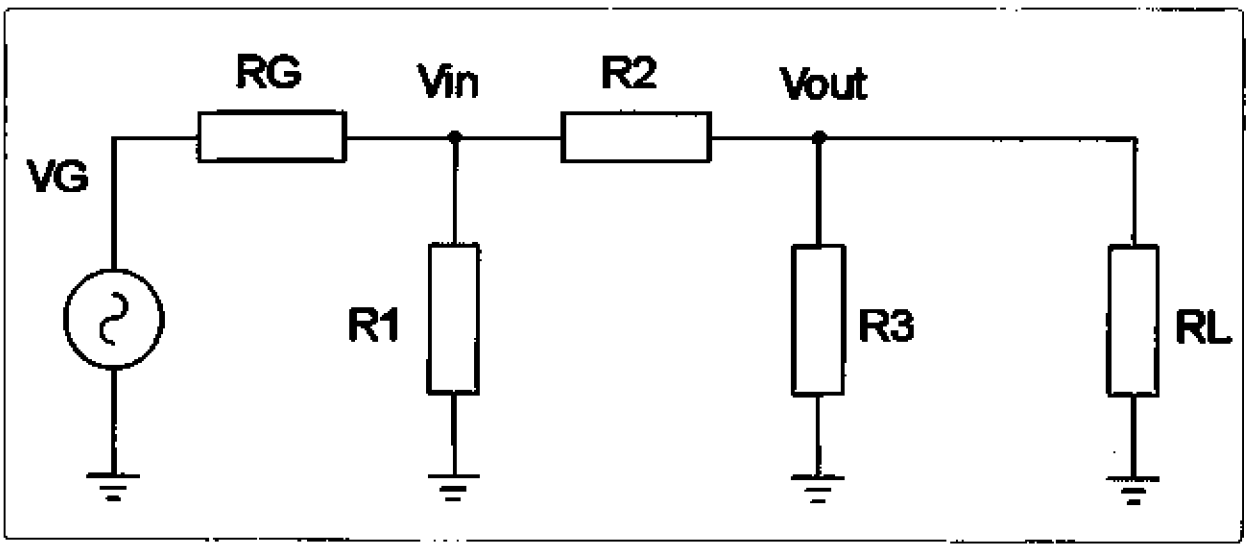


Figure 3: Circuit used for derivation of equations.

Modelling of the attenuator network

Analysis of the network is made relatively simple once it is realised that all currents flowing through the network and the attached load must return to the source via ground.

The sum total of all currents flowing via ground can be represented as follows:

$$I_{R1} + I_{R3} + I_{RL} = I_{RG} (1)$$

Using V=IR, we can re-write (1) as follows:

$$\frac{V_{in}}{R1} + \frac{V_{out}}{R3} + \frac{V_{out}}{RL} = \frac{V_g - V_{in}}{RG} (2)$$

The attenuator network has a 50 ohm input impedance, and the source is a source with 50 Ω characteristic impedance, placing V_{in} in the middle of a voltage divider comprising two 50 Ω resistances. V_{in} is therefore half of V_g. This allows us to simplify (2) as follows:

$$\frac{V_{in}}{R1} + \frac{V_{out}}{R3} + \frac{V_{out}}{RL} = \frac{V_{in}}{RG} (3)$$

The source and terminating load each have a characteristic impedance, Z, of 50 Ω. We can simplify (3) further:

$$\frac{V_{in}}{R1} + \frac{V_{out}}{R3} + \frac{V_{out}}{Z} = \frac{V_{in}}{Z} (4)$$

If the pi-network is symmetrical with the same characteristic impedance at the input and output, it follows that R1=R3. Simplifying (4) further:

$$\frac{V_{in}}{R1} + \frac{V_{out}}{R1} + \frac{V_{out}}{Z} = \frac{V_{in}}{Z} (5)$$

Rearranging (5), we get:

$$\frac{V_{in}}{R1} + \frac{V_{out}}{R1} = \frac{V_{in}}{Z} - \frac{V_{out}}{Z} (6)$$

And rearranging (6) some more, we finally get a formula for R1 and R3

$$R1 = R3 = \frac{Z(V_{in} + V_{out})}{V_{in} - V_{out}} (7)$$

Having derived a formula for R1 and R3, we can now consider the current entering RL; it is the current flowing in R2 minus that flowing away in R3:

$$I_{R2} - I_{R3} = I_{RL} (8)$$

Again, using V = IR, and RL = Z

$$\frac{V_{in} - V_{out}}{R2} - \frac{V_{out}}{R3} = \frac{V_{out}}{Z} (9)$$

Rearranging (9), we get:

$$\frac{V_{in} - V_{out}}{R2} = \frac{V_{out}}{Z} + \frac{V_{out}}{R3} (10)$$

Rearranging (10), we finally get:

$$R2 = \frac{Z \times R3(V_{in} - V_{out})}{V_{out}(R3 + Z)} (11)$$

Having derived the formulae (7) and (11), we are able to determine values for R1, R2 and R3 for any desired voltage ratio.

Knowing that the attenuation L_{dB}, in decibels, where V_{in} and V_{out} are amplitudes, is:

$$L_{dB} = 20 \times \log\left(\frac{V_{out}}{V_{in}}\right) (12)$$

it follows that:

$$V_{out} = V_{in} \times 10^{\frac{L_{dB}}{20}} (13)$$

Where L_{dB} is the desired attenuation in decibels.

For the desired attenuator steps at 50 Ω system impedance, the following Table 1 was created in a spreadsheet using equations (13), (7) and (11) to generate the required values of R1, R2, and R3.

Component Selection

The standard E12 decades of resistance values follow a geometric series. The easiest way to get a value approximating the required value for the step attenuator components within half a percent was to use a pair of resistors. A spreadsheet was used with the equation for parallel resistors (14) and a table of E12 values to generate paired resistor values, from which suitable resistor pairs were selected. See Table 2.

$$R_{parallel} = \frac{1}{\left(\frac{1}{R_a} + \frac{1}{R_b}\right)} (14)$$

The choice of DPDT switches had already been determined by price, with the switch being equivalent to a KNITTER SWITCH MFP-201 N-RA.

Attenuation (L dB)	Vout/Vin	Vin (V)	Vout (V)	R1 Ω	R2 Ω	R3 Ω
1dB	0.891	1	0.891	869.55	5.7692	869.55
2dB	0.794	1	0.794	436.21	11.615	436.21
3dB	0.708	1	0.708	292.40	17.615	292.40
5dB	0.562	1	0.562	178.49	30.398	178.49
10dB	0.316	1	0.316	96.248	71.151	96.248

Table1: Step attenuator pi-network design values.

Required value (ohm)	Ra (Ohm)	Rb (Ohm)	parallel value (Ohm)	Error (%)
869.55	1000	6800	871.80	-0.26
436.21	680	1200	434.04	+0.50
292.40	2700	330	294.06	-0.57
178.49	180	22000	178.54	-0.03
96.248	150	270	96.429	-0.19
5.7692	6.8	39	5.7904	-0.37
11.615	12	390	11.642	-0.23
17.615	18	820	17.613	+0.01
30.398	33	390	30.426	-0.09
71.151	82	560	71.526	-0.53

Table 2: Parallel E12 resistor values approximating required values for R1, R2, R3.

The BNC connector chosen was a 50 Ω right angle connector, the Molex SD-73100-0105. If substituting a BNC connector with the same footprint, make sure it is not a 75 Ω connector.

PCB design

PCB design was undertaken in gEDA, the open source software PCB design suite available for most flavours of Unix, including GNU/Linux, and Mac OS X.

Custom PCB design and fabrication allows footprints to be developed for surplus or available components very easily, which was quite advantageous. Subsequent changes to footprints to suit cheap BNC connectors or switches can also be done simply and easily if necessary.

gEDA exports industry standard gerber files, as well as various graphics formats, allowing a PCB to be produced either commercially, with CNC PCB milling, or at home with iron on transfer resist techniques. In this case the gerber design files were sent off for manufacturing.

The open source 'gerbv' gerber viewer software is worth installing too, to review output files before sending them off for manufacture.

The design uses a transmission line running from the input to the output interspersed with DPDT switch footprints. The transmission line dimensions were naively determined with an on line transmission line calculator assuming a widely quoted FR4 relative permittivity of 4.0.

I have since learnt from Jim Tregellas, VK5JST/VK5TR, that the permittivity of FR4 varies quite a bit, and the transmission line should ideally be a bit narrower, around

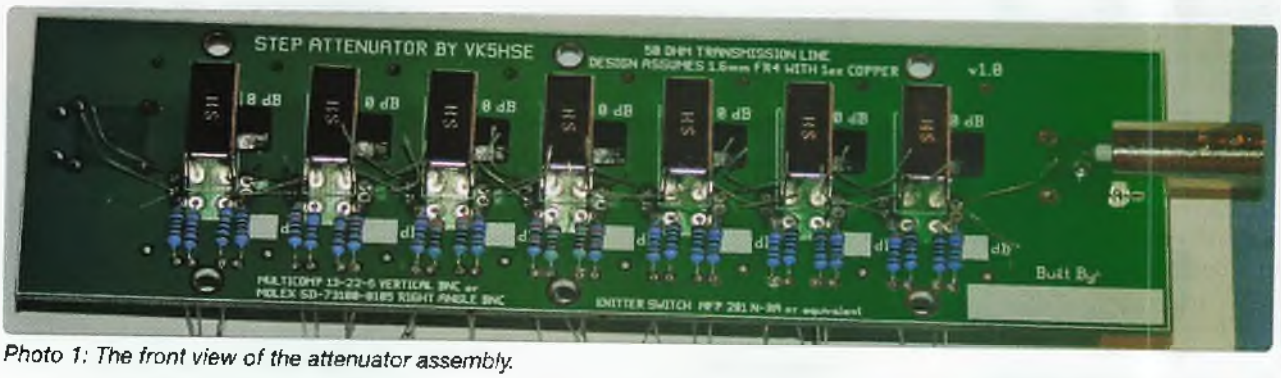


Photo 1: The front view of the attenuator assembly.

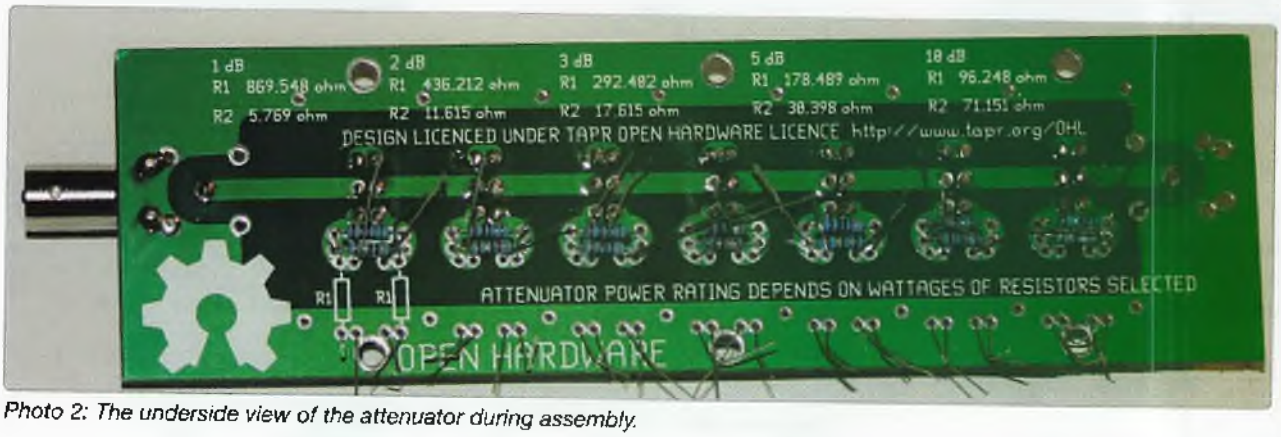


Photo 2: The underside view of the attenuator during assembly.

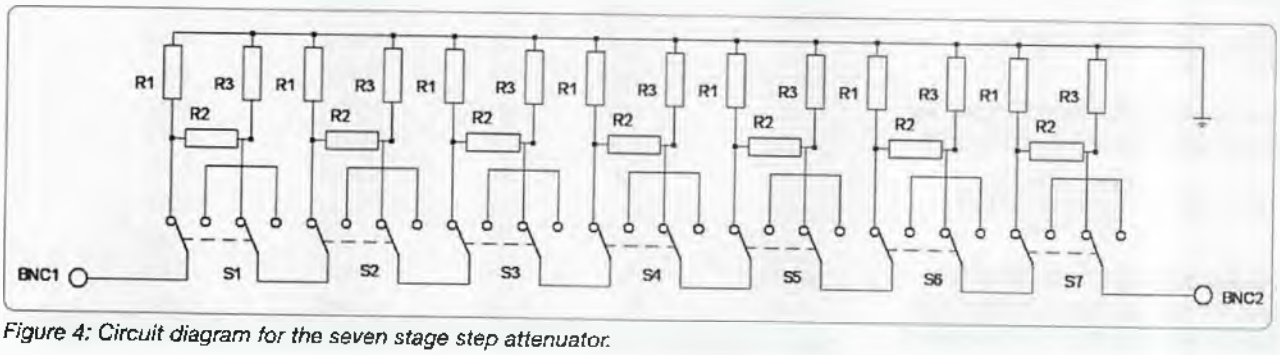


Figure 4: Circuit diagram for the seven stage step attenuator.

2.36 mm (93 thousandths of an inch), based on a permittivity of FR4 of around 5.1 or 5.2 for general HF and VHF applications.

The BNC footprints were based on the cheap, readily available 50 Ω right angle BNC connector, the Molex SD-73100-0105.

Copy and paste techniques were used once a single BNC footprint and a single attenuator stage had been designed in 'PCB', the layout editor. The usual precursor to PCB design, the generation of a circuit diagram in the circuit editor 'gschem', netlist generation, and PCB parts placement was not done as the design was so simple.

In the absence of a schematic, the 'PCB' software tool allows a PCB to be designed in a manner not dissimilar to painting and graphics software, which is very handy for simple projects such as this.

The following schematic on Figure 4 was however generated for this article.

Construction

Once the boards had arrived from Hackvana, soldering ensued. Switches were installed first. The R2 pairs were installed on the bottom side, to fit under the switch bodies, and the R1, R3 pairs were installed on the top side of the PCB.

Care must be taken when flipping the PCB over so one does not get left and right mixed up and mess up the placement of resistors for the respective attenuator networks.

It would pay to use a multimeter to confirm the values before soldering, as a completed pi network is harder to visually troubleshoot, particularly if using 1% five band resistors.

Once the resistors have been installed, the BNC connectors can be fitted. The thin oxide layer on plated connectors and terminals sometimes resists wetting with solder. If this is the case, some gentle scratching of the area to be soldered beforehand will facilitate flux action and soldering.

Resistance (Ohms)	4 Band Colour Code (5%)	5 Band Colour Code (1%)
6.8	Blue Grey Gold Gold	Blue Grey Black Silver Brown
12	Brown Red Black Gold	Brown Red Black Gold Brown
18	Brown Grey Black Gold	Brown Grey Black Gold Brown
33	Orange Orange Black Gold	Orange Orange Black Gold Brown
39	Orange White Black Gold	Orange White Black Gold Brown
82	Grey Red Black Gold	Grey Red Black Gold Brown
150	Brown Green Brown Gold	Brown Green Black Black Brown
180	Brown Grey Brown Gold	Brown Grey Black Black Brown
270	Red Violet Brown Gold	Red Violet Black Black Brown
330	Orange Orange Brown Gold	Orange Orange Black Black Brown
390	Orange White Brown Gold	Orange White Black Black Brown
560	Green Blue Brown Gold	Green Blue Black Black Brown
680	Blue Grey Brown Gold	Blue Grey Black Black Brown
820	Grey Red Brown Gold	Grey Red Black Black Brown
1000	Brown Black Red Gold	Brown Black Black Brown Brown
1200	Brown Red Red Gold	Brown Red Black Brown Brown
2700	Red Violet Red Gold	Red Violet Black Brown Brown
6800	Blue Grey Red Gold	Blue Grey Black Brown Brown
22000	Red Red Orange Gold	Red Red Black Red Brown

Table 3: Resistor colour codes.

Performance

Initial DC testing with a multimeter was encouraging, with a 50 Ω reading displayed for various combinations of attenuation.

Further testing was undertaken with an N2PK vector network analyser by Barry Williams VK5BW, to establish to what extent the design departed from ideal, purely resistive 50 Ω behaviour at HF frequencies and beyond. The attenuations were within 0.1 dB of the actual attenuation selected.

Results are summarised in Table 4. The attenuator performed best when more than 5 dB of attenuation was selected.

Barry VK5BW undertook further tests with a spectrum analyser and HP slotted line at 150 MHz, finding an insertion loss of 0.15 dB and also that the 5 dB and 10 dB attenuators continued to provide accurate attenuation steps. Finally, Barry VK5BW estimated bleed through at 150 MHz to be less than 1 dB with all of the attenuators switched in. VSWR rose to 1.85:1 at 150 MHz.

For detailed results of tests, see reference 3 below.

Conclusions

A simple, cheap yet fairly accurate step attenuator has been presented with reasonable

Frequency range	Attenuation settings	Return Loss (at worst)	VSWR
0-48 MHz	0 dB	28 dB	< 1.08:1
	1 dB, 3 dB, (1+2) dB (1+2+3) dB	29 dB	< 1.07:1
	5 dB	39 dB	< 1.03:1
48-60 MHz	0 dB	27 dB	< 1.1:1
	1 dB, 3dB, (1+2) dB (1+2+3) dB	26 dB	< 1.1:1
	5 dB	34 dB	< 1.04:1
0-60 MHz	More than 5 dB, i.e. 15 dB, 25 dB, 35 dB	39 dB	< 1.02:1

Table 4: VK5BW's VNA test results.

performance up to 48 MHz for most attenuation settings, and reasonable performance to 60 MHz for attenuation settings in excess of 5 dB.

