BARG News

Ballarat Amateur Radio Group

Inc. #6953T

March 2023 Monthly Newsletter

Next Meeting 11:00am, Saturday 25th March 2023

At the Airport

All Welcome

Contacting us

You can e-mail the secretary

vk3bml@barg.org.au

We're on the web

www.barg.org.au

https://twitter.com/vk3_barg

https://www.facebook.com/groups/VK3BML/

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Club Nets

VHF NET: Every Tuesday Night at 8 pm on 146.750 MHz / 146.150MHz - 91.5 tone - VK3RBA.
HF NET: Every Thursday Night at 8 pm on 3.608 MHz - VK3BML
6m NET: Every Tuesday Night at 8:30 pm on 53.650Mhz RX / 52.650Mhz TX - FM with a 91.5 tone - VK3RWU

LINKED REPEATERS:

The local VK3RBA-70cm repeater on Mt Buninyong is part of a network of linked repeaters covering North-Western Victoria.
Access details for this repeater have recently changed.
For full details of this linked network and access details see
https://www.qrz.com/lookup/vk3rba
You can listen to the system live http://vk3rba.dyndns.org:441/
This linked system may be accessed via IRLP node 9503.

President's Report March 2023

There is not going to be much in this one. But I thought I better at lest put something down. I don't have a lot to report on this month and there has at the time of writing this no Committee meeting yet.

John Moyle Field Day as a club activity went well this year.

As most will know we were located at Cape Clear and a big thank you should go to Craig VK3KG for allowing us to use his QTH for the event. There were some 11 people and I know I have missed someone in the count the day after as I recall a head count of 12. We battled the wind and managed to make 82 contacts in the HF log by the time we gave up. Contacts were made into most states and 1 contact into New Zealand. The 6 meters and above did not fare so well and I don't think any contacts were made. I still need to put the log submission together but if my back of the napkin math is correct, we have 164 points for the contest. We seemed to have more participation this year than other years and it makes me wonder if we try another field location or the same location next year.

As the John Moyle Field Day was a success as a Club activity. There is another contest coming up in August that we could run as a multi-operator entry, that is the Remembrance Day Contest this year's dates are the 12 & 13th of August start time is 12th Aug 03:00 UTC. Now as this is not a field day contest we could if there were enough members interested to operate from the Clubrooms for a few hours if we wanted to.

If you are not familiar with the RD contest jump onto the WIA website and have a look at the rules under the contests link. If you are interested in making the RD contest another club call sign activation event let me know. In June I will be asking if anyone is interested. https://www.wia.org.au/members/contests/rdcontest/

My own little corner of the world. My MST 3 transceiver build has found a little bit of life and I have started working on it again. I hope to have this finished by mid-year now. Some may have seen an email from me about a memory backup batteries holder that had severely leaked more than once but the looks of it, thanks to Lachy VK3ALM for the replacement holder it is now back into operation again with memory channels and I don't have to muck around each time I turn the radio on.

Some of you had asked what the radio was, it is a Yaesu FT-980 that belonged to Doug VK3VBA and has now found a home in my own shack and seems to work well and is not having some of the issues like drifting or receive issues that I have seen comments on. I have a Microphone for it but would like to track down once I have the money a better Mic for it so I can get my QRP Atlas radio up and running.

That's it if I don't stop writing now the editor is going to tell me off again.

See you all at the March meeting.

73's Ben VK3NRD.

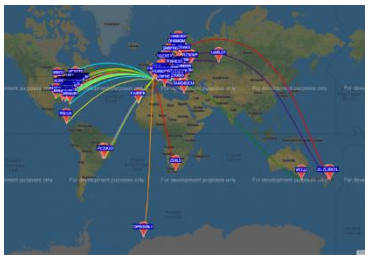
SCENES FROM A FIELD DAY

VHF and Above for March 2023

It's been a while since I've put some notes together for the club's magazine so as the higher frequency bands activity is heading towards the end of the summer cycle, I can recap of some of the happenings during this time.

For the past 2-3 years there has been virtually no 2M propagation between VK and ZL which is something I haven't seen if ever. There may have been a handful of times when reports have been made of an opening but in most cases, it's been of short duration and rare.

However, it has to be said that 6M has been well and truly alive to all parts of the world i.e., VK to ZL, USA, Central America, South America, Europe, Asia and South Africa.



I believe this is due to the high number of amateurs using WSJT mode FT8 which has enabled users to complete a qso in a very short time and at signal levels lower than that suitable for CW QSO's.

Whilst this is good it's a shame that CW and SSB seems to have fallen away due to easier way of having a contact (not a qso) using a digital mode.

Personally, I've had contacts on this band using modes FT8, CW and SSB especially in Asia which has been great so it's a bit sad to see this trend which probably won't change down the track.

Know operators in our area are VK3KQT, VK3BNC, VK3AHH, VK3AXH, VK3JF VK3ZAZ and I'm sure there are plenty of others. Steve VK3ZAZ has done particularly well to many areas around the world using his large and antenna and some moderate power.

Another recent event was some Auroral activity on 2M where some VK3s were able to QSO with VK7MO near Hobart using digital, SSB and CW. Although the signals suffer severe distortion due to spreading contacts were still able to be made.

There have been very few contacts into VK6 this season as I suspect both propagation and stations not being on the 2m to 23cm bands due to possibly 6M activity however some VK7 diehards have still been around to pick up the slack.

Overall, my thoughts are that activity on some of the higher bands had unfortunately has fallen away due to the digital modes being simpler for contacts to be made.

