

Amateur Radio

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Number 5 ▶ 2018
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IC-7610 review



- ▶ A Foundation primer
- ▶ SSB transceiver using Choc Board

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*Our cover this month features the Icom IC-7610
transceiver. Read the user review on page 11.
Base image supplied by Icom Australia.*

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Contributions to Amateur Radio



Amateur Radio is a forum for
WIA members' amateur radio
experiments, experiences,
opinions and news. Manuscripts
with drawings and/or photos are
welcome and will be considered
for publication. Articles attached to
email are especially welcome. The

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Amateur Radio Service

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

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Editorial

Peter Freeman VK3PF

Spring is almost here

This winter seems to have been cold and windy in Gippsland. Of course, the wind makes the apparent temperature lower, so our perception is that it is colder. Rainfall in the local area is low compared to average figure, with the year to date total only about two thirds of the long term average. Several regions around the country are experiencing the driest conditions on record and are already drought declared.

Yet our snow fields in Victoria have received significant snow falls, the best in 14 years, as a result of the pattern of cold fronts which have delivered the precipitation events.

As we move into spring, most welcome the warmer weather and longer days. Beware the strong wind events that often occur during the season.

Spring also sees several high profile radio contests and the annual Jamboree on the Air (JOTA). JOTA always occurs on the third full weekend in October. So expect to hear lots of young voices on the airwaves during the weekend. I would expect that most Clubs and individuals would have at least preliminary arrangements in place if they are hosting Scouts or Guides. There are constraints as to who can participate directly with the Scouts and Guides, but almost anyone can participate by talking over the radio. Perhaps you might be able chat to a youngster on air over the weekend?

I have seen at least one report that suggests that the Sun may have commenced its next solar cycle. If that is the case, we should start to see a slow increase in solar radiation and sunspot numbers and

therefore some better ionospheric propagation. Unfortunately, we will only be sure that we have passed the solar minimum several months after it has occurred.

Disputes, grievances and complaints

I am occasionally copied in on emails from individual WIA members corresponding with the WIA Board. The matters at hand would formally be classified as being in the broad category of "Disputes, grievances or complaints".

Readers should note that official Complaint Forms can be found on the WIA website, under the menu item "WIA Information" and select the "Information About The WIA" option. There are two forms, one for General Complaints and one related to "Business" activities. The forms detail how the completed form should be lodged.

The July Board Minutes – Agenda Item 35 on page 23 – deals with this matter. The Minutes note that all complaints are to be submitted in the approved format. The Minutes note that the Board shall periodically publish a summary of all complaints that have been considered and closed. The Minutes make reference to a Complaints Officer. The form outlines the timelines for responses and appeals, including reference to the WIA Privacy Policy.

Some of the material I have received clearly does not comply with the required processes, first and foremost because the complaint has not been submitted on the official form.

Continued on page 16



Board comment

Justin Giles-Clark VK7TW

Representation, Education and Promotion – what has your WIA been doing in these areas?

Representation

The International Amateur Radio Union (IARU) is the only amateur radio body recognised by the International Telecommunications Union at World Radio Conferences and the next is to be held in 2019. The IARU is split into three regions and VK is in Region 3 (Oceania). The VK IARU Region 3 Director is currently Peter Young VK3MV. Peter is up for re-election and the WIA Board has endorsed his nomination for one more term. The 17th IARU Region 3 Conference is being held in Seoul, Korea during the week commencing Monday 10 September 2018 to Friday 14 September 2018. The Conference is being hosted by the Korean Amateur Radio League. The WIA Board has nominated Greg VK2GPK as delegate and Dale VK1DSH as observer to attend this Conference. This clearly demonstrates the WIA's commitment to supporting and representing amateur radio internationally.

At the end of July the WIA made a submission to the Australian Communications and Media Authority (ACMA) on our recommendations for changes to the Amateur Licence Conditions Determination. This submission was the result of over five years of consultation with the amateur community, two previous submissions and four surveys to create the final five part submission. This is a major body of work and I would like to thank the Spectrum Strategy Committee for the huge amounts of time and effort put into this over many years.

The WIA Board has identified an issue with repeater and beacon assignment and is working toward creating a team of accredited frequency assigners. This is due to delays with the ACMA processing frequency assignments. Many clubs are resorting to paying substantial amounts of money to alternate frequency assigners to do the assignment for them. The WIA is working on offering a frequency assignment service at a reduced rate for members, affiliated clubs and community groups. We have the insurance in place and are current looking for suitably qualified individuals. Interested? Then contact us via support@wia.org.au

Promotion

The WIA President and Vice-President attended the North East Radio Group AGM. This was done via video conference and the format was a thirty minute presentation then thirty minutes of questions and answers. This facility is available to all affiliated clubs. All you need is a good broadband internet connection with the ability to project onto a big screen and amplify audio from a PC. If interested then email support@wia.org.au

We all know and love the Amateur Data Interchange Format (ADIF) standard and those keen contesters in VK will also know that it does not include some of the popular WIA VK Contests. Nev Thomas VK5XD has suggested that we adopt proposed changes to the ADIF 3 specification. The WIA has agreed to sponsor the changes to include the John Moyle Field Day and the Remembrance

Day contests. Nev will be putting that proposal together with WIA sponsorship. A huge thank you to Nev for progressing this improvement.

The think-tank of the WIA – the Strategy Advisory Committee – has some new members following nominations being received. We welcome Phil VK4PG, Grant VK5GR, Peter VK4EA, Ewan VK4ERM, David VK4MZ and Aidan VK4APM as the Board representative. This committee is working on a number of white papers that will be submitted to the WIA Board prior to going out for amateur community consultation and input. One of the priority areas is membership engagement. The WIA Board recently confirmed student membership eligibility with the following students being able to access reduced membership fees:

- Full Time and Part Time Vocational Education Training Students
- Full Time and Part Time University Students
- High School and Primary School Students
- Commonwealth NEIS scheme participants

The History and Archive Committee put together a comprehensive business case to the WIA Board to update their outdated IT equipment. This update included a contemporary scanning solution. This business case has been approved by the WIA Board and the equipment is being purchased and setup. One of the key areas of the Business Case was the production

Continued on page 4

Board comment Continued from page 3

and publishing of historical material and making this material available via the Internet.

Education

In June the ACMA released the consultation paper: New approaches to amateur radio qualification arrangements. Amateur Radio learning and assessment is currently provided on behalf of the WIA and the ACMA through a Deed of Agreement between the ACMA and WIA. This agreement has been in place for 10 years and terminates in February 2019.

This current service is delivered throughout Australia through a geographically diverse network of clubs with almost 300 assessors and learning facilitators undertaking over 1300 assessments per year on a volunteer cost recovery basis.

Despite the short consultation period the WIA received a total of 17 direct submissions from members of the WIA and others within the amateur community

expressing deep concern for the approaches suggested in the ACMA consultation paper. These concerns and suggestions were included in the WIA submission.

Key themes that resonate through all submissions received by the WIA is that our members and the broader amateur community strongly oppose any change to the amateur radio qualification framework that:

- results in a reduction in the social and community outcomes that amateur radio provides to approximately 14,000 Australian amateur operators, their clubs and the communities in which they operate; or
- exposes the hobby to further existential (high cost for low numbers) risk; or
- Imposes additional barriers to entry for new operators or the barriers to advancement for existing operators

The ACMA received 45 submissions and has settled on Approach One

– “an approved body to provide training, conduct examinations and issue certificates of proficiency through delegation under the Act”. Approach One also outlines that the organisation is a Registered Training Organisation (RTO). As part of the tender, the Commonwealth expects to express a preference that the successful tenderer is either an RTO, has the capacity to become an RTO before the contract commencement date, or is partnered or affiliated with an RTO.

The ACMA is preparing to release a Request for Tender document in late August – early September for the replacement service. The WIA is currently preparing for the release and response to the Tender.

I finish this Board comment with a huge thank you to Brian Clarke VK2GCE. The WIA Board accepted with regret Brian’s resignation at our July Board meeting.

On behalf of the WIA Board,
Justin VK7TW

Promote our hobby

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



Consider taking it to the office of the local health professional (doctor, dentist, etc.).

You never know, **you might stimulate someone** to consider taking up our hobby!

Special Event Opportunities For 2018

The WIA is sponsoring several special event callsigns that will be available between now and the end of 2018.

There are time slots available for operators to make use of the callsigns to commemorate the special events.

Please note that each of the callsigns are Advanced grade, and an Advanced operator will need to make application.

The remaining events are as follows:

- September is the 100th Anniversary of the first radio contact between the Marconi station in Wales and with Mr. Ernest Fisk (AWA) Sydney Australia. This event is using VI#MARCONI special event callsign. The event will run from 0000UTC on 1 September to 2359UTC on 30 September.
- 11 November 2018 is the 100th anniversary of the Armistice agreement that ended the hostilities in WWI. This is the culmination of the WIA ANZAC commemoration that the WIA has facilitated. The event will make use of two special event callsigns VI#LWF and VI#PEACE. The event will run from the 0000UTC on 3 November until 2359UTC on 11 November. The time slots for this event are for 24 hours.

There is more information relating to these events on the WIA web site.

The Latest WIA Affiliated Club - VK9XX

The WIA Board at its July meeting welcomed the latest affiliated club

to the Wireless Institute of Australia.

The Christmas Island Amateur Radio Club has club callsign VK9XX and welcomes DXpeditioners to the island.

Christmas Island is an Australian external territory located in the Indian Ocean off the North West coast of Western Australia.

It is about 350 kilometres south of Indonesia and about 1,550 kilometres north-west of the closest point on the Australian mainland.

Its population is over 1800 and climate is tropical as the latitude is only 10 degrees.

It has an area of 135 square kilometres and has prolific flora and fauna. The best known is the red crab. There are millions of red crabs that migrate around November each year.

Welcome to VK9XX - Christmas Island Amateur Radio Club.

Ham TV test

On Friday 24 August at 7.15 pm South Australian time (09:45 UTC), Tony Hutchison VK5ZAI handled a telebridge linkup to the ISS.

Simultaneously Tony telecast the telebridge station along with both sides of the audio. The students involved in the ARISS contact were from the Glenden State School in QLD asking their questions to astronaut Serena Aunon-Chancellor KG5TMT on-board the ISS.

About The Marconi Centenary

Marconi 100 Year Commemoration of First Direct Wireless Message from UK to Australia.

September this year marks the 100th anniversary of the first wireless transmission between

Australia and the United Kingdom. Messages were transmitted from the Marconi station at Waunfawr in Wales on 22 September 1918, and were received at the Wahroonga home of Ernest Fisk, the Managing Director of Amalgamated Wireless (Australasia) Limited (A.W.A.).

Two communications were sent by Morse code back to Australia. The first message was from the Prime Minister of Australia, Mr. W.M. "Billy" Hughes, who was in the UK at the time, and the second from the Minister for the Navy, Mr. Joseph Cook who accompanied Hughes.

Wireless was a very new phenomenon, and the experiment between Ernest Fisk and Guglielmo Marconi was a significant achievement in the early development of world-wide wireless communications. There was considerable public interest, and political controversy, as Hughes was using his wireless message to strengthen support for the war effort in Europe at a time when support in Australia was waning. The Marconi-Fisk achievement is commemorated by a plaque located outside the original receiving site in Wahroonga, which is still a private residence.

This event has very high significance for the descendants of the Cable and Wireless company, the Overseas Telecommunications Commission (OTC), AWA, Siemens, and the entire radiocommunications community.

The WIA acknowledges the ongoing commitment of the Hornsby Amateur Radio Club to commemorating Marconi every 5th year.



Wireless Institute of Australia
2019 Callbook

Arriving in **November**

There's always something to learn in ham radio!

Graeme Scott VK2KE

I've used an Icom IC-7600 on HF for some years with great success. All I had to do was switch on the rig, choose the band I wanted and the antenna to suit, then press the 'tune' button on the rig and away we went. Well late in 2017, I was finding the rig's ATU could not tune to any antenna, especially the 80 metre inverted Vee that had been in use for many years.

So I went on the hunt for the problem; I tested the coax cable, the balun and even the antenna. I even changed the coax and the balun and checked the length of each half of the inverted vee. Still no joy!

I used the MFJ antenna analyser, and a dip oscillator (GDO) and could not find the fault, so the IC-7600 was taken to the Icom service workshop in Melbourne in case the rig or its ATU was faulty. No fault was found in either device.

So "back to the drawing board" as they say.

Then one day I jiggled a PL259 coax connector in the shack and found I could make the signal disappear and come back again. AHA!it was one of those nickel plated PL259 connectors. The outer ring on the connector I found needed to be tightened down much more firmly and the problem was fixed.

Then I realised that the coax from the rig went through a number of PL259 connectors on its way to the antenna. It went through the monitor scope, the HF Linear amplifier and the low pass filter, so there was much opportunity for bad connections!

One thing I discovered was that a number of the PL259 connectors were made of nickel plated metal (cheapos) and the outer ring had to be really tightened down to ensure the coax was connecting properly to the antenna. So, at the moment, the rig is directly connected to the antenna and bypassing all the devices that were in the line and now the rig's ATU was fine and we could operate again on all bands with no problem.

I found that some of the PL259 connectors in the monitor scope sockets were old ones that I've had for years and were in fact silver plated and I assume they were no problem, but the nickel plated 'cheapos' were problematic.

So now I'm purchasing some high quality PL259 Plugs and will be throwing the cheapo nickel plated ones in the recycle bin!

So one 'lives and learns' as the saying goes.

The lesson to me was that it's not good practice to use cheap connectors.

QED

Scotty VK2KE

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Make a SSB transceiver with the Choc Perf Board

Adam Rong BD6CR

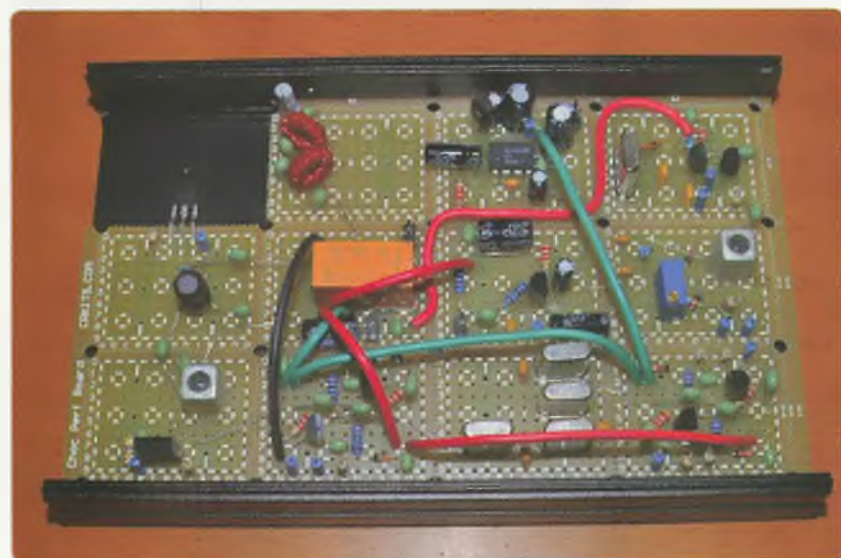


Photo 1: Choc Perf Board circuit built up.

The Knobless Wonder is a SSB radio with one frequency without tuning or volume knobs designed by VK3YE. It is much like a DSB radio adding a crystal filter as shown above. It also uses several bi-directional amplifiers just like BITX. The designer likes dead bug building style but my way is to use the Choc Perf Board from <http://crkits.com/>. This perf board is specially designed by BD6CR several years ago to facilitate RF circuit experiments. The perf board consists of several units with the same pattern. In each unit, there are total 12 4-pad pattern, very convenient for discrete components.

In order to be compatible with ICs, pin headers, and relays, two rows of pads are added. The most convenient design is to fit in 7 mm x

7 mm IF transformers (shielded coils) like FCZ-7S series by FCZ labs in Japan or DIY7 series widely used by CRKITS.COM. In order to support that, total six big pads are added into each unit. Grounding is around each unit and stamp holes are added to be easily broken apart or used for shielding can installation. We call it Choc Perf Board because it is much like a big bar of chocolate that you can easily break into small bars.

Compared with the regular perf board with all independent pads, grounding around each unit in Choc Perf Board provides isolation between RF circuit stages and also very near and short grounding. The pre-wired pads can meet most of the wiring requirement in discrete component circuit so it is quite convenient. It has good RF performance and good for HF band receivers and transmitter of a few watts. In order to make the final

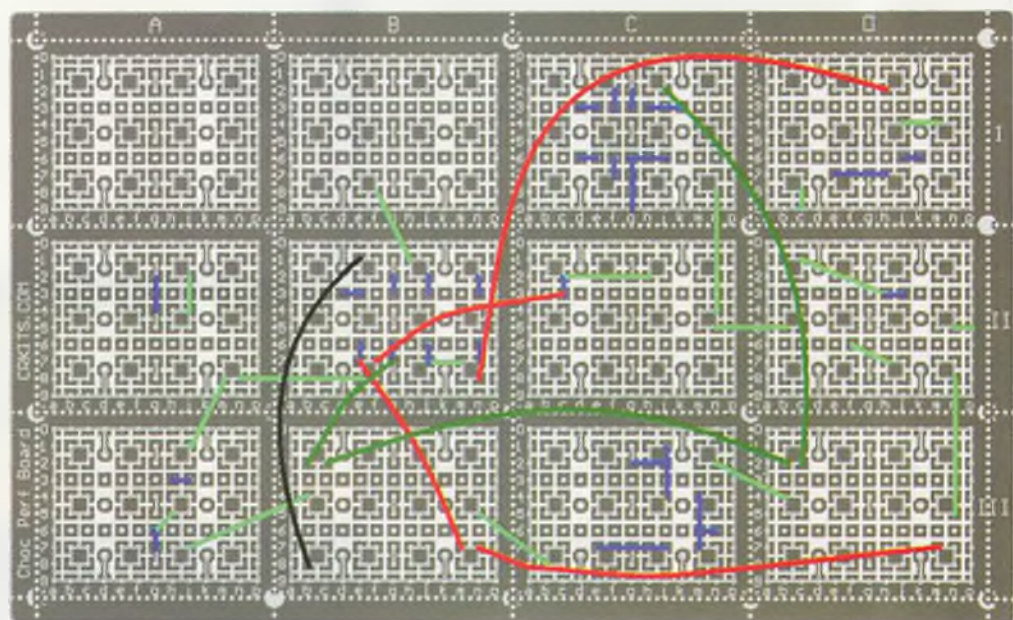


Photo 2: Choc Perf Board - wiring links example.

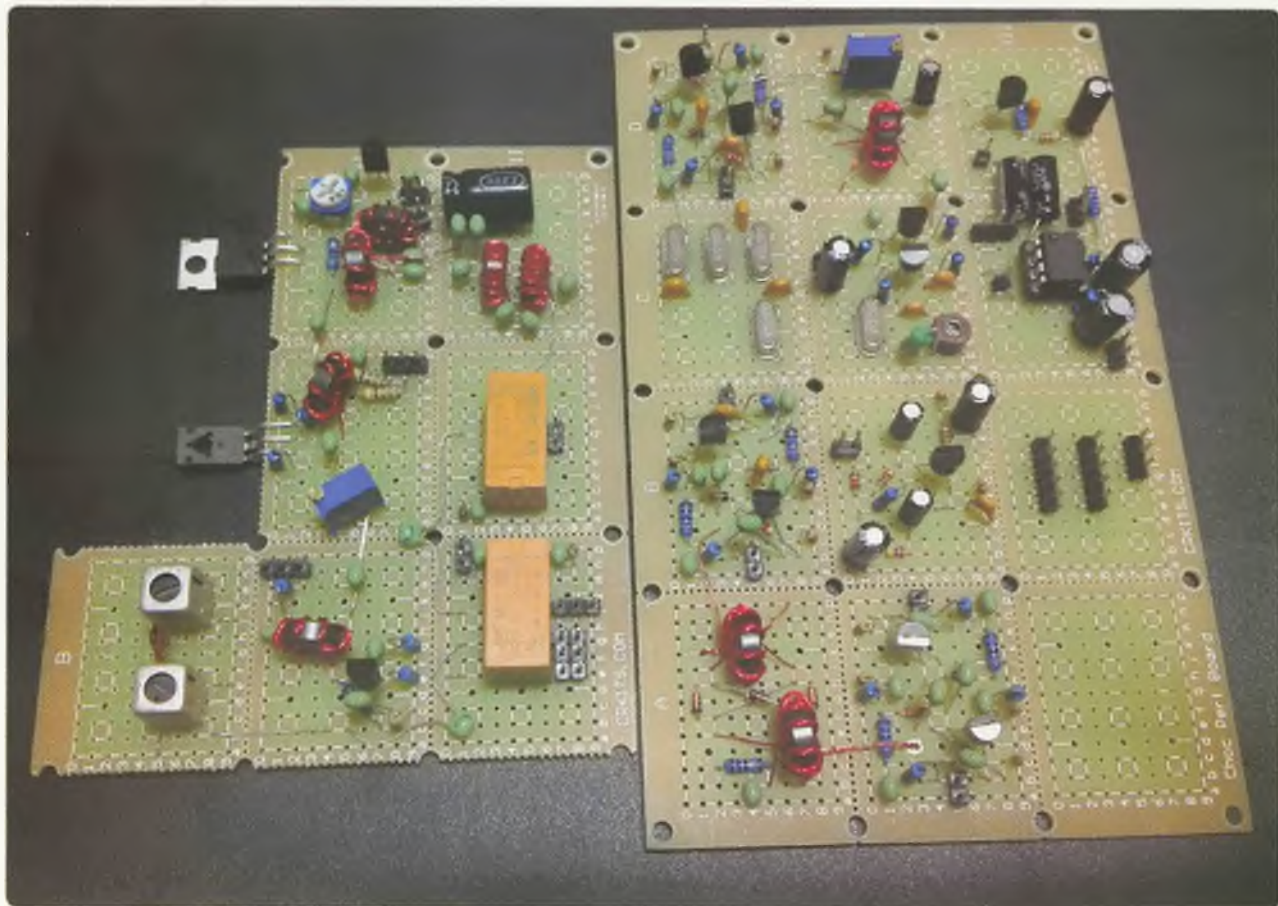


Photo 3: Component side view of two modules.

project look better, it is compatible with a metal case used for KN-Q7A transceiver. With the face plates and controls, it makes a complete homebrew radio.

The Choc Perf Board is a single layer board, so it needs a few jumper wires. Jumper wires can be classified into several types: power lines can be a few coloured insulated solder wires (like red, deep green and black wires as shown in the diagram) on the component side; inter-unit signal connection can be an unused component lead, solder wire, or a thin shielded coaxial cable (like the light green wires as shown) on the component side; intra-unit connection can be an unused component lead on the component side, or if it is very nearby, it also can be a solder bridge connection or solder bridge connection with the help of an unused component lead (like the

blue wires as shown).

In the photo on the top of this article, we took apart the upper left unit for the space of the heat sink installation for the transmitter final stage. Because there is no plated via or hole in the single layer PCB, with high temperature soldering or extra force, the pads are relatively easier to peel off, especially for the independent pads. To play safe, it is advised to cut through the copper foil using a knife first and then mildly break apart the unit with a pair of pliers.

If you build your project without reference to a wiring diagram, you will need to study the schematic and make a good plan of the layout on the Choc Perf Board. First, plan each stage on the whole board to make each inter-unit connection as short as possible, especially for RF signals (and if you have to use long wires to connect RF

signals, consider a coaxial cable to avoid noise radiation or pick up) and don't make the transmitter final stage loop back to the front stages to avoid self-oscillation. Also, local oscillator stage is quite sensitive because it is easy to radiate or pick up interference to make it unstable, so it is advised to keep away from the transmitter final stage as well. Sometimes, in order to make it easier for perf board building, you will need to modify the schematic a little bit, like interchange of components in serial connection, adding of a capacitor for AC coupling, adding of a small value resistor for DC connection, change of polarity or phase of a few components like transformers, adding or removing a few decoupling capacitors depending on the actual layout and wiring. It is observed that the Choc Perf Board is not as friendly with audio circuits

as the RF circuits, because the requirement of the grounding in the audio circuits is not the same as the RF circuits, so you will need to take caution to wire the audio stages to make it stable.

Once you are familiar with the Choc Perf Board building, you can challenge more complicated projects like a complete BITX-40. Here I show you the planning of my two boards and they still can be installed into the KN-Q7A metal case, one on bottom case and the other on the top case. My BITX-40 covers the whole 40-metre band and transmits 5 watts with clear transmit audio and the receiver is quite sensitive. I also built a FM transmitter of two transistors in one unit and it works quite well too.

