BREAKOUT

The Newsletter of the Hastings and Napier Amateur Radio Clubs

Hastings Branch 13 NZART – Napier Branch 25 NZART

Volume 22, Issue 10, October 2022

Hastings Br 13 Club Calls
ZL2AS
ZL2QS

Napier Br 25 Club Calls
ZL2GT
ZL2G

IRLP Node 6793 147.250

Branch's 13/25 Net
9.00 AM Sunday Morning
670 Repeater

Editor
John Newson
ZL2VAF

A quick glimps of the Wanganui Vintage Radio Museum inside

http://www.zl2gt.nz/

http://www.zl2as.org.nz/

Emergency Call-in Frequencies: 3615khz and 670 repeater

AREC Emergency Comms

https://arec.nz/join-arec/

KIWI ZL DX GROUP

Inside This Issue

NAPIER BRANCH 25

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Committee Meetings: ***7:30 pm, 3rd Tuesday of January, March, May, July, September, November***
Club Calls: ZL2GT, ZL2G
Club Web Site: http://www.zl2gt.nz/

Club Nights: First Wednesday each month (except January) 7.30pm at the Club Rooms: 123 Latham Street Napier

Napier Branch 25 Amateur Radio Club

At last months Club Meeting we ran the annual quiz, winner was Mark ZLTUK, second place: Peter ZL2CD . Prizes for all contestants, even if only a chocolate fish, this event went down well, with about 11 people tryng it on.

Next Meeting is the AGM and the Pan Pac home brew competition, this is open to almost any home made product or indeed home brew produce that you may have completed. If your entry is too large to bring along, then photos are permitted.

Think about standing for office for the coming year, or simply come along to support those that are willing to stand.

My Yaesu FTDX10 arrived and as we had spoken at the last meeting about the possibility of remote controlling the radio in the shack, and as I felt I would like to remote my own radio to a quiet spot, Stu ZL2XC has been guiding me through a variety of remote software and radio interfaces to see what is

available, and what actually works. I owe a huge thank you to Stu, as my knowledge of things internet and LAN/WAN etc is sadly woeful. However the good news is that I will be able to demonstate the Yaesu software working at the next meeting. If you think you can use a remoted radio, then it is essential that you attend the AGM as we will be looking for enough interest in this project for it to progress. We will also be looking for a discussion on where the Club should head direction wise. Please attend!

The weather is definitely brightening up so outdoor pursuits, like aerial work, might be on your agenda. I wish you well in those endeavours.

One of the things you could look at is the Makers / Home Brew group who meet every other Monday evening, Mentored by Errol ZL2IT, we would like to see a few more attendees at the Clubrooms 7:00pm.

Looking forward to seeing you all at the next meeting, which is Wednesday 2nd November at 7:30pm, Club rooms Latham Street.

73 Dave ZL2MQ

HASTINGS BRANCH 13

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Club Call: ZL2AS and ZL2QS

Club Nights: Fourth Wednesday each month at 7.30 pm Pakowhai Hall, Pakowhai Road, Pakowhai

From the Top Table

Hi one and all for this month and it is with sadness that I take the time to mention the sad passing of Mike zl2wr who was a great friend of mine since way back in the late 1990s, and unfortunately I was not able to attend Mikes send off. Mike was the one I brought my first HF rig from and it was a Kenwood TS430S which I had for a number of years with a sad story over its life time with me.

Well here we are at labour weekend and I recall my working days in that we always looked forward to this weekend as this lead to the Xmas shut down and Holidays. Yippee 2 or 3 weeks off ... until I got promoted to the dispatch store and then all I got was the statutory days off as not all of New Zealand closes down over Xmas. Someone had to be there to send orders out to the customers and this meant my holidays built up. When I retired I had over 2 months of days to take so I used them up before I retired all in one hit with the bosses blessing. Come to the end of that time I was released into retirement.