Let's hope this is not a trend that will extend into the future.

Cheers, Ian VK3AXH

QRZ, 474khz (630m) and 136khz (2200m) Our lowest frequency bands.

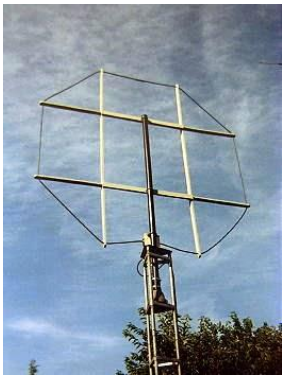
The more senior of our members would well remember cutting their teeth on crystal sets and then graduating to a one valve radio if you could beg or borrow a valve! Batteries and AC power sources were expensive and difficult big issues not like the “Transistor Age”.
A prolific range of broadcast stations from 500 to 1500khz and even the police on the top end of the band providing entertainment of an evening whilst lying in bed, earphones on and carefully adjusting the “cat’s whisker crystal detector” for best results!

Never did I think that one day I would in fact revisit these frequencies and transmit on 474 and 136 kHz. Today with much better radios capable of tuning these frequencies it’s just a matter of turning our expertise to the transmitting and antenna problems.

A program called “Weak Signal Propagation Reporter” (WSPR) written by Joe Taylor K1JT and pronounced “Whisper“ was designed for sending and receiving low powered transmissions to test propagation paths and weak signal performance is the backbone of our “WSPR” operation. There are standard WSPR allocated frequencies on all our bands just like the newer FT-8 allocations.

Most evenings I put up a 630m or 2200m “WSPR” signal using either the WSPR standalone program or indeed the “WSJT-X” program which includes WSPR as one of its modes of operation. A spotting program “WSPR Net” is a very interesting adjunct to your library and enables world-wide plotting of your WSPR contacts and demonstrates the current propagation on the bands. Just Google these programs to download and get operating information.

Well with a receiver which covers 474khz, the antenna system needs some thought especially if you are confined to a standard building block like most of us. Existing 80m antennas can be pressed into service with some modifications. A suitable loading coil, antenna tuning and matching will be required and information on these is available especially on the design and where to get bits for their construction.



Transmitting on these frequencies is not covered by off the shelf Amateur rigs so we need to look at using a transverter to run WSPR and which only requires Qrp power levels. The transverter takes an input frequency in the 80m band for example and mixes it with a crystal controlled oscillator to give an output on 474khz. One such transverter by G2XBM is an example of this type of technique and is used by most of the active BARG members on this band.

This transverter is easily built from on hand or scrounged parts. Don't overlook our collection of resistors, capacitors and various transistors etc. at BARG. Circuit boards are not required but "dead bug style "construction is all that is required at these frequencies.

The final requirement in our equipment list is a suitable digital modem the likes of one designed for PSK31 operation etc. or you may indeed have a commercial one available.

Information on building one of these can be found on the web or a simple one produced by VK6PG can be built. Indeed these were built years ago as a project here in BARG and I can supply details if required.

Not every amateur's "cup of tea" but you might like to "give it a go". Prior to the pandemic there were a number of club stations active on 474khz, VK3AIG SK, VK3AXH, VK3IDL and VK3BNC. Any questions would be welcomed, and assistance provided if it means more stations on the air. It's a good challenge and well within the capabilities of our members. Can I say it's a fun project, some new experiences (winding large diameter coils) and an insight into propagation at these low frequencies?

OK well how far can we "whisper" on 474khz, well from my experience certainly all states of VK and ZL and Hawaii as best so far.

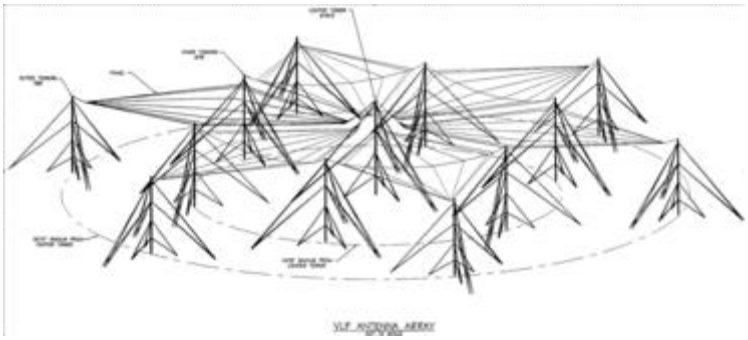
Since then, I have migrated down to 2200m, 136Khz and developed a suitable transverter, antenna and suitable matching for the antenna. Early results have resulted in contacts in VK3 and VK4. This has been another first for Ballarat as it was for 474khz. Perhaps the crystal set is not really dead!

Reflecting on wavelength and years, I have now operated from 2200m to 9cm, that's a bit of a difference in quarter wave verticals! Any assistance or help in sourcing parts or bits or indeed whatever, just call.

I look forward to seeing new stations on 630m or 2200m.

https://www.wsprnet.org/drupal/wsprnet/map
http://www.472khz.org/pages/about-472-khz/getting-started.php
https://vk6ysf.com/receive_converter_630m_mk1.htm

73's Bob VK3BNC



International Marconi Day

The Electra enters Mounts Bay from the harbour at Penzance.

Marconi was born on 25th April 1874 at the family's town house in Bologna, Italy. Much of his early childhood was spent travelling with his mother and elder brother. From an early age he was more interested in scientific toys than in schoolwork. Having failed the qualifying exam for the Naval Academy he concentrated on his scientific interests. He pursued his dream of using Hertzian waves as a basis for communicating without wires.

