



Auckland Branch 02, NZART

NEWSLETTER

March 2011



Next event – Fox hunt
at 24 Dingle Road
19th March 2011 at noon for BBQ

Interbranch Competition — All welcome

Copy and paste this link to see a six minute video of an ARDF event

www.youtube.com/watch?v=UPLWCC_rDqk



Dingle Dell

St Heliers, Auckland, New Zealand



Scale 1:2,500

Contour interval 3 metres

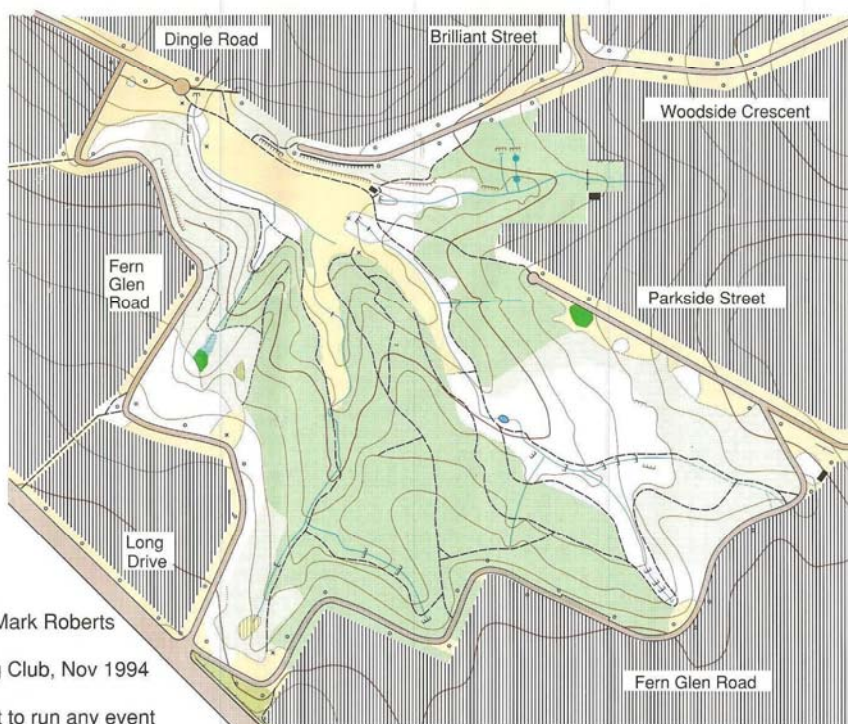
metres 50 100 150 200 250 300

Magnetic
North

This map was created with funding assistance from Auckland City Council

- 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

From President Steve, ZL1FS

The Jock White National Field Day has come and gone. It was enjoyed by all who took part, so I am told. Planning for it was (again) ably done by Selwyn, ZL1BRC. With lessons learned from last year, two tents were used with the maximum allowable separation (10 metres). An 80 metre folded dipole was run along the south boundary, and a full wave delta loop was used for the 40 metre band.

Gwynne, ZL1AAR took charge on the day, assisted by Japie, ZL1JN and Selwyn to erect these antennas, while Graham, ZL1ONL and Wallace, ZL1WAL put up the tents and trestle tables. Ray, ZL1AJR lent us his ICOM 756 Pro III. This year we were determined to operate CW on both bands with Andrei, ZL1TM and Wallace (his first time) as CW operators. James, ZL1KNI dropped in to operate on phone in the evening and filled his log sheet with VK station contacts (worth 10 points each).

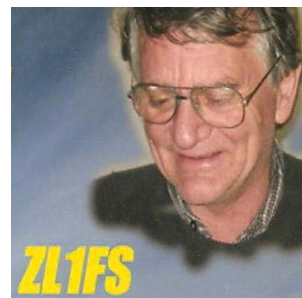
The team ensured that ZL1AA was on the air by 6am next morning. Early on Sunday morning, propagation on 40 metres to Southland was good while nothing was heard in between until later in the morning when the skip angle permitted it. Next year we might consider using a vertical antenna for these early hours. Gwynne excelled by serving up a full English breakfast on Sunday. After the contest, it took only one hour to clear up and stow the gear ready for next year's contest — or some emergency that this event is designed to prepared us for.

