



**Auckland Branch**  
N Z Association of Radio Transmitters Inc.

**NEWSLETTER**

**September 2012**



# **GENERAL MEETING**

**Clubroom, 400 St. John's Road, Kohimarama  
Saturday 15th September, 2012**

**BBQ at 1200 - 1300 hours**

**Meeting starts at 1330 hours**

## **Agenda**

- Reports from your Committee
- Other business

**Message handling rehearsal (using VHF 144.600 mHz Simplex)  
for the upcoming AREC "Shakedown" exercise on 26th Sept at 0926.**

**Sale of Neil Cromarty's gear.**

Tauranga Emergency Communications Group - Sat 29<sup>th</sup> Sept.

**Western Branch Equipment Sale - Saturday 13 October**

At 217 Rosebank Road Primary School Hall 9am to noon.



## From the Secretary, Wallace, ZL1WAL

### Last month's meeting:

We were treated to two very interesting presentations after last month's general meeting.

1. Our thanks go to Jeff Lowe ZL1TOU who gave us a first hand account of his visit to 2O12L, site of the Amateur station for the Olympics in London. He described their organization and showed us pictures of their temporary site (a scout hall with an adjoining field on which they had erected five antenna towers for the event. After the Para-Olympics these will be removed. (See elsewhere in this newsletter about their achievement in breaking the record for the most number of QSOs for a special event station). See also their web page <http://www.2o12l.com/> for latest news and logs.
2. Paul Barratt ZL1AJY demonstrated how noise can be eliminated by winding a few turns of your coax through a torroid before connecting to your radio. Lively questions, showed that Members benefited from this educational session as myths were debunked, e.g. "Earthing solves all RF problems." Thankyou Paul.

### This month's meeting (that is, this coming Saturday 15th September):

Background: Civic Defense are staging a national Shakedown on 26th September. It is expected that one third of New Zealand's population will participate as their employers announce the practice event at 0929 hours. Employess are expected to duck under their desks and take cover. AREC has decided to activate their state of readiness at the same time.

In the spirit of making this successful Japie ZL1JJN, our AREC Section Leader, will explain the structure of the AREC Regional organization. This will be followed by a rehearsal of message handling. Stations will all be operational on 144.600 MHz Simplex, and be expected to use the proper AREC call signs and formal message pads. His Deputy is Steve, ZL1FS, who has composed some sample messages for us to send, and these will be checked afterwards for any "Chinese whispers". Remember the war time account about a message that was passed down the line and became: "*Send us three and four-pence, we are going to a dance*" when its original was: "*Send us reinforcements, we are going to advance.*"

It is important that all those who indicated on their Membership renewal form, their willingness and ability to support AREC, should attend this rehearsal. The national shakedown follows a week later. We want to demonstrate that we know what to do.

### Noise on the bands:

How many have taken up the invitation by John ZL1GWE to monitor noise on the HP bands in their vicinity. He is running a project to monitor noise on our HF bands, being the first step to make an evidence-based case to help ourselves. Contact him to obtain a spreadsheet template for your monthly observations.

### Antennas:

Selwyn has donated some large barrels to be used as antenna pole bases. And Japie has provided an article that provides practical experience with various lengths of a large loop antenna to best suit the listening bands from 160 m to 20m We expect to be ready in October to test various antennas in preparation for better performance at the Jock White Field Day next year.

### Broadband:

Orcon was the chosen ISP provider. The modem is installed and tested, thanks to help from Simon ZL1SSW. Its speed is impressive. The VoIP phone is operational too.

### Purge of Membership list:

NZART-HQ are working with RSM to clean up the Call book. This month, Branches are being asked to comment about those that have not replied to RSM's correspondence. Similarly this newsletter is emailed to many people who no longer subscribe to this Branch (and perhaps do not subscribe to NZART either). Whereas these emails do not bounce, I have been reluctant to purge them just in case there is some interest. But how will I know? The time has come to take the lead from NZART. Those who have been **copied in** should QSL me please if you still wish to read about activities at Auckland Branch.

## Short list of Equipment that will shortly be put on TradeMe for auction.



Atlas 210-X  
and PSU



Atlas 350-XI  
and PSA



Kenwood TS-430S  
(no power supply)



ZL1 Mark II

. KW-107 Tuner supermatch



Heathkit HM-15

MFJ 941 Tuner

The complete list is posted on the notice board.