By August 1895 he had achieved transmission over 1.75 miles (2.8 km..).

In 1900 he came to Cornwall to set up an experimental wireless station, eventually choosing a site at Poldhu Cove on the Lizard peninsula. Sir Ambrose Fleming was responsible for much of the design of the Poldhu station. The first experimental signals only travelled a short distance but on 12th. Dec. 1901 the first transatlantic radio signal from Poldhu, was picked up at St. Johns, Newfoundland, some 1800 miles (2880 km.), by an aerial held aloft by Marconi's kites. It was the prearranged letter 'S' sent in Morse code.

GX4CRC THE CORNISH RADIO AMATEUR CLUB will be running this memorial event on Saturday April 23rd.

Club details and International Marconi Day information can be viewed at http://gx4crc.com/

International day rules are;

There are now only 2 categories:

1. TRANSMITTING AMATEUR

To establish direct two-way communication with 15 different official Award Stations, mixed modes are permitted in the log (mixed modes cw, voice, data)

2. SHORTWAVE LISTENERS

To log two-way communications made by 15 different official Award Stations, mixed modes are permitted in the log (mixed modes cw, voice, data).

Hello budding DXpeditioners

- Hello budding DXpeditioners.
- Have you ever wondered what DX-peditioning is all about?
- Would you like to dip your toe in the water without a full-on commitment?
- Would you like to join a DX-pedition but are unsure of how to get on the invitation list?
- Do you want to experience being on the business end of the pileup and build DXing skills?

A DX-pedition is a great way to improve your operating skills as well.

Well, the Norfolk Island DX-pedition Bootcamp might have been for you.

Experienced DX-peditioners will be on Norfolk Island for 14 days in the second half of March 2023 (17 – 31 March).

Chris VK3QB, Luke VK3HJ, Alan VK6CQ and Patrick VK2PN will be active from Norfolk Island as VK9NT (and VJ9N) between 17-31 March 2023.

They will be joined by Guest operators Matt K0BBC and Tom VK3FTOM.

Read more here;

https://dxpeditionbootcamp.net/home-page

https://www.qrz.com/db/VK9NT

https://www.facebook.com/groups/6266151060075296

Chris vk3qb@hotmail.com

2023 World Amateur Radio Day is April 18

What: 2023 World Amateur Radio Day
Who: All amateur radio operators worldwide
When: Tuesday, April 18, 2023 at 0000 UTC until Wednesday, April 19, 2023 at 0000 UTC
Where: A global event covering all regions of the International Amateur Radio Union (IARU)
Why: World Amateur Radio Day, held on April 18 each year, is celebrated worldwide by radio amateurs and their national associations which are organized as member-societies of the International Amateur Radio Union (IARU). It was on this day in 1925 that the IARU was formed in Paris.

American Radio Relay League (ARRL) Co-Founder Hiram Percy Maxim was its first president.

Amateur radio experimenters were the first to discover that the short-wave spectrum could support long-distance radio signal propagation. In the rush to use these shorter wavelengths, amateur radio was “in grave danger of being pushed aside,” the IARU’s history has noted. Amateur Radio pioneers met in Paris in 1925 and created the IARU to promote the interests of amateur radio worldwide and to protect and enhance its spectrum privileges. Today, the IARU is a federation consisting of more than 160 national amateur radio organizations in as many countries and separate territories. The International Secretariat of the IARU is ARRL The National Association for Amateur Radio® in the United States.

On World Amateur Radio Day, all radio amateurs are invited to take to the airwaves to enjoy our global friendship with other amateurs, and to show our skills and capabilities to the public.

How: World Amateur Radio Day is not a contest but rather an opportunity to “talk” about the value of amateur radio to the public and our fellow amateur colleagues. It is also a great opportunity to talk about your radio club and amateur radio in local media as a lead-up to ARRL Field Day (held each year during the fourth full weekend in June) and another ham radio related activity in your community – such as volunteers who serve in local emergency communication readiness including the ARRL Amateur Radio Emergency Service®.

Here are just a few ways to participate in, and promote, World Amateur Radio Day:

- Get a station on the air! Create your own personal "event" to talk about amateur radio to others, including family and friends.
- Find out more about World Amateur Radio Day by checking the IARU website and other Resources listed below.
- Create and hold a special net or on-air event on World Amateur Radio Day to raise the level of attention for the celebration, and to encourage other hams to talk about our hobby. Consider creating and offering a commemorative certificate for contacting your special activation. It can be an electronic one as these are cost effective.
- Get the word out! If you are an ARRL Public Information Coordinator, Public Information Officer, or responsible for radio club publicity, send a press release and conduct some public relations outreach to highlight the day and/or events. Talk about all of the activities radio amateurs have continued to support during the pandemic, and how amateur radio serves our communities. Find recent examples of amateur radio in-the-news at **www.arrl.org/media-hits**.

- Promote your personal World Amateur Radio Day activity(ies) on social media platforms like Twitter and Facebook by using the hashtag **#WorldAmateurRadioDay**. Make sure you send it to various clubs, reflectors, and media.

Join us in celebrating World Amateur Radio Day and all the ways amateur radio brings us together!

