

QUA FARC

Franklin Amateur Radio Club Inc. NZART Branch 10



MARCH 2024

VOLUME 32 ISSUE 3

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Meetings: Club meetings are on the third Tuesday each month in the clubrooms, 19 Stadium Drive, Pukekohe, at 7.30 PM. Visitors welcome.

Next General Meeting and 2024 Speakers Program

Our next meeting will be held on Tuesday 19 March at 7.30 PM in the clubrooms located at 19 Stadium Drive, Pukekohe. The speaker will be Dr David Black and his topic will be digital audio broadcasting (DAB).

Our Program for the year so far: March - David Black ZL1MZ talks on digital audio broadcasting, April - Graham Anderson speaks to the club on Auckland Museum of Transport and Technology (MOTAT), May – Selwyn James will address the issues involved in providing audio services at large and small events. Selwyn was the sound engineer at last year's Franklin Positive Ageing Expo in Pukekohe.

Practical Training Sessions

We recently started holding mini training sessions at the club on the second Tuesday of the month. Steve ZL1TZP held the first of these in February when he coached club members on editing the code plug of a Digital Mobile Radio (DMR). Steve gave his students an 'edit' exercise to complete at the end of the training which most were able to achieve.

Peter ZL1PX will hold a 'taster' session on CW on Tuesday 12th March at the clubrooms to start at 7.30 PM. He will first run a Morse code learning session at 6 words per minutes with a limited number of characters which should take about 25 minutes. After this he will explain how you can install and use the NZART TeachMorse8 software on your laptop so that you can run the sessions independently at home.

DMR specialist Steve ZL1TZP will hold a further training session on Tuesday 9th April at the club house starting at 7.30 PM. This is a chance to revise our code plug and pi-star skills and pick up some new ideas. Bring your DMR radio, laptop and hotspot. All welcome.

Committee meets on the first Tuesday of each month (excepting January) at 7.30 in the clubrooms.

Subscriptions: individual \$20, family \$30, due December
Bank Number: 02-0404-0157944-000

Nets: HF Sunday 9 AM, 3.700 MHz (Mike ZL1UOM); VHF Sunday 9.30 AM, 146.900 MHz (Peter ZL1PX); DMR on Talkgroup 5301, 2nd & 4th Tuesdays 7.30 (Steve ZL1TZP).

QUA editor: Peter ZL1PX pjh@teachlit.com

QUA is sent by email to members and anyone interested.
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Jock White Field Days: February 24/25

Peter ZL1PX

One of our best ever Jock Whites this year! Well-attended and well-run with much enjoyment all round. Logistics expert Gary ZL1WGL provided excellent off-grid resources at his farm in Attewell Road, Puni for our entry into the Jock White Field Days this year. These resources included a dry shelter for the generator, a cabin for transmission and sleeping and an outdoor loo.

Our super road crew team of Steve ZL1TZP, Tom ZL1TO and Francois ZL4FJ met at the clubrooms at 10 AM on Saturday. They happily loaded transceivers, power cable, antenna wire, generators, tables and chairs on to Steve's trailer and set off for Puni. Francois followed closely in his car to keep an eye on the heavily loaded trailer. He reported no equipment fell overboard on its way through Pukekohe town. After a short stop at Steve's place to pick up a couple of SWR meters, some patch cables and a RigExpert they arrived at Gary's farm.



Our editor tries a Saturday night shift on 80M .

At the farm, expert riggers Gary ZL1WGL, Steve ZL1SPR, Mike ZL1UOM and Greg ZL1GCQ helped unload equipment and set it all up. Steve ZL1TZP used his RigExpert to check

resonant frequencies. Mike adjusted antenna connections as needed so transmissions could begin.

Although operators began sending transmissions at 3 PM, there was some difficulty with the 80 meter band. There seemed to be a lot of noise and reception was poor. Mike's first class detective work soon identified the issue as a noisy generator. As we had plenty of power cabling, he solved the problem by moving the generator to a more distant location. He also gave the generator a solid earth by pouring copious water and one other unspecified liquid over the soil before driving in an earth peg.