# ***Auckland Branch, NZART (Inc.)***

## ***Minutes of General Club Meeting***

**On:** Saturday, 18<sup>th</sup> August 2012 at 1300 hours  
**At:** Clubrooms

**Present:** George ZL1TUJ (presiding), Steve ZL1FS, Wallace ZL1WAL, Ray ZL1AJR, Selwyn ZL1BRC, Rob ZL1RED, Japie ZL1JJN, Jeff ZL1TOU, Ian ZL2AD, Paul ZL1AJY, Giovanni ZL1BRA ,

**Visitors:** Malcolm Motion ZL1MIT, Paul Manley ZL2CQ

**Apologies:** Gwynne ZL1AAR, James ZL1KNI,

Sustained ZL1JR / ZL1FS

**Welcome:** The Chairman welcomed the visitors.

**Minutes of the previous General Meeting** on 21<sup>st</sup> July 2012 at Clubroom.

Having been circulated (in July newsletter), these were taken as read and approved:

ZL1TUJ / ZL1AJR

### **Reports:**

#### **Antennas:**

The beam was stepped and the beam was aligned. However it is decided to replace the rotator.

The Committee has yet to decide what antenna to erect (160m loop or V long wire or both?).

**Power supply:** Resolved by Auckland Council – no charge

**Gate:** This was damaged by the footpath contractors. Auckland Council have been advised.

**Phone:** Working. Orcon are to be the ISP.

#### **AREC:**

An national exercise will be held on 26 Sept at 9:26 am, in conjunction with a national CD exercise.

#### **Fund raising:**

The last newsletter pictured some transceivers for sale.

Equipment for sale is listed will be listed on the notice board; and soon will be auctioned.

#### **Antennas:**

Next month we hope to have time to assess requirements for new antennas in the yard, so that the following month, a working bee can be called to erect it (them) while the section is still vacant.

**Meeting closed at 1400 hours.**

---

### **Jeff Lowe ZL1TOU gave an interesting account of his visit to the Amateur site of the Olympic Games 2012L (Two Oscar, 12 London).**

This site was temporary; a scout hall and an adjacent field where the masts will remain until 9<sup>th</sup> September after the conclusion of the Para-Olympics. One 70 foot tower supported a 40m beam. – “Very impressive,” he said. At the time that Jeff visited, they had made 30,000 QSOs and had a logging system that was automated and allowed subsequent on-line searches. QSL cards will be sent only if requested. He passed around some pamphlets that showed their antennas and operators at their stations. Jeff urged us to contact 2O12L if we hear their CQ on all bands at xx.023 and xx.028.

---

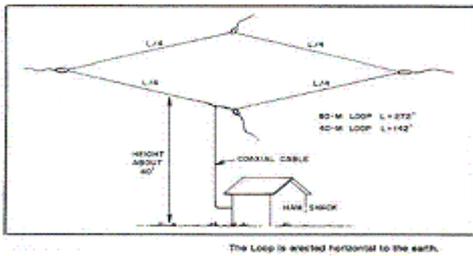
### **Paul Barratt ZL1AJY demonstrated the use of toroids on coax cables.**

In the least amount of set up time, Paul was running his transceiver into a dummy load and using a meter to demonstrate RF on the outside of the coax. By the simple insertion of a choke at the receiver end, the RF was suppressed. Similarly a choke can be included at the mast head (instead of a balun) to eliminate RF being fed down the coax. Paul explained the theory of the Faraday effect and debunked some of the myths that surround this hobby. This session aroused lively discussion.

Next Paul showed a DVD of a field day setup as it happened at Awhitu in 1982. It was a hive of activity with young men in brief shorts improvising as they erected antennas and carried out tests. Meanwhile, the wives and girlfriends lay back and enjoyed the sunshine.

---

It was agreed by the meeting that this afternoon’s illustrated talk, lecture and demonstration were highly informative and made for a most enjoyable day.



# Skywire Loop Antenna

aka WOMHS Loop Skywire  
 aka Full Wave Loop Antenna  
 aka Magnetic Loop Antenna

Observations by [Jason Buchanan](#) - N1SU

## What is the right length?

**574' feet** for 160-15 meters. Anything shorter becomes a challenge to match on the upper bands and increases the chances of the feedline becoming the radiator and a source of RFI.