Caution should be exercised in relation to the amount of power attenuated so that it does not exceed the power ratings of the resistors used. Input voltages should not exceed seven volts RMS if half watt resistors are used.

Vertical, but more expensive, DPDT switches would allow the unit to be built into an enclosure with a lid.

For less exacting applications such as foxhunting, the presented design could form the basis for a shortened version, with fewer attenuator stages.

Finally, it is hoped that the reader has been encouraged to start exploring some of the open source PCB design tools, including gEDA and the other main option KiCad, on free, open source software operating systems such as GNU/Linux. The barriers to PCB design on a whim when the right component comes along have never been lower!

I would like to extend my thanks to Barry Williams VK5BW and Jim Tregellas VK5TR for their input in the design and testing of the step attenuator.

Kits are likely to be available from aztronics.com.au as I now have 993 switches left over...

References

1. Bramwell, Denton K7OWJ (1995), A RF Step Attenuator *QST, 79(6)*.
2. Shriner, Bob WA0UZO and Pagel, Paul, K. N1FB (1982) A step attenuator you can build *QST 66(9)*.
3. Results of scans on Erich Heinzle VK5HSE switch attenuator (see the *AR* web page for this issue).

Icom makes Strictly Ham Bayswater's Grand Opening a day to remember

Jessica Brinsdon - Icom (Australia)

The team from Icom Australia together with Ross VK3MY (third from right).

On Saturday 7 December, Icom held its first *'Icom Day'* for many years to help celebrate the official opening of the new Strictly Ham store in Bayswater. The event was extremely well received by amateur radio enthusiasts throughout Melbourne and Australia.

On the day there were free radio health checks conducted by Icom factory service technicians for customers who brought in their Icom radios, together with a free sausage sizzle and promotional giveaways.

The event was a great success for Icom and Strictly Ham, with over 200 people joining the event throughout the day, including well known industry personalities, members of various local and interstate radio clubs, and organisations such as the Wireless Institute of Australia. The Melbourne Amateur TV Group (ATV) were also filming on the day and streaming the event live to their repeater and the BATC web site.

Icom also had on display the latest commercial HF radio IC-F8101 with demonstrations by Icom staff.

Comments from customers who attended the event likened it to a hamfest, with the opportunity to chat to other amateur enthusiasts and to seek advice from Strictly Ham and Icom on various products and the latest communications technology. The success of the event has also created possibilities for similar events in the future.

To find out more information on Icom's Amateur radio products please visit *http://www.icom-australia.com/*

VK QRP club celebrates 30 years

Garry Cottle VK2GAZ

The Australian VK QRP Club celebrated its 30th birthday in December 2013. With its motto *'We do more with less'*, the club aims to advance the use of all modes of low power communication and encourage home-brewing in the amateur radio service.

Because it promotes low power (five watts or less) in all communication modes the CW Operators' QRP Club is perhaps now better known as the VK QRP Club.

Photo 1: Len O'Donnell VK5ZF SK.

Alive, active, and continually growing, the club keeps its members informed with its quarterly publication Lo-Key and its regularly updated website. In addition the club's weekly SSB Natter Net and CW Net, using any power level, are very active. Several international members, and others, have claimed the milliwatts per kilometre (MPK) award.

Photo 2: Jack Swiney VK6JS SK.

Founded on 12 December, 1983 by Len O'Donnell VK5ZF SK, the present club rose from the ashes of the VK CW QRPp Club. The latter, started in 1979 by Jack Swiney VK6JS SK, unfortunately closed three years later.

Now with a combined international and Australian membership of 255 amateur radio operators and SWLs, the VK QRP Club will soon celebrate its 30th birthday and has reached the milestone of 120 issues of Lo-Key.

We invite you to celebrate with us. More details are available on the club website *www.vkqrpclub.org* Club membership is available to anyone interested in QRP (five watts or less) operating or home-brewing. Email the club Secretary at *secretary@vkqrpclub.org*

Silent Key

Douglas John Temperley VK2BKT

I am sad to report the death of Douglas John Temperley, on 26 August, 2013.

Douglas was born in 1919 at Hurlstone Park. At the age of seven he moved to north Queensland with his family and lived there until he was 21. In 1937 he commenced an electrical apprenticeship at the Tully sugar mill. The apprenticeship was transferred to Brisbane for the final two years. He was engaged as an electrical fitter working on American Liberty ships during the war. He finally obtained release from manpower and joined the RAAF. He received basic training as a pilot at Bradfield Park and later transferred to Dubbo before being discharged in 1945. Douglas then worked for various electrical firms in Sydney during which time he attended Sydney Technical College at night and obtained a Diploma in Radio Engineering.

He was employed as a Technical Training Officer by the Department of Civil Aviation. After that he joined the Ionospheric Predication Service at the Rocks in Sydney as an engineer. In 1956 he worked at the Weapons Research Establishment in Woomera and in 1959 transferred to Salisbury, SA, in charge of the electronic workshop. In 1961 Douglas returned to Sydney to the Overseas Telecommunications Commission (OTC) as an engineer in radio communications. He visited coastal radio stations with several trips made to New Guinea and the satellite earth stations in Ceduna, SA, and Carnarvon, WA. There were frequent visits to Norfolk Island establishing a radio telephone service. Also several visits were made to Christmas Island (Indian Ocean). In 1972 he was seconded to the United Nations based in Suva, Fiji. He also travelled extensively around the south Pacific to Nauru, Vanuatu, Tonga, Gilbert & Ellis Islands, Western Samoa, Cook Islands and New Guinea. He then returned to OTC, Sydney. Douglas was then seconded to Australian Developmental Aid, Kingdom of Tonga, to conduct an investigation into radio equipment.

Douglas left OTC and joined the Department of Transport based in Canberra dealing with ship to shore communications. In 1979 he attended the World Administrative Radio Conference in Geneva, Switzerland. He then returned to Sydney.

In 1972 Douglas became interested in amateur radio and obtained the callsign VK2BKT. He joined the Lyrebird Net on the NSW south coast and was active in club outings, barbeques, functions and the like.

In retirement Douglas achieved a lifelong ambition and gained his pilot's licence. He took family and friends on many flights. Another passion of his was snow skiing.

Douglas is survived by Halloween, his wife of 63 years and their three sons and their families.

Contributed by Kevin VK2BJK.

A DXer is born!

Jean Fisher VK3VIP and Donna Ireland VK3FRET

Figure 1: The T33A website where most major details of the DX station are found.

Newly licensed F call Donna VK3FRET and her first HF contact

One of the hardest things for any new amateur is getting onto HF. So when Donna VK3FRET made her first ever HF contact, with T33A, it was an event to remember.

With a little help from her friends news of the DX station was heard via Skype as you can see in Figure 2.

Donna's husband Steve VK3VM then encouraged her to have a go and despite some initial flutters in her tummy she prepared to make the call. Donna adjusted her transceiver to 10 watts and with help from a prepared script gave a call as detailed.

To call

First announce your callsign.

VK3FRET...say this after the station has called CQ or QRZ.

Response to station

T33A VK3FRET. You are 5 and 9, 5 and 9. My name is Donna. How do you read me? T33A VK3FRET.

Closing

T33A VK3FRET thanks for the QSO. 73. T33A VK3FRET.

John VK3DQ heard the QSO and as her assessor was ecstatic that she was able to establish communication with T33A, at around 2240Z. This was subsequently confirmed with an entry in their online log, refer Figure 3.

So, some advice for new operators.

- Listen and use the DX Clusters to understand when the various bands are open.
- Listen to others. Amateur radio is a social activity and others will be willing to help you.
- Listen to repeaters, and learn to use the DX Clusters.
- Have a pad of paper and a couple of good pens so you can take notes of stations calling.
- Write a brief script if it helps.
- When you hear the DX station say CQ or QRZ then respond by saying your callsign clearly using phonetics if the conditions are not the best.

But most of all...don't panic. Just do it. Enjoy.

Figure 3: The 'Club Log' website confirming that the QSO was indeed successful.

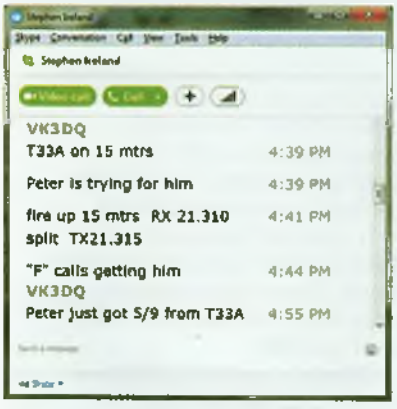


Figure 2: The Skype screenshot indicating the presence of T33A on 21,310 MHz listening 21,315 MHz.

Photo 1: Donna VK3FRET.

Archive activities - An occasional report on collecting our history

Peter Wolfenden VK3RV – Committee Leader, WIA Historical and Archives Committee

The archive team continues to identify and record details of historical material donated to the institute. Items often take the form of single documents such as a recently donated 1913 licence which will help future researchers to understand the operating conditions of early experimenters. Other recently acquired material has added significantly to our understanding of the development of amateur radio and the WIA – all parts of an ever expanding jigsaw puzzle.

For example, a copy of minutes for the 1927 Federal Convention held in Adelaide was recently made available by the Adelaide Hills Amateur Radio Society (AHARS). That, in itself, helped to fill a gap in our collection of AGM documents, but reading further into the pages, it was interesting to note that Wally Hannam, (the seconder of the motion to establish the Institute of Wireless Telegraphy in Sydney in 1910, from which the WIA grew) was still very active in the administration of amateur radio.

The location of AGMs and the provision of a Federal Executive for some years rotated between the States or Divisions. In 1926 the Executive was located in NSW where Phil Renshaw (2DE) was President and Wally Hannam (2YH) filled the position of Secretary.

Wally Hannam's activities in radio and electronics should be

Photo1: An image from the WIA exhibition in Melbourne, September, 1932.

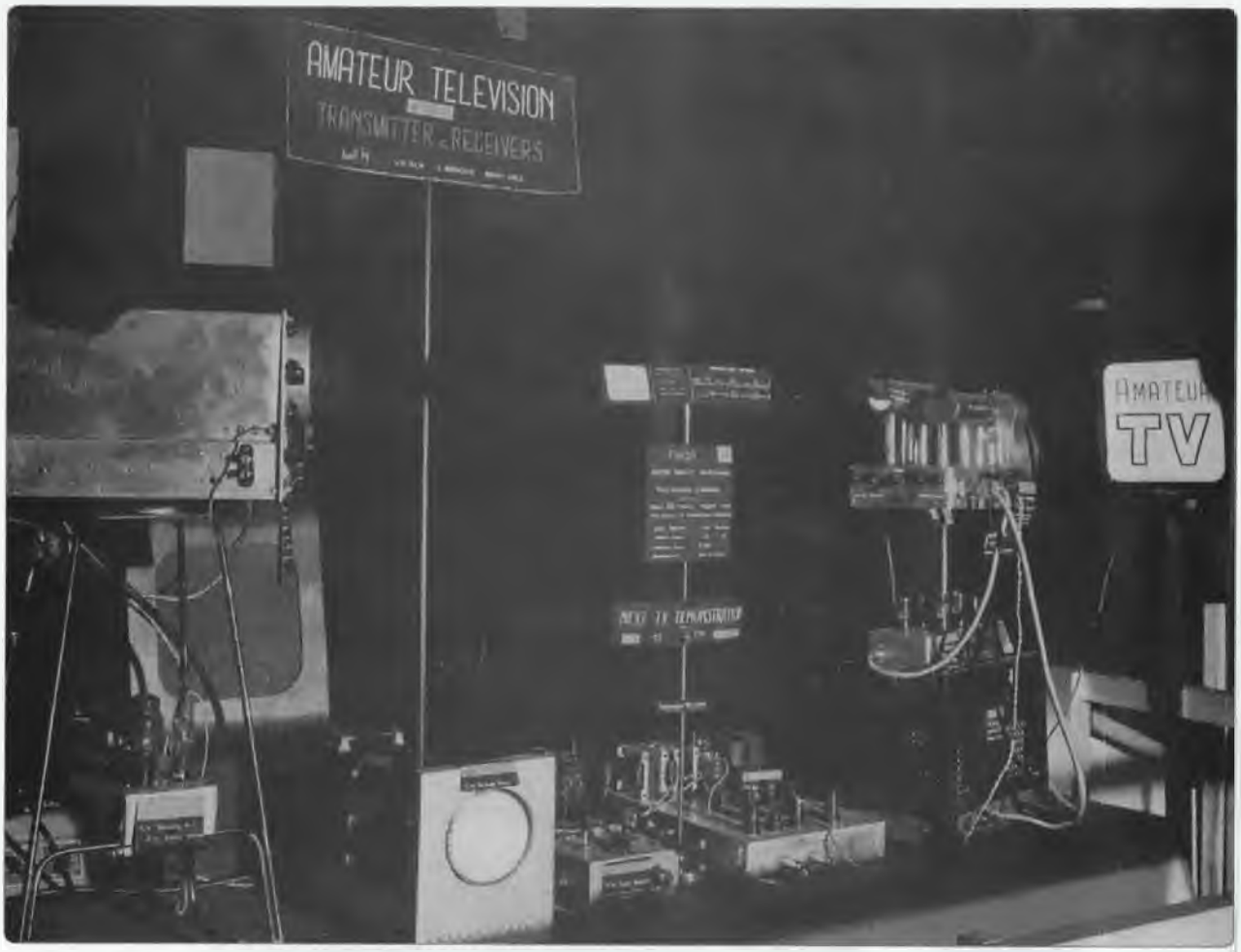


Photo 2: A view of the ATV demonstration provided by Len Moncur VK3LN circa 1949.

well remembered by all Australian amateurs. If it were not for his enthusiastic interest in private wireless communications, our hobby and national organisation may not have come into existence. His association with George Taylor and personal exasperation with those in charge of the radio spectrum pre 1910 gave birth to this Institute. But Wally did not stop with his initial pre WWI interest. After the war and his involvement with Mawson's 1911-12 Antarctic Expedition, he was involved with public radio exhibitions and is included in a photograph of the 1923 Wireless Exhibition Committee (page 65 of the *WIA Book Volume 1)* and again in May 1962 *Amateur Radio* magazine where he is shown as guest of honour at the opening of the WIA NSW Crows Nest re-development.

Walter Hannam (VK2AXH) died in March 1965, his journey through amateur radio contributed greatly to the life of amateur radio in this country and in particular, this Institute.

On another subject, a good photograph can contribute to understanding history very quickly. Labelled and dated photos are quite rare! But occasionally interesting images, together with identification come our way. The first archive photograph is from a Victorian Division Exhibition held in the Lower Melbourne Town Hall in 1932. The equipment represented 'state of the art' at that time – no commercial gear then!

Then in 1949, a demonstration of amateur television was made from the stage of the Melbourne Exhibition by Len Moncur VK3LN; this was six years before television broadcasting commenced in Australia.

If you have photographs or documents which you think might be of interest to the WIA Archive, please contact me via the WIA office in Bayswater, or email *vk3rv@wia.org.au*

Plan ahead **John Moyle Field Day** **15 - 17 March**

VK3 news Amateur Radio Victoria

Jim Linton VK3PC
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Office reopening and AGM

The volunteer office staff will be back on the job on Tuesday, 4 February.

Notices of Motion for the Annual General Meeting to be held on Tuesday 13 May, at 40g Victory Boulevard, Ashburton, must be signed by at least three members. Nominations for the Council term for 2014-17 must be on the prescribed form available from the Secretary. Each candidate must agree to serve, be financial and nominated by two financial members. Both must be in the Secretary's hand not less than 90 days before the AGM.

National Parks Award – then and now

The aim of the Keith Roget Memorial National Parks Award has always been to encourage portable operation in Victoria's National Parks. The Award started around 1970 as the Victorian National Parks Award. A force behind it was Keith Roget VK3YQ SK, a portable operator, who joined the WIA Victorian Division Council in 1960 after serving in World War II as a navigator wireless operator. A staunch WIA supporter, Keith at various times held the positions of Treasurer, President and Secretary for Victoria. He joined the WIA Federal Executive in 1973 and was crucial in the set-up of the new WIA federal company. Keith was Federal Treasurer until his work as an accountant took him overseas. Working tirelessly for the WIA over a long period, in a style unassuming to most members, he was made a WIA Life Member in 1979. He died on February 13, 1980.

Wanting to keep the ideals of the Award, his widow Jean agreed in the mid-1980s that it was fitting it be renamed in his memory as the Keith Roget Memorial National Parks Award (KRMNPA).

Discussions were held with Parks Victoria which notified its regions and rangers that they may expect to see amateur radio activity in National Parks. Roger Baker VK3BKR was made its custodian. The Award was further revamped in September 2008, covering Victoria's 45 National Parks with the manager being Chris Chapman VK3QB. Thank you to both for your efforts.

In 2009 a new member of the Amateur Radio Victoria Council Tony Hambling VK3VTH showed plenty of interest in portable operations using his station. Soon he became the Awards Manager which included the KRMNPA. One of his first major tasks was to promote the Award, which included the annual activation period in November. It proved to be a huge success for the Centenary Year of 2011, and has been held each year ever since. With perfect weather conditions in 2013 a record number of portable stations set up and logged many contacts.

Tony VK3VTH says a very enthusiastic group of radio amateurs activated 26 unique VK3 National Parks across the three days from Friday to Sunday. Activators included interstate 'guests' from across the border John Williams VK2AWJ, Larry Munns VK5LY, Paul Simmonds VK5PAS, Col Huon VK5HCF and Tom Aubre VK5EE. Their huge effort was most appreciated.

