



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

**NEWSLETTER**

**May 2013**



## **GENERAL MEETING**

**Saturday 18th May 2013 at 1330 hours**

**To consider and vote on the remit going to the NZART Conference**

**Some subscriptions are overdue: Please pay \$45 by direct credit to 12-3047-0076823-00**

### **80M PHONE TRANS-TASMAN CONTEST: 11 MAY, 8PM-2AM**

This popular 80m phone Trans-Tasman contest is coming around again, and will be held on Saturday 11th of May 2013, from 8pm to 2am NZST. As usual your best 5 hours of the 6 count toward the final result.

Contact as many ZL's and VK's as you can each hour on 80m SSB. Bonus points for QRP, and for each group of 5 different call areas. Full rules and last years results are on the WIA contest pages:

#### **DIRECTORY:**

[www.qsl.net/ZL1AA](http://www.qsl.net/ZL1AA)

[ZL1AA@NZART.org.nz](mailto:ZL1AA@NZART.org.nz)

Clubroom: 528-2039

Contacts: 524-9969 (Gwynne)

21- 0226-4981 (Steve)

Box 18-003, Glen Innes, Auckland, 1743

400 St Johns Road, Kohimarama,

Google earth: 36.86973°S; 174.84386°E

ARRL Grid: RF73kr

ASB Bank Account: 12-3047-0076823-00

Nets: Mondays 3.645 MHz

Thursday 145.775 MHz

Club: Saturdays 145.775 MHz

Skype: ZL1AA\_NZ

Remote K3: [ZL1AA.dyndns.org](http://ZL1AA.dyndns.org)

# From your President, George ZL1TUJ



## And the winner of the 2013 Inter-Branch ARDF Competition was ....

Franklin Branch 10. Their two members, Rod Radford, ZL1RK, closely followed by Gary Landon ZL1WGL came in first and second. I see from the results that they were the oldest competitors and I am told that they each had their frailties. While age may weary them, it seems that DF technique is all important. Incidentally, Rod was joint winner with Tom McDonald ZL1TO at our inaugural Inter-Branch ARDF Competition held in Dingle Dell in 2011.

## Auckland Council Unitary Plan.

Thanks to Steve for convening the Special General Meeting to consider the proposal by NZART President Vaughan Henderson ZL1TGC to contribute to a fighting fund to engage lawyers to present the case for inclusion of antennas in the Auckland Unitary Plan. We are grateful for private donations that have been made to support this cause. If others wish to similarly pledge their support, anonymity can be assured if you deposit directly into our ASB bank account **12-3047-0076823-00**.

## Equipment TradeMe Sales:

Thanks to Wallace for handling the advertising, correspondence with bidders, packaging and dispatch of these items that are a source of our revenue. Gwynne intends to take on this task.

## NZART Conference:

Gwynne has graciously accepted the responsibility to be our Delegate on Queen's Birthday weekend at Masterton. We shall meet on 18th May at the clubroom to discuss and vote on the remit, to give him our voting preference.

## New Members:

We welcome Tony Burns, ZL1AHJ, Hiraki Seko ZL1XX and Ayman Milhem.

## Montgomery Cup — we won—again:

The team, headed by Wes ZL3TE, that competed in the Jock White National Field Day in February, are to be congratulated for another fine performance to maintain the cup in our clubroom. The experiments by Gwynne, Steve and Japie with loop antennas, proved to be worthwhile. Look at all those poles and thanks to Wallace for pouring the concrete bases.



## 2013 - Jock White Memorial Field Day Results

### Montgomery Cup - Northern region

CALL	80 Metres			40 Metres				Total Multi	Total Score	Power Out	BRANCH			
	QSO's			QSO's										
	Ph	CW	DX	Ph	CW	DX	Ph					CW		
1 ZL1AA	373	230	1	33	16	328	193	4	27	14	90	384120	100	02 Auckland
2 ZL1AM	388	202	1	33	16	289	175	3	26	14	89	352084	100	28 Whangarei
3 ZL1CG	384	175		31	16	387	142	6	27	14	88	348304	100	77 Te Aroha
4 ZL1UX	280	95		30	15	310	55	2	27	14	86	220762	100	12 Hamilton
5 ZL4TM	328	160		32	16	169	48		26	12	86	218526	95	88 TECG
6 ZL1ZLD	285	153	1	31	13	186			22		66	143748	100	86 Musick Point
7 ZL1FND						393	104	2	26	14	40	68760	100	78 Far North Districts





# THE FOX HUNTING PAGE

By Wallace ZL1WAL

The threat of rain may have put some would-be competitors off coming to Churchill Park to take part in the ARDF (Amateur Radio Direction Finding) Inter-Branch Competition on Saturday 20th April using 144.7 Mhz. Previous winners were there to defend or take back their title.