**I recommend a different loop for use on 20-10 meters** if those are your favorite bands, mostly because it's easier to put up 71 feet of wire (14MHz) with only 18 feet per side.

The formula for a calculating the length of a full wave loop antenna is: **Length (feet) = 1005/f MHz.**

- 544' is comfortably resonant at 1.847kHz, 3.694kHz, 7.389kHz, 14.779kHz and 29.558kHz. Not an optimal length.
- 560' is comfortably resonant at 1.794kHz, 3.589kHz, 7.178kHz, 14.357kHz and 28.714kHz. Not an optimal length.
- 565' is comfortably resonant at 1.778kHz, 3.557kHz, 7.115kHz, 14.230kHz and 28.460kHz. Still a little short.
- 574' is comfortably resonant at 1.750kHz, 3.5kHz, 7.00kHz, 14.000kHz and 28.000kHz. **My personal preference.**

## Performance Observations:

**Noise** seems to be greatly reduced with the loop compared to dipoles. My dipoles are mounted on a pole at the end of the house and some of the noise may be due to their height (35 feet for the dipoles vs. 30 feet for the loop) and close proximity to the house and stuff inside. The loop is 40 feet or greater from the house in most places. The noise on 20 meters is sometimes reduced as much as 1 S unit when using the loop compared to the dipole (even at 3:00am when nothing in the house is on). Once in a while a station may be slightly stronger with the dipole but the noise is stronger too - weaker stations are easier to copy with the loop due to less noise.

**Feedpoint** location is important - it's preferable to have the feedpoint on the north side of the loop (or a side that faces a part of the world where there is little DX), especially if your loop is square. My loop's performance was increased by moving the feedpoint to the north side; stations to the south were easier to hear.

**Corner feedpoint** locations of square loops increase gain in the direction of the opposite corner. A loop fed in the southwest corner will have a few dB (3dB or more) gain favoring the northeast corner. The loop **really, really** cuts the mustard on 160, 80 and 40 meters compared to a dipole at the same height. It works just fine and dandy on 20 meters as well but I'd rather have a dedicated 20 meter loop for 20 through 10 meters. I had a separate loop for 20-10 and it was far easier to put up and maintain (a lot less wire to be targeted by nearby falling tree limbs).

## Other observations:

- Signal reports are usually equivalent or better with the loop than my 20 or 40 meter dipoles at 38-40 feet.
- QSB seems to be less of a problem with the loop than the dipole - the fades aren't as deep and sometimes not there at all while the dipole could be horrible.
- The loop is a little quieter than the dipole, especially on the lower bands.

My experience so far has been that the computerized models of loops are over-optimistic compared to real operation in the field. You can get a rough idea with modeling software but that software doesn't take into account how much the wire droops from the corners to the middle of each side, etc. The exception to this is corner-fed loops, they do have a strong lobe as the models predict.

- When I read about full wave loops, five things came to mind:
  - Tuners are a bother
  - Ladder line is a bother
  - It's too big
  - It's hard to put up
  - It isn't worth it

I was wrong. A manual tuner is as easy as tuning a linear, ladder line is a misunderstood jewel, there's no such thing as an antenna that is too big, it was fairly simple to put up (even in my woody yard) and the performance makes up for whatever negatives are left over.

- Ladder line has become my feedline of choice - RFI is greatly reduced and power levels are not a concern. My tuner will burn up before ladder line will.

## Parts:

- My fullwave skywire loop is made up of [WA1FFL Ladder Lock](#) 544' insulated [Flex-Weave Antenna Wire](#) held by [3/16" Dacron Rope](#).
- Pulleys - BIG ones are better, preferably 3", and get good ones. DON'T use anything smaller than 2" or the wire in the corners will break after a couple years. I use marine-grade Harken free running blocks (see [West Marine](#) for details). Check for strength (200lbs is good), preferably with a sheave made of delrin - conductivity should not be an issue even if the insulation wears through.

