



Auckland Branch
N Z Association of Radio Transmitters Inc.

NEWSLETTER

April 2012



INTER-BRANCH ARDF COMPETITION

**Saturday 21st April 2012
at 24 Dingle Road,
St Heliers**

*As you drive north down Long Dr,
take the first turn to the right into
Fern Glen Road North. It is a
narrow twisty road down beside
Dingle Dell Reserve. As you reach
sea level, behold, my QTH.*



BBQ at 1200 hours

Briefing at 1250

The first competitor starts at 1300; the rest start at 5 minute intervals

- Each of the five foxes transmit its call-sign in slow MCW on 144.700 MHz: MOE, MOI, MOS, MOH and MO5 respectively for 1 minute each; that is, they are silent for 4 minutes until their next turn to transmit.
- Bring your hand-held, headphones, compass, clipboard, felt tips and \$5 for BBQ and entry fee.
- Print out the attached map of Dingle Dell and familiarize yourself with its legend.
- The last page of this newsletter tells **what to expect**.



From the Secretary, Wallace, ZL1WAL

Jock White National Field Day: The results show that we won the Montgomery Cup (again).

Fox Hunt in Dingle Dell Reserve - 17th March: This was a practice day to rehearse the organization required for the Inter-Branch Competition that we shall host on Saturday 21 April. The weather behaved; new and old faces appeared, Gwynne ZL1AAR ran the BBQ to perfection as usual, and a fun day it was. All four of the foxes were found, which vindicated the event. Steve ZL1FS was narrowly beaten by Vaughan ZL1TGC. Some newcomers had less success. Each gave an account of their ARDF strategy and route choice. We decided that hand-held 2m rigs prove to be more reliable than the NZART purpose-built sniffers. This year, I placed the foxes on higher ground (than last year). Nevertheless, there is still the problem of reflected signals that confuse the sniffers.

Telephone line:

Last month this newsletter showed pictures of Steve and Japie at work digging a trench across the yard. The 'phone line is now buried - thanks to an impromptu working bee on Sunday after the Fox Hunt.. They shoveled and shoveled and shoveled. A big diameter conduit is being laid between the clubroom and the implement shed. This is to allow a coax cable to be pulled through if required for JWFD or some other antenna project in the future.

St Heliers Village Fair: Last Saturday with the help of Ray ZL1AJR, Steve, ZL1FS, and Gwynne ZL1AAR we set up a station outside Gerald Harbinson's Real Estate Office at 12 Polygon Road. In the dead of night, firing my catapult over the high street light standard was a bigger challenge than my last month's effort to get a halyard up the giant Himalayan Cedar tree in front of the St Heliers Library. Ian Falgar's Chameleon 80 /10 end-fed antenna was hoisted and strung along the road in front of the National Bank. Sadly, tuning it was problematical; but we did contact some VKs on 10metres. Meanwhile Steve made many contacts with his 2m rig. We were surrounded by children who queued to pay \$2.00 to go through the bouncy train and \$5.00 for a turn on the climbing wall. Had we erected a sign: "Queue here to transmit—\$2.00." we might have made a fortune, hi hi.



Inter-Branch ARDF Competition (Fox Hunt): Other Branches have featured this event in their newsletters and have put it on their agenda at their recent meetings. The VHF Group have asked to reprint the construction details of a Yagi made from a tape measure. Therefore we are hopeful of seeing them well represented and well prepared. Franklin Branch won it last year. We shall meet at my QTH at 24 Dingle Road where a BBQ will be served by Gwynne at noon. I propose to brief all competitors, and answer any questions just before 1 pm. Ray ZL1AJR will be the Starter and he will let participants start at five minute intervals. The foxes transmit on 144.700 MHz. Even if you do not have a Yagi or loop antenna, you can hold your 2m hand-held set very close to your body to prevent signals from behind being received. Remember that a sharp null gives a better bearing towards the fox. This is demonstrated by the oscilloscope measurement illustrated at the bottom of page 7 herein. Tips and Techniques about triangulating signals were expounded in last month's newsletter. Re-read it.

AREC exercise: Japie ZL1JJN manned a corner on the route of the Whangarei Car Rally held during last week-end. He gave the Committee an account of the perils and the need for thorough preparation for this event. Safety issues and readiness to respond, were the whole point of this exercise.

