



Western Suburbs Radio Club Inc.

June 2006 Newsletter

ZL1AC, Branch 03 NZART 3000 Great North Road New Lynn, PO Box 15-122, New Lynn.

President: Andrew Barnett ZL2ALW, Secretary: Ross Reddell ZL1VRR

Newsletter Editor – John Neill ZL1NE

VHF Club Net Wednesday 07:30pm 146.525 MHz, HF Club Net Fridays 07:30pm 3.623 MHz

Website <http://www.gsl.net/zl1ac>

Club Calendar

Monday	12 th	June	Club Meeting See Below for Details
Monday	30 th	October	AREC Meeting at 7:30pm

June Club Meeting

The June meeting will be devoted to the following topics:

1. V. President to report on Merv's Questionnaire from those that were returned.
2. Merv's Video production of Tom's 70th years in Amateur Radio.
3. Waitakere Sprint update. The President will talk about changes to the Sprint at the meeting.
4. Check on Reception of Channel 39 ATV ZL1BQ repeater at club rooms.
5. Conference 2006 at Christchurch Remit results.

Newsletter by Email

I have only received a small response so far from Club Members wishing to receive the Newsletter by email. If you would like to receive the club newsletter by email then please send an email to john.neill@clear.net.nz and I will add you to the list. There is a considerable cost saving to the club by emailing the newsletter and this will help the committee to keep the cost of your annual subscription as low as possible.

Club Fees

These are now due. The fees are that same as last year at \$25.00 per member and special rates for families. Fees may be paid to the treasurer at any club night or by post to **PO Box 15-122, New Lynn.**

May Club Meeting

The May meeting on the 8th celebrated the 70-year anniversary of Amateur Radio operation by Tom Duxbury ZL1CZ. Tom described a little of his years of operation and his working career. He started in radio by listening to ships at sea contacting other ships and shore stations. His first attempts at transmitting were with homebuilt equipment and operating as a "Pirate". Tom sat for his Amateur Radio Operating Licence at Akaroa in 1935. Tom worked for a couple of private companies, being made redundant from one, however that did not make him a rich man when his salary was only £2 a week. He joined the Air Force in 1939 initially engaged in basic training and then escorting troop ships. Tom was sent to Wireless School by mistake but enjoyed it and was teaching wireless to others before he had even completed the course. Following radio training Tom was posted to Esperente Santo or Santos as the personnel stationed there called it. This is a small island in the New Hebrides, now Vanuatu. From there he moved to Bougainville and other islands in the area. One of these was in the doldrums where it was particularly hot and wet. Tom returned to New Zealand via Santos in a Hudson, which lost power on the way, but they managed to restart the engine. On his return he spent more time at the Radio Training School before being posted to Green Island and Los Negros. It was while he was there that the Atomic Bombs were dropped on Hiroshima and Nagasaki. At the end of the War Tom returned to New Zealand on board the Wahine and also on board was the Japanese Zero plane that is in the Auckland Museum.

After the War Tom had Trouble finding a fulfilling job and so joined the Air Force again and spent time in Fiji. During this time he experimented with radio and in 1948 worked W6AL in the United States on 10-metres on a piece of wet string. The "wet string" was sash cord soaked in brine. Following Fiji, Tom worked for Civil Aviation and State Hydro before leaving to make taxi radios for Pye, then at Teleco designing and manufacturing VHF radios. Tom's final employment was at Manukau Technical Institute.

Amateur Radio has always been there in the background during Tom's career and we congratulate him on 70 years of operation. This meeting was recorded on Video and will be played over Amateur TV Channel 39.



Tom ZL1CZ receiving his certificate from Club President Andrew ZL2ALW



Tom cutting the cake celebrating 70 years as an amateur Radio Operator.

The Making Of Antennae Traps

The following technical articles are reproduced with the kind permission of Branch 65 Papakura Radio Club.

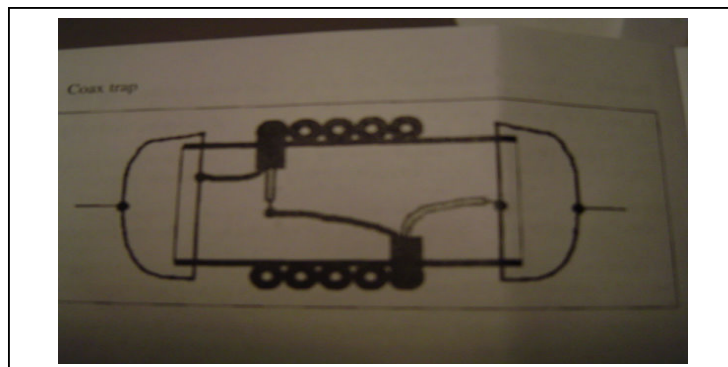
The making of antennae traps. One was a trap that was initially at 5Mhz frequency and was changed to become a 40m trap, the second was a trap made out of 50-ohm coaxial cable.

First we checked the current resonance of the made up trap using a dip-meter and then with the MFJ aerial analyser. Both meters agreed on the resonate frequency of 4.8Mhz, which was an old commercial channel used with Rally New Zealand many years ago. It took a little time to work out how to use the MFJ meter for this purpose but once sorted out, proved to be an accurate way to do the measurement. We then took turns off the coil to raise the frequency to 7.1Mhz. After a number of trial by error adjustments we got the coil to the desired frequency.

To make the trap from coaxial cable we took enough RG58 coax to give 9.5 turns on a 48mm OD PVC tube. The PVC needs to be of a pure type as the grey type is not suitable for R.F. purposes. To check this, place a small section of the tube in a microwave oven along with a cup of water. Run for approx 2 minutes and check to see if the PVC tube is hot or not. If the tube is hot or warm then it is no good for RF.