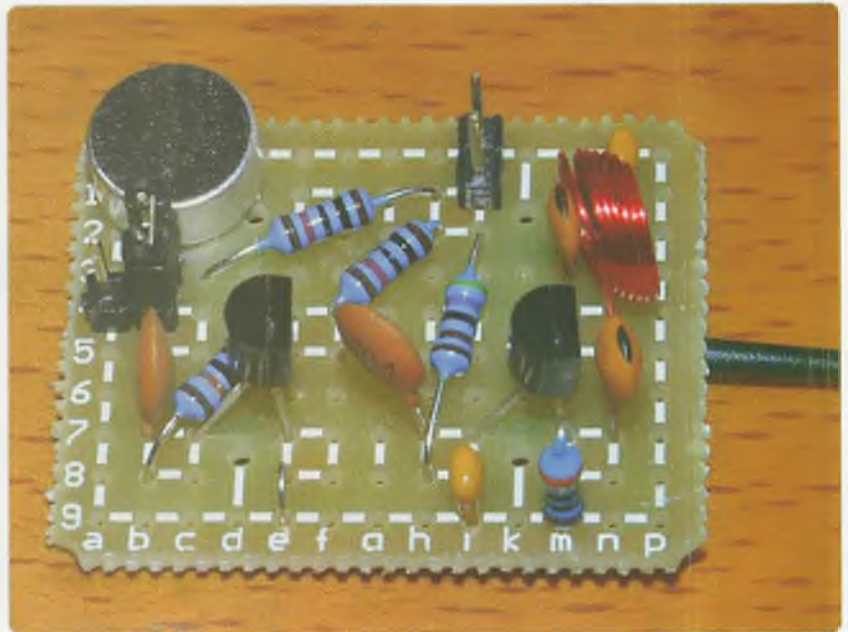
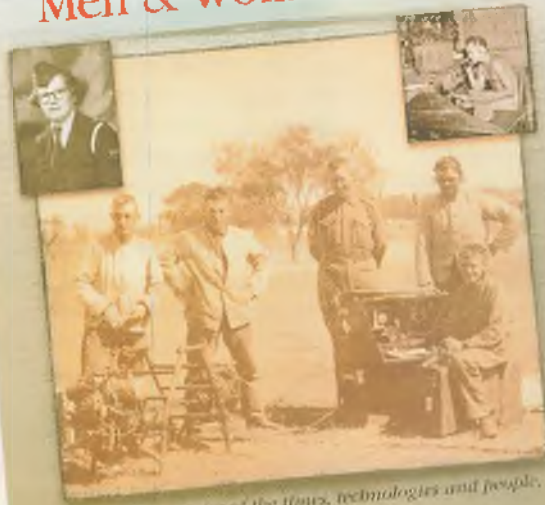


Photo 4: A simple 2-transistor FM transmitter built on the Choc Perf board.

Wireless Men & Women at War



Australian stories of the times, technologies and people,
from WWI to the 1960s



The Wireless Institute of Australia

Wireless Men & Women at War

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

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Icom IC-7610 review

Lee Moyle VK3GK



Photo 1: The IC-7610 and the SP-41 optional external speaker.

Two years ago Icom introduced their first RF direct sampling transceiver, the IC-7300. It was so well received by the general amateur market that it soon became a best seller. For an "entry level" rig, it was sure packed with great features and even at around \$1600 (street pricing), it was well within the budget of many amateurs and some of its performance specs outperformed other transceivers costing thousands of dollars more.

However there was a bit of a gap between the top of the line IC-7851 and the new IC-7300; the IC-7600 was in need of an upgrade..... Enter the Icom IC-7610.

I got my first look at the IC-7610 at the Dayton Hamvention in May 2017. Aesthetically it looked great, well laid out with similarities to the IC-7851 and IC-7700 as well as the IC-7600 and IC-7300.

In August 2017 I attended the Tokyo Hamfair and was lucky enough to operate the "pre-release" IC-7610 on display at the event. It was very nice.

All of the talk at the event was that it was the next big advancement in amateur radio transceiver technology given it was utilizing RF Direct Sampling and should be available and released by Christmas 2017.

The Looks

A quick glance of the rig confirms that it is typically Icom in design. The front panel has that familiar layout, the set out knobs, controls and VFO with the huge sharp display is similar to all the other Icoms and functionality is quite intuitive compared to some of the radio manufacturers.

It really does resemble the IC-7600. However the IC-7610 now has a bank of touch screen buttons and a multi control instead of the row of mechanical buttons and rotary controls.

The display screen is huge... well 120% larger now and bright, quite a nice addition for those of us of the aging generation with less than perfect eyesight.

It has a nice solid feel about it, which is typical of Icom now days. The VFO is nice and smooth and the knobs are firm, no really noticeable wobble to note. Maybe it's because I am an Icom user but the controls are just so logically laid out it's a pleasure to use.

Dimensions are 340 mm x 118 mm x 277 mm (W x H x D) and mass is a very respectable 8.5 kg.

The rear panel is quite comprehensive with a myriad of connectors and ports. It has two

switchable antenna connectors, BNC sockets for separate RX In/Out, a 10 MHz reference input socket and connectors for transverters. Two USB ports are included along with two DIN sockets for accessories, an Ethernet port and a DVI connector for an external monitor. Main/Sub receiver is well catered for with two speaker jacks, jacks/sockets for CI-V, CW keying, amplifier PTT keying, ALC, External Keypad and external tuner plug.

The Display

The large 7 inch (178 mm) display features just left of centre on the front panel. Being a touch screen it incorporates many of the IC-7610's functions and controls. Also included is the real time spectrum scope, a necessity nowadays for checking band activity. Being able to display 1 MHz bandwidth, enables full view of several of the HF bands. You can also split the screen to display main and sub receivers on the spectral scope.

The screen is a TFT LCD and is bright and sharp. It also includes a waterfall and real audio scope, great for checking TX and RX audio characteristics, distortion etc of either your own Tx or analyzing that incoming signal that sounds just



Photo 2: The rear panel of the IC-7610.

nasty all over the band.....

Frequently used controls like RF output power, Mic gain, compression etc. are available on the 'MULTI' knob and when pushed the functions are displayed on the top right of the display. Below the display screen is the MENU button which gives the user access to the 'Set Mode', this allows adjustment of display configuration, function settings, antenna setups and more.

Maybe a larger display would be nice, well just connect that spare external display to the DVI interface on the rear panel. Problem solved.

Tx

Icom's HM-219 electret hand mic is supplied with the IC-7610. It has up/

down controls and Tx audio sounds surprisingly good straight out of the box. Audio is nice and sharp.

Of course you can add a desk mic or headset easily and you can even disable the DC supply to the mic socket if using a dynamic type microphone. TX audio parameters can be adjusted to suit your mic and voice characteristics as needed.

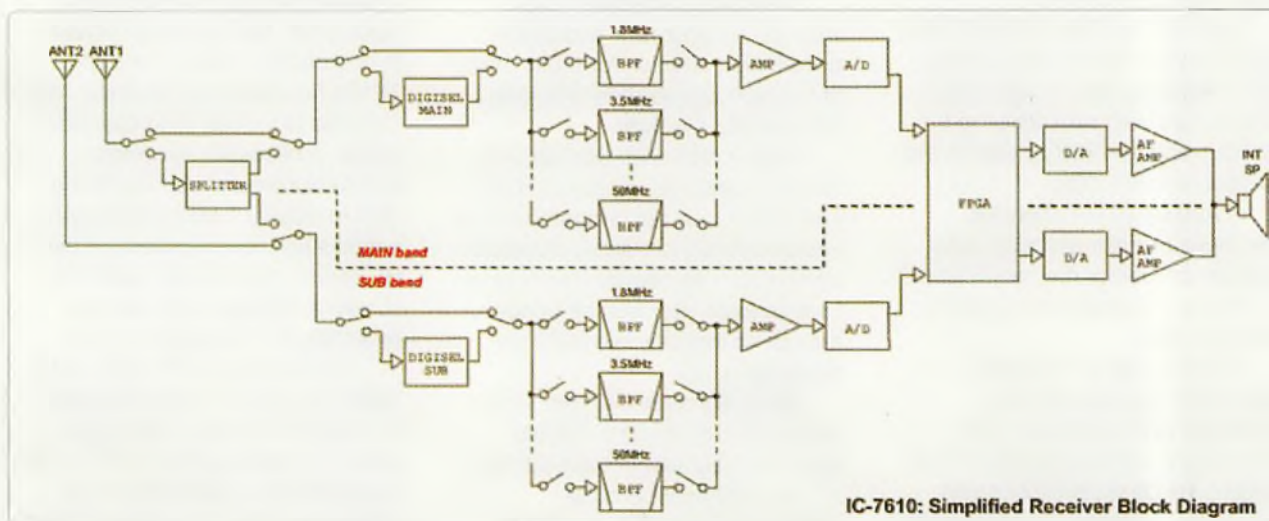
The internal Auto ATU typically matches up to a 3:1 VSWR but a nice additional feature included in the IC-7300 is also included in the IC-7610, Emergency mode. This enables the user to match an antenna with a 10:1 VSWR but at a reduced power level of 50 watts maximum to reduce stressing the ATU components.

For the CW users the IC-7610 has both Full and Semi break in as well as a multifunctional keyer.

The keyer has eight presets which can store up 70 characters each and like all recent Icom keyers, it can be programmed via screen and for contest use has incrementing serial numbers which are all stored on the front SD card.

RX, Dual Independent receivers

One of the shortcomings of the IC-7600 was the limitation of one receiver. However the IC-7610 has two independent receivers. This means you can listen to two different bands at the same time using the dual watch feature.



IC-7610: Simplified Receiver Block Diagram

Figure 1: A simplified block diagram of the IC-7610.

Both receivers are fed from the same antenna port via an internal splitter, or you can utilize diversity where each receiver is fed by its own separate antenna port. For diversity reception, the main and sub RX can be locked together with the tracking feature. Split operation is now made easy as you can listen to the DX station and tune the pileup, listening to both at the same time.

A nice addition that has only been seen in the Icom flagship radios like the IC-7800, IC-7700 and IC-7850/51 series is "Digi Select". Icom states: The DIGI-SEL preselectors are RF filters with sharp, narrow passband characteristics preventing Analog-to-Digital Converter overflow from large out-of-band signals when sampling the RF signals. Additionally the third and higher order IMD components are reduced. This is ideal when strong signals are received in a contest pile-up or from broadcast stations on adjacent frequencies or bands.

Rotating the VFO knob will tune the radio but you can also use the touch screen and input direct frequency or if the waterfall

is enabled, just touching the signal will change the frequency. Even point and click of the USB mouse is possible when you click on the scope area of the screen.

If that loud local pops up you can use the ATT button and have from 0 to 45 dB of attenuation using the MULTI knob in steps of 3 dB.

On Air

The IC-7610 is a delight to operate, its receiver is quiet and sensitive. Comparing it to my IC-7851, there was nothing that I could hear on the IC-7851 that was not copyable on the IC-7610, even the very, very weak stations. Utilizing the twin bandpass filters and the APF (audio peak filter) really enhances that weak CW station, the signal just leaps out of the noise. The DSP RX bandpass filters are sharp, and even in the crowded band during a CW contest, one can engage the filters, even down to 100 or 50 Hz and the QRM is gone. A nice feature of the filters, whether in SSB or CW is that they give a nice looking filter bandpass display on the screen. The notch filter is also nice, either in manual or auto mode and it has selectable bandwidths also, great

to remove that annoying heterodyne or tuner upper. DSP noise reduction is good for reducing the RX noise if your local noise floor is on the rise and with 15 levels there is sure to be a sweet spot for you.

Added bonuses

With the ever increasing local noise in the suburbs, many hams are looking for remote setups. The IC-7610 comes with an onboard RS-BA1 remote server, so you just need to configure the internal settings, plug in the Ethernet cable and with the RS-BA1 software on your PC you can operate your IC-7610 via remote, either from home in the next room or from the other side of the globe.

The IC-7610 has built in RTTY/PSK on screen encoder/decoder and a quick setup of the memories will enable RTTY and PSK contact with just a push of a button...no other equipment needed.

Two rear USB ports can be used to control the transceiver, one via a PC using CIV commands which can also interface with logging and rig control software. The other USB port can be used for IQ output and also connects to your PC.

Table 1: IC-7610 Specifications

Receiver ¹		0.030–60.000 MHz ²
Frequency coverage	Transmitter ¹	0.1357–0.1378, 1.810–1.999, 3.500–3.800, 7.000–7.200, 10.100–10.150, 14.000–14.350, 18.068–18.168, 21.000–21.450, 24.890–24.990, 28.000–29.700, 50.000–52.000 MHz
¹ EUR version. Varies according to version.		
² Guaranteed range: 0.500–29.999, 50.000–54.000 MHz.		
Mode	USB, LSB, CW, RTTY, PSK31/63, AM, FM	
Number of channels	101 (89 regular, 2 scan edges)	
Antenna connectors	SO-239 x 2 (50 Ω unbalanced (Tuner off)) BNC x 1 (RX antenna In/Out)	
Power supply requirement	13.8 V DC ±15%	
Power consumption	Tx	23 A (at 100 W output power)
	Rx	3.0 A typical (Standby), 3.5 A (Maximum audio)
Operating temperature range	0 °C to +50 °C; 32 °F to 122 °F	
Frequency stability	Less than ±0.5 ppm (0 °C to +50 °C; 32 °F to 122 °F)	
Frequency resolution	1 Hz (minimum)	
Dimensions (W x H x D) (projections not included)	340 x 118 x 277 mm; 13.4 x 4.6 x 10.9 in	
Weight (approximately)	8.5 kg; 18.7 lb	
Transmitter		
Output power (HF/50 MHz)	SSB/CW/FM/RTTY/PSK: 1–100 W, AM: 1–25 W	
Modulation system	SSB	Digital P.S.N. modulation
	AM	Digital Low power modulation
	FM	Digital Reactance modulation
Spurious emissions	HF bands	Less than –50 dB
	50 MHz band	Less than –63 dB
Carrier suppression	More than 50 dB	
Unwanted sideband	More than 50 dB	
Microphone Impedance	600 Ω	

Receiver system		Direct Sampling Superheterodyne		
Intermediate frequency	12 kHz			
Sensitivity ¹ (Filter shape: Soft)	0.5–1.799 MHz	1.8–29.999 MHz	28.0–29.7 MHz	50 MHz band
SSB/CW (at 10 dB SIN)	–	0.16 µV typ.	–	0.13 µV typ.
AM (at 10 dB S/N)	6.3 µV typ.	2.0 µV typ.	–	1.0 µV typ.
FM (at 12 dB SINAD)	–	–	0.5 µV typ.	0.32 µV typ.
¹ HF: Preamp 1 ON, 50 MHz; Preamp 2 ON				
Sensitivity for RED ² (Filter shape: Soft)	1.8–2.999 MHz	3.0–29.999 MHz	28.0–29.7 MHz	50 MHz band
SSB (at 12 dB SINAD)	10 dBµV emf	0 dBµV emf	–	–6 dBµV emf
AM (at 12 dB SINAD)	16 dBµV emf	6 dBµV emf	–	0 dBµV emf
FM (at 12 dB SINAD)	–	–	0 dBµV emf	–6 dBµV emf
² Less than, HF: Preamp 1 ON, 50 MHz; Preamp 2 ON BW: SSB=2.4 kHz, AM=4 kHz, 60% modulation, FM=7 kHz, 60% modulation				
Selectivity (Filter shape: Sharp)	More than		Less than	
CW (BW: 2.4 kHz)	2.4 kHz/–6 dB		3.6 kHz/–60 dB	
CW (BW: 500 Hz)	500 Hz/–6 dB		700 Hz/–60 dB	
RTTY (BW: 500 Hz)	500 Hz/–6 dB		700 Hz/–60 dB	
AM (BW: 6 kHz)	6.0 kHz/–6 dB		15 kHz/–60 dB	
FM (BW: 15 kHz)	12.0 kHz/–6 dB		20 kHz/–60 dB	
Spurious and image rejection	HF bands	More than 70 dB		
	50 MHz band	More than 70 dB (Except for ADC Aliasing)		
Audio output power	More than 2.0 W (at 10% distortion with an 8 Ω load, 1 kHz)			
Display				
Frequency range	1.9–50 MHz bands			
Matching impedance range	16.7 Ω–150 Ω unbalanced (less than 1: 3 VSWR)			
Tuning accuracy	Less than 1: 1.5 VSWR			
Tuning time	2–3 seconds (average) (Maximum 15 seconds)			
All stated specifications are subject to change without notice or obligation.				
Supplied accessories: (May differ depending on version)				
• Hand microphone, HM-219 • DC power cable • Fuses • Plugs				

Dual clocks are available and both independently settable so you can set one for Local time and the other for Zulu or UTC time.

Icom have enabled not just one but five timers... so there is no excuse for missing that early morning greyline schedule any more.

The USB ports are handy too as they allow you to plug in the RC-28 encoder, as this gives you the extra tuning knob if you need it for the second receiver. The RC28 can also plug into your laptop/PC for VFO and PTT function when using the RS-BA1 remote software.

The bottom line....should you get one?

Many have said that it's better to get two IC-7300s than an IC-7610 if you are just after the extra receiver.

With the IC-7300 currently selling at \$1700, that's \$3400 compared to an IC-7610 at \$4600, OK so a saving of about \$1200 BUT that's not a comparable solution and honestly just too oversimplified as the IC-7610 is just so much more than a couple of IC-7300s, in a larger box, in features, on air performance and in refinements. (NB: The above figures are current street prices at the time of preparation of this review. Recommended Retail Prices are listed at the end of this article.)

With the current street price of an IC-7610 at around \$4550-\$4600, this represents seriously good value for money given that Icom Australia also offer a five year warranty, provided that the unit's details are registered via the online warranty

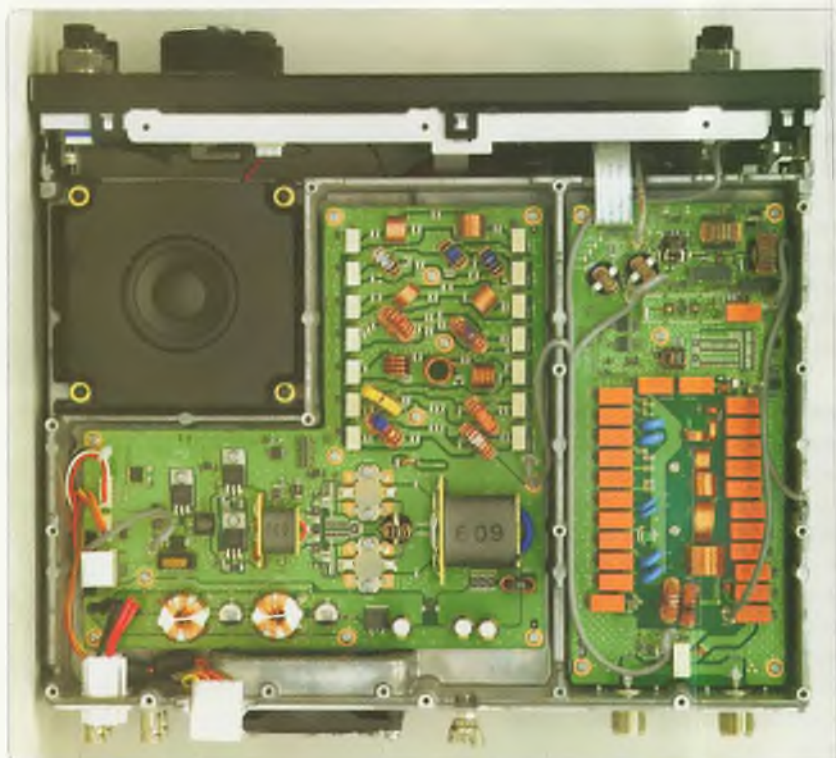


Photo 3: A view of the interior with the top cover of the IC-7610 removed.

registration portal or a warranty card mailed in to the Icom (Australia) office.

As technology advances and Icom update their transceiver offerings more and more of the "flagship" features are being offered into the lower models.

I currently operate an Icom IC-7300 and an IC-7851 which is my main operating rig. The IC-7610 really is leagues ahead of the 7300 but it is seriously up there with the IC-7851 for most applications. (If I didn't already have the IC-7851 I would have an IC-7610.)

If you are looking for a general

upgrade or even a contest worthy rig with excellent noise reduction and filtering, with dual receivers, simple to operate and looks aesthetically pleasing to the eye, you really have to consider the IC-7610 to be at the top of your list of choices.

Thanks to Icom Australia for the loan of the IC-7610 for this review.

Current recommended retail prices

IC-7300: RRP - \$2580.60
IC-7610: RRP - \$7150.00
IC-7851: RRP - \$22,440.00

Images courtesy of Icom.

Participate

RAOTC QSO Party
Oceania DX Contest
Yarra Valley Amateur Radio Group Hamfest
BARG Hamvention

15 September
6 October
14 October
28 October

A primer for newly licensed F calls

Roger Crofts VK4YB

You have your new licence, call sign, rig and antenna and you are ready for your first QSO. Let's say you are running your 10 watts PEP of SSB into a dipole at modest height in the back yard. Your signal will be relatively weak compared with others but you can still make plenty of contacts. You can of course call CQ or answer a CQ or join an existing QSO. For your first QSO, my advice is to answer a CQ from a strong station. Give his call sign and then your call sign slowly, clearly and phonetically. I am amazed at the number of F calls who quick fire their call signs without phonetics, giving the other operator little chance to copy it. A better way to do it is to say, for example, "Victor Kilo Four Yankee Bravo, this is Victor Kilo Four Foxtrot Alpha Delta Whiskey, Victor Kilo Four Foxtrot Alpha Delta Whiskey, Over". With any luck your call will be answered. You didn't need to give his call sign phonetically because he already knows it, but it is best to do so. I am an assessor, so I know you did this as part of your practical, nevertheless, it is easy to get flustered. It is not a bad idea to write down a note of what you intend to say. Give your name and repeat it phonetically. It makes it awkward for the other operator if he doesn't know your name. Give the other operator a signal report and use the Readability (1 to 5) and Strength (1 to 9) reporting system. I have heard some very strange reports from some F calls. The Readability/Strength reporting method is the only one used by radio amateurs today. Make it clear when your over is finished. You could say "VK4YB this is VK4FADW over". Once the call signs have been established there is no need to use phonetics, but I prefer to do so anyway. Others

may be listening and they would like to know who is transmitting.

OK, so you have your first QSO under the belt, what next?

You will probably want to see how far your signals will go. In other words, work some DX. The term DX was originally a Morse abbreviation for distance or distant. It can still mean that today, but more often refers to a station with a rare and sought-after prefix regardless of how far away they may be. At this stage you will probably be happy to get a report from any far-away station and leave chasing the rare prefixes until later.

There are several types of QSOs, which fall in two groups: One on one and Multi operator.

These can be further divided:

One on one QSOs

1: The Rubber Stamp

In this QSO, two operators exchange signal reports, names and QTHs only.

2: The Extended Rubber Stamp, includes the above information, plus a little more e.g. rig, antenna, or local weather.

Do not belittle the Rubber Stamp or Extended Rubber Stamp QSO. These QSOs enable overseas operators with very little knowledge of English to enjoy a DX exchange and perhaps work towards one of the many certificates available. Always treat overseas operators with the greatest respect. They have taken the time and trouble to learn some English. Imagine trying to conduct the QSO in their language!

3: The Rag Chew

This is the backbone of Amateur Radio. It may last 15 minutes or several hours. This is a wide ranging discussion with very few rules. Avoid politics and religion.

Remember others are always listening. Overs may be long or short, but, remember to give both call signs at least every 10 minutes and usually at the beginning and end of each over.

4: The DXpedition QSO

This the shortest type of QSO and usually takes only a few seconds to complete but may take hours of calling before it is achieved. I devote a separate note about these QSOs later.

Multi operator QSOs, Nets and Roundtables:

1: Club nets

These can often be found on 80 m any evening. One station will take the role of net controller and will start by asking for participants call signs. These are informal nets and anyone is welcome to join. Make a note of the order of stations, so you know who to pass it to after your turn. If you are not sure, just say "back to net control".

2: Formal DX nets

These are very varied. Some of them have very strict rules, and you will be pulled up sharply if you break them. Before joining any DX net, it is essential to listen through at least one complete session so that you are familiar with what is expected of you. The purpose of the DX net is to allow quick contacts to be made between participants. Usually, when it is your turn, you may call any station that has checked in. Make it snappy. With a large group it may take an hour to go all the way through. Time wasters are not appreciated. The session is often divided into two segments, taking check-ins and then "running" those check-ins. Less formal nets allow check-ins at any time. If your first attempt at

a QSO is unsuccessful because reports cannot be exchanged, you will usually be asked if you want to try another station. Make sure you have your second choice ready. You may always "pass" at your turn if you wish.

3: Informal DX nets

A group of friends may take turns to call CQ DX. Any DX station shared will be expected to exchange reports with all of those on frequency. Friends may come and go and there is usually a lot of chit chat until DX shows up. Generally one station acts as net controller, sometimes called a "grandmother". My advice is do not answer a CQ DX unless you really are DX. A VK1 to VK7 prefix has no rarity value, but if the caller is in the Americas or Europe, they will likely appreciate a call from you. Stations nearer to home may be less enthusiastic. If in doubt, do not call.

4: The Roundtable net

This usually starts as a one on one rag chew, with others joining in or leaving from time to time. Mostly the same gang is present, which is not to say that newcomers are not welcome. The "over" may be passed around or VOX break-in may be preferred. My advice to F calls is do not break in on a roundtable unless you have good copy on all the stations on frequency. Make sure you have followed the topics of conversation and have something to contribute. If your signal is not reaching all stations, bow out

graciously. Otherwise someone will need to relay your messages, which is tiresome.