Nets: The Committee decided last month to shift the times of the Branch nets as follows:

VHF 145.775 MHz at 2000 every **Thursday**

HF 3.645.00 MHz at **2000** every Monday.

Subscription: (Wearing my other hat as Treasurer):

Only 14 Members of 40 have paid their subscription (\$30) and we are nearly half way through the year. After paying Insurance (\$650), Use of repeaters (\$250), Phone line (\$600), I want to avoid the cost of posting invoices out to those whose subscriptions are overdue. It is more efficient to pay by direct credit to our ASB Bank Account Number: **12-3047-0076823-00**.

The Membership Renewal form is on the home page of our web site www.gsl.net/zl1aa/ Fill it in, then hit the "Submit" button (top left corner). An e-mail with this form attached is sent to me. My thanks to those who have already paid.

AUCKLAND BRANCH, NZART (inc.)

Minutes of Committee Meeting

Date / Time / Place: Tuesday, 3rd April 2012 at 1735 hours; Clubroom.

Attendees: George ZL1TUJ (Presiding), Steve ZL1FS, Wallace ZL1WAL, Ray ZL1AJR, Japie ZL1JJN, Gwynne ZL1AAR, Ole ZL1OLE.

Apologies: Wes ZL3TE (attending ARRL DX conference).

Sustained ZL1TUJ / ZL1JJN

Minutes of the previous Committee meeting on Tuesday 6th March 2012; 1750 hours

Taken as read and approved ZL1WAL / ZL1AAR

Correspondence In:

Newsletters from: Franklin; North Shore, Suburban Branches

NZART enclosing Remits and forms for nominating awards.

Auckland Council Parks and Reserves giving permit (35081) for event in Dingle Dell Reserve

Vaughan Henderson of VHF Group asking permission to reproduce our newsletter article about Yagi antenna construction

Auckland Council Leasing Dept saying that containers will be stored on site.

Kiwi Bank confirming Term Investment altered to show Withholding tax = 0%

John Martin about fund raising.

NZART Info line publishing results of JWFD.

Received ZL1WAL / ZL1TUJ

Correspondence Out:

Suburban Newspapers with photo and caption about NZ Amateur day for their "Milestone" column

Vaughan Henderson re charging batteries and delivery of Foxes for event in Dingle Dell on 17th March

Mid Sussex Radio Society asking permission to reproduce article about an attenuator for 2m Sniffer

NZART ARX asking for more ERN forms

John Martin asking for guidance to raise funds from IBM's Community project.

Auckland Council seeking permission to use Dingle Dell for Fox hunt on 21 April.

Approved ZL1WAL / ZL1TUJ

Finance:

The Treasurer presented the Year to date Finance report

Received ZL1WAL / ZL1TUJ

The Treasurer explained that Withholding Tax (\$115.50) had been deducted for the previous Term Investment with Kiwi Bank. This can be recovered by submitting a Tax Return for 2011. Having found an IRD Exemption Certificate, Wallace has asked Kiwi Bank to alter the present Term Investment so that withholding tax will not be deducted in future.

Payments requiring approval:

Lawns	\$34.50	R Higgins
Print cartridge	\$24.00	Ray Chapman
Print cartridge for printing maps	\$25.53	Wallace Bottomley
Batteries for sniffers	\$22.00	Wallace Bottomley

Approved ZL1WAL / ZL1TUJ

General business:

Reports:

JWFD result: Auckland Branch won the Montgomery cup (again). Wallace is to get it engraved.

Certificate: Gwynne has framed last year's certificate and has purchased a frame for this year's.

AREC: Training day 30th March 2012. Japie gave a full account of his experience manning an observation station on a gravel strewn corner of the Whangarei car rally, illustrated with photos. His van incurred stone damage caused by drifting participants. George will follow up Insurance options.

Event: Wallace reported that a station was set up for St Heliers Village Fair on 31st March. A Chameleon 80 / 10 m antenna was used with little success except on 28 MHz. Steve operated his VHF rig with good success. Gwynne, Ray and Ole assisted talking to curious passersby. The day was brilliant; cake and BBQ stalls busy; and small children queued for the climbing wall (\$5) and the bouncy train (\$2). It was suggested that had we invited people to transmit (\$2), a queue would form.

Exams: Several candidates are likely from James' school. Three passersby at the NZ Amateur Day have shown interest; one a lapsed NZART member who still has his rig.

