BARG News

Ballarat Amateur Radio Group

Inc. #6953T

July

Monthly Newsletter

Next Meeting

Friday 31st July 2015 @ 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 1261
Mail Centre
Ballarat. Vic. 3354

Or E-Mail : **vk3bml@barg.org.au**

We're on the web
www.barg.org.au

A WORD FROM THE COMMITTEE

With the arrival of the new financial year subs are again due. They can be paid at a meeting night or paid direct deposit to our bank. Subs have remained at $40 individuals and $50 Family.

The Bendigo Bank.
Acc title: BALLARAT AMATEUR RADIO GROUP.
BBS 633-000.
ACC. No 142591247.

Please include name and call sign to be included when deposit made so we can track it down and reply with a receipt.

The AGM will be held on Friday, August 28th, the Committee wishes to advertise this important event and would ask members to consider nominating themselves for one of the various positions which need to be filled. The club is run by the members. If none of the members are willing or able to take up the executive roles the club will not be able to run. The roles are not onerous, and there's plenty of support. So please do consider taking on a role, even if it's only for a single term.

There's a nomination form here. If filling that in and sending it back is a challenge, an email nominating yourself for a role to the secretary will work also. (Nominee's and seconders can be sorted out at the AGM)

B.A.R.G. Inc. NOMINATION FORM

Ballarat Amateur Radio Group—Inc # 6953T

DATE: _____

I wish to Nominate _____ CALL: _____

For the position of _____ of BARG Inc.

Nominated by: _____ and _____

Nomination accepted by: (Nominee) _____

Regards, Ian Mc - VK3AXH

A Word From The Editor

Welcome to the July edition of the Ballarat Amateur Radio Group newsletter. Thank-you very much to all those who've contributed again to this edition of the news letter. We're always interested to hear what's going on round the club, so if you attend an event then take a photo and write a few lines. If you have a new piece of kit, had a classic disaster, made an interesting contract, why not tell the club about it. It's as simple as dropping me a note. Don't worry about formatting or type of media. I can work with you to sort that out.

This month we've about caught up on the back log of articles too. I'll aim to get the next issue out the weekend before the meeting, which is 22nd / 23rd August.

Malcolm

VK3MEL

Ballarat Amateur Radio Group Hamvention

Sunday the 25th of October

Ballarat Greyhound Racing Club

Corner of Rubicon and Sutton Streets, Ballarat. 3350. (next to the Trotting Track)

* Doors open at 10:00 am.
* Entry is $6.00 per person and cost of hiring a table $10 each (1.8m)
* There will be Trade displays from the usual traders.
* The usual and popular pre-loved equipment displays and sales.
  (you never know what you may find!!.)
* Food and drinks will be available on the premises.

FOR INFORMATION AND BOOKINGS CONTACT:

Hamvention Coordinator: Roger VK3ADE Email To: hamvention2014@barg.org.au

Vale Ian Stanley, VK3CIS

It was with regret we heard of the passing of Ian Stanley VK3CIS on 13 May 2015 after a long illness. His Celebration of Life service was held at the Neil Street Uniting church on the 20th May with a large gathering of friends from the BARG club in attendance to share in his life memories with XYL Kathy and family. He was a man with an interest in trains and memorabilia as well as football statistics. Ians final journey was accompanied by the sounds of his beloved steam trains with whistle and full steam as it left the station.

At the clubs General meeting on the 29 May a moments silence was observed in Ian's memory.

The BARG committee and members offer their sympathy to Kathy.

VHF and Above for July 2015

With winter well and truly with us propagation on the higher bands has been a little bit scarce. However there are still contacts to be made on 2m SSB most mornings within VK3 and to VK5. In addition the aircraft enhanced signals are still to be found on 144.2 from VK3 into both VK1 and VK2. BARG members include VK3KG, VK3AIG, VK3PMG, VK3KQT and VK3AXH.

To maintain one's enthusiasm each year an event known as **GIPPS TECH** is organised by the Eastern Zone radio group and held in Churchill near Morwell at Federation University. The event begins on Friday evening with an information meal at the Morwell Hotel and kicks off the following morning where presentations are given by radio amateurs on a wide range of topics of interest to the group which numbered around 120 this year. The event concludes around 1pm Sunday.