This time off gave me lots of time to sort out my super and my other super scheme and the company that I had a retirement scheme with as well to give them time to work out how much they were going to pay me. Made my bank balance look good for a while but it went out fast once I started buying new radio gear and pouring money into my late daughters home to bring it up to a good looking home again for my granddaughter and still the work goes on at this stage. We are still waiting for the bathroom to be done, all in good time I guess.

I am looking forward to seeing some of you in Waipawa for tea and a good chit chat and fun night out for us, so, if you are thinking of coming, please let Peter ZL2HM know asap so he can get the numbers in to the pub before we turn up.

The HF bands are still working good but with daylight savings time 20 meters is coming alive later in the day.

Branch 13/HBARC, Hastings, office bearers,
David Walker ZL2DW (Secretary),
Blue Smith ZL3TT (President),
Peter ZL2HM (Treasurer).

I was very surprised how few JOTA stations there were on the air this year. It seems to me that locally there is no interest from the Scout groups around here which is a shame. This could be a good way to recruit new kids and parents into the hobby. But its Ok as we are still ticking along with the 1 or 2 that have passed the course this year and I say a big well done and welcome to these guy and girls and welcome aboard.

Ok that's it for this month don't forget your subs are due next month as well as your NZART sub if you are a member.

cheers

Blue ZL3TT President Branch 13 HBARC

The Next Branch 13 Meeting
(October)
The Branch 13 "CHB Meal and Meeting" will be held at Waipawa on 26 October, 6pm at Skinny Mulligans. All (and families) welcome.
Booking numbers to Peter (ZL2HM) before 10am on Tues 25 October.
There are various car pools going so ask about.
There is NO NORMAL MEETING at Pakowhai Hall that night.

Branch 13/HBARC
General Meeting and AGM and Homebrew Competition will be held on 23 November 7-30pm at the Pakowhai Hall.

For sale
I have a 2m 12 element Yagi that I need to dispose of as I don't have room anymore since changing address. Centred on the low end of 2m.
I can deliver locally if required. Open to any offers.
Contact Errol ZL2IT 021490253.

Picture of Cody Booth (on the right hi hi) giving a talk to Branch 13 at our 28 September meeting. Thank you Cody and St John.
Branch 13 made an online donation to St John

MUSEUM VISIT

On 30 September Mike ZL2VM and David ZL2DW visited "The Wanganui Vintage Radio Museum" at Wanganui. It filled up several hours with delight and nostalgia, thank you Graham and Val (both hams) for hosting us.

David is shown pointing to a radio made in Hastings, an "Elgin 6 valve DW" manufactured by Rees and Ramsden, Hastings, in 1936. He is also showing the back of same. The other pictures are a selection from the day.

I think it fair to say that the Legged Gramophone tickled Mike with delight. Graham said the "volume control" was the doors (open or shut or partially so) on the front. It was a wind up machine (ie no power) and gave us great nostalgia while listening to a 78 rpm record.

Well worth a visit when next in Wanganui. www.vintageradiomuseum.co.nz

David ZL2DW

Graham Hawtree ZL2AHR our host

The miscellaneous cabinet

Michael.....obviously a "leg man" enjoying the wind up gramophone

Radio made in Hastings, an "Elgin 6 valve DW"

This months ramble

Last year when the NZART conference was in Napier, I went along and attended a talk by Errol and Dave on Magnetic loop aerials. As I have a large RFI at my little workshop, I decided to give a Magnetic loop aerial a try. Magnetic loop aerials work on the magnetic part of the signal and not the electric part. This makes them less sensitive to RFI as this is in the electric part of the signal. You do give up 1S point of signal, but for less back ground noise. That is the theory, but as I will get to later, correct placement of the aerial is required .
Errol was kind enough to give me a Magnetic loop aerial that he was no longer using, and so I cut it down to the length that I required, see (Fig 1), and installed a variable tuning cap at the top.