Almoner: Steve reported his visit to Selwyn Ross ZL1BRC and his offer to fix his rig and /or lend a club rig, was declined. Selwyn has a 16' thin aluminum mast for sale.

Membership: Renewals = 14 / 40. Invoices will be sent to the rest. There are 57 NZART members attached to Auckland Branch. The Secretary writes to these Members each year.

Remotely operated station: Woosh often fails to link; so the new phone line is opportune. George reported that he has purchased a K3 / 0 which is a User interface to the internet (no computer required) having an identical display and knobs, as is found on the K3, but it is not RF capable.

Minutes (continued)

Phone line:

Steve reported that the phone line is now connected.

A working bee on Sunday, 18th March filled in the trench across the yard.

A master connection box will be mounted behind the door of the Clubroom, handy to the LAN cables.

Phone number: 528-2039. Listing: "ZL1AA - Auckland Branch Assoc. of Radio Transmitters Inc."

Only Broadband is required. However VOIP is possible.

The line will be toll-barred.

Sponsorship is being sought for its monthly fixed cost.

Computers: Ole has a plan for a Linux server for Members to use the Internet and a LAN.

Grounds:

The trench between the Clubroom and the implement shed is still open while a large diameter conduit is being laid. It will be threaded with a draw-string for a coax in the future.

Steve intends to borrow the Pony Club's tractor to fill in the trench and to level the area between the clubroom and the implement shed. It is intended to claim the use of this area by grassing it.

Maintenance: Painting the roof will occur on Saturday 14th April.

Batteries: The big grey battery was recharged last week (in anticipation of use at St Heliers Fair).

Surveillance: George reported that the Logitech 9000 Pro is wide-angled and therefore suitable.

Smoke alarm: Not yet connected. With the advent of the phone line, the alarm will be monitored.

Loan book: The book is being used for equipment out on loan. Ray cannot remember to whom he has lent his noise suppression speaker, model bhi NES10-2. QSL to him.

Nets: VHF on **Thursdays** at 2000. HF on Mondays at 2000. The Secretary will advise the Call-Book editor and the Web Master to update their pages.

Roster: Wallace has checked into the VHF Group, Manukau, Western and North Shore nets to publicize the Inter-Branch Fox hunt competition on 21st April at Dingle Dell.

Monthly (3rd Saturdays) General Meeting Program:

21st April Fox hunt in Dingle Dell – Inter-Branch Competition. BBQ at Noon.

19th May Voting on Remits. George will ask Vaughan to attend and explain any NZART issues.

16th June Report on NZART Conference by Gwynne.

Other suggestions for future meetings were:

Visit to Motat

Visit to Coast Guard Communications Centre

Intruder surveillance by John Martin.

Understanding propagation and being an effective DXer.

The DVD of Gwynne's son-in-law's recent trek from Waioeka to Taupo is being re-edited, so it will not be available for showing in the short term.

Membership drive:

NZ Amateur Day. Station set up outside St Heliers Library - done.

Publicity in Suburban Newspapers - done.

St Heliers Bay Village Fair. Station set up outside Harbinson's Real Estate, 12 Polygon Road - done.

Secretary is to write letter of thanks to Mr Gerald Harbinson.

ZL1TUJ / ZL1FS

Antennas:

Alignment of beam. 14th April. Japie's van will be used as a platform.

Gwynne said he would complete the 80m antenna project when he becomes more mobile.

Discussion about better antennas for next year's JWFD will be discussed in October

A coax switching box is needed for the band sensing device. George will locate some relays for it.

Members will soon be invited to operate the Remotely Operated K3 Station.

Library:

Gwynne has printed file copies of all of the Branch newsletters in B5 size. These are also available to view on www.qsl.net/zl1AA > Newsletter > Year > Month.

Gwynne intends to present recent issues of QST magazines to the Library.

Newsletter: Deadline for photos and text this weekend please.

Honourary Life Member: The Committee will recommend to General Meeting on 19th May, the election of Ray Chapman ZL1AJR as an Honorary Life Member. He joined the Branch in 1952.