If you would like to know how far your signal is going, my advice is to join a formal DX net. Many people dislike formal DX nets because they are very inflexible and time consuming. They do however provide you with a protected frequency, clear of QRM, and give you the best shot at working a DX station. Everyone on frequency is standing by for you and you alone to call the DX. If you can't make the QSO under those circumstances, you will not have a chance in a free for all.

You may find your signal is doing quite well and you can work some DX off your own bat. All well and good, but you will need to do a lot of listening to seize upon an opportune moment. One technique is to wait for a QSO to end and call just after the stations sign out. This is called tail-ending. You only need give your callsign in this instant. The station who "owns" the frequency will hopefully reply. That is the station who originally called CQ and has continued to work stations since on that frequency. It is considered bad manners to call the other signing station, although you could give his call and say "up five" for example. You can only do that if you have been monitoring the frequency up 5 kHz and it is definitely vacant. You will increase your chances of a QSO by monitoring several target

frequencies, and then jump in when the first QSO ends.

The most difficult QSO to make will be with a rare DXpedition station. These stations invariably work split frequency and there is usually a big pile-up of calling stations spread over many kilohertz. You will need to know how to put your rig in split frequency mode. Make sure you don't transmit on the DX station's frequency. Several self-appointed "policemen" will doubtless tell you where to go and they won't be polite about it. Your first problem will be finding the transmit frequency of the DXpedition. It may not be obvious. DXpedition stations have a bad habit of rarely giving their callsign. They forget that not everyone has access to the internet. If you do have access yourself then go to one of the many spotter sites. You will easily find the current frequencies on each band of any DXpeditions on air. Even when you have your receiver on the DX station's frequency and your TX frequency is in the listening band, there is little chance of your signal being picked out. You must wait for conditions between the DX station and North America and Europe to fade out. If you are lucky, some operators will specify calls from particular areas only. If you hear "VK/ZL stations only please", that is your big chance. Good Luck.

73

Roger VK4YB

Editorial Continued from page 2

Perhaps one fault of the official form is that it requires submission via the postal system or using facsimile. Perhaps in this era, allowance should be made for submission of the completed form and any supporting material via email and attachment/s?

In my view, some of the disputes might be considered to

differences of opinion regarding the interpretation of "facts".

Regardless of the substance of the grievance, if the issue is raised by the submission of a completed Complaint Form, then the WIA is duty bound to respond officially. One would trust that the Complaints Officer would investigate the substance of the issue/s and that

the Board should seek to come to a reasoned logical outcome.

It would not be appropriate for me to even mention the substance of any dispute of which I am made aware.

Until next issue,
Cheers,
Peter VK3PF

Addendum to the SharkRF OpenSPOT Review

Peter Jung VK5JP and Ben Broadbent VK5BB

This update describes further experience with the SharkRF OpenSPOT:

- Issues using the SharkRF OpenSPOT with Yaesu C4FM radios, Peter VK5JP.
- Experiences using D-STAR through the OpenSPOT using the Icom ID-51A Plus 2, Ben VK5BB.

Peter VK5JP:

The following document outlines my experiences since our last article in keeping my Yaesu C4FM radios working seamlessly with the SharkRF OpenSPOT.

All Yaesu C4FM products seem to be continually having their firmware updated by Yaesu and this is proving to be a bit problematic in trying to keep them compatible with the operations of the SharkRF OpenSPOT.

Having completed the new firmware updates for all my Yaesu Digital Radios and the SharkRF, I discovered they no longer communicated with the SharkRF as previously?

After completing the updates I could receive but not transmit, the new "Group" mode Coding appeared to be interfering with the settings.

Eugene VK5ZA had the same issue but we were both able to resolve the problem by setting the modems to:

- C4FM half deviation,
- C4FM Modulation to "A",
- Modulation to 4FSK and
- Calibration to Auto

Despite the top line on "Status" "TO"- having '5*****ABCDE' and the Radio unique identifier across the top, the units do transmit.

I had a successful conversation

with Casey KC9BUP; he reported that the audio was quite good from the FT-70DR with the new settings in the modem.

The New group mode setting throws up the blank '*****ABCDE' on transmit on all the fusion digital radios e.g. FT-400DR/XD, FT-100DR, FT-2DR, FT-1DR and the new FT-70D.

With further exploration of the Fusion C4FM settings on the SharkRF, I discovered that I needed to set the modem to C4FM Half Deviation when using the new Yaesu FT-70 and for the FT-2DR, reset to Full C4FM. This is also the case for the FT-400DR/XDR and the FT-100DR. I am about to update to the new release firmware for the FT-991/A and see how that goes. This is proving to be a bit of a problem requiring different settings in the SharkRF for different model C4FM radios!

For information, I use the RT Systems programming software to program my radios and this, I later found, introduced the problem of needing different settings to allow communication between the Yaesu radio and the SharkRF.

The new FT-991/A (Talk Groups) firmware release works okay with the RTS software. Same as the other radios, once the firmware upgrade is done two of the icons in the GM function are blanked out (Group & Delete Icon). There is now a new Group TX RX bar instead of the group bar. The transmitter still pings every 30 seconds in GM Mode, apart from that no other changes were noted.

For those of you who have a FT-991/A, if you haven't recently updated your firmware you will be required to do the Main, TFT, DSP

and C4FM. Previous versions of the Main and TFT will no longer be compatible. After the new "Main" firmware is installed, a reboot is required whilst holding in the DSP Key, this used to drop you into the "Enter the Call sign" Screen, it now just comes up with "Yaesu". The TFT firmware needs to be loaded next in order for the display to return to normal operation.

After much "head banging and pulling of what remains of my hair", I finally found what was causing the issue with the Yaesu FT-70DR and the SharkRF requiring the setting on the SharkRF to be set to "Narrow" Deviation. I defaulted the hand-held back to factory settings and reprogrammed my operating frequency for the SharkRF; success! I then reloaded my template using the RT software and did a test transmission, the problem had returned!

I had discovered that the RT Software was at fault and it needed a DLL file update. Once that was downloaded and done, and the FT-70DR reprogrammed with the updated software, the issue of requiring the SharkRF to be programmed with different deviation settings was resolved.

The FT-70DR is now back to operating as the other Fusion Radios on C4FM, problem solved at last and the SharkRF OpenSPOT settings work with all my C4FM radios again.

So folks, keeping all systems compatible and able to work with each other are not necessarily easy and the problems can be introduced from several different inputs, the Yaesu firmware updates, RT Systems programming software updates and possibly the

SharkRF support group trying to keep up to date with the changes being introduced by the radio manufacturers.

Over to Ben VK5BB:

Since we wrote the last article reviewing the SharkRF OpenSPOT, I have taken delivery of a "new toy", the Icom ID-51A plus2 dual band D-STAR capable portable radio. This is not a review of the ID-51A but how I worked through programming the radio to work seamlessly into the D-STAR networks via the OpenSPOT. My previous experiences were with the much older Icom IC-91AD dual band portable.

Just a reminder or review of the main principle within D-STAR, which is using address fields to control connections and where you wish to connect to. Table 1 below demonstrates these address fields as when used through a D-STAR repeater gateway (using VK5RWN as a demonstration).

The older IC-91AD requires more manual input in setting and changing these address fields. I have found that by programming the memory channels, access to the different addresses is quick and convenient. You just select memory, scroll to the address you want, enter it, key the radio to link and once linked, reset UR: back to CQCQCQ, and have your QSO. When finished the QSO, you unlink the connection again using the UR: field address line etc.

The ID-51A does not have a keyboard as such but a number of buttons that control the access to different functions and menus. The later generation Icom D-STAR radio are much more menu focussed, but once you get used to it, it is not

1.	UR: CQCQCQ	used for general QSO and address linking to reflectors or gateways.
2.	R1: not used	when in simplex mode, these two fields are not used.
3.	R2: not used	
4.	MY: VK5BB	you always need your call sign to identify who you are on the D-STAR networks.

Table 2: Address fields when using an OpenSPOT gateway. See text for details.

that complex and you do not have to "drill too deep" to access the address or function you are after.

One function promoted for the new D-STAR radios is the "DR" function, which is used to access lists of addresses of many D-STAR repeaters around the world. These lists can be used to set both the destination UR: address and the "from repeater" R1:, R2: address lines. You do not need to populate these address fields individually but using the DR mode, select the "to" and "from" addresses from the lists and the rest is set automatically.

These lists are available from a number of different sources and from the Icom web sites, although custom lists from secondary users such as some clubs or D-STAR user groups can be more comprehensive and up to date.

When using the SharkRF OpenSPOT, the radio and the OpenSPOT use a simplex single frequency for communications between the portable and the OpenSPOT. Therefore the address fields will be set differently as per Table 2 above.

I found that using the SharkRF OpenSPOT for accessing the D-STAR world is simple. There are no complex settings required for D-STAR operation, the main one is setting the simplex frequency for communications between the

OpenSPOT and the portable radio, and your call sign which needs to be set within the OpenSPOT settings.

You are ready to go! You control the OpenSPOT via the radio, primarily by using the UR: address line.

I found the simplest and least button pressing method is to program the radio's UR: field memories with the common addresses that you need to connect to either gateway repeaters or the reflectors. It appears that you cannot disconnect the OpenSPOT, it needs to be connected somewhere and when you switch it on, it will try to connect to the last connection you made. (Further testing is required here and maybe something to be added to the SharkRF community "wish list"!)

I have programmed a memory channel with the simplex frequency and DV mode and named it "Shark CQ", with the address lines set as per the previous example above.

Using my ID-51A, I press and hold briefly the "CS" button which then displays the four address field lines, UR:, R1:, R2:, and MY:.

The UR: line is highlighted and I select this line to edit which takes me into another menu, where I select "Your Call Sign" (the "UR" memory list previously programmed) where I can now scroll to the address command I wish to use. I select the wanted address, (REF0023CL) exit and key the radio to action the command.

The OpenSPOT will generally respond in its animated voice something like, "OpenSPOT disconnected, OpenSPOT connected to R E F 0 2 3 Charlie".

Now I again use the "CS" button to display the four fields, select the top "UR:" line again then in the

Table 1: Address fields when using a D-STAR gateway repeater. See text for details.

1.	UR: CQCQCQ	Your call sign or the "TO" address. The CQ is the general QSO address, but this is also where you place the destination or linking address.
2.	R1: VK5RWN C	repeater 1 identifies the repeater you are using or "From".
3.	R2: VK5RWN G	repeater 2 enables the repeater system as a gateway and connected to the D-STAR internet network.
4.	MY: VK5BB	my call sign, identifies you on the D-STAR networks.

next menu I select the "CQCQCQ" address which puts the radio back into general QSO mode and I am ready to go and make my call on the Reflector 023 C.

Once I have finished working or monitoring through Reflector 23C, I repeat the above process to select a different destination. For example, I might be out of range from the local VK5RWN repeater but I wish to have a scheduled QSO with a mate via that repeater.

In the UR: address line I select the command "VK5RWNCL" from my UR: memories, key the radio, the OpenSPOT responds, "OpenSPOT disconnected, OpenSPOT connected to V K 5 R W N Charlie". I reset the UR: field back to "CQCQCQ" and make my scheduled QSO.

The examples above are demonstrations based on the older original D-STAR network system. However it is the same process to connect to the alternative later D-STAR "DCS" or "XLX" reflectors through the OpenSPOT. The

simplest means to access these is to have the respective addresses programmed into the radio's "UR" address memories.

One little "niggle" I have experienced is that the OpenSPOT does not appear to be able to be in an "idle" or "not connected" state. This showed up when I switched on, on one occasion, and the service to the reflector connection was not available. This seemed to cause the OpenSPOT to "hang" and the status lights indicated that it was trying to make the connection, but of course it was not happening. I am not sure whether the OpenSPOT will eventually "time out" or not, but the simplest way I found to get out of this state was to log into the OpenSPOT's dashboard, go to the "Connection" tab/window and select an alternative address and "SAVE" that, thus forcing the OpenSPOT to a new connection.

Summarising

Our experiences with the SharkRF OpenSPOT have proven to be

enlightening and generally simple to use, once you have grasped the respective concepts for the mode of operation you are playing in, i.e. D-STAR, C4FM or DMR. It is a simple device to set up and takes the "pain" out of "home brewing" your own hot spot that meets your needs with operations in the new Digital Voice modes in Ham Radio. The really neat feature of the OpenSPOT is that it gives you access to the digital voice mode networks of the respective "DV flavour" without the need for direct access via a local repeater system.

We trust that both the original article and this "addendum" have proven both interesting and of assistance to you the reader in the use of the SharkRF OpenSPOT. Well we have been having fun and? Isn't that what amateur radio is about?

Have fun and happy "Internet" DXing through your SharkRF OpenSPOT!

73 Peter VK5JP and Ben VK5BB



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 Australian National Satellite Net is held on the second Tuesday of the month (except January) at 8:30 pm eastern, that's either 9:30 or 10:30Z depending on daylight saving. Please note we will be taking check-ins from 8:20pm-ish. Check-in starts 10 minutes prior to the start time. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. Operators may join the net via EchoLink by connecting to either

the "AMSAT" or "VK3JED" conferences. Past experience has shown that the VK3JED server offers clearer audio. The net is also available via IRLP reflector numbers 9568. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RBM Blue Mountains repeater on 147.050 MHz

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

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

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

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

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.

SOTA & Parks

Allen Harvie VK3ARH

e vk3arh@wia.org.au



Photo 1: Andrew VK1DA operating from VK3/VG-034.

Newest Mountain Goat – Andrew VK1DA

Andrew VK1DA was first licenced in 1965 and has been an active SOTA activator and chaser from the start of VK SOTA. He was activating VK3 Alpine summits whilst VK1 was being finalised then was there for VK1 on its launch on 1 February 2013 from VK1/AC-034 Mt Majura.

During the start of SOTA in VK, not all activations qualified so gaining points was a bonus. However, the art of activation was being refined. Andrew averaged about 200 points a year for the first three years. He unfortunately had a few accidents: a fractured radius in the right wrist, an ankle problem another time. Each had him unable to activate for a month or two. Then in 2007 heart problems surfaced and he was out of action for a while. This slowed Andrew and came as

a warning to all activators: despite having an active lifestyle, average blood pressure and cholesterol in the “safe” range, he still had to address serious problems.

Once back on his feet, Andrew took advantage of the daylight saving period to activate the Canberra 1 point summits after leaving work for the day. He could leave work at 5 pm and be on the summit on air by soon after 6 pm. That makes the 1 point summit activations a fun activity after work. He was not alone, as Adan VK1FJAW joined in a few of those in the days when they worked at the same office.

Andrew found the 12 metre challenge an interesting variation. It made us all focus on antennas for that band and on organising our activations to ensure we got as many contacts as possible. The 6 m

and 10 m challenge was also a good way to distract us from 40 m and get us to focus on something a little different. Andrew was a 6 m op from the 70s, and quite likes 6 m.

Andrew has tried to do is to qualify each summit on both SSB and CW. And when band conditions have been good (a distant memory now), he has also tried to make the four contacts on as many bands as possible. That is good for the chasers too, especially when contacts are only possible on the higher bands. There were a few activations where he would have to move from 40 m to 20 m and nearly always work John VK6NU who was a loyal patient SOTA chaser on CW. Andrew rarely makes “hit and run” activations, i.e. making four contacts and then closing down, other than when rain or high winds have been imminent, as he enjoys



Photo 2: Andrew VK1DA operating on CW at Bowring Hill.

operating portable so will try to get as many contacts as possible.

Joint activations have been a consistent theme. Andrew VK1DA has activated with Andrew VK1AD (no relation), Ian VK1DI, Al VK1RX, Adan VK1FJAW, Peter VK3PF and Wayne VK3WAM, Paul VK1ATP,

Wade VK1MIC, Tony VK1VIC, Matt VK1MA and Grant VK4JAZ. These activations allow you to share equipment, be safer in the bush, agree on navigation options and have a good chat along the way.

The past year has been focused on higher scoring summits but



Photo 3: Andrew VK1DA "gentlemen activator" at VK2/SM-052 (Bald Mountain) in VKFF-0212 (Gourrock National Park).

eventually you run out of them even in the Canberra area and you have to travel further to find them. Andrew's final run to Goat Hood in mid-2018 combined a trip to GippsTech, activating two 8-pointers on the way down. A trip with Peter VK3PF on the day after the conference bagged 3 x 8-pointers, each with a winter bonus, plus a single 6-pointer. So that weekend added 72 points now only requiring another couple of 8-pointers in the Canberra area that had been selected earlier for their bonus points to provide the final points required for MG.

Congratulations to Andrew for achieving SOTA Mountain Goat. Looking forward to many more summits.

OZSOTA

Has your SOTA Australia feed been quiet as of late? Check you have moved to the new OZSOTA@groups.io group at Groups.io by visiting <https://groups.io/g/OZSOTA>

Discord

Don't have enough SOTA on your computer? Subscribe to the feeds on Discord for real time updates:

- SOTA: <https://discord.gg/7D6FkjZ>
- WWFF: <https://discord.gg/fw5tdA8>

Upcoming Activities

Andrew White Memorial SOTA

Activity Day: Saturday 15 Sep 2018
- Warren ZL2AJ.

VKFF Team Championship:

Sunday 21 Oct 2018 - Paul VK5PAS.

KRMNPA Activation Weekend:

Friday 9: Monday 12 November 2018 - Tony VK3XV.

VKFF Activation Weekend: Saturday 24 - Sunday 25 Nov 2018 - Paul VK5PAS.

Stay safe.

73 & 44

Allen VK3ARH



Gordon McDonald VK2ZAB, VK3EJ – silent voice, not a silent key

Chris Davis VK1DO/VK2DO and Roger Harrison VK2ZRH

Gordon McDonald, renowned as VK2ZAB and latterly VK3EJ, died on 30 July 2017. He was 88 years of age. For any amateur inhabiting the 2 m and 70 cm bands over the past three or four decades, and 23 cm more recently, Gordon was a “fixture”.

Born in Echuca, in northern Victoria, Gordon grew up in the 1930s and obviously became captivated by the magic and wonder of wireless. He was subsequently drawn into the world of radio, radar and other distracting matters that the Royal Australian Air Force offered over the 1940s-50s, absorbing a sound technical grounding and enjoying a rewarding career in the RAAF.

His ease with matters of an RF nature led him in his later professional career to sophisticated encounters with bi-static radar, the realms of VHF technology and many matters conducted behind closed doors with satellite communications, weapons guidance systems and areas of innovation and fabrication that he was reluctant to discuss. All this clearly stood him in good stead to continue a career post-RAAF that saw him sought after and revered as a dependable technical authority.

Gordon gained his Amateur Operators' Limited Certificate of Proficiency (AOLCP), No. 387, in 1957. His first callsign, VK3ZEJ, was issued on 16 September that year. Despite the general excitement engendered among the amateur community on the HF bands from Solar Cycle 19 roaring to the highest peak on record over 1957-58, Gordon's interests fell much higher in frequency, on the bands 144 MHz and above. Besides, he held the



Photo 1: Gordon VK2ZAB with Shiela the heeler.

view that the use of Morse code was “against nature”, speech being humankind's main natural means of communications, and having

Morse as a qualification for access to the HF amateur bands for a Full Call licence was anathema. He eschewed six metres as being “HF

anyway", and advocated the view that VHF began above 100 MHz, never mind the ITU's definition of VHF as 30-300 MHz.

According to Gordon, amateur radio was a sport, not a pastime or a hobby. An individual sport. The kind where you strive to better your last personal best (PB). If that happened to surpass another individual's PB, so much the better for all.

On moving to Sydney sometime in the 1970s, Gordon took up that VK2ZAB callsign, for which he is widely remembered, and opened his enduring VHF-UHF career on 2 m in 1981.

Gordon was an individualist, "a person who is independent and self-reliant; non-conformist". For all who encountered him, individualist is probably a profound understatement. He was strong-willed and emphatic in expressing his opinions, or even setting out facts. He would occasionally open conversations with a statement that would take your breath away. Such assertions were seemingly not meant as a personal affront, but as a means to getting to the nub of a matter in opening a discussion. When he was done with the blood sport of debate, rancorous or otherwise, he was wont to sign-off with "there Hugo". This is not to suggest he was anti-social. Far from it. At the annual Wyong Field Day and other hamfests that he attended irregularly, he was always eager to share a beer with whoever cared for a convivial drink and a chat.

All that said, he was no simplistic theoretician. His technical competence and contentions were manifested in neat implementations of his design thoughts and concepts. If his commercial work reflected his achievements as a VHF experimenter, he must have set enviable standards of system efficacy and reliability in the workplace.

His implementation of SSB transmission early in his amateur radio career put him among the

pioneers on VHF. He continued to stoically support phone-style transmission, favouring voice above computer-to-computer contacts, which appeared on the bands increasingly over the past decade. Latterly, however, he evinced an interest in the use of digital voice communications, but never got to implement it.

Over the 1980s, Gordon established himself as one of the few VK2 stalwarts on 2 m and then 70 cm, working ever-further distances exploiting tropospheric scatter propagation whenever it appeared, as well as the more reliable, though evanescent, meteor scatter. To exploit the latter, he secured a high power permit, for which he acquired a solid-state linear capable of 1 kW.

When the bands opened with tropospheric refraction or ducting, or the rarer 2 m sporadic E, he was often the 'first-heard' and 'last-worked'. In January 1994, he observed some odd propagation on 2 m, during which he worked Rick VK4HF located 70 km north of Brisbane, but Gordon had to beam 75 degrees east of north, while Rick

beamed southeast to ZL. Gordon believed that coastal ducting, observed at the time, enabled reflections from Lord Howe Island to support the contacts, detailed in his article published in the February 1994 issue of *AR* magazine – online at: www.armag.vk6uu.id.au/1994-february-AR.html

Aircraft enhancement

From the early-1980s, Gordon pursued an interest in aircraft enhanced propagation (aka "aircraft scatter"), maintaining regular skeds and making contacts with stations in Victoria (Melbourne, in particular) and southeast Queensland. The propagation mode sparked a series of technical articles by him and several other authors, compiling something of a long-running technical 'debate'.

Gordon put forward an hypothesis of aircraft enhanced propagation based on the theories of bi-static radar espoused by US engineer and academic, Merrill Skolnick, and he could argue the case with veracity. Many observations by a flock of other amateurs on various amateur bands



Photo 2: This pair of 2 m DXers, having worked each other on sporadic E openings over decades, met at the 2010 Kyneton Hamfest in Victoria - Gordon McDonald VK3EJ/VK2ZAB (on left) and Murray Hely ZL3MH (from Christchurch, New Zealand).

supported his contentions and the principles have been proven (including mathematically) through to 10 GHz, and beyond.

Antenna arrays

Gordon's station at Wideview Road, Berowra Heights, northeast of Sydney, was a formidable landmark. A windmill style, triangular Southern Cross tower dominated his suburban block, a prominent location just prior to the landscape falling toward the Hawkesbury Valley and Pittwater. It was well-visible from the Pacific Highway.

At this location, Gordon first erected a 4-bay array of 6-element Yagis for 144 MHz featuring "staggered stacking", a technique that substantially increased the array's front-to-back ratio to reduce "... interference from the rear". The arrangement is illustrated in Figure 1. He explained the concept and detailed the practical implementation of staggered

stacking in the first article he contributed to *Amateur Radio* magazine, which was published in the June 1982 issue - online at: www.armag.vk6uu.id.au/1982-june-AR.html

Located where he was, with many of his main DX contacts located to the south in VK1 and VK3, and to the north in northern VK2 and south-eastern VK4, local Sydney basin stations generally to the north and south of him would have rock-crushing signals on or around the 2 m DX calling frequency while he was endeavouring to copy the weaker stations 100s of km away. The extra 12 dB of rear signal rejection he obtained with staggered antenna stacking proved well worth it.