Resources
ARRL The National Association for Amateur Radio®
www.arrl.org/world-amateur-radio-day

IARU
www.iaru.org/on-the-air/world-amateur-radio-day

IARU Region 2: The Americas
www.iaru-r2.org/en/on-the-air/world-amateur-radio-day/

Article: "World Amateur Radio is April 18," ARRL News (April 8, 2022)

Article: "Why World Amateur Radio Day is key to highlight crucial service," ITU News Magazine (No. 1, 2021)

DON'T FORGET

10:00AM EVERY THURSDAY MORNING

BARG Coffee Club

ALL WELCOME

Food Seduction on Doveton
524 Doveton Street North

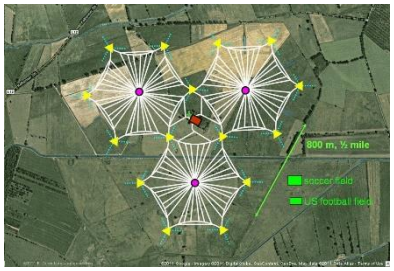
ALSO

Frequent Friday Night Pub Dinners

KEEP WATCH ON BARG CHATTER EMAIL FOR THE NEXT OUTING

Magazine Reviews

Silicon Chip March 2023 Review



P14 Communicating when underwater. Looks at underwater and underground communication and its history. Includes examples of U-Boat and other naval systems that exist and where they were located and transmitting powers. Many diagrams of the various systems and aerial arrays.

P31 Digital Volume Control, Potentiometer. Two versions of the one project that replacing the normal mechanical volume control with a smooth, noiseless device. Uses a PIC and discusses the programming and assembly.

P42 Model Railway Turntable. For the model railway enthusiast, mechanical construction and electronic control of a single track table with stepper and PIC control. Well documented with step-by-step instructions.

P56 ALTIUM Designer 23. Software review of this popular CAD, giving a report on added functions and improved performance.

P62 ZBB30A1 Module, 60W Programmable DC Load. Performance test of this load and discussion of how it works.

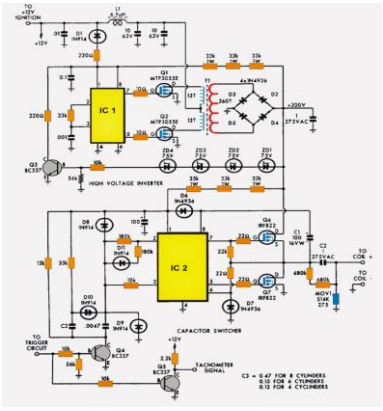
P68 Active Mains Soft Starter, Part 2. The construction and component layout of this project along with setup and calibration.

P74 Advanced SMD Test Tweezers, Part 2. Implementing the new design and its display and features.

P83 Serviceman's Log. Repairing vacuum cleaner, musings on core memory, repairing a Diakin 3phase airconditioner.

P90 Vintage Radio. BGE radios. A look at British General Electric Mantel Radis, their construction and circuit diagrams

P96 Circuit Notebook. Regenerative BFO metal detector, 3D-printed Robotic Arm



P105 Ask Silicon Chip. Changing active loudspeakers to passive, Bridging Hummingbird Amps and transformers, Modified bench supply dropping its bundle, Material entering the public domain, Using 2.2KΩ pot in Bench Supply, Building the DAB+/FM/AM Tuner, Multi-Spark CDI crossfire prevention, Multi-Spark CDI draws too much current. Suitable material for speaker cabinets, Currawong transistor equivalents, Boost Controller troubleshooting, Trouble locating pin1 of an IC.

QST Review March 2023.

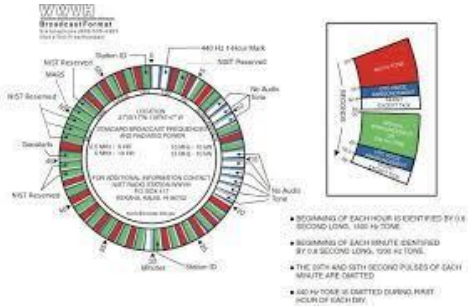
Review by Craig VK3KG

All the normal letters to the magazine covering host of questions, praise for articles and memories of previous experiences.

P 13. Joseph Rudi NK7U is just a youngster at 76yrs but has combined his two main hobbies of radio and League baseball which has been a passion [like most Americans] for many years and spent 15yrs from 1967 for Oaklands Athletic. He was always into Popular Science magazine and building crystal sets until baseball consumed him after high school. In mid-70's he was hosted by two friends and became W6BSL and used a mobile rig as he travelled the country working the baseball industry. His wife is N7PAV and eldest son K7MJR. He now likes helping a charity raising monies for various causes.

P 30. Wind Chime 4: An antenna for four bands as a Vertical. Requiring only 33 feet [10metres length] it hangs by a hook from a tree or a cross arm from a tower or building. Strung between three "crossed cruciform ends" that act as spreaders, there are four lengths of wire strung in and only two wound coils are needed. The device works on 30M with two coils, 20M full size, 17M full size and 15M. They are all fed in the centre cruciform to a coaxial cable feed. The lower cruciform is then tied using paracord of nylon cord to prevet the device swinging in the wind. To imagine what it looks like early amateurs used a similar looking structure called a "cage or box" suspended horizontally in the air. No reason that can not be so done with this antenna. Now there's a challenge to those who want experiment. !!

http://www.arrl.org/qst-in-depth



P 33 Measuring Frequency Accuracy and Stability of WWV and WWVH. A very absorbing article on these famous time stations that have been in existence for 100years now and started on the 6 March in 1923 intending to just provide standard sigs in the LF and MF bands. See also article in QST for October of 1924. {we may still have a copy in the club library for those interested in reading. Originally used for maintaining stability for broadcast stations so they didn't interfere with each other the sigs now cover calibration, space weather, and radio amateurs alike. WWVH started in 1948 and both transmit on 2.5, 5, 10 and 15 Mhzs. WWV also transmits on 20 and 25 Mhzs. The author K0WWX then procedes to explain in very well defined terms how a signal can be compared to a ref station like WWV/H

See www.arrl.org/qst-in-depth Accuracy to measure some signal via the transmitted signal in the atmosphere means the reader has to have an understanding of the propagation of a sky wave and the refraction as it enters the ionosphere.