Durlene waits poised and ready for her shift

There was no shortage of operators this year. When I arrived on scene, Steve and Mike were going for it on 80 and 40. Gary ZL1WGL, Cliff ZL1RP and Greg ZL1GCQ waited for their turn or helped put last minute adjustments to antenna and power configurations. Frank ZL1AMQ was ready to CQ. Durlene ZL1ULK arrived ready for action a little later. On Sunday our newest operators appeared – Francois ZL4FJ, Steve ZL1SPR, and Jason ZL1JRW – and achieved their first ever Jock White contacts.



Francois achieves his first Jock White contact Sunday

Steve ZL1TZP reported a memorable contact on Sunday while taking a shift...

"I'd like to mention the 2 Japanese stations I worked as part of the Field days. While tuning around on 40m on Sunday I heard a couple of JA's talking, one of which was quite strong so I thought I'd try to make contact. I managed to make contact with them, and I explained in Japanese that we were having a Field Day contest, and explained the reporting system, and was able to make valid QSO's and exchanges with both stations. I had to work for the contacts, but I feel it was well worth the effort. I also managed to get 4 VK's, but the JA stations were the most memorable contacts of a much enjoyable weekend. I am looking forward to next year's event."



L to R: Mike ZL1UOM, Cliff ZL1RP, Gary ZL1WGL, Steve ZL1SPR, Tom ZL1TO, Jason ZL1JRW, Steve ZL1TZP. Jason is on his first ever JW shift.

Franklin Amateur Radio Club took to heart the spirit of Jock White this weekend by putting in a robust and comprehensive answer to the Field Days team challenge. My apologies if I didn't mention any members who were present. I will make sure to get you next time.

Junk Sale

Our Junk Sale this year will be held at the clubrooms on Tuesday 16 July starting at 7.30 pm. So far, we have a variety of equipment, including transceivers, kindly offered to the club by Rob Duncan ZL1TKQ of Clevedon and another gentlemen whose name and call sign we weren't given but who recently moved from Norfolk Rise in Waiuku to a hospital room. We also have a legacy Icom receiver for sale which we have yet to check.

Franklin Amateur Radio Club 75th anniversary

Committee are collecting thoughts about a celebration of the club's 75th anniversary in 2025. Ideas so far are a celebratory dinner for past and present members and their families, a publication of the club's history and perhaps an award event.

Constitution

Largely thanks to Ted ZL1BQA, committee have begun to look at changes to the constitution to bring it in line with MBIE changes to incorporated societies. Committee will be bringing these ideas to the next general meeting.

Beginners Quick Guide | The Basics of DMR Digital Mobile Radio (Updated: 2024)

-Jason Rielly (Published on the web by Radioddity.com)

Introduction:

"The nice thing about standards is there are so many to choose from." I love the ironic humor in this statement; a standard should result in everyone doing things the same way in order to be compatible, and prevent having to constantly re-invent the wheel. Yet, everyone has to have their own standard! Just take two-way radio digital voice systems for example: there's P25 phase 1 and phase 2, NDXN, DMR, TETRA, OpenSky, Provoice, and dPMR, along with a whole host of legacy digital voice modes as well. That doesn't even consider the ham radio contenders, such as DStar, Fusion, FreeDV, some old offerings from Alinco & AOR and so on. And guess what? Absolutely none of them are compatible!

Choosing what digital voice standard you'll go with can be daunting. For emergency services and government communications, P25 is by far the most dominant, there's no doubt about that. For business & private radio, DMR followed by NXDN are the two most popular choices. In the ham radio arena, the picture is a little less clear. DStar took an early lead, but Yaesu is keen to take market share with their Fusion offering. Hams have always been keen to leverage off existing commercial equipment, and it seems the most popular commercial system adopted presently is DMR.

Personally, I think DMR will take the lead in both the commercial business & private two-way radio field as well as in ham radio. This is helped in no small part by the ready availability of DMR radio equipment at prices that rival traditional analog two-way radio, and that one of the biggest names in two-way radio, Motorola, are throwing their weight behind DMR.



Motorola's SL7750 blurs the line between DMR radio and cellular mobile phone

Three flavours:

There are three "tiers" or levels of functionality for DMR systems.

Tier 1: The simplest form of DMR is Tier 1, which is mainly used for simplex communications, with no repeaters. The human voice is digitally sampled and compressed with the AMBE+2 codec, and then transmitted in this digital form to another radio.