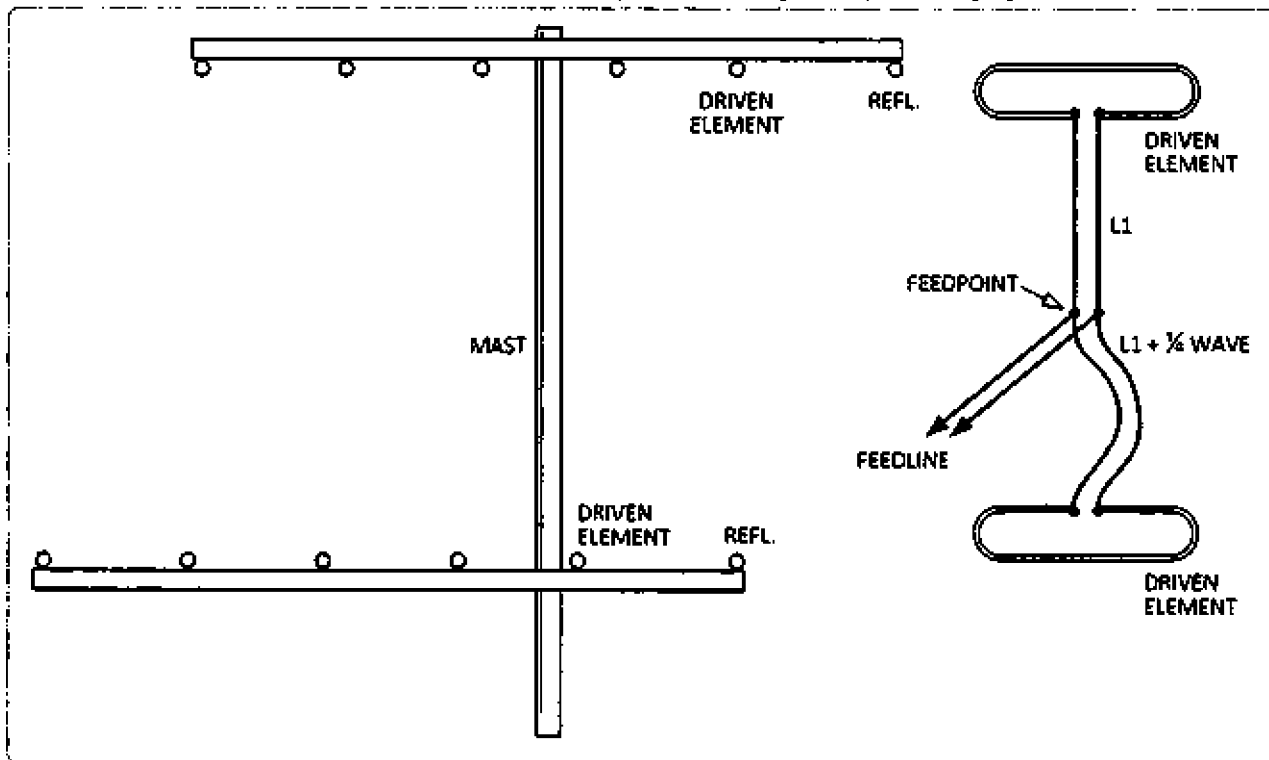
Gordon subsequently up-scaled that first 2 m array to a 4-bay assembly of large 2 m Yagis. Not for the faint-hearted! Sporting 13 elements, each boom was about 11 metres in length. On 70 cm,

he installed four 22-element Yagis inside the 2 m array, and later, a two metre diameter dish for 23 cm to replace a quad-stack of Yagis nested among the others.

He had strong views on antenna design and his own constructions reflected his contentions, successfully and with practically demonstrated finesse. He was a fount of knowledge and had a way of distilling complex challenges into simple design criteria, as well as implementing innovative mounting systems, making his arrays robust and reliable.

A case in point is his article on 'Stacking Yagis, Phasing and Matching', published in the November 1999 issue of *AR* magazine - online at: www.armag.vk6uu.id.au/1999-november-AR.html He settles the perennial puzzle of "what distance to stack Yagis?", recommending the use of the formula 52 divided by the 3 dB beamwidth in degrees, yielding

Figure 1. Staggered stacking of Yagis, as used by VK2ZAB. The lower Yagi is mounted a quarter wavelength (90°) forward of the upper Yagi. Both Yagis were fed with homebrew 200 Ohm balanced line. The feedline from the lower Yagi to the feedpoint is a quarter wavelength (90°) longer than the feedline from the feedpoint to the upper Yagi (L1). Signals received at the rear of the stacked Yagis thus arrive at the feedpoint out-of-phase by half a wavelength (180°), achieving significant cancellation.



grating lobes 17 dB down for a gain of 2.5 dB over a single Yagi. The empirically derived formula of the era, by antenna guru Joe Reiser W1JR, was 57 divided by the 3 dB beamwidth, yielding grating lobes 13 dB down for 2.8 dB gain over a single Yagi.

On-air habits

On the air, Gordon would start the day working north up the NSW coast as far as Brisbane, and beyond. Then he would turn his attention to the crowd to the southwest and right down to the outskirts of Melbourne.

Gordon was not a CW man and attempts to attract his attention usually provided satirical remarks about intermittent or extraneous carriers on the frequency.

He had his own operating style; effective and unforgiving, but he had, to his credit, an astonishing range and variety of stations worked, being one of the many to open the band to ZL each year; few serious across-the-pond operators failed to work him, not just on 2 m, but 70 cm and 23 cm as well, in many cases.

At the time of his passing he had worked 78 grid squares on 2 m, 57 on 70 cm (still the most recorded in VK) and 29 on 23 cm, all on SSB. Gordon also set some VK2 DX records on 70 cm and 23 cm, recorded in the WIA Australian VHF-UHF records since 1947, online at: <http://www.wia.org.au/members/records/data/>

Gordon the author

Gordon contributed a dozen articles to *AR* magazine over more than 20 years, leaving a legacy of significant technical articles that have withstood the test of time. Apart from those mentioned above, the following titles can be found online at www.armag.vk6uu.id.au – Horizontal v Vertical Polarisation

at VHF & UHF (June 1982), Using the BF981 in Two Metre Preamps (June 1984), Enhanced VHF/UHF Signals due to Aircraft (October 1985), Propagation via Reflections from Aircraft (February 1986), Signals reflected via aircraft (May 1989), Signal Strength S Meters & Preamps (July 1990), Boom Correction Factors (November 2002), Correction VHF SWR and Watt Meters (October 2002), and Six co-axial baluns for VHF/UHF antennas (August 2003).

He also had several salient technical articles published online. In June 2000, Gordon presented a lecture at a meeting of the Sydney VHF DX Group on a Complex Impedance Meter, intended for VHF-UHF measurements. See: www.grantronics.com.au/docs/ZMeterVK2ZAB.PDF

www.grantronics.com.au/docs/ZMeterPhoto2.jpg

www.grantronics.com.au/docs/ZMeterTechNotes.PDF

He updated his original 1984 article on 2 m preamps based on the BF981, published online in 2009, at: <http://home.iprimus.com.au/toddemsie/bf981preamp.html>

Competence and colour

Gordon's lectures at the annual Wyong field day, and for the Sydney VHF DX Group (when it held meetings at Amateur Radio House in Parramatta over the 1990s – early-2000s), were instructive and intensely practical. He preached real-world design, not ethereal notions. He understood what worked, the ever-so-practical man, never failing to give guidance and advice that could be readily used by others.

Gordon felt honoured to receive the WIA's Ron Wilkinson Award in 1993 for his contribution to VHF experimentation.

After retirement and the sale of his Berowra home circa 2008, he went on tour across the continent, visiting family before settling in Cobram, which he felt was an ideal location to be within striking distance to the northeast (ACT and Sydney, etc), the occasional ZL opening, the Melbourne and Tasmanian directions and, of course, those elusive contacts across the Great Australian Bight. He soon equipped himself with a homebrew four-bay array for 2 m and was once again a mighty force on the band. He never returned to 70 cm, but continued developing his dual dishes on 2.3cm.

With the relaxation of license requirements in 2004, Gordon enjoyed appearing on HF in recent years. He liked to chat, and often put forward fairly robust questions and propositions, not always understood by hapless newcomers, but he provided colour, interest and – if you were of a technical disposition – fascinating exchanges.

In his later days, he was experimenting with stacking dishes, a proposition that some would think foolhardy, but he had found considerable success in minimizing the cumbersome nature of such a large antenna system.

For those who knew him personally, he was a constant source of humour; contentious, satirical and often diabolically annoying when he got the bit between his teeth, but revealing him as an intensely practical man, widely-read and diverse in his travels and philosophy. One might describe his humour as dry; we would say highly inflammable on occasion, if not simply 'incendiary'. Valé Gordon McDonald. A force of nature, sorely missed.

Thanks to the WIA National Office for providing historical AOCIP and licence information.



Don't forget to register for MEMNET.

Tech Hints: Time Synchronisation via GPS made simple

Steve Ireland VK3VM/VK3SIR with Roger Stafford VK3FZ

In this modern day and age of Amateur Radio, those seeking DXCC or verification of a rare contact are forced into employing precise, accurate logging systems. Likewise various transmission modes that employ time-based synchronisation techniques have emerged and are extremely popular with Amateurs. This has enforced a requirement to have the hardware that the system operates on to have its time synchronised to GMT accurate to a couple of milliseconds.

Internet Based Tools

Most of us that electronically log contacts with our range of logging programs (i.e. DXLab's DXKeeper, Ham Radio Deluxe just to name two) traditionally rely on software that adjusts our PC clocks based on internet "pings" and response times. The most commonly used software amongst Amateurs appears to be the "Dimension 4" and "Meinberg" internet-based software package. All packages that utilise the internet have their noted issues; "Dimension 4" is noted to sometimes adjust time based on irregular packet responses (i.e. our Australian internet backbones and NBN is still being highly "tuned"). The "Meinberg" product overcomes "spikes" by averaging responses before making adjustments rather than reacting to occasional

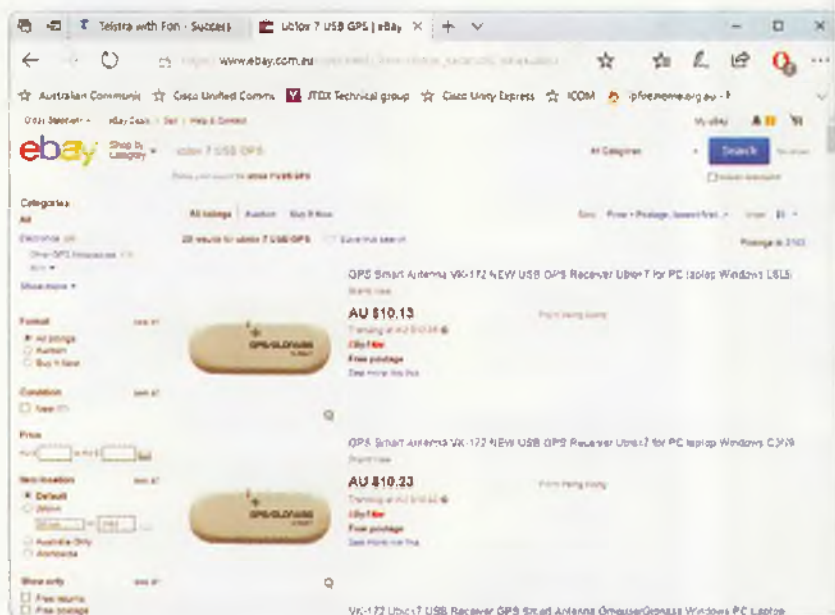


Photo 1: The GPS receiver on eBay. (Source: <http://ebay.com.au> accessed 13/11/17 searching "ublox 7 USB GPS")

intermittent "spike" in internet response times. The "Meinberg" product can also be very fiddly to set up i.e. Windows 10 sometimes does not like the service account assignment.

Portability and/or Reliability – Using Neo 7M-based GPS Modules

So how can one do it simply and easily when portable and/or on the move? What if you are in the bush where Mobile-based internet systems are a bit "dicky" either

due to congestion or a lack of base stations (i.e. the "back beaches" of the Mornington Peninsula in Victoria or the Copper Coast of Central South Australia).

What if you require greater precision – inexpensively – than what potentially unstable Internet provisioned sources can provide?

The solution is simple – we tap into the cluster of atomic clocks that orbit above us – the GPS / GNSS / GLONASS systems. A brief description on these systems can be found at <http://www8.garmin.com/aboutGPS/> and <http://www.physics.org/article-questions.asp?id=55>

There have been lots of devices and lots of ways described over the years using various systems and software for obtaining precision time synchronisation via the GPS system. Many have required precise

The Meinberg Tools can be found at <https://www.meinbergglobal.com/english/sw/ntp.htm> for the time-server daemon and <https://www.meinbergglobal.com/english/sw/ntp-server-monitor.htm> for the monitor tool.

Dimension 4 can be found at <http://www.thinkman.com/dimension4/download.htm>

models of “this and that product” and customised software – and that could be quite expensive. The WIA, together with Alan VK3XPD, offered grants in 2014 to beacon operators for positioning and timing devices (ref: www.wia.org.au/members/grantscheme/gpsbeacon/).

Yet only now has it become completely affordable and exceptionally simple to use the GPS/GLONASS systems to synchronise our PCs. You can now purchase modules such as the “VK-172” Module – based on the Ublox 7M GPS Module - for just over \$AU10 (delivered) off eBay.

These are based off the common Ublox NEO 7M GPS Module that is commonly deployed as the location “brain” for many drones and model aircraft:



Photo 4: The ublox software website. (Source and location: <https://www.u-blox.com/en/product/u-center-windows> at 13/11/17)



Photo 2: The UBlox NEO 7M GPS module. (Source: <https://s3-ap-southeast-1.amazonaws.com/a2.datacaciques.com/16/11/11/34i2v032tk11fb8j/06fd4936caf3f800.jpg>)

The Ublox Demonstration Software – “u-center”

If you are using these modules you should first download and install the Ublox Demonstration

Software – Ublox “u-center Windows”. Note that there are also versions for non-Windows systems. This software is not strictly necessary as Windows should auto-detect Ublox devices; yet this package also supplies a “Virtual COM: Port Driver” that makes future operation of the device simple and consistent.

The “virtual Serial Driver” simplifies deployment of the module to a single fixed “virtual” COM: port. This means that you can put the module into any USB port on your Laptop/PC/Tablet and that it will always refer to the same COM: port number.

Note that deploying the Virtual driver is not the default option; the relevant screen and selection is shown on Photo 5.

The “u-center” software also enables many advanced of the features of the Ublox modules to be unlocked (i.e. Select GPS or GLONASS). Further discussion on the module and its configuration is beyond the scope of this article.



Photo 3: An internal view of the NEO-7M deployed in a “VK-172”. (Source: https://forum.u-blox.com/?qa=blob&qa_blobid=11316380723856418927)

GPS Time Synchronisation Software – NMEA Time v2

There are lots of packages available. By far the most useful package in my opinion is the “NMEA Time” v2 Package available at <http://www.visualgps.net/>

The advantage of NMEA time is its accuracy; it attempts to as best as possible hover the local PC time-base to a constant mean and then makes precision adjustments accordingly.

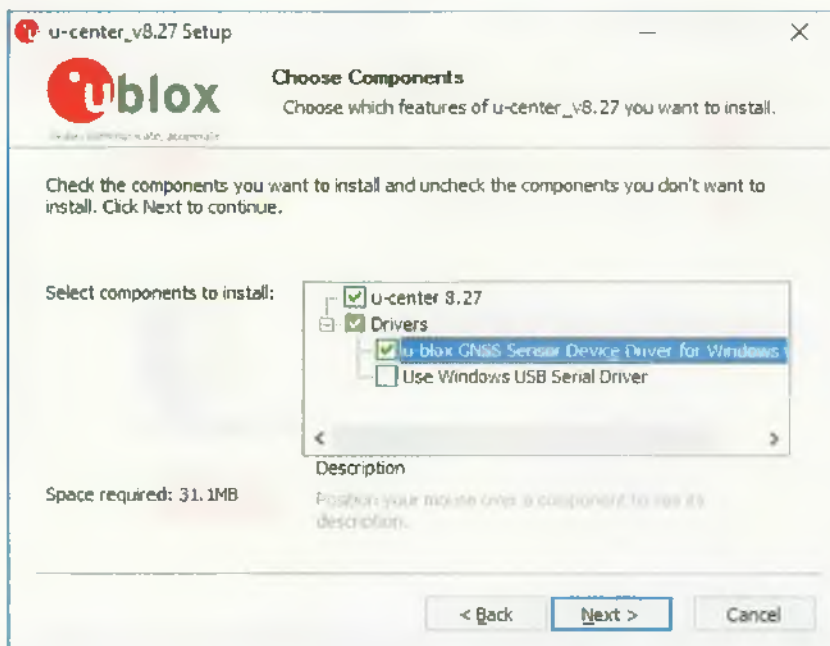


Photo 5: Be sure to select the correct software driver.

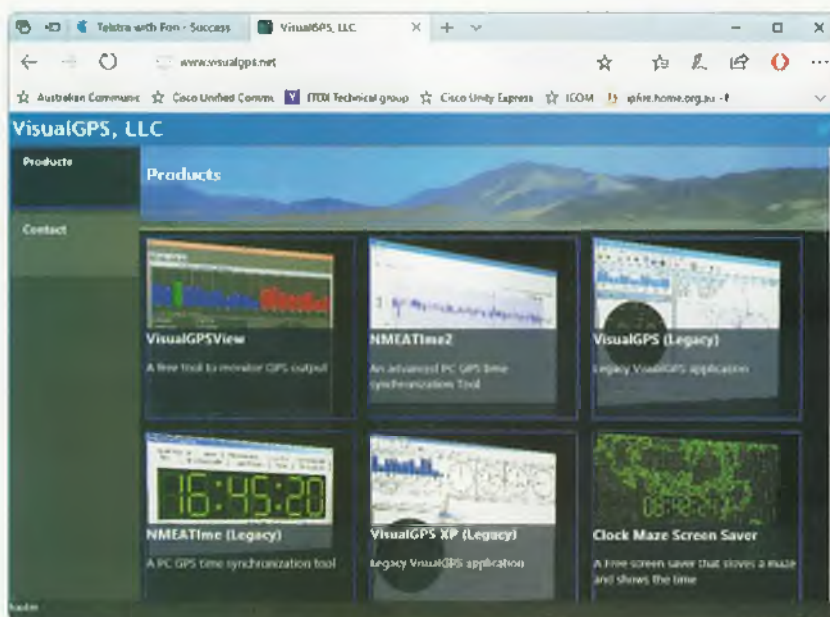


Photo 6: The Visual GPS website to source software. (source: <http://www.visualgps.net>)

Abnormal “glitches” tend to be negated using the sampling methodology used.

The advantage of “NMEA Time” is that the authors of the software obviously have Amateurs in mind ~ they have included functionality that auto-calculates your Maidenhead Locator position. See Photo 8.

The software also has excellent facilities that enable you to examine exactly what is being calculated from the satellite signals. See Photo 9.

The disadvantage of the “NMEA Time” utility is that it is shareware and ceases operation after 30 days unless registered.

Yet \$US20 is far cheaper in the long run that relying on unreliable open public services (such as Telstra Air) or continually purchasing additional data for your mobile services.

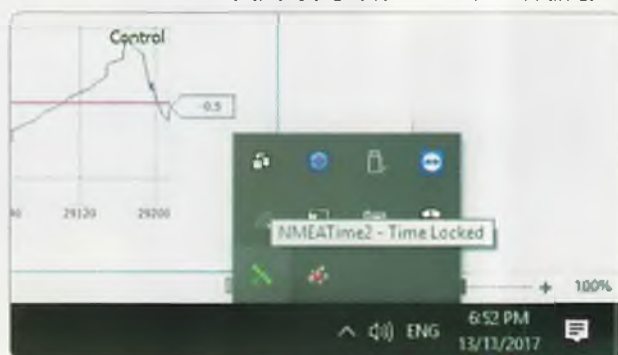
RF Immunity

So far there have been no reports of the modules creating any noise products that can be detected on HF (as some USB devices can). Some of the images taken here have been sourced from a Dell Laptop (an old Latitude 1564) that is used extensively for portable operation; there have been no observable random disconnect issues observed that can sometimes be experienced when using HF (i.e. inductive pickup and overload).

Limitations

These modules do not have the facility for external antennas. Therefore, operating these units indoors and/or under metallic roofs may be an issue (as with any GPS device). Using extension USB cables can of course pick up stray RF – so if you are going to use these modules indoors (and say position them near a window) then a quality shielded cable will be a must – in addition to good RF and antenna engineering and earthing systems (as always).

Photo 7: A partial screen shot showing that the PC is locked to NMEA time.



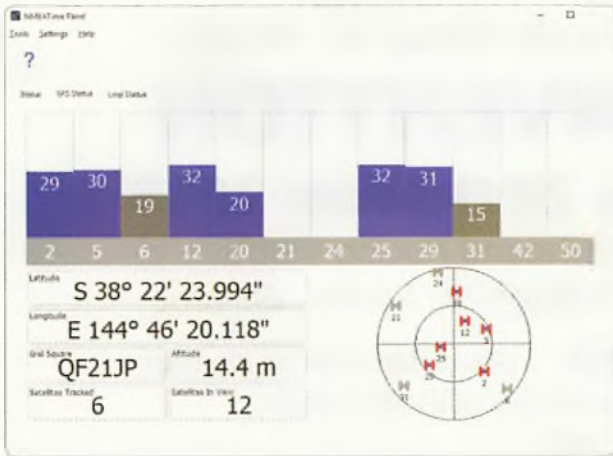


Photo 8: The NMEA Time Panel software showing the Maidenhead locator.



Photo 10: Screenshot showing that the software is licensed.

Remember though – these modules are cheap devices. We have been using such devices now for around 6 months with great success.

To tempt the curious: the “signal locked LED” can be employed along with the Ublox Software to provide a stable, locked signal extending up to 10 MHz along with appropriate configuration settings through the Ublox “u-center” software. These modules have great utility to the average Amateur; yet describing how to do this is well beyond the scope and intent of this article.



Photo 9: The NMEA Time software Loop Status screen showing the status history of the receiver and software. (Source: Primary)

Summary

GPS time synchronisation can be an inexpensive first-line technique for maintaining time precision. With many digital voice and data modes requiring time precision utilising these modules can offer the opportunity for you to use these data-processed modes with our Amateur services simply and efficiently away from our base QTH.

Disclaimer

All links and diagrams shown were accurate at the time of writing this article. Please conduct searches via your favourite search engine as publication can sometimes take time.

MEMNET

The Wireless Institute of Australia

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Go to www.wia.org.au click on '*For Members*', then click on '*Log into MEMNET*', and register... It's very simple.

If you have already registered for MEMNET but have not received a confirmation Email we may not have your correct email address.

Please email memnet@wia.org.au with your email address, name and membership number.

If you are changing your email address, please *remember to update* your information in **MEMNET**.



Ballarat Amateur Radio Group Inc. (BARG)

HAMVENTION

Sunday 28 October 2018

At the Ballarat Greyhound Racing Club's
Function Room, Rubicon St. Redan, Ballarat

Display and Sales (setup from 8am on the day)
Trade Table \$20.00 includes one admission,
extra tables \$10.00 each

(Space for 70+ tables, this is the big one!)

General Admission \$ 7.00 (under 15 free)

STRICTLY 10:00 AM START

Food and drink will be available on the premises

Enquiries To:

Email: hamvention2018@barg.org.au

or BARG on the web www.barg.org.au

Hamads

FOR SALE – VIC

Elecraft T1 Automatic Antenna Tuner. Excellent condition.
Hardly used. Ideal for QRP.

\$190 (plus shipping cost)

Contact Alex VK3AMX (03) 9850 7493 (Melbourne)

FOR SALE – VIC

14 m self-supporting tower galv ex windlight incl mast +brg
\$150

16 m galv Hills Cyclonic winch up tilt over \$190

Yaesu FRG8800 HF rx 500 kHz 30 MHz sno:9E330030 ex
cond \$150

FT1000MP HF tx sno:6f100295 ex cond orig pkg \$700

TET TE33 3band beam good cond \$100

Yaesu FT757 sno 5j221055 FC757 auto ant tuner + FP707
hd pwr supply, al matching units, manuals and mic, DC lead
\$460

PA amp 30 W sno:44625929 new in carton \$100

PA amp 15 W 12V 240V \$50

Electronic multimeter Leader Im75a \$40

Contact Bill VK3LY on 0409 954 491

FOR SALE – VIC

Heathkit HW-8 QRP CW rig with power supply, headphones
and manual \$100 plus postage. For Sale Yaesu FT1500 2 m
FM with mic \$100 plus postage.

Jim VK3KE on 0438 671 253

FOR SALE – QLD

One (1) MFJ 862 swr wattmeter, suitable for 144, 220, 440
MHz, new in carton, never been used. One (1) MFJ 269c
antenna analyser used once, perfect condition, plus carry-in
case plus three (3) dummy loads for calibration. Kenwood
TS 480HX tx/rx, not working but in good condition.

Merv VK4DV QTHR phone 0448 985 537 or email
vk4dv1@gmail.com

WANTED – QLD

Wanted to buy a Digital Display Unit for my TS-820S. Just
need mixer/counter and display to restore my 820S.
Adrian VK4KL 0429334469

WANTED – SA

Kenwood TS-130V low power HF transceiver in good
physical condition and excellent working order. Not for a
collection but will be used on air. Information re any on-
board filters, accessories available etc will be appreciated.
Please contact Doc VK5BUG via d.wd@bigpond.com in the
first instance. Many thanks.

Ham Radio Friedrichshafen 2018

Michael Rademacher DG8YP



Photo 1: Exhibition outside.

This year I was on holiday with my wife at Lindau, a nice Bavarian town at the banks of Lake Constance.

There was a chance to visit the Ham Radio 2018 show in Friedrichshafen not far away from my holiday resort. I sent my friend Terry VK5TM some photos of that exhibition and he asked me to write a short report to be published in *AR*. Here it is:

Friedrichshafen Ham Radio is the leading Amateur Radio exhibition in Europe. This year's 43rd International Amateur Radio Exhibition 2018 took place a little bit earlier than usual. So they didn't expect as



Photo 2: Flea market.

many users as last year because some important contests and Ham events had been held at the same time. Finally 15,460 visitors (17,110 last year) came to Friedrichshafen on that weekend. Friedrichshafen is located on the bank of Lake Constance, a lake that is surrounded by three countries; Germany, Austria and Switzerland. Just at the north side of the Alps. It is a wonderful place to stay.

Hams coming from 63 countries met and exchanged their experiences in personal talks.

In the entrance hall a big wall was covered with many QSL cards from all over the world. A world map was installed there too where every visitor could place a pin at his QTH.