Fox hunt. On 19th of this month (being our usual 3rd Saturday of the month meeting day) a Fox Hunt will be held in Dingle Dell, preceded by a BBQ at Wallace's QTH on his terrace at noon. Advanced notice was given in last month's newsletter showing a photograph of his QTH at 24 Dingle Road that is near the north entrance to Dingle Dell (at sea level if approached from Tamaki Drive). Invitations have been sent to our neighbouring branches. This is an opportunity for fellowship in the spirit of friendly inter-branch competition.

The foxes will be transmitting on 144.7 MHz FM so bring your hand-held 2m radio. Elsewhere in this newsletter are instructions about how to build a simple Yagi for it. Be sure to have your batteries charged. And if you want to get an edge on other competitors, visit Dingle Dell in the next fortnight to familiarize yourself with the terrain. In future, the location of fox hunt events held in any of the other 30 reserves that have been mapped in greater Auckland, may not be announced until on the day.

St Heliers Fair. We intend to set up a stall on Saturday 26th March on the corner of Polygon Road and Maheke Street. Visit us and witness the thrill as kids receive an echo back of their names being sent in CW then received from a remote station and displayed on a monitor. This is an opportunity to engage their interest, and to inform their parents in the hope recruiting the next generation.

73
Steve, ZL1FS
021- 0226 - 4981



THINKING ABOUT WIRE ANTENNAS FOR H F

In recent months some Branch members have been debating how to upgrade multiband home antennas with such varieties as end fed half wave, G5RVs, Carolina Windoms etc – ask Gwynne ZL1AAR for details

Lee Jennings ZL2AL has recently forwarded to the ZL Hams website, reference to an article which embraces the topic of measurements for monoband wire antennas, in all conceivable configurations, complete with worked calculations and how and why to fine tune them. That reference is <http://www.chem.hawaii.edu/uham/antennas.html>

You may be able to find there an antenna choice which fits your needs, bearing in mind that some antennas can be zigzagged to fit limited space without serious loss of performance.

For JWFD 2011 the Branch team opted for a folded dipole for 80 metres and a delta loop for 40 metres, both being closed loop types promising lower noise on reception and better bandwidth than simple dipoles, and promising lower losses, given the high earth resistance at the site. Once these were tuned and matched they both gave a very satisfactory performance. On 40m the loop earned reports of consistently putting out the best signal from Auckland to Southland so we must have been doing something right.

While on the subject of loops, delta, circular, quad and rectangular, loops do not all behave exactly the same way. Similar, but not identical. Feed point selection, polarization, height and aspect ratio all have their effect. For delta loops there is excellent information at http://w5sdc.net/delta_loop_for_hf.htm, including suggestions on home brewing loop antennas for the WARC bands such as 18068 to 18168 and 24890 to 24990, opening new possibilities under marginal propagation conditions when the next band higher in frequency is either closed or marginal or crowded.

de Selwyn ZL1BRC

Excerpt from Financial Times 20 Feb 2011 “The sun is waking up ...scientists are warning that earth should prepare for an intense electromagnetic storm that, in the worst case, could be a “global Katrina” costing the world economy \$2,000 bn.

To read the complete article see:

<http://www.ft.com/cms/s/0/67444b2c-3d13-11e0-bbff-00144feabdc0.html?ftcamp=rss>

You must register (free) to see the full article.

de ZL1GWE John

CW SKIMMER

"CW Skimmer" was developed by Alex VE3NEA and is a very efficient CW decoder that is able to decode **all** CW signals in the receiver's passband - up to 700 signals can be decoded in parallel. If used in conjunction with wideband SDR (Software Defined Radio) it gives a snapshot of all signals being heard at the location of the receiver. Some people who own these wide-band receivers make the data publicly available. These Skimmers form what is called a "**Reverse Beacon Network**." Basically these receivers send data with everything they hear to a central location with a spotting database (similar to DX Summit with the exception that the spots are initiated by a machine). The information is publicly available on the Internet at <http://www.reversebeacon.net>. The important thing is that not only callsign and frequency is used in the spot but also SNR (Signal to Noise Ratio) for that signal. One other useful tool provided is called "**spot analysis**" where you can compare your signal with that of one of your neighbours, assuming both are heard by the remote station. As the application name suggests, you can only look at CW signals.

There are some requirements for a station to be "spotted" by a skimmer, such as the station should be calling CQ or TEST and, in general, the number of spots is limited by 5 minutes, that is, a station is not spotted twice within a 5 minute period.