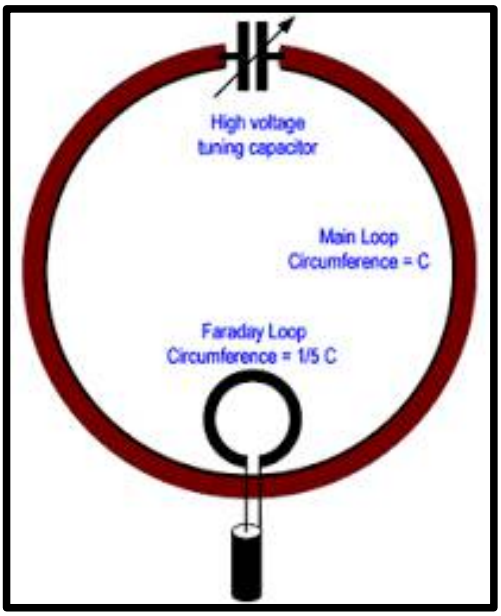

Fig 1

Now in the world of Magnetic Loop aerials, if you transmit out of them, you can generate high current flows In the Loop. Which, when it gets up to the tuning cap at the top, changes from current flow to very high voltage across the tuning capacitor. These can reach many thousands of volts, and so the choice of a tuning cap is very important.
At the moment I only have variable tuning caps out of old AM radios. Now these are OK for receive only! Because the other half of the Tuning Cap is through bearings on the shaft and or a swipe arm they are NOT usable for High Voltage flow.
There are two types of Tuning Caps that can be used .
One of these are the glass vacuum copper variable tuning caps that are predominantly made in Russia, see (fig 2). These cost more money than I have at the moment, or a Butterfly tuning cap, see (fig 3).

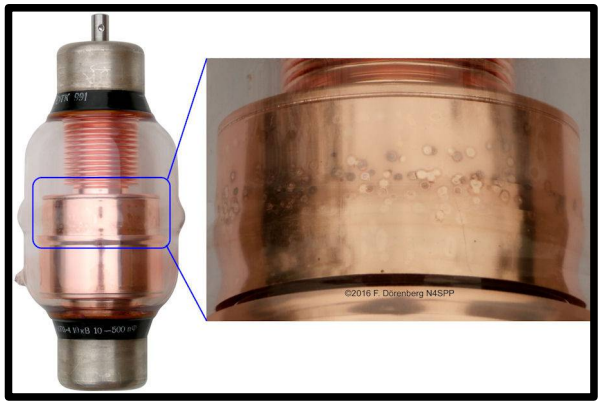

Fig 2

Fig 3

I'm just using a tuning cap I picked up at our famous Hastings junk sale, it goes round and round unlike a old AM radio type does not. This is good because I'm driving it with a 2 RPM motor. This is slow enough, so that I can actually hear the noise peak at the tuning point before I've gone too far past .
This got my Magnetic aerial working on receive .
It's hang up at it's present position right next to my Wi-Fi Cat5 cable. Do not try this at home because when the internet is running it will give me S9 noise on my Yaesu FRG-7 receiver

I placed it there because

1: It was a quick and easy place.

2: I can reach it from the step ladder.

The old rule that I was always taught, back in the 60s as a apprentice television engineer is

"The Aerial has to be where the signal is!"

When I get my main aerial , which is going to be a 3 m diameter copper pipe loop with a butterfly tuning cap at the top , driven by a stepper motor, computer-controlled. Tracking the VFO of my Transceiver as I tune the band, and will snap to attention, driven from the SWR feedback to the computer. To be mounted on top of the roof.

This is to be my "one and done" aerial. I intend to be mainly on 80 and 40 meters. That's going to be my aerial of choice for everything.

I will reuse my test one, it will be converted to 30 m and run LOW POWER QRSS BEACONS AND PSK31 which is very slow speed Morse Code running a mill-watt of power or so and see how far we can go.

If you refer back to (fig 2) the image of the Russian vacuum copper variable capacitor this shows spotting on the outer ring where it has arced over.

This is the major problem with Magnificat Loop Aerials.

With 10 Watts transmitting power you can expect somewhere close to 3 kv on the tuning cap, it all depends on the Q of the tuned circuit (parallel tuned circuit) that you can make. The more power you run, the risk of arcing becomes greater .