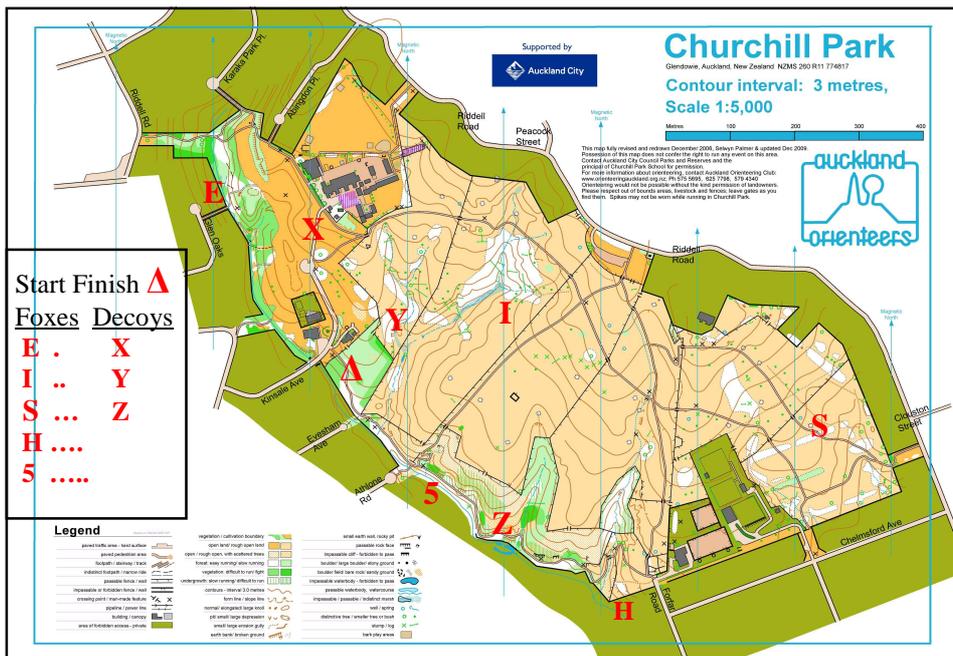
Over 65 years olds were given a one fox concession . Below are the results wherein you will see that age and infirmity does not matter. The winner's route was **Δ - 5 - I - S - H - Δ**. Notice that there are some non-transmitting decoys (see **X, Y** and **Z**), purposely placed to distract the hounds.

## Thanks:

It was a pleasure to convene and plan for this event. Gwynne ZL1AAR was the chef as usual; Ray ZL1AJR administered the Start and Finish while Simon ZL1SWW input the results on his laptop. Thanks also to Harry and Simon for fetching the foxes afterwards.

A fun time was had by all, and that includes the camp followers whose support was greatly appreciated.

## Times and scores for Inter-branch ARDF competition (Fox Hunt) at Churchill Park, Glendowie, in 2013



Date **20 April 2013**  
 Event Starts **13:00**  
 Starting Interval **0:05:00**  
 Each fox scores **20**  
 Time limit (mins) **60**  
 Points late / min **-1**

Start Time	Name	Age	Branch	Finsh	Foxes	Points
13:00						
13:05						
13:10	Vaughan Henderson ZL1TGC	66	66	14:18	3	72
13:15	Rod Radford ZL1RK	82	10	14:23	4	92
13:20	Gary Landon ZL1WGL	67	10	14:13	3	80
13:25	Harry Pompe ZL1BK	57	66	14:46	5	79
13:30	Simon Watt-Wyness ZL1SWW	50	02	14:32	4	78

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

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

**On:** Saturday, 27<sup>th</sup> April 2013 at 1335 hours  
**At:** Clubrooms

**Present:** Steve ZL1FS (presiding), Wallace ZL1WAL, Gwynne ZL1AAR, Ray ZL1AJR, Robert ZL2RED, James ZL1KNI, Selwyn ZL1BRC, Ian ZL2ATD, (all recorded in the Attendance book),

**Apologies:** Bob ZL1AFU, Paul ZL1AJY, Tor ZL1BNX, Jeff ZL1TOU, Japie ZL1JJN,  
Sustained ZL1WAL / ZL1AJR.

### **Fighting Fund re Auckland Council Unitary Plan:**

The Chairman read out the letter from Vaughan Henderson ZL1TGC, President of NZART Inc. on this subject. Vaughan's proposal is asking for a commitment from the nine Auckland area Branches for \$800 each to be used as a fighting fund. This is to be used to hire lawyers to present a case to Auckland Council to make provision in the Unitary Plan to allow poles and towers for antennas for Amateur Radio Operators. Without such provision, Amateurs would have to apply for Resource Consent, costing \$5,000 each. Steve said that the Committee had considered this proposal and recommended that Members support it. The Committee now needs the approval of Members in General Meeting to this level of expenditure - being over \$300 as allowed by the Branch Constitution.

