



# BARG News

*Ballarat Amateur Radio Group*  
*Inc. #6953T*  
*September*  
*Monthly Newsletter*

Next Meeting  
Friday 27<sup>th</sup> September @ 7:30pm

At the B.A.R.G. Club House, Ballarat Airport

All Welcome



## **Contacting us**

You can write to the club at the address below, or e-mail the secretary

The Secretary : B.A.R.G. Inc.  
Box 1218  
Mail Centre  
Bakery Hill Vic. 3354

Or E-Mail : [vk3bml@barg.org.au](mailto:vk3bml@barg.org.au)

We're on the web  
[www.barg.org.au](http://www.barg.org.au)

## **Presidents Report**

Welcome to the September newsletter. The days are getting loner again, which lends itself to getting out in the shack, or out and about. Last meeting was a Saturday meeting, and the rain poured down. There was a good roll up again, so maybe we should be doing more regular Saturday meetings. What do members think?

With a new committee on board its time to revisit the calendar for the next 12 months. Ideas for talk topics or visits are always welcome. Guest speaker or member speaker nominations are also welcome. Speakers don't have to be radio related, but it's good if they are technical.

Thanks to Bob, VK3BNC for the great article on the low frequency bands. Bob did offer some pictures, but I was too slow seeing the email and ran out of time. (My bad). So hopefully Bob can share those on the Chatter email.

Next meeting is this Friday. Kicking off at 7:30pm. See you there.

73

*Malcolm, VK3OAK*

## **VHF and Above for September 2019**

This month has seen some change in the propagation on these bands with bursts of good propagation occurring on both 2m and 70cm.

Reports from VK3TXR, VK3ALM, VK3ZAZ and VK3AXH. The most notable qso's were between these stations and VK2EMA in North Central NSW over a distance of around 840Km to Ballarat where signals were up to S8 and S9 on 2mx. Attempts on 70cm were signals being detectable but not readable.

On another occasion both VK3ZAZ and VK3AXH qso'd with Peter VK5PJ in the Barrossa Valley on 2mx and Steve on 70cm and I think a scratchy contact on 23cm.

Contacts were also had with VK5JR and VK5DK between Ballarat and Mt Gambier up to 23cm as well. Hopefully conditions will continue to improve and operators have a great DX season during the warmer months.

The Club's 2mx antenna project has been completed by most taking part. It's hoped that very soon all will be in the air and getting amongst the good conditions during the DX season. These stations include VK3TRW, VK3LTL, VK3ALM, VK3TXR. Paul has a pair of yagis and will be combining them so watch this space for Pauls reports. I think I may have missed some of the other makers so please accept my apology.

In the near future the club will embark on a 70cm building project so if you are interested please make it known and we look forward to your participation.

If you have something of interest for this column please drop me a note for inclusion in this report.

*Till next time 73....VK3AXH*

## Member Request

Some time back I loaned a HIGH VOLTAGE probe to a member and cannot remember who it was at this time. As I am about to do some HV measurements on a transmitter it would be handy to reacquaint myself with the device. It was an ex TV HV probe with a metal (ring guard) as part of the plastic barrel. The borrower is welcome to borrow again after I finish my job..

*Thanks Craig VK3KG.*

### VK3BML club station of Ballarat Amateur Radio Group.

**HF NET:** Every Thursday Night at 8 pm on 3.608 MHz - VK3BML

DATE	OPERATOR	NAME	ALTERNATIVE OP.	
26-Sep-19	VK3EXE	Chris	VK3DRE	Doug
3-Oct-19	VK3KQT	David	VK3AXH	Ian
10-Oct-19	VK3DRE	Doug	VK3TXR	Paul
17-Oct-19	VK3AXH	Ian	VK3GGG	Mick
24-Oct-19	VK3 TXR	Paul	VK3ESE	Chris
31-Oct-19	VK3GGG	Mick	VK3KQT	David
7-Nov-19	VK3EXE	Chris	VK3DRE	Doug
14-Nov-19	VK3KQT	David	VK3AXH	Ian
21-Nov-19	VK3DRE	Doug	VK3TXR	Paul
28-Nov-19	VK3AXH	Ian	VK3GGG	Mick
5-Dec-19	VK3TXR	Paul	VK3EXE	Chris
12-Dec-19	VK3GGG	Mick	VK3KQT	David
19-Dec-19	VK3EXE	Chris	VK3DRE	Doug
26-Dec-19	VK3KQT	David	VK3AXH	Ian
2-Jan-20	VK3DRE	Doug	VK3TXR	Paul
9-Jan	VK3AXH	Ian	VK3GGG	Mick
16-Jan-20	VK3TXR	Paul	VK3EXE	Chris
23-Jan-20	VK3GGG	Mick	VK3KQT	David
30-Jan-20	VK3EXE	Chris	VK3DRE	Doug
6-Feb-20	VK3KQT	David	VK3AXH	Ian

## Vol 87 No 4 . AMATEUR RADIO August 2019

A Simple QRP Transmit shield for Raspberry Pi single board computers.