I'm going to build a 25 plate butterfly (see fig 4) spaced at 4 millimetres between plates that should give me 4,300 thousand volts spacing.

My copper loop is aimed at 80 m and 40 m only .

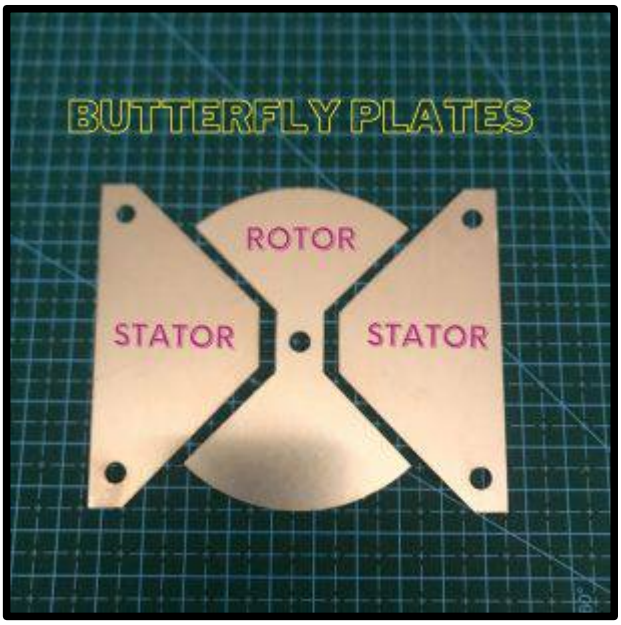

Fig 4

You cannot get one loop to do the entire Spectrum .

As you go up in frequency you get more and more skin effect and the resistance of your loop goes up which knocks around the Q of the loop. The ability of the loop to work efficiently depends upon the Q of loop and the square footage inside your loop. It gives you 1s point lower so the book says but worth the reduction if I can get a low noise background. It's the way forward for me and also a small loop is very handy if you live in a small section, that we seem to live in now days.

As a side note Errol and Dave, at The Napier branch of NZART are running a building club for our beginners, here in Hawke's Bay. The first up project is the "Beach 40 " transceiver running on a handful of audio transistors (you can find the circuit on the internet).

I am building one as well.

I suppose I should not say this but.... Once our beginners have built their 40 m Beach 40 transceivers we're going to let them run wild on 40 m.

Also we have found that the circuit also runs quite happily on 80 M and so we may have two versions that we will build in our club. I am just spreading the news.

1: Computer control tuning,
https://tf3lj.isageek.net/to-automatically-tune-a-magnetic-loop-antenna.html

2: QRSS circuits,
https://www.qsl.net/pa2ohh/

3: Magnetic aerial design ,
https://miguelvaca.github.io/vk3cpu/magloop.html

4: The man who designed the " beach 40 circuit ",
https://vk3ye.com/index.htm

Eric ZL2TSU

Dipole vs Vertical: Which Antenna is Better?

The dipole versus vertical question doesn't really have a single "right" answer, and amateurs will offer different responses based on their individual preferences. It's almost like the Ford versus Chevy argument. Both get you from point A to point B, but there's always the claim that one is superior to the other.

Vertical

The basic quarter-wave vertical antenna is essentially half of a dipole with the other half of the antenna composed of radials, either at or above ground. One of the primary advantages of HF vertical antennas is that they are omnidirectional, meaning they transmit and receive in all directions.

With a good set of radials, these antennas produce a low angle of radiation. This reduces the number of hops that HF radio signals must make to reach their destination, and makes them a good choice for DX—especially on the low bands. By comparison, a horizontally-polarized antenna needs to be a half wavelength above ground to have similar low-angle performance.

Verticals can be mounted on roofs, towers, poles, or at ground level. The ones that are ground mounted are less noticeable to neighbors and easier to maintain. Those that are elevated above ground require fewer radials—two minimum per band, but four is better. If you don't have the space to install standard length radials, there are verticals that utilize a group of short radials with broadband matching unit. They're typically mounted eight feet or more above ground level.