Having wound the coax on the tube we connected up the inner conductor from one end to the outer braid of the other end. It was only a matter of adjusting the gaps, between the windings to get the resonate frequency of 7.07 Mhz. The advantage of the coax trap over the coil and capacitor of around 50-75pf, these are very hard to find these days. The only disadvantage of the coax trap is it is a little heavier and is reliant on the quality of the coax cable, there will be some loss in the coax. A grid dip, FET- dip, MFJ aerial analyser is required to make the traps as variances in capacitor, tube diameter, coax characteristics will change the resonant frequency of the coil. A number of these meters are available from some members of the Branch 65 club.

By Richard ZL1BNQ.



Coaxial Parallel Resonant, traps for Multiband Antennae de VK2ZCO

This type resonant trap was described in HAM RADIO (Oct 81) by Gary O'Neill N3GO

The following notes and spreadsheet are based on an article by Paul Duff VK2GUT in AMATEUR RADIO (Oct. 93)

The self inductance of a coiled length of coax combined with the distributed resonant frequency dependent on the values of L and C . Naturally these values depend on the coil dimensions and the length of coax.

A tedious set of formulae involving many repetitive calculations are involved in designing a trap to resonate at a desired frequency.

The attached Excel spreadsheet allows (see below)

1. The coil former diameter to be chosen (i.e. what you have on hand)
2. Any choice of coax (outer diameter and capacitance per foot obtained from the published data)
3. The choice of the starting number of turns for calculation.

The spreadsheet then calculates the inductance, capacitance and resonant frequency at one-tenth turn intervals from the starting number of turns. The starting number of turns is varied until a resonant frequency is obtained close to the required value.

Basic Construction (see diagram)



Before construction begins wind a test coil of coax with an extra 2 or 3 complete turns.

Calculate and check the trap resonant frequency. Any serious discrepancy indicates the published capacity per foot may be wrong. Adjust this variable in the spreadsheet until the predicted resonant frequency for the test trap is close to the measured frequency.

- (1) The coax is wound tight and close spaced on the former.
- (2) Holes are drilled in the former to allow the coil to be terminated by passing the pre stripped coax ends inside the former.
- (3) One end of the inner conductor is soldered to the braid at the other end of the coax coil
- (4) The free ends of the coax are terminated to the antenna elements. Heavy gauge wire may be passed through extra holes in the end of the former as "bridles" to provide anchorage points for trap termination and antenna elements.

Adjustments.

The resonant frequency of the trap can be checked and adjusted using a dip meter and a calibrated receiver. A short length of coax with approx 20mm exposed centre conductor makes an ideal "sniffer"

It may be best to design the trap to resonate slightly below the designed frequency. The resonant frequency can then be increased by reducing the number of, or spreading the coax turns.

After adjustment fix the coax turns to the former, so they will not move and weather proof the trap.

SPREADSHEET OPERATION

Please Note All dimensions for the trap are measured in inches and the cable capacity in pf per Foot.

As distributed the spreadsheet will already have values entered for
Former diameter (D)
Cable thickness (t)
Cable capacity and starting numbers of turns

The inductance, Capacitance and resonant Frequency will be displayed for each tenth turn for the next full turn.

Changing any one of the 4 values (D, pf, per foot or numbers of turns will cause the spreadsheet to recalculate new values of Inductance, Capacitance and Resonant Frequency

After choosing former diameter and cable it is only necessary to change the starting number of turns.

At some point the frequency display will show a value close to the desired frequency.

By entering the number of turns 9 to the nearest tenth, in the third last line of the spreadsheet the required length of coax (allow extra termination) will be calculated.

The last numerical value gives the approximate length of the coax coil.

Some literature indicates the best diameter to length ratio lies between 2:1 and 1:1.

The Excel spreadsheet will be available as an e-mail attachment on request to <colhod@comcen.com.au>

You will notice in the picture the turns are separated slightly to bring the resonate frequency to the required value.



Once adjusted the coax turns are cemented in place with ordinary PVC plumbing adhesive.

AREC Activity

The AREC Group met on Monday 29th May. The meeting discussed Auckland preparedness for any of the disaster events that could occur in the area, then there was a practical session on radio operation. The next meeting will be 30th October 2006 where some amendments to your AREC blue folder and an updated list of currant members will be given out

Club Nets

VHF Net 146.525 MHz 7:30pm every Wednesday, HF Net 3623 KHz +/- QRM/QRN 7:30pm every Friday. All are welcome to check in on the nets. The HF Net Roster can be found on <http://www.ql.net/zl1ac/wsre-hf-roster.html>. We are looking for more members to take a turn at running the net.

9-Jun-06	ZL1JL	John
16-Jun-06	ZL1NE	John
23-Jun-06	ZL1ACZ	Barry
30-Jun-06	ZL1WI	Roy
7-Jul-06	ZL1VRR	Ross
14-Jul-06	ZL1MW	Brian
21-Jul-06	ZL1JL	John
28-Jul-06	ZL1NE	John

Change of Calls Sign

On June 1, 2006 ZK1 stations will finally change to the new E51 prefix in the Cook Islands. On August 15, 2004 ITU Operational Bulletin No. 818 stated "Following a request from New Zealand, the International Call Sign Series E5A-E5Z, in accordance with the provisions of No. 19.33 of the Radio Regulations, has been provisionally allocated to New Zealand for exclusive use by the Cook Islands (formerly ZK1)." Don't forget to add the prefix E5 to your logging programs.