The site is best viewed with **Firefox** browser (Internet Explorer has some performance issues). I encourage you to go to <http://www.reversebeacon.net/analysis/> and check how the ZL1AA signal compared with ZL1AM (Whangarei) and other ZL's on the Jock White National Field Day. Select the date (**26.02.11**) then select **skimmer** under **Oceania** (there are three of them: VK1LW in Campbell (ACT), VK6IA in Perth (WA) and ZL2RV in Lower Hutt), then enter **ZL1AA**, click **Add**, then enter **ZL1AM** then click **Add**.

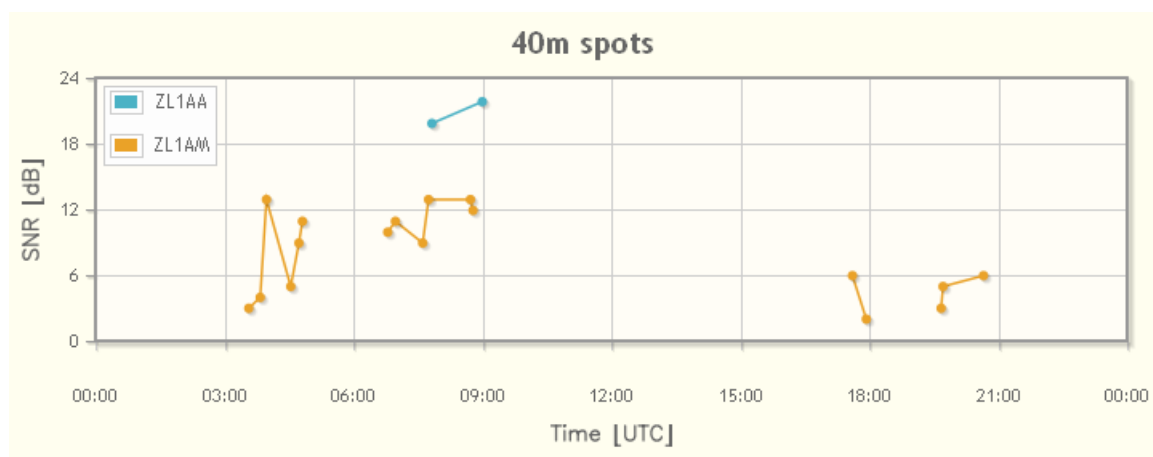
There are some very interesting observations: ZL1AM had a better signal on 80m (either they had a better antenna, a better location or more power or a combination of these):

80m:

VK6IA in Perth gave ZL1AA maximum SNR of 9 dB at 17:48 UTC at the same time ZL1AM was shown with SNR of 14 dB. ZL1AM was also stronger at VK1LW location in the evening: 30 dB SNR produced by ZL1AM vs 26 dB produced by ZL1AA. Both ZL1AM and ZL1AA were about the same on Sunday morning. ZL2RV also showed that ZL1AM signal was slightly better at his location (by 1 dB). ZL1AM was even spotted by an Italian receiver on 80m with 5 dB SNR and that really tells something about the ZL1AM signal.

40m:

VK6IA and VK1LW did not spot ZL1AA. Probably because it didn't do enough CQ or because they had problems decoding the ZL1AA signal which, unlike 80m, wasn't machine generated. ZL2RV however, gave 2 spots for ZL1AA and showed ZL1AA having a better signal than ZL1AM (Whangarei) on 40m. (See illustration below)



ZL50VK (Papakura branch) had only 3 spots but that may be because their callsign is somewhat unusual.

de Andrei, ZL1TM

ZL1AA Branch 02

Jock White National Field Day 26-27 February, 2011

Clockwise from top right: Gwynne ZL1AAR with 80 metre folded dipole on bamboo pole; Andrei ZL1TM on CW on 80m; Ray ZL1AJY, and Gwynne; Japie ZL1JJN; Selwyn ZL1BRC (obscured) and Wallace ZL1WAL on CW on 40m.



A SUPER - GAIN ANTENNA PROJECT FOR 40 METERS

Taken from original plans published 1969 in 73 Magazine by Ed Dusina, W4NVK, Melbourne, FL

This project gives enough information to build a 40 meter Super-Gain antenna designed to help hams compete somewhat better with the foreign broadcast stations which practically take over the band in the evening and night time. It is based on the theory of super gain NVIS arrays, which reject QRM from low angles.