Also this year Tony VK3VTH reports what he believes is another first, the husband and wife team of Joe VK3YSP and Julie Gonzales VK3FOWL who activated Churchill and Dandenong Ranges National Parks and were kept busy across the weekend; a further well done is

The certificate belonging to Deane VK3TX, issued way back in March, 1971.

extended to Julie VK3FOWL who recently joined the amateur ranks after 30 years as a second operator.

Not to miss this third annual event was Peter Fraser VK3ZPF who described it as a fantastic weekend. He personally activated three National Parks and chased 14 others in the parks, to log 100 QRP and 14 QRO QSOs.

During the weekend of portable activity QRP DX QSOs included those into the Cook Islands, USA, Germany, England and New Zealand.

Another of the many chasing the Award was Peter Watkins VK3TKK, who managed to get his tally up and an application is on the way. He and many others enjoyed the fun.

The 2014 activation weekend is November 14-16. However activations are encouraged throughout the year, but keep in mind the summer fire season, particularly in some of the more remote parks.

The rules acknowledge those holding the original or subsequent earlier versions of the award are able to claim credit if they satisfy the Award Manager. Full rules and other resources are available on the Amateur Radio Victoria website.

History is important. Tony is gathering old Parks Awards Certificates or photographs from early activations that can be scanned should be sent to him at *vk3vth@amateurradio.com.au*

We thank Deane Blackman VK3TX for his Certificate 15 issued on 12 March, 1971 – the first endorsed for CW only contacts.

To further support the KRMNPA radio amateurs activating National Parks are asked to publicise in advance their intention, through both the Amateur Radio Victoria website plus the user group *http://au.groups.yahoo.com/group/krmnpa/*

The Victorian Local Government Award is also initiated by Amateur Radio Victoria to encourage on air activity based on communicating with and between the state's 79 local government areas. It is particularly popular with those engaged in KRMNPA activity.

Analogue television era ends

To mark the closure of five analogue transmitters in Melbourne an interesting story on the history of television in Australia was prepared for the digitised repeater VK3RTV. Australia's final switch-over saw those transmitters on Mount Dandenong turned off for good on Tuesday, December 10, 2013. The moment of closure was captured. It was an opportunity in history that could not be missed. The program traced the very early days on TV that dates back to 1929 when Radiovision was first shown in Melbourne. Among the early exponents of TV were radio amateurs who had it on public show before the government finally allowed it to begin. The program traced the late arrival of ABC and commercial telecasts in 1956, the adoption of colour transmission and finally digital transmission.

Education for all ages

A quality Foundation licence training class with written and practical assessments will be held in February at centrally located Ashburton. Experienced trainers take prospective candidates through all they need to know for the entry level licence. Each session usually attracts a mixed gender and age demographic. Safety and interference avoidance skills will be taught. The instructor using commercially made equipment also demonstrates how to put together a station and operate it without causing interference to others.

Candidates also need to know how amateur radio fits in the many other uses of the spectrum, the licence conditions, technical basics of electricity and electronics, transmitters, receivers, feedlines, connectors, antennas, propagation, electromagnetic compatibility (EMC) and electromagnetic radiation (EMR).

The basic theory and radio practice book, Foundation Licence Manual, is available for $26 through the post at shop.amateurradio.com.au

The next session at 40g Victory Boulevard, Ashburton, will be held on 15-16 February, 2014. To enrol contact Barry Robinson VK3PV at *foundation@amateurradio.com.au* or on 0428 516 001.

Over to you

December AR

Dear Peter,

Congratulations to you and the Publications Committee for an excellent December edition of AR magazine – couldn't put it down!

Thank you in particular though to the contributors - your efforts were really appreciated. In particular, Graham Byrnes' Transverter Systems, John Titmuss' Review of Videomate U620F DVB/SDR, Peter Parker's A Triband End-Fed Wire Antenna for QRP Portable, Kevin Parkins' Antenna Tuners, and Jim McNabb and Michael Romanov's A High Performance Antenna System for the VK/ZL Trans-Tasman Contest 2013 were superb reading. Similarly, the WIA News article A Foray into the Do-It-Yourself World gave a glimmer of light into the future of our hobby.

However, it was Dr Hank Prunckun's Pair Ranked Analysis that really caught my attention. Not only was the article well written and entertaining, it was a good lesson in grounding for those of us who get so absorbed into the technicalities that we miss the simple solutions. Congratulations Dr P, and thank you for sharing.

Cheers,

Mark Bosma VK6QI/2

Bowning NSW

VK7news

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

VK7 EMCOMM news

Early December 2013 saw four amateur radio operators (VK7FEET, VK7HSE, VK7RT and VK7TW) involved in Exercise Huddle organised by the Tasmania Fire Service. Over 450 fire-fighters, staff and volunteers were involved from around VK7. The Incident Management Centre was set up as it would be for a level three incident and the Operations Room including the radio operating position. In a major logistics exercise the four strike forces were sent around four locations in greater Hobart and briefed about what happens during a major incident like the Dunalley fires early in January 2013. It was a positive and collaborative exercise.

Photo 1: Exercise Huddle wrap up from the Chief Officer and Minister. Photo courtesy of VK7TW.

VK record

Congratulations to Rex VK7MO/3, David VK5KK/3 and Derek VK6DK who extended the 10 GHz digital record to 2293.3 km, from VK3 to Torbay near Albany in VK6. On ya Rex!

2014 VK7 regional news

After the Sunday 9.00 am WIA National News broadcast there is the VK7 Regional News broadcast at 9.30 am. This goes out on the local two meter repeaters all around VK7 along with 3.57, 7.140, 14.130, 28.525 and 52.125 MHz so there are plenty of options to listen to local amateur radio news from around VK7. For more information take a look at the website: *http://groups.yahoo.com/groups/vk7regionalnews/*

Save the date

The 2014 'Meet the Voice' barbecue will be held at Ross in the caravan park on Sunday 22nd March, 2014. Presentations start around 11 am EDST and the barbecue around noon. Registration is $5 per amateur licence holder and family with all profits from the event going to repeater maintenance around VK7.

Repeater news

The premier VK7 repeater VK7RAA on Mt Barrow has been the focus of much work and effort over the last few months with Joe VK7JG and his band of repeater repair technicians, including VK7CH and VK7PD, installing new preamplifiers, repeaters and switchable antennas. This also included some repairs after the electrical substation sustained a lightning strike causing the facility to remain on generator for an extended period of time.

Given the severe winter a maintenance trip to VK7RBH on Ben Lomond by Al VK7AN, Joe VK7JG and Peter VK7PD was undertaken. A solar panel was found to be cracked by falling flag ice and it is planned to replace it before winter 2014. Some repairs to the building were performed and the repeater system performance checked and found to still be within tolerance.

The new tower for the Mount Duncan repeater VK7RMD has been constructed and hot galvanised thanks to Dion VK7DB and his eager team of tower constructors and is ready for installation along with a new one kW solar array. These items will be airlifted onto the mountain early in 2014. This will make for a very professional installation that will last many years.

Northern Tasmania Amateur Radio Club

Congratulations to Lyn VK7FROG, XYL of Kevin VK7HKN who received an early Christmas present along with Laz VK7FLAZ who passed his Standard amateur radio licence examination and has applied for VK7LAZ. The end of November saw five people assessed as part of a two

week Foundation Licence course in the NTARC Rocherlea clubrooms. Congratulations to all five who successfully passed including Paul VK7FAAV and Greg VK7FLTR.

The NTARC Education Officer, Peter VK7PD, is looking for expressions of interest from anyone wishing to upgrade their licence. Peter is planning to start classes on Saturday 1st February. These classes will run for six consecutive Saturdays and then the 7th Saturday will be the assessment day. Classes will commence at 9.30 am and finish at 4.00 pm. If interested please contact Peter by email at *pdowde@bigpond.com*

The NTARC Christmas gathering at Myrtle Park was attended by the author last year and what a fantastic location! The campsites are in a Myrtle tree grove right next to a wonderful river that saw Barry VK7BE catch three trout in about an hour. Barry was awarded the Slippery Trout award from President Lewis VK7FLPL. The BBQ was stoked up thanks to Andrew VK7AAB and a wonderful dinner was had by all. The raffle was drawn by yours truly and many members camped the night in their well-appointed camper vans and some delicious homemade sweets finished off the night well.

Photo 3: Equine Endurance State Championships radio base – LtoR: Wayne Hodge, Rick Polden VK7RI, Norm Thorley VK7KTN, Malcolm McIntosh VK7XS and Peter Dodd VK7KPC. Photo courtesy of VK7ARN.

Cradle Coast Amateur Radio Club

The last weekend in November 2013 saw members of CCARC, NTARC and WICEN Tasmania (South) provide 13 safety communications checkpoints for the Tasmania Equine Endurance Riders Association State Championships held at Sassafras. 76 competitors took part with 21 riders on the 160 km ride and 55 riders in the 95 km ride. The weekend went well and some great feedback was received from the organisers.

Photo 2: NTARC Christmas BBQ at Myrtle Park. Photo courtesy of VK7TW.

Radio and Electronics Association of Southern Tasmania

REAST will be running a five week upgrade course for upgrading to Standard/ Advanced in February 2014; if you are interested then please contact our learning organiser Reg Emmett VK7KK on mobile 0417 391 607, or via email on *regemm@ozemail.com.au* Please note that the 2014 REAST Annual General Meeting will be held on Sunday 16 February at 11.00 am in the Queens Domain clubrooms, Hobart.

In November 2013, two representatives from the Tasmania Police Bomb Response Group gave a hands-on presentation of their equipment and technology. This included two robots – the large wired robot called Eric with articulated arm and a smaller radio controlled robot for small spaces. There were explosive injection devices, protective explosive suits, X-Ray machines and a very well appointed van that it all packs into. A huge thank you to Scott and Bernard for their time.

Our December BBQ was popular including a recent arrival in Hobart in Kevin Madden aka 'Zak' who we welcomed. Zak has held many callsigns around Australia and recently returned from many years teaching in China. There was also some swift trading in the pre-loved equipment area.

The DATV Experimenters' nights continue to show the depth and breadth of this wonderful hobby with show and tell including Rex VK7MO on sun noise and measurement and the on-screen 'live' construction of a 20 W HF linear amplifier (HPSDR - Penny Whistle) over three nights including the setup and testing, remote controlled cameras and 630 metre ATU. Our video presentations included the presentation by Phil Tompson VK7SS on lighting and surge protection and the Jan King W3GEY/VK4GEY presentation called AMSAT – Past, Present and Future and Ham Nation presentations.

Photo 4: Tasmania Police Bomb Response group presentation with Eric the robot. Photo courtesy of VK7TW.

Over to you

Political comment

Dear Peter,

Below is a letter that I have sent to the National Office concerning comments made by our new President and the political nature of his last contribution to AR. I will certainly not be renewing my membership and I hope that my letter is published in the next edition.

I also hope that me taking a stand on an issue like this may make you much more vigilant is allowing the pages of AR to carry political comment, of any disruption.

Regards,

Noel Laidlaw

Phil Wait

National President WIA

Dear Sir,

I notice that in the last AR (Dec 2013 p3.) you were good enough to suggest that when the carbon tax was abolished it may have the effect of reducing the National Office's electricity bill by $73.00 for the year.

This is unproven political claptrap and a cheap political shot supporting Tony Abbott and his political cronies. There won't be a drop in electricity prices, that is as sure as night follows day, it's just political nonsense.

I really don't mind if you are so gullible to believe this sort of nonsense, that is entirely up to you. What I really strongly object to is using the pages of the WIA to peddle your own form of political bias.

You are a disgrace and should resign as president. My dues go to pay for the AR and I am appalled that our national president should use MY money to promote his own partisan political position. The WIA has had a very proud tradition of being apolitical. And so it should.

I will not be rejoining the WIA this year.

Noel Laidlaw VK3JOO

Licensed amateur for 43 years

Phil Wait VK2ASD responds:

Dear Noel,

Thank you for your feedback, Noel. Your view is certainly an interesting 'take' on the themes expressed in the December President's Comment.

I was rather expecting to be asked to resign because of the more substantive issues raised, such as the concept of introducing a digital AR magazine, and not what was simply a passing comment intended to inject a little satirical levity into the serious issue of identifying areas of cost-saving for the WIA's operations that would yield substantive results.

I can appreciate that your view on saving $73 as a result of the carbon tax discontinuation is an unintended consequence of including the remark, which was actually intended to capture something of the public 'zeitgeist' (feeling of the times) about costs and cost-saving, which everyone is concerned about. As you would appreciate, the $73 figure was a 'made-up' amount, as the telegraphers' code for "best wishes" resonates with all amateurs. There was no intended connection with political claims made by any sides in the debate. If I had used any other figure, higher or lower, I could be rightly accused of using my position and AR magazine to promote a personal political agenda. However, whether our electricity bills will fall or rise following the Australian Government's actions on the carbon tax, we won't really know until the accounts arrive.

Noel, your letter is also interesting for other reasons. As licence conditions have not restricted on-air subject matter for quite a few years now, your letter highlights the dangers of making even vaguely political comments on-air, no matter how innocently made or obscure such remarks might be. One never knows who might be listening, and it is often easy to unintentionally upset someone.

So, am I about to resign for my erstwhile indiscretion? No, I don't think so. However, Noel, if you remain a member, you will have your chance to vote for someone else in the upcoming Board elections, and maintain your ability to submit interesting letters for publication in AR!

Yours sincerely,

Phil Wait VK2ASD

President.

Spotlight on **SWLing**

Robin Harwood VK7RH
e *vk7rh@wia.org.au*

2014 has arrived and there have been some changes since New Year's Day. As earlier reported, the Voice of Russia is no more. Apparently VOR management seriously miscalculated President Vladimir Putin as he issued a decree in mid-December, with it being merged with the RIA Novosti press agency, before both were scrapped. A new organisation called 'Russia Today' will replace both. It appears that all government media outlets now come under one control, seemingly ending decentralised decision making and duplication.

Shortwave services have indeed been axed to Africa, central and South America. Broadcasts to Europe and North America ceased some time back. I now have the schedule as from January 1st and surprisingly Australia remains a target. English programming is on between 0600 and 0900 on 21800 from Irkutsk in Siberia. Transmissions formerly came from Novosibirsk on 21840 yet this site has ceased. I believe that languages on shortwave besides English will be Vietnamese, Arabic, Chinese, Japanese, Hindi and Urdu. French, German and Spanish will be transmitted via DRM. Interestingly Russian will solely be sent via MW as will Polish, Dari/Pashto, Farsi, Turkish and Kurdish. Here on the above table is what is scheduled and could be easily heard here in Australia.

Note they utilize the digital platform DRM broadcasting to the Indian sub-continent. India has adopted DRM for MW and some shortwave services. However

Chinese	1000-1400 Irkutsk	5900 250	Asia
English	1000-1200 Irkutsk	12035 15	Asia DRM
English	1000-1200 Irkutsk	9560 250	Central and SE Asia
English	0600-0900 Irkutsk	21800	Australia and SE.Asia
Hindi	1300-1400 Irkutsk	7400 15	Asia DRM
Japanese	1200-1300 Irkutsk	5980 250	Asia
Japanese	1300-1400 Irkutsk	5980 250	Asia
Urdu	1400-1500 Irkutsk	7400 15	Asia DRM
Vietnamese	1200-1300 Irkutsk	9560 250	Asia

Pakistan has decided against DRM so it is unusual that they broadcast in Urdu. I believe Urdu and Hindi are so similar; the main difference is the script. Urdu uses the Arabic script whilst Hindi uses their own.

As I also reported the Okeechobee facility, formerly owned by WYFR, was sold to Jeff White who operates WRMI. On December 1st the mothballed transmitters were turned on, causing a few temporary hiccups. However WRMI has now settled down and is being heard in Europe and Africa although programming seems to be targeting North America. Brother Stair from South Carolina has apparently booked time over several senders at WRMI. This is the same individual who already uses other shortwave senders in Tennessee around the clock.

Incidentally remember Harold Camping? He was the former owner of WYFR and the Family Radio Network. He predicted the World was going to end on 21st May, 2012 and then revised it to October but his prediction never eventuated. Within weeks he suffered a stroke from which he did not recover. He died in mid-December just a few days after WRMI took control of the former WYFR site in northern Florida.


DX- News & Views

Chris Chapman VK3QB and Luke Steele VK3HJ
e *vk3qb@wia.org.au*

December and January on the bands

After a somewhat frenzied November full of DXpeditions and contests, December continued the good conditions on the higher bands, with a lot of DX on 12 and 10 m. The sun was fairly active, but geomagnetic conditions were generally quiet.

January started off with a few moderate solar flares, and the appearance of a huge sunspot. Numbered 1944, and having an area of around 1500 millionths of the sun's surface (and many times the size of the Earth), it has thrown out M and X-class flares. The three-month moving average of daily sunspot numbers from October-December has also moved upwards, to 123.7. This is the highest it has been this cycle, higher than the first peak of late 2011. Hopefully this trend will continue for another great year of DXing.

In early December, the VU7AG Lakshadweep Islands DXpedition concluded a really good operation from this infrequently activated entity. Jean-Jacques FW5JJ continues on air just about daily, on different bands and modes, from Wallis Island. The Vienna International Centre station 4U1VIC made its first appearance on air in a few years on 1 December. T32RC was a special activation for the 20th anniversary of the Russian Robinson Club. They activated Kiritimati (Christmas) Island in East Kiribati. Nigel G3TXF operated /PJ7 from Sint Maarten. Jim VQ9JC is back on air again from Diego Garcia. Vlad UA4WHX has been operating / CE9 and /CE8 from islands around

Some Upcoming DX Operations

The following table summarises some of the DX activations that may be of interest to VK operators.