UTC Real time clock

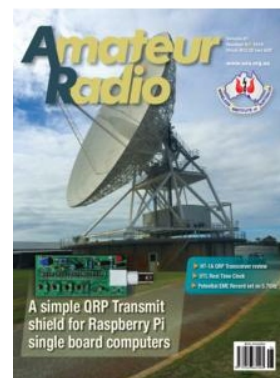
Review. Comet SBB-5 Antenna and DIAMOND K416 Mobile mount.

HT 1A CW QRP Transceiver

Your SDR around the home.

Receive SSB on your 27MHz AM CB.

Find that source of RF noise with QRM.guru.



### **474khz and 136khz, 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!

With 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.

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 problem.

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 is the backbone of our "WSPR" operation.

Most evenings I put up a "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 this band. Just Google these programs to download and find 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 160m or 80m antennas can be pressed into service with some modifications. A large loading coil will be required and information on these is available locally especially on the design and location of suitable materials for its manufacture.

Transmitting on these frequencies is not covered by off the shelf Amateur rigs but we need to look at using a transverter to run WSPR which only requires low power in the region of five watts. 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, also available at our local supplier, Wiltronics. 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.

These frequencies are possibly not those you would have thought about but you might like to "give it a go". There are a number of club stations active on 474khz, VK3AIG, VK3AXH, VK3IDL and VK3BNC from time to time. Any questions would be welcomed and assistance provided if it means more stations on the air. The tricky part of this project is the antenna, loading coil and generally tuning of the system, 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 on my wish list is W and JA prefixes. VK4YB with an extensive antenna and excellent location works USA, JA, KH and VE. Perhaps the crystal set is not really dead! Any assistance or help in sourcing parts or bits or indeed whatever, just call.

*See you on 630m, 73's Bob VK3BNC*

TAC BANDPLAN notes.

Outward QSL bureau operation.

VK6 and the Dish.

A GaAs FET preamp for 2 metres.

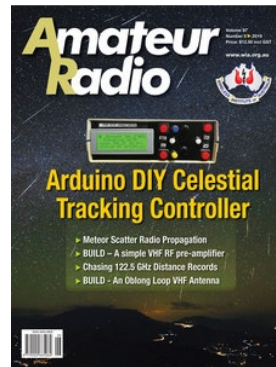
K3NG Az/El rotator control for EME and microwave use.

SWR and the meaning of life.

Chasing the 122.5 GHz distance record.

Build a 50 ohm oblong loop for 144 Wspr or SSB.

Use Corflute for HF radial counterpoise pads in field day or portable activation.



### 496 ELECTOR MAGAZINE. July & Aug 2019.

#### REGULARS.

P63 Peculiar Parts TL431 Precision programmable reference.

P76 Q&A

P80 Err-lectronics Corrections feedback and updates.

P82 Elector store highlights. Equipping your Maker lab.

P90 Homelab helicopter.

P104 From tubes to silicon.

P110 Elector Ethics.

P112 The Store.

P114 Hexadoku electric Sudoku.

#### FEATURES:

P14 Create a 100% private vocal assistant with AI.

P22 Snips speech recognition. With an example for Raspberry Pi.

P34 Revolutionary battery pack design .

P49 Towards a Tsunami of Light.

P50 Paris 2019 Elector challenge

P64 IOTA Crypto currency Pt 2 PiDiver – FPGA board for fast calculations.

P72 AS Interface Essentials for industrial automation.

P78 An Elector BoBs Catalogue.

#### PROJECTS:

P6 A Six channel Temperature monitor & Logger.

P48 Bright Flashing LEDs.

P50 Qt for Raspberry Pi

P54 New CPLD board with MAX 10.

P58 Waterflow Monitor with ESP-32

P94 ESP-32 as a Timer Server plus RTC plus GPS display.

P100 Create a new component (Symbol) for KiCAD package.