The final design....still under testing by many hams....is extremely simple, uncritical and offers large gain and QRM rejection. The propagation studies and design work was done at Dusina Enterprises in Melbourne, Florida.

The antenna is described as having approximately 9 db forward gain and an average of 15db rejection against low angle QRM. The antenna is useful up to about 200 miles radial distance from the transmitter in the daytime and up to around 1,000 miles at night.

DESCRIPTION

The antenna consists of a single dipole antenna placed very close to the ground and above a reflecting "screen" so as to limit the radiation to 90 degrees + or - 35 degrees approximately. It is nothing more than a simple folded dipole made from 300 ohm TV type twin lead cut to the length of 63 feet 2 inches plus or minus 1 inch and is fed in the center with RG58 coax or some other 50 ohm coaxial cable.

It is suspended tightly between 3 supports (non-conductive) exactly 7 feet + or - 3 inches. If metallic supports are used, it is suggested that nylon cord, about 3 - 4 feet on each side between ends and supports to reduce the effect of capacitance on the ends of the antenna. On the ground directly below and parallel to the antenna, lay three reflecting wires of a non-critical length 65 to 80 feet long. One of these is laid directly below the dipole. The other two are spaced 6 feet from the center or dipole portion of the arrangement and again parallel to the dipole. The reflecting wires can be laid on top of the ground for slightly better efficiency and secured at ground level using nails bent into a U shape or any other method you desire. Feed with about 100 feet RG58, 50 ohm coax.

Using the exact directions above should yield about 1.05 SWR at 7.250 Mhz and increasing towards band edges. Some tuning may be required as with most any antenna projects for your favorite frequency.

Quote W4NVK, "Due to the extreme simplicity of this antenna and to its significant improvement in communications of this particular band, plus its small size, I believe that if amateurs erect such an antenna and test it for themselves, they will be quick to see the value of it and by this means more use can be obtained from the 40 meter band in the daytime, since it not only greatly increases the signal strength of the stations communicating, but significantly reduces the QRM leaving the state and rejects any QRM coming in from outside the state."

THE USE OF THE REFLECTING SCREEN IS VERY IMPORTANT FOR THREE REASONS!

1. Antenna impedance will be 50 ohms only when elements are cut as described with reflecting elements installed.
2. Efficiency is less than 50 percent without reflectors.
3. Unpredictable patterns, gain, rejection and other factors are due to variations of ground conductivity at each amateur's location.

The performance of this antenna depends entirely on the reflectors!

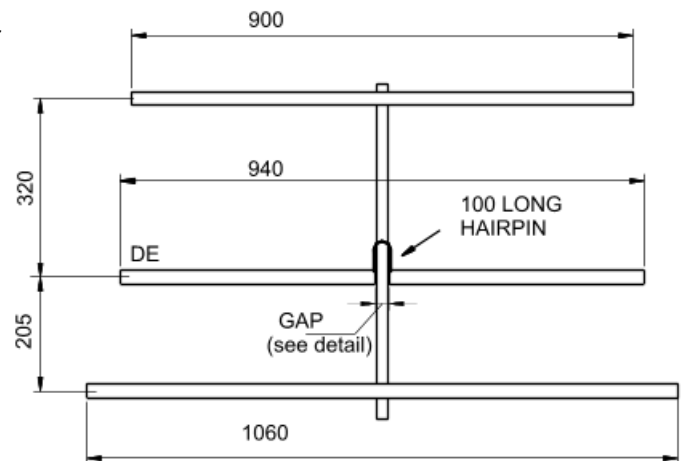
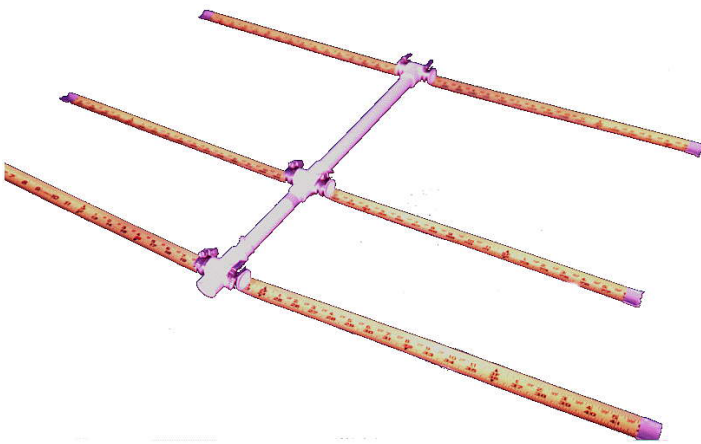
TESTAMONIALS ABOUT THE 40 M SUPER- GAIN ANTENNA K5AXN, used PVC at the ends and center of the antenna to keep it exactly 7 feet. Tests show 10db gain. W8SYD had a 10db gain over a G5RV at 50 feet up, (a 160 meter G5RV). **I can copy and talk to stations I do not even hear on my G5RV or the 14AVQ vertical antenna.** This antenna really knocks out the foreign broadcasts when the skip is long.