# Auckland Branch 02, NZART (Inc)

## Minutes of Committee Meeting

**Date / Time / Place:** Tuesday 4<sup>th</sup> September 2012 / 1945 hours / Clubroom  
**Attendees:** Steve ZL1FS presiding, Wallace ZL1WAL, Ray ZL1AJR, Japie ZL1JJN, Gwynne ZL1AAR, George ZL1TUJ.  
**Apologies:** None

**Minutes** of the previous Committee meeting on 7th August 2012  
Taken as read and approved ZL1WAL / ZL1AJR

### Correspondence In:

Newsletters: North Shore, Franklin, Hibiscus Coast  
Vaughan – advice about a source of crystals for foxes  
Japie – Design of a loop antenna  
Japie – Minutes of AREC Regional Meeting  
Japie – AREC Call signs within hierarchy and the prescribed Message handling form.  
Selwyn – Advice about upcoming sales of equipment  
Gwynne – Recollections about AREC Memorandum of Understanding  
Rob ZL1RJS – requesting us to advertise for missing spokes from CP6 antenna after Franklin Sale  
Community Post – last chance to apply  
Ian ZL1UMC re sale of Neil Cromarty's junk at Tauranga

#### Matters arising:

Electronic waste at Selwyn College Sat. 8<sup>th</sup> September, 9am to 3pm  
Western Branch 217 Rosebank Road, Primary School Hall Sat. 13<sup>th</sup> October, 9am to Noon  
Tauranga Emergency Communications Group - Sat 29<sup>th</sup> September.

.Received ZL1FS / ZL1AAR

### Correspondence Out:

Call Book editor – Remove Selwyn from Examination Supervisor's list  
Andrei – Asking him to update our Web page with phone numbers in the Directory, Nets and Newsletters.  
Community Post – application for 200 envelopes

Approved ZL1FS / Z1AAR

### Finance:

The Treasurer presented the Year to date Finance report and stated that short term funds have been used up.

Received ZL1WAL /ZL1AJR

Payments requiring approval:

Telecom Account	\$52.24
Lawns	\$38.20
Battery	\$200.00 (to be met by donations from: Gwynne, Ray and George)

Fund raising

Lotteries: No application has been made yet.  
Sale of equipment Big ticket items were pictured in the last newsletter.  
\$125 has been received so far. Two other sales are pending.  
The very ancient Marconi Wave (GDO) meter should be donated to Musick Point Museum.

### General business:

#### Reports:

AREC: Japie described the upcoming national CD "Shakeout" exercise on 26<sup>th</sup> September at 9:26 am at which time about one third of NZ's population will be participating in "Drop, Cover and Hold". He said that AREC intend to stage their national alert exercise at the same time. Our Branch call sign is ZK1EA on 144.600 MHz Simplex with which our Members communicate. There are three other Branches all reporting to VHF Group, 3.900 USB is **NOT** to be used to transmit – merely to monitor. In the next newsletter there will be an invitation, especially to Members who have indicated their AREC readiness /willingness (on the Membership Renewal form) to attend our planned AREC Message Handling exercise at our next General Meeting on 21<sup>st</sup> September – just before the real AREC exercise, We need to know what to do before this event and to be competent at the time. Japie asked that we submit accounts for Phone, Internet and Insurance which will be reimbursed by CD in accordance with a Memorandum Of Understanding (MOU) written many years ago (1974).

## Minutes (continued)

### Reports (continued)

Examinations: none

Membership:

Almoner: It was pleasing to see Selwyn at the last General Meeting.

Drive for Members from Educational Institutes – The Flyer has not been designed yet.

Batteries:

Leith Jackson ZL1BCJ has a new battery for sale (See Finance Report).

Three Committee members agreed to sponsor the purchase of this.

Beam Alignment. Steve reported that the new rotator is ready for installation – scheduled for 22<sup>nd</sup> September when Steve and Japie have their vehicles on site at the same time.

ISP: George delivered the Orcon Modem and VoIP handset.

Maintenance:

Sign: This needs to be more securely affixed because it has been found lying down.

Gate: This is the responsibility of Auckland Council.

Equipment out on loan: The 2m rig has been returned for use in the AREC exercise.

Computers, LAN: No action until the ISP is operating.

Antennas:

Barrels: Steve to pick up from Selwyn who has generously donated some.

Wire: No purchase is contemplated just yet.

Foxes – crystals for the 80m keyers: No reply from IQ Limited in Albany,

Photocopier: A serviceman has called today and remarked about the distorted side door. He will salvage a part from another copier at his base. [This is now working. Anticipated cost is \$180. Ed].

**Program for General Meetings** (on 3<sup>rd</sup> Saturday of each month):

**Sept 15<sup>th</sup>** AREC Message handling exercise

**Oct 20<sup>th</sup>** JWFD Antenna tests

**Nov 17<sup>th</sup>** **To be announced** Possibilities are:

Visit to Coast guard

Fox hunt

**Dec 11<sup>th</sup>** (Tuesday 1930 hours) **AGM**

### Remotely operated station;

The file of Users and passwords had to be re-entered, so expect some changes.

