QRM News

Newsletter of the Wagga Amateur Radio Club (WARC) **April 2010**

President: John VK2YW
Secretary: Jorgen VK2KJJ
PO Box 294 Wagga Wagga NSW 2650
Meetings at Small St Clubrooms
Last Friday of each month

Callsign: VK2WG – VK2RWG – VK2RTW
Nets: 7.165Mhz Sundays 1200hrs EST
Web: http://www.wagga-arc.org/
IRLP Node - 6260
Editor: Bob VK2VKV Sponsor: EACOM

President's Report

Hello again.

At the outset I want to apologise for not delivering the last couple of QRMs that we do still deliver in town. I have very little in the way of excuses but promise that this month you will get two copies – last month and this month.

Speaking of QRM, last weekend I went down to the clubrooms to get our archived copies of QRM. Now, you might wonder why, but I was looking for references to our Silent Key members and was partially successful. If you recall we are going to erect a Silent Key Honour Board to list our deceased members. I am hoping to be able to put them into chronological order and to do that we need to find at least the year in which they passed away. We seem to have managed to now find almost everyone, but as yet do not have Warren Williams VK2ZGN in particular and there are a couple of others as well, but those at least we think we can find. So if you have any inkling of when Warren passed away then please let me know.

But back to QRM. Now, I admit, I didn't read every word but I did scan through from 1977 to 2000 and, given I was around for all that time, they made wonderful reading. It was also very interesting to note the changes the sheet has undergone since then. It seems a lot of these changes have followed the technology of the day. I know for a fact that the early sheets were done on the humble Gestetner and it was fascinating to see the first photos appear and how their quality has also undergone great change. Then along comes the word processor and the newssheet takes on a whole new look and feel.

Editors have included Helen XYL Jeff VK2XD (our very first), Jeff VK2AQ, Paul VK2KVY, Graham VK2HI and Pete VK5XN, the late VK2SW – Sid, John VK2JGK and the Quilled Pen and others. All these people have added immensely to our club history but there was always this one underlying theme and that was they all implored us for more articles. And I am sure that this theme is also supported by our present Editor. So, if you have an article brewing away in your mind then put pen to paper and send them in.

This next meeting will be a talk – in hunt courtesy of John VK2JGK and Helen VK2FOAL. There will be the usual supper at the end of it. If you are coming please remember to bring three or four dollars to cover the coffee and dogs.

See you at the meeting Friday night 30th.
73 de John VK2YW

Inside This Issue

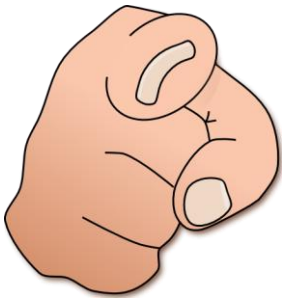
Proposed "Linked" Repeaters, their Call Signs and Frequencies:

Bethungra	VK2RBE	146.775
MIA	VK2RGF	146.850
Galore	VK2RGA	146.875
Tumut	VK2RTD	146.800
Wagga	VK2RWG	146.750

It is expected that all of the systems will be operational by mid-2010. Each links back to VK2RWG via a UHF link.

*** HISTORY THIS WEEK, FOR TODAY ***

1492 - Columbus is given royal commission to equip his fleet
1527 - England & France sign treaty of Westminster
1725 - Emperor Charles VI & King Philip IV of Spain sign Treaty of Vienna
1789 - George Washington inaugurated as 1st president of US
1808 - 1st practical typewriter finished by Italian Pellegrini Turri
1864 - New York becomes 1st state to charge a hunting license fee
1888 - Hail stones kills about 250 in Moradabad district of Delhi
1900 - USA annexes Hawaii
1947 - Boulder Dam renamed in honour of Herbert Hoover
1980 - Terrorists seize Iranian Embassy in London
1988 - World Exposition, Expo 88 opens in Brisbane Australia
1997 - 42 million watch "Ellen" admit she is gay



Have you done anything to promote **Amateur Radio** this month?