All Members in attendance spoke in support of this proposal and they made the following additional points:

- Three proxy votes have been received in support of the proposal.
- Vaughan has since spoken to Auckland Council Planning Officials after his initial letter was acknowledged, only to be told that provision for antennas in the final plan could **not** be assumed.
- So it seems that the work and cost (\$5,000) incurred by North Shore Branch to have North Shore City recognize Amateurs' antennas is being ignored by Auckland Council.
- It is not known if existing antennas have been officially permitted or consented. Therefore it seems possible that a disaffected neighbour could demand that an existing antenna be removed. An example of such a dispute was quoted and the antenna was taken down rather than fight it.
- The Branch is already struggling to break even with its annual funding.
- There are sufficient funds in reserve to meet this one-time opportunity to fight for existing and future Amateurs in pursuit of their hobby.
- Individual Auckland Branch Members, some anonymous, have pledged \$550.
- This Branch should commit the full \$800 requested plus these pledges.
- That the next newsletter should report these pledges (without names or amounts) and to seek commitment from more individual Members to ensure that the fighting fund is not limited in the event that the case may have to be taken to the Environmental Court.
- This newsletter should be sent to Branch Members only.
- A reply to Vaughan is now a matter of urgency.

A unanimous decision was made to commit the expenditure of \$800 - ZL1FS / ZL2RED

### **Other Business:**

#### **Newsletter:**

In view of the difficulties being experienced by Robert ZL2RED, Wallace has indicated that he is prepared to take back responsibility to produce the monthly Newsletter.  
Robert concurred.

**Meeting closed at 1402 hours.**

# Auckland Branch 02, NZART (Inc)

## Minutes of Committee Meeting

**Time / Date / Place:** 1930 hours / Tuesday 7<sup>th</sup> May 2013 / Clubroom

**Attendees:** Steve ZL1FS (presiding); George ZL1TUJ, Wallace ZL1WAL, Gwynne ZL1AAR, Ray ZL1AJR, Japie ZL1JJN, Robert ZL2RED, Wes ZL3TE and Selwyn ZL1BRC,

**Minutes** of the previous Committee meeting on Tuesday 2<sup>nd</sup> April 2013

Taken as read and approved ZL1AJR/ ZL1AAR

### Correspondence In:

Newsletters: Franklin, North Shore

Melissa Ousey requesting info about getting an Amateur licence and VHF set

NZART - Remits and list of Members attached to Auckland Branch

NZART - revised Examination program and updated PIB 46

NZART – rejecting demands by ZL2AMJ for copyright of “The New Zealand Amateur Radio Study Guide”

### Correspondence Out:

Letter to Vaughan Henderson supporting Fighting fund request

Gwynne re fixing post and padlock at Scout den

Melissa Ousey re examination procedure

Robert re Toll account. The amount is \$2.71.

38 letters to NZART Members attached to Auckland Branch asking them to join or donate to Fighting fund.

Inwards received and outwards approved ZL1WAL/ ZL1TUJ

### Finance:

The Treasurer presented the Finance report

Individual Member pledges made for the Fighting fund now totals \$550.

Received ZL1WAL/ ZL3TE

Expenses requiring approval to pay:

Orcon	Broadband	\$75.00	Direct Debit each month
Gwynne	Fox hunt	\$32.02	
Selwyn	Log books	\$12.52	
St Heliers Village	Table hire	\$10.00	
Higgins	Lawns March & April	\$73.60	

Approved ZL1WAL/ ZL1FS

Fund raising

No decision yet by Auckland Council Civil Defence for our application for \$3,500 through AREC

Lotteries application – None made yet; There is 2½ months until the next deadline

Sale of equipment on TradeMe – no sales this month

### General business:

**Reports:**

**AREC** –The next meeting is on 16<sup>th</sup> May at VHF Group. Weekly nets are held planning for Car Rally.

**Batteries** - OK

**Maintenance** - Steve will plumb the outdoor sink. Steve and Japie could not find the outflow in the paddock, Toilet (in block building). Nearest stall needs to be cleaned (water blasted) and sign posted.