DO NOT CHANGE SPACING (6 FEET ON EITHER SIDE) OR THE HEIGHT (7 FEET + or - 3 INCHES). DO NOT TRY TO ADD A DIRECTOR ELSE YOU WILL LOSE RANGE. 10db is a lot on 40 meters.

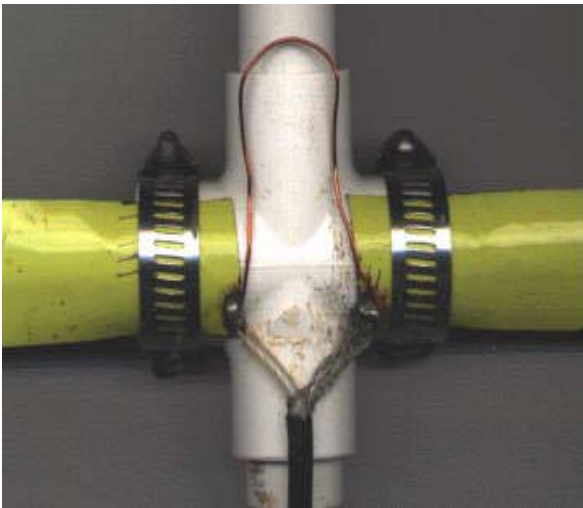
You can scale this antenna for 160 meters or 75/80 meters but NVIS will not work above 40 meters.

Construction details for a Yagi direction finding 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.



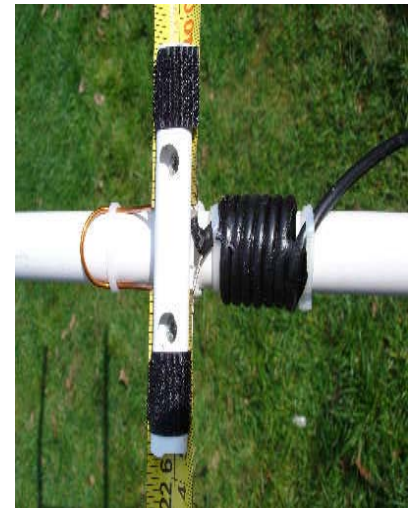
BEAM DIMENSIONS
(mm)



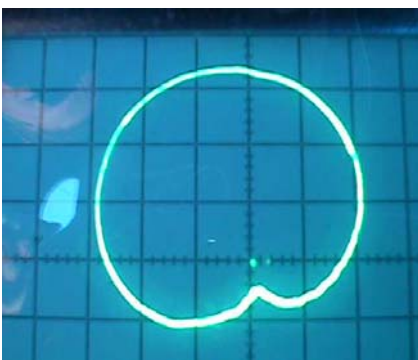
The 5" length of wire loop provides sufficient reactance to cancel the capacitance effect of the antenna. Be sure to do the soldering before attaching to the PVC cross. The driven element can be held by hose clamps which allow some adjustment for tuning the **gap** (wider for the lower frequency of 144.700).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

AUCKLAND BRANCH, NZART (inc.)

Minutes of Committee Meeting

Date / Time / Place: Saturday 5th March 2011; 1210 hours; Clubroom.

The Secretary called this meeting "... on an as required basis .."and "... on such notice as he deemed fit" [Section 6 of the Constitution]. Selwyn, ZL1BRC ,invited to attend, objected to it being held on the principle that "other Committee members had not been given notice and were therefore unable to participate" [paraphrased].