Latest Executive Meeting

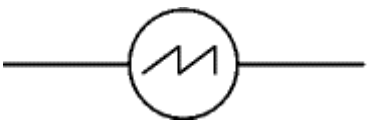
Report from the Executive meeting 12/4/2010

Treasurer's Report: Bank balance $7,498.92, Cash in hand $67.50

General Business:

1. Board of Honour – John VK2TH is awaiting on more information for the board.
2. Antenna Analyzer Project is going well, with 7 members expressing their interest and wishing to be involved. SCARC has advised price of $135, however if we can get 10 members to order, we will get a further $5/item discount
3, An upgrade course (from Foundation to Standard licence) is being offered to Club members. We are waiting on further details from Andrew Cole
4. Call book: Still a few books waiting to be picked up.
5. April meeting will be a fox hunt. VK2YW to provide an article on fox hunting for the April QRM.
6. 100 years WIA celebration in June. Will try for an interview on 2AAA-FM to publicise weekend's activities.

7. VK2KAW to purchase new garden hose.
8. Letter of thanks to go to VK5DX for the donation of the cavities filters.



Fox hunting

At the last Executive meeting I mentioned that I wanted to have one more go at getting a Foxhunt (a proper one) off the ground. My attempts in the past had been futile. Yes, we have held some really fun talk-in hunts, and Friday night should be no exception, but the sheer fun of a proper hunt using direction finding equipment is (in the hobby at least) hard to beat. The Executive thought that a contributing factor to not being able to get one off the ground might be that people don't know what to do and that I should write an article on same, so here goes.

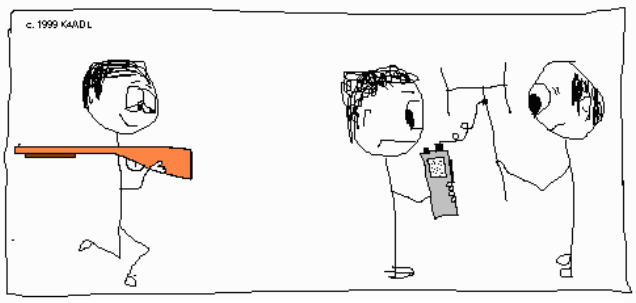
In its truest form a Foxhunt is where the fox is actually mobile. Said fox will, once the hunt starts, move from place to place transmitting continuously. The hunters then set off in pursuit with directional antennas and attenuating equipment such that reasonable directions can be worked out and hopefully catch the fox. Now this isn't a simple exercise as those who have been in it will attest. In fact I can recall deciding to join one down at a gathering at Deniliquin many years ago only to find out the Fox was in a light plane and wasn't caught until he landed – very diabolical, but I am sure you get the idea.

However, I want to try and get a fixed hunt underway. These are better known as Hidden Transmitter hunts where the hider conceals the transmitter somewhere and then retires to a more congenial spot where he/ she can relax and have a good laugh as they watch the rest of us go around in circles looking for said device.
So what equipment is needed? Firstly, a transmitter set up for the task and this is where the club comes in because we have one affectionately known as the Ruptured Duck. There is also a smaller box known as Little Toot. (And yes there was a Big Toot, but it is long since deceased). Now the Duck transmits on 146.500 and so once hidden happily broadcasts till someone locates it. How do they locate it I hear you ask? Well, you need a receiver, a directional antenna and some form of attenuation. The receiver needs to have a signal strength indicator, the antenna needs to have a good front to back ratio (so you don't go in the wrong direction) and the attenuator needs to be good enough to reduce the received signal to a level where you can still rotate the antenna and get direction information. And, simply put – that's it!

You can get all carried away and develop all sorts of good additional bits to improve your chances but if you are just starting off you just need the basics. So your 2m car radio is quite satisfactory if it has an S meter. An attenuator doesn't have to be anything much either and in fact you may find that when you get close you can hear signal on frequencies adjacent to 146.500 and when you get even closer just removing the antenna all together may get you close enough. And a 2m yagi antenna can be as simple as 3 elements. These can be made in a couple of hours remembering of course that you are attempting to get more signal from the front than the back. There are plenty of designs around to get you started.

There are also a couple of us in the club who can help you get started. So, are you interested? Would you be interested in something on say a Sunday morning that might culminate in a BBQ lunch somewhere? If this is of interest to you why not give me some feedback so we might start to get something underway in the near future.