Tier 2: Things start to get a bit more complicated here. With Tier 2 DMR, repeaters are used in a TDMA arrangement, with two "timeslots. What this means is that two completely separate radio transmissions can be going through the repeater at the same time; each radio takes turns in transmitting in short 27.5 millisecond bursts. In addition to this, radios can be set to logical closed groups called 'talk groups', which you can think of as 'virtual channels'. Repeaters can be linked via the internet to form networks that can be as small as just two repeaters, or thousands of repeaters across the world. Again, the AMBE+2 codec is used to turn speech into compressed data for transmission. All amateur radio DMR systems are Tier 2, as are many business / commercial radio DMR systems.

Tier 3: This is effectively a trunked radio system on top of Tier 2. A pool of frequencies are used to carry the TDMA transmissions. This is used by more complex or larger networks for big businesses and commercial radio users.

The advantages of DMR

So why go to all this trouble, when plain old analogue FM works perfectly well? DMR has the advantage that it is four times more efficient when it comes to spectrum usage. For one 25 kHz analogue FM channel, you could fit four DMR transmissions. Not only that, but DMR offers some very flexible calling facilities - you can call one person, a group of people, or everyone in your fleet at once. While not every DMR network supports it, sending of data and short messages is also possible. DMR is also designed to be easy to network, with connections using IP, so creating wide coverage areas using a network of DMR repeaters is already built-in; cover your city or cover the entire country! Yet another advantage is because a DMR transmitter is only turned on about half the time due to it transmitting in bursts, battery life is longer.

TYT's hugely popular MD-380 can be bought for around \$100US



Some DMR Jargon:

Colour codes: Every DMR transmission uses a "colour code" which is very similar to CTCSS or PL tones in the analogue radio world. On a repeater or simplex frequency, every radio must use the same colour code to be able to communicate together. The main use for colour codes is for where two repeater coverage areas on the same frequency may overlap, different colour codes are used to ensure each radio accesses the correct repeater.

Timeslot: For Tier 2 and 3 systems, a timeslot is a slice of time, about 30ms long, that a radio can transmit in, or receive in. There are two timeslots per frequency, and you need to have your radio configured for the right colour code for the repeater, the correct timeslot and correct talkgroup for you to be able to hear anything.

Zones: This is simply a collection of channels & talkgroups, all grouped together in one "zone" or bank. A radio user can switch zones to access a different lot of channels & talkgroups that they may wish to use. Typically zones are divided into repeaters for different areas, so you might have one zone for the west side of a city, and another covering the east side of the city - but there's nothing to say that you must set up a zone that way.

Code Plug: This is a Motorola term that has stuck over the years, and in the DMR context means a complete configuration file of channels, talkgroups, zones, contacts etc. for a radio. The code plug can be saved to computer disc, and is used to program a radio to give it the functionality a user requires.

CPS: Another Motorola term, meaning Customer Program Software. Simply put, this is the software you'd use to create a "code plug" and configure your radio.

Hotspot: A small box that connects to the internet and acts like your own personal low power DMR repeater, useful if you're not in range of a DMR repeater to access. You can even take them with you and use your cell / mobile phone wireless data to connect the hotspot to the internet and be able to use DMR anywhere you get cellular signal. Most hotspots are multi-mode, handling not only DMR but DStar, Yaesu Fusion and P25 as well. ZUMspot, Jumbospot, Openspot, MMDVM etc are all examples of hotspots that you can buy or build yourself

Radioddity GD-77, dual band, DMR & FM, I think the best bang-for-your-buck DMR portable, also around \$US100US



So what's in it for me?

The use of DMR in radio hobbyist circles falls into two categories: ham / amateur radio and scanning receiver use. Let's take a quick look at each:

Ham radio: Hams have long taken advantage of surplus, second hand, or even new commercial radio equipment and re-purposed it for their own use, and DMR equipment is no exception. Worldwide, DMR enabled and connected repeaters are appearing and are interconnected to provide a huge linked network spanning the entire globe. Depending on the talk group selected, you could be communicating just around town, across your region, across the entire country, and some groups even cover the world. Motorola DMR equipment is frequently used, but increasingly the cheaper units, in particular TYT, have increased the affordability and availability of DMR equipment to the mass market. In some cases, you can get on air to the DMR scene for less than a hundred dollars!