Readers of the magazine would be aware that the ARRL runs a competition regularly for members to test and record a nominated frequency within a 1 minute time frame.

P38. Remote Controlled Balanced Antenna Tuner. Again for many the argument of balanced feed versus unbalanced feed will always promote some mental activity for them. Here is a novel design with practical limits precipitated by an article in earlier QST by W2DU [QST series of articles in 1973] This article describes a basic Balanced L network antenna tuner using two roller inductors of 20 micro Henries, a 19-488 pf gang and a 1:1 choke balun. Using a motor driven 90 tooth driving band on the inductors and a motor 60RPM on the capacitor with an Arduino Mega 2560 thrown in there is a an interesting construction for someone. Programing is available from randymather@frontier.com

P41 Review: QRP Labs QDX 5 Band HF QRP Digital Transceiver.

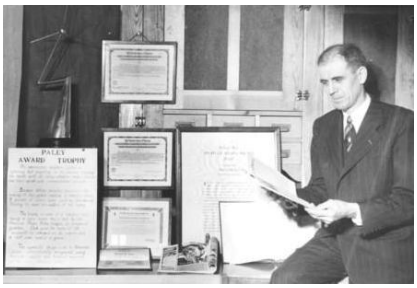
P44 Review: Signal generators. Today some are no longer just Analog but digital and so here is a review of some six devices.

P53 Ask Dave; answers a range of enquires. Can you challenge DX with 20Watts. Feeding a big Horizontal loop and setting the computers default speakers. Phints & Hacks. Tagging cables with bread bag clips. Cover up defective Chrome with a pen. www.molotov.com . Rejuvenating portable power sources. . Mounting elements on booms using spring tension.

P57 Ham Radio after Downsizing. What to do for antennas in flats and apartments when we have to move into smaller and less spacious homes.

P58 Desert Portable. Travelling in mobile home across America.

P60. Care and feeding of SOTA chasers. Some tips for chasers and activators on the move. Quite a few rules and guides for small signal users but others can benefit from them as well.



P63 W9BSP a Historic man who mentored many. 100Years after. Marshall Ensor W9BSP sent morse to thousands thru the 1930's from his Midwest farm in Kansas. He was an educator from early days teaching manual arts for 50 years as well as tutoring amateurs in morse code. His sister Loretta also took out her licence as a 19year old in 1923 and after Marshall died in 1970, she converted the family home into the ENSOR PARK and MUSEUM. www.ensorparkandmuseum.org for further details.

P67 HAARP and bouncing signals off asteroids.

P69 Public Service. Gordon KX4Z Interviews.

P76. Taking your club repeater Off the electrical grid. May be worth reading as the crisis in electricity bills is on the rapid rise.

P78. Ham Media Playlist. Answer Questions. Dave KE0OG has developed a learn/teaching style that seems to fit the modern ages for learning. Dial into the computer instead of going to a school to learn something of interest. See some videos at https://learn.arrl/org see also his channel

www.youtube.com/davecasler and can email him askdave @arrl.org as an example see how easy he makes the explaination of How the J Pole works. Something that confuses many when a open transmission line has to feed into end fed half wave antenna. https://tinyurl.com/casler-jpole
Still do not understand what SWR is all about then look at the site titled SWR DEMYSTIFIED AD#28 ON HIS PAGE.

P80 How's DX.? Paulau T88WA Disasters can hit any activity but when you have only 6.5 days out of 14 you would be pleased with 28878 contacts as good. Read about the things that caused all this and try and work them into a check list that can overcome or bypass possible game stoppers to an activity. Doing field day activations
Can be great chance to check you own equipment and
spares boxes are up to date.

P82. World above 50MHz. The 25th Cycle bringing South Pacific 6M openings to North USA. New Zealand and Australia at start of December 2022.

P90 QST A Look Back to April 1973. A band edge Marker Generator used a single transistor and a crystal.
Combination HiStab 2 Tone generator and calibrator started with a 1000kHzs crystal and the new RTL-IC the FF lops to count down to 1 Khz..

P96 Classic Radio. The beginning of SSB equipment. Starting in 1950s the market showing off Eldico had the SSB Jr radio using the phasing method and a 50W power on 160metres. It sold for USD69 back then. Other brands started to appear like Hallicrafters, Collins, Johnson and Heathkit.
National company and then R.L.Drake in 62/63.

P98. 100,50, 25yrs ago. Listing indexes.

And as always, the many pages of mouth-watering adverts at the end of the magazine. That's all for March. Watch out for the April edition coming very soon.

QST Review April 2023

Review by Craig VK3KG

P13 Member spotlight. Larnell WD4LZC. Known for his Gospel music and a well-known amateur. Starting as a CB er in early 1970's and invited to his pastor's to see his amateur radio setup. He was hooked and learning the morse was easy as he considered it like drumming and had a rhythm.
In 1986 on the way to a Grammy award his wife Tammy passed her test as KA4TEW . He has earned many awards for his music and also a member of a number of halls of fame but also the Amateur radio Hall of Fame 2008 and the ARRL's A-1 Operators Club.