73 De John VK2YW



Never one to pay close attention at Club meetings, Jorgen arrives incorrectly equipped for the fox hunt.

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"Michael!!! What are you doing wasting money on more USELESS radio equipment!!!"

Antennas for the Space Restricted

The trend towards smaller lot sizes and inner-city living has made it harder for many amateurs to erect antennas, particularly for the HF bands. This, along with the fear of causing interference, has driven many to confine their operating to the VHF and UHF bands and/or when away from home. This article shows that it is possible to operate successfully from a confined space. I will concentrate on antennas for two, ten and eighty metres, though it should be possible to apply the ideas given to other bands.

Antennas for two metres

The helical antennas supplied with handheld transceivers often perform poorly around the house. A better antenna is usually needed. This can range from a simple ground plane or J-pole to a beam and rotator. A difficulty often faced is finding a way of routing the feedline inside without compromising security, particularly if your home is rented.

Indoor antennas can be quite effective if you are near a repeater. Provided it can be placed near a window facing the direction of interest, its performance should be acceptable. Indoor antennas can take many forms. Some experimenters have successfully used self-adhesive copper tape to build quad loops. In this case, the tape is simply stuck onto a window pane or a piece of cardboard. Little space is required; a loop for two metres is about 50 cm square, while one for 70 cm is less than 18 cm square. Depending on how the loop is fed, it may radiate either horizontal or vertical polarisation signals.

Another option is some sort of vertical antenna. These go under various names, such as "J-poles", "Slim Jim" and the like. Normally made out of metal tubing for outdoor use, the keen experimenter should be able to use materials such as PVC tubing, coaxial cable and 300 ohm TV ribbon to make an indoor version. Performance a little over that provided by a half wave dipole should be obtainable.

Though a half-wave dipole offers less gain than more elaborate antennas mentioned above, they are easier to build. Because vertical polarisation is most common, a simple dipole can be hung vertically behind a curtain or in a similar inconspicuous position. Or, when outside, hang it from a tree branch for better coverage on VHF. Simple vertical antennas are particularly useful when omnidirectional coverage of a local area is desired, for example during club nets or local contests.

Antennas for ten metres

The existence of the 27 MHz CB band has been a real boon for the antenna experimenter active on 28 MHz. Many CB antennas can be modified to ten metres with very little work being required. For flat dwellers, a yagi or quad is normally out of the question, though the possibility of installing a VK2ABQ miniature beam antenna for a few decibels of gain should not be discounted.

Those with sizeable balconies or a backyard could try a horizontal dipole. The space required is about 5 metres. If fed with open wire line, the dipole should also work on 21 MHz with the addition of an antenna coupling unit.

Another option is a modified fibreglass CB whip. This is effective for both local and overseas contacts and occupies very little space. Longer whips give the best performance; a 1.8 metre whip is suggested. Good height and a clear outlook are desirable. A ground system is important. This can either be a metal roof, gutter, railing or one or two 2.5 metre long radials. Once installed, the whip is trimmed (using a hacksaw) to make it resonant on 28 MHz. To avoid over-cutting, saw off small pieces at a time (no more than 1 cm) and check the standing wave ratio (SWR) at the antenna after each cut. If the antenna is too long, you will find that its SWR is lowest at 28.1 MHz and gradually rises towards 28.6 MHz. Continue trimming the antenna until the SWR is lowest around 28.4 MHz. It will rise either side of this frequency but should be acceptably low over the whole Novice section of 10 metres. When you've finished, you will probably have sawn 8-10 centimetres off the antenna.

Antennas for eighty metres

This is a challenging band for the amateur with little space. Though a compact antenna is unlikely to yield regular DX contacts, it should be possible in almost every case to enjoy fairly regular QSOs up to about 1000 km when band conditions are quiet. There is always a trade off between bandwidth and efficiency with small antennas. Always aim for efficiency; it is better to be heard on one frequency than to be heard on none.

