THE MUSE

----------February 2025----------

The newsletter of the MUSICK POINT RADIO GROUP (INC.) NZART BRANCH 86
***Incorporating* The Society for the Preservation of Amplitude Modulation (SPAM)**
***and* Green Radios On The Air (GROTA) News.**

Musick Memorial Radio Station, Bucklands Beach, Auckland. Call Sign-ZL1ZLD.
BRANCH 86 *NZART* NET- TUESDAYS, 7.30PM, 145.775 MHz, Musick Point Repeater. All welcome!
SPAM WEB SDR Remote Receiver - http://spamnz.zapto.org:8901/
SPAM KIWI SDR Remote Receiver- http://musickpoint.ddns.net:8073/
Musick Point Website- https://musickpointradio.org Webmaster-Neil ZL1NZ.
SPAM ZL6AM or ZL1ZLD AM Nets- Fridays 8.30PM, 3.850MHz, Wednesdays at 11.30Hrs, 7.125MHz
Museletter Editor- Martyn, ZL3CK.
Meeting- Second Sunday of the Month (Except May-Third Sunday, to avoid Mothers' Day)
NEXT MEETING- Sunday February 9 th at 1pm. Coffee and tea provided.

Aerial comparisons being done at Musick Point 20 Jan 2025- ZL1DL & ZL3CK looking on.
The ground wave performance of this vertical Vs. a horizpntal wire were being compared, using signal strengths as received at the Musick Point SDR, about 200 meters away.

From the Chair

Hello, once again, and welcome to another inspirationally rewarding collection of critical information and never-to-be-repeated drivel from the chairman. Time has flown by since we welcomed in the New Year, and we will be in February by the time you read this. Before we can blink, Farmers will be having their pre-pre-pre-Christmas sales already – oh joy!

Beginning in the 17th century, Britain sent everyone named Colin to America, Australia and all over the Earth. Why?
They were attempting to Colinise the World

Now that we have "anytime" access to Musick Point, we decided to try having an open night once a week, on a trial basis. The consensus, at the January meeting, was that Friday might be a good night to try it. And so it was to be. About half a dozen of us turned up on the 17th and a few of us set about having a bit of a tidy up in the 'workshop' in an attempt to dump junk and, hopefully, make a bit of much needed room on the floor and space on the bench. Rob and Martyn fired up the RCA to get it warmed up and later Rob ran the AM Net while most of the others forced themselves to have a coffee.
Apart from a continuous focus on tidying and decluttering the place, there is also an aim to test and, if necessary, repair used equipment (and we have quite a bit of it) for sale. Sale of equipment has two positives: a bit of income on the balance sheet, as well as additional decluttering. There is probably nothing quite as satisfying as opening up something, working out why it is doing what is doing (or not doing anything at all), repairing and testing it, and then seeing it sold.
The following Friday night saw a few of us turn up, so Dave, ZL1DL and I set about cleaning up in the workshop again. By the time we had had enough of that, we had cleared a good portion of the bench. We headed for the usual coffee while Rob, ZL4ROB ran the AM Net again (and it was after midday again).

"I have DCO, it's like OCD but all the letters are in alphabetical order…. ….As they should be."

Sundays have been busy as well, at Musick Point. Rob has been agonising over a duplexer that he has built and is trying to get tuned satisfactorily on each band. There has been plenty of VNA use and plenty of soldering iron use into the bargain. Who would have thought that a few capacitors and a few little coils could cause such confusion, discussion, de-soldering, soldering, VNAing(?), and then repeat all from confusion several times more.

I bought a wig today, it was only $1. It was a small price toupee

Others have been messing with an alternative antenna and antenna site for the Kiwi SDR. Dave and I had erected a patch antenna on the top of the tower and then last week we went back up to insert a common mode choke at the bottom of the feedline. Once back down, Dave set about building a high-pass filter to help minimise a lot of the lower frequency broadcast bands and hopefully improve reception. A bit of to-and-fro with VNA, multimeter and soldering iron and then it was off to the repeater level to put it to the test on the SDR. It was quite a pleasant surprise to see the improvement it made. After a bit of checking around, we left it on a WSPR band and went down for coffee.

I want to go back to the days when my biggest anxiety was stopping the cassette tape before the DJ started speaking, when I was recording the top 10 from the radio.

Until next month:
73, and call CQ
David, ZL1DRV

But Why?- from Dave ZL1DL-Answers to the questions you never asked…..