You've probably noticed that most Ham mobile radios and HTs use vertical antennas. Part of the reason is that they conserve space and mount easily on vehicles. VHF/UHF propagation is line of sight, and traditionally vertical antennas have been the choice for portable or mobile—whether it's simplex or via a repeater.

On the downside, verticals have a reputation for picking up more noise than a horizontal antenna in AM/CW/SSB modes. They tend to be more sensitive to vertically-polarized noise generated by lightning or overhead power lines. They also tend to be more expensive to buy and have the additional cost of adding radials.

Horizontal Dipole

The horizontal dipole is the simplest and most widely used type of antenna. They're easy to put up for temporary or Field Day use, and they're also widely used by radio amateurs at home because they're inexpensive and easy to build. Another advantage of dipole antennas is they are very efficient when used at their resonant frequency.

Dipole antennas are mostly omnidirectional when sending and receiving signals. Dipoles can be hidden in trees, attics, and along roof lines to keep your HOA happy.

Though horizontal dipoles are relatively easy to make, they often take some effort to install in trees or on poles and towers. Height also matters—the higher the dipole, the better. Ideally, a dipole should be at a half wavelength above ground for best performance and making DX contacts. At 40 meters, that would be 33 feet. But many Hams report they can still get good performance at lower than half wavelength heights.

You can erect dipole antennas in a variety of configurations to meet your needs: flat-top, inverted-V, sloping dipole, or folded dipole. There are even variations of the dipole that can cover multiple bands, like trap dipoles, parallel dipoles and off-center-fed (OCF) dipoles.

One of the disadvantages of a horizontal dipole is length, especially on the low frequencies. Since the dipole is typically a half-wave antenna, it can be impractical on small lots. For the 80 meters band, the length would be 130 feet; 160 meters would extend 260 feet.

The Answer?

If cost is your primary consideration, the horizontal dipole is a great choice. All you need is wire, insulators, and some support rope to build this simple antenna. Just be sure you have two supports, such as trees or poles to hang the dipole. Remember, higher is better. If you only have one support, you can droop the ends into an inverted-V configuration, which can also save space. Be sure the ends of your inverted-V are at least eight feet above ground so they aren't a danger to humans and pets.

DX chasers should consider the vertical. They don't take up much space, many are less than 30 feet high, and most don't require supports other than a few guy lines. Vertical antennas naturally have a low angle of radiation, meaning you'll have a good chance of making worldwide contacts. The downside is that they can cost several hundreds of dollars, require more time to assemble, and need radials.

If you're having trouble deciding, why not use both varieties? I never considered my antenna farm complete until I had both vertical and horizontal antenna options on all HF bands. And I managed to squeeze them all into a 0.3 acre suburban lot, enjoying the advantages of both.

Vertically-polarized antennas and horizontally-polarized antennas also complement each other very well. Where one works poorly, the other may perform well. You might be surprised at what the vertical can pull in that the dipole can't and vice versa. With changing propagation, it's a winning combination for maximizing contacts.

Pictures from the Branch 20 Table Sale on 1 October 2022

Who is that man on the extreme LHS, foreground ?

Who are those two men on the extreme RHS, furthest away, one wearing a "Tea Cosy" ?

Get Started
Amateur Radio

If you would like to join the fraternity of Amateur Radio Operators. Join Ham Cram Radio enthusiasts Warren Harris and Steve Main.

Limited Spaces –
Please enrol at the EIT Tairāwhiti Campus!

Tutors: Warren Harris and Steve Main

Starts Monday, 7 November 2022
Self-Directed Learning using the study/guide book. Students must enrol before 7 November and receive an online version of the guide.

Workshop: 26 and 27 November 2022
This weekend training session will finish with the Amateur Exam. This is a big weekend; some prior study is required.

Time: 8.30am

Fees: Fee Free

Location: EIT Tairāwhiti
290 Palmerston Road
Gisborne

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EIT
TE AHO A MĀUI

Te Pūkenga