Scanning: As the world relentlessly marches on to a digital future, many businesses and commercial interests have migrated their legacy analogue FM two way radio systems to DMR. There are scanners available that can hear DMR, enabling the scanning hobbyist to continue to listen to such transmissions. For those hobbyists who can't justify the high price tag of those scanners to listen in to DMR, there are other alternatives: certain computer software can decode DMR with a regular scanner and a 'discriminator tap', or a 'virtual audio cable' if using an SDR, or if portable DMR reception is desired, an entry level DMR transceiver from TYT or Radioddity will do the job very well - to keep yourself on the correct side of the law, you should disable any transmit capabilities of these transceivers.

Minutes of Franklin Amateur Radio Club (Inc) Committee Meeting
held at the clubhouse, Stadium Drive, Pukekohe 6 February 2024

Chairperson Steve ZL1TZP opened the meeting at 1930 hours and welcomed all, extending thanks for coming.

Attendance: ZL1TZP, ZL1TO, ZL1AMQ, ZL1WGL, ZL1SPR, ZL1BQA, ZL1UOM

Apologies: ZL1PX (Covid) ZL1TZP / ZL1WGL
ZL1TZP apologizes for next month committee meeting.

Minutes of the December committee meeting.

Approved ZL1TO /
ZL1WGL

Correspondence

Newsletters received since publication of January QUA, from Branches:

13-25: January. Cover Eiffel Tower. Napier 6m WSPR transmitters working well. Pakowai Hall repairs under way. Satellite station for sale. Sterba curtain antenna.

65: ZL2SEA to speak on Winlink 7 February. Field Day preparation. DX – YJ0AA Efate Island Vanuatu 4-11 February. President's motorhome expedition to South Island. Installing a home solar generation system. Development of Li-Fi. Estate items for sale by tender.

Counties Energy. Our power will be off late evening 15-16 February.

The correspondence report was accepted. ZL1TO /
ZL1BQA

Finance

Income	Interest \$89.75 (4 January), \$108.80 (5 February)
	Subscriptions for 2023/24 have now been received from ZL1RP, ZL1LL, ZL1ULK, ZL1MFL, ZL1TZP, ZL1PX, ZL1WGL, ZL1GAC, ZL1AMQ –
Donations in	lieu of sub ZL1BQA, ZL1TO, ZL1UOM
Expenditure	Power bill zero for January and \$21.30 (2 February) due to discount The broken kitchen window was repaired at a cost of \$219.20 in early January.

The term deposit rolled over in January for 12 months, with interest at 6.1%

Thanks to Steve ZL1TZP for the replacement blind, and fitting it. (Payment for the blind cutter is to be made).

The finance report was approved. ZL1TO / ZL1BQA

Reports
AREC.

[AREC Display at Museum of Transport and Technology](#)

[Auckland AREC will be taking part in an Emergency Response Live Day at The Museum of Transport and Technology \(MOTAT\) on Sunday 18 February. Andy Brill ZL1COP Group Leader, North Shore AREC \[glnthshore@arec.nz\]\(mailto:glnthshore@arec.nz\) has advised:](#)

[There will be a working display of AREC equipment, including the Auckland AREC comms van. To make this display work we need people to talk to, so we are looking for people in Auckland, and throughout the](#)

country who are able to participate by contacting us by radio during the day. We will also need some on site volunteers to man the display.

The Plan so far:

Date/Time 1000 – 1600 hrs approximately, Sunday 18 February.

Location: Museum of Transport and Technology, near the Telecommunications section 805 Great North Road, Western Springs.

Operating on the following modes and channels:

Local Comms:

Emergency Services Band – ESB03 – Tamahunga CDEM repeater – for comms with Community groups in the Rodney Area. Can use other CDEM channels if other groups wish to participate.

Auckland 670 VHF Amateur Repeater.

PRS UHF repeater PRS05 Waitakere.

National Comms

AREC UHF DMR digital radio network – Waitakere repeater – ZK Talkgroup

HF SSB 7115 kHz

Vara HF Peer to Peer data 7115 and 10130 kHz.

Vara HF Winlink Email– Any useable HF gateway frequency.