Four Committee members who turned up for a Committee meeting scheduled for 1st March were mistakenly told that their number did not make a quorum, so they returned home. For the record, the Constitution was amended on 3rd November 2007 to read: "Section 6 (c) A Quorum of the Committee shall be four (4) members present in person."

Attendees: Steve Miller, ZL1FS (Chairman); Gwynne Rowe, ZL1AAR; Wallace Bottomley, ZL1WAL (Secretary / Treasurer); Ray Chapman, ZL1AJR

Minutes of the previous Committee meeting on 1st February 2011:

As circulated to the Committee and corrected from that published earlier in the newsletter, accepted ZL1FS / ZL1WAL

Finance: The Treasurer presented a report.

Received ZL1WAL / ZL1AAR

• **Expenses requiring approval for payment**

- | | |
|-------------------------------------|----------|
| • R Higgins – Lawns in February | \$34.50 |
| • NZ POST – Rental of Post Box | \$145.00 |
| • Wallace - BBQ expense 19 February | \$24.90 |

Approved ZL1FS / ZL1AJR

• **Donation to AMSAT-ZL** to be put to Members at the next General Meeting.

• **Subscriptions:**

- The Treasurer reported that 15 out of 40 subscriptions have been paid. The rest are 3 months overdue.
- The Branch is trending below the critical mass of members to operate within budget.
- See discussion under General Business about strategy to collect subscriptions.

Correspondence In:

- Newsletters from neighbouring branches in February: Papakura, Suburban, Franklin, Hibiscus Coast; March: Papakura, North Shore.
- Break In magazine and voting paper for President and Northern Councillors for NZART.
- Amateur Repeater Trustees Association (ARTA) – explaining their objection to unfairness of fees charged to repeater stations.
- Suburban Radio Club – receipt and letter of thanks for our donation to them for their repeater antenna replacement.
- Selwyn – a paper about antennas for the newsletter.
- Andrei, ZL1TM explaining the working of a CW Skimmer that provided comparative SNR reports pertinent to the JWFD contest.

• **Matters arising:**

- Votes cast for Officers for NZART have to reach NZART before 20th March. It will be impossible for the ZL1AA vote to be considered by Members at the next General Meeting and reach NZART in time. The Committee urges Members to exercise their individual vote in time.
- Because we do not operate a repeater, ARTA is irrelevant to us (until they ask all branches for a donation). The Committee decided to read their letter to members at the next General Meeting if requested to do so.

Received ZL1WAL / ZL1AJR

Correspondence Out:

- St Heliers Village Fair – Application for a stall for 26th March 2011.
- Auckland Library database of Organizations.

Approved ZL1FS / ZL1WAL

Minutes of Committee Meeting (Continued)

General business:

PROGRAM

- **19th March** (3rd Saturday). **Foxhunt in Dingle Dell** Meet at 24 Dingle Road (at sea level).
 - Other Clubs have been invited to participate. This should engender a spirit of friendly competition and fellowship. Franklin RC has promoted this event to their members in their newsletter.
 - Wallace will collect the NZART ARDF equipment today, so that Steve AL1FS and Simon ZL1SWW can check that the FM alignment is on frequency (144.700 MHz) and batteries are charged.
 - Participants should bring their own 2m hand-held radios. The newsletter will provide instructions for building a Yagi for 145.000 MHz for it.

No formal Branch General meeting will be held.

- **26th March** - Saturday, 1000 to 1500 hours **St Heliers Fair**
 - A space has been allocated at the corner of Polygon Road and Maheke Street.
 - Wallace suggested staging an attraction for kids and their parents -.by having a remote operator echo CW messages / names so that they are displayed on the K3.
 - Selwyn has made a hood for displaying images on his laptop computer.

- **Future events:** Wallace is to produce a planning calendar.

Strategy to collect subscriptions:

- The next newsletter will be posted using the prepaid envelopes gifted by George, ZL1TUJ.
- Wallace will email the newsletter to Gwynne for printing in A5 format.
- Wallace will design an invoice with suitably positioned return address so as to mail it back easily.
- Steve and Wallace will meet again on Wednesday to stuff envelopes and affix labels.
- The Membership list circulated to the Committee shows financial status for the last four years. Some did not pay last year; others longer.
- The phone tree will be used by the Committee to contact and prompt these members.

Computers, Internet, Printers:

- Three computers are set up to access the internet, but only one printer (in Black only) is functioning.
- It is planned to set up more computers—one at each station so as to view www.qrz.com while operating.