**Exams** – four candidates have shown interest. Wallace will prompt them.

**QSL card** collection and dispatch, Gwynne will collect from Musick Point branch. Ray will dispatch.

**Remotely operated station.** George will distribute ideas from USA about demand for remote sites.

**Computers** – individual logins are approved so that each member has his own desktop. George in charge.

**Event held** - Inter-Branch ARDF (Fox hunt) competition: It was won by Franklin Branch represented by Rod Radford ZL1RK from only five competitors. Revenue \$50, Cost \$32.00. Certificates to be signed.

**Future Monthly General Meetings:**

**18<sup>th</sup> May** Steve will talk about shipboard electrics. Japie will be with AREC at Whangarei Car Rally.

**22<sup>nd</sup> June** Report by NZART conference delegate. Selwyn will explain HAP charts

Date to be set for St Heliers / Glendowie Scouts/ Guides winter instruction 1800-2000 hours. It is intended to set up a HF rig at their den. The format will be JOTA-like, with members asked to QSO with them.

**Delegate to NZART Conference at Masterton:** Gwynne was appointed.

**QSL Card design ideas:**

Gwynne will present design alternatives from the amalgam of ideas contributed by Wes and Robert.

**Logs:** Paper logs have been redesigned. These are preferred now, though LoTW is desirable in the future.

**Meeting closed at 21:00 hours with supper provided by Ray ZL1AJR.**

## Continuation of discussion about experiments with vertical antennas

Acknowledge <http://ve2bmc.com/ANTENNA.htm>

(3rd installment)

### FULL WAVE LOOPS

Equilateral Delta Loop, Compressed Delta Loop Quad Loop, Rectangular Loop, Half square Loop, ADR Loop, Bobtail Curtain, SDR Loop

Full Wave Loops are very simple antennas which can be extremely efficient if a minimum of precautions are taken in their design. For some reasons, only a few variations of these loops have been thoroughly documented; mainly the Quad and the Delta Loops. Interestingly, from a performance and “ease to feed” standpoints, these models are clearly not the most appealing ones. It is still a mystery to me why the other variations have not been better explored and documented.

One of the appealing characteristics of the Full Wave Loops is that they can actually exhibit a very interesting GAIN and even offer some directivity. The table (next page) shows the gain and directivity of different loop designs and other common antennas. Another interesting aspect of the Full Wave Loops is that they do not require radials for the return current. In a sense, they are “self contained”. In fact, a vertically polarized loop could be represented as being a pair of phased verticals, each with its own elevated radial.

Just like it is the case for all vertically polarized antennas, the quality of the ground is an important factor and will have a determining effect on many characteristics such as take off angle, gain, near field losses, etc. It is also important to note that the horizontal wire of the loop will tend to couple with the ground itself so one has interest to elevate the loop as high as possible and/or improve the quality of the ground underneath the antenna itself.

### SHAPE OF THE LOOP

The shape of the loop itself will greatly influence its gain, radiation resistance and bandwidth. For example, the quad and the equilateral delta loop have both relatively high radiation resistance and similar gain. By compressing the vertical sides of these loops and widening the horizontal component, the gain will increase significantly and the radiation resistance will decrease to a level that can be optimized to perfectly match a 50 ohms coax line. The price to pay for these advantages will be some bandwidth. Following this logic, going from a quad to a rectangle or going from an equilateral delta loop to a compressed delta loop would provide the advantages mentioned above. Once again, the comparison table testifies these very facts.

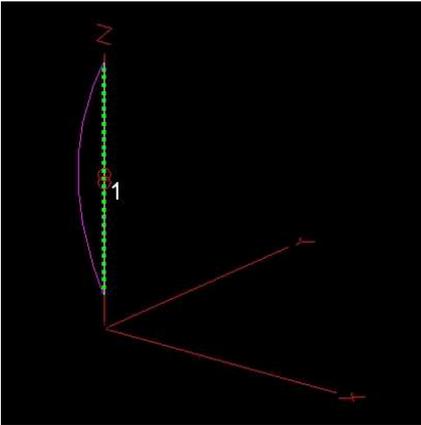
### EFFECT OF THE GROUND

Just like it is the case for all vertically polarized antennas, the quality of the ground is an important factor and will have a determining effect on many characteristics such as take off angle, gain, near field losses, etc. It is also important to note that the horizontal wire of the loop will tend to couple with the ground itself so one has interest to elevate the loop as high as possible and/or improve the quality of the ground underneath the antenna itself.