Recommended with 1 abstention (Ray) ZL1AAR / ZL1TUJ

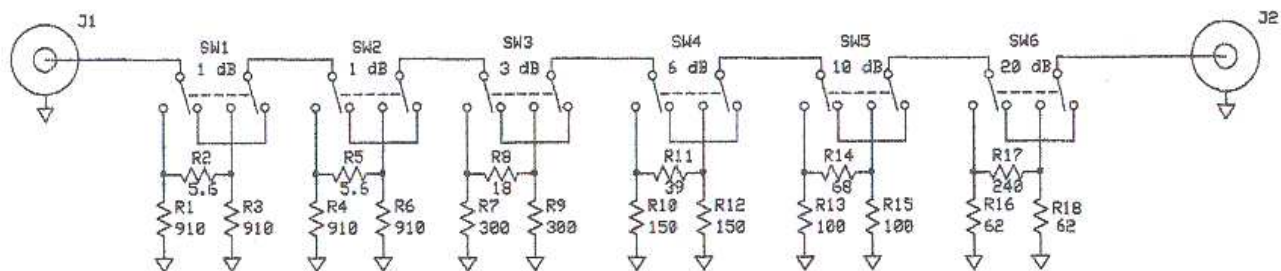
Meeting closed 21:58 with supper provided by Ray ZL1AJR

A Switched Attenuator For Fox Hunting

The commonest use for this attenuator is for “fox hunting” where in close proximity to the fox, the signal strength is too high to allow the “S” meter on the radio to help find the direction of the signal.

If life was simple all we would need to do to reduce an RF signal in a 50R circuit, would be to introduce a 50R resistor (or some other value) in series with the signal. Regrettably life is not so simple. Attenuators need to reduce the signal level and maintain the circuit impedance at the same time.

The preferred circuit was borrowed from a standard design, which by coincidence was used by Elecraft for one of their kits as well.



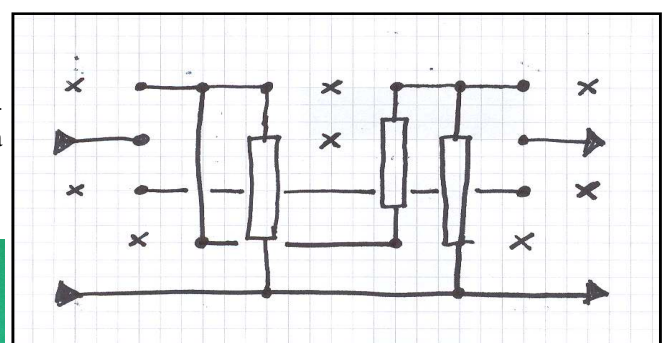
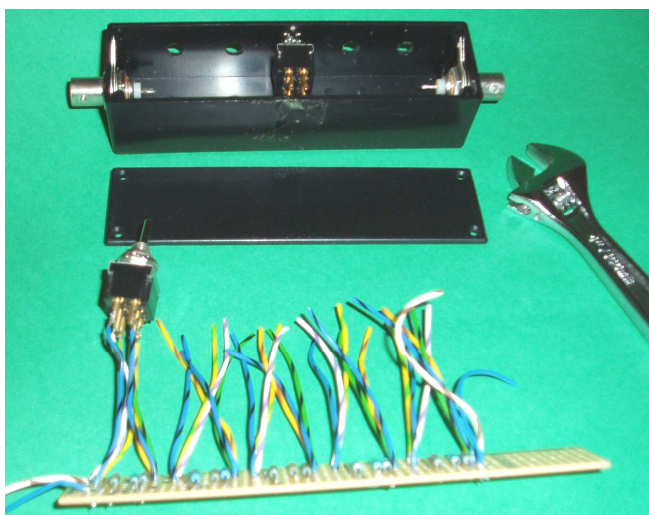
A typical network attenuator.

We usually use the Decibel as a measure of attenuation. For example, half a signal is said to be reduced by 3dB, a tenth by 10dB, a twentieth by 13dB, and a hundredth by 20dB and so on. For a useful attenuator it is necessary to have an “In” and an “Out” and between the two, a number of switched elements of different values. The usual values in dB are 1, 3, 6, 10, and 20. For fox hunting it is useful to have a value range of at least 60dB. To arrive at your required attenuation all you do is to switch in as many modules as required.

Attenuation	Resistor B	Resistor A. (values in ohms)
1dB	5.6	910
3dB	18	300
6dB	39	150
10dB	68	100
20dB	240	62

You can, if you wish, calculate your own values at this point or use my look up table. I suggest that you use the internet to look up sources of information for yourselves. The next important fact to consider is the power rating of your attenuator. If yours is only for receiving, then standard 1/4 or 1/8th watt resistors will do.