Date	Call	QSL via	Information
24 Jan – 12 Feb	FT5ZM	N2OO	Amsterdam I (AF-002). Team, 160 – 10 m, CW, SSB, RTTY.
26 Jan – 5 Feb	TY1TT	LotW	Benin. ON4DX. HF, highest band open.
26 Jan – 28 Feb	XT2AW	M0OXO	Burkina Faso, Ouagadougou. DF2WO, CW, SSB, holiday style.
29 Jan – 7 Feb	J79JG	LotW	Dominica (NA-101). AD8J, mainly CW, holiday style.
29 Jan – 9 Feb	FG/F6ITD	F6ITD	Guadeloupe, Basse Terre I (NA-102). F6ITD, HF, SSB & digital.
31 Jan – 4 Feb	A52JR	LotW	Bhutan. PP5JR, PU5FJR, PU5BIA, JH1AJT, 80 – 10 m, SSB.
2 – 13 Feb	5I0DX	LotW	Tanzania, Zanzibar I (AF-032). Italian team, 160- 10 m, SSB, CW, PSK, RTTY.
1 – 12 Feb	S9TF	IK5CRH	Sao Tome & Principe, Principe I (AF-044). IK5CRH, IK5CBE, IK5BCM, 80 – 10 m, CW, SSB, RTTY.
5 – 17 Feb	TO7CC	TBA	Reunion (AF-016). F6KOP Radio Club, all bands, all modes.
8 – 22 Feb	TO4YL	F5GN	Martinique (NA-107). F4BMR, 160 – 10 m.
9 – 25 Feb	FG/F6ITD	LotW	Guadeloupe, La Desirade I (NA-102). F6ITD, HF, SSB & digital.
10 – 18 Feb	3B9/OE4AAC	OE4AAC	Rodrigues I (AF-017). OE4AAC, CW, holiday style.
11 – 16 Feb	7P8ID	DK3ID	Lesotho. DK3ID, 40 – 6 m, SSB.
11 – 25 Feb	YJ	LotW	Vanuatu, Efate I (OC-035). N7OU, NE7D, 160 – 10 m, CW.
12 – 24 Feb	8Q7KB	DL2SBY	Maldives, Ziyaaraifushi and Fihalhohi I (AS-013). DL2SBY, 30 – 10 m, SSB, CW, RTTY.
15 Feb – 5 Mar	XV2BM	JA8BMK	Vietnam. JA8BMK, 160 – 10 m, holiday style.
19 – 27 Feb	VP9/G7VJR	M0OXO	Bermuda (NA-005). G7VJR.
22 Feb – 16 Mar	PJ7AA	AA9A	Sint Maarten (NA-105). AA9A.
24 Feb – 7 Mar	A35AX	OQRS	Tonga, Tongatapu I (OC-049) and Vava'u I (OC-064). DK1AX, DK1MA, CW, SSB, RTTY, holiday style.
25 Feb – 16 Mar	5X1XA	G3SWH	Uganda. G3PJT, CW.
25 Feb – 21 Mar	XU7ACQ	KF0RQ	Cambodia. KF0RQ, 40 – 10 m, SSB, PSK-31, RTTY.

the southern end of Chile, including from King George Island in the South Shetland islands at the Bellinghausen Antarctic Station as RI44ANT. Many stations were on air from across Russia and Eastern Europe during December with "110RAEM" in the callsign. These celebrated the 110th anniversary of the birth of the famous Soviet Arctic Explorer and radio operator, Ernst Krenkel.

H40TA is Sigi DK9FN, operating from Lata village on Nendo island, in the Temotu Province of the Solomon Islands. This was to be a multi-operator expedition, but for various reasons, only Sigi was able to make it there. H40TA is a charity operation, with donations for the Lata hospital, especially to help those affected by the tsunami last February.

Santa Claus was on air in December, using the callsign OF9X from Finnish Lapland. Santa Claus was active in both phone and CW, using a remote link to the Radio Arcala station.

Kiyo JR1IZM was operating as 9X0ZM in Kigali, Rwanda. Massimo IA0MZ has been on air daily from the Mario Zucchelli Antarctic Station in Terra Nova Bay. Peter HS0ZKX has been active from near Kalasin in Thailand on the Low Bands each evening. 1A0KM was on air from the headquarters building of the Sovereign Military of Malta in Rome. Also in Rome, Francesco HV0A activated the Vatican station on 4th January. This one pops up from time to time without notice, so keep a watch for HV0A. Francesco will from time to time QRX the European pileup to call for DX, including VK, so be patient and you have a good chance to get this one.

FT5ZM, **Amsterdam I**. A team of around fourteen operators should still be on air when you receive this. Good luck with this rare activation. For more info see: *http://www.amsterdamdx.org/*

TY1TT, **Benin**. Wim ON4DX was planning to operate from Benin in November, but delays in getting his licence mean he will now be operating into the first week of February. He plans to be on the highest band open. For more info see: *http://www.dxpedition.be/Benin.html*

XT2AW, **Burkina Faso**. Harald DF2WO will be operating "holiday style" from Ouagadougou, using CW and SSB.

J79JG, **Dominica**. Albert AD8J will be operating mainly CW in a "holiday style" activation. QSL via LotW, or via AD8J.

FG/F6ITD, **Guadeloupe**. Jean-Pierre F6ITD will be on air from two islands. Basse Terre, 29 Jan – 9 Feb, and La Desirade, 9 Feb – 25 Mar. On the weekends he will use the callsign TO6D. For more info see: *http://www.qrz.com/db/FGF6ITD*

A52JR, **Bhutan**. This will be a family DXpedition. Zorro JH1AJT, with Sergio PP5JR and his children Fernanda PU5FDA, Eduardo PU5FJR and Bia PU5BIA. They plan to be operating SSB on all bands.

5I0DX, **Tanzania**. IK7JWX, I8LWL, IK6JRI, IZ6JOD, IS0AGY, IZ8LFI, and IV3FSG will be operating from the Kiwengwa Beach Resort on the island of Zanzibar, on 160 – 10 m, SSB, CW, PSK and RTTY. QSL also ok via IK7JWX, bureau or direct. For more info see: *http://www.qrz.com/db/5i0dx/*

S9TF, **Sao Tome & Principe**. IK5CRH, IK5CBE, and IK5BCM will be on air from this infrequently activated entity in the Gulf of Guinea, to the west of Africa. They will be on 80 – 10 m, CW, SSB and RTTY. For more info see: *http://gmiross.wix.com/principe-is-2014*

TO7CC, **Reunion**. The F6KOP Radio Club plan to activate all bands, all modes with a focus on low bands and RTTY.

TO4YL, **Martinique**. Francoise F4BMR plans to operate on 160 – 10 m. QSL via F5GN.

3B9/OE4AAC, **Rodrigues I**. Eric OE4AAC will be operating CW, in a "holiday style" operation.

7P8ID, **Lesotho**. Ewald DK3ID plans to be on 40 – 6 m SSB.

YJ, **Vanuatu**. Bill N7OU and Rocky NE7D will be in Port Vila, and plan to be on 160 – 10 m, CW. Bill lives in a high rise building in Portland, Oregon, and does all his operating on DXpedition. QSL also ok via home calls.

8Q7KB, **Maldives**. Kasimir DL2SBY will be operating from Ziyaaraifushi I, 12 -18 Feb, and Fihalhohl I, 18 – 24 Feb on 30 – 10 m, SSB, CW and RTTY. QSL via bureau or direct.

XV2BM, **Vietnam**. Toshi JA8BMK will be on holidays in Vietnam. While there, he plans to operate on 160 – 10 m, using a Hex Beam, vertical and inverted vee antennas.

VP9/G7VJR, **Bermuda**. Michael G7VJR plans to operate from Bermuda. QSL via M0OXO.

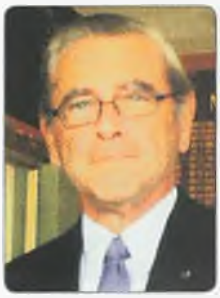
PJ7AA, **Sint Maarten**. Tom AA9A returns to Sint Maarten. QSL via AA9A.

A35AX, **Tonga**. Klaus-Dieter DK1AX and Heidi DK1MA will be operating "holiday style" from Tongatapu and Vava'u islands in Tonga.

5X1XA, **Uganda**. Robert G3PJT will be operating CW, and will be in the RSGB Commonwealth Contest, 8 – 9 March.

XU7ACQ, **Cambodia**. John KF0RQ will be visiting his daughter and family in Vietnam, and while there will be on 40 – 10 m SSB, PSK-31 and RTTY.

Special thanks to the authors of The Daily DX, 425 DX News, DX World, NG3K's Announced DX Operations, and QRZ.DX for information appearing in this month's column. Interested readers can obtain a free two week trial of The Daily DX from *www.dailydx.com/trial.htm*



VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

Photo 1: The Oceania DX contest VK Club Award (Mixed Mode) plaque for 2012.

Having won the Australia Club Plaque in 2012 for *The Local club from Australia with the greatest number of member stations participating in the Oceania DX Contest*, it then took almost a full year of representation by Lou VK3ALB for the wall plaque to finally arrive at the GARC. But it was worth waiting for.

2012 Oceania DX contest

In all nine members of the GARC participated in the contest which requires operators to work stations both inside and outside the Oceania region, on the various HF bands. The highest scorer of the GARC group was Lou VK3ALB, followed by Bert VK3TU, Ken VK3NW, Ken VK3DQW, Dallas VK3DJ, Andre VK3AVZ, Peter VK3WK, Jenni VK3FJEN and Ian VK3ZIB.

GARC in the Park

This year the annual event was held on Friday 13 December, supported once again by members of our sister club the Geelong Radio and Electronics Society; no radios were evident during this event just the opportunity to mix and socialise, whilst consuming the sausage sizzle and BBQ skewered lamb along with vast quantities of other food and drinks provided by the members.

VHF/UHF Field Day

Team VK3ALB comprising Lou VK3ALB, Jenni VK3FJEN, Nik VK3BA and Michael VK3FMIC found conditions were pretty flat with few people around due to the poor weather conditions. Bands in operation were 2 m, 70 cm, 23 cm, 13 cm, 6 cm, 3 cm, 1.25 cm and 6.25 mm plus, just out of interest, they took a laser light communication system and worked the GARC (LUMEG) team VK3UHF, over a distance of some 36 km.

During the course of the field day it was necessary to establish some basic communication paths by Nik VK3BA, as shown in the following link *http://www.youtube.com/watch?v=kP0D5Rv10RA*

Highlights of the Field Day include a number of excellent contacts on 2 m, to VK5PJ at 588 km, VK1DA at 535 km and VK5ACY at 527 km, while on 23 cm to VK2KRR at 438 km and finally VK3VFO and VK3WRE at 241 km, who were both worked on all bands up to 2.4 GHz.

Photo 2: Members of both the GARC and GRES at the BBQ.

Photo 3: Presidents Nik VK3BA and Barry VK3MBW with their QRO microphones.

Training successes for 2013

During the course of the year, several assessments were made stemming from the GARC training programme which resulted in seven new Foundation licensees, four Standard licences and three Advanced licences. This impressive throughput is down to the commitment of the GARC's team of trainers and assessors who give up a great deal of their private time to further the cause of amateur radio.

Our assessors are Ken Jewell VK3NW, Rex Foord VK3ARG and Andre Van Zyl VK3AVZ, and our trainers Chas Gnaccarini VK3PY and Ken Jewell VK3NW.

Next assessments will be April 2014 (with four places already booked - two x Foundation and two x Standard). Information regarding these courses can be made by contact with the GARC's training administrator Jenni VK3FJEN who may be found at *www.vk3atl.org*

VK2news Summerland Amateur Radio Club

Richard Newbold VK2FJC

Corey Newbold VK2FCOR

Ten year old Corey Newbold, a young radio and electronics enthusiast from Gulmarrad, NSW has passed his AOCP(F). He is surely one of the youngest ham radio operators in Australia.

He has made several electronic kits and dipoles, and is hoping Santa Claus has dropped off a Ten Tec 1253 general coverage receiver kit for construction. Special thanks must go to the Summerland Amateur Radio Club and in particular Duncan VK2DLR and Bernie VK2BLW.

Corey hopes to emulate his father Richard VK2FJC and work some DX on 10 and 15 metres while the current sun spot cycle is at its peak. Corey has often spoken with his dad's good friend John VE7MTW on Vancouver Island, Canada. His next contact with John will be with his own callsign, VK2FCOR.

L to R - Duncan VK2DLR (Summerland Amateur Radio Club education officer and WIA Assessor), Corey Newbold VK2FCOR, proud father Richard VK2FJC and WIA Assessor Bernie VK2BLW.

VHF/UHF - An Expanding World

David Smith VK3HZ
e vk3hz@wia.org.au

Weak Signal

Welcome back from the break. I was going to write that this report will cover both the November and December months. However, November was a month with very little propagation of note. So, we'll move on to December.

Normally, the period between Christmas and New Year is one of intense Sporadic E activity on two metres. However, this year has been extremely quiet on that front. The only Es activity reported was on December 18th at around 1025Z when Adrian VK4OX worked Norm VK7AC and Peter VK7PD. Prior to the contacts, Adrian had been hearing the Hobart VOR on 112.7 MHz on and off from about 0940.

In contrast, Tropo enhancement produced some good openings between VK6 and VK3, and also from the east coast across to New Zealand.

On the morning of December 3rd, Bob ZL3TY reported hearing several VK two metre beacons including VK3RED, VK3RGI, VK7RAE and VK2RSY. At 2240Z, he worked Colin VK2BCC with 5x9 reports both ways. At 0130Z he worked Steve VK2ZT at 4x1. By 0400Z, signals had risen and they repeated the contact, this time with 5x9 reports. Other stations worked included VK2ZQ, VK2BZE, VK2BHO, VK2ARA and VK3DUT (5x9). At 0710, Bob worked Steve on 70 cm at 5x1. He also worked John VK2BHO on 70 cm at 5x1. The VK2 and VK3 beacons were still audible at the end, at 0910Z.

On the evening of December 9th, another ZL opening occurred – this time to the north island. At 0530Z, Ross VK2DVZ worked Nick ZL1IU on two metres (5x5) and 70 cm (5x1). Other stations making it across the water included VK2ZT, ZL1RS, ZL2ADU and ZL1SWW.

From about December 12th, a large, very slow moving, high-pressure cell had been building up over the Bight, and was starting to produce results. This culminated in the 2000+ km contacts on 10 GHz from VK6 to VK5 and VK3, reported in the Digital Modes section later. Also of note, on the morning of December 15th at 2245Z, Ian VK3AXH worked Rob VK6LD/P on 70 cm over a distance of 2341 km. Rob was operating the remote station he has set up in Albany, but more on that later. At 2300Z, Andrew VK3OE operating his remote station VK3OER in central Victoria worked Rob VK6LD/P on two metres – a remote station to remote station contact. Also holding up the VK6 end were Derek VK6DZ (also operating /P at Torbay Hill with 10 GHz), Wayne VK6JR and Ron VK6VOX. Many VK3 and VK5 contacts were had, with the opening continuing until the evening of December 17th.

During this time, conditions were also enhanced in other directions by the high-pressure cell. On the morning of December 14th at 2125Z, Peter VK5PJ worked Norm VK7AC on both 70 cm (5x9) and 23 cm (4x2) – a distance of 1027 km.

By December 20th, the high had moved over to the Tasman Sea, and an opening to ZL from VK2, and later VK4, was the result. During the opening, on the morning of December 20th, an unusual callsign was worked by a number of stations. Steve ZL1TPH was operating from his usual portable location at Cape Reinga using the special callsign ZM90DX. This callsign commemorates 90 years of Kiwi DX operation. Steve worked many stations and was heard by Ross VK2DVZ on 23 cm (519) but failed to complete that contact.

VK6LD/P portable station

As mentioned earlier, Rob VK6LD has set up a remotely-controlled station in Albany, WA. Rob reports:

The south coast area of WA, around Albany and Esperance is only sparsely populated with amateurs and of these, only a few are set up for long haul DX on two metres and 70 cm. Having lived down that way previously from 2007-2011, I had a great time working into VK5 and VK3 when the VHF and UHF bands were open. Unfortunately work brought me back to Perth in 2011 and the opportunities to work east from Perth on two metres and 70 cm are quite rare.

My thinking and aim was to get back to working some DX across the Bight and secondary to that was also to work locals on FM, a secondary HF station for local contacts and something to operate when I visit back to Albany.

Fortunately, I still own a property in Albany, so I had somewhere to site some equipment and I needed to install an antenna system from scratch, an Internet connection and a secure area to install all the equipment. This was to include two metre and 70 cm Yagis to point east, the 2 m/70 cm collinear for FM contacts and a Codan 9350 auto tune mobile antenna for HF operations.

The remote station uses an IC-706MK2G and a product called RemoteRig (http://www.remoterig.com/wp/). The RemoteRig product allows me to operate from my QTH in Perth and to transmit/receive remotely from Albany, approximately 400 km south.

The Yagis used are deliberately fairly short. On two metres is a seven element M2 and on 70 cm is a 12-element M2. The Yagis are fixed facing approx. 100 deg azimuth and no rotator. The rationale behind this being from my location, Adelaide is about 95 degrees and Melbourne is approximately 105 degrees.

Finally I had gathered all the requisite pieces and scheduled a trip to Albany to install. The installation of the antennas, pole and brackets, running cables neatly, constructing a secure cupboard, relocating the TV antenna to minimise any potential for TVI, setting up a 3G mobile broadband connection and reconfiguring the RemoteRig hardware and software to suit all took me the best part of two weeks work - much to the XYL's displeasure!