A lot of Ham stuff was to be seen in two halls at a very large flea market. It was very crowded early Friday morning; you had to be there early to get best things. Many Hams came to Friedrichshafen especially for that market, to get things they had looked for a long time.

In hall A1 you could see 180 stands of organisations from 32 countries and a lot of dealers. Many Hams used this exhibition to get in personal contact with their dealer they buy stuff from all during the year. DARC, RSGB, ARRL, RAST, IARC and many other Amateur Radio organisations offered books, CD and other things to buy. It was very interesting for me to get information from Qatar Radio Society about a satellite project that



Photo 4: DARC mobile station.

was planned to launch this year. Satellite Es'hail-2 geostationary communication satellite (Position 26°E) will carry 2 AMSAT-DL Phase 4-A Transponder that will cover Europe, Africa and India with a large footprint.

Yaesu presented their new flagship transceiver FT DX 101D that was covered by a glass dome and very well protected by the staff. They showed all their Amateur Radio devices and all could be used. I visited other dealers like ICOM, KENWOOD, FlexRadio, Spiderbeam, Rigol etc. and got interesting information.

Hans Summers (G0UPL) was there too with a stand to give

information of his well-known QRP-Labs devices. It was a good chance to talk about his projects. I have built some too.

This year's motto was "Radio-Scouting – Youth Radio Adventure". The DARC offered a lot of lectures for that theme.



Photo 5: Yaesu devices for testing.

In the outer area they showed their projects.

On all three days many lectures and meetings took place. I decided to visit the Digital Voice User Meeting to get more information of DMR I will install in the coming weeks. The US Licence Exam could be done as well.

On Saturday evening a big party, Ham Night, was organised in the outer area where a DJ of DARC

Photo 3: Yaesu FT DX 101D.





Photo 6 & 7: Scouts and Zeppelin starting.



Photo 8: Me and my wife at DARC stand.

Radio played songs of the 70s and 80s. The Alm Hütte restaurant offered a lot of beer, other drinks and Bavarian food. So it was a very nice Ham fest, having much fun and meeting many friends.

A highlight was to get a chance to buy a flight with the Zeppelin that was stationed at the airfield directly beside the Ham Radio exhibition. Unfortunately there was no chance to use your Portable radio because of the electronics inside the Zeppelin.

Saturday and Sunday there was another event "Maker Faire" in



Photo 10: Running toothbrush.

parallel, a festival of creativity and inspiration. Makers and hobbyists could see projects to get young people in contact with electronics. They had the chance to build guided projects like a "Running tooth brush"; just a combination of a toothbrush's head, a battery and a vibrator of a mobile phone. Excellent and simple.

So you excite interests of youngsters and kids! A lot of dealers, especially for school projects, offered their kits.

It was a very nice weekend with excellent summer weather, meeting new friends and planning new projects. A perfect weekend! I will be there next year too. The Friedrichshafen Ham Radio 2019 event will be on 21 - 23 June 2019; the regular time slot. I would be happy to see you next year in Friedrichshafen.

Vy 73,

Michael Rademacher DG8YP



Photo 9: Kids working on guided projects.

Remembrance Day Contest 2018

Alan Shannon VK4SN



Photo 1: VK2MT - Inverted Vee Antenna on 10m Squid Pole.

Congratulations again go to VK7 as the 2018 Remembrance Day Contest Winning state. The number of logs received from that tiny island was staggering with over 36 percent of VK7 operators submitting logs. VK4 ops only registered a mere 7 percent making the local wood turner happy making a huge wooden spoon. I've heard from a "little birdie" that the VK7 input was due to Vince VK7VH getting everyone involved and to get the logs in. Well done Vince – your hard work has paid off.

Congratulations go to the following individuals:

SOPH VK7VH 802, SOCW VK2GR 600, SOMX VK5LJ 872, QRPPH VK3AAK 92, QRPCW No Entry, QPRMX VK2IO 451, MS VK5ARG 875, MM VK4KW 1169.

The highest scoring Rookie was won by Terry VK6FLTC with 56 points in the Single Op Phone section.

Top Foundation operator was Leonie VK2FHRK with 199 points in the Single Op Phone section.

Top Team was TrickyMuzzVince (VK7ZBX, VK7ZMS, VK7VH) setting a new team record with a score of 2398 points.

Browsing through the results only one score stands out above the average. A QRP stations score was well above other QRP station results and on following up the reason, VK2IO's location and large wire antennas, proved fruitful at his portable location in Dharug National Park. Seven Multi-Single and six Multi-Multi stations entered using 58 operators.

As state versed state this year everyone fought against the odds in many ways. Not only was propagation poor, most southerners from VK5 and across the Tasman were affected by massive static crashes produced by several storms, lightning, high winds, snow, and very low temperatures for those braving the field day

experience. As hard as it was, QRP stations felt the brunt of it all. A lot of operators mentioned the signal levels were on or just below the QRN.

Conditions meant that there were about 500 operators less than previous years. This and the poor conditions reflected below average log scores and no new records were set. The record chasing VK4KW went all out with eight operators, three operating positions and a chaser, and fell short of the Multi-multi record by 256 points. CW operators were let down with fewer ops and long breaks between contacts. The PH: CW ratio this year is 11:1, down from 9:1 last year. Log scores were below average across the board. Seven paper logs were included in the 175 logs received. For the first time there were no entries for the QRP CW section. Operators included 10 Foundation, 15 Standard and 150 full calls.

Points losses were mainly from

incorrect copying of callsigns due to bad conditions or just not showing up in the log of the person contacted within 15 minutes each side of the noted contact time. Logging was of a high standard with portable and QRP stations correctly entered. One ham submitted a log with a specific call and at first it seemed that not many had copied it correctly. On checking it was found that all supposed miss-copied had the same call. Further checking revealed the operator had two callsigns and gave out the wrong call for almost 75% of his log, ending up in losing 126 points. It was decided to take points off rather than a disqualification for using two callsigns.

Log checking was made difficult due to operators that think they know better than the software file outputs and are changing the name of the log and/or changing header categories to non-conforming options. For example instead of leaving CATEGORY-BAND to the default ALL, the option is changed to HF. On upload of this log the system fails as HF is not a Band option and requires editing before trying again.



Photo 2: VK3ALZ portable in Trafalgar East.

Cabrillo is an international standard for contest logs format that allows a smooth and trouble free system of log processing. (<https://www.rof.org/cabrillo/cabrillo-specification-v3/>)

The rules state to put your Callsign in the email subject line and call your log 'callsign.log', but once again this is not happening making it hard for

checking and following up. Surprisingly enough it was mostly the winners who failed to comply with these conditions.

The new VK Log Checker upload site worked a treat; however, a logging program missed the CATEGORY-TRANSMITTER: option for single operators causing a slight problem and logs were redirected to

Remembrance Day Contest 2018 Results

State	NR of Logs	Logged Contacts	PH Contacts	CW Contacts	Raw Score	Weighing Factor	Weighted Score	Percentage of Licensees who put log in	Percentage of Participants who put log in	Unique Participants
VK 1	6	221	169	52	317	418	0.76	1.44	46.15	13
VK 2	37	6009	5175	834	9032	4114	2.20	0.90	20.00	185
VK 3	34	3666	3416	250	4504	4051	1.11	0.84	16.59	205
VK 4	14	2033	1875	158	1704	2801	0.61	0.50	12.17	115
VK 5	20	3066	2800	266	3444	1405	2.45	1.42	18.18	110
VK 6	25	1883	1823	15	2081	1380	1.51	1.81	38.46	65
VK 7	36	6058	5710	348	8439	602	14.02	5.98	36.73	98
VK 8	2	25	25	0	25	137	0.18	1.46	40.00	5
ZL	1	37	37	0	0	5000	0.00	0.02	2.63	38
P2	0	0	0	0	0	5	0.00	0.00	-	0
TOTAL	175	22998	21030	1923	29546	19913	TOTAL	0.88	20.98	834

Remembrance Day Contest 2018 Team Results

TEAM NAME	CALLSIGN1	SCORE	CALLSIGN2	SCORE	CALLSIGN3	SCORE	TOTAL
TrickyMuzzVince	VK7VH	802	VK7ZMS	754	VK7ZBX	842	2398
AREG Team One	VK5ARG	875	VK5SFA	725	VK5SA	208	1808
NSW Wombats	VK2GR	600	VK2BJ	456	VK2PN	254	1310

2017 Remembrance Day Contest Results

SINGLE OP PHONE				SINGLE OP MIXED				SINGLE OP CW (cont)	
Callsign	Points	Callsign	Points	Callsign	Points	Callsign	Points	Callsign	Points
VK7VH	802	VK2XZ	110	VK3BCZ	40	VK5LJ	872	VK2WQ	76
VK2MT	775	VK6LL	107	VK1DW	38	VK7ZBX	842	VK2GZ	24
VK7OO	645	VK3LTL	105	VK6CX	37	VK7ZMS	754	VK4TT	16
VK3XV	494	VK3BMT	104	VK7KC	37	VK5SFA	725		
VK7TW	486	VK4ADC	101	VK6YTS	36	VK2AZ	678	GRP PHONE	
VK7HW	382	VK4QH	99	VK6YD	36	VK3VT	520	VK3AAK	92
VK2XAX	380	VK7LG	98	ZL3RIK	35	VK7HDM	512	VK3OAK	94
VK5DT	367	VK6QS	97	VK4FPDG	32	VK7GN	510	VK2MG	80
VK3BNR	344	VK5LOL	95	VK2JON	31	VK7BO	360	VK7NTK	56
VK2YW	328	VK7ZGK	90	VK5VC	31	VK3AWG	331	VK3FLCS	46
VK7JGD	317	VK6MM	88	VK6AB	31	VK7FB	308	VK2FRKA	34
VK2BGL	312	VK6GHZ	88	VK3DY	28	VK7ZCR	259	VK7KPC	29
VK7QP	301	VK2DEK	86	VK6ADF	27	VK3ANL	218	VK1FREB	0
VK3MB	299	VK2LEE	83	VK7KK	26	VK3SIM	215		
VK5SA	208	VK4KLC	83	VK3WMM	24	VK6DDX	184		
VK3LM	207	VK3BYY	82	VK7TU	23	VK5BC	172	GRP MIXED	
VK2FHRK	199	VK7JU	81	VK2VV	23	VK2NP	168	VK2IO	451
VK6CSW	189	VK2YE	80	VK7KW	22	VK2KMI	81	VK3HN	105
VK7DIK	185	VK6POP	78	VK5DJ	21	VK6RZ	50	VK3GK	22
VK2SS/P	177	VK6HM	77	VK7FJAM	20	VK2JDR	43		
VK3MDH	174	VK3LRE	76	VK2QN	19	VK6NAD	36		
VK7DG	168	VK6JP	72	VK5KX	17	VK1DA	15	MULTI-SINGLE	
VK5UV	165	VK6BMW	66	VK4FLR	16	VK8RR	14	VK5ARG	875
VK3GC	161	VK3ADW	59	VK3TNL	16			VK2GGC	788
VK7RM	156	VK2BBQ	58	VK4ATH	15	SINGLE OP CW		VK4HH	674
VK5KBJ	155	VK2TTL	57	VK3NCC	13	VK2GR	600	VK2AWX	478
VK3AVV	142	VK6FLT	56	VK5LG	11	VK2BJ	456	VK2BOR	326
VK7KDV	141	VK6MJC	55	VK8VWA	11	VK2PN	254	VK4BW	127
VK5YX	137	VK6MIL	52	VK4JJW	11	VK3QB	184	VK3ER	56
VK3CG	137	VK6AXB	51	VK5FBAA	10	VK7RF	36		
VK7BEN	137	VK6MB	50	VK7ZSB	10	VK2EL	148		
VK2RT	134	VK7WH	48	VK7KWB	8	VK7CW	144	MULTI-MULTI	
VK3AMW	118	VK5XY	47	VK5UE	7	VK1MCW	134	VK4KW	1169
VK1MA	116	VK6BDO	47	VK4RJ	5	VK2BHO	120	VK2AU	898
VK2FAJM	113	VK7DW	47	VK3FBOM	4	VK2IG	100	VK4WIS	461
VK5PX	112	VK3ZPF	44	VK1DC	0	VK5DC	94	VK6AHR	284
VK5PL	111	VK7PD	44			VK3TP	86	VK2ATZ	217
VK3JK	110	VK4FNQ	43			VK7EE	82	VK6LVI	97

the manager to fix and upload. Some social media chatter says it's not needed for single ops. This of course is misleading as there are some single ops using two radios and this is normal practice to include this category as part of the Cabrillo V3 formats to indicate S02R operation. Three operators did use this method of operating. The upload site allows

the user to upload, view uploaded logs, and read the soapbox comments about the contest. Once the contest is over, logs are checked and the results are displayed. See <https://contester.azurewebsites.net/> for more info.

Thanks go to those whom I requested a rewrite of their logs which was gladly done and re-submitted.

Big thanks to those involved in getting a guest speaker for the Remembrance Day speech, especially Peter VK1PE. Peter has skills I don't.

As per usual, there is a full report and statistics on the WIA Website. Best 73 and see you next year. Alan VK4SN.





VK3news MDRC

Ken Millis VK3KIM

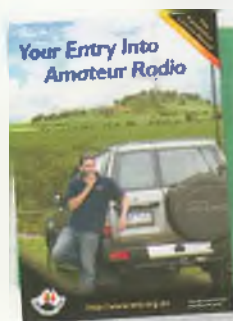
The Moorabbin & District Radio Club celebrates its **70th Anniversary** later this year. The Club was founded in 1948 and arose from meetings of a few amateurs living in the Moorabbin area. The weekly meetings were held in a radio shop owned by Col Gibson VK3FO, in Centre

Road Bentleigh. The Club was formalised on 25 October 1949 with a membership of sixteen.

The Committee would like to hear from past members with their recollections and anecdotes of their time in the Club to assist with the preparation of material for the Anniversary Celebration.

Please contact the Secretary, Ken Millis VK3KIM at secretary@mdrc.org.au should you be able to contribute.

Further information regarding the 70th Anniversary will appear in the next edition of *AR*.



New Foundation Manual is available now

Visit our Bookshop:

http://www.wia.org.au/members/bookshop/page_data.php?id=113



Its on again!!

Yarra Valley Amateur Radio Group Hamfest 2018

Sunday 14th October 2018

10am to 2pm at the

Gary Cooper Pavilion, 16 Anzac Av. Yarra Glen. Melway 274 K 1

Entry \$7.00

Open to traders from 8.30am.
Call in on VK3RYV the Yarra Valley
Repeater 146.725MHz
Ample Parking.
BBQ, light refreshments available.
Free tea and coffee.

Table Hire \$15.00

For table bookings and further information contact :
Craig - vk3war@gmail.com (0409 448 510) or
Col - vk3cnw@wingersoftware.com (0423 535 988)

Yarra Valley Amateur Radio Group. VK3YVG. PO Box 346 Healesville Vic 3777. www.yvarg.org.au



VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

The GARC AGM

At the GARC's 69th AGM this year, the following officers were returned for year 2018 -2019.

The Executive Committee

President

Lee De Vries VK3PK

Vice President

Tony Collis VK3JGC

Secretary

Nicholas Kasperovic VK3TY

Treasurer

Alan Jalocho VK3LCD

Five Ordinary Committee Members:

Barry Abley VK3S, George Patterson VK3AGL, Peter Munroe VK3BMG, Nicholas Buckley VK3FNXR and Rex Foord Jr VK3FRJF.

Four newcomers to the 2018 - 2019 committee are:

Rex Jr VK3FRJF, Peter VK3BMG, Alan VK3LCD and Nick VK3FNXR.

President Lee then welcomed the new members to the GARC committee and thanked the retiring members: Russell VK3KRS, Calvin VK3ZPK and Dallas VK3DJ for the years of valuable service that they had given to GARC members.

The Ray Cowling Award

As is the custom, the last order of AGM business is to decide who would receive the Ray Cowling Award.

The Ray Cowling "GARC Promotion Award", is given to a club member who has contributed the most to the GARC and Amateur Radio, promoted the club throughout the year and introduced and helped new members at the club. A secret poll was held and there was **outstanding support for Rex Foord Snr VK3ARG!**



Photo 1: Rex VK3ARG receiving the Award from President Lee VK3PK.

GARCnet:

The long-term intent of the repeater linking project is to construct a sustainable, high quality 2 metre wide area analogue network covering South Western Victoria (from the Bellarine to the SA border, including the Great Ocean Road). The Project Manager for the repeater link-up is Peter VK3WK assisted by Bert VK3TU and Dennis VK3BQZ.

The purpose of this network is to not only to provide seamless (almost) VHF coverage of the area but to connect amateurs in this region with the GARC.

The automated network broadcast facility is a key component of this strategy. Implementation of this project involves linking existing repeaters VK3RGC (Geelong), VK3ROW (Beech Forest), VK3RWL (Warrnambool), VK3RPL (Portland) and the establishment of two new repeaters; one at each end of the Great Ocean Rd (the team are currently negotiating for a site near Anglesea) and are negotiating with other groups to include a repeater at Mt Gambier. The overall network will be known as the "GARCnet".

The linking of the 2 m repeaters at VK3RGL, VK3ROW and VK3RWL and integration of IRLP node (6572) into the network, has now been completed and is operational.



Photo 2: From left to right: Rex Jr VK3FRJF, Peter VK3BMG, Alan VK3LCD, Nick VK3FNXR, Peter VK3WK, Bert VK3TU and Dennis VK3BQZ.



DXTalk

Luke Steele VK3HJ
e vk3hj@wia.org.au

With only the occasional sunspot group evident and periods of high geomagnetic activity, propagation has been generally dismal the past few months. We'd better get used to it, as this is likely to be the pattern for the next few years as we reach towards the bottom of the solar cycle. Hopefully geomagnetic conditions will settle soon and we can enjoy some improved Low Bands conditions.

The main activity on air in August has been the Austral Islands DXpedition TX5T. They have been active on 160 - 10 m but with little activity on 12 or 10 m. They have been heard here on 160 m through to 17 m and quite workable on 30 m down to 160 m. No signals on 15 m and up have been heard at your author's station. North America has done well with TX5T and Europe has struggled.

About the most active band lately has been 40 m, with decent signals mid-afternoon from Europe and with Asia/Pacific/Americas in the evenings. The mid-week CWOps CWT mini contests add life to the CW sections of 40 and 20 m. Thirty metres has been almost deserted with a few weak signals heard. Twenty metres has seen some activity but mostly weak signals and the higher bands have been very quiet.

Earlier in August, there were some reasonable signals on 160 m coming in from USA in the evenings and on 6 August HK1MW Bolmar from Colombia was loud.

TX5T Austral Islands has been the only notable DXpedition active. A few IOTA activities on our side of the planet have been workable,

such as RT65KI Ildiyya Island, Russian Far East. The European IOTA activities have been mostly unheard here.

Mike VK4QS reports that he has been enjoying some success with 160 m DX recently. In July he worked Fiji, Japan, Hawaii and USA from his modest station near Maryborough QLD. His station consists of a Yaesu FTDX-9000, hand keyed in CW with a pre-WW2 Japanese Naval SPARK Key. Antenna is a 12.5 m ground mounted, base loaded Vertical (5/8 th on 20 m actually was the original purpose) with Three Top Hat Wires, each 15 m long. 40 base radials pigtail strapped together and rolled into a one metre circle at the base of the antenna, plus a 50 turn base loading coil on a 90 mm diameter white poly pipe. Mike uses a full wave 40 m Pennant Antenna, broadside to the USA as a receiving antenna to cut down QRN. Mike calls CQ in the evenings on 160 m and is regularly spotted by stations in the USA.

Upcoming DX

DXpedition activity scheduled for October and November includes the following.

Mayotte TO6OK, 21 September - 6 October. A team of Czech operators will be active on 160 - 10 m, CW, SSB, RTTY and FT8. QSL via LotW, Club Log or OK6DK direct. For more information see: <http://www.cdpx.cz/>

Rwanda 9X0T, 26 September - 10 October. The Italian DXpedition Team will be active 160 - 10 m, CW, SSB and RTTY. On 20 m only, they

will be active on FT8 as 9X0Y. QSL via LotW, OQRS or I2YSB direct. For more information see: <http://www.i2ysb.com/idx/>

Samoa 5W0GC, 28 September - 14 October. Stan LZ1GC will be active from Apia (OC-097) on 160 - 6 m, CW, SSB and RTTY with a focus on 160 and 80 m. QSL via LZ1GC or Club Log.

Christmas Island VK9XT, 29 September - 6 October. Four operators will activate Christmas Island (OC-002) on 80 - 10 m, SSB and Digital modes. QSL via LotW. For more information see: <http://vk9xt.qsodirector.com/>

Albania ZA5V, 1 - 8 October. S59A and OE6V club members will operate from Lake Shkodra Resort on 80 - 2 m, CW, SSB and Digital modes, and EME. QSL via S59A.

Niue E6Y (OC-040), 6 - 16 October. NZ Quake Contesters will be active for both SSB and CW Oceania DX Contests, and all HF bands outside the contests. QSL via ZL3PAH. For more information see: <https://quakedxpeditons.wordpress.com/>

Norfolk Island VK9N (OC-005), 9 - 14 October. JO7GVC and JK7LXU will be operating holiday style on 40 - 10 m, CW, PSK and FT8.

Chad TL8, 9 - 21 October. Ken LA7GIA will be active from N'Djamena on 160 - 10 m, CW and maybe some SSB. We'll be lucky to hear him, but if there is a chance, Ken will make an effort for us in VK. QSL via LotW. For more information see: <http://la7gia.com/Chad/index.html>

Samoa 5W0GC, 15 - 24 October. Stan LZ1GC will be active from

Apia, Upolu Island (OC-097) 160 - 10 m, CW, SSB and RTTY. Focus on 160 and 80 m. QSL via Club Log.

Vanuatu YJ0GC, 15 October - 4 November. LZ1GC will be joined by OM5ZW and OK2WM on Efate Island (OC-035). They will operate 160 - 10 m, CW, SSB and RTTY with a focus on 160 and 80 m. QSL via LZ1GC or Club Log.

Christmas Island VK9XG (OC-002), 15 - 30 October. Five UK operators will be active from 160 - 10 m, CW, SSB and FT8. QSL via LotW. For more information see: <http://www.6gs.org.uk/christmas-island-2018/>

Ceuta and Melilla EA9/W1XGI, 16 - 22 October. JA1XGI will be operating from Melilla as EA9/W1XGI on 40 - 10 m, CW and FT8. QSL via LotW, Club Log or direct to JA1XGI.

ZL7X Chatham Islands (OC-038), 16 - 22 October. JH1GNU, JH1HRJ and JE1SCJ will be active 160 - 10 m, CW, SSB and FT8, with a focus on Low Band CW, and FT8 all bands. QSL via LotW, or JA0VSH direct or bureau.

Haiti 4V7R (NA-096), 19 - 29 October. A group of six operators will be active 160 - 6 m, CW, SSB, RTTY and FT8. QSL via EB7DX. For more information see: <http://lazydxers.com/4v7r/index.html>

Ducie Island VP6D, 26 October - 3 November. A large group of

operators will be on air 160 - 10 m, CW, SSB and Digital modes. QSL via LotW or website OQRS. This DXpedition should be well heard in VK. For more information see: <https://www.vp6d.com/>

Zimbabwe Z23MD, 26 October - 6 November. Members of the Mediterraneo DX Club will be active on the HF bands, CW, SSB and RTTY. QSL via LotW or IK2VUC. For more information see: <http://www.mdx.org/z23md/>

Christmas Island VK9XQ (OC-002), 3 - 6 November. Michael DF8AN will be active 160 - 6 m, CW and Digital modes including FT8. QSL via DF8AN direct or bureau. No LotW. Michael still likes to collect paper cards.

Cocos-Keeling VK9CH (OC-003), 6 - 10 November. Michael DF8AN will be operating 160 - 6 m, CW and Digital modes including FT8. QSL via DF8AN direct or bureau. No LotW. Michael still likes to collect paper cards.

Christmas Island VK9XQ (OC-002), 10 - 17 November. Michael DF8AN will be operating again from Christmas Island for a week.

4U1UN United Nations HQ back on air

After many years QRT, apart from the beacon and one small activity

from the garden of the UN HQ in New York City a few years ago, the UN HQ station will hopefully be regularly on air again. After lengthy negotiation by James K2QI, President UN HQ Radio Club, Dima RA9USU and Adrian KO8SCA and the generous donation of equipment, the UN HQ will again be on air. Adrian and James have been busy installing a BigIR vertical antenna on the roof, forty-eight floors up and an Elecraft K3, Acom amplifier and network equipment. Remote operation of the station is likely to be from a broadcast booth on the third floor of the UN HQ. UN HQ is a DXCC Entity and is currently ranked 34th Most Wanted, due to the extended period of inactivity. On 23 August, for only a short time, Adrian tested the 4U1UN station. Hopefully by the time you read this, we will all have heard and worked what has become a highly sought after DXCC entity.

Please email me with any DX related news for inclusion in this column. I am particularly interested in hearing about DX worked or heard in other states, and from newer DXers. I do welcome news from other DXers to add to the DX News!

73 and good DX,
Luke VK3HJ



Over to you

Linux

Dear Editor,

I was given an old laptop just before Christmas without a working OS. As No. 1 son had been at me for years to use Linux, I decided to give it a try. Boy has it been a steep learning curve!

