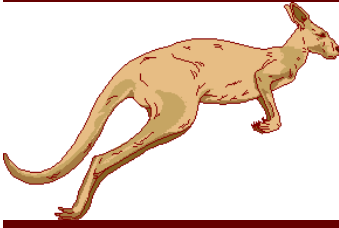


Volume 35 Issue 8

September 2004



IO CLUB

SUBURBS AMATEUR RAD

WESTERN AND NORTHERN

WANSARC NEWS September 2004

Incorporated Number



ALL ICED UP

It happens every year—the temperature drops, the ice forms and what were once gleaming metal structures become a magnet for ice crystals. Now how much attenuation do we have here?? Picture shows telecommunication tower at Mt. Hotham.

DELIVER TO:

If not delivered within 7 days, please return to:
WANSARC PO Box 336 RESERVOIR Victoria 3073

NEXT MEETING Friday September 3 2004— General meeting and natter night. A good time to catch up with other club members and share ideas, experiences and gossip!

Around the Shack	2
Stormy night successfu	3
Troubleshooting valve radio's	4
A 2 element Yagi	5
Laughter is a Medicine	6
Circuit ideas	7
Laughter is a Medicine	6



CLUB FREQUENCIES

146.450Mhz FM and
28.470MHz USB

Around the Shack

- So the RD contest is over for another year and general comments from many amateurs indicate that the number of stations around for contacts was well done on the last few years. Aside from remembering those amateurs who lost their lives in war, it is a great time to catch up with fellow amateurs. Club members active during the RD included Reg VK3KK, Grant VK3HFS, Mark VK3PI and Mick VK3CH. Jim VK3DBQ from NERG's was extremely active, with Mark VK3BYY giving out a few numbers.
- The Lighthouse Weekend followed the RD contest weekend, with many BIG signals on the bands. VK5SR, Club Station of the Mount Gambier Radio Club had a fine signal on 40 metres with an inverted vee at the top of a flagpole.
- And many of our members will



have been a little weaker but try listening around 1830—1930 local time.

- EA3JE heard on 20 metres recently with a 5x9 +20 signal—reason? 6 elements over 6 elements over 6 elements monoband at 65 metres!!! Lou was using an FT1000 driving the system—wonder how he obtained his tower approval??
- Congratulations to Mark VK3BYY on his receipt of Life Membership of the NERG's. Dave VK3JMB gave a stirring summary of Mark's efforts for NERG's over many years. Mark has been extremely active over a long period of time in maintaining NERG repeaters and equipment, together with the production of the NERG news on a monthly basis. Greg VK3VT presented Mark with a certificate—well done Mark VK3BYY!!!

know of the Papakura Radio Club in New Zealand. A couple of members check in from time to time on the club net. During the Lighthouse Weekend the club ran ZL6LH with a booming signal on both 20 and 40 metres.

- 40 metres appears to have come to life with low QRN despite some local rain and thunder storms. Recently heard ZL3GS in Christchurch in contact with KB7LP with 5x7 signals in Oz. European signals



TYPICAL CABLE LOSSES VS FREQUENCY

Loss/100 ft	RG-58	RG-8X	RG-213	RG-6	RG-11	RF9913	RF9914F
1MHz	.44 DB	.2 DB	.21 DB	.16 DB	.14 DB	.15 DB	.26 DB
10 MHz	1.4 DB	.78 DB	.66 DB	.57 DB	.42 DB	.40 DB	.52 DB
50 MHz	4.1 DB	2.0 DB	1.6 DB	1.4 DB	1.0 DB	.90 DB	1.1 DB
100 MHz	5.3 DB	3.0 DB	2.0 DB	2.0 DB	1.5 DB	1.4 DB	1.5 DB
200MHz	8.2 DB	4.5 DB	3.0 DB	2.8 DB	2.2 DB	1.8 DB	2.0 DB
400 MHz	-----	6.0 DB	4.7 DB	4.3 DB	3.5 DB	2.6 DB	2.9 DB
700 MHz	-----	7.9 DB	6.6 DB	5.6 DB	4.1 DB	3.6 DB	3.8 DB
900 MHz	-----	8.8 DB	7.8 DB	6.0 DB	5.2 DB	4.2 DB	4.9 DB
1 Ghz	-----	-----	8.4 DB	6.1 DB	6.6 DB	4.5 DB	5.3 DB