First find an enclosure and check to see if your proposed attenuator will fit inside. If OK then proceed to cut the board to size and clean up the sharp edges. Marking out the Vero-board, I use a fine felt marker pen to indicate the insulated breaks in the board. Do this very carefully and check a second or third time.



Now we are on the home straight. I found a suitable size box (from a junk sale “bonus box”). I added a BNC connector at each end and drilled 5 holes for the switches in one side. Note that this is only my arrangement based on what came to hand. You can make yours any size or shape you want. It all depends on the bits available.

A quick and easy way to test the attenuator is to put it in line with a receiver that has an “S” meter. Find a suitable constant strength (FM) signal, or using a signal generator, watch the meter as you add attenuation. 6dB is 1 “S” point.

To test my unit I took some DC series resistance measurements. The values of my unit are; 20dB, 10dB, 6dB, 3dB and another 20dB. This gives a total of 59dB.

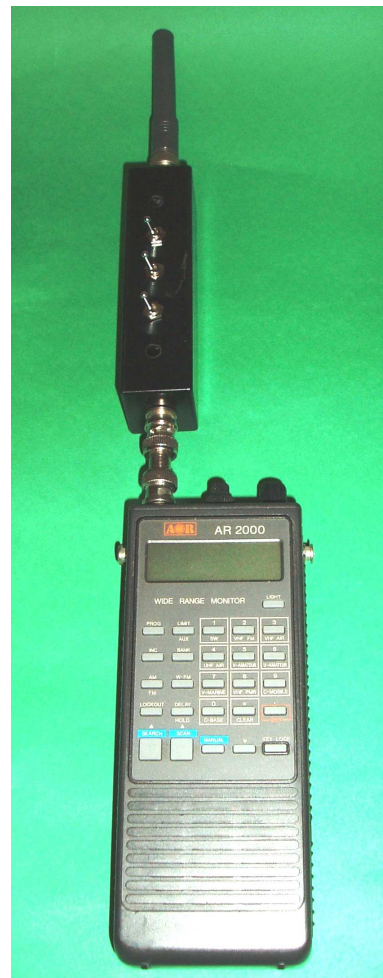
Switching each value in turn from 0 to 59dB gave the following results in ohms;

3	17.5
6	34.8
9	49.4
10	50.7
13	62.8
16	72.9
20	82.1
23	87.5
26	91.5
29	94.4
30	94.2
33	96.4
36	97.9
40	98.7
43	99.2
46	99.7
49	100.0
50	100.0
53	100.3
56	100.4
59	100.5

Notice how some values are not as one might expect. This is caused by small variations in resistor values within the tolerance limits.

I'm not too worried as we have a "fox hunt" in a week or two and I'm going to use my attenuator to test it under field conditions.

de Chris G4ZCS
Mid Sussex Amateur Radio Society



2012 CONTEST CALENDAR

For international contests there is a formidable list published by WA7BNM (<http://hornucopia.com/contestcal/contestcal.html>). The following is an extract that lists a few those events which may be of practical interest to us. Each contest will have its own set of rules which you will need to follow.

SELECTED INTERNATIONAL CONTESTS 2012

15 APRIL	CW TITANIC 24 HOUR SPRINT *
5 – 6 MAY	10 – 10 CW SPRING CONTEST
26 – 27 MAY	CQ WW WPX CW CONTEST
23 – 24 JUNE	ARRL FIELD DAY
14 – 5 AUGUST	10 – 10 SUMMER SSB CONTEST
1 – 2 SEPTEMBER	ALL ASIA PHONE CONTEST
6 – 7 OCTOBER	OCEANIA DX SSB CONTEST
27 – 28 OCTOBER	CQ WW SSB CONTEST
24 – 25 NOVEMBER	CQ WW CW CONTEST

Please see the Contest pages of Break-In, for links to VK-ZL contests.

* SCORING

10 points for any Titanic special event station.**

5 points for a FISTS HQ station.

(GX0IPX, GX3ZQS, MX5IPX, VK2FDU, ZM6FF, JL3YMW, KN0WCW)

3 points for a FISTS Affiliated Club Station.