Topics ranging from the progress of digital radio to experimental balloon launches with a payload to a home built CNN device and everything in between. In addition to the presentations there are displays of equipment, sales of components and the opportunity to catch up with those amateurs we normally talk to on air. Amateurs from all over Australia attend including some from New Zealand.

There is no doubt that computers are now playing a big role in communications with a range of radio's now available together with SDR devices. It won't be long before you will hear lots of noise bands across our analogue radio's dial due to the expanding use of digital transmissions.

Rex VK7MO gave an excellent report of the propagation mechanisms to achieve his world distance record from the NE corner of Tasmania to VK6DZ in Western Australia over a distance of approx 2700km on 10GHz. Rex has also continued his experiments with aircraft scatter tests with distances up to 900km on 10GHz and around 500km on 24GHz from portable stations set up throughout VK2, VK3, and VK5 back to David VK3HZ generally located in or not too far out of Melbourne.

A great weekend for all with 3 BARG members attending this year ie VK3KG, VK3KQT and VK3AXH

Till next time….73 Ian, VK3AXH

Vale Brian Stares, VK3KQB

BARG Life member Brian Stares passed away on 17th June 2015. Brian was born in Casterton, Victoria, and served in the RAAF between 1950 and 1956 as a Radio Technician "Air". He was a keen and active member of the Ballarat Amateur Radio Group for many years.

The BARG committee and members offer their sympathy to Brian's family.

THE 2 METRE ROLL UP ANTENNA.

A recent construction night spent time looking at simple antennas, and one that was of particular interest was the 2 meter roll up. Craig VK3KG showed the group that ones that he'd built and used successfully over the years, and has provided the attached article for those that might be intested in building their own. Craig also provided some diagrams with dimensions, but technology got the better of us, meaning it was not able to be printed in this issue of the news letter.

This antenna was originally described in the WA VHF Groups Bulletin 1982 and then reprinted in Amateur Radio Sept 1985. A further reprint in the WICEN News for 1996 eventually caught my attention and I decided to build one. Also Garry VK3TGB built one and made further upgrade suggestions.

Because WICEN discouraged the use of any transmitter with less than a healthy ten watts output it initially meant that the use of a handheld radio was not desirable as the main VHF radio in any station set up. Of course a handheld was still ideal for using around the larger sites where you may wish to call someone but not on the main working channel. As sometimes these people were moving out of the camp site a better antenna [or higher power] was indicated.

Unless the camp site pole or tower could accommodate another antenna and coax run we had to improvise and use another antenna and support. The use of a flexible antenna that could be hauled up a tree/building etc started to appeal when this original reference was found.

As well as a base station alternative it can be taken on holidays with the radio [HTT] and used in hotels and motels when travelling. Using small size coax like RG58 the weight and space factor isn't a real concern. I also carry this antenna in my truck or van to supplement the roof mounted antenna when in the bush and having difficulty with getting out from a position. A quick try with this throw up a tree device allows me to ascertain if its worth unpacking and erecting the telescopic mast and the J pole antenna from this position.

The circuit for the roll up antenna can be seen in Fig 1. The value of cap at 3.6pf is only approx. and can be pruned during the tune up process. The inductive stub will be made from a 290mm length of coax which is then shorted at the bottom end.. It is possible to substitute for the coax capacitor with a small silver mica SM cap or similar but its not as easy to adjust for correct value when picking items out of the capacitor draw. Far easier and quicker to rely on the fact that coax is manufactured with a known specification of how many pf per metre [or foot] there is and by cutting off or pruning the length the correct value can be found for the job. Years ago when adjusting valve oscillator circuits two wires could be twisted together to make a small capacitor known as a "gimmick"and this allowed fine cap adjustments to be made.

The main items required to construct this antenna is the RG58 coax cable and some insulating tape/epoxy and a nylon cord length. I use a couple of small plastic cable ties in lieu of the nylon cord look. To use a different cable [there are some quite small and light weight ones available now] you will need to allow for the different Velocity Factor [VF] and recalculate lengths.