Power industry seeks to stymie amateur radio

In the effort to bring Broadband Powerline Communications to Australia the power industry wants interference protection for amateur radio and other recreational HF radio users to be removed. Under the Radiocommunications Act the power companies could be breaking the law if they cause harmful interference to the radio communications. They believe it would be too costly to remove amateur HF band frequencies from their systems and such a measure will also be at the expense of BPL capacity or data flow rates. The power industry has urged the Australian Communications Authority to outweigh the interests of amateur radio and other recreational HF radio users, with the benefits of making broadband enabling technology available to the public. The ACA is now looking at how it can legally remove the interference protection provided under the Radiocommunications Act to amateur radio and what it categorises as other less significant users of the HF spectrum.

Jim Linton VK3PC

THANKS TO TONY

VK3BZT for his kind donation of equipment to the club, following a recent swap night. The goods were advertised on the VK2CA website and promptly snapped up by a more than happy buyer. End result—happy customer, happy club to the tune of \$150. Thanks Tony for your original donation and Bob for turning the gear into \$\$\$\$\$.

President's message September 2004.

Welcome to another month's edition from WANSARC. I had the chance to participate in the recent RD contest, which as we know is an annual event on the amateur calendar. But as reported in a recent WIA National News Broadcast, it was hard to catch a number during the 24-hour event. Several WANSARC members were on the air (VK3PI Mark and VK3CH Mick) but activity on 2 meters and 70cm was at an all time low. Activity on the HF bands was marginally better but all I managed was 24 contacts on 80 & 15m. Overall, I managed 121 contacts.

Whilst contesting may not interest all, it is a significant event that should be supported by all amateurs and if this year is an indication, we maybe remembering the RD contest (maybe a contest to remember the contest!). I encourage all to get behind the Australian Contests and next year why don't we activate VK3AWS for the event as well.

Till next time, happy hamming!

Grant, VK3HFS

Stormy Night successful.....



Andrew McDonald, from the Severe Weather Association, presented a very informative and interesting presentation to our August WANSARC meeting. Andrew gave an overview of the Severe Weather Association (www.severeweather.asn.au), its aims and membership. Andrew is also an avid Storm Chaser, spending many a weekend with other enthusiasts chasing storms to witness the best of the worst of storms. A short video presentation gave members a taste of severe weather, particularly in Northern NSW and Queensland. Despite chasing storms and sometimes spending three or more days driving in close proximity to fellow enthusiasts, Andrew said that it was the thrill of the hunt.

Following many questions to Andrew, it was revealed (with good humour) that Andrew had made a trip to Darwin last year to attempt to witness storms in the Top End. Imagine Andrew's surprise when he received a telephone call from a media group in Melbourne asking for a comment on the wildest storms and rain in Melbourne for half a century (remember the November rain storm which flooded Fairfield, Preston and Reservoir?). Andrew could only sheepishly mention that he was in Darwin "looking for the big one" when it had actually happened in his own backyard!!!

It was acknowledged by Andrew that the USA has one of the most interesting areas for storm chasers and weather observers.

From a communications perspective Andrew and his fellow enthusiasts use normal CB for communications, however the introduction of the Foundation Licence may provide a better avenue for reliable long distance communications via Amateur Radio. Check out storm chasers in Australia at www.stormchasers.au.com/

The WANSARC club net via VK3RTL-R, VK3HFS-L, VK3NE-L and on occasions ZL1VK-R Auckland. With many listeners and links, the WANSARC net is unique.

Call in 1930 hours local time via 146.450MHz FM simplex, or via echolink.....

WANSARC—ham radio word for FUN!!!



The band may be open and you're sitting on the frequency listening????!! Get on a give a holler—you may be surprised as to the response.