In all my careful checklists and packing, I managed to leave behind a vital cable. Not content to leave turning on the system until my next visit in February 2014, I made an 800 km round trip back to Perth one day to collect the forgotten lead - the XYL thought I was mad!

Anyway, with the cable in hand, the system was hooked up on the last night I was in town before returning to Perth. I finally sorted out all the remote connection issues and crawled into bed around 1.30 am, to be up early the next morning to head back to Perth.

The Optus 3G is holding up, but can be a bit laggy at night – for the price I can live with it. Everything seems OK and, touch wood, it is still working for me.

Judging by the number of stations worked by Rob from his remote station, the system seems to be working well, and is a very welcome addition for those of us to the east.

Photo 1: Doug VK4OE with his 47 GHz equipment.

47 GHz contact

Doug VK4OE reports on a recent contact he had on 47 GHz:

Rex VK4REX/P was operating at Howells Knob (QG63JF) inland from the Sunshine Coast, and I was operating from Mt Gravatt (QG62MK) in Brisbane. This morning (November 7th), we completed our first QSO on the 47 GHz band over a distance of 91.4 km. Signals were around 5x1 each way on a warm and hazy day over a path that is normally line-of-sight.

This is not the first QSO on this band in VK4 - about five years ago I had some limited short distance QSOs - but the one today is more worthy to be the initial, officially claimed, VK4 distance record for the band. One of those original transverters has recently been modified and improved - now working significantly better than the original one. Longer paths are expected to be readily covered when I graduate my antenna from a 26 dBi horn to a machined dish originally designed for 38 GHz use.

Photo 2: The VK6LD/P remote station antennas.

Equipment summary

VK4OE/P - 100 mW TX power to a 26 dBi horn, plus a Kuhne low noise power amplifier and WR22 waveguide four-port transfer switch to manually change between RX and TX states.

VK4REX/P - 30 mW TX power to Procom dish and feed, plus a Kuhne low noise power amplifier with servo

driven mechanical rotation plate to change between TX and RX.

Update: Rex decided later on to test his FT-817 IF radio and found that instead of the normal two watts of drive power that he designs his transverters around, he was only getting around 4 mW output from it. He thus calculates that his transmitter power was in the order of 80 µW!

After correcting the problem, on November 19th, Doug and Rex decided to try again over a longer path. Doug moved to Eagle Heights in the Gold Coast hinterland for a path distance of 132 km. After optimising dish pointing, signal reports were 5x2 both ways for a new 47 GHz national record. They now have plans to attempt an even longer path of 181 km.

78 GHz record contact

Alan VK3XPD reports on recent events on 78 GHz:

On the millimetre wave front, I wish to advise that the current 78 GHz SSB record has been extended. On December 14th, Russell VK3ZQB and I extended this national record out from 11.7 km to 31.8 km. The final path was from Tower Hill near Warnambool to Mt Warnambool. Both transverters delivered about 10 mW to 300 mm dishes.

Despite the less than ideal local weather conditions, the signals were both crushingly strong at 5x9+20!

So, with that much signal margin, we decided to try for a Tower Hill to Mt Leura shot near Camperdown. We were, however, unsuccessful. We believe this band requires true 'line of sight' signal paths and since Mt Leura was below the visual horizon, we failed. No matter - we just need to look for a few alternate line of sight paths.

As the summer progresses, I'm sure there will be more extensions to the 78 GHz distance record to follow.

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

Digital DX Modes

Rex Moncur VK7MO

New 24 GHz EME world record

On 16 November Charlie VK3NX, worked Charlie G3WDG, over 16,878 km for a new 24 GHz world record using JT4F. Earlier on the same day VK3NX worked OK1KIR on JT4 and also on CW for a new CW record of 15,885 km.

10 GHz terrestrial with JT4F

During November Rex VK7MO travelled to Western Australia to set up Derek VK6DZ on 10 GHz for terrestrial operations. Derek lives close to Torbay Hill, about 30 km west of Albany – the site used by Wally VK6KZ for his 10 GHz world record contact with Roger VK5NY back in 1994. The system Derek is using is fully GPS locked and produces 10 watts output to a 60 cm dish. With the increased sensitivity of JT4F compared to SSB, higher power (VK6KZ ran 100 mw) and larger dish size the sensitivity of the new system is improved by some 50 dB. As training for Derek, Rex travelled around the southern part of WA activating some 24 grid locators as shown in Figure 1. The longest contact was 746 km to near Geraldton. The red circles indicate JT4F contacts only and the white indicate SSB and JT4. The orange was via aircraft scatter using ISCAT-A.

On the way back Rex also ran some JT4F training sessions with David VK5KK, from near Port Lincoln to Adelaide and made contacts with Colin VK5DK and Russell VK3ZQB, from the Adelaide Hills.

By around 11 December there was evidence of potential ducting across the Bight and Rex travelled down to near Port Campbell and a number of stations were alerted to the possibility of an opening. On the evening of 13 December the first station to copy a single tone signal from VK6DZ was Keith VK5AKM using a 22 dB patch panel antenna. Shortly after VK5KK using a 38 dBi dish and four watts completed a JT4F QSO over 1,913 km (this was repeated three times over the

Figure 1: Grids worked by Rex VK7MO/6 on his tour of southern VK6.

following two days and the distance increased to 1,932 km. The next morning Rex set up on a cliff near Port Campbell and rang Derek who had stayed up all night at Torbay Hill. Immediately Derek started transmitting his 1270 Hz tone was clearly evident and a 2,293 km QSO was quickly completed with signals -16 and -13 dB. While SSB was attempted and Derek copied callsigns and Rex copied Derek giving a 3/1 report, an SSB QSO was not completed. Figure 2 shows the paths involved with VK5KK and VK7MO. It also shows a potential path to the north east coast of Tasmania which would allow the existing world record of 2,696 km to be extended to 2,720 km.

Now that Derek is set up to go portable at relatively short notice there is the prospect of many more QSOs on 10 GHz across the Bight. With a series of stations able to run GPS locked JT4F from Adelaide to the east we should be able to track the development of suitable conditions from VK5AKM and VK5KK near Adelaide, VK5DK at Mt Gambier, VK3ZQB at Port Fairy, VK3NX at Geelong, VK3XPD in Melbourne, VK3HZ portable in VK3 to VK3GHZ near Bairnsdale and potentially VK7MO portable in Tasmania.

JT4F, which is part of the WSJT suite, has the advantage that it copes well with tropo-scatter spreading and at this stage is considered to be the preferred digital mode for 10 and 24 GHz tropospheric propagation. The practice is to conduct JT4F QSOs on 10368.225 MHz which is the focus frequency for narrow band digital modes in the VK band plan. JT4F is still under development but one should use at least Version 9.5 R3033 or later to gain the features that will be discussed below. There is evidence that ducting produces less spreading than troposcatter but often the propagation seems to be a mix of both troposcatter and ducting with the associated spreading and JT4F is the best

Figure 2: 10 GHz contacts from VK6DZ to VK5KK and VK7MO and proposed longer path.

compromise for both. GPS locked JT4F also has the advantage of single tones which allow one to find the weakest signals and to monitor the development of propagation. Thus at this stage it is considered we should standardize on JT4F for this work to avoid the confusion of moving between different modes. JT4F differs in a number of ways from the more familiar JT65 and thus one needs to gain some experience with its use by working closer stations so as to be ready when there is an opening. The main differences are the use of single tone messages, the MinW (minimum bin-width) facility, averaging facility, and the exchange of S/N reports as discussed below.

Single Tones: Given that both stations are GPS locked it is possible to send simple messages such as RRR, 73 and QRT based on the frequency of single tones. A single tone can be sent by using the '@' symbol in front of a number which specifies the tone frequency, in any TX box – for example @1000 produces a tone of 1000 Hz. Single tones have the advantage that all the energy is constrained to one frequency and have a significant advantage over multi-tone messages. JT4F also has a facility to integrate single tones over a full one minute period which gives around 8 dB advantage over multi-tone messages. This facility is implemented by going to the Setup menu and ticking plot average JT4 Spectrum. The program will then add a Yellow graph to the main WSJT graphing window which shows a peak on the frequency of the single tone. If no signal is present one will see random peaks from period to period (from the noise) so one needs to gain some experience in looking for weak single tones to use this facility correctly. The frequency of the single tones can be read directly from the waterfall (set to the frequency scale) if they are strong or from the Yellow graph. Frequency on the Yellow graph can be read by moving the mouse vertically around the peak and a small yellow window will show up with the difference frequency from 1270 Hz from which one can derive the actual frequency

(we are working with Joe Taylor K1JT to make this simpler). The single tones that are currently being used are:

@1270 – this is used for tuning (for example, if one station is not fully GPS locked) or when waiting for propagation

@1000 – this is used to signify that the station is ready to receive messages in multi-tone form

@1500 = RRR

@1700 = 73

@2000 = QRT

MinW: The current version of JT4F has the ability to match the bin-width to the amount of spreading. It does this by attempting decodes at the narrowest bin-width (designated 'A' or 4.8 Hz) and then if it cannot achieve a decode it doubles the bin-width and makes another attempt and keeps trying right up to the F bin-with of 157 Hz. When a decode is achieved there will be a letter at the end of the line signifying the bin-width at which the decode was achieved. One issue with this approach is that the program may gain a false sync at a narrower bin-width and thus never test at the bin-width where a good sync might be included in the average. To overcome this it is best to start the program from just a little below the expected bin-width. The MinW feature which is on the main WSJT window just below the tolerance can be adjusted. One can make an estimate of the amount of spreading from the initial 1270 Hz tone to set MinW. The relationship between the letter designator and bin-width is as Table 1:

Letter designator	Approx. bin-width (Hz)
A	4.4
B	8.8
C	17.5
D	39.4
E	78.8
F	157.6

Table 1: Bin-width designator and bin-width.

Averaging: The averaging facility is useful when the signal is strong enough to gain sync but not decode but by including a number of periods in the average one can decode these very weak signals. One can typically gain an advantage of 2 to 3 dB by averaging over up to six periods. The main issue with averaging is that one must exclude from the average any periods that do not produce likely valid information to average. Given that both stations are accurately locked for time, valid syncs will be within 0.4 seconds for a terrestrial path (the variation arises due to the fact that WSJT uses 0.186 second interrupts and with this applying to the timing at both ends there is with rounding the potential for 0.4 second variation). It has been found that it is best to set the sync to zero (the default is 1) as then the program will pick up sync almost all the time, but many will be false. Thus one must use information such as the correct DT and correct DF to decide which are likely to be good syncs for inclusion in the average. The decision as to the correct DF depends on the spread of the signals which can be determined from the initial 1270 Hz tones.

Signal Reports: The practice is to exchange signal reports in the form of dB levels. Fig 3 shows the format of the messages and reports as can be set up in the JT4F options. The report is transferred to the message when you double left click on the other station's callsign. (There is a small bug in JT4F at present in that single tone format is overridden when you double left click on the callsign to pick up the report and thus it is necessary at this stage to click on Gen Msgs to return to the single tone format in TX4 to TX6. Hopefully this will be fixed by the time you read this).

Tolerance and Freeze: Tolerance is implemented by ticking freeze (see Figure 3). On weak signals, JT4F sometimes picks up a false sync from the noise plus the three lower tones or the three higher tones and noise above them. To avoid this one can set the tolerance to 100 Hz and click on the waterfall to position the tolerance based on the 1270 Hz tuning tone.

Conventions: The convention is that the easterly station transmits first period.

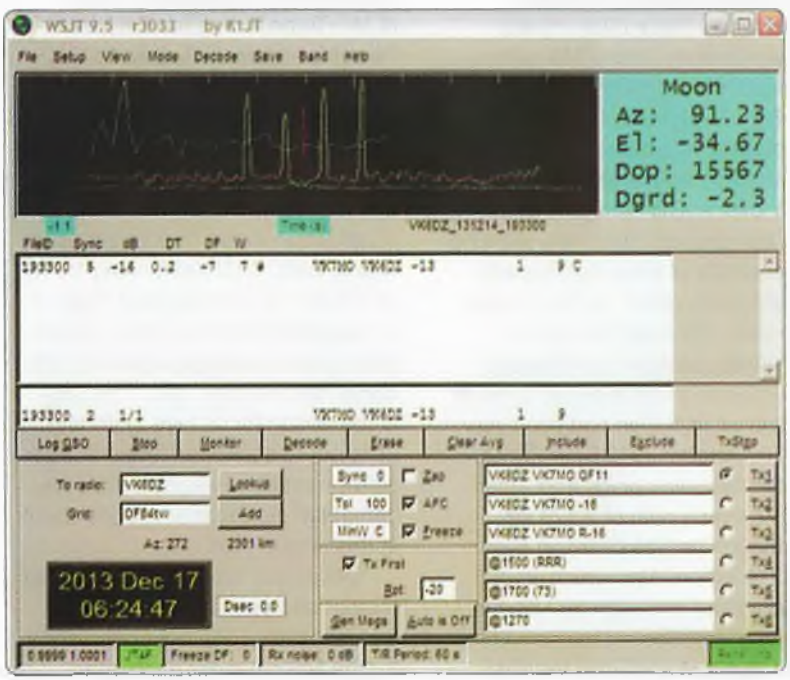


Figure 3: Recommended message format.

10 GHz EME demonstration in VK6

During the trip to Western Australia mentioned above Rex VK7MO gave talks to the WAVHF group covering the arrangements to set up Derek VK6DZ and also a talk on small station 10 and 24 GHz EME. The following day Rex gave a demonstration of 10 GHz EME with his small 77 cm dish to the group (Figure 4). Many group members had the opportunity to work either OK1KIR or G3WDG. It was fitting that VK6KZ who used a G3WDG transverter for his 10 GHz record contact back in 1994 was able to work G3WDG on 10 GHz EME some 19 years later.

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

Figure 4: Members of the WAVHF group observing the 10 GHz small station EME demonstration.

Meteor Scatter

Kevin Johnston VK4UH

The November to Christmas period for 2013 has seen the beginnings of the summer VHF season with enhanced propagation across the bands. Activity has been good over the holiday with multiple Es and tropo events occurring. Either of these VHF 'enhanced propagation' effects can influence results on meteor scatter where these other modes may significantly extend MS paths well beyond the typical 2500 km limit. By way of example, last year in September 2012 Arie VK3AMZ successfully completed with Bob ZL3TY over a 2,341 km path at a time when the Hepburn chart was showing the possibility of tropo ducting with a big cloud of 'yellow' at the ZL end of the path. Although this path is theoretically possible by MS alone the number of pings received in either direction up until then had been very small. In October 2012 Starr ZL3CU reported decoding pings from Ross VK2DVZ over a path of 2,179 km, even though he was beaming over the NZ Southern Alps which would normally block this path for MS due to limiting elevation. At the same time Simon ZL4PLM and Ross VK2DVZ made exchanges. On this occasion there was high probability of tropo extension at the VK end of the paths which would both extend propagation and also increase the elevation of signals across the ZL Alps.

Our Meteor-scatter counterparts in Europe have recently extended (as reported in DUBUS 3/2013) the MS World Record to a staggering 3,377 km on two metres using this combination propagation mode of MS-Tropo during the European Perseids shower in August 2013. EA8TJ in the Canary Islands (IL18rj) off the west coast of Africa completed with 10 stations across UK, Holland, Belgium, Switzerland, Germany and Italy using this combination propagation mode. The longest path was to S50C (JN76jg) running 1.5 kW of FSK441 to 4x18 element Yagis. It is suggested that the critical feature is the point and angle where the MS signal hits the tropo duct. The take home lesson for us here in VK and ZL is not to abandon Meteor Scatter activity just because there are other 'tempting' propagation modes about at this time of year.

December brought the Geminid meteor shower. This shower typically brings the best conditions for the MS calendar each year. The Geminds occurred over an extended period peaking on 14 December. The shower occurs every year where the orbit of the Earth around the Sun takes us through the cloud of celestial dust and debris remaining from the asteroid Phaeton. The ZHR can be as high as 120 meteors per hour at its peak.

Regrettably even though the peak of the Geminids shower occurred over a weekend period results and activity were disappointing this year, not achieving the very high return rates reported during previous showers. Reports on the logger described frequent hyper-dense returns (burns) extending up to 30 seconds even on two metres. Unfortunately I was away in VK5 and missed the peak. Arriving home late on the Sunday evening (15th Dec UTC) I had made prior arrangements for a sked with Arie VK3AMZ to attempt a 70 cm FSK441 MS contact during the night when Gemini would be low on the horizon for both stations.

Commencing at 1700 UTC, 03.00 am local time, a successful two-way QSO was completed by 1900 UTC on 432.230 MHz. The best ping received at the VK4 end was 230 ms long at 12 dB above the noise, over a distance of 1,402 km. This is certainly a first for me.

Meteor Scatter on 70 cm shows the reverse of the effects described last month for operation on 50 MHz. Since the wavelength is roughly 1/3 of that at two metres then the duration of the pings is roughly 1/(3^2) or 1/9th of the time expected on two metres. The amplitude of returns is expected to be 1/(3^3) or 1/27th or 15 dB weaker.

Finally this month some more experience has been gained running the MSRX programme mentioned last month. I have been successfully running this application in the background, behind WSJT for most of my MS operations over the last two months. Accepting that the decoding process in MSRX effectively delays the appearance of decoded signals for almost a complete cycle it is still proving very useful for weak pings that FSK441/WSJT has missed. The averaging facility is also fascinating where the MSRX programme 'stitches together' data from multiple weak pings received during a single period, none of which gave a complete decode by itself. The result is, sometimes, a complete usable decode where none existed before. More on this when more experience has been gained.

73 from this keyboard and all the seasons' successes for 2014.

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*

The Magic Band – 6 m DX

John McRae
VK5PO

December had some interesting DX.