STEP A Mark and cut one length of coax to 940mm. This will become the half wave vertical radiator of the antenna and we only use the outside shield. You will need to cut about 5mm of the plastic jacket off at one end only. This will later be soldered to the incoming coax.

STEP B Mark and cut the inductive stub to 300mm. At one end pair back the vinyl jacket by 10mm and the braided section by about 4mm. The braid can be lightly soldered and the inner stripped about 1.5mm and tinned. The bottom end is stripped back just enough to allow the inner wire to be soldered to the outer braid in a tidy fashion.This bottom can now be covered over with a boot of some description to prevent moisture ingress.

STEP C The capacitive stubb and the feed cable is now prepared by rolling out a length of coax that will be the feeder cable. My initial unit was 4 metres long onto which you allow another 50mm which will become the capacitive stub. See FIG 2. Completely remove the jacket and the braid from the coax at about 50mm from the end. The gap should be 10mm wide and the two braided ends may then be soldered to prepare the final assembly. This cut in the coax is the point where the antenna, the inductive stub are all joined later. We have allowed 50mm in the capacitive stub but it will be about 35mm once we have completed the pruning to minimise the SWR on set up.

STEP D Lay the three coax pieces on a flat surface and using 22swg tin copper wire or similar bind the prepared braided ends of the feen coax to the inductive stub and solder. You may use stripped wire from some hookup if no TCW available.

STEP E Now bind the 940mm antenna section to the outer braid of the capacitive stub and solder together. At this time the inner section from the inductive stub can be solder across to the braid section of the antenna/capacitive stub. The antenna should now be ready for testing although the join is not very stable we need to give it some stiffness to prevent damage to our soldering. I used about 60mm of a red plastic knitting needle to act as a brace which is eventually hidden when wrapped up.

STEP F Terminate the end of the feeder coax with selected plug. I have used BNC's because most hand helds use it or an adaptor is easy to find for any of the other types. Generally an PL259 will be too bulky especially if a step down adaptor is used. At this time the top of the coax antenna is sealed against moisture and some type of hanging device provided. For my antennas I use a length of suitable black nylon cord and use two heavy duty cable ties to hold it to the vinyl of the coax. This length can be of your design or just to make a small loop which can then be increased by connection to fishing line or other halyard materials.

STEP G Now hang the assembly in a clear area outside while the tuning and adjustments are done. The use of an antenna analyser will make the job easier however a suitable transmitter and SWR meter can be connected and the band swept to observe where the best SWR is obtained.

With the initial 50mm length on the capacitive stub the frequency will be so far out of band and well low of the desired center frequency of 146Mhz. Note this freq well then cut off 5mm from the stub. The freq should change significantly as removing 2mm should alter by about 500kHz.Provided you added the 50mm at the start you have 15mm to remove slowly as you approach the desired frequency.

With an antenna analyser it is easier to use and find the out of band position than with other transceivers. If no analyser available you need to trim slowly and carefully until you note a changing SWR at the bottom edge of the 2M band. Once this starts to indicate it is becoming lower and approaching a 1:1 value sweep the band and check at a couple of other points before removing another small clip of the coax. When cutting ensure the braid and the centre conductor isn't left touching before taking the next reading.

Once you have come into the band set the frequency to 146Mhz and observe the effect on this frequency as you prune the coax. You can then step each side of the freq toobserve how the SWR appears above and below but return to 146 to make the next adjustment. Remember that its so easy to cut it off BUT not so easy to put it back on if you go too far and the SWR starts to rise again.

SHOULD THE WORSE HAPPEN and you have taken too much cap off you can cut another stub and solder it onto the junction however it may make the join bulkier when you have to seal it up later on.

STEP H When you have completed the adjustment and happy with its performance. Try accessing a distant repeater using the sets rubber ducky antenna. Note the quality of the returning signal [is it noisy or fully quieting. If you have an S meter or bar meter note the strength then connect this device and try again. The difference should be obvious.

Further test it by working a simplex station and changing the antenna. This will not have the benefit of the repeaters elevated height and sensitivity to affect the results. And should be a significant difference.