TROUBLESHOOTING VALVE RADIO'S—OLD OR NEW—from Dan VK3DWH

Absence of Signals

- Burnt out rectifier valve Broken down filter capacitors Open-circuit field winding or filter cho
- Short in H.T. by-pass capacitors Open circuit cathode resistors H.T. supply line open circuit
- Open circuit R.F. or I.F. Coil Shield can shorting to grid cap Disconnected wiring
- Faulty valve socket or speaker connection Low B+ Voltage Radio Station Missing
- Radio is not turned on

Poor Volume

- Weak valves Low H.T. or filament voltage Poor alignment
- Open circuit R.F. or I.F. coils Faulty volume control Incorrect valve types
- Leaky high voltage caps Your Hearing Aid is Faulty Radio is too far from your ear
- Partner has removed long wire antenna

Distortion

- Open circuit bias or grid resistors Audio feedback Low emission valves
- Incorrect voltages Leaky coupling capacitors Gassy output valve
- Radio not designed for Led Zeppelin (Relocating Tuner to 693 Magic should cure problem)

Crackles & Whistles

- Faulty resistors Faulty capacitors Loose contacts at sockets
- Dry joints Faulty output transformer Faulty power transformer
- Ineffective valve shield(Whistles in particular) You are listening to New Years Celebrations

Radio is on fire

Hum

- Poor filtering Short between cathode & heater Poor shielding on audio leads
- Bad rectifier Faulty electrolytic capacitor Singer didn't know the words

No Shortwave reception

- Dirty wave change switch Resistors high in R.F. stages Weak frequency changer valve

Low High tension

- Weak rectifier valve Faulty power transformer ncorrect speaker
- Faulty valve Partner is satisfied you won't burn house down

Rectifier glowing red

- Direct short on H.T. Line. (e.g. Electro filters) Somebody put a 3 pin plug on the battery cables

Output valve red

- Open circuit anode on output valve Open circuit output transformer Speaker unplugged
- Incorrectly aimed Spray Pak during restoration Set is on fire

A 2-Element Yagi by Keith WB2VUO

Probably the easiest rotatable beam is a 2-Element Yagi, both in the mechanical and the electrical sense. While the gain won't be "up there" with the big tri-banders & the like, a useful amount of gain can be realized without breaking the bank! Gain is about 5dBd

Although the Reflector and the Driven Element are "sketched" as being the same length, in actuality, the Reflector is 5% longer than the Driven Element. The formulas for the element lengths are listed below:

DE (ft) = 470/F(MHz) [HF] : DE (in) = 5600/F(MHz) [VHF] REF (ft) = 494/F(MHz) [HF] : REF (in) = 5880/F(MHz) [VHF]

The Spacing (S) can vary from 0.15-Wave to 0.25-Wave, with little change in the array gain. According to the charts in the "ARRL Antenna Book", 14th Edition, the variation in gain is less than 0.5dB. What does change is the feed impedance. Depending on how you want to feed the array will determine the spacing. The closer the spacing, the lower the feed point impedance. At 0.20-Wave, the impedance is around 40-Ohms, resulting in a 1.25:1 SWR, and at 0.25-Wave, the feed point impedance is around 60-Ohms, resulting in a 1.17:1 SWR. This is with direct feed with 50-Ohm cable.

The feed can be direct, or through a 1:1 balun, and will show very little variation either way. Construction of the 2-Element Yagi Various construction methods can be used for a 2-Element Yagi. The most common is to take a length of rigid tubing, cut to the desired boomlength, and mount the elements with U-bolts, pipe clamps, muffler clamps or what-have-you. The boom can also be wood or a lattice-like structure, or even PVC pipe. The main consideration is mechanical strength. The elements can be any conductive material that will support its own weight, or a suitable length of wire or braid that is supported by a rigid non-conductor. One of the really inexpensive antennas I saw in a publication used lengths of #14 house wire, taped to bamboo poles. Of course, the author lived in the South, and just went out in his backyard and cut his own canes! Some people have all the luck! Below, I have dimension for some of the HF and VHF bands, and some construction "tips":

Frequency (MHz)	Boom length (feet)	Driven element length	Reflector length
14.1	13.95' - 17.45'	33.33'	35.04'
18.1	10.87' - 13.59'	25.97'	27.29'
21.2	9.28' - 11.60'	22.17'	23.30'
24.9	7.90' - 9.88'	18.88'	19.84'
28.4	6.93' - 8.66'	17.39'	16.55'
29.3	6.72' - 8.40'	16.86'	16.04'
50.4	46.96" - 58.69"	111.33"	116.90"
52.5	44.99" - 56.23"	106.66"	112.00"
146.0	16.18" - 20.22"	38.36"	40.27"

Let's say, for example, that you need a 10 Meter beam. Looking at the chart, the longest element is just less than 18', and the boomlength would be about 7' to 8.66'. The elements could be DIY aluminium tubing (expensive), or it could be EMT (conduit), which is heavy, but inexpensive. The boom could be a length of TV mast, Chain-link fence rail or a 2 x 4. The least expensive would be the heaviest (2 x 4 boom & EMT elements. With about 5dBd gain, and a 25 watt rig, this would be like going with a 75 watt amp, at \$0.33/watt, and if you were running 100 watts, you would have effectively 300 watts for \$0.08/watt, plus the cost of the rig, of course.