2 points for a FISTS Member.

1 point for a Non Member.

LOGS to include:

DATE/CALL/NAME/QTH/QRG/TIME/FIST No
or "NM"/ POINTS

SEND TO m0bpt@yahoo.co.uk

** Titanic special event stations from around the world will be active on this day.

EI100T - Irish Titanic 100th Anniversary commemorations, Cork, Ireland.

GB0TI – Lichfield, United Kingdom (Captain's birthplace)

GB100MGY – New Brighton, Wirral, United Kingdom.

GB1HGMY – Southampton, United Kingdom

GI100MGY - Project White Star, Belfast, Northern Ireland.

GB100GGM - Pontllanfraith, Blackwood, Gwent, South Wales

OO100MGY – Antwerp, Belgium

OR100MGY – Knokke-Heist, Belgium

OTT100MGY – Londerzeel, Belgium

VE0MGY – Wreck site

VI4MGY - Queensland Maritime Museum, Southbank, Brisbane, Australia.

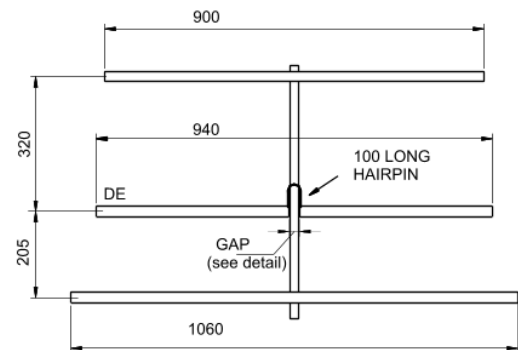
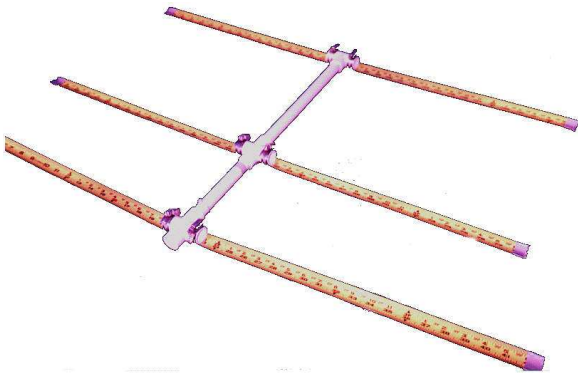
VK5MGY - Special event station, Adelaide, South Australia

VO1MGY - Admiralty House Communications Museum, Mount Pearl, NL, Canada.

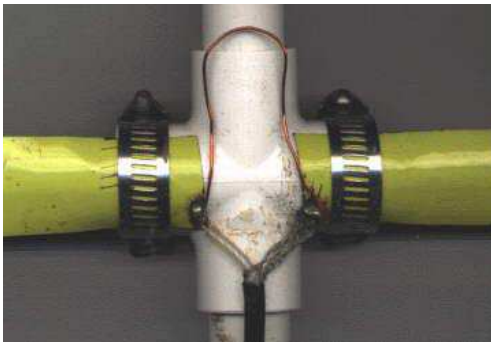
VO1MCE – Cape Race, Canada

Construction details for a Yagi DF antenna for your 2m hand-held radio

The following link http://www.theleggios.net/wb2hol/projects/rdf/tape_bm.htm describes the construction of this Yagi for 145 Mhz. (NZART use 144.700; ARRL use 144.565). The elements are made from a cheap metal tape measure, chosen because it springs back into place after being bent. Thus movement through bushes is unimpeded, and it may be folded for transporting in your car and for compact storage. See the picture at the bottom of this page.



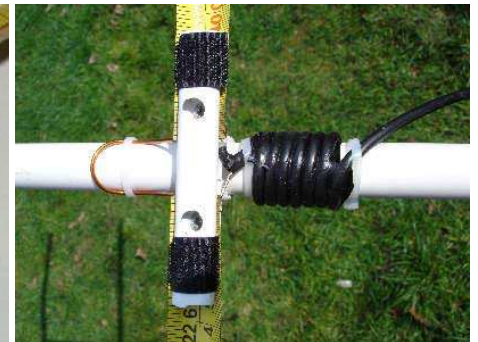
BEAM DIMENSIONS
(mm)