P24. Letters. Covers Humidifiers, Stealth roof top antenna, QSO's developing a Friendship and suggestion that morse should be used for a new public service.

p30. USB Interface for Transceivers. Make your own interface on Vero board and some small components with a sound card CM108, HUB USB FE11SX4 and a

FT232RL BUILD ON A SUB VERO STRIP. Add two 600 ohm transformers, a pair of H11L opto-couplers with desired sockets to suit the rigs DATA and USB/MIC sockets and your operating.
Further see www.arrl.org/qst-in-depth for additional technical details.

P32. Networking basics for Amateur Radio. Understand your home network and how you can interface it to your radio gear. Earn how to remotely access an Icom IC-7610.

P34. A Coupled Resonator HF Antenna. Is a multiband dipole for 80,60,40,20,15 and 10 metres. Further reading in the ARRL Antenna Handbook 21st Ed page 7-24
It could be used as a horizontal dipole config but for field use one central support up to 30feet, and the end support at 10 feet the horizontal spread covers 60 feet. The basic antenna is 33ft and 6 inches to the 80M coil with a further six feet beyond to the end insulator. The feed point is inside a pvc box and with a FT240-31 toroid coil wound 1:1 with 14AWG www.balundesigns.com for more design details. The wire for the inductively coupled 10m and 20m antenna is kept about 2 inches above and below the dipole and maintained there by plastic spacers.
The two loading coils for 80m are 1.5 inch pvc x 5.5@ using 18 magnet wire https://powerwerx.com and auto lugs and bolts.
A pair of PVC spacers are bolted to the balun box and drilled with holes for the two inductive antennas on 10 and 20 metres.
This keeps spacing away from the 80m dipole also.
On testing found to be a good NVIS low band antenna

P38. Review: ICOM IC-V3500 FM VHF transceiver. Transmits only 144 to 148 it receives 136-174 MHz. and has variable power switched 5-10-25-65Watts.

P42 Comet CAT-300 1.8 to 50 MHz. Manual antenna Tuner.
Handles 300W PEP. Zo= 10 - 600 ohm.

P44 Review: Audit SDR Splitters/Switch

P46 tinySA Ultra A 100kHz to 6 GHz Spectrum analyzer. See Mar 2021 edition It has own built in sig gen and has a four inch colour screen display. www.tinysa.org and distributed by www.randl.com price at USD130 www.fcc.gov useful looking.

P50. Ask Dave and looks at coaxial cable queries, LMR400 versus RG8 for short jumpers. Stealth vertical on 6M uses open feeder as quarter wave stub section. Can you daisy chain DSP to reduce noise.

P52 Micro wavelengths. Affordable Microwave Power measurement. Uses a AD8317 power detector good to 5760 but falls off towards 10GHz. www.tinysa.org operates to 12GHz and was US$129

P54. Microphones for Amateur radio. First instal of three will discuss and compare quality and sensitivities characteristics that contribute to sound quality. This is always a continuous subject and many will get overheated talking about needs for wider BW responses and better quality for voice communications, so does our voice conversations have to be more than that 3.5 KHz wide signal, and what about the loss of originality when a signal is digitised. Does it matter now in times of AI and digital robotics. We now have remotely keyed and logged

stations without any humanoid voice involved. Is it relevant.? I have a box of old PMG carbon mics, aren't they still relevant?

P58 Morse code Rhythm patterns from a to Z. Learn morse musically then practice using some sheet music.

P60 If cant Work it, Don't hear it. Sounds dodgy argument.

P66 AR Response to earthquakes in Syria and Turkey.

P73 April 2023 Frequency measuring Test.
See last months edition on WWV/H

P74 Student University club news.

P76 Ham Medi Playlist. Some good ideas from learnt knowledge and mistakes. Straight up on an activation its declared 'Oh dear I have left the antenna at home.' How do you recover.

P78 How's DX.? Some exciting developments.

P80. World above 50MHz. Looks at the solar cycle 25 and its effect on 40MHz [7 Metre] band. In southern America and across Gulph of Mexico.

P99. Look back to May 1973. A practical 40M Quad antenna uses only one structural pole for a cross support that has wire for two loops suspended and down to ground with para cord and the wire loops cut to resonant size fed by open wire ladder. And a gimmick/gadget was described for cutting up pcb to make small component mounted isolated pads.

P94. Classic Radio. Recreating a 1950's Meissner three tube [valve] radio. Simple super-regen set.

P96 100, 50 and 25 yrs index

And of course, lovely advertisements.

As another famous bloke used to say. And that's your blooming lot.
73 Craig VK3KG

DIYODE March 2023 Review

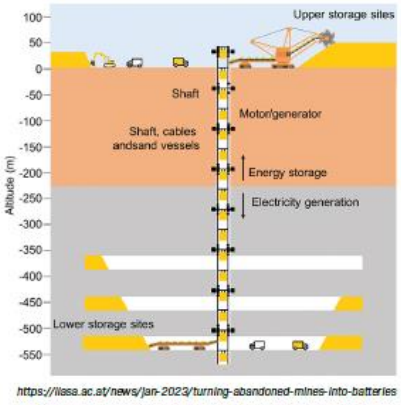
P6 DIYODE is Digital. From this issue the only way to read the magazine is online or download the pdf, due to the cost of publishing on paper.

P8 DIY DRL Daytime Running Lights. The development and how to make some LED assemblies that respond to indicator and headlight operation.

P33 Ethical Making. Distinguishing between right and wrong in a world full of absolutes is no easy task. A look into some of the ethical situations the Maker community has been faced with over the years.