Alternative software RCFORB. James has successfully made a QSO using ZL2TZE's remote station in Blenheim that uses this software. It is also used on 20 remote stations in Europe, UK and USA each using different rigs (but only half of them permit transmission). The screen display is of a generic radio and it looks simple enough to use. Help is provided by mouse-overs.

Operation privileges require Membership which means sending a scan of one's Ham Licence George is trying out his new K3X – a client device.

Meanwhile, it is not open for others to use.

No progress on the antenna switching project – relays are wanted

### Projects

Fox battery charger; Wallace will fetch the charger from Vaughan after 14<sup>th</sup> September and Steve will fix its connectors (that had been cut off by a previous borrower of the equipment).

The 2m foxes are required for JOTA weekend in October at Camp Maynard, 101 Paremoremo Road, Albany.

Keyers for two foxes for 80 m: Wallace has written to IQ in Albany but no reply has been received from them either.

More sniffers: No progress.

### Antennas:

Japie provided an article about practical experiments with various sized Loop antennas that are suitable for 160 metres thru 20m. [See Newsletter Ed.].

This fits within the yellow overlay of the Google earth plan that appeared in the last newsletter.

**The meeting concluded at 2010 hours with supper provided by Ray ZL1AJR.**

**Jeff Lowe ZL1TOU brought this pamphlet back from UK for us.**

**They promote ARDF (not fox hunting).**



**for youth**  
The combination of outdoor, hide-and-seek type game, technology and competition is guaranteed to get 100% positive response from youngsters. There has been a steady input of ARDF equipment into many UK scout centres, supported by dedicated amateurs.

**equipment**  
Amateur Radio enthusiasts are the primary source for kits, ready built or imported receivers.

**construction**  
Many amateurs will design and build their own equipment. ARDF is one of the last bastions of home built equipment. A simple top channelled AM receiver integrated with a lightweight antenna is the preferred solution for most competitors, although a modified amateur band handheld radio will often suffice. Build a simple ARDF receiver as a school or club project.

**contact**  
RSGB: 3 Abbey Court, Fraser Road, Priory Business Park, Bedford, MK44 3WH  
+44 (0)1224 832 700  
WWW: For a source of information on events, equipment, rules and helpful tips: Go to: <http://www.ardfukinternet.co.uk>

**MOVE IN THE RIGHT DIRECTION**  
**ARDF**  
AMATEUR RADIO DIRECTION FINDING



**RADIO TRACKING, ORIENTEERING, WALKING / RUNNING**  
Up to five transmitters (or "foxes") are situated in woodland and the objective is to work out their locations from radio bearings and then visit them, on foot, as quickly as possible.

**about**

**two versions?**

**ARDF on 80m** (short wave) allows the use of tiny handheld radios capable of taking very accurate bearings. 80m ARDF gives a distinct advantage to the quickest on foot.

**ARDF on 2m** (VHF) is more technically challenging because radio reflections from trees and terrain will often obscure the true transmitter location.

**EQUIPMENT - CONSTRUCTION EXPERIMENTATION**  
**radio sport for all**

It's either the ultimate competitive outdoor sport, a mental challenge for you and a test of your equipment, or just a great fresh-air pastime taken at a more leisurely pace!

**START HERE!**

**for orienteers**

ARDF provides additional challenges for the orienteer. Controls are co-located with a radio beacon, but their position is not shown on your map, only the course start and finish!

You will have to decide a route and the order to visit each control by interpretation of the received beacon signals. Your radio bearing may initially be ambiguous and you will need to refine your route plan as you progressively uncover the location of the controls.

**ARDF has International competitions for the elite or adventurous.**

**APPLY HERE FOR GB REPRESENTATION !**



## 2012L (2 Oscar 12 London) site of Amateur Special Event Station for the Olympics

**New World Record number of contacts for a Special Event Station!** The previous record established by DQ2006X was exceeded on 21st August when the QSO total reached 49,791. The target figure of 60,000 QSOs was reached at 23.05z on Friday 31st August.



The plan has always been to make at least 60,000 contacts during the seven weeks of round the clock operation. Having achieved that, we have now revised our target to another round figure of 70,000.