Finally the soldered junction needs to be securely sealed and taped over. Beware that using some forms of silastics to seal the ends of the coax and the junction can affect the SWR readings as it cures and the dielectric characteristics vary. Originally I obtained some rubberised caps that came of the ends of coaxial cable when on the drum and these make excellent seals over the ends of exposed cable. Wrap all joints well and ensure the plastic knitting needle stays in place as binding is concluded

When all complete check the SWR once more and note how far up or down it allows operation to where a 2:1 SWR is noted.

This project should take about two hours work to complete and is a handy antenna to keep in your tool box when in the field and has been proven of use when travelling overseas on holidays.

Craig VK3KG

A former Army Sergeant took a new job as a high school teacher. Just before the school year started, he injured his back. He was required to wear a light plaster cast around the upper part of his body. Fortunately, the cast fit under his shirt and wasn't noticeable when he wore his suit coat.

On the first day of class, he found himself assigned to the toughest students in the school. The smart aleck punks, having already heard the new teacher was a former Army Sergeant, were leery of him and he knew they would be testing his discipline in the classroom.

Walking confidently into the rowdy classroom, the new teacher opened the window wide and sat down at his desk. When a strong breeze made his tie flap, he picked up a stapler and stapled the tie to his chest.

Dead silence... The rest of the year went smoothly.

Round the Web

HamShield for Arduino (VHF/UHF transceiver)

A Kickstarter project that's building a radio shield for Arduino's. If you've not heard of Kickstarter before then now might be the time to look. Kickstarter is one of a number crowd funding sites. Creative people can advertise their projects and seek funding support. Usually they'll offer rewards for various levels of funding. In the case of the Hamshield, by investing ~$100US you'll get one of the early shields.

Kickstater projects don't get any of the funding unless the minimum funding goals have been set. Hamshield has met the goal, so it'll definitely go ahead.

If you decide to invest you should be aware that it's a project concept, not a finished product. The Hamshield team have completed the protypes and now need money to commit to a commercial manufacturing run.Manufacturing runs can have unexpected complications and delays. Kickstarter themselves can't provide any guarantee that the product will actually arrive.

I've signed up to a couple of Kickstarter projects. One was very late, but they all delivered what they promised.

If your intersted in the Hameshield you'll need to be quick. It closes on Thursday, July 30 2015 18:18 AEST.

The HamShield supports a wide range of VHF and UHF frequencies, covering 3 amateur bands. This includes the 1.25 meter or "220" band (220 MHz to 225 MHz), which is notoriously hard to find equipment for! It also can transmit on MARS bands.

The HamShield supports both voice and packet radio modes. You could even invent your own digital modes with enough skill. It is compact, lightweight, and works great with any Arduino or Arduino compatible that supports Uno-style shields.

The HamShield is the product of 12 months of design, engineering, and prototyping. This May 2015, we had our final design. We need your support to bring the economies of scale in our favor, fund the final development, part purchasing, and production of our shield, and help bring innovation back to Ham Radio.

With the HamShield, you no longer need a dedicated radio or piece of equipment for each type of operating mode. There is also no need for complicated radio interface cables. The radio is now under your complete control!

You can find the Kickstarter project here:
https://www.kickstarter.com/projects/749835103/hamshield-for-arduino-vhf-uhf-transceiver

OzQRP MDT Kit

The guys at OzQRP have just released a new 40m SSB kit. All through hole components and supplied with case and all components. At around $80 it sounds like it'd be a great kit for those wanting to have a go a constructing their own transceiver. The only extra bits that need to be obtained are a microphone and antenna.

Best of all, it's an Australian kit, so shipping costs are minimal.

The MDT (Minimalist Double Sideband Transceiver) is an inexpensive and easy to build kit for the 40M band. It is ideal for the first time builder as all parts except the microphone socket are mounted on a single PCB and all the components are through hole.

http://www.ozqrp.com/MDTindex.html

Features:

1. Size 130mm x 100mm x 50mm.
2. Sensitive Direct Conversion receiver.
3. Up to 2W PEP power output.
4. Frequency range 7.090MHz - 7.130MHz or 7.050MHz – 7.110MHz.
5. Microphone amplifier accepts standard low impedance dynamic or Electret microphone with selectable on-board bias resistor.
6. LED transmit power and modulation indicator.
7. 3.5mm stereo headphone connector. Can power external loudspeaker.
8. Carrier suppression up to 50dB.
9. All spurious transmit outputs better than -46dBC.
10. Receive current approximately 50mA.
11. Transmit current approximately 250mA at maximum power output.
12. Reverse polarity protection using a series-diode.