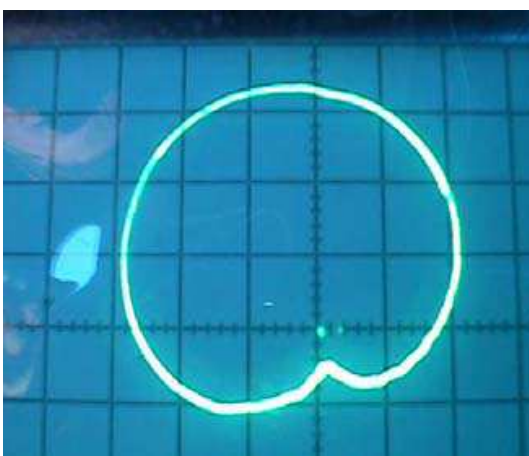
The 5" length of wire loop provides sufficient reactance to cancel the capacitance effect of the antenna. Be sure to do the soldering before attaching to the PVC cross. The driven element can be held by hose clamps which allow some adjustment for tuning the **gap** (wider for the lower frequency of 144.700). It will tune to a SWR of 1:1.



Self-tapping screws or bolts and lock nuts may be used to affix the director and reflector with a saddle. Use a punch to make holes in the tape and enlarge them with a rat's tail file. Cut the tape with tin snips.



Seven turns of coax around the boom perform as an optional balun if it is to be connected to a handheld 2m radio.



Oscilloscope measurement of performance showing the -50 db notch at the back of the Yagi. Tests showed that its reflector could be inches from the fox yet nothing is heard.



The main design objective is to allow the elements to be folded. See how cleverly this is done for transporting it and storing it.

Cover the sharp tips with tape to avoid injury. Here, a purpose-built receiver has been attached to the boom.