My idea was to use it for as many amateur radio related programs as I could.

The more I looked, the more programs I found that worked, and worked well on

Linux OS. Searching to web gave many answers, but not all.

The problem seems to be, is knowing who is using Linux for amateur radio and where to go for many of the answers.

My request is for AR to run a segment each issue covering Linux related amateur radio programs. I am sure there many amateurs who use Linux that could head up a column.

Terry VK2KDK.

Ed: Terry's request has some merit. Do we have any readers with the appropriate knowledge of Linux and with the skills to write a series of articles that are easy to read and follow who is willing to volunteer?

If so, please drop me an email at editor@wia.org.au





ALARA

Jenny Wardrop VK3WQ

QSLing - from Linda VK7QP

It is now more than 40 years since I gained my amateur radio licence. While I was employed it was hard for me to find time for radio among all my other activities. Since retiring, I have got back my interest in radio, supported through ALARA. I have been active on the air for a couple of years and decided it was time to get serious about sending and receiving QSL cards.

In December last year Martin took some photos of me enjoying my various hobbies, and we sent these off to UX5UO who made them up into some nice QSL cards for me.

When we first came to Australia and entered a contest, I remember

Photo 1: Linda in 1972 when she was VK4VV.



sitting down with the log to write out the QSL cards and then sending them off to the bureau. This was in 1972.

Martin VK7GN has been collecting cards over all this time and you may have seen him and his QSL card collection on the ABC show 'Collectors'. If not, you can watch him on the show at https://www.youtube.com/watch?v=Ek9xTW_bJEs. We have a lot of cards for him but very few for me.

I wanted to get some QSL cards to confirm the different countries I have worked. So I started out with my box of cards and began filling them in, as I did in 1972. Then I paused for thought.

Some people want cards direct these days and many no longer want them at all. So I went to QRZ.com. This is a website of all the amateur stations in the world and many of them indicate how they will QSL. Some use the bureau,

so those were straightforward.

To send the cards off to the WIA there are a few rules involved and I was pleased to see these rules in the recent issue of *Amateur Radio* (2018 no. 3). I sorted out my cards in the required order and sent them off. Some use OQRS- online QSLs direct. These will respond to QSL requests free through the bureau. You need to look up the station you worked and enter the details of your contact. Then you can choose to pay for a direct card or request a free one through the bureau.

Many stations upload their logs to Logbook of the World, LOTW, so that contacts are confirmed in this way, rather than by QSL card. To get access to LOTW requires getting an online certificate from ARRL, which manages LOTW. It took me two goes to get this right but they were very helpful when my first attempt did not work. I was then able to upload my computer log from Log4OM and check my contacts.

Photo 2: Linda's new QSL card, depicting some of her hobbies.



I also downloaded my data from LOTW to Log4OM. By coincidence, shortly after this, I received my first DX cards from the bureau, for my operation in the 2016 IARU Contest.

Log4OM enables me to see who has confirmed a contact on LOTW and I can also use it to mark off cards I have received through the bureau or direct. I also have a small but developing collection of QSL cards.

I have set myself the goal of working 100 countries and I am looking forward to the next contest to get my numbers up.

Linda VK7QP – ALARA
Vice President and VK7 State Representative.

Dot VK2DB reports on the Port Macquarie Field Day

It was a great meet, good crowd, good sausage sizzle, tricky foxhunting, lots of meet, greet and looking at the disposal tables. The field day is usually held in the Tacking Point Surf Club building overlooking the beach where we can look through the large windows and see whales. This year the Surf Club was being renovated so it was held in the Wauchope High School. Although we had plenty of space to spread out, it wasn't quite as convenient as the Surf Club.

There are always plenty of lucky door prizes and raffle prizes and this year Philippa VK2PPS was lucky enough to win the Radio Theory Handbook by Fred Swainston.

I won a tool belt for nails, hammers and screwdrivers but I think the OM has his eye on that! I had been asked to take the CLARA (Canadian Ladies Amateur Radio Association) quilt to show on the ALARA table and it certainly created a lot of interest. People listened to the story of last year's CLARA birthday bash and our trip through Canada. Then they stayed to look through the photos and hear about the Cairns ALARAMEET. ALARA members there were Diane VK2FDNE, Philippa VK2PPS who was wearing a beautiful bracelet



Photo 3: Philippa VK2PPS and Henry VK2ZHE.

that she had made and Carol VK2FCSR who was sitting at the Radio Supply table.

ALSO.....

The first radio contact between Wales and Wahroonga was on 22 September 1918 and of course this year is the centenary. OM John VK2ZOI, President of Hornsby and Districts Amateur Radio Club has been working with Jo

Harris OAM from the Ku-ring-gai Historical Society to make sure the celebrations run smoothly. Jo has been in contact with and invited some very important guests. John has secured the VK100MARCONI callsign for the event and is now working on the special QSL card. We may even make the TV news!

33, Dot VK2DB – VK1 & 2 State Representative.



Photo 4: The ALARA members at Healesville (Left to Right): Margaret VK3FMAB, Kaye VK3FKDW, Lisa VK3FNET, Pat VK3OZ, Mum Elsie, Jean VK3VIP, Judy VK3FJAG, Jenny VK3WQ, Diane VK3FDMP and Pam VK3NK.



Photo 5: The ALARA members at Gippsland Gate Hamfest. Back row: (Left to Right) Pat VK3OZ, Judy VK3FJAG, Diane VK3FDMP, Margaret VK3FMAB, Jean VK3VIP. Front row: (Left to Right) Kaye VK3FKDW and Mum Elsie.

VK3 report from JEAN VK3VIP

Our ALARA lunch held on 28 July was at the RSL Club in Healesville on a lovely sunny day.

We had about 15 YLs and

OMs attending and as it was ALARA's Birthday, we had a cake to celebrate. A big thank you to Kaye VK3FKDW who made the very enjoyable cake and a big thank you also to Diane VK3FDMP who

organised the venue for us.

The Gippsland Gate ARC held their Hamfest on 4 August. Mum and I, Jean VK3VIP, made our way to Cranbourne, with 10 kilos of onions for the barbecue! *[I imagine many tears were shed! Ed.]* I helped Pat VK3OZ in the kitchen, along with Margaret VK3FMAB, while Kaye VK3FKDW and Mum, Elsie, looked after the ALARA table.

Unfortunately, my OM John VK3DQ was unable to attend the Hamfest as he was in hospital, where he was kept for a week. *[We all hope you'll get well soon John. Ed.]*

Jean VK3VIP – VK3 State Representative.

ALARA Contest

This contest will be over at the time of this report and I hope that you all had lots of contacts. Make sure that your log gets to Marilyn VK5DMS as soon as possible (by 30 September 2018).



Gold Coast Amateur Radio Society HAMFEST 2018

Saturday 10 November 2018

*Venue: Albert Waterways Community Hall, Corner
Hooker and Sunshine Boulevards, Mermaid Waters.
(Just behind Pacific Fair Shopping Centre)*

- Doors open to the public at 08:30 (Table holders can set up from 06:30).
- Everything is under cover.
- On-site parking.
- Entry only \$7:00 per person or \$10 Family.
- Great Raffle Prizes.
- Further info <http://www.gcars.com.au>
- Table bookings please contact hamfest@gcars.com.au

See you there!



VHF/UHF - An Expanding World

David K Minchin VK5KK

Introduction

This month we have Leigh VK2KRR's round up of WSPR activity as well as a report on the EME 2018 Conference and some other EME activity. We also have a bit of a preview of the progress on a soon to be released "VHF/UHF" SDR transceiver and Kevin VK4UH's ever popular Meteor Scatter notes.

WSPR Propagation Report June - August 2018

Leigh VK2KRR reports... "We have now passed the middle of winter and heading back towards summer propagation conditions. It won't be long till the bands will be alive again, now is the time to get your station sorted out and running ready for summer. There is often a mid-winter peak for Tropo and sporadic E conditions, while we did see a definite increase in 6 m sporadic E, there was no winter Tropo peak which has been seen in previous years. No doubt this is due to the state of the climate in Australia with very dry conditions and little rainfall or weather fronts coming through. Not to worry though, this is just all part of the VHF UHF radio game, sometimes certain forms of propagation won't occur for a long period of time, sometimes years, and this is what makes the times when the bands come to life even more significant and memorable."

50 MHz WSPR

"21 June, we had a winter E opening, mostly on the eastern side of the country, the maximum path was between VK5PJ and ZL4LV at 2918 km. VK5PJ also had a path with ZL4JW. Meanwhile, ZL4JW was also received by many Sydney stations. There was a path from

Melbourne to NE NSW, path from Sydney to Roxby Downs and a path from Roxby Downs to Townsville."

"26 June, another great day on the east coast and beyond, with Phil 3D2TS at Fiji getting paths to Sydney and Melbourne with VK2HC at 3233 km, VK2ZMT at 3138 km and VK3II at 3909 km, brilliant. Also from New Caledonia, Phil's other station FK1TS was hearing VK3II. Jim VK3II is doing extremely well from his site SE of Melbourne, also hearing VK1KW, VK3ATQ, VK4TVL, VK2KRR, VK3WE and ZL4LV."

"27 June, as an indicator to an opening where a number of digital QSOs were made into Europe from Australia, I noticed that a path had been established with 1 watt of TX power from PA0O in Netherlands, to VU3KAZ in India at 7606 km. This has not happened previously; the path is virtually the same heading to Australia if propagation extended further on. Sure enough, others did make some contacts on FT8 and JT65."

"11 July, Chris N3IZN had a 6 m WSPR path to Japan from California to JH1HRJ. Signals over the 8990-km path lasted several hours. 12 July, more eastern states Es, with paths from Tasmania to NE NSW between VK7AM and VK2XN, VK2XN also getting to VK5AKK and VK3KCX. From Townsville, VK4TVL was being heard by VK2HC and VK2KRR. 22 July, Chris N3IZN was heard 9199 km away by Chuck EA8DBU on Tenerife Island off West Africa."

144 MHz WSPR

18 June, Tropo occurred in the evening and the following morning and saw paths mostly between VK2KRR and VK5GF, VK5PJ on 2 m

with large +dB signals, also across to Michael VK5ZEA at Port Lincoln on 70 cm at 1018 km. 24 June, another good Tropo opening which appeared to be isolated between VK2KRR near Wagga NSW, and VK5GF, VK5PJ, with reports extended as much as +20 dB."

"28 June, good tropo around the south east, with many signals all around including from Alan VK3DXE near Melbourne with paths to VK1KW, VK2EMA (near Dubbo), VK2KRR, VK3JTM, VK3PD, VK3ZAZ, VK3ZTE, VK5GF and VK5PJ. Mark VK2EMA had paths with VK1KW, VK2KRR, VK2IJM, VK2KCM, VK2XN and VK3DXE. 9 July, 70 cm signals showing up between VK2KRR and VK5ZEA at 1018 km, as strong as -5 dB."

"Sporadically during the end of June, through July and into August there have been a number of brief openings between the KH6HME 70 cm WSPR beacon and Chris N3IZN in southern California. I have been monitoring the Hawaiian path to California using the KH6HME 70 cm WSPR beacon data and comparing that with warnings of tropical storms and hurricanes usually running from east to west, south of the Hawaii to California tropo path. Sure enough, most times there is a Hurricane in the right spot, the beacon spots start coming though, typically at 4074 km path distance. From around 5 August to 9 August the path really picked up to Chris peaking at an excellent +10 dB signal at one point. See the graph in Photo 1 kindly generated by Glenn N6GN, showing signal reports of the KH6HME 70 cm WSPR beacon by Chris N3IZN from 30/7/2018 to 9/8/2018"

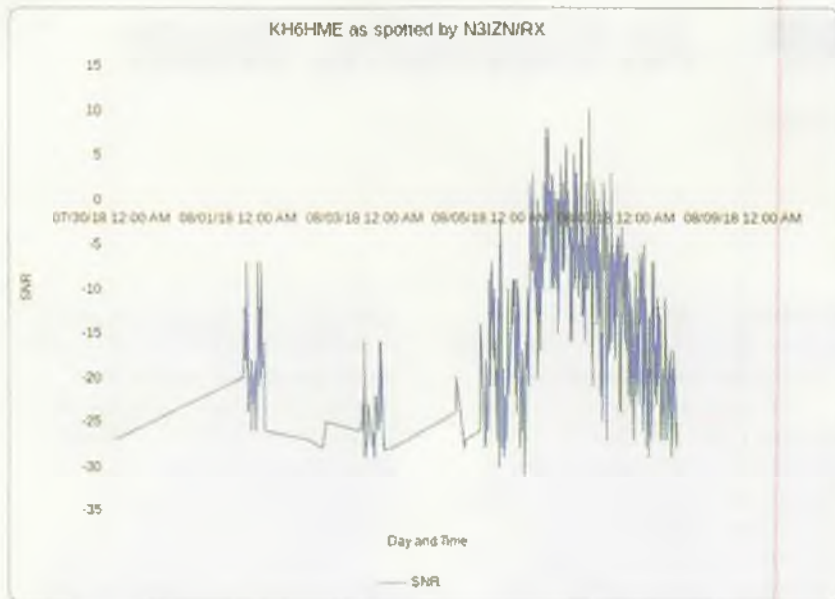


Photo 1: KH6HME 70 cm beacon received by N3IZN early August 2018.

"9 August, a Tropo opening occurred from Sydney to Adelaide area with VK5PJ contacting VK2IJM at 1117 km, VK5GF across to VK2IJM at 1163 km and VK2DVM at 1168 km. On the same date, paths were also up from Melbourne area VK3ZTE, VK3DXE and VK3LU to VK5PJ and VK5GF. 13 August, good Tropo in

the south east from Adelaide area to Sydney, Melbourne, and Canberra. There was a prediction of paths from VK5 to SE VK4, but these didn't eventuate. Great to see a few VK4 stations having a look on 2 m WSPR when the predictions indicated that paths might be a possibility."

All contributions on propagation and

WSPR are welcome; just send Leigh an email at vk2krr@wia.org.au with the information and he will review for the next write up.

2018 EME Conference in the Netherlands

The 18th EME Conference was held at Egmond aan Zee in the North West of the Netherlands from the 16 to 19 August 2018. Over 200 EMEers converged this year from around the globe including the Australian contingent of Mike VK2FLR, Allan VK4EME and David VK5KK.

The EME Conference is held every two years at a location proposed and selected at the previous Conference a bit like selecting the Olympics location! Whilst the Conference has been held in the USA a few times, Europe has now been home to the Conference for 10 years straight. This year's program included the usual technical lectures as well as two days of travel to various facilities around the Netherlands. These included the Astron Westerbork Radio telescope and the Astron space manufacturing facility at Dwingeloo.

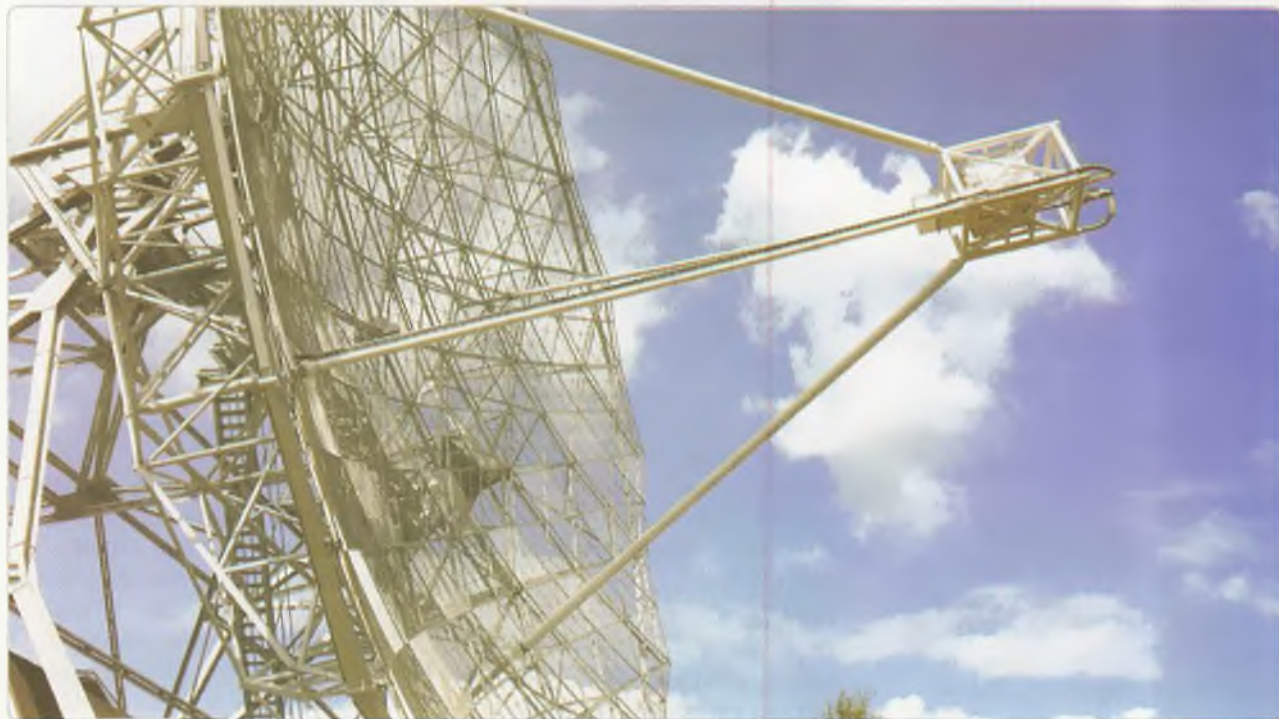


Photo 2: KH6HME 70 cm beacon.



Photo 3: Jan PA3FXB demonstrating the PI9CAM EME installation.

The Westerbork radio telescope is a compact array type consisting of fifteen (15!) 24 metre dish antennas in a line over 1.5 km. The dishes can be individually moved or focused in one direction very similar

to our own system of six (6) 22 metre dishes at Narrabri, NSW. The Dutch facility is in a RF quiet forest in the North east of the Netherlands.

The Astron facility at Dwingeloo has full space R&D manufacturing

capability for both mechanical and electronic design. The machining facility was impressive as was the array of RF components made for S to Ka band satellite equipment. One section even does chip design

Photo 4: 1.2 metre portable 10 GHz EME system – VK5KK.



for weak signal data systems used for deep space probes. An absolute microwaver's paradise but the price for anything is (quote) "About the same as a small German car!"

Perhaps the highlight of the visit was the demonstration of the PI9CAM 25 metre EME installation. The 25 metre dish was originally installed in 1956 and was at the time the largest radio telescope in the world. With the installation of the Westerbork the old dish had slowly become obsolete and was de commissioned around the early 2000s. In 2007 a group of Dutch EMEers banded together to promote a project to re-commission the dish for various studies on Pulsar's and EME of course. The dish was badly corroded however they were successful in obtaining 1,000,000 Euro from the government to do the restoration, nice work!

The dish was re commissioned in 2013 and PI9CAM has been in constant use on 144/432 and 1296 MHz EME ever since. Dutch power limits are much the same as VK so no more than 120 Watts is run on any band (no 1 kW permits). Despite the relatively low power, the demonstration done by Jan PA3FXB on 1296 MHz on SSB saw "Hello Moon" reflections at RST 5x6!

The presentations over the next two days were first class and the general comradery from all parts of the world was clearly palpable. The next EME conference will be in Prague (Praha) in the Czech Republic late August 2020.

10 GHz EME Portable in the Rain

In other EME news, VK5KK has



Photo 5: Keith VK5AKM supervising the 10 GHz EME operation.

finally upgraded his portable 10 GHz EME system to a larger 1.2 metre prime focus dish. The final straw was encouragement from Rex VK7MO who said in his presentation at GippsTech 2018 that once you go to a 1.2 metre dish "you'll never go back!"

The intention was always to use a 1.2 metre dish but the NEC 10 GHz dish I had for many years was destroyed (along with many other antennas) in the Pinery fires two years ago. A replacement was found earlier this year and mounted up on the same AZ/EL arrangement used with the older 900 mm offset dish. A Miteq WR75 feed has been

mounted up with adjustable focal length and the ability to change the feed or insert a 90-degree twist to change to vertical polarization. The rest of the equipment is the same as before with 30 Watts and 0.65 dB noise figure.

The first test was done on 12/8/2018 at VK5AKM's QTH at Wasleys (PF95im), 60 km North of Adelaide. The day was selected more on "Moon conditions" rather than "Weather conditions"... it was a cold wet and miserable day! After some work on the feed positioning, sun noise was > 8.5 dB so a good improvement over the older 900 mm dish. The offset dish was deliberately under illuminated to limit ground noise pick up as the feed horn faced downwards. The auto tracking system was following the sun on noise OK, a good thing as the sun was not visible due to the heavy rain clouds. The gusty wind did cause a bit of "hunting" in tracking every time the Elevation pendulum copped some wind though! The moon was about 10 degrees behind the sun, so we switched to track the

moon. As we watched, the noise meter lifted on "Moon noise" as soon as it reached the final position. We had 0.4 - 0.45 dB of moon noise without any re alignment!

Theoretical moon noise should be closer to 0.6 dB but we did not attempt any further adjustments on the day as there would be some weather elements at play. Instead we simply followed the moon for the next hour until sked time to see how the tracking system was working. The VK5DJ EME controller works well with HH12 0.1-degree position encoders with only a 0.05 dB variation on moon noise as it tracked mostly caused by the wind

on the dish or the elevation pendulum moving.

We had a sked with Peter OZ1LPR in Denmark at 0700 UTC on 10368.210 MHz. This was the earliest he could see the moon over the trees. For us to see moon set we had to set up in a spot open to

the west and use a car as a wind block to the south westerly wind. All day we had watched the rain on the Adelaide weather radar and had been lucky that all but one of the rain showers had missed by a few km. But we could see this one big event heading our way and it was probably going to hit at 0700 (of course). The sked started and so did the rain. VK5AKM held the umbrella whilst VK5KK did the laptop work. The contact was quick and Peter OZ1LPR was worked on QRA64D COFM at -11 dB (we were -20 dB). Peter's signal was clearly audible in the speaker and would have been SSB copy, he does run 250 Watts though! Peter could hear VK5KK good enough for CW.

We completed the contact in the rain however whilst all the RF equipment is water proof, the IC-706MK2G and laptop were not. The result can be seen in the laptop photo! After the contact we shifted all equipment into the garage to dry out. Water poured out of the laptop keyboard when it was tipped upside down; luckily it is an 8-year-old clunker but still seems to work OK. Everything else survived.

SDR about to go mainstream for VHF/UHF?

We have discussed SDR in detail in this column over the past few years but mostly around niche

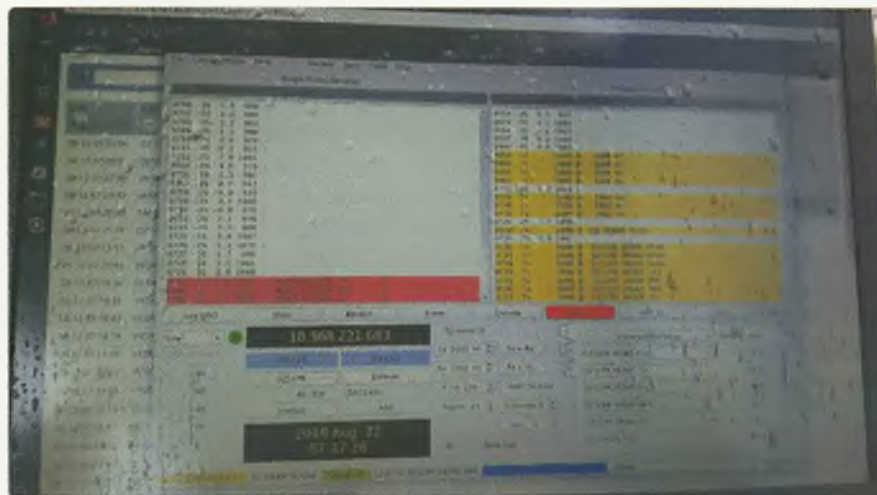


Photo 6: Peter OZ1LPR's 10 GHz -11 dB decodes – Wet laptop!

manufactured or home brew designs. To date, the mainstream "black box" manufacturers have not entered the VHF/UHF area with SDR no doubt due to the balance between demand, the huge development costs involved and hence the return on investment (ROI) to justify.

Two manufacturers (FlexRadio and more recently Icom) do have SDR transceivers for HF/50 MHz with varying adaptations of "direct sampling" but typically limited to 70 MHz by hardware. Some of these transceivers use actual sampling and processing at the RF frequency, others use digital down conversion to a lower "IF" frequency usually sub 50 kHz. To use any of these SDRs above 70 MHz you need a transverter, this has partly lead to the re-emergence of both kit and ready built high performance 144/432 & 1296 MHz transverters akin to what we saw back in the late 1970s! Kuhne Electronics is one manufacturer of transverters but also kits are available from Sam G4DDK (DDKits), Down East Microwave and many other sources you can find online. If you are into EME or weak signal VHF/UHF work, these are all good options vs the current crop of analogue HF transceivers with 144/432 MHz tacked on.