One of the things we are taught in electronics, typically without explanation, is that in a coil, Inductance is proportional to the square of the turns, which on the face of it, doesn't seem right. There Is an eye glazing mathematical proof for this; luckily there is also a much simpler explanation.

Visualise a single turn of wire wound around a magnetic core. Now, for example, if we apply an AC current of value "i" to the turn, we create a magnetic flux of magnitude "m" in the core. As the applied current is AC, it varies cyclically in magnitude. The flux created therefore also varies in magnitude, relative to the current. The relative variation of flux to our winding results in a current being induced back into the winding. This induced current is in opposition to the current that created the magnetic flux and therefore effectively works to limit the original current. This opposition to the original current flow is known as inductive reactance (XL).

Now we know that for a given frequency, (XL) is directly proportional to inductance (L) as given by: **$XL = 2\pi fL$**

Therefore, if we can establish a relationship between turns and reactance, a similar relationship will apply to turns and inductance.

Back to our one turn coil example. A single turn with current "i" creates a magnetic flux of "m". If we added another single turn, independent from the first and also supplied it with a current "i", it would also create a magnetic flux of intensity "m". The two turns each create a flux of "m", resulting in a total flux of "2*m" in the core. We used two separate turns for easy visualisation; in reality we can have a contiguous winding of two turns fed with current "i" to also create a flux of "2m".

The reactance experienced for a given current is proportional to the magnetic flux. Each turn, in our two-turn coil is now exposed to a flux of "2m" and therefore experiences twice the reactance as compared to when there was only one turn on the coil. As the two turns are in series, the total coil reactance is the sum of the two individual reactance values. So now we have 2x the reactance per turn x two turns = 4x the reactance compared with our one turn coil. For 3 turns, we would have 3x the reactance x 3 turns = 9 times the reactance. Therefore, it can be seen that the reactance is proportional to the turns squared.

As inductance is proportional to reactance, it holds that the inductance of a coil is therefore also proportional to the turns squared.

Musick Point News-

Finally, we can have evening gatherings at ZL1ZLD. The first of these was on Friday 17th January starting at 7PM and was very well attended. The usual Friday AM net was run from the Clubrooms using the RCA/NZPO 1301 transmitter and Collier and Beale 941 receiver. Reception was good, and so much better than at the home station. We hope to continue to have the station open on Fridays after 7PM for as long as the members want it. ZL1DL has a plan of what we can be doing while there- tidying up was top of the list! And some progress was made too. Check in on the Musick Point Branch 86 VHF Net (145.775 repeater Tuesdays at 7.30) to check to see if there will be a Friday evening gathering, or email via the Musick Point website (see above)

AM News-

The editor's ZC! Mk2 decided to "pack a sad"after 40 years of reasonably regular use and being quite reliable. The Tx VFO went 'wobbly' while at the recent park day (see below) so ZL3CK had finally to learn something about the ZC1's innards. The excellent ZC1 Service Manual from the Wellington Branch, plus a genuine handbook allowed a careful 'going over' which included removing and cleaning all the valve and vibrator pins. Most of the set appeared original, but the usual electros had been replaced sometime before it was aquired, and they appeared OK. Resistances were ok and the HT voltage was around 325 with 12.6V input.

ZC1 & happy "custodian" before failure,,,

This particular ZC1 came from a deerstalker's hut in the Kaimanawa ranges, and the microphone has "police" scratched on it. It was paid for by a $10 swap- an integrated circuit, bought from Tricity house.

This was a deal worked out between 'CK and the local helicopter pilot, the late Ross Fraser, in Turangi where both lived at the time. Ross had an interest in electronics and knew about the ZC1 which was 'resting', unused, up in the ranges, and readily transported it back to civilisation and a new life by helicopter.

So it became the then-ZL1TPE's first HF rig and was soon on the air with a new HF call ZL1SU in 1979. AM and CW were in frequent use, with a ¾ wavelength aerial stretched from the house to the 75' Fire siren tower as it was conveniently next door. Convenient, that is, except when it went off! Which was often!

To complete the story, after the above 'overhaul', determing the voltages were all within about 50%(!) and changing a valve (twice), (thanks Basil, good suggestion to try a few more) It now seems to be cured.

Next job is to work out how to get it to tune into a vertical aerial on 40 meters. This seems to be difficult. The vertical 'sort of' works with the bottom 3 sections only (i.e.18 feet) and a short feeder. A horizontal

wire of 66 feet (as per ZC1 operating instructions) also appears to “tune” but it doesn’t seem to be radiating the full 2+ watts available.