Any way you look at it, it's a big bang for the Buck! If you wanted to make the Yagi for, say, 20 Meters, the "boom" could be a ladder, (No, I'm not kidding!), or a lattice-construct made with 2 x 2's or 2 x 4's. It would be HEAVY, ... but the price of 20 Meter beams is HEAVY, also. It might be feasible to do the ladder boom, and beef up the mast instead of depleting your budget. For the VHF beams, the boom could be PVC pipe, 2 x 2's, TV mast or whatever. This would provide the mechanical support and the insulation for the feed point all at the same time. For vertical polarization, the boom could be extended back beyond the Reflector, and the beam then end-mounted, putting the mast out of the field of the antenna. This would allow the antenna to even be side-mounted on an existing mast. The beamwidth of a 2-Element Yagi is about 110-Degrees, so aiming is not critical, however, the front-to-side ratio and front-to-back ratio is 10 - 20 dB, providing a high degree of rejection to unwanted signals.



Laughter is a medicine.....

A little girl was talking to her teacher about whales. The teacher said it was physically impossible for a whale to swallow a human because even though it was a very large mammal its throat was very small.

The little girl stated that Jonah was swallowed by a whale. Irritated, the teacher reiterated that a whale could not swallow a human; it was physically impossible.

The little girl said, "When I get to heaven I will ask Jonah".

The teacher asked, "What if Jonah went to hell?" The little girl replied, "Then you ask him".

A Kindergarten teacher was observing her classroom of children while they were drawing. She would occasionally walk around to see each child's work. As she got to one little girl who was working diligently, she asked what the drawing was.

The girl replied, "I'm drawing God."

The teacher paused and said, "But no one knows what God looks like."

Without missing a beat, or looking up from her drawing, the girl replied, "They will in a minute."

One of you sent me a virus.

It is a very severe virus.



Look what it did to my mouse.

A guy goes to the government to interview for a job. The interviewer asks him, "Are you a veteran?"

"Yes, I served two tours in Vietnam."

"Good, that counts in your favour. Do you have any service-related disabilities?"

"I am 100% disabled. A mortar round blew off my testicles so they declared me disabled."

It doesn't affect my ability to work, though."

"Sorry to hear about the damage, but I have some good news for you. I can hire you right now! Our working hours are 8 to 4. Come on in about 10 and we'll get you started."

"If working hours are from 8 to 4, why do you want me to come at 10?"

"Well, here at the government, we don't do anything but sit around and scratch our balls for the first two hours. No point in you coming in for that."

Fireground instructions



1. Find flat ground prior to extending stabilising arms.
2. If a vehicle can be found, use it as a stabilizer.
3. If using car for stabilisation, ensure stabiliser arm is firmly planted on the bonnet or boot.
4. Where possible complete fire job well prior to owner of vehicle returning.
5. If owner returns while making up, thank owner profusely for their public service.

STEVE VK3JSR THANKS WANSARC MEMBERS

Recently the WANSARC Committee and club members agreed to make a donation of \$100 to Steve Reining, VK3JSR, to assist with covering costs of repairing the repeater controller for VK3RHF. Steve is the brainchild behind the multi-repeater system—here is Steve's response to members following this donation.

A Very Welcome—thankyou to all at Wansarc for your Donation towards VK3RHF. Progress is slowly but surely moving forward with getting VK3RHF back on air. A number of things are currently on the move forward. The Controller has been safely returned [REPAIRED] from the USA. The UHF Links between the 3 Sites are currently being reconfigured for the new 70cm Band plan. More 80 MHz transceivers are being modified for 29 mhz voting receivers and another 6mtr receiver. More UHF Links are being sort and configured for the extra voting receivers A new cabinet has been purchased for the controller, which needs alot of metal work, cut outs etc for all the DB 9 and 15 connector for all the ports and ancillary inputs and outputs. I purchased a Doug Hall 4 channel voter for 10 metres So the 2 channel voter will be used on 6 mtrs and another 2 channel voter built for 70 cm Both voting receivers will be at Mt Macedon. UHF Linked back to Olinda Once all is built and together it will all need to be aligned and levels matched, especially the voting receivers to vote correctly. Critical audio levels are required for Audio noise quieting comparitor voters.