Callsign on Amateur Frequencies – ZK1EBW

Callsign on other channels - “MOTAT COMMS BASE”.

Obviously, we can't talk on all channels at once, so if you don't get a response we may be busy. You can call us by phone on 0223546451 and set up a call on any channel or mode.

You can also Email us via HF radio by sending a normal email or a Telnet Winlink message. Our Winlink email address is ZK1EBW@winlink.org. Telnet Address ZK1EBW. Unless you have contacted ZK1EBW before via Winlink you will need to use the following subject line in your email to allow the system to accept your message: /WL2K R/MOTAT Display

If you would like to join us on site and maybe assist in the display, or just participate on the radio from home, please Andy with your details and what you would like to do. It would be great to get some other AREC groups and Community Response Groups involved as an exercise, but any assistance is welcome.

Note that NZ Emergency and Defence Services personnel and their families can get free entry into MOTAT from the 17th – 25th of FEB - Bring your AREC ID card to take advantage of this offer.

Peter ZL1PX has reported MOTAT would like to see us again in August 2024 for a similar activity to 2023. 75th anniversary.

Barbara Knowles has expressed interest, and has information in her archives on Bob ZL6IW (SK).

The Secretary is to meet Barbara face to face to get the information. An item is to go into the newsletter so that other former members may make their archives available. In particular we will want information from - ZL1BQA (10 years on Council, 2 years as Vice President of NZART) - When was Ian ZL1PZ on Council - Fred ZL1SP did 4 years on Council.

General business

ZL1UOM's neighbour has an antenna farm and may have been a lighthouse keeper.

Protocol around free membership for new hams.

The tradition within the club has been to give free membership for the remainder of the year that a new ham joins the club, with the first subscription due after the next AGM subsequent to their joining. Such a

process should help us to document membership statistics which may be required by the Companies Office.

Constitution

Gary ZL1WGL remarked that his caravan club is going through the process of using the constitution builder at the Companies Office. Ted ZL1BQA pointed out that the required disputes process may be three A4 pages of the constitution. The Secretary was asked to enquire of Debbie at NZART Headquarters for an update on Council's progress with advice to member clubs.

Topics at coming general meetings

February: A round table discussion of ham related topics. Ted will chair the discussion. All members attending are asked to bring a question.

March: Looks like the speaker will be David Black ZL1MZ on digital audio broadcasting (DAB). John ZL3AQT may visit us at one of these meetings, on the invitation of Steve ZL1TZP.

April: Graham Anderson from MOTAT with Mark Vincent.

July: Junk sale

Project evenings

DMR meeting at clubhouse 13 February 7.30 pm with Steve ZL1TZP – programming channels into code plugs To bring radio, programming cables and laptops.

CW. Tuesday 12 March led by Peter ZL1PX.

Jock White Field Days 2024

We have accepted an offer from Gary ZL1WGL for the venue of our station at 200 Attewell Road. We will contest two bands - both phone and CW.

Junk sale

ZL1TKQ is the vendor of some of the junk sale offerings. An IC290 rig is one offering.

The meeting closed at 2050 hours

Minutes of Franklin Amateur Radio Club (Inc) General Meeting held at the clubhouse, Stadium Drive, Pukekohe 20 February 2024

Chairperson Steve ZL1TZP opened the meeting at 1930 hours and welcomed all.

Attendance: ZL1TZP, ZL1TO, ZL1LL, ZL1AMQ, ZL1WGL, ZL1SPR, ZL1BQA, ZL1UOM, ZL1MFL, ZL1ULK, ZL4FJ, ZL2GCQ, ZL1YOT.

Apology: ZL1PX (and ZL1RP by an unread email)

ZL1TO / ZL1TZP

Minutes of the January meeting.

Approved
ZL1BQA

ZL1WGL /

Correspondence

Newsletters received since publication of January QUA, from Branches:

03: AGM 27 April, including amendments to Club constitution. AREC Northern Region Manager visited 24 January. Winlink running on ZL1KB and ZL1SKL radios subsequent to AREC Teams seminar. Bay of Islands national system link down. AM transmitter proposed for 402A Pollock Wharf Road. Te Puke market day 2 March.

Counties Energy. Our power off late evening 15-16 February.

