

Monthly Newsletter
Of The
Ballarat Amateur Radio Group Inc. #6953T

Box 1261, Mail Centre, Ballarat, Victoria, 3356, Australia.

Next Meeting:

Friday, 27th of June, 2014, 7.30 pm



BALLARAT AMATEUR RADIO GROUP INC. (BARG)

REG. NO. A0006953T - ABN 44 247 200 143

NOTICE OF ANNUAL GENERAL MEETING

Notice is hereby given that the Annual General Meeting of Ballarat Amateur Radio Group Inc. (BARG) for the year ended 30th June 2014 will be held at the Clubrooms, Huts 31A and 31B, Ballarat Airport, on Friday, 25th July 2014, commencing at 19:30.

BUSINESS

1. Confirmation of the Minutes of the Annual General Meeting held on 29th July 2013.
2. Any matters arising from the Minutes.
3. Presentation of Financial Statements for the year ended 30th June 2014 and Statement of Financial Position as at 30th June 2014, together with the Auditor's Report thereon.
4. President's Report for the year ended 30th June 2014.
5. Election of Office Bearers for the year ending 30th June 2014, including President, Vice President, Secretary and Treasurer.
6. Election of six Ordinary Club Members to the Committee of Management.
7. Appointment of the Auditor for the year ending 30th June 2014.
8. Confirmation of Non Elected Positions for the year ending 30th June 2014, including Amenities Coordinator, Awards Coordinator, Computer System/IRLP Coordinator, Construction Group Coordinator, Education Officer, Hamvention Coordinator, Librarian, Net Coordinator, Newsletter Editor, Property Officer, Public Officer, Radio Modernisation Coordinator, Technical Officer, Email Maintenance Officer and Web Site Officer.
9. Setting of Membership Fees for the year ending 30th June 2014.
10. Any other business.

BY ORDER OF THE COMMITTEE OF MANAGEMENT

Doug Ellery VK3FDRE

Honorary Secretary

25th June 2014

Nominations of candidates for election as Officers of the Club or as Ordinary Members of the Committee of Management shall be made in writing, signed by two members of the Club and accompanied by the written consent of the candidate and delivered to the Honorary Secretary not less than seven (7) days before the date fixed for the holding of the Annual General Meeting.


Nomination forms are available on the Club's Web Site, and will also be available at the Monthly General Meeting to be held at the Clubrooms on Friday, 28th June 2014 at 19:30.




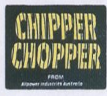


BA'S AUDIO WORKSHOP PTY. LTD. ABN 59 007 427 778
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BALLARAT