In August 2017 Icom previewed

a "concept" VHF/UHF SDR transceiver at the Tokyo Ham Fair. It was made clear that what was on display was a "mock up" based on the IC-7300 HF/50 MHz transceiver. The radio was tagged as the IC-9700 and promoted as a replacement for the IC-910H

that was discontinued several years ago. It was clear that this was an exercise to gauge interest to invest in the development however keen interest has led to significant pre-orders around the globe despite no actual final product being available!

Now 12 months later, Icom has displayed three working IC-9700 transceivers with full specifications at the 2018 Tokyo Ham Fair. We now know that the IC-9700 will be direct sampling on 144 and 432 MHz rather than a simple down conversion to a sub 70 MHz IF to use an adaption the IC-7300 back end. 1296 MHz is now standard (was an option on the IC-910H) using what is described as "analogue down-conversion/digital IF sampling" aka a transverter in front of the SDR. 1240 - 1300 MHz is converted to a 311 - 371 MHz IF using a low-noise local oscillator to provide improved RMDR/ phase noise performance. The power output is 100 Watts on 144 MHz, 75 Watts on 432 MHz and 10 Watts on 1296 MHz. There are two independent receiver chains controlled in a similar fashion to the IC-910H.

The various SDR functions and menu items appear much the same as the IC-7300. It has an internal "sound card" so can be directly connected to a PC for digital modes. Pictures of the rear

panel reveal the usual combination of a SO-239 for 144 MHz and N connectors for 432/1296 MHz but also an SMA connector. Yes, finally we have a transceiver with a 10 MHz reference input to stabilise the frequency to digital mode requirements!

No release date has been published yet and one suspects the line up to buy this transceiver will be longer than the queue for a Boxing Day sale. We will watch with interest!

In closing

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

73

David VK5KK

Meteor Scatter Report

Dr Kevin Johnston VK4UH

This month: 144MHz Meteor-Scatter Distance Record broken, new version of WSJT-x announced, preferences for MSK 144 v MSKMS modes in use, 28 MHz MS activity, recent Meteor Shower reports and forthcoming events on the horizon.

As regular followers of this column will know, meteor scatter (MS) contacts are frequently reported beyond the "nominal" maximum range 1800-2000 km for this mode of propagation. For example, contacts between VK4 and ZL are not generally possible with MS alone and require assistance by other modes of propagation occurring at the same time, to extend beyond these distances. Most commonly areas of tropospheric ducting (tropo) at one or both end of the path or sometimes sporadic E (Es) may bridge the gaps and make such contacts possible. Reports have been received that the existing World 144 MHz Meteor-Scatter distance record,

previously achieved between EA8TJ (Canary Islands) and S50C (Slovenia), has been extended by a contact between Fernando EA8TX (IL18qi) and Dieter DJ6AG (JO51eq) in August 2018 over a distance of 3428 km. This path extended the existing world record distance by 51 km and it is believed to have occurred using dual-mode meteor-scatter/tropospheric (ms/tropo) propagation between these two stations. Thanks to John G4SWX for this report.

As this column was being prepared, news appeared that a new version of WSJT-x has been announced. The new version 2.0 is not yet available even for β -testing and is anticipated that general release will not be before early 2019 although an RC1 Version may be available after September 2018. Some information by way of a "white paper" (1) is available indicating that changes are proposed mostly involving the FT8 and MSK 144 protocols. Many of the upgrades will involve the adoption of a 77-bit information payload in place of the 72 or 75 bits in use in the current versions. It is likely that the new MSK 144 protocol will not be backward compatible and hence will have to be adopted by all stations at change-over. It is suggested that the new version "will provide a modest increase in information content and will make possible new message types that support enhanced exchanged information". What the new version of MSK 144 mode will actually provide "in-practice" is unclear at this early stage; however, it is good to know that active development is still underway.

In the meantime, there is still significant interest and discussion between VK-ZL users of both of the current "new" MS modes, MSK 144 and MSKMS. Both modes are Forward Error Correcting (FEC) but are not compatible and cannot therefore be used at the same time on the usual activity frequencies.

The major practical difference between the two modes, which are very similar in use and appearance in most other regards, is the format of the signal reports. MSK 144 provides only a +dB signal strength above noise as its report whereas MSKMS reverts to the older IARU recognised two-digit reporting system giving information on both received signal strength and ping duration: e.g. the original 26, R26 type report format, previously used with FSK 441 etc. Following the responses to a preference question on the MS Facebook facility, it appears that the majority of VK MS operators, including the author, found value in the IARU/MSKMS style reports as an indicator of propagation and operating conditions. Currently the WSJT-x platform only accommodates the MSK 144 mode whereas the alternative MSHV platform supports both modes. It is unclear if the new V.2 WSJT-x will or could be optioned to revert to the IARU reporting format. That would be a great result.

Over the last few months there has been renewed interest in digital Meteor Scatter on 28 MHz. There have been sporadic reports of FSK 441 contacts on 10 m in VK from time to time but usually only when other digital modes are being "degraded" by meteor pings. Planned 10 m MS activity has been developing using MSK 144 mode which has proven very suitable for this band. As would be predicted meteor pings are very prolonged at these lower frequencies. There is no agreed focus frequency for MS on the VK 28 MHz bandplan and activity has been occurring predominantly on 28.130 MHz and less frequently on 28.135 MHz in parallel to the normal 2 m/6 m activity sessions on Saturday and Sunday mornings. Stations including VK3DUT, VK1MT, VK2FAD, VK2ZMT and VK4CZ have all been reporting completions on the logger. Most active stations are only running 10 m beams or even simple

horizontal dipoles as antennas.

There have been two major meteor showers since the July-August AR report. The Southern Delta Aquariids (SDA) shower peaked around 30 July. SDA is a major shower whose parent body is uncertain. The predicted peak Zenith Hourly Rate (ZHR) for SDA, a prediction of the number of visual meteors and an indirect index of the number of large meteor burns to be expected was around 16 meteors/hour. This shower is however known to be very long-lasting providing enhancement of propagation over many days or even weeks. The 2018 SDA shower produced some remarkable propagation with frequent and prolonged meteor returns. From here in QG 62 multiple contacts were made over the weekend 27-28 July (UTC dates) with stations across the southern states including VK1MT (QF44nm), VK3ZL (QF22fe), VK5PJ (PF95mk) on 144 MHz and VK2ZMT (QF57ua), VK2FAD (QF52ss), VK2VV (QF58jb), VK2BLS (QF55kk), VK2GIB (QF57sf), VK3WE (QF92se), VK5PJ (PF95mk), VK7BO (QE38md) on 50 MHz and then VK2FAD (QF56ss) on 10 m. There were several new initial contacts for the author amongst these calls. A review of the VK Logger reports from this weekend

showed the large number of active stations and contacts across all active call areas.

The second was the Perseids Shower which peaked around 13 August. MS stations in the northern hemisphere consider this shower to be the best on the annual calendar. The shower occurs when the passage of the earth, on its orbit around the sun, crosses the debris trail remaining behind in the path of Comet 109/P Swift-Tuttle across our solar system. The Perseids shower has a ZHR of up to 100 meteors/hour and produces magnificent propagation – but only if you operate in the Northern Hemisphere. Here in VK however the radiant of this shower is far to the north and only just appears over the northern horizon even for stations in VK4. Also, since enhancement will be predominantly for East-West paths, there are very few paths between active stations that can take advantage of this shower. Interestingly there was enhanced propagation over the weekend sessions on 10-11 August (UTC dates) across all states, on both 2 m and 6 m, which continued long after the Perseids radiant had set over the horizon here in VK4. It is likely that this enhancement was in fact due to residual meteor

activity occurring at the end of the SDA shower from earlier in the month.

The next major showers on the calendar will be the Orionids peaking around 22 October (Class-1 shower, ZHR 25 meteor /hour) and then Leonids peaking around 18 November (Class-1 shower, ZHR 20 meteors/hour).

Activity Sessions

The weekend activity sessions run on Saturday and Sunday mornings from before dawn (around 2000 UTC or earlier) until propagation fails.

Frequencies: 2 m 144.230 MHz, 6 m 50.230 MHz Current Preferred Mode MSK 144 15 second periods.

Southerly stations running 1st period beaming North, Northerly stations running 2nd period beaming South.

Register with VK-ZL Meteor Scatter Facebook Page (Closed group of AR operators) for up to the minute advice and information.

Contributions for this column are as always welcome. Please e-mail to vk4uh@wia.org.au

Kevin Johnston VK4UH
Brisbane

1. <http://physics.princeton.edu/pulsar/k1jt/wsjt-x v2.0.txt>



Silent Key

Bill Dixon OAM VK7OZ

Bill Dixon OAM VK7OZ passed away on 30 June. He was 91 years old.

Bill was first licensed as VK2OZ in 1957.

Bill joined the Royal Australian Air Force in 1949, initially training as a signaller. He finished his career with the RAAF as Wing Commander W E Dixon, Senior Air Force Officer, Tasmania.

You can read Bill's story of his early RAAF career in the RAAF RadSchool Association magazine at <http://www.austradesecure.com/radschool/Vol30/Page7.htm>

While with the RAAF, Bill was sent to the UK where he acquired a Scottish callsign and to the US where he acquired a Heathkit transceiver.

After leaving the RAAF, Bill joined the Public Service as a member of the Promotions Appeal Board and studied computing at the University of Tasmania. He was also active in several charitable organisations.

Vale Bill.
(Richard Rogers VK7RO)

Silent Key

David Ponsonby VK7ADM

It is with sadness that we report the passing of David Stanley Ponsonby VK7ADM.

David became a silent key at the Royal Hubert Hospital around 9 August, 2018.

David lived in the Parratah and Oatlands area. He was active in the mid-90s and was known as "the bee man".

Vale David.
(Tony Cordwell VK7ZAC)

Plan ahead

Operate within the band plans:

<http://www.wia.org.au/members/bandplans/about/>



VK2news

Tim Mills VK2ZTM
e vk2ztm@wia.org.au

Spring is here and the major activity about now is the Centenary of the reception of the first direct Wireless message from Great Britain to Australia. The original message was transmitted from Wales and received at Ernest Fisk's Wahroonga residence on 22 September 1918. On Saturday 22 September 2018 the Centenary is to be observed near the site in a joint operation by the Ku-ring-gai Historical Society and the Hornsby and District ARC. Included will be the special event call sign VK100MARCONI.

About mid-year the Illawarra ARS had a field day at Burrinjuck Dam near Yass in NSW and included in the activities was a balloon launch. The balloon had APRS and a 10 metre beacon. Once the balloon got into the high altitude wind it reached and passed over the east coast within a couple of hours when it was observed that it deflated and fell into the ocean. It was thought that it was lost. However - next morning it was found on a beach - having been washed ashore overnight.

August was a busy time for many VK2 clubs when they held their AGMs. These included Oxley Region, Hunter Region Group, CCARC, Illawarra, Waverley and WICEN. Also in August the Blue Mountains ARC held their annual Winterfest. Waverley ARS held their annual auction in July on the one weekend of the year when the hall at their club site becomes available.

The Waverley ARS will celebrate their Centenary in 2019.

Also in August, Jeff VK2BYY launched his sixth novel in his Barefeet series. It is the *Rise of the Gomerai*. Jeff thinks this maybe the last in this series having exhausted the various themes. Jeff was the VK2WI station Engineer in the 1970s, a time of a lot of rebuilding to re-establish the site following extensive vandalism in the late 1960s.

On the first Sunday in October is when south east VK changes into Daylight saving. VK2WI News maintains the same local time of 10 am and 7.30 pm on Sunday. The short talks series created by Onno VK6FLAB 'What use is an F-Call' has been added to the evening VK2WI News. ARNSW will be holding the next Trash & Treasure event on Sunday 30 September and the November Foundation course is the weekend of 10 and 11. Council approval came through to install a 40 metre pole, to replace the existing 30 metre tower, for the VK2RWI repeater network at Dural.

The Oxley Region ARC recent AGM found the committee positions being filled by Henry VK2ZHE as President, Paul VK2ICQ as Vice President and Dennis VK2DAM as Treasurer. No one stepped up for Secretary - resulting in Henry VK2ZHE taking on the position until they find a 'volunteer'. The remaining committee positions are Larry VK2CCLL, Arthur VK2ATM and

Rob VK2CRF. The Oxley Region ARC worked the recent RD Contest from the Camden Haven Airfield using the club caravan on all bands.

The Central Coast ARC with their AGM in August saw a few new faces. President is Myles VK2ASS, Vice President Jaye VK2FOMG, Secretary Mark VK2CCR and Treasurer Dave VK2DLS. The other committee positions are unchanged and Dave VK2KFU is the new Publicity Officer. All CCARC meetings are held at the Karingong club rooms in Dandaloo Street. Activity day is Saturday with a sausage sizzle at noon, followed by the meetings. There are activities on other days. Public transport is available with an hourly bus - route 34 - from Gosford railway station. The 2019 Field Day at Wyong is on again in February. More details at ccarc.org.au

WICEN NSW has a lot of activities through September and the big one in late October with the Hawkesbury Canoe Classic. The Mid North Coast WICEN group meets at 3.30 pm on the first Saturday following the Oxley Region meeting.

The USA Amateur exams are available locally with the Oz-VE group who can be reached at veexams.com The exam conducted on 1 July was before it was available in the US due to the time difference.

73, Tim VK2ZTM



WIA Contest Website



To keep up to date with all of the major Australian contests, including rules and results, at the WIA Contest Website at: www.wia.org.au/members/contests/about



WIA Awards

Marc Hillman VK3OHM/VK3IP

Below are listed all New awards issued from 2018-06-15 to 2018-08-14, plus all updates to DXCC awards.

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

New awards

DXCC Multi-band (3)

#	Call	Name	Mode	Band	Count
130	VK5GR	Grant Willis	Digital	40-30-20 m	379

DXCC Multi-band (5)

#	Call	Name	Mode	Band	Count
91	VK3TZ	Tony Burt	Phone	40-20-17-15-10 m	959
92	VK3GA	Graham Alston	Digital	40-30-20-17-15 m	664

DXCC Multi-mode (Phone)

#	Call	Name	Count
625	VK2RT	Bruce Beresford	103

Grid Square

#	Call	Name	Mode	Band
351	VK2TTP	Peter Pratt	Digital	HF
352	VK3GQ	Peter Carew	Open	HF
353	VK3GQ	Peter Carew	Digital	HF
354	VK5GR	Grant Willis	Phone	HF
355	VK5GR	Grant Willis	CW	HF

Worked All States VHF

#	Call	Name	Mode	Band
220	VK3TCT	John Sutcliffe	Open	6 m
221	VK3TCT	John Sutcliffe	Digital	6 m
222	VK7CW	Steven Salvia	CW	6 m

DXCC updates

DXCC Multi-band (1)

#	Call	Name	Mode	Band	Count
4	VK2CA	Allan Meredith	CW	30 m	212
97	VK6WX	Wesley Beck	CW	20 m	142
110	VK3TZ	Tony Burt	CW	30 m	173
3	VK2CA	Allan Meredith	Digital	20 m	191
54	VK3EW	David McAulay	Digital	20 m	203
144	VK3TCT	John Sutcliffe	Digital	20 m	107
146	VK2RT	Bruce Beresford	Digital	20 m	140
174	VK5GR	Grant Willis	Digital	20 m	156
186	VK4CC	Colin Clark	Digital	20 m	122
190	VK3LDB	David Burden	Digital	20 m	146
1	VK3OHM	Marc Hillman	Open	20 m	211
17	VK6WX	Wesley Beck	Open	20 m	214
27	VK5DG	David Giles	Open	20 m	150
34	VK3MEG	Steven Barr	Open	20 m	227
75	VK2TTP	Peter Pratt	Open	20 m	145
80	VK2NN	Peter Garoufalas	Open	20 m	172
99	VK3TCT	John Sutcliffe	Open	20 m	113
109	VK3TZ	Tony Burt	Open	20 m	285
145	VK2RT	Bruce Beresford	Open	20 m	155
165	VK5GR	Grant Willis	Open	20 m	175
166	VK3FZ	Roger Stafford	Open	20 m	214
189	VK3LDB	David Burden	Open	20 m	156
205	VK5SA	Chris Levingston	Open	20 m	111
5	VK2CA	Allan Meredith	Phone	20 m	292
35	VK3MEG	Steven Barr	Phone	20 m	206
39	VK6WX	Wesley Beck	Phone	20 m	169
114	VK2NN	Peter Garoufalas	Phone	20 m	149
150	VK3TZ	Tony Burt	Phone	20 m	272
153	VK2TTP	Peter Pratt	Phone	20 m	144
167	VK3FZ	Roger Stafford	Phone	20 m	183

WIA DX & operating Awards



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

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

DXCC Multi-band (3)

#	Call	Name	Mode	Band	Count
18	VK2CA	Allan Meredith	CW	30-20-17 m	587
24	VK3EW	David McAulay	CW	30-20-17 m	900
37	VK7CW	Steven Salvia	CW	30-20-17 m	761
71	VK3TZ	Tony Burt	CW	40-30-15 m	436
62	VK6DU	Lance Martin	Digital	20-17-15 m	478
66	VK3EW	David McAulay	Digital	30-20-15 m	549
111	VK2CA	Allan Meredith	Digital	20-17-15 m	461
121	VK3GA	Graham Alston	Digital	40-20-17 m	450
17	VK2CA	Allan Meredith	Open	20-17-15 m	890
36	VK7CW	Steven Salvia	Open	30-20-17 m	802
39	VK6DU	Lance Martin	Open	40-20-15 m	877
42	VK5DG	David Giles	Open	30-20-15 m	387
51	VK3TZ	Tony Burt	Open	20-15-10 m	748
69	VK3MEG	Steven Barr	Open	20-15-10 m	552
95	VK3OHM	Marc Hillman	Open	40-20-15 m	501
102	VK3FZ	Roger Stafford	Open	20-15-10 m	602
112	VK6WX	Wesley Beck	Open	40-20-15 m	485
120	VK5GR	Grant Willis	Open	40-20-15 m	429
122	VK4CC	Colin Clark	Open	20-17-15 m	516
2	VK2CA	Allan Meredith	Phone	20-17-15 m	758
52	VK3TZ	Tony Burt	Phone	20-15-10 m	679
68	VK3MEG	Steven Barr	Phone	20-15-10 m	503
86	VK3GA	Graham Alston	Phone	20-15-10 m	450
103	VK3FZ	Roger Stafford	Phone	20-15-10 m	479

DXCC Multi-band (5)

#	Call	Name	Mode	Band	Count
20	VK2CA	Allan Meredith	CW	40-30-20-17-15 m	913
21	VK3EW	David McAulay	CW	40-30-20-17-15 m	1397
35	VK7CW	Steven Salvia	CW	40-30-20-17-15 m	1163
46	VK3TZ	Tony Burt	CW	40-30-20-15-12m	664
79	VK3EW	David McAulay	Digital	40-30-20-17-15 m	826
9	VK3TZ	Tony Burt	Open	40-30-20-15-10 m	1136
34	VK7CW	Steven Salvia	Open	40-30-20-17-15 m	1228
36	VK6DU	Lance Martin	Open	40-20-17-15-10 m	1370
72	VK3FZ	Roger Stafford	Open	30-20-15-12-10 m	890
84	VK5DG	David Giles	Open	30-20-17-15-10 m	598
90	VK5GR	Grant Willis	Open	40-30-20-17-15 m	647
19	VK2CA	Allan Meredith	Phone	20-17-15-12-10 m	1136

DXCC Multi-band (7)

#	Call	Name	Mode	Band	Count
9	VK2CA	Allan Meredith	CW	40-30-20-17-15-12-10 m	1195
10	VK3EW	David McAulay	CW	80-40-30-20-17-15-12m	1798
14	VK7CW	Steven Salvia	CW	40-30-20-17-15-12-10 m	1523
6	VK2CA	Allan Meredith	Open	40-30-20-17-15-12-10 m	1810
15	VK7CW	Steven Salvia	Open	40-30-20-17-15-12-10 m	1611
16	VK6DU	Lance Martin	Open	40-30-20-17-15-12-10 m	1809
21	VK3TZ	Tony Burt	Open	40-30-20-17-15-12-10 m	1463
35	VK3FZ	Roger Stafford	Open	40-30-20-17-15-12-10 m	1144

DXCC Multi-band (9)

#	Call	Name	Mode	Band	Count
12	VK3EW	David McAulay	CW	160-80-40-30-20-17-15-12-10 m	2

DXCC Multi-mode (CW)

#	Call	Name	Count
189	VK6DU	Lance Martin	328
223	VK6WX	Wesley Beck	209
224	VK3TZ	Tony Burt	287
234	VK3MEG	Steven Barr	151
245	VK4CAG	Graeme Dowse	163
249	VK3FZ	Roger Stafford	227
258	VK5GR	Grant Willis	116

DXCC Multi-mode (Digital)

#	Call	Name	Count
12	VK6DU	Lance Martin	279
19	VK2CA	Allan Meredith	254
20	VK3EW	David McAulay	296
38	VK3TCT	John Sutcliffe	113
50	VK2NN	Peter Garoufalis	114
58	VK2RT	Bruce Beresford	155
61	VK4CC	Colin Clark	157
62	VK5GR	Grant Willis	196
65	VK3FZ	Roger Stafford	142
67	VK4CAG	Graeme Dowse	192
71	VK3LDB	David Burden	179

DXCC Multi-mode (Open)

#	Call	Name	Count
328	VK6DU	Lance Martin	334
350	VK4CAG	Graeme Dowse	327
370	VK3MEG	Steven Barr	267
375	VK2TTP	Peter Pratt	166
376	VK6WX	Wesley Beck	259
400	VK3TCT	John Sutcliffe	121
409	VK2NN	Peter Garoufalis	204
413	VK3WE	Rhett Donnan	164
431	VK2RT	Bruce Beresford	171
444	VK5GR	Grant Willis	215
451	VK3FZ	Roger Stafford	310
452	VK5SA	Chris Levingston	125
458	VK3LDB	David Burden	188

DXCC Multi-mode (Phone)

#	Call	Name	Count
556	VK4CAG	Graeme Dowse	321
572	VK2TTP	Peter Pratt	166
573	VK6WX	Wesley Beck	222
575	VK3MEG	Steven Barr	252
594	VK2NN	Peter Garoufalis	181
617	VK3FZ	Roger Stafford	270
624	VK5SA	Chris Levingston	106



VK7news

Justin Giles-Clark VK7TW

e vk7tw@wia.org.au

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

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

<http://www.vk7ax.id.au/atvgroup/>

The last edition of *AR* magazine outlined the fantastic success of training and assessing 12 students in the North West of VK7, including Scouts, youth and adults. One of those recent Foundation licensees has been heard regularly on air in the NW. Rhys VK7FORD erected a 2 m/70 cm flowerpot antenna that was made at a recent Club Antenna building day to get on air. Welcome Rhys.

Northern Tasmanian Amateur Radio Club

The July meeting was a BBQ meeting and show and tell session that was well attended.

The weekly technical sessions are going well at NTARC. John VK7FJFD trying to quieten a noisy power supply with a case and fan and Bernie VK7BR was measuring his magnetic loop antenna with Peter VK7KPC and improving its performance. Kevin VK7KJL, Simon VK7FSRM and Norm VK7KTN have been working on computers. André VK7ZAB has been playing with power supplies. Stuart VK7FEAT played with outdoor baluns and an interesting UHF quad beam antenna. Thanks to Robin VK7RH, there has been a huge donation of *AR* magazines for the NTARC library.

Peter VK7KPC set up his laptop and aircraft tracking system. Ross VK7ALH brought in his recently acquired Mullard No 7 military antenna coupler and his Drake T4XB transmitter. Kevin VK7HKN

set up his Toughbook laptop and brought along his Pixie 40 m CW transmitter – the same as James VK7FJAM has built. Ebenezer VK7AT has been using a signal generator to check frequencies with his digital short wave receiver. Tabitha, who is the 12 year old harmonic of Tony VK7YBG, came along to show off a digital clock kit she had recently built and André VK7ZAB has been building a TNC-Pi kit.

With the low light levels during winter the solar panels and batteries have been working overtime on the Mt Arthur VK7RAA repeater site necessitating the installation of a wind generator to supplement the charge system. The Southern repeater VK7RTC suffered an issue with the snow breaking the repeater antenna on Mt Wellington. WICEN Tasmania (South) came to the party and purchased a replacement antenna and NTARC thanks WICEN for the generous donation. Hayden VK7HH, Southern Repeater Officer, lets us know about the addition of a voter receiver site for VK7RTC on Mt Nelson. This substantially improves coverage of mobiles in Southern Tasmania. There is real time voter RSSI data is available from the following link. <http://hh.vk7.com.au:83/voter.php?node=1727>

Peter VK7PD has discovered some historical information about repeater VK7RAA in Northern Tasmania. The repeater was first licensed in 1971. The frequency was channel 4 and was 146.4 input and 146.9 output (500 kHz split). The international standard of a 600 kHz split came later and that was when it became the current callsign of

VK7RAA. The following information came from a historic article by the Peter Frith VK7PF SK.

The original repeater was a TCA 1674 50 watt base with a FET preamp, ident keyer for VK7WI/R2 with coaxial dipoles at 80 feet (24.4 m) TX and 60 feet (18.3 m) RX. Filters are used on both the TX and RX. Coverage has been good with mobile contacts 100 miles (161 km) south (near Hobart) and west to Burnie. Over water paths to VK3 have produced contacts in Gippsland, Bairnsdale, Melbourne and Geelong. Best DX was 380 miles (612 km) to Ararat, Victoria.