Various capacitors tried across the aerial and earth terminals seemed to improve output on both 80 and 40 meters. In fact with a certain set of capacitors it blew the 24v ‘christmas tree” lightbulb in series with the random length wire being used as a trial aerial. Hmmm. Watch this space!

For this photo you can make up your own title! Taken after the ZC1 failed... **Dave ZL1DRV** about to offer condolences to ZL3CK (kneeling in distress) with **Maurice ZL1MPU** comiserating.
(Below) At the same time, **Ethan ZL1EK** was performing his special “QSO dance” before making a few FT8 contacts (He’s throwing a wire up a tree)

Rob ZL4ROB, not to be outdone, had happily 'gone bush' with his portable setup on the other side of the reserve.

Harry ZL1BK's attempt to harness solar power for his dipole- Ahh-Harry, did you notice there isn't actually any sunshine?

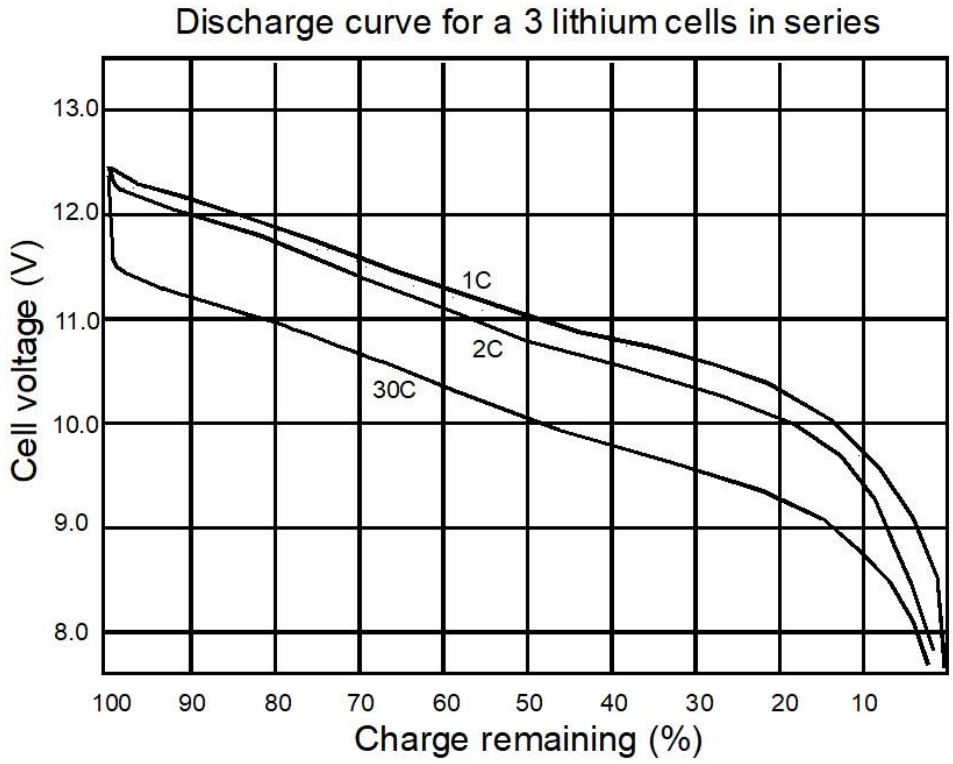
(Photos courtesy ZL1DL)

<u>GROTA Report from KelvIn ZL3KB-</u> Update for January 2025:

The feet belong to **Kelvin ZL3KB,** with W.S. No.48, Cooper's Knob, Banks Peninsular.

The first 'Green Radios On The Air' trial of the new year, and so again we chose our favourite area, the Lyttelton Port Hills. The wind was forecast to be quite lively, but you know, when the going gets tough……. I elected for a SOTA peak at Coopers Knob while **Aidan ZL3APB** and **Des ZL3AK** set up on military bunkers around Mt Cavendish**. Mike ZL3MWD** and **Peter ZL3IA** chose Stoddart Park at Diamond Harbour, **Noel ZL4OW** and **Leo ZL2LEO** were around Mt Pleasant, so it turned out to be an all-green COTA SOTA POTA GROTA! All sites had a WS48 set, as well as two ZC1s at Mt Pleasant and the GROTA loan ZC1 at Diamond Harbour. **Ray ZL3RAM** had to abort his Godley Head site as there were too many people there! The wind was a little boisterous in some places, but strangely, my position on Coopers peak had hardly any wind at all. As expected, we had excellent strength signals between all sites, but keeping all sets "on frequency" all day was a constant challenge.