UTO SOUND SPECIALIST
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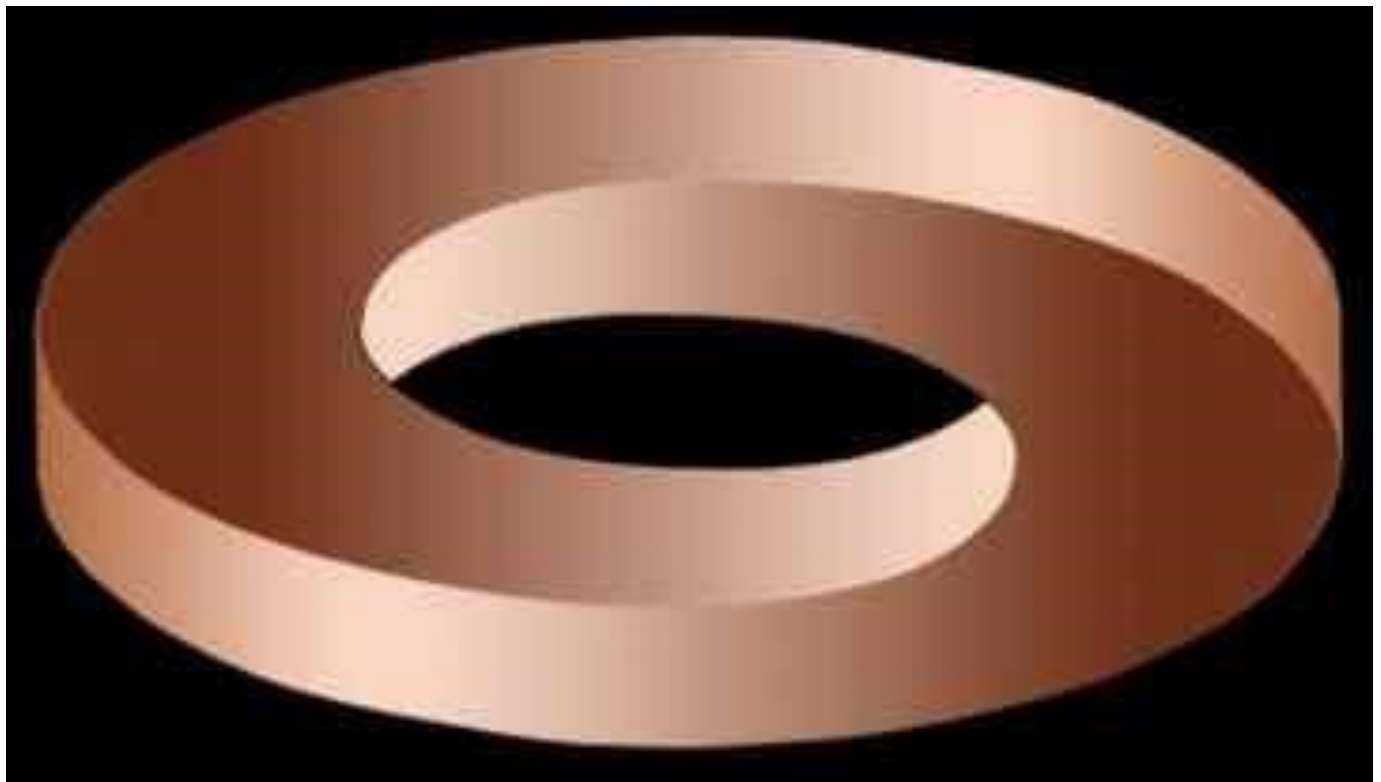
8 EASTWOOD ST., BALLARAT 3350
Tel. 5333 4465 Fax. 5331 5851

HEWITT & WHITTY Pty. Ltd. Outdoor Power Equipment	
Cnr Carrngham Road & Wiltshire Lane Ballarat VIC 3350 Phone: (03) 5336 1344 Fax: (03) 5336 1027	Damien Hennessy Sales / Spares Mobile: 0417 313 811 Email: damo_611@hotmail.com
	






 Engineered Products Group


B.A.R.G Items for Loan.

Antenna Analyser MFJ269 HF-VHF-UHF
Antenna Analyser MFJ249 HF/VHF
UHF Antenna Analsyer
Antenna Analyser VHF. Autek.
Receiver Drake SSR-1.
Receiver FRG-7.
Transceiver TS-530.
Oscilloscope BWD 509.
Grid Dip Oscillator.
Safety Belt.
Antenna Gin Pole.



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It's only six months since we first brought you the story on these Australian-built electric superbikes. Now they're ready to race again with significant improvements – by Andy Marsh & Ross Tester

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Portable scope has two fully isolated inputs with 240k points memory and a fast update rate, a built-in DMM, 14.5cm colour touchscreen, data logging and optional serial bus decoding – by Nicholas Vinen

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Is your router's WiFi too slow to run your smart TV? If you can't use a direct Ethernet connection try using Ethernet power line adapters – by Leo Simpson

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Everything about this superb loudspeaker system is impressive: size, power handling, efficiency, extremely wide frequency response and low distortion. And they sound absolutely brilliant – by Allan Linton-Smith

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Developed specifically for the Majestic Loudspeaker System, this versatile design can also be customised and used anywhere a 2-way loudspeaker crossover network is required – by Nicholas Vinen

40 Touch-Screen Digital Audio Recorder, Pt.1

Want to record & play back audio with CD sound quality? This compact device records to & plays back hours of audio from a standard SD card and doubles as an SD card reader when connected to a PC via USB – by Andrew Levido

64 The Micromite: An Easily Programmed Microcontroller, Pt.2

This month, we show you how to control external devices. In particular, we detail infrared (IR) remote control and describe how to measure temperature, control a servo, interface to an LCD and keypad and much more – by Geoff Graham

84 40V Switchmode/Linear Bench Power Supply, Pt.3

Final article shows how to install the PCB into a case and modify the meters. It also gives the test and adjustment procedure – by Nicholas Vinen

Special Columns

58 Serviceman's Log

Resurrecting a faulty car key fob – by Dave Thompson

80 Circuit Notebook

(1) Modified SiDRADIO Has Exceptional Performance; (2) Micromite Clock Uses Analog Meters For The Time Display; (3) Arduino-Compatible Alarm Clock Has Large LED Dot Matrix Display

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**SILICON
CHIP**



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Super J-Pole Antenna

As shown on BARG Construction night by Kevin, VK3WN

The SUPER—J POLE for 435 MHz

By Peter Miles—VK3YSF— vk6ysf.com/superjpole.htm

The Super J Pole antenna is a co-linear vertical consisting of a number of half wave length vertical elements separated with half-wave length stubs (Tuning stub) feed with a folded matching stub. The sub doesn't receive or radiate any energy; it is simply a way of picking off the desired feed impedance.