P39 Garage Parking Buddy Arduino-based Car Presence Sensor & Parking Assistant. This handy project helps you park your car in the garage and lets you know remotely if your vehicle is properly parked before you close the garage door. Using an ultrasonic sensor to detect the distance between garage and car.

P59 Mining Renewable Energy. Essentially, when electricity prices are high and generation is required, large amounts of sand would be sent down a disused mine shaft. Generation essentially occurs via regenerative braking (essentially, stopping it from freefalling on its descent). When electricity is cheap, the sand is bought back to the surface to be used again to generate power when the cost goes up.



https://iiasa.ac.at/news/jan-2023/turning-abandoned-mines-into-batteries

P62 Automatic Zen Garden, Part 2. Find your inner peace with this automatic Arduino-powered Zen Garden. Who knew watching a steel ball roll making pretty patterns in sand could be so relaxing?

P80 Automated Robotic Arm Arduino-Mega based Arm with Touchscreen Control. Design and code of a simple arm controlled by an Arduino Mega.

P87 Efficient Arduino Programming. we're diving right into making your code professional, speedy, and easy to understand.

OTN March 2023. Journal of the Radio Amateurs Old Timers Club Australia Inc.

P2 RAOTC General Information.

P3 From Committee, From Editor.

P4 Melbourne September 2022 luncheon.

P4 OTN Stewart Day Award 2022. Presented to the RAOTC member whose original contribution to the OTN has been judged to be best published in that year.

P5 From Members.

P6 How I got to be a Ham, John Drew, VK5DJ. From a boy building crystal sets from "Boys Own Magazine 1940" to simple one valve sets and using ex-military transceivers such as the Wireless Set No 19.

P10 Why is the tide turning? Andrew Walton VK3CAH. A very informative article on the tides and why they behave the way they do, with a couple of simple diagrams and easy to read explanations.

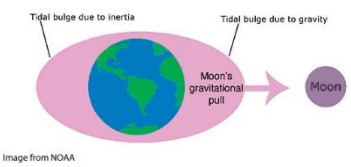
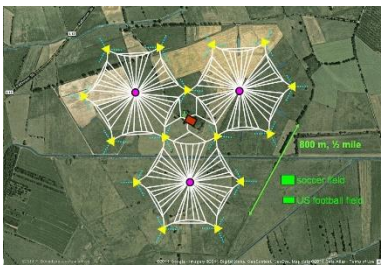


Image from NOAA

P11 About a jigger, gold bars and storepedoes. Herman Willemseen VK2IXV. About the maritime exploits of Herbert William (Bert) Waugh, around the Pacific and his exploits with morse code of the day.

P13 My Radio Life. Part 1. Winston Nickols VK7EM. Winston begins with his school days and parents' encouragement to experiment and build things. Saving to buy

batteries and his apprenticeship at an electrical store and beginning of servicing television sets. Building his own TV and reel to reel tape recorder. Some very interesting photos of Winston's projects and shack back in 1964. His geology expeditions and collections.



P20 U-boat Radio. Colin McDonnell M0EAO. An interesting and eye opening stats of the radios, hardware and performance of U-Boats in general along with VLF and radar detecting receivers. Some excellent photos of some of the equipment.

P22 Goliath – the WWII U-bot VLF communication system. Bill Roper VK3BR. How this early wartime system worked and the aerials needed to accomplish the communication with the U-Boats. Also, why the obvious VLF transmitter sights were not targeted by the Allies.

P26 Horse, Morse in action. Newsletter of the Royal Australian Signals Association (Vic) Inc. About the combination of AIF's 1st Australian Wireless 1 Squadron's experience with the Mesopotamian Expeditionary Force during WWI.

P27 A bug in sleeves. Herman Willemseen VK2IXV. A description of the works and revitalizing a New Zealand "Supreme" bug key.

P28 You too can have a one-to-one SWR. Bill Roper VK3BR. Bill delves into the world of SWR and what it means to the transmitter and matching to an aerial.

P29 Book Review: Project Hibal. John Sutcliffe VK3TCT

P30 RAOTC Membership List

P33 Obituary Rodney Champness VK3UG

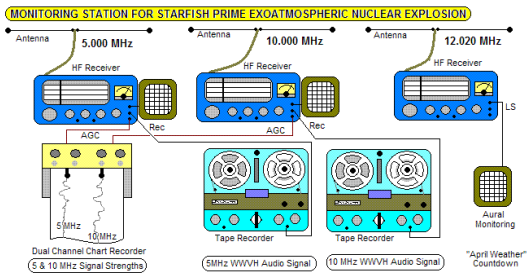
P34 Silent Keys

P34 New RAOTC Members.

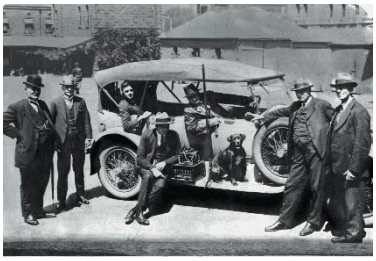
P35 Obituary Nick Watling VK4YT

P36 Obituary Robert Howard VK3HJ.

P37 An Unorthodox bug. Herman Willemseen VK2IXV. The workings and history of the AWA/NZ bug, How and where it was made, and the makeup of the companies involved.



P39 Starfish Prime. Paul Edwards VK7ZAJ. Recollections of the High-Altitude Thermonuclear Explosion detonated in the Pacific in 1962. A detailed description of the operation of monitoring and operating of the telegraphy and telemetry system involved, including receivers and radiosondes.