Maintenance:

- The entry porch has been water-blasted.
- Steve has asked Graham ZL1ONL to assist with the roof gable.

New Curtains:

- It was noted that Ray, ZL1AJR had donated a bottle of wine to Mrs Christine Watson for running up the new blue curtains in the Clubroom.
- Steve is authorized to purchase a new track for the remaining curtain.

Shelves

- Magazines (Break-in, CQ, QST, 73) have been unpacked from boxes and shelved. Duplicates are for sale (\$2.00) but will be dumped after a period.
- Steve has asked Selwyn to help decide what junk should be dumped.

Jock White National Field Day – 26th - 27th February

- It was enjoyed by those who contested in fine weather.
Gwynne has completed the summary sheets calculating our Branch score.
- After the final result has been announced by NZART it will be appear on our web page.

Antennas:

- The collinear antenna has been relocated and connected to the VHF station. Our thanks go to Selwyn who had to clamber under the clubroom.

Meeting Closed 13:00.

Signed _____ Date _____

(Chairman)

AUCKLAND BRANCH, NZART (inc.)

Minutes of Special General Meeting

On: Saturday, 19th February 2011 at 1505 hours
At: Branch Clubrooms

Present: Steve ZL1LS (Chairman). Others are recorded in the attendance book.

Apologies: Gwynne ZL1AAR, George ZL1TUJ, James ZL1KNI, and Ian Falgar. Sustained ZL1WAL / ZL1FS

Silent Key: The meeting stood in silence for a minute in memory of Tom Duxbury, ZL1CZ - SK

Election of Committee:

1. Graham O'Neil, ZL1ONL
2. Ian Robinson, ZL2ATD

Elected ZL1WAL / ZL1FS

Brian Wilson, ZL1UXB, who was nominated at the Annual General Meeting – subject to his consent - advised that he is committed to a Tuesday evening course for the next four months. Therefore a vacancy remains on the Committee.

Business conducted by the Committee:

- **Finance:**
 - \$6,000 has been reinvested as a term deposit with KiwiBank.
 - The budget (\$500 loss for the year) was adopted.
 - \$150 was donated to Branch 86 to help fund replacement of their repeater's antenna.
 - Members renewing membership using our web page, need latest Acrobat Reader on their PC.
 - Payment by Members of subscriptions (\$33) is slow. They will soon be 3 months overdue.
- **AREC:** Photo ID Badges have been made and distributed to six members.
- **Events:**
 - NZ Amateur day – ZL1AA participated on the forecourt of the St Heliers Library.
 - Planning for Jock White National Field Day on 26-27 February. Andrei has advised that he will be a CW operator. Wallace will stand in to ensure that ZL1AA enters the CW section.
 - Gwynne will manage on the day, but he will be away until then.
 - Fox hunt at Dingle Dell on 19 March. Meet at noon at 24 Dingle Road, Wallace's QTH for a BBQ.
 - Neighbouring branches have been invited to participate and share in the fellowship.
 - St Heliers Fair – 26 March. An application for a stall site has been made.
- **Maintenance:**
 - The FT1000 has been fixed.
 - The 80 m antenna centre pole has been erected.
 - Shelves are being stocked with magazines. Duplicates are for sale but will be dumped after 2 months..
 - Selected junk will be stored next.

Other Business:

- **Jock White National Field Day:**
 - Selwyn, ZL1BRC submitted a paper headed "Field Day Lessons" and a copy of the rules.
 - Wallace tabled a list sorted by Branch Call signs to assist operators.
 - Selection of and positioning of antennas was delegated to Selwyn.
 - The team will meet on Wednesday morning.
 - Steve advised that he will not be available.
- **VHF net on Sundays at 2000 hours.**
 - ZL1AA is not being represented except by Selwyn.

Meeting closed at 1530 hours

Signed _____ Date _____
(Chairman)

Selwyn advises that **VHF Group's** newsletter "**Spectrum**" is available on line to all. Register at <http://www.qsl.net/zl1bq/spec/> Inside this month's issue is:

- Researchers crack the mystery of the missing Sunspots,
- Part 3, What's in the Data Modes and Utilities DVD,
- D-Star provides link to Christchurch. VHFG makes donation to help Christchurch.
- Klondyke Repair Report, 2.4 Ghz Trans-Tasman firsts
- and more in colour.