Please forward my thanks to all for the donation and i will try to keep updating progress as it happens

Steve Reining VK3JSR
VK3RHF system Owner Operator
29.640/29.540 - 53.625/52.625 - 438.750/433.75 - 1273.400/1293.400

CIRCUIT IDEAS—LOW VOLTAGE ALARM

This low voltage circuit can be used to monitor batteries and other volatile sources of current for problems. The circuit sounds an alarm and lights an LED, but can be interfaced to any number of other circuits for many different uses.

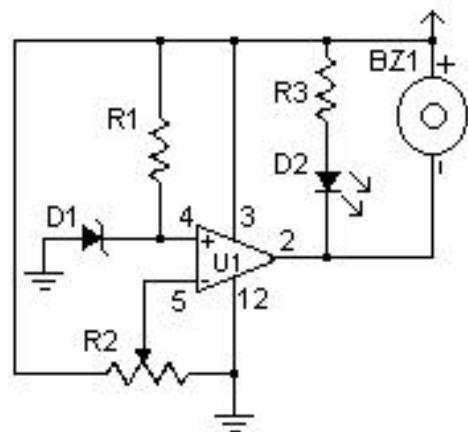
Schematic

Parts:

R1, R32	1K 1/4W Resistor
R21	5K Pot
U11	LM339 Op Amp IC
D11	1N5233B Zener Diode
D21	LED
BZ11	Piezo Buzzer
MISC1Board,	wire, socket for IC

Notes:

1. The circuit will operate from 9V to 12V.
2. Adjust R2 until the alarm goes off at the correct voltage.



.WANTED—WANSARC MAGAZINE Producer/Editor—Mark VK3PI has advised the committee and club members of WANSARC of his intention to relinquish the reins of the club newsletter at the end of 2004. It has been difficult for Mark to make this decision, however work commitments on the horizon in 2005 and a continuing calendar of family activities means that something must go!!

So if you want to be part of this great WANSARC tradition, contact Mark VK3PI for details on how you can become the next cog in the wheel that turns out a production each month. Remember, no experience necessary, just enthusiasm and support from other club members.

WANSARC VK3AWS

PRESIDENT: Grant Stowell VK3HFS

Telephone: 0419 007 718

SECRETARY: Mark Stephenson VK3PI

Telephone: 0425 768 320

Email: wansarc@wia.org.au

All correspondence to be addressed to the SECRETARY:

PO Box 336

RESERVOIR 3073



WANSARC CLUB PROFILE

History

The Western and Northern Suburbs Amateur Radio Club (WANSARC) was first formed in 1969 and since then has served the needs and interests of amateur radio operators, short wave listeners and those interested in hobby radio and electronics. The club is not gender specific, having both female and male members. Members come from all walks of life with a mix of experience, young and mature, novice and technical. The most important aspect of the club is the willingness of all members to share their knowledge for the benefit of others. Members mainly reside in the west and north of Melbourne, however membership is encouraged from all interested.

Meetings

From September 2003 Building K, Northern Metropolitan Institute of Technology (NMIT), St. Georges Road, Preston (western side between Bell Street and Cramer Street) Melway 18 E12

Meetings held on the 1st Friday of each month (excluding January) commencing at 7.30pm local time. Talk in on 146.450MHz FM—call club station VK3AWS.

Benefits

Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of like minded radio and electronics enthusiasts, excellent club facilities and environment.

Club Nets

146.450MHz FM each Tuesday evening commencing 7.30pm local time. Linked to Echolink for intrastate, interstate and international stations participation.

More Information

Website: www.wansarc.org.au

Committee: Bob VK3EL, Tony VK3JED, Gordon VK3YOD, Grant VK3HFS, Mark VK3PI
Dan VK3DWH

Email: wansarc@wia.org.au

Secretary: Mark Stephenson VK3PI vk3pi@optusnet.com.au

Postal: WANSARC PO Box 336 RESERVOIR 3073

VK3AWS

A proud tradition of supporting hobby radio and electronics enthusiasts since 1969