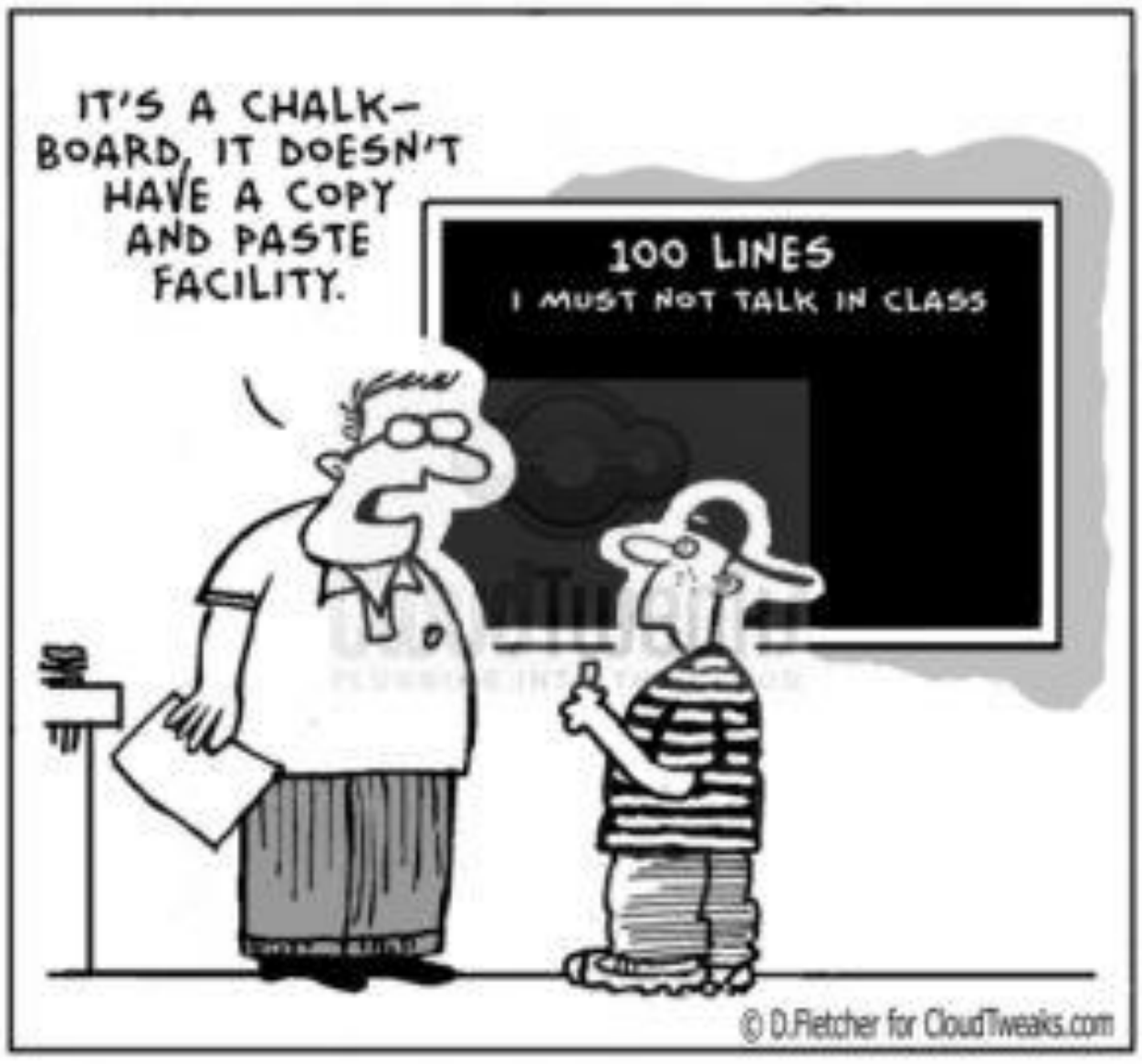


P45 A Short History of the Victorian Police Wireless Patrol, Part 1. Ian Meates. An article about the first Victorian wireless system, from base to mobile operation and the equipment and vehicles used to perform this early form of radio networking.

P50 Up the creek with a paddle. Herman Willemseen VK2IXV. Herman shows the ins and outs of a Galbraith (NZ) paddle that became a common device in homebrew keyers.

P52 Experimenting with 160 metres. John Dawes VK5BJE/VK5PF. John takes us on a voyage though his HF years and rigs and homebrew gear used on 160m from valves to solid state.

P57 A Hand Key that has done the rounds. Herman Willemsen VK2IXV. History and photo of the 160yo GPO and PMG key.
P58 Ultimate Test for Signalers. Sgt Matthew Bickerton. An excerpt from a military newsletter about an activation to test signalers' skills and enterprise in setting up stations in an exercise on the HF military Bands.
P60 Notice of RAOTC March 2023 Luncheon.



MESSAGE FROM YOUR NEWSLETTER EDITOR

To keep the quality of this newsletter!

- If you have a project, antenna, vehicle installation, some club or amateur radio history or somewhere you have operated amateur radio.
- Have you bought a bit of gear or accessory that you have used and think it would be interesting for others to know about.
- If you go bush to operate.
- Tell us about it!!!!!!!!
- Some pictures and a simple bit of text talking about your endeavours is all we need.
- If you don't think your journalistic talents are lacking, like most of us, then apply pen to paper and in point form write what you want to say. Some massaging from the editor will make your article readable.
  No matter how small or big, contributions gratefully accepted. tomvk3dmk@gmail.com