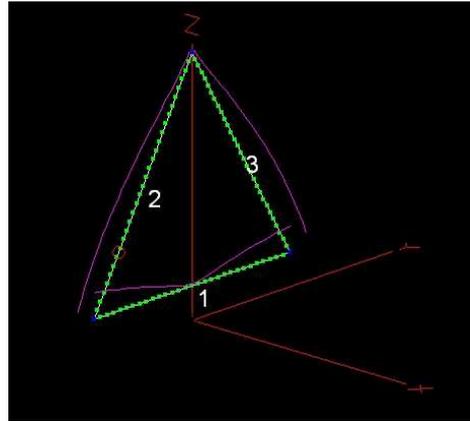
### PERFORMANCE

Even though it is almost difficult to believe, going from a  $\frac{1}{4}$  wavelength vertical to a simple rectangular loop can lead to 3-4 S-units improvement.

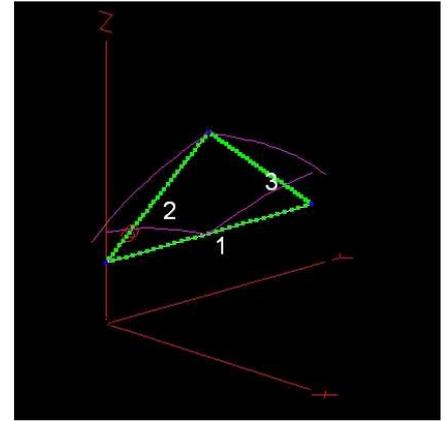
The Vertical dipole...



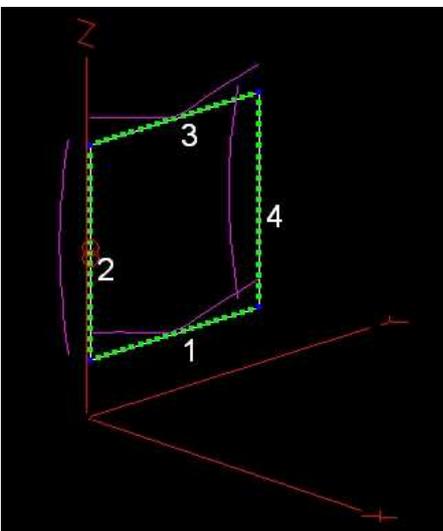
Delta Loop (Equilateral)



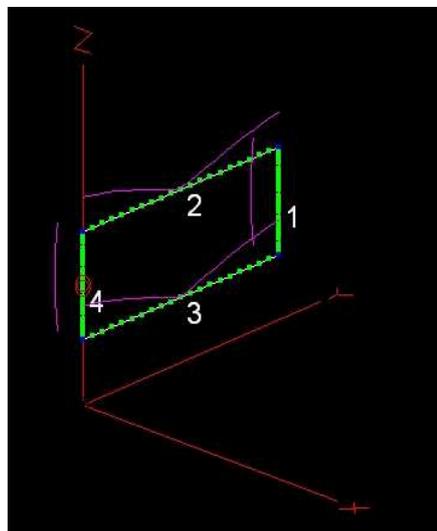
Delta loop (Compressed)



Quad Loop or Cubical Quad if square



Rectangular Loop



The Rectangular Loop is the best performing antenna I have tried so far, not to mention other interesting advantages like:

- No BALUN required (can be fed directly with coax).
- Radiation Resistance can be adjusted by changing the ratio of the height / width
- It is by design a dual-band antenna where a 20m loop for nstance will resonate as a 2 wave length loop on 10m. Using a 75 ohm 1/4 wave length section cut for 10m will give a perfect match for both bands.

## Comparison Between Different Antenna Systems "in Free Space"

ANTENNA	FORWARD GAIN	FRONT / SIDE REJECTION	RADIATION RESISTANCE
1/4 Vertical	1.45 dBi	0 dBi	21 ohm
Vertical Dipole	2.13 dBi	0 dBi	72 ohm
Delta Loop (Equilateral)	2.96 dBi	2.4 dBi	115 ohm
Quad Loop (Square)	3.30 dBi	3.8 dBi	126 ohm
Delta Loop (Compressed)	3.55 dBi	5.2 dBi	31 ohm
Rectangular Loop	4.55 dBi	8.3 dBi	32 ohm
Half Square	4.83 dBi	8.3 dBi	32 ohm
ADR Loop	5.25 dBi	26.1 dBi	63 ohm
Bobtail Curtain	6.46 dBi	99.9 dBi	34 ohm
SDR Loop	6.57 dBi	19.3 dBi	50 ohm

Next month: Half square, ADR Loop, Bobtail curtain, SDR Loop will be discussed.