Additional half wave length section can be added with addition of a half wave length tuning section (Tuning stub). The addition of half vertical elements could be added indefinitely, subject to reality of diminishing returns. This arrangement can be applied practically and usefully on bands within the VHF and UHF spectrum. The use of the J pole feed arrangement creates an antenna that is relatively ground independent compared to many other designs.

DIAGRAM OF THE SUPER J-POLE

Frequency:	435Mhz
Polarisation:	Vertical
(A) Main element:	502mm (<i>0.75 Wavelength x 300/f x k</i>)
(B) Matching stub:	167mm (<i>0.25 Wavelength x 300/f x k</i>)
(C) Additional section	344mm (<i>0.50 Wavelength x 300/f x k</i>)
(D) Tuning stub:	344mm (<i>0.50 Wavelength x 300/f x k</i>)
(E) Feed point:	Approximately 10 - 30mm from the bottom. Subject to adjustment for lowest VSWR

The dimensions of the Super J-Pole have been determined as follows:

Length (Mtr) = $300/f \times k \times el$

f = Operating frequency e.g. 435.5MHz

k = The effect of the diameter of the material in relation to the wave length (0.97)

el = Chosen element e.g. Wavelength main element, wave tuning stubs or wave matching stubs, 0.75, 0.50 or 0.25 respectively.

The associated photos are of my successful in service (2001 - 2006) version that covers the entire 70cm (430 - 450 MHz) band.

Practical construction

Construction is very simple. After determining the various element lengths, mark them out accordingly on a continuous length of copper wire and bend to achieve the antenna shape. The tuning section that separating the additional half wave length elements can be bent around to form a semicircle (see photos). Tape the wire formed antenna to a suitable length of dowel or fibreglass rod for stability.

After successfully impedance matching the coax feed point with a VSWR meter the antenna can be mounted inside a suitable length of conduit to protect the antenna from the effects of weathering.

It is recommended that the coax be attached through some sort of feed line choke arrangement to mitigate possible common mode currents in the transmission line.

Super J—Pole cont.

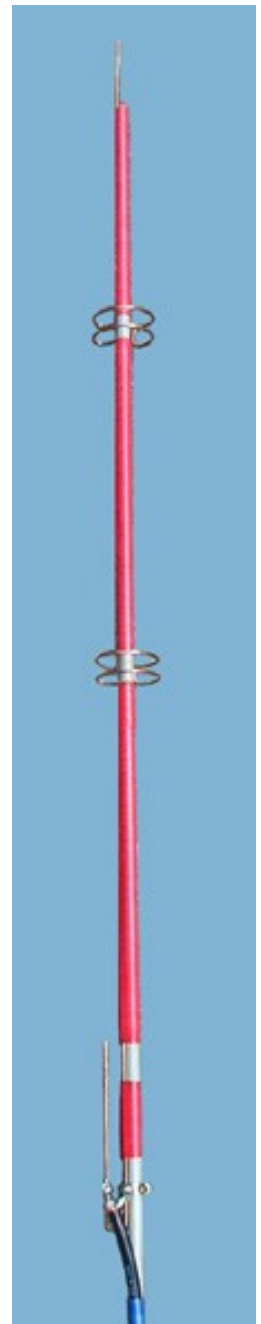
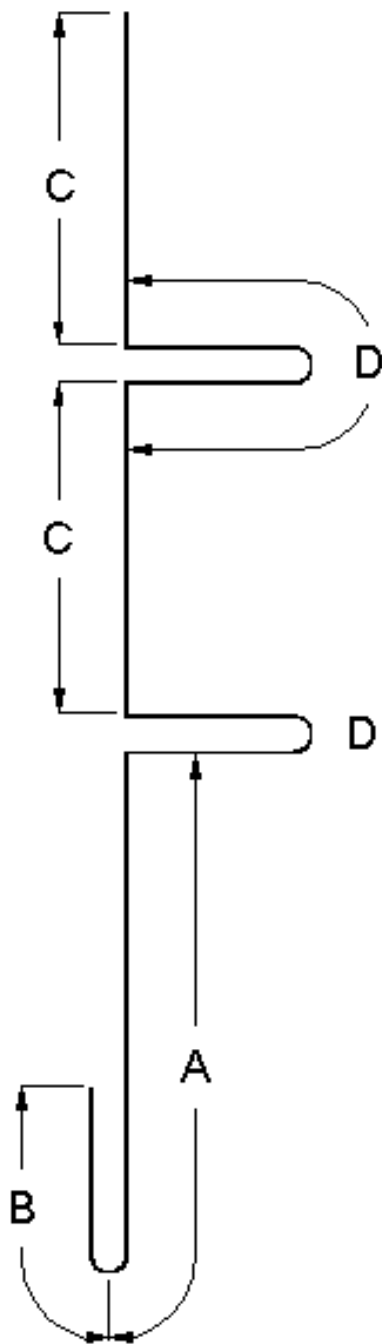
The Super J-Pole antenna for 430 - 450MHz was constructed and used for FM simplex and repeater operation