Ted Doell – re Proposals for Club Constitution and Bylaws.

Peter Henderson – re Steel and Wheels. “Just one item to pass on for tonight’s meeting. Steel N Wheels will be held this year on Sunday 14 April. Would anyone else like to hold the event? As yet there are no volunteers.

The correspondence report was accepted.

ZL1TO/ ZL1ULK

Finance

Income

Interest \$89.75 (4 January), \$108.80 (5 February)

Subscriptions, and donations in lieu of subscriptions.

Expenditure

Power bill zero for January and \$21.30 (2 February) due to discount

The broken kitchen window was repaired at a cost of \$219.20 in early January.

The finance report was approved.

ZL1TO / ZL1BQA

Reports

AREC.

Tom ZL1TO reported on the AREC Display at Museum of Transport and Technology. There was minimal involvement of Franklin AREC members. ZL1TO checked in on the 670 repeater. Andy ZL1COP has written to thank those who participated.

There will be an Auckland area AREC meeting at North Shore on the evening of 22 February. Tom ZL1TO intends to attend.

Peter ZL1PX has reported MOTAT would like to see us again in August 2024 for a similar activity to 2023.

75th anniversary.

Ted ZL1BQA has written advising the dates that Franklin members were on AREC Council.

General business

Protocol around free membership for new hams.

The proposed bylaw on this topic reads:

New Members

Shall not be required to pay a subscription for the financial period that they have become a member and shall enjoy the same rights and privileges as other members. Their first subscription shall fall due after the next AGM subsequent to their joining.

In relation to this clause financial period means, the period between Annual General Meetings.

The proposed bylaw is how we treat new members

ZL1BQA / ZL1WGL

Durlene ZL1ULK drew member’s attention to a Break In ham ad of a yagi antenna with a 3 bedroom house.

Topics at coming general meetings have been sorted.

February: Tonight we will have a round table discussion of ham related topics. Ted will chair the discussion. All members attending are asked to bring a question.

March: Looks like the speaker will be David Black ZL1MZ on digital audio broadcasting (DAB). John ZL3AQT may visit us at one of these meetings, on the invitation of Steve ZL1TZP.

April: Graham Anderson from MOTAT with Mark Vincent.

July: Junk sale

Project evenings

Steve ZL1TZP reported last week's meeting was quite successful. DMR meeting at clubhouse was on 13 February 7.30 pm with Steve ZL1TZP – programming channels into code plugs. Members brought their Anytone handies with programming cables and laptops. Steve issued a challenge for all to program BrandMeister TalkGroup 5057 (Tasmania) into our Transceivers. And after the next ZL1SA DMR net (27th Feb), we move from TG5301 and go to TG5057 for a single round.

CW.

A project evening is scheduled for Tuesday 12 March to be led by Peter ZL1PX. The Teach program is on the NZART web site and will be used as a learning tool.

Jock White Field Days 2024

There will be an opportunity after the formal part of the meeting to finalise various jobs and roles.

Collect tables, chairs, rigs, antenna, coax and connectors generator oil and petrol from clubhouse 10 am, Saturday 24 February.

Trailer and towing vehicle... Lifting heavy equipment ...

Log sheets and computer tracking of our station progress,

Ground preparation 200 Attwell Road

Assemble antennas, accommodation, tables, chairs, rigs and power supplies

Operators – in one hour slots 3pm to midnight Saturday and 6am to 3pm Sunday

Operators 40m and 80m phone Saturday afternoon

Operators 40m and 80m CW Saturday afternoon

Operators 40m and 80m phone Saturday evening

Operators 40m and 80m CW Saturday evening

Operators 40m and 80m phone Sunday morning

Operators 40m and 80m CW Sunday morning

Operators 40m and 80m phone Sunday afternoon

Operators 40m and 80m CW Sunday afternoon

We have accepted an offer from Gary ZL1WGL for the venue of our station at 200 Attwell Road. We are planning to contest two bands - both phone and CW. However if the major CW operator is not fully recovered we may change to a phone-only club station.

Junk sale

Franklin Junk sale will proceed in its normal date, third Tuesday of July, 15 July 2024. A beam on its 20m tilt-over tower is yet to be retrieved.

The meeting closed at 2020 hours