The sun has been active, and if we had that sort of solar activity at Equinox, I think we would see some real exotic DX. Maybe even European propagation! Propagation from central America and the USA was almost absent, unlike over the previous two years, although VK5BC and VK5PO worked TI5/N5BEK on the 3rd of December. Some stations in VK2 and VK3 also heard the YS1YS and TI2NA beacons briefly during this time.

On the 10th of December, VK5PO heard YS1AG on CW, but was unable to complete a QSO.

The usual aTEP was prevalent many times during December from JA, and JA was worked from most call areas.

The 15th of December at 0623Z saw Wayne VK4WTN complete a two-way CW QSO with JJ, FW5JJ on Wallis Island. It was not until the 26th of December at 0157Z that Andrew VK3OER was the next VK to work Jean Jacques, 'JJ' on CW. Followed on by VK5PO, VK4CZ, VK3GHZ, VK4AMG, VK3OT and finally VK5SIX at 0305Z, when FW5JJ faded.

KH6SX was worked on both SSB and CW firstly on the 10th of December between 0443 and 0502Z by VK4RF, VK5RM/4, VK3DUT, VK5PO, VK3XDX and finally VK5ZK.

Then again on the 26th December Art KH6SX was worked by VK3VG on SSB then followed by VK3ZAZ and VK3OER on CW. This was a twenty minute opening, and the first QSO was at 0415.

Alan E6RQ (VK4WR) was worked by many stations between 0721 and 0905Z on the 7th of December. Stations in Alan's log include VK3DUT, VK5PO, VK5ACY, VK5BC, VK3ZAZ, VK5JR, VK4CZ, VK7DX, VK3OER and finally VK2ZQ. CW and SSB was used. On the 9th of December, E6RQ again was worked by VK3XDX, VK3AUU, VK3YFL, VK1DJA and finally VK4's WTN and BG. This opening started around 0615 and finished around 0726Z. There were also further openings between Niue and VK7 and VK3 during December.

VK5PO managed to get an excellent Christmas 'present' when, on Christmas day at 0043Z he made a two-way CW QSO with Sigi H40FN located in Temotu Province. The grid square was RH29UG.

WSPR (Weak Signal Propagation Reporter)

This mode has been around for three to four years now, but it was excellent to see upwards of forty different VK stations, which included all states and territories, using it on six metres. This is the most activity seen so far using WSPR. Lloyd VK4TVL in Townsville amassed 45 two-way reports. So, 45 different callsigns were logged at least. That is an excellent use of WSPR.

Sporadic E propagation was excellent from time to time during December.

VK6 to VK4, VK8 to VK7, and others, all states and territories seem to have made contacts. Some excellent 'night E's' were also prevalent. Huge signals were commonplace between VK5 and VK3 call areas.

Merv VK4DV at Rockhampton worked a few stations via sporadic E. Using SSB, Merv worked VK2ZIW, VK1DJA, VK2DO, VK3NX and VK3HY between 0225Z to 0345Z. Congratulations are extended to Merv for 50 years as a WIA member!

Finally, from Graham VK6SIX come these observations:

An interesting year of six metre DX from my shack in OF77XX. I was in the shack every day in 2013, and looking through my three paper logbooks that covered all activity in 2013 on six metres I have these statistics:

Total number of days with six metre openings in 2013 (QSO's with other stations) - 22.

Total number of stations worked on six metres in 2013 – 53 (some stations worked more than once).

Number of countries worked - 7, they being ZL, VK, JA, HL, A92, DU and 9M2.

Countries heard but not worked – 1, BA4SI.

Please submit reports, logs or other info you may consider useful to John VK5PO at *vk5po@wia.org.au*

Contests

James Fleming VK4TJF

Hello again and welcome to a new year of fun filled contesting and a whole lot of fun on the airwaves. I hope everyone had a good new year and great holidays that bought them plenty of ham radio gifts to get their stations contest ready. On a personal level, I will be heading off to the Dayton Hamvention and will attend Contest University.

This year promises a lot of good contests. The sunspot cycle has reversed polarity and is on its way back down, thus making 20 metres and 40 metres the likely bands of choice this year. The 10 metre contest for me in December was a blast and I even got a personal best score. I noticed some very big scores from more than two multi-operator stations. Propagation to Europe during the contest was superb to say the least. I even got a few new DXCC entities. Results for the 2013 Oceanic DX contest should be well on their way. I'm eagerly checking the website for updates.

This month 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, the Asia Pacific Sprint, which is only two 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 8th of February from 1100 to 1300 UTC is the Asian Pacific CW Spring Sprint. 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 worldwide as possible. 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 15th and 16th of February. 48 hours of fun that starts from 0000 UTC Saturday to 2359 UTC Sunday. Bands are 160, 80, 40, 20, 15 and 10 metres, 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 operator 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 five watts or less, low power 150 watts or less, or high power up to 1500 watts or your licence limit which, in VK, 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 US states and the Canadian provinces/territories. The final score is the points times the multipliers. Email logs in Cabrillo format to *DXCW@arrl.org*

Contest Calendar for February 2014 - April 2014

Month	Date	Starts at	Spans	Name	Mode
February	1st - 2nd	1800 UTC	24 hours	Mexico RTTY International contest	RTTY
	8th	1100 UTC	02 hours	Asia Pacific Spring Sprint	CW
	8th - 9th	0000 UTC	48 hours	CQ WW RTTY WPX contest	RTTY
	15th - 16th	0000 UTC	48 hours	ARRL International DX contest	CW
	21st - 23rd	2200 UTC	48 hours	CQ WW 160 metre contest	SSB
March	1st - 2nd	0000 UTC	48 hours	ARRL International DX contest	SSB
	8th - 9th	1000 UTC	24 hours	RSGB Commonwealth contest	CW
	15th - 16th	**0100 UTC**	**24 hours**	**John Moyle Field Day**	**SSB/CW/ Digital**
	15th - 16th	1200 UTC	24 hours	Russian DX contest	SSB/ CW
	15th - 17th	0200 UTC	48 hours	BARTG HF RTTY contest	RTTY
	22nd	0000 UTC	24 hours	FOC QSO Party	CW
	29th - 30th	0000 UTC	48 hours	CQ WW WPX contest	SSB
April	**5th**	**1000 UTC**	**02 hours**	**QRP Hours contest**	**SSB/CW/ RTTY/PSK31**
	12th - 13th	0700 UTC	30 hours	JIDX CW contest	CW
	19th - 20th	2100 UTC	20 hours	YU DX contest	CW
	26th - 27th	1300 UTC	24 hours	Helvetia contest	SSB/CW/ Digital
	26th - 27th	1200 UTC	24 hours	SP DX RTTY contest	RTTY

John Moyle Field Day Contest 2014

Presented by Denis Johnstone VK4AE/VK3ZUX

15 - 17 March, 2014

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: *jmfd2014@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, 15 - 16 March 2014.
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. Phone, CW, Digital or 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 point 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 point 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 2014", 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 jmfd2014@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 18 April 2014.
17. If any station works the same station more than 5 times on any band or on any mode, both stations must enter a log to verify the contacts. If one station fails to submit their log then only the first 5 contacts will be used for scoring and all other contacts will be removed from the score. This rule has been introduced to overcome a problem experienced in previous contests where 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 unverified 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 800 m 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 will 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 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 will 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)

Silent Key

Kenneth Donald Ayers VK4KD

Ken Ayers was born in Gloucestershire, England on 29 July, 1917. He obtained his amateur licence in 1938, and his callsign G2FRG.

Ken arrived in Queensland in 1959 with wife Daphne and daughters Jackie and Carol. He acquired a job as a TV technician in his first week on the Gold Coast. In 1963 he had built, on Chevron Island, two shops with workshop behind and a flat above. This was to accommodate his companies Quality Vision TV Repairs and Gold Coast TV Hire, with the family in the flat. He had, by this time, also acquired his Australian callsign, VK4KD.

In 1966 third daughter Robyn was born. It was about this time that he became one of the inaugural members of the Gold Coast Amateur Radio Society (GCARS), although in those days it was known as the Southport Radio Club.

In 1978 Ken thought it was time that they had their own clubrooms as they had been having their meetings in any place they could find, mostly in member's garages and similar style buildings. He decided a good way to raise money for this would be a hamfest, so in 1978 the first Gold Cost Hamfest was held, at the property of Frank VK4VN, now a silent key. It was a huge success and subsequent ones were held annually at various venues until a permanent location was found at the Waterways Hall at Broadbeach; it is still run there every year, in November.

By this time Ken had opened his shop in Southport, called Amateur Paradise, and the amateurs who called there to buy their radio gear or just to have a chat donated to the clubhouse fund. Christmas parties were held at Ken's home at Nerang, where the family had moved in 1974. Attendees were each charged $5.00 for their food and drink, and these funds went into the building fund. It was a slow job, with Ken and the club members working on the building at weekends and any other spare time they had available. It was finally completed in 1989.

Over the years Ken was the state co-ordinator for WICEN and also on the committee of the Queensland division of the WIA. In 2003 he retired from the GCARS and in 2007 he started a social group named the South Coast Amateur Radio Group.

Unfortunately his hearing went, then his eyesight, so he spent the last few years of his life sitting on his back veranda overlooking local bushland, and quietly nodding off.

Ken died on 26 September, 2013, aged 96, in the Parkwood Gardens Nursing Home, where he spent the last two months of his life, after having two very nasty falls. He leaves his wife of 62 years, Daphne VK4IA, and daughters Jackie, Carol and Robyn. RIP Ken.

Contributed by Daphne Ayers VK4IA.

SOTA News

Allen Harvie VK3HRA

2013 was a good year for SOTA in VK

In 2013 we have:

- gained our first Mountain Goat
- over 30 have achieved Shack Sloth
- launched VK2 and VK4 in October
- maintained a steady increase in participation with now over 140 Chasers and 90 Activators (of whom 74 have recorded Summit-to-Summit contacts)

All of the above has been achieved before the two-year anniversary of commencement of SOTA in VK3, which will occur in February 2014.

The term Goat is used affectionately to describe the SOTA Activator who frequently heads out into the hills and mountains in cold, wet or hot weather to activate near and distant peaks, many of which can require heavy effort in tackling the Australian bush. The title of Mountain Goat is a SOTA prestigious award for activators who reach 1000 points in their activator's log. The award recognises dedication and effort in reaching the peak for what might be 30 minutes or less of on the air activating before returning home.

Wayne VK3WAM achieved the first Mountain Goat in VK on 13th November 2013. This would be no surprise to anyone who has met Wayne and all will agree that this recognition is well deserved, given the work Wayne has put in to bring SOTA to VK as well as the effort expended in completing over 160 activations.

It is difficult to give a norm for achieving Mountain Goat, as this depends on which band (HF/VHF), mode (CW/SSB), the location (EU/USA/VK) and the distance from the home QTH to the nearest mountains (achieving from 1 to 10 points). It would appear, however, that an HF activator typically takes about 3 years so Wayne's achievement in less than 2 years (1year 9months) is well above average and a magnificent first for VK-land.

The SOTA 1,000 points target does take a lot of effort in VK3. Many of the summits Wayne has activated have been in the wilderness and have comprised multi-day multi-summit expeditions requiring polished bush skills. These skills of communication, navigation and self-reliance have been enhanced by, and also support, Wayne's other interests including Bush Search and Rescue Victoria (BSAR) thereby benefiting the greater community. All of this requires a lot of planning and effort, and according to Wayne it only magnifies the fun (and presents opportunities to sit in fire trucks). I'm sure this won't be the end of firsts for Wayne.

More information regarding Wayne's activations (both highs and lows) is available at *http://waynemerry.wordpress.com/* Anyone considering SOTA activations should start there, as there is a wealth of information waiting to be consumed.

Photo 2: Wayne VK3WAM in a MFB truck.

Photo 1: VK3WAM on VK3/VS-016 Mt Gorin.

There have been many activities worthy of attention this year and not all have been in the field. The effort required to bring an association on line is measured in many weeks of poring over maps and computers to ensure the correct data and should not be understated. Well done to those who contributed to bringing VK2 and VK4 online.

The patience demonstrated by Chasers is evident by the 30 plus Shack Sloths we now have. Whilst the activators sitting on top of the hill may gain the glory, they require skilled chasers to qualify

the summits. Given the low power activations and degrading HF conditions the skill and patience required to claw out a remote signal from the noise is admirable.

Andrew VK1NAM and Allen VK3HRA both achieved 1000 points Summit to Summit, which was only introduced in 2013. They are 13 and 15 respectively for the entire SOTA program. This represents consistent activations incorporating chasing and activation skills. Andrew VK1NAM has walked approximately 456 km to activate VK SOTA qualifying summits, between 1 Feb 13 to 31 Dec 13. In addition, Andrew's efforts in promoting DX S2S contacts has been achieving results with a trend for more activations occurring later in the day and having EU activators setting up early operations to specifically chase VK activations. With the evening activations come sunsets.

The take up of SOTA activations combined with F call licensees is developing a pool of keen low power operators. Ben VK3FTRV's multi-summit multi-day walk/activation in November is a great example of embracing spirit of SOTA. 9 summits over two days starting from Gippsland on VK3/VT-034, then Mt Useful, Mt Selma, Connor's Plain, Mt Shillinglaw, VK3/ VE-091, Mt Skene (where he spent the night), Bald Hill and Mt Terrible Spur. 171 contacts made were made with 3 new summits activated. This also included making a CW contact from the summit of Mt Skene.

CW activations are gaining interest with VK3BYD Warren's activations gaining a loyal following. It has been a long year for Warren with CW only activations but with Wayne VK3WAM also picked up on CW only multi-summit activations in December. The desire by several activators of going deeper into the bush whilst reducing weight will see more CW only activations in the coming year as well as many dusting off their CW skills and others picking up the skill for the first time.

SOTA might seem an odd activity to some but the camaraderie between activators and chasers is remarkable. It's been a big year for SOTA in Australia and we have more to look forward to in 2014.

What does 2014 hold for SOTA?

- Expect more goats.
- Increase in CW activations.
- DX SOTA from activators and chasers alike.

Thank you to those of you who have given up so much of your time to help put SOTA in VK together - not just the activators and chasers but also the XYLs who tolerate our behaviour and makes SOTA the dynamic activity it is today.

Once again, congratulations to Wayne VK3WAM for achieving Mountain Goat status.

See you from a summit.

Allen VK3HRA

VK3news Geelong Radio and Electronics Society

Rod Green VK3AYQ

As with any organization it is the contribution of time and effort by individual members that determines the success of that organization. Our president Barry VK3MBW is one of many of our members who have made a gigantic contribution to our society. Earlier this year we were offered an old caravan by another member Jim VK3VBC. This van was originally a food van and needed a considerable amount of work both inside and out before it could be used for any other purpose.

Over a period of months Barry and his wife Sandra devoted many hours of work to turn the food van into a mobile 'shack'. New windows were fitted and the outside of the van painted. Inside the area was divided into two to make one area for HF work and the second for VHF/UHF. Generous use was made of wood panelling and the final result was an as new interior. Once this work was completed the van was fitted out with the radio equipment. This comprised an HF transceiver, VHF/UHF FM transceivers, a computer for logging purposes, and a rotator to turn the beams for HF, VHF and UHF. Also vertical antennas were obtained for two metres and 70 cm. All equipment can be run from 240 V mains power, or a petrol driven generator. Batteries are also available for 12 volt operation.

So far the caravan has been used for the John Moyle field day, and the lighthouse weekend. It was also used as a display of amateur radio equipment during the 2013 Geelong Heritage Festival. From now on operating from a portable location will be much easier. It is envisaged that in the future we will be taking part in more field days than we have in the past.

Members preparing for the hunt.

Early in 2013 we included in our syllabus an activity which we had not had for many years. This was a transmitter hunt. But whereas in earlier times these hunts had been on HF with members hunting from their cars, it was decided to try something different. The hunt was held in Eastern Park overlooking Corio Bay. The frequency was 146.525MHz FM and all competitors were on foot. A large group of hunters assembled in the park on a warm Saturday morning to take part. The transmitter was hidden by Keith VK3AFI. The hunters set off, and after a while a few found Keith sitting in his car waiting for them. They were told that they were close to the transmitter but to look further. Eventually two hunters found the hand held transmitter hidden in a clump of trees and bushes. At the conclusion of the hunt the participants gathered in a nearby rotunda for a barbeque before going home. This activity was a great success and will be included on our syllabus as a regular event.

VK2news The Hunter Radio Group

Rodney C Prout VK2CN

90th birthday celebration

The Hunter Radio Group (HRG), formally the Newcastle and District Radio Club (NDRC) celebrated its 90th year on 13 October, 2013.

The HRG - History

A meeting was held at the residence of Mr Lionel T Swain of 135 Beaumont Street, Hamilton on Friday, 13 October, 1922, at 8 pm to consider the advisability of forming a local 'wireless society'. Over 70 persons were present.

Mr Swain moved and Mr Abbott seconded that Major Gill be President. The club met at several venues including St. Peters Hall, Hamilton, Sharpes Hall, Maitland Road, Islington, Winship Street, Hamilton and the YMCA Building, King Street, Newcastle.

The first Annual General Meeting of the NDRC was held at the clubrooms at 25 Winship Street, Hamilton, on 24 October, 1923.

On 9 April, 1924 the NDRC affiliated with the Wireless Institute of Australia (WIA) for a fee of £1/1/0. The Society was granted Licence No 2S0, and the name was changed to Wireless Society of Newcastle on 4 June, 1924.

On 15 February, 1927, the then President, Mr O'Mara, moved and Mr Wilson seconded the motion that the Club disband and that the General Committee shall control the distribution of assets.

The next record of activities found was a dinner held at the Orient Hotel, Watt Street, Newcastle over the weekend of 26/27 September, 1936. During this period some activities were held in The Sun Building, Hunter Street, Newcastle. This building is just up from the corner of Hunter and Watt Streets and for some years was used as the studios for radio station 2NX.