Note:

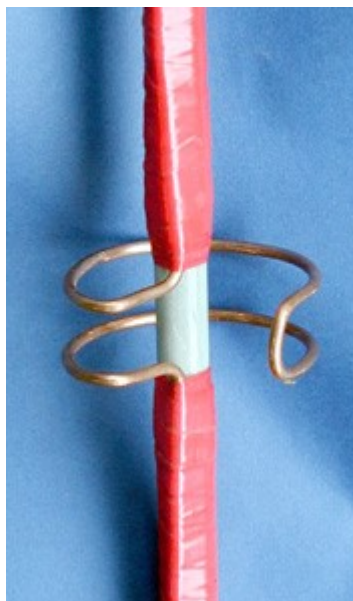
The photo of the adjustable feed point shows the coax connection polarity per the original construction as the polarity was viewed then to be unimportant. I have been convinced since that it is crucially important that the coax connection polarity be the reverse of that shown in the photo, that is the centre of the coax attached to the main element and the shield to the J pole stub.

For more information on the J-Pole see:

<http://en.wikipedia.org/wiki/J-pole>



Adjustable Feed Point



Tuning Stub



Complete assembly

New Microwave Band for Ballarat

On Thursday 19th June I was asked to try for a contact between VK3MQ located portable at the Mt Dandenong lookout and Mt Buninyong on 3.4GHz over a distance of 132 Km.

After a quick phone call we decided to call each other around 2pm on the same afternoon. The weather was freezing and Mt Buninyong was partly covered in low cloud with a fairly stiff breeze blowing from the north west.

Having setup the equipment using 144.150MHz for liaison running around 20 watts to a $\frac{1}{4}$ wave magnetic base on the roof of my car and the 3.4GHz equipment made from pcb's by Graham VK3XDK and a 20 watt PA imported from Israel and using an ex pay TV offset dish and home built pet food tin for the feed we were ready to go.

Rob VK3MQ was also using the same kit of pcb's with a 1.5 watt PA kit obtained from Mini Kits in South Australia. Rob had his 3.4G transverter frequency locked to a Rubidium standard so when he called on 3400.150MHz I didn't have to touch my dial as he was a booming signal at S9+15dB. My antenna was slightly realigned but was close enough not to see any increase in signal strength.

We chatted about each setup and after about 20 minutes decided to give it away due to the cold weather.

I'm pleased to say that VK3AIG, VK3CMC and VK3COW are all progressing well with their 3.4G projects and some are almost ready to also try out their Equipment. It's also great to see Bob VK3BNC now operational on 1296MHz and progressing towards 2.4GHz as well.

Hopefully this may inspire others to join in the fun and challenge of getting into the microwave bands.

73, Ian – VK3AXH



BITS & PIECES

This month is a special month in that we are being visited by the Geelong Radio Electronics Society (GRES) and we would hope as many members as possible can attend.

We would particularly extend an invitation to our friends from Maryborough to come along and join us, this is a great chance to get a lot of Western Victorian Amateurs together for a talk and some socialising.