Dingle Dell

St Heliers, Auckland, New Zealand



Scale 1:2,500
metres 50 100 150 200 250 300
Contour interval 3 metres

This map was created with funding assistance from Auckland City Council

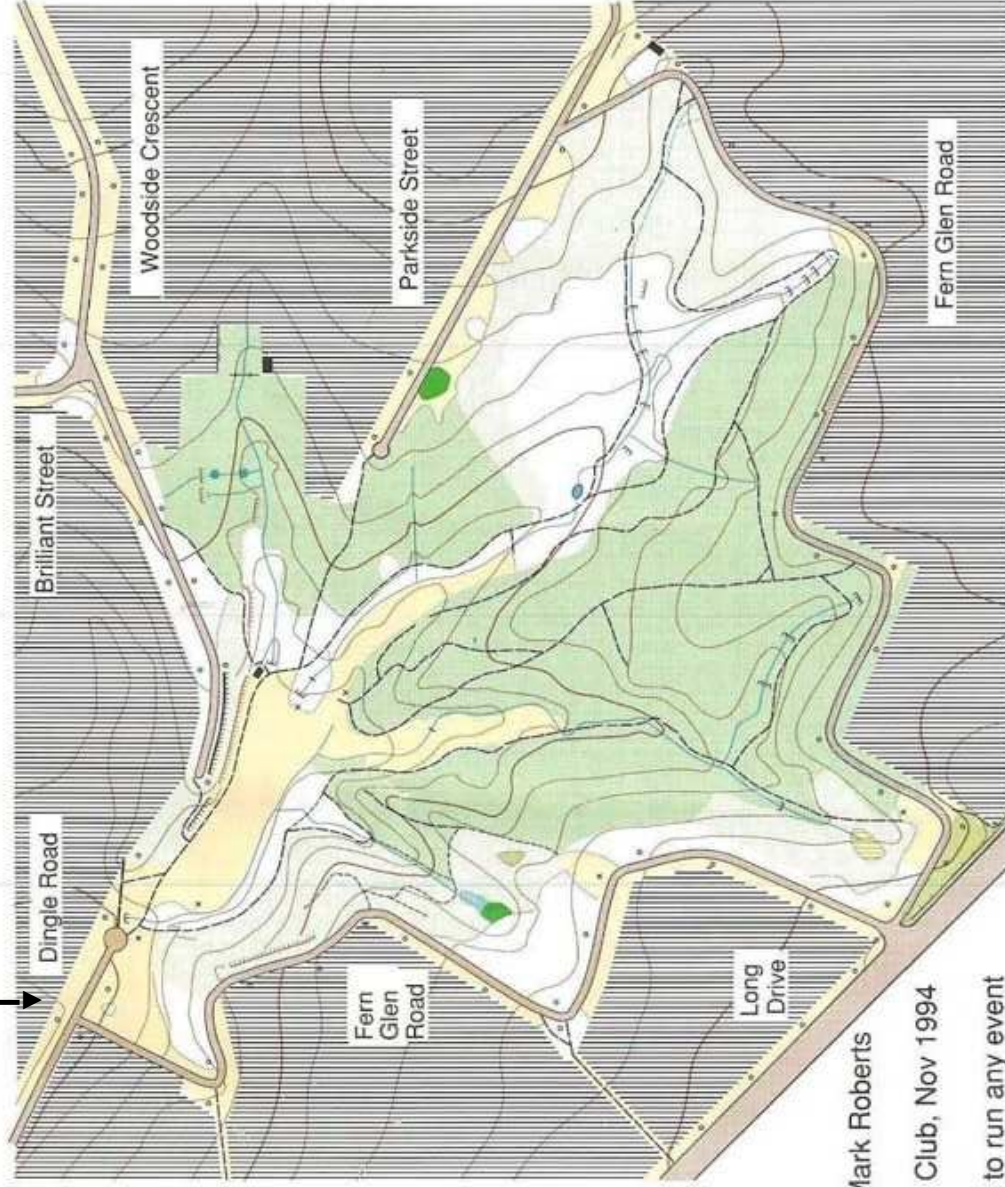
Magnetic North

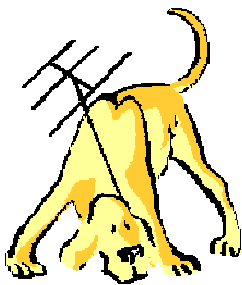
- Lamppost or power pole
- ◆ Building, man-made object
- Sealed road
- Footpath
- Passable cliff
- Crossable stream; lake
- Waterfall; bridge
- Watercourse
- Earth bank
- Index contour, contour
- Form line, slope line
- Depression, pit



- Open land
- Open with undergrowth, slow run
- Open with undergrowth, walk
- Forest, run
- Forest, slow run
- Forest, walk
- Forest, fight; hedge; thicket
- Vegetation boundary

Basemap by Wallace Bottomley 1979
Fieldwork by Wallace Bottomley, Andy Brewis, Mark Roberts
Cartography by Mark Roberts using OCAD 5
Published and copyright by Central Orienteering Club, Nov 1994
Contacts 302 0506, 849 6562, 624 1513
Possession of this map does not confer the right to run any event
Contact Auckland City Council Parks & Reserves for permission





Invitation

Inter-Branch ARDF

2m competition



24 Dingle Road, St Heliers, (at sea level, but phone 575-6383 if you get lost)
Saturday, 21st March 2012

BBQ at noon followed by a briefing and individual starts from 1 pm.

What to expect:

- In Dingle Dell Reserve there will be five foxes hiding (hi hi) somewhere in its 16 acres of bush and streams. However they will be easier to find than at last year's event. The paths are graveled and stepped in places, and the streams are bridged; so it is not muddy underfoot.
- Print the map of Dingle Dell; Familiarize yourself with the map's orienteering legend, and / or visit the area beforehand. You will see that runners have no real advantage over the rest of us.
- Bring your own 2m hand-held rig and see construction details of a yagi antenna previously published on our web page at: www.qsl.net/zl1aa > Newsletter > 2011 > March > page 6. Alternatively, you can hold your hand-held set closely against your body to shield RF entering from behind. The null provides the best bearing towards the fox. Bring a compass, headphones, felt-tip pen, clipboard, map and \$5.00 entry fee.
- Competitors start individually at 5 minute intervals (after the Starter writes the start time, in unique coloured ink, onto the "clip card" that is used to record foxes found).
- Each fox broadcasts its identity in slow Morse code on 144.700 Mhz: MOE, MOI, MOS, MOH, and MO5 for one minute each in rotation. That is, each fox is silent for four minutes until its turn to transmit again.
- Each fox appears at eye level, as an orange and white prism-shaped flag on which is written a unique code. As you find each fox, record its code thus scoring 20 points.
- Time allowed: 1 hour. One point will be deducted for each minute late in returning. As you finish we shall record your elapsed time, check the codes and compute your score.