Members of the HRG at their October meeting are, from L to R, at back: Barry VK2AHE, Peter VK2YPK, John VK2JJW. Standing: Grahame VK2FA, George VK2NGA, Graham VK2VV, Jamie VK2YCJ, Michael VK2CMM, Charlie VK2CLH, Graham VK2ZUB, John VK2PSM, Gordon VK2DN and Rodney VK2CN. Sitting: Pauline VK2GTB, Maurice VK2CD, Len VK2ZFD, Norm VK2BNS and Les VK2RJ.

Over the weekend of 9/10 September, 1939, the WIA, Northern Division, conducted a HAMFEST.

The Wireless Society of Newcastle was re-formed at a meeting held at The Hunter Street West campus of the Newcastle Technical College during the late 1940s. Again Mr Lionel T Swain, VK2CS was elected President and Mr W Pearce VK2CW was elected Secretary. Meetings were held monthly and lectures and demonstrations were presented.

About 1949-50 it was suggested that the Club should seek to become a Branch of the WIA, New South Wales Division. This was agreed to by the members and the NSW Divisional Council attended a Special Meeting held in Room 41, H G Darling building, Newcastle Technical College, Tighes Hill where the Division President inaugurated The Hunter Branch of the New South Wales Division of The Wireless Institute of Australia, with Mr Lionel Swain VK2CS as Foundation President.

However during those happy years, amateur radio in the Hunter Valley was well served by The Hunter Branch.

Some of the highlights of this period included:

John Moyle VK2JU on various topics including the first demonstration of Stereophonic sound in Newcastle.

Frank Hine on the R C Bridge.

Dr Leo McMahon on SSB.

Joe Reed VK2JR on antennas.

Dr Adcock on direction finding.

Wally Hannon on Mawson in the Antarctic.

Bob Winch on VHF equipment.

Peirce Healy on VHF equipment.

Major Collet VK2RU on VHF gear.

Ken Greenhalgh on transformer winding.

Bob Godsall on VHF and UHF gear.

Also members of the VHF/TV Group.

Morrie Meyers of Aviation Electronics.

There were other lectures by members and visitors, not forgetting the Annual Member Build Competition.

In 1951 it was decided to hold an Annual Field Day. For a number of

years these were held at Blackalls Park, Bolton Point Park and Teralba Community Hall. During the late 50s, this was changed to The Hunter Branch Annual Dinner and Convention. These were held at the Newcastle Technical College, Clegg Common Room, Newcastle West Army Drill Hall and finally at the Esplanade Hotel, Telford Street, Newcastle.

Speakers at these dinners have included; John Moyle, Neville Williams and Jameson Rowe from Electronics Australia and various others plus Max Hull the WIA Federal President, Berry Beresford from Mullard Australia and some technical people from the AWA organisation.

Annual Christmas parties for the XYL and junior operators were held each year for a number of years until there was lack of assistance from members. These events were held at the Henderson Park Hall, Adamstown and the Community Hall at Charlestown.

At our monthly meetings for many years, a technical film or video was presented to members prior to the lecture. These films were organised by John Traill VK2XQ of Mayfield (BHP library) and videos by Lionel Doolan.

The 11th Annual Dinner in 1962 was held during Stuart Fairbairn's Presidency and the organising committee that year included VK2's CS, XT, AKX, RJ, ZSG, BGJ, ZIF and AYL.

Lectures on all facets of amateur radio were presented at our meetings and included SSB, RTTY, ATV, receiver and transmitter design and construction, disposals and conversions, antennas - both HF and VHF/UHF, power supplies, printed circuit board design and manufacture, general construction practices, test equipment and SSTV.

And we must not forget computers.

The late Gordon Sutherland VK2ZSG always felt that some of the best pieces of gear displayed at our meetings were the VHF/UHF gear built by the late John Miller VK2NR.

Members of the Hunter Branch travelled to Dural on several occasions to assist with the building of the divisional transmitting site at Quarry Road, Dural. Our work on the piers and flooring must have been pretty good as they are still there to-day. The Foundation Stone for Dural was laid on 12 August, 1956.

The Hunter Branch was also associated with Amateur Radio House, Atchison Street, Crows Nest. The Lectern for the lecture hall was given to the division by members of the Hunter Branch.

In 1970, the Hunter Branch was asked by the NSW division if it could conduct the VK2 QSL Bureau for the members. Under the direction of Bill Hall VK2XT this task was carried out until 1980.

After a visit to the Hunter Branch by Peter Dodd, Federal Secretary, it was agreed to assist in the publishing of the Amateur Radio Callbook. Again the Hunter Branch came forth and carried out this task.

For some years our magazine '*Amateur Radio*' carried the Zone Notes. Those for the Hunter Branch were prepared by Les Sparkes VK2AOR, Bob Rose VK2AQR, Keith Howard VK2AKX, and Gordon Sutherland VK2ZSG.

In 1970 a letter was sent to NBN Television requesting permission to install a two metre repeater at Great Mount Sugarloaf transmitting site. The Management of NBN agreed to this request and thanks to the efforts of Rodney Prout VK2CN and the late Merv Hardy VK2AAM, the repeater was in operation by January, 1971. The first contact through the repeater was by Tony O'Brien VK2BOA, returning from Sydney and Rodney and Merv at the Sugarloaf site. The repeater antennas were installed on the NBN transmission tower by Chris Minahan VK2EJ.

During the early 1990's several members of the Hunter Branch attended the Printed Circuit Board Course conducted by the School of Electronics, Newcastle Technical College.

Past Presidents of the Hunter Branch include Lionel Swain VK2CS, Johnny Clarke VK2DZ, Bill Hall VK2XT, Stuart Fairbairn VK2AYF, Les Baber VK2RJ, Frank Cox VK2APO, Frank Boundy VK2ZFB, Rodney Prout VK2CN, Gordon Sutherland VK2ZSG, Maurie Jones VK2CD and Len Daley VK2ZFD.

Over the years the New South Wales Division of the WIA has seen fit to confer Honorary Life Memberships upon several members. They were Sir Allan Fairhall VK2KB, Lionel Swain VK2CS, Dr. Adcock, Direction Finding, Bill Hall VK2XT, Keith Howard VK2AKX and Bill Otty VK2ZL.

The Hunter Radio Group also conferred Honorary Life Membership upon Gordon Sutherland VK2ZSG, Rodney Prout VK2CN and Peter Sturt, VK2ZTV.

The HRG - Now

Currently the HRG conducts monthly meetings at the studios of NBN TV at Mosbri Crescent, Newcastle, at 8 pm on the 2nd Friday of each month, excepting January. For many years a social dinner has been held in July and a Christmas social dinner in December each year. These events were and still are organised by our Social Secretary, Pauline Jones VK2GTB.

The Hunter Group operates a six metre beacon VK2RHV on 50.288 MHz and two two metre repeaters on 6900 and 6975. The latter operates the EchoLink system. There is also a UHF repeater on 438.025 MHz. All transmitting equipment is at the NBN TV transmitting site at Mount Sugarloaf, serving the Lower Hunter Valley.

VK4news QTC

Mike Charteris VK4QS
e *mikevk4qs@gmail.com*

Let me start by wishing all amateurs in Queensland a very Happy New Year for 2014. I hope that everything you undertake over the coming twelve months will be both prosperous and exciting. By now some of you will have returned to work, while others continue to endure the summer. With 'Safety' at the forefront of everything we do these days, it is timely to remember that most accidents happen in and around the family home. Our loved ones are the most important people in our lives and we owe it to them to do our work/hobby in a safe manner.

The New Year is a great time to have a bit of a clean out round the shack, to tidy up the antennas and plan for the coming months of radio activity. With a lead time of two months to write this column, a few readers may perhaps question the vintage of some news presented in these pages. I trust that though it was a celebration for those who were part of it, that perhaps it is still interesting and entertaining, if not inspiring for those reading it for the first time. Many of the activities can indeed be overlaid and encouraged as new activities in your own club. I look forward to your club contribution throughout 2014, for as you know these pages are about 'US' Queensland amateur radio operators.

Royal Flying Doctor Service celebrates 85 years on May 28, 2013

I recently came across an article about the RFDS, and the fact that it was celebrating its 85th anniversary on May 28, 2013.

I went to their website *www.flyingdoctor.org.au* and read about this unique and amazing organization that is an absolute Godsend to literally thousands of Australians.

To take a little time and read what the RFDS achieves each year is quite fantastic when it is considered that the Australian Federal Government only contributes a miserly 25% to the overall running cost of this organization. The RFDS was a dream that was born out of the vision of Reverend John Flynn some 85 years ago. In many ways the RFDS is like our own amateur radio hobby, in as much as it started with very humble beginnings and very basic equipment. These days they operate very sophisticated equipment with many bases throughout Australia, flying very expensive aircraft daily. So I then pondered that as clubs throughout Queensland, just like the RFDS we are always seeking to acquire funds for our clubs.

But what if just once a year we decided to open our hearts for other Australians and gave a club donation to the RFDS on their Anniversary, May 28. Now this may take the form of an RFDS donation tin at the Clubhouse, or something similar. It may achieve just $10 a year, which is better than nothing. But it may see you all open your hearts for those who live in the back blocks of Australia for just a little more perhaps. If I could suggest most humbly that if your club decided to undertake this, that before you send your donation, that you take a photo of all the club standing in front of a large cardboard cheque say one metre by 30 cm with your club name and the amount in large letters and numbers. You can then post this to the RFDS from your club as a donation and they can see where it came from. You could include some history on your club, and perhaps a commitment to donate a little bit each year. This could perhaps be written up in the RFDS magazine with the photo of your club members.

What could we achieve for the RFDS if it were adopted by amateur radio clubs in Queensland as an act of kindness each year. Take a little time to think about this please. Discuss it at a club meeting and see what you can come up with, as I am sure you will be amazed what you can achieve in a year with just small change as a donation. And if by chance you feel I am stark raving mad, and why don't we support every other worthy organization, well the RFDS is radio based and so are we, so there is a great deal of mutual understanding. Now this is not a WIA initiative, purely a suggestion from Mike Charteris VK4QS, so blame me please. I would look forward to hearing from you with regards to your discussions on this plan of kindness.

News from Queensland

The big news for 2014 is the announcement that this year's WIA AGM conference will be held on the Sunshine Coast, and hosted by the Sunshine Coast Amateur Radio Club. The details I have to hand are as follows.

Date: The AGM will be held over the 16th, 17th and 18th May, 2014, at the following locations:

Friday: Alexandra Heads Surf Club, with beers and food from 4.00 pm.

Saturday: Aussie World Palmview, day and evening function. Spouses tour of hinterland, Eumundi Markets, Montville and Maleny.

Sunday: Mooloolaba Spit, Underwater World, airport for rescue helicopter.

Sunday Evening: BBQ at Sunshine Coast Amateur Radio Club.

Special event call sign

For the AGM this will be VK104WIA.

So mark your calendar, and put a few pennies away for the WIA AGM. This is a great opportunity for all clubs in Queensland to think about attending from near and far. With a bit of planning over the next four months it might well be possible to achieve a representation from every club in Queensland. For who knows when next it will be held on our doorstep.

Amateur radio and air cadets with Mike VK4MIK

A couple of months ago I received a very nice email from Mike VK4MIK, from the Tablelands Radio Club. Mike has been out there spreading the good word of amateur radio to some of the local air cadets. During the course of a six hour stint Mike taught them all about radio procedure and explained the principles of radio propagation. Initially they operated with UHF CB radios, before setting up an HF Station using a W3EDP longwire. Operations were conducted on both 15 and 20 metres which saw a contact with a VK4 operator on USB. This was followed by an international contact into Japan using that age old form of communication, CW. This attracted the interest of the air cadets greatly and generated a lot of curiosity, while Mike was kind enough to tap out their names in Morse code. The word quickly spread among the cadets, and before too long the cadet leaders were duly impressed with Mike's efforts. The cadets thanked him personally and thus another day ended with the cadets very much enlightened as to the mysteries of amateur radio. Mike expressed the hope that the impression made on the cadets would lead to some of them taking up amateur radio as a hobby. Mike recalled that back in the 1960's he had been duly impressed as a young fellow by Townsville amateur Bob Brittan, who was kind enough to show him his totally homebrew AM/CW station and the large cubical quad erected in his back yard. To light the spark and plant the seed can often see the lives of people changed in ways not imagined by a brief exposure to our wonderful hobby.

Noel's VK4NL 'Nutty Campers' take amateur radio at Rainbow Beach in force

Many by now will be aware, even if not willing participants, of what is becoming an increasingly popular activity in the ranks of Queensland amateur radio families. I say families as it is fair to say that amateur radio is the catalyst for the family to travel with their caravan or the like to various locations for the social interaction that is known as Noel's 'Nutty Campers'. Far from being just the individualistic activity that many of the public see it as, this group are embracing the real spirit of amateur radio by way of group socializing and enjoying their time together. One recent activity saw them all roll up to the Rainbow Waters Caravan Park at Carlo Point, Rainbow Beach. Once they had managed to get all the wagons in a circle, it was down to meeting and greeting followed by socializing. Campers came from as far as Brisbane, Dalby, Yarraman, Kingaroy, Gladstone, and many places in between. Keep up the good work Noel as it's great to see amateurs out and about and enjoying themselves as social groups.

Alan VK4EAB receives Life Membership of the GCEC from President Bob VK4MR.

Low band activity on 630 metres (472–479 kHz) and 136 kHz

There seems to be growing interest in the 630 metre band and the 136 kHz allocation by innovative amateurs in this country. If you have set up a 630 metre band or 136 kHz station in Queensland, and you would like the details published, then drop me (VK4QS) an email. I was recently contacted by Kevin Dalton VK4WA, who has set up a beacon on 475.58 kHz. It operates from approximately 0800 UTC to 1400 UTC. Kevin informs me that he is also looking at a beacon on 136 kHz, which might well be operational by the time this goes to print. Thus far Kevin's 630 metre beacon has been heard in Sydney. So if you manage to receive either of them, then I am sure Kevin would look forward to hearing from you.

Gympie Communications and Electronics Group (GCEG)

It's always great to see club members recognized, and such was the case on 2nd October, 2013 when Alan Booth VK4EAB was rewarded with Life Membership for his outstanding dedication to amateur radio. Alan is a 'White-Stick' operator in his early nineties and lives in a nursing home. Alan still enjoys a regular daily 40 metre CW sked as well as daily IRLP QSO's to the USA and South Africa.

Also from Gympie this month, we learn that the club has established a new 80 metre net on 3.630 MHz. It kicks off each Wednesday night at 8.00 pm Queensland time, so pop along and say hello and support another great net on 80 metres.

Bunya Mountains & District Am Com Inc

In news from the Bunya Mountains for 2014, the club has set dates for the next round

of Foundation license course/exams to be held on the following dates, 22/23 February, be quick for this one, 7/8 June, and 4/5 October. These will be held at the MYCNC complex in Dalby unless otherwise advised. Contact Neil VK4NF if you require a Foundation manual to start your amateur radio hobby. Exams for upgrades to Standard or Advanced licenses can be arranged as well. For those wishing to chat to club members, pop into the club's 80 metre net each Sunday night at 7.30 pm local on 3.650 MHz.

Well that's all the news for this month my friends, I look forward to hearing from you throughout 2014. Cheers – 73.

VK2news

Tim Mills VK2ZTM
vk2ztm@wia.org.au

New Year greetings

Amateur Radio New South Wales (ARNSW) has the sad duty to report the passing of their President Terry Ryeland VK2UX on 11 November, 2013 after a short period in hospital. He was 74. His well-attended service was conducted at the Leura Memorial Gardens Crematorium on Friday 15 November. Terry was a Life Member of both ARNSW and of the Blue Mountains ARC. He had been active in the NSW Rural Fire Services in his home region of the Blue Mountains. Terry was also active in lawn bowls as a leading umpire. Terry had for many years been the Nominated Assessor with ARNSW, as well as having been their class lecturer, and had over the years guided many a CBer towards our hobby. A keen CW operator, he also maintained one of his former calls VK2BRQ. He will be missed by all who knew him both within and beyond the hobby.

The passing of Terry VK2UX had ARNSW fill the vacancy on their committee with Paul Anslow VK2APA who is the current class instructor. Senior Vice President Mathew Magee VK2YAP moved into the President's role with Peter Zielinski VK2VG moving from Junior to Senior Vice President and Al Hirschel VK2KAM taking on the role of Junior Vice President. ARNSW will have their AGM on Saturday, 3 May 2014 with committee nominations being called for in March.

ARNSW will commence the annual upgrade course on Monday evening, 3rd March. Bookings are required by an email to *education@arnsw.org.au* A Foundation course will be held at the VK2WI Dural site over the weekend of March 22/23 with all grades of assessments on Sunday the 23rd. Bookings are required. ARNSW held a successful 'Radiofest' last November with a series of lectures, and has next in the series a BBQ and field events scheduled for the 9th March. Other events will be held in June and November. Details via the VK2WI news sessions.

VK2 amateurs in February can look forward to the ability to erect an antenna support up to 10 metres without the need to involve their local council at their QTH. Details were given in a WIA news release last December. It is also pleasing to welcome a VK1 two metre beacon, on 144.410 MHz to keep VK2RSY on 144.420 MHz company. Since the close of Channel 5As, in particular in the Hunter Region, there have been big gaps in east coast beacon coverage. With four beacon slots available in VK2 it would be nice to see some of them filled by systems around the state.

The Summerland ARC suffered a lot of damage to their Richmond Hill club rooms by a break in late last year. A considerable amount of equipment was stolen including a rare Yaesu HF transceiver model FT-DX401, serial number 1H301077 Any information to club president Chris VK2ACD.