Radio and Electronics Association of Southern Tasmania Inc

<http://www.reast.asn.au/>

<https://www.facebook.com/reasttas/>

Congratulations to Jamie Smith and Jarrod Marney who recently passed their Foundation assessment.

Reminders of the DMR repeater in Lenah Valley VK7RCR run by Clayton VK7ZCR. Frequencies are RX: 433.525 MHz and TX: 438.525 MHz. Clayton puts the VK7 Regional News broadcast to air on a Sunday morning from 9:30 am on talk group 3807.

The August presentation night was given by Dr Mike Groth VK7MJ on The Fundamentals of Radio Astronomy. The presentation covered many aspects of Radio Astronomy ranging from the development of Radio Astronomy (Karl Jansky and Grote Reber) through to the role of microwave mapping in developing theories of the universe and studies into HF planetary radio emissions from



Photo 1: Dr Mike Groth VK7MJ (Photo courtesy of Justin VK7TW).

Jupiter. The presentation was recorded and can be found on the REAST YouTube Channel.

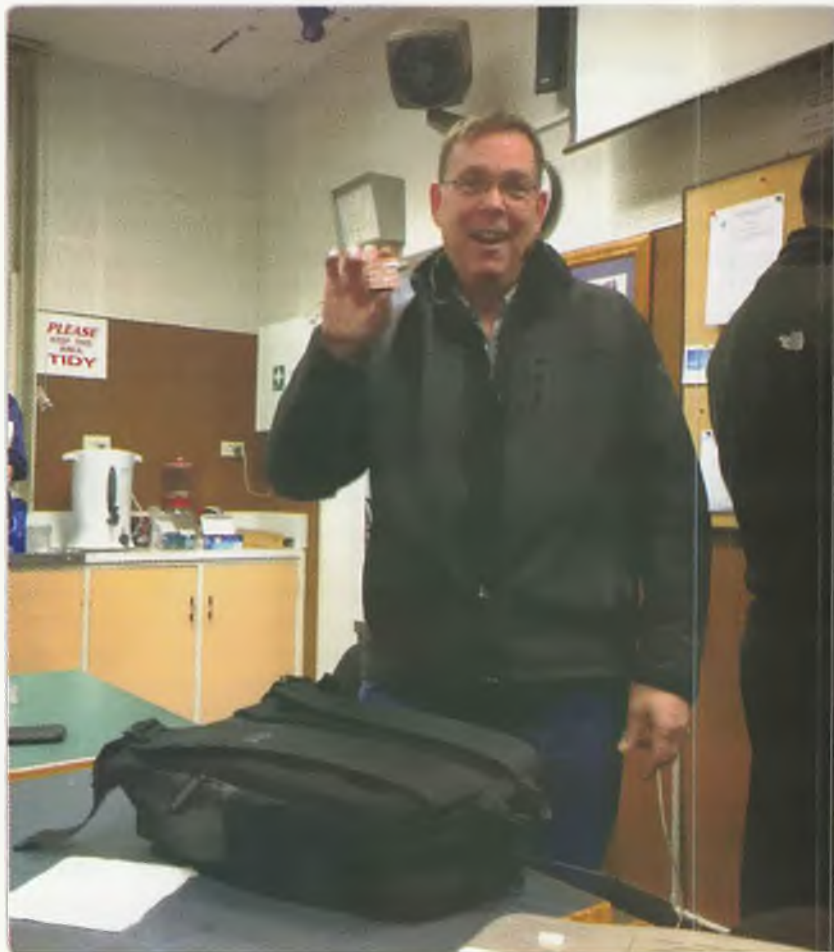
Damien VK7SD, REAST Repeater Coordinator, let us know about the upgrade of the VK7RAD Queen's Domain repeater. It is now a two rack unit Spectra Engineering MX-800 and the sensitivity of the receiver is much better. This is the first stage of the REAST Repeater upgrades and has now freed up rack space for the installation of a digital repeater. The frequency is Rx: 146.7 MHz, with a minus 600 kHz offset, TX: 146.100 MHz and a 141.3 Hz CTCSS tone. The CW ident and tail can be eliminated if you also program a 141.3 Hz CTCSS decode on your 2 m radio.

REAST has had a very successful DMR promotion with the purchase and sale of over twenty GD-77 handheld radios. These were pre-programmed thanks to Clayton VK7ZCR and many were pressed into service using Clayton VK7ZCR's DMR repeater.

The REAST Experimenters Nights continue with a focus on "round-to-it" projects. Murray VK7ZMS was playing with an Arduino Nano with some help from Sean VK7FAZE to get a PTT function working for RTTY. The interface was mounted in a nice 3D

printed case. John VK7FPJA bought along a dynamic desk mic that he

Photo 2: Paul Pruss VK7FPCL won a recently built dummy load that was a door prize (Photo courtesy of Justin VK7TW).



was rewiring and some interesting general coverage receivers. The author worked on his 10 GHz GPS Disciplined Oscillator and worked with Richard VK7ZBX to test the rigs that were now GPS locked. Larry VK7WLH and Kim VK7KB investigated analogue TV translators and power amplifiers. Winston VK7WH showed off a very interesting IP control box that he is using to control his remote station. Ron Cullen worked on LED strip lighting and capacitive touch and magnetic reed switches for automated wardrobe and bed lamps. Richard VK7ZBX and Rex VK7MO repaired both their Kuhne 10 GHz transverters replacing surface mount capacitors. Some dummy load kits were put together and used as door prizes.

Firstly, my apologies to all readers and contributors for VK6, on missing the last edition of AR Club News for VK6. I got the deadline dates all wrong and coupled with an insane workload at the salt-mine, I didn't get the article done.

Northern Corridor Radio Group

It's been a huge couple of months for NCRG. We finally received our new UB40 Ultra-beam 40 - 6 m Yagi and that is now in the air on our 28 m tower that originally housed our 3-element mono band Yagi for 40 m. This entailed a big effort from the UB40 project team led by Wayne VK6EH. The antenna was hoisted to the top of the tower by crane. Reports so far have been excellent; particularly on 40 m with quite a bit of DX worked already. At the same time, we replaced all our rotator controllers with Green Heron rotator controllers so they can be easily controlled from either radio room. Unfortunately, the antenna was erected on the same day as the RD contest, so the club was unable to compete; the first time in a long time that we haven't fielded a team. Someone had to give the 2GGC boys a chance to get the gong I guess!

Well the silly season is rapidly approaching, and NCRG is looking forward to participating in the CQWW, Oceania DX Contests as well as supporting the local scouts and guides during JOTA.

Work is continuing on our 10 GHz EME station with Keith VK6KB/VK6EME driving this project. We have the antenna operational, an amplifier sourced and next step will be the transverter.

Much of the last month has been consumed preparing for the WA Hamfest Weekend which occurred just before this article was

written, on the weekend of 25 and 26 August. We had 290 attendants to the Hamfest event and 15 turned up for the annual Tech day on Saturday. Lectures given included an update from FlexRadio on the Flex 6000 series transceivers – presented by Michael Walker VA3MW, EME for Dummies by Alex VK6KCC, a home brew EME Az/EI system presented by Larry VK6UM and an update on the microwave scene by Keith VK6KB. After lunch, Cedric VK6CD presented a lecture on the Smith Chart principles and uses, followed by a presentation of the NCRG remote HF station and was concluded with a presentation by Steve VK6SJ on Simulcast System principles and how it could be applied to the Perth Repeater Network.

Whilst not being strictly speaking an NCRG event, NewsWest held a dinner at the Bayswater Pub on the evening of 25 August, which attracted amateurs from Busselton to Geraldton and all points between. The dinner was a great opportunity to catch up with amateurs outside each of our respective clubs and also an opportunity to show our appreciation for the fantastic job that NewsWest does for the entire amateur community. The night was a great success and I really hope that they do it again next year.

The Hamfest event on the Sunday was yet another outstanding success. All the local amateur radio vendors attended and, like last year, the raffle first prize was a Flex 6400 transceiver sponsored by Future Systems and NCRG and was won by Ken VK6AKT. Brian Mitchell VK6MIT won the second prize which was a Keysight U1242C Multi-meter, donated by Measurement Innovation. Third prize was an icom ID-51A portable sponsored by NCRG, RF Solutions and Icom. Fourth prize was a Comet GP98 tri band antenna donated by Future

Systems and the fifth prize was a \$100 voucher donated by TET Emtron.

Larry VK6UM won the Home Brew contest with the Az/EI controller and 10 GHz antenna system he presented at the Tech day. The Home brew contest was judged by Tony Preston VK6CV and Mal VK6LC. The prize was a soldering station donated by Altronics.

It was a great weekend, but we are all glad it is finished now! Just 364 days to Hamfest 2019!

One of our club members, Barrie VK6ADI, had two masts destroyed in a freak storm earlier in the year, which were then replaced by his insurance company. A number of club members made the trek to his farm about 100 km out of Perth to look at his new masts and antennas. Very impressive! The antenna farm now sports a 13 m tilt-over self-supporting tower with a quad stack 12 element Yagi array on 70 cm, a dual stack 12 element Yagi array on 2 m, a 20 element 23 cm Yagi and a winch up tilt over mast supporting a TET-33 HF tri-bander, a repaired 6 m log periodic Yagi and another 12 element Yagi for 2 m. Winches are all electric.

Ham College

Ham College is pleased to advise that all students from the standard licence course either passed standard or advanced assessments recently and that the advanced course is now underway. Our successful foundation courses over a Saturday and a Sunday continue and so far this year the College has added 20 Foundation licences to the register. By the time this copy appears in print our AGM will have come and gone and a new committee will be steering the college into the issues of training and assessment raised by the changes flagged by the ACMA. It is clear that the involvement of an RTO will be likely to increase the costs of assessment and may reduce or even remove the College from this

role. We shall just have to wait and see but the College is determined to continue to provide its service to the VK6 AR community for education and assessment in whatever manner it can. Uncertain times are ahead, for sure.

Andrew VK6AS
Enrolments Officer

Bunbury Radio Club

Our Annual General Meeting was held on 11 July 2018. The following members were elected to the Committee:

President Norman VK6GOM
Vice President Brian VK6HBS
Secretary Richard VK6PZT
Treasurer Bob VK6VK6TJ
Member Richard VK6VRO
Member Danny VK6FDRW

In his annual statement, the President congratulated everyone for their contributions to the Club over the last twelve months. The Goal we set last year was to focus on our monthly meeting as the vehicle for ham radio knowledge and activities. This aim was achieved with reduced time spent on administration and increased time spent on amateur related talks and activities. These latter activities were of a universally high standard and of great interest to attendees.

The Google group is showing a steady increase in technical discussions. Also, the QSO Party seems to have taken off with a regular coterie of participants

including several non-members. To me, it indicates that we are providing a need for local hams.

Our annual get together will be held in lieu of the November monthly meeting. It will be in the form of a luncheon at the Collie Tavern. There will be a raffle with a significant prize, such as a dual band mobile or something similar. This raffle will only be available to financial members who attend the luncheon.

73 Norman VK6GOM

Friday Night Tech Net

Reg VK6BQQ runs the Friday Night Tech Net across EchoLink and is in its 866th week. The net is at 20:00 WST on Friday nights and attracts participants from all over the world. Contact Reg for more information on rlbagshaw@aol.com for further information.

Christmas Island Amateur Radio Club

Welcome everyone to the first of, I hope, many newsletters for the newly incorporated Christmas Island Radio Club, call sign VK9XX, referred to from here on as the CIARC Newsletter. CIARC is now incorporated, affiliated with the amateur peak body WIA and can financially trade as non-profit organisation.

Many people have been very supportive to get the CIARC this far, Neville VK5XD, Mas JA7FAS,

WIA, Mic, Stu and John from the Men's Shed, Karen and Lisa from Tourism, the Marks from IOTA, freight companies and several others. The donated rig from Nobu JA7KY with cables and speaker from Mas JA7FAS is now here from Japan, the mike from Lyall VK5WL and along with some auction gear from Adelaide Hills Radio Club and admirably negotiated by Neville VK5XD.

We should have a room to setup some basics in the next week or two, so might need a hand to organise some benches, cabling and aerials if you are not busy and on island.

I note here there are several amateurs and one or two XYLs and floaters not resident on CI but are very supportive of the CIARC. At this stage we plan to have an open evening and probably Sunday morning if you would like to come, just look or chat on air or just chat, maybe the kids might like to come and see what all the fuss is about.

I thank everyone again for their support in making CIARC a reality.

A number of amateurs are planning activation of VK9X this year, using the club station, including Paul A65DR, David G3WGN, DF8AN and Allen VK3ARH.

Founding President
Douglas Haig VK9JD

Plan ahead

Spring VHF/UHF Field Day

24 - 25 November 2018

Summer VHF/UHF Field Day

12 - 13 January 2019

Find the Rules at:

<http://www.wia.org.au/members/contests/vhfuhf/>

Ross Hull Memorial VHF/UHF Contest

January 2019

Details available at:

<http://www.wia.org.au/members/contests/rosshull/>



For the July meeting Peter VK5PX, from the North East Radio Club, came to AHARS with a set of exam questions about the Regulations. Peter has been involved in the exam process for many years, starting when we amateurs actually set the exam papers.

The AHARS members at the meeting were presented with a standard multiple choice exam answer sheet in which we had to tick the A, B, C or D box we thought was the correct answer to the questions as Peter read them out.

After the 25 questions Peter went through the answers and we marked our papers. He could have been mean and made us exchange answer sheets but he didn't so it was up to us to give ourselves a tick or a cross for each question.

There were many "How many did you get wrong?" questions asked at the end. I wonder how many of us would have passed. This exercise also pointed out how some of the rules have changed over the years. Peter also presented a second 25 questions but these were to be answered by a show of hands or response from the crowd.

What a good idea, how about other clubs do the same thing at one of your meetings?

The June technical session at the shack was a show and tell on test equipment that would be handy around an amateur shack and the July session was about power supplies and connectors for the amateur shack with emphasis on safety and compatibility with other operators.

The August technical session will be about oscilloscopes and



The tower at Crafers showing its very poor condition.

spectrum analysers presented by Jim VK5TR and Barry VK5BW. AHARS holds technical sessions at our shack in Hannaford Road, Blackwood, directly behind Hungry Jacks. Social gathering at the shack are held on the second Saturday of the month and technical sessions are held on the fourth Saturday.

A great deal of work has been done on the AHARS tower at Crafers where our repeaters and beacons operate from with some commercial radio systems This work has been led by Barry VK5BW

and Dean VK5HNV and assisted by dedicated band of helpers who have done a magnificent job to rescue the tower just in time.

I have enclosed one photo to indicate the very poor state this tower was in and from this you can see if nothing was done in a hurry it would have soon ended up a twisted and mangled wreck on the ground. Barry will write a detailed report on this project for inclusion in a future edition of *Amateur Radio*.



Tony Hambling VK3XV

e arv@amateurradio.com.au

w www.amateurradio.com.au

ARV Life Membership Awarded to Ross Pittard VK3CE

Amateur Radio Victoria President, Barry Robinson VK3PV, reports that long time member, Ross Pittard VK3CE, has been awarded Life Membership of ARV.

At the Annual General Meeting of the Wireless Institute Australia Victorian Division / Amateur Radio Victoria, on Tuesday 15 May 2018, a motion was put forward and unanimously supported by the ARV Council and attending members, to award Ross Pittard VK3CE, prestigious Life Membership of ARV.

Ross holds two positions on the ARV council: Secretary and

Treasurer and is key to maintaining positive control of finances to ensure the State Wide Repeater Network remains in operation.

Maintenance costs and site fees are a big drain on Amateur Radio Victoria's finances, and Ross, who is a country member, also generously assists in maintenance of repeaters around his QTH of Central Victoria and beyond.

Ross also holds amateur licence tutoring and assessments, which can be arranged for times to suit students in Central Victoria. Ross had input in the setup of the automated WIA Sunday Broadcast which is relayed through the Melbourne Club Rooms and broadcast through repeaters

VK3RMM, VK3RML, VK3RMU, 3615 kHz, 7158 kHz and 10.130 MHz at 10.30 am & 8.00 pm. Keeping Amateur Radio Victoria's name in the front of our country members. Congratulations and "Thanks" Ross from all members.

2017 LGA Challenge Award presentation to Peter VK3PF

During 2017, Amateur Radio Victoria sponsored a special 12 Month operating award, to encourage and promote activity "to and from" the 79 VK3 Local Government Areas.

This Award was called the 2017 LGA Challenge. The overall winner of the Challenge was Peter Freeman VK3PF. Peter activated

Peter VK3PF in his shack with his plaques for the Victorian Local Government Challenge.



and worked all 79 VK3 areas in the first few months of 2017. A great achievement!

Peter was recently visited by ARV Awards Manager Tony VK3XV and presented with, not one, but three wall plaques..... 79 LGA Activated, 79 LGA Worked and the Grand Slam Plaque - ALL Worked and Activated. These Plaques are now available (at cost) to all amateurs involved in the "normal" ARV LGA Award, full details of which can be found in the Awards section of our website. All entrants in the 2017 Challenge have received professionally designed and printed Certificates to commemorate the Challenge. Full results have been previously published in this column and in the News section of ARV website.

School Amateur Radio Club "On Air"

ARV Members Joe VK3YSP and Julie VK3FOWL are well known for being active with the School Amateur Radio Club Network (SARC). Recently the SARC group activities were further promoted by a visit from the Network Ten Outside Broadcast news crew, with weather presenter Mike Larkin "on air" to highlight the group's activities at St. Kevin's Primary School in Ormond, Victoria. This brief, but succinct, News segment presented the Schools Amateur Radio and Electronics Workshop activities, which included student Homebrew

equipment displays and brief student interviews, in a positive and beneficial manner for our hobby and particularly, our future Amateurs. More detailed Information on this special visit and the SARC network is available at www.sarcnet.org

ARV Diary Dates

Foundation Licence

Our next popular Foundation licence course will be **September 22-23**.

The Foundation licence syllabus is thorough in covering the essential basics of electronics, radio communications, several safety aspects and the regulations. Candidates undergo a practical test on the band plans, regulations, symbols, antennas, then a hands-on ability with a typical radio station, engaging in its set up, testing or power and SWR, on-air use preparation, calling CQ and making contacts.

There is a lot to learn through the training with candidates expected to prepare by reading the updated Foundation Licence Manual available for \$35.50 from the ARV Shop.

The course is held at the Amateur Radio Victoria office: 40G Victory Boulevard, Ashburton. To enrol on line please visit our website: www.amateurradio.com.au

Homebrew Group

The Homebrew Construction Group of Amateur Radio Victoria aims

to promote the good fellowship and exchange of ideas between amateurs who are enthusiastic builders of their own equipment. It does this through monthly meetings in the ARV rooms located at 40G Victory Blvd, Ashburton on the first Saturday of each month (excluding January) at 2.00 pm.

The meetings are generally very informal but commence with a "Show and Tell" session where projects can be displayed and described. The following discussion usually generates a wealth of ideas for the newcomer and experienced constructor alike. The session is followed by a guest speaker, when possible.

Homebrewing encompasses almost every aspect of our hobby and those who might not necessarily regard themselves as dedicated homebrewers will find something of interest in this group.

2018 meeting dates

1 September, 6 October, 3 November and 1 December.

Keith Roget Memorial National Parks Award

This ongoing Award scheme is boosted by the popular annual activation weekend:

9-12 November 2018

For further information contact: awards@amateurradio.com.au



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Over to you

Phishing scammers a growing threat to Amateur Radio Clubs

Sir,

I am writing to you to pass on a warning regarding the growing threat posed to Amateur Radio Clubs by criminals attempting to 'Phish' money by impersonating Club Committee members.

Over the past year there have been three separate attempts I am aware of within VK7 by a person or persons to convince a club official to transfer funds from the clubs bank account to their own.

The first occurred in June 2017 when a criminal attempted to impersonate the President of REAST and contacted the club Treasurer in an attempt to have them urgently transfer funds to their account for some fictitious purpose. It was only when the Treasurer contacted the President to confirm this that the con was identified.

A similar incident again occurred in 2017 shortly after the club voted in a new Treasurer when someone tried to convince the new office holder them to urgently transfer funds.

The timing of this shortly after the new Committee was formed is interesting (possibly trying to take advantage of the changing of the guard). Again, if our new Treasurer had not been taking care this attempt may have succeeded.

Early in July 2018 I was contacted by another VK7 club advising that someone had tried the same trick again without success.

While Amateur Operators are generally canny with their money, it appears that there may be one or more persons thinking our clubs are soft targets. In all the instances above the person had done their reconnaissance and had selected their target with care. They knew the name and contact details of the Treasurer, as well as that of a person with the authority to request a funds transfer.

It is possible that this person may consider targeting other clubs or make further attempts in the future, and their failure in VK7 may drive them to look to the mainland for greener pastures.

I would ask that all Club Committee members reading this letter take note and take extra steps to protect their clubs funds:

- Make sure that only authorized office bearers can access club accounts
- Make sure that surprise or urgent requests for money are viewed with caution
- If in doubt of the legitimacy of any such request, double-check with your Committee before transferring any money
- Ask the caller something only the real person would know
- Report any attempts to the Australian Competition and Consumer Commission (ACCC) via their web page at <https://www.scamwatch.gov.au/report-a-scam>

Best Wishes,

Sean Lincoln VK7FAZE

President

Radio and Electronics Association of
Southern Tasmania (REAST)



IT'S BACK-Bigger than Ben Hur :-)

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Contact Roy Gabriel VK5NRG Phone: 0438 362 049 Email : vk5nrg@wia.org.au

Silent Key

Gordon Shearer VK2DN

It is with regret that we advise the passing of Gordon Shearer VK2DN of the Junction, Newcastle.

Gordon passed away on 26 July, 2018 aged 89 years.

Gordon started school at Hornsby where his father worked on the railway. His family moved to Five Dock where his parents ran a General Store then they moved to Mayfield, Newcastle and later to Tighes Hill.

During the War years, Gordon was a High School student. He was involved in the School Cadets and the Volunteer Air Observer Corps. He also witnessed the Japanese shelling of Newcastle. He completed his Leaving Certificate at Newcastle Technical High School and in February 1946 commenced an indentured Fitter and Turner Apprenticeship with BHP, completing in 1950. He had obtained a Marine Engineering Certificate and completed Mechanical Engineering and Industrial Electronics and Programmable Controller Certificates at TAFE.



He married Shirley (deceased) in 1951 and they had three children: Dawn, Jan and Greg. Gordon was at sea as an Engineer on BHP

coastal vessels and in 1952 joined the crew of RMS Aorangi, a trans-Pacific Ocean Liner as 19th Engineer.

He then worked at the State Dockyard and later spent 30 years at Stewarts & Lloyds as an Instrumentation Engineer controlling the steel pipe manufacturing process, leaving in 1986. He then spent eight years working for TAFE in various teaching assistant roles.

Gordon passed the Amateur Licence exam in August 1972 (together with his son, Greg) and received a Limited Amateur Operators Certificate of Proficiency.

He was a member of the Hunter Radio Group, Westlakes Radio Club and the Wireless Institute of Australia. He was also involved with the Radio Amateur Emergency Network, WICEN.

Gordon passed away on Thursday 26 July 2018.

Rodney Prout VK2CN
Secretary, Hunter Radio Group.

Silent Key

William (Bill) Charles Hall VK2XT

It is with sadness we advise the passing of William (Bill) Charles Hall VK2XT of Coal Point, in the City of Lake Macquarie.

Bill passed away on 20 June 2018, aged 105 years.

Bill spent his early years at Kurri Kurri in the Hunter Valley. He obtained his Amateur Licence with the call sign VK2BH. However, the PMG'S Department required VK2BH for the Commercial Broadcast Station of Broken Hill. Bill was then given the call sign VK2XT.

Bill moved from Kurri Kurri to Cooks Hill in Newcastle where he was the Publican of the Oriental Hotel. He had a very good Amateur Station at the hotel with a multi band HF Yagi antenna system from which he worked many DX Stations.

Bill retired from the hotel business and moved to Coal Point in the City of Lake Macquarie where he set up his amateur station including the installation of a Cubical Quad HF antenna system.

Bill with his wife, Betty (deceased), travelled extensively overseas mainly to JA



land where he had made many JA amateur friends. He worked the JA stations every day

on 15 metres to the point that the JA stations were in line to say hello to him.

Bill was proud to state that he had worked over 350,000 stations during his life time.

He was on the committee of the Hunter Radio Branch of the NSW Division of the WIA but his main efforts were with the NSW Division as the QSL Officer. From his other premises at Teralba, Bill conducted the inwards and outwards bureau for the NSW Division.

Bill also had an extensive museum of old radio equipment. In his later years, he was on the air every day, including participating in Col's Net on 40 and 80 metre bands.

Bill was a long life member of the Hunter Radio Group, ARNSW and the WIA.

Bill is survived by his son Jim and family.
Vale Bill VK2XT.

Rodney Prout VK2CN
Secretary, Hunter Radio Group Inc.

Due dates for publication

Dates for submission can be found at the bottom of the page:

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



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 Secretary:
armag@wia.org.au

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- QTHR means the address is correct in the current WIA Call Book.
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