The only "failures" were the two ZC1s at the Mt Pleasant site, which turned out to be insufficient battery voltage, and the same battery was used on both sets. Interestingly, they were using a lithium battery of three series cells, which should give a fully charged voltage of 12.6Volts. However, with a bit of volt drop in the cable and connectors etc, this can get below 12V on full load, and then when the battery is just 20% discharged, the set may only see around 11V. (see graph). Perhaps we need to investigate some kind of boost/buck converter that will give 13.8V without debilitating EMI noise!



In the end, with the help of Ray's field strength meter, they managed to tune up one set and got it on the air with low power. Also, Aidan's bottle of beer and WS48 blew over whilst he was operating BELOW it IN the bunker! (no, we are not re-enactors, Aidan).

Mike took the prize as the best modulation of the day on the ZC1, sounding very smooth and "armchair copy". A few of us with WS48 sets reported distorted signals from other 48 sets, but we can only conclude the path was almost line of sight, and hence exceeding strong signals! John ZL3LL, 20km away at Weedons, was hearing two of our WS48 sets, so it goes to show what a bit of height does!

Aidan ZL3APB's W.S. No. 48 at Castle Rocks Bunker, Port Hills.

Peter ZL3IA at Stoddart Reserve, Diamond Harbour, with WS 48 and ZC1

The operating of the day was finished with some nice morse on the 48 sets between Aidan, Des and myself. As usual, we attracted lots of interest from the general public at many of the sites, so we must be getting known as “that mad bunch of loonies with old radios”. (You said it, Kelvin!)

A fabulous day, all ending at the pub to share our experiences.

Thanks, **Kelvin ZL3KB**

Used and New Equipment Sales-

New Quansheng Radio about to be released-advance information-

https://zl1dl.zlham.net.nz/2025/01/26/26-1-25-new-quansheng-ht/

Saturday **March 8th 2025, Te Puke Amateur Radio Club Market Day branch 53 NZART**

At **Paengaroa Community Hall 4 Old Coach Rd. Paengaroa.**

Venue opens for vendors 6.30 AM. Table (1.8 Mt) prices- presale $20. On day of sale $25 . Half table $12.00 or $15 son day of sale.

Sale time 9:30 AM. Door charge $2.00 per person.

For further information contact **Syd Rowe ZL1LWR** (07) 533-1029 or 0272488664

E-mail – sydrowe@extra.co.nz

Breakfast available from 7:30 AM to 11:00 AM at reasonable prices.

Free Amateur Radio Buy, Sell and Wanted website-

See "ZL Ham Ads" and "The Machine", the MPRG Blog-
https://ZLham.net.nz https://MPRG.zlham.net.nz

Minutes of the General Meeting of the Musick Point Radio Group for

January 12, 2025.

Commenced at 1300.

Present- 10 financial Members as per attendance book.

Apologies- nil

November minutes-
Accept as published- Moved- ZL2MOH, Seconded- ZL1TOF -Passed.

Finance- ZL1DL-
Details not available at the meeting, but noted we are $800 better off than last year at this time. Cost of data connection has increased again. No significant (new) expenditure in the foreseeable future.
Accept financial report- Moved ZL1FTH. Seconded- ZL3CK -Passed

(Rec'd Later) As at 31/12/24- Current-$3014.29 Saving-$ 8392.04 Repeater-$74.22

New Members for approval-
Stephen Pilcher ZL1SRP- Proposer- ZL1DL Seconded-ZL1FTH - Passed.
Eric Bristow ZL2TSU (Hastings) Proposer- ZL3CK Seconded- ZL4ROB - Passed.

General Business-
Night meetings now possible due to no gate control now. ZL1DL will promote.
Activities suggested – ZL3CK-Suggested Friday nights so can also run the AM net.
ZL1DL Focussed tidying (!) Prepare radio and equipment for sale-
Digital modes- ZL1EK
Decided that the first evening meeting will be next Friday 17 January, from 7PM.

AREC Report- ZL4ROB- General discussion on improving emergency capabilities at MP.

Meeting concluded at 1324.

Minutes taken by ZL3CK