

THE WORLD BELOW 400 GHz

The Periodical Newsletter of the
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WAIKATO VHF GROUP EXECUTIVE

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General Meeting August 2014

A General Meeting of the Waikato VHF Group will be held on
Sunday, 31st August, 2014 at 1:30pm,
at the

Tauranga Volunteer Coastguard Headquarters, 72 Keith Allen Drive, Tauranga.

Click [HERE](#) to go to a map of the location.

The guest speaker will be Les Cole (ZL1KF) who will give a talk and presentation on the construction of the Auckland Waterview tunnel and the comms involved.

Non members and visitors welcome.

Update on Waihi North

Due to not knowing when the Te Keho site will be available to move into, the group has been investigating an alternative temporary site. A very promising site has been found, but still requires some further investigation before a commitment can be made to locate our equipment there.

All radio and power supply equipment for '5475 MHz, plus its associated link to Te Weraiti, where this new extension will join into the Waiplety Network, has been assembled in a rack ready for installation.

We look forward to welcoming users on "Waihi North '5475" onto the Waiplety 2m repeater network as soon as that becomes possible.

Message on Waiplety Network

The message that has been running 3 times a day on the Waiplety network is to be removed for the time being.

We now hope that users of the network are aware as to what repeater they should use to obtain optimum service from their location.

Branch 12 NZART Hamilton Amateur Radio Club Market Day

The Market day in August has been and gone. Funds raised were just a few dollars shy of \$300.

Thanks to a big ticket item, and \$50 of sales from Ian ZL1TAT, plus some miscellaneous sales off the VHF group table.

As I was wheeling some big heavy unsold items back to the car, another amateur offered to buy them, (an offer I didn't refuse!) then I saw him carry them up the driveway!! (I offered to wait down in the carpark while he got his car.) Geeesh... I don't know what the guy eats for breakfast...

Meteor Scatter

Up until recently. I have had consistent 2M Meteor Scatter (MS) contacts as far away as Dunedin. Unfortunately in the southerly direction, there is now wideband noise. This noise is of the order of 20 dB above the previous noise level, so my 2M contacts to the South look to be numbered... ☹️

It's probably been close to 2 years of Sunday morning activity...

Will investigate doing some 6m Meteor Scatter experiments, if the local noise is lower. 6M MS pings should be stronger, and of longer duration. Typical maximum distance is not any greater though...

Wellington 2m beacon

The Wellington 2m beacon has been upgraded so, that as well as CW, it transmits JT4D mode. JT4D is part of the WSJT suite of programs. <http://physics.princeton.edu/pulsar/K1JT/>

The RF source is now a ZL2BKC ZLPLL board, <http://zl2bkc.com> driving a power module, all with GPS timing. JT4D is decoded by a PC, at levels below that the ear can decode CW. Tune your receiver to 144.2738 MHz to decode the signal.

The TX power has also been increased, and is thought to be in the region of 10 watts, with the signal being regularly received up in the Auckland region, as well as in Hamilton. The Auckland 2m beacon on 144.253 MHz appears to be stronger in the Waikato.

FT817ND

After many years of using older separate equipment for the HF and VHF bands, late last year I purchased a FT817ND, a nice little portable multimode transceiver, covering 160M thru 70cm. It covers quite a few modes, and extra options such as CW filters, and a TCXO can enhance its performance. The unit together with a small HF ATU and a portable antenna can be a lot of fun. The small 6m/2m and 70cm whip makes it useful as a local monitor, but bigger antennas and amplifiers can make it a big station.



Some bigger stations use this as a driver, as the small RF power output, can reduce temperature drift associated with higher power transceivers in a small enclosure. The higher heat dissipation can also affect the longevity/reliability of transceivers.

Digital mode interfaces are available so one can run digital modes.

Getting used to the menus is a new thing for me. (Actually the FT817 was first sold in 2001, so it has been around for a while)

One can also optimise Rx performance on a band per band basis, by switching in attenuators/preamps. If one looks at the Yaesu FT221R 2m transceiver and the FT101 HF transceiver, of 1970's vintage, then the reduction in size (and weight!) is dramatic, and the performance in most areas is far superior.

OK, the older rigs have one thing going for them, in that they can be repaired readily using generic leaded parts, whereas modern equipment is almost entirely SMD, which either requires repair by the manufacturer, agent, or by an amateur with SMD capabilities.

The valves used in the finals of the FT101 series, are getting harder, and more costly to obtain, so some of those rigs (with valve driver/finals) although still operating on 10 and 15m, have much

reduced output power, due to the final and driver valves gradually losing emission.



What we pay for dollar wise now, for the FT817ND is similar to that for the price of a FT101 or a FT221 in the 1970's. So the value for money, these days is exceptional.

Remember the other station, can't tell whether you are using a 40 year old rig, or a current model...

Tips

With small base type radios, often the speaker, and enclosure is a limiting factor in audio quality, and using an external speaker can make copy of stations more readable. So it's worth trying an external speaker.

Another tip is that some radios can have a reasonable amount of RF on the DC cable due to either installation, or insufficient decoupling or additional amplifiers. This can cause some problems such as DC supply malfunction, and excess volts on the equipment and RF feedback. I have seen some issues on some of my equipment when running simple generic PSU's giving 20v on the 13.8v line.

Additional RF decoupling may be needed, or choking of the PSU cables. Note the chokes appear more often on PC equipment, to reduce spurious radiation.

I buy clamp on ferrites to help choke the RF from entering or exiting equipment from paths such as DC or other cables.

If running external antenna with a ground, then choking the coax going back to the rig, can reduce local received noise, as well as RF on the transceiver.

The bands

I haven't spent much time on 6m since the lower section was released, so maybe the readers could drop me a line and tell us what's been happening.

What activity has been happening on the bands? What gear has been built or used?

The improving weather should help with some DX openings.

After all the winter rain, check your cables for water ingress.

Check your coax connections. I have had a few RF connections fail recently, and also a diplexer fail.

Some Tips for making VHF/UHF Repeater Contacts

On the VHF/UHF bands the use of repeater systems is primarily intended to increase the operational range of mobile and portable stations. Fixed station operators should keep this in mind. If two fixed stations can make a two-way contact without the use of a repeater, why would it be opportune for them to use a repeater for a long winded QSO?

Whoever makes use of a repeater must take into account he does not have the 'monopoly' on its use. This applies in fact for contacts on all frequencies. On non-repeater frequencies the 'first come, first served' (and somehow 'keep') principle is used. On repeater systems this principle should not prevail. Everybody must get a shot at this very useful medium, especially the mobile and portable stations.

During a repeater QSO, it is a good habit to leave a short pause (3 secs.) in between 'overs'. In that way, someone else can make a quick call or intervene in the ongoing QSO. By immediately pressing the PTT button after an over, this possibility is effectively prevented. Think about it.