The use of 300 to 600 ohm open wire feed line (instead of 50 ohm coaxial cable) can allow a dipole cut for one band to operate on several higher frequency bands with the help of an antenna coupling unit. Of greater interest to us, however, is the behaviour of such dipoles below their normal resonant frequency. If your operating frequency is not much less than an antenna's design frequency (eg transmitting on 3.6 MHz using a tuned feeder dipole resonant at 5 MHz), such an antenna can be quite effective. Tuned feeder dipoles much shorter than this do work but are inefficient. I would suggest a dipole with a total length of at least 25 metres as a sensible minimum for efficient operation on 80 metres.

Some operators use end-fed wires. An effective counterpoise is important, particularly if the wire is a quarter wavelength (20 metres) long or less. Some people use the gutters on their house for this. However, there is a risk that poor electrical contact between lengths of guttering could act as crude rectifiers and cause interference-producing harmonics to be radiated. Half wavelength-long end fed wires exhibit high feed point impedances and are less dependent on an effective earth for correct operation.

Vertical antennas are another possibility. Again an extensive ground system is needed for good efficiency. This greatly reduces their attractiveness to amateurs living in flats where access to any ground, let alone a good one, is difficult. People with backyards too small for a dipole may have sufficient space for a trapped vertical. Several 80 metre operators known to the author have had good results with the commercially-made verticals manufactured by Andy Coman.

A rotatable dipole can be formed from two mobile whips. Such antennas have directivity and do not need extensive grounding systems. A description of such an antenna appeared in *Amateur Radio* last year. Bandwidth will be narrow, but experimentation with remotely controlled relay switching schemes, to allow a choice of operating frequencies, may prove fruitful.

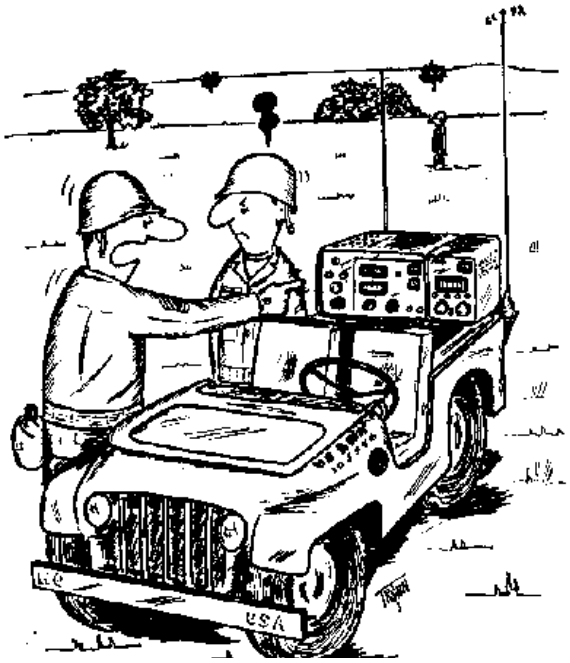
A magnetic loop is perhaps the smallest practical antenna for 80 metres and the only option for some. It consists of a circle or square of metal tubing brought to resonance on the operating frequency by a variable capacitor. A single loop can cover several bands. The efficiency is lower than for larger antennas, but no ground system is needed and the antenna does not have to be very high off the ground. Loop sizes as small as 1.5 metres square are practical on eighty metres, though larger loops will be more efficient.

An effective magnetic loop antenna will have a thick, low-resistance element and good connections. The bandwidth will be narrow at 3.5 MHz; 10 kHz is typical. A narrow bandwidth (or "high Q") indicates that the antenna is efficient and resistive losses are low.

Conclusion

This article has provided a few ideas for those who may have thought that they had too little space to erect an antenna. Provided that care is exercised in the construction and adjustment of the antennas described here, all should yield acceptable results.

Article contributed by Peter Parker VK3YE – first appeared in Amateur Radio, October 1997



I don't care if Division doesn't send QSL cards, Gerard……**GET ON THAT RADIO!"**

CALENDAR OF EVENTS

SPECIAL EVENT

VK – Trans Tasman Contest

Saturday 8 May 2010 – 80 Metres
Saturday 12 June 2010 – 160 Metres
0800 UTC to 1400 UTC
(in 6 one-hour stages)
Note: Best 5 hours to count

This contest will provide 5 to 6 hours of non-stop evening entertainment, which should not intrude too much on family life or sleep time.