Band Reports

The 2M SSB net on a Wed night [144.150] at 2030hrs local is still active as is the morning Side band net on 144.100 each morning at 0800 – 0900. Those with beams should swing towards Mt Gambier to see who is about. As summer approaches there should be more stations about.

The 80m club net on Thursday 11 June had 18 stations active, and another 4 logged in only and didn't stay for a chat.

The 2M Tuesday gathering on VK3RBA also draws a number of Club members as well as Melbourne and Western District operators.

73 Craig. VK3KG

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P6 Keylines: Our changing hobby .

P7 News desk. New products and awards. International Museums weekends, Cubesat mission

P9 Dayton Hamvention News and Products.

P12 Review: ICOM ID-51E Plus review. D Star VHF/UHF handheld.

P 16 Review: 3 Element 144Mhz LFA-Q Antenna from InnovAntennas.
This looks like an interesting device for the home, the portable field day or even SOTA activity as its easy to collapse and assemble.

P23 User Review: TheRigExpert AA-54 Antenna Analyser. This unit covers 100Khz to 54Mhz but there are other devices that cover to 170Mhz, 1000Mhz and to 1400Mhz. Each has a LCD display & uses the USB to connect to a laptop and will display SWR, Z,X,R,L & C for individual frequencies. A swept display will show for multiple frequencies.

P26 Build your own 2Metrereceiving convertor. Homebrew like it used to be. Kits can be purchased from www.spectrumcomms.co.uk

P30 Stable Voltages by Rev George Dobbs. Looks at voltages for stable VFO's.

P32 Remotely switch your Antennas with relays., and use a remote ATU.

P36 An ARDUINO Project. To program a simple digital voltmeter.

P46 In the Shop with Harry Leeming. Looking at faults in early FT290 and checking your FM deviation set up.

P50 LiPo Batteries and 4G TVI problems.

P53 HF Highlights. Nepal, Sporadic E and More.

P58 World of VHF. Spanning the Atlantic on 144MHz.
Troppo over 4686 Km. See www.youtube.com/watch?v=MZmBANS5ong

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P67 Looking for PCBs for published projects in Prac Wireless.

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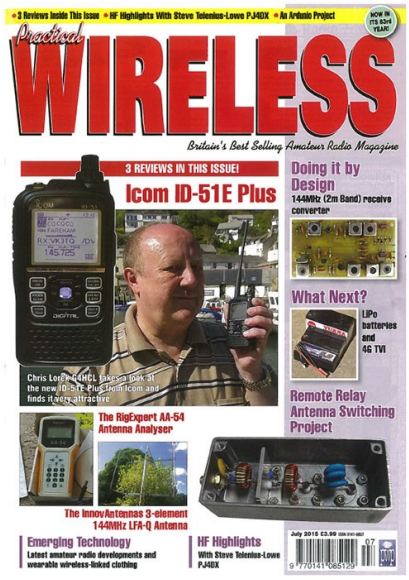

73 Craig. VK3KG

Florida woman stops alligator attack with a small Beretta pistol.

This is a story of self-control and marksmanship by a brave, cool-headed woman with a small pistol against a fierce predator. What is the smallest calibre that you would trust to protect yourself? A Beretta Jetfire testimonial.... Here's her story in her own words:

"While out walking along the edge of a pond just outside of The Villages with my soon to be ex-husband discussing property settlement and other divorce issues, we were surprised by a huge 12-ft. alligator which suddenly emerged from the murky water and began charging us with its large jaws wide open. She must have been protecting her nest because she was extremely aggressive. If I had not had my little Beretta Jetfire .25 caliber pistol with me, I would not be here today! Just one shot to my estranged husband's knee cap was all it took.... The 'gator got him easily and I was able to escape by just walking away at a brisk pace. It's one of the best pistols in my collection! Plus the amount I saved in lawyer's fees was really incredible.