This month will have the annual Central Coast Field Day at the Wyong Racecourse on Sunday, 23rd February, held rain, hail or shine. Over the weekend the CCARC will conduct a Foundation course. The CCARC will not hold any lectures until March, all efforts have been put towards the field day.

The Tamworth ARC conducted the fourth of their balloon experiments in late December. John VK2YGV advised that after a good release it stopped sending data on all systems and has not been seen or heard of again. Hopefully the payload will be found somewhere to the west of Gunnedah!

The Waverley ARS have introduced a 'Shack Night' on the first Wednesday evening of the month where members can gain experience in using modern radio equipment on air, advises Simon VK2UA. They also have a working bee at the Rose Bay club rooms during the day on most Tuesdays. Check them out at *http://www.vk2bv.org* There will be a training weekend this month, on the 8th and 9th February. Contact them via *education@vk2bv.org*

HADARC, the Hunter Radio Group and St.George resume monthly meetings this month (February). VK2AWX resumes the Monday night broadcast net this month.

73 – Tim VK2ZTM.

ALARA

Margaret Blight VK3FMAB – Publicity Officer

Greetings to all for the New Year and might it be a happy and productive one for you. The year 2013 wound down with the usual round of Christmas parties and get-togethers giving everyone an opportunity to catch up with friends, including fellow amateurs. ALARA lunches took place for many YLs and their OMs so the year ended on a very pleasant note.

The VK3 ALARA Christmas lunch took place in Bendigo giving a number of YLs living in country areas the opportunity to meet up with less travel time involved. As well a party from Melbourne took the opportunity to take a weekend break, booking into accommodation near to Bendigo. On arrival at the property, an antenna and radio gear was quickly set up and there were a number of contacts made over the period. This was voted a most successful radio weekend.

There was a good turnout for the last lunch of the year and the numbers included some of the new graduates from the all-female Foundation licence course. It was a beautiful sunny day and everyone enjoyed the meal and the atmosphere

Photo 1: Stephen VK3SIR at the radio while others wait their turn.

of Christmas Cheer. Kris Kringle parcel sharing added to the gaiety. It was particularly pleasant to catch up with friends who had travelled down from Echuca for the occasion.

ALARAMEET 2014

It hardly seems any time since our last ALARAMEET which was held at Ulverston, South Australia, in September, 2008. Enthusiastic women operators travelled from all over Australia to attend. There were also visitors from New Zealand, the U.S.A., Japan and Korea. Everyone agreed it was a most successful occasion. It provided the opportunity for sponsors to meet up in person, sometimes for the first time, and many old friends were able to renew their acquaintance.

Photo 2: L-R: Margaret VK3FMAB, Pam VK3NK, Amanda VK3FQSO, Julie VK3FOWL, Donna VK3FRET, Jean VK3VIP, Pat VK3OZ, Heidi VK3FHID, Margaret, Jenny VK3WQ, Monica VK3FMON, Barbara VK3FBJD. The ALARA banner is supported by Pippi, Bean and Ayla.

So hopefully we can all look forward to another successful Meet to be held in Nelson Bay, NSW later in the year. I suggest that you start marking your calendar and begin budgeting as this is an opportunity that only comes around every few years. I am looking forward to meeting with you there.

ALARAMEET Nelson Bay, 24th to 27th October, 2014

The ALARAMEET team has started planning the next Meet to be held in beautiful Nelson Bay, NSW. There are many lovely, interesting and relaxing spots there; we will descend on them and make it a great weekend.

Port Stephens was first discovered by Captain Cook in May, 1770. He named it after the Secretary of the Admiralty, Sir Phillip Stephens. Nelson Bay is a suburb in the Port Stephens Council area and, by road, is about 60 km north-east of Newcastle.

In the mid-1800s Nelson Bay was used as an anchorage in poor weather and was used by ships that came for timber and water. The lighthouse on the northern headland, Nelson Head Light, is the oldest building there and is different to other lighthouses as it has no tower.

The first vehicle into Nelson Bay was a T model Ford which drove along a sand track from Williamtown in 1926. By the 1960s, after better roads were built, Nelson Bay became a popular tourist spot.

Although it is still a few months away, please start thinking about attending ALARAMEET 2014 so you can enjoy this beautiful part of the NSW coast and join in the fun and camaraderie of the group.

As Anjes VK2GWI lives there, she is doing most of the planning, assisted by her OM Henk VK2GWK and Elwyn VK2DLT.

http://alarameet2014.com/ is the place to find out more.

33rd ALARA contest

The overall participation was enthusiastic and saw numbers increasing. Lesley VK5LOL who is the ALARA contest manager has again done a sterling job. Congratulations to the overall winner of the contest, ALARA President Jean VK3VIP who reached a score of 1227. The top VK4 member was Catherine VK4GH with 1088. This year's top Foundation licensee Leonie VK2FHRK did a remarkable job by earning 912 points and coming overall third in the entire contest. This effort will surely encourage other Foundation members to enter our next contest. Hilary VK2IUW was the top scorer for NSW and Rosanne VK7NAW took the honours for Tasmania. It was interesting to learn that this contest also involved some participants using both CW and EchoLink in their transmissions.

News from WARO

Below is a little piece about one of my sponsors, Joline ZL1UJB, who received the WARO Achievement Award for 2013. The following piece was printed in the WARO magazine and written by Rosemary ZL1RO;

'Joline ZL1UJB was licensed in 1996 and joined WARO in 1997. At the WARO AGM in that year she offered to co-produce the WARO Bulletin and she has been a member of the WARO Executive continuously ever since. Her roles have also included that of WARO Bulletin Editor for three years, committee member, Librarian then Librarian/Archivist for the past seven years.

A talented storyteller, Joline has written a great many articles for the WARO Bulletin on a wide range of subjects, often at very short notice, when copy for an issue was scarce. WARO's 50th Birthday Book is the result of the year of effort that Joline undertook to collect a profile from almost every living WARO member. She then compiled the Birthday Book, organised the printing and distributed a copy of the book to each member of WARO.

Words like enthusiastic and encouraging come to mind when we think of Joline. She seeks out newly licenced YLs and befriends and encourages them as they settle into our hobby. At local level Joline and her OM Morris ZL1ANE attend market days and WARO get togethers in the Waikato, Bay of Plenty and Auckland areas. She is regularly on the air on VHF with a group of YLs during the week. She is one of the net controllers on the Sunday night two metre YL net. Joline is a keen supporter of WARO and a deserving recipient of the WARO Achievement Award.'

VK6news

Keith Bainbridge VK6RK
e *vk6rk@wia.org.au*

Greetings everyone, and welcome to the first VK6news for 2014.

I'd like to wish you all a Happy and Prosperous New Year and may the DX flow into your antennas!

There hasn't been much input for this month's column, I expect the Xmas and New Year festivities have curtailed the activities of most clubs, but here is this month's input from the Hills Amateur Radio Group (HARG).

Don't miss our monthly General Meeting on Saturday 22nd February. Mal VK6LC will present a fascinating video of the rare VK9RS Rowley Shoals DXpedition in 1999. According to Mal this is still the most famous IOTA DXpedition ever mounted in Australia. The video runs for 59 minutes and covers the mammoth task of moving two tonne of DX gear 2,300 km to Broome followed by another 260 km of sea travel to Cunningham Island-Imperious Reef, running two one kW stations for five days that totalled 11,000 QSOs on SSB/CW. A four man team, two from Australia, one from USA and one from Portugal burned up 300 litres of fuel and all of Mal's energy! This was two years in the planning and an international DXpedition that cost US$15,000 in 1999. The DXpedition won the WIA and Overseas Islands DXers top awards for 2000. This is a great video to encourage our younger Dxers and fascinate the older ones.

Other talks already planned for next year include Slow Scan TV, a visit to the ABC transmission site in Hamersley, satellite and ISS communication, how to connect your radio to your computer and D-STAR operation. Also, we will participate in the John Moyle field day in March and the RD Contest in August.

Cheers from Bill VK6WJ for HARG.

The only other input I received this time was from Wayne VK6EH on behalf of the Northern Corridor Radio Group (NCRG).

Sunday 22nd December saw NCRG members, past members and friends join the family of Neil Penfold VK6NE (SK) for an Ashes spreading ceremony. Neil was instrumental in pushing for and finally selecting the current site of our club rooms in Whiteman Park in 2004. The facility was later named after Neil as the 'Neil Penfold State Amateur Radio Centre'.

Present were Neil's family Vaughan, Douglas and daughter Rosilyn along with Douglas' son and daughter who were currently visiting from Switzerland. Vaughan spoke to the gathering and commented on how Neil had loved the NCRG and remarked how honoured the family was to return Neil to familiar surroundings. Vaughan scattered Neil's ashes around the flagpole at the entrance to the club as Neil was very proud to fly the state and national flag at every opportunity, and the flagpole signified to him that the club was complete and official. The event concluded with morning tea and finger food and lots of family recollections of Neil's life.

Thanks Wayne, it really was a fitting way to remember Neil and we were honoured to be approached by the family to make the club his final resting place.

NCRG activities, like most other clubs, have been quiet of late, but things are getting back into gear and new projects are in the offing, including renewed activity to complete the VK6RIO Indian Ocean two metre beacon. There has been interest at last from the South African side and Phil VK6APH and the author have been gathering the necessary equipment to provide the folks in ZS with a complete beacon setup. This has involved scrounging, buying, and begging the SDR parts from various sources, and the icing on the cake was a donated Metis board from TAPR in the US, a very generous donation indeed and we for which we are most grateful. The ZS VHFers are having meetings in January so I hope to be able to report in more detail next month.

So secretary's, please let me have your contributions for future VK6 news notes in plenty of time for inclusion, preferably before the 27th of each month.

Some of those attending the ashes spreading of Neil VK6NE (SK) at the NCRG.

News just in from the NCRG

The NCRG very much regrets to inform all amateurs that one of our stalwart members Gerald VK6XI was the victim of a terrible personal tragedy on 29th December. A person broke into the family home and Gerald's daughter and his former wife were murdered.

The club and all the amateur fraternity in VK6 would like to join together to offer Gerald and his son Nicholas our deepest sympathies, and to let them know we are there for them whenever we are needed.

Editor's note: It is believed that a person has been apprehended and is assisting police in their investigation of the crime.

Hamads

FOR SALE – NSW

HP 1710A 150 MHz two channel oscilloscope. One channel not working but other is fully operational.

RACAL type 409 modulation meter 3 MHz-1200 MHz, fully operational. Archive equipment. Either item will take any reasonable quote.

Contact Arthur VK2DKF QTHR or email *arthur.forster@bigpond.com*

WANTED – NSW

Antenna tower. I am looking for an antenna tower at least 15 metres in height that is not used and currently unwanted and is in need of a new home. Reasonable offers considered under $1,000.

If interested please send photos by email to me at *lbutcher59@optusnet.com.au*

Thank-you, John VK2HA.

HP 1740a oscilloscope, either working or not, for spare parts. In particular HP 5081-3030 vertical preamp hybrid that is common to all 17XX models is wanted. Let me know what you have.

Please Contact Chris via email *vk2cy@wia.org.au* or QTHR, or phone anytime and leave message on 02 9763 1407

WANTED – QLD

One single pole six (6) position ceramic switch. To discuss price and condition reply to Mervyn VK4DV, phone 07 4928 5537 nights or by email to *vk4dv@yahoo.com.au*

FOR SALE – SA

The VK5JST Aerial Analyser (*AR* May 2006). Over 10,000 built, and still available from the Adelaide Hills Amateur Radio Society. For full details see *www.ahars.com.au*

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

ADVERTISERS INDEX

TRADE PRACTICES ACT
It is impossible for us to ensure that the advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore, advertisers will appreciate the absolute need for themselves to ensure that the provisions of the Act are strictly complied with.

VICTORIAN CONSUMER AFFAIRS ACT
Advertisements with only a PO Box number address cannot be accepted without the addition of the business address of the box-holder or seller of the goods.

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 Strategy Committee

Phil Wait VK2ASD (Board member – President); Geoff Atkinson VK3AFA (IARU Specialist); Peter Young VK3MV (Regulatory Counsel); Roger Harrison VK2ZRH; Doug McArthur 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.

Administrative & Finance Committee

John Longayroux VK3PZ - WIA Treasurer (Committee leader); Greg James VK2GRU - WIA Assistant Treasurer; David Williams VK3RU - WIA Company Secretary; Mal Brooks VK3FDSL - WIA Office Manager; Phil Wait VK2ASD - WIA Board member – President; Chris Platt VK5CP - WIA Board member - 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 Committee

Robert Broomhead VK3DN - Committee Leader; Roger Harrison VK2ZRH - Deputy Leader

- 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 Swainston VK3DAC - Co-Leader; Owen Holmwood VK2AEJ - Co-Leader; Ron Bertrand VK2DQ; Mal Brooks VK3FDSL – Administration; Robert Broomhead VK3DN - Systems

- 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.

Affiliated Clubs Committee

Phil Wait VK2ASD - WIA Board member – President; Mal Brooks VK3FDSL - WIA Office Manager; Ted Thrift VK2ARA - Clubs Liaison officer; John Longayroux VK3PZ - WIA Treasurer

- 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

Community Service Committee

Bob Bristow VK6POP - Committee Leader; Fred Swainston VK3DAC; Greg James VK2GRJ; Ewan McLeod - WIA Director; Paul Hoffmann VK5PH

- Develop, promote and co-ordinate all WIA community support activities

Radio Activities Committee

Chris Platt VK5CP - WIA Board member; Geoff Atkinson VK3AFA

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

Historical & Archive Committee

Peter Wolfenden VK3RV - Committee Leader; Roger Harrison VK2ZRH - Deputy Leader; Linda Luther VK7QP; Martin Luther VK7GN; Jenny Wardrop VK3WQ; Will McGhie VK6UU; Ian Morris VK3IFM; Drew Diamond VK3XU; David Wardlaw VK3ADW

- 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.

New Initiatives Committee

Phil Wait VK2ASD - Board member – President; Robert Broomhead VK3DN; Roger Harrison VK2ZRH; David Williams VK3RU - WIA Company Secretary

- Think-tank ideas and initiatives to advance amateur radio and WIA membership.
- On approval by the Board, run proof of concept trials.

IT Services Committee

Robert Broomhead VK3DN - Committee Leader; Tim Broomhead VK3KTB - Assistant Webmaster / Programmer; Marc Hillman VK3OHM - Awards System Developer

- 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.

Join your local radio club today!

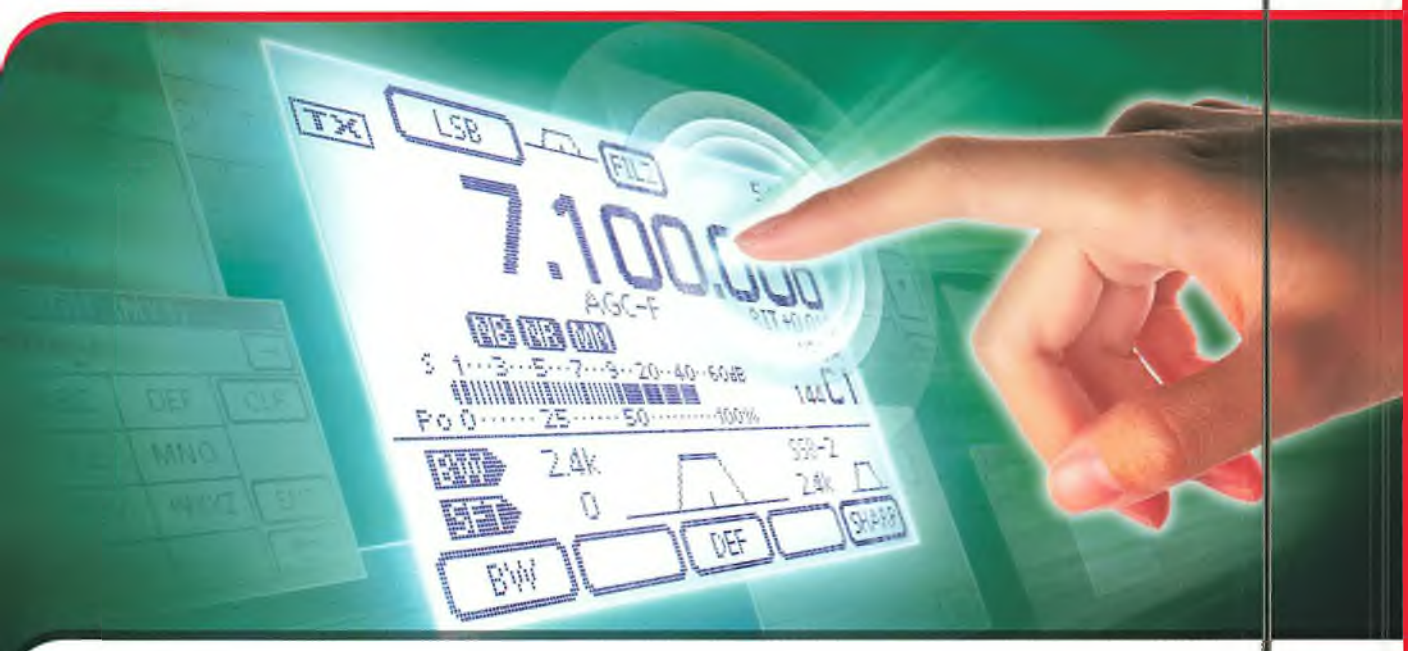
Radio Clubs:

- Are Australia-wide
- Will introduce newcomers to amateur radio
- Run regular meetings and functions
- Provide short training & accreditation courses for people wishing to obtain an amateur radio licence

Further information on clubs can be found on the WIA website

www.wia.org.au

ICOM



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