Our guest speaker this month is Fred Swainston VK3DAC, Fred is among many things a director of the WIA and has kindly volunteered to give a talk on the challenges facing the WIA over the next 12 months. Others will know Fred from his excellent Amateur Radio Text books or perhaps from his personal involvement in designing train courses. I think we really struck lucky when Fred volunteered to present for us and it would be lovely to repay him with a great roll up.

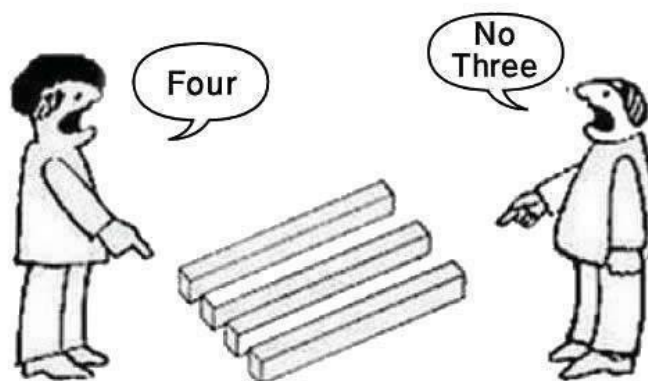
And more news is Peter Cossins, VK3BFG will return in September with a demo digital ATV repeater and talk about the building of the Melbourne Digital ATV repeater.

As usual the meeting will kick off at 1930 hours on Friday the 27th of June at the Club Rooms, Ballarat Airport.

Roger VK3ADE.

BARG. President.

IT IS REALLY CONFUSING!!!!



This may be of interest.....

An extraordinary collection of antique radios from the 1920s to the 1960s takes us on a journey through changes in communication, entertainment and design.

Follow the link below.

<http://www.abc.net.au/local/photos/2014/06/10/4022175.htm?§ion=news>

73, Ian VK3CIS.

ACMA have just announced the Amateur licence fee has risen to \$74 per annum and if you are making some variation to your licence, i.e. taking a new call sign on a whim or doing a licence call sign upgrade and wish to "trade in" the old call sign then that cost is still \$49. Whether you wish to do this may depend on how much time is left on the present licence before need to renew.

I have seen many let the old call sign run out and just pay up [\$74] for the new licence.

Bit hard to operate two call signs at the same time though.

73 Craig VK3KG.

Winter VHF/UHF National Field Day Event 21/22 June 2014

Another radio activity day has come and gone and although I didn't go into the field mainly due to the weather at this time of the year I managed to have a few contacts with those individuals and groups that braved the elements to have those illusive contacts we all like to have.

It will be interesting to see the results as you may have noticed in AR magazine some scoring changes have been undertaken for this event to try and help those stations that operate from locations in rural areas to achieve a more deserving result.

The main change is to give credit to stations that have contacts over greater distances particularly on some of the higher microwave bands rather than having a contact with just another grid square. This means the longer distance say on 10GHz ie Ballarat to Mt Gambier attracts higher points than say Ballarat to Geelong.

Again I think these activity days whether they are HF or VHF are a great opportunity for members so set up stations in the field and have some fun.

There are many events where BARG could participate just like the recent one where a 40m station was setup near the club rooms. They include the John Moyle, Summer and Winter VHF Field Days, SOTA and National Parks Award events

Let's give this activity some serious thought and generate some enthusiasm into what we do with amateur radio.

During this past weekend I managed to have contacts from my home station on 144MHz, 432MHz, 1296MHz and 2.4GHz.

My 2 cents worth, Ian – VK3AXH



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) _____



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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) _____

BALLARAT AMATEUR RADIO GROUP INC. REG. NO. A 0006953T

CLUB REGISTER AND ANNUAL SUBSCRIPTION CHECK

NAME:	_____	MOBILE PHONE:	_____
CALL SIGN:	_____	EMAIL ADDRESS:	_____
STREET:	_____	WIA MEMBER?:	YES <input type="checkbox"/> OR NO <input type="checkbox"/>
SUBURB/TOWN:	_____	PARTNER'S NAME:	_____
POSTCODE:	_____	SUBSCRIPTION PAID:	\$ _____
WORK PHONE:	_____	RECEIPT NO:	_____
HOME PHONE:	_____	RECEIPT DATE:	_____
If the Club decides to publish a Club Directory, are you willing to have the above information included?		YES <input type="checkbox"/>	OR NO <input type="checkbox"/>
SIGNATURE:	_____	DATE SIGNED:	_____

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