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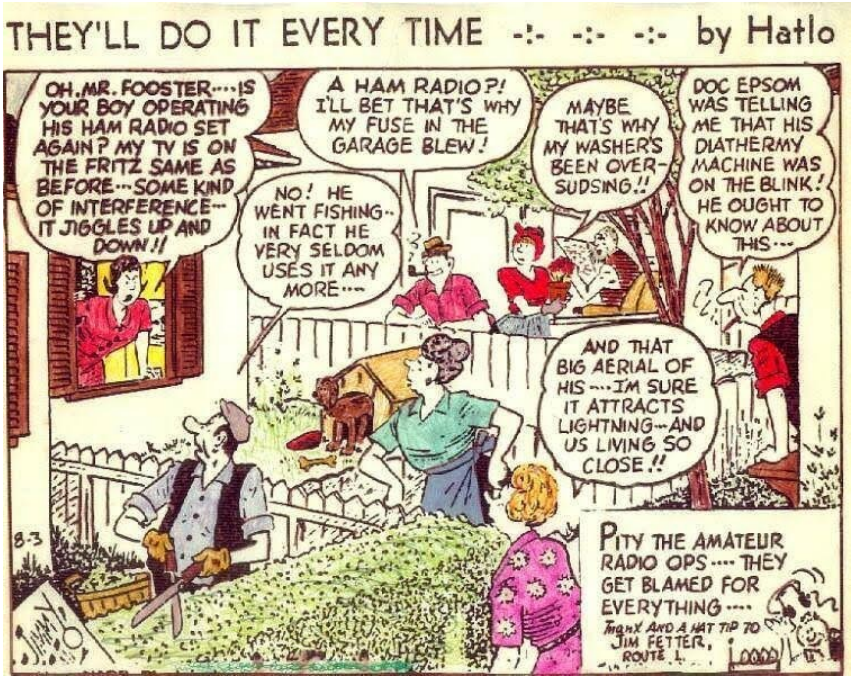
73 Craig. VK3KG



Square Testicles

An elderly woman walked into the Royal Bank of Canada one morning with a purse full of money.. She wanted to open a savings account and insisted on talking to the president of the Bank because, she said, she had a lot of money.

After many lengthy discussions (after all, the client is always right) an employee took the elderly woman to the president's office.

The president of the Bank asked her how much she wanted to deposit. She placed her purse on his desk and replied, '$165,000'.

The president was curious and asked her how she had been able to save so much money . The elderly woman replied that she made bets. The president was surprised and asked, 'What kind of bets?' The elderly woman replied, 'Well, I bet you $25,000 that your testicles are square.'

The president started to laugh and told the woman that it was impossible to win a bet like that. The woman never batted an eye. She just looked at the president and said, 'Would you like to take my bet?'

'Certainly', replied the president. 'I bet you $25,000 that my testicles are not square.'

'Done', the elderly woman answered. 'But given the amount of money involved, if you don't mind I would like to come back at 10 ' clock tomorrow morning with my lawyer as a witness.' 'No problem', said the president of the Bank confidently.

That night, the president became very nervous about the bet and spent a long time in front of the mirror examining his testicles, turning them this way and that, checking them over again and again until he was positive that no one could consider his testicles as square and reassuring himself that there was no way he could lose the bet.

The next morning at exactly 10 o'clock the elderly woman arrived at the president's office with her lawyer and acknowledged the $25,000 bet made the day before that the president's testicles were square. The president confirmed that the bet was the same as the one made the day before.

Then the elderly woman asked him to drop his pants etc. so that she and her lawyer could see clearly. The president was happy to oblige.

The elderly woman came closer so she could see better and asked the president if she could touch them. 'Of course', said the president. 'Given the amount of money involved, you should be 100% sure. '

The elderly woman did so with a little smile. Suddenly the president noticed that the lawyer was banging his head against the wall. He asked the elderly woman why he was doing that and she replied, 'Oh, it's probably because I bet him $100,000 that around 10 o'clock in the morning I would be holding the balls of the President of the Royal Bank of Canada!'