

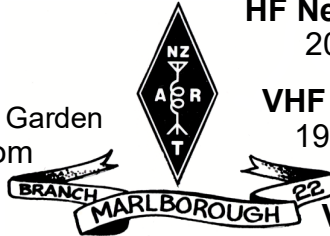
June 2023

INTERFACE

MONTHLY BULLETIN
MARLBOROUGH AMATEUR RADIO CLUB INC. P.O. BOX 432 BLENHEIM NZ

CLUB CALENDAR

General Meeting;..... 8 June, 7.30pm, EOC
Social Group; 15 June, Dodson St Beer Garden
Committee Meeting; 22 June, 7.30pm, via Zoom



HF Net Tuesdays & Saturdays
2030 hrs 3876kHz

VHF - USB Net Wednesdays
1930 hrs 144.150MHz

VHF Mondays 1930 hrs
146.950MHz,
145.600MHz, 147.225MHz

Net Controller;
Rob Carter, ZL2IW

Website: www.zl2ks.org.nz

BRANCH 22 NOTICES

1. Nick Batt WSPR (Weak Signal Propagation Report) .. 8 June
2. John E – Antenna software (Antennas Part 3) 13 July
3. Video from Don L - vintage truck drive? 10 Aug

Editor: Caryl Simpson caryl@simtronics.co.nz **MARC Contact:** marcbranch22@gmail.com



SARTrack Exercise Accommodation, Dip Flat 6 - 12 May 2023 (see report & more photos P. 6 - 8)



Helen Harris, ZL2HH
Gavin Piercy, ZL4IY
Linda Laing



We have 2 new members who have just passed their ham exam. We welcomed Mark McGowan last month so let's welcome Linc Teale as well. Callsigns not official yet but Mark's first choice is ZL2MHZ & Linc, ZL2CLT.

Thanks to Bill, ZL2AYZ, for helping them gain their qualifications.

MARLBOROUGH AMATEUR RADIO CLUB GENERAL MEETING
at EOC, 11th May 2023 at 19:30 Hours

Present: John Errington (Chair), Don Laing (Secretary), Greg Barton (Treasurer), Ken Menzies, Graeme Dillon, Gerard Van Antwerpen, Bill Cousins, Graeme McKay, Ian Conway, Ron Harris, David Rothwell, Nick Batt, Wayne Parker, Don Jamieson

Apologies: Antony Whitaker, Paul Rennie, Helen Harris, Stuart Watchman

Visitors: Kerstin Mueller

Health & Safety: No issues raised

Previous Minutes: As published in Interface agreed by those present as a true and correct record

Matters Arising: MOM corrections as per Correspondence

Correspondence: (since Committee Meeting 29/04/23)

Inward

13/04/23	Paul Rennie	GM MOM correction re Kaikoura Cabinet lock
05/05/23	Nick Batt	CM MOM correction re absent dates July~Dec 23
11/05/23	Kerstin Mueller	Meeting attendance inquiry

Outward

01/05/23	NZART	Updated membership list
01/05/23	MARC EOC Roster	Roster June ~ Sept 2023

Matters Arising: None

Finance & Membership:

Accounts (available upon request)
Membership 56 paid, 1 unpaid
Income, Interest & subs
Payments Nil

Events: None noted

Sangster Shield – no Branch 22 team entry

NZART Conference

Motion: That Stuart Watchman be nominated as Branch 22 delegate. J. Errington / I. Conway / Carried

Remits:	No 1	No	For: 11	Against 0
	<i>Support for Break-In digital copy but not for digital only subscription</i>			
	No 2	No	For: 11	Against 0

Repeaters & Systems:

Kaikoura – Grant S has advised that owner in negotiations with Mainpower (North Canterbury Electricity Distributor) to replace antenna pole

Repeater Development

- No response from Richard Smart CARC. To follow up

Alternative repeater site

- No response from Richard Smart CARC. To follow up

Speaker Schedule

Tonight - David Rothwell on waterproof joints (Antennas Part 2)
June – Nick B – WSPR (Weak signal propagation reporter)
July - John E – Antenna software (Antennas Part 3)
August – Volunteers for mini-presentations required

SAR / AREC - P. Rennie

SAR exercise currently being held at Dip Flat concluding Friday 12/05/23.
Wet & inclement conditions

General Business: None

Meeting closed: 19:55

Next Committee meeting: 25th May 2023 by Zoom, 7:30pm

Next General meeting: 8th June 2023 at EOC, 7:30pm

Presentation - David Rothwell demonstrated professional technique for waterproof cable joints

D. Laing



'IRRITABLE OWL SYNDROME'

The club has radios available, as well as an antenna analyser, for members to borrow when required.

Contact a committee member for more details if you would like to avail yourself of any of these. marcbranch22@gmail.com

MARLBOROUGH AMATEUR RADIO CLUB COMMITTEE MEETING
via Zoom 25th May 2023 at 20:30 Hours

Present: John Errington (Chair), Don Laing, Stuart Watchman, Greg Barton, Graeme McKay, Gerard van Antwerpen, Paul Rennie

Apologies: David Rothwell, Nick Batt

Health & Safety: No issues identified

Confirmation of last Committee meeting minutes: Confirmed as correct *Moved JE, Seconded DL, Passed: All*

Matters Arising: None

Correspondence: (since GM MOM 13/04/23)

Inward:

13/05/23	CARC	Activities for next week
19/05/23	CARC	Activities for next week
21/05/23	Greg Barton	Photos of NED repeater hut & antenna
24/05/23	Mark McGowan	Membership processed inquiry
24/05/23	NZART	Break-In magazine

Outward:

13/05/23	Stuart Watchman	NZART 2023 Conference – confirmation Branch 22 delegate & Remit notes
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Matters Arising: None

Finance: (In Committee) Treasurer presented his report

Membership 57 (paid)
Income: Subs & Interest
Payments: Nil

Events:

NZART Conference - advise NZART Branch 22 nominated Delegates Stuart Watchman ZL2TW & Paul Rennie ZL2RE **DL**

Repeaters & Systems: Kaikoura Follow up with Grant S re antenna pole change **JE**

Repeater Development

Telephone message left with Richard Smart.	To follow up	DL
Proposed Repeater Site	as above	DL

Repeater System

Meeting with Grant Simpson on 24/5/23. Stuart W has prepared a documentation list that needs to be recorded and will liaise with Grant to complete. These will be uploaded to MARC Gmail account. **JE/SW/DL**

Speaker Schedule:

June	Nick Batt -WSPR (Weak Signal Propagation Report)
July	Antenna Part 3 – John E on antenna software.
August	Don L offered to show video of attempt to drive a vintage truck to Carrington Hut up the Waimakariri River, Arthurs Pass
September	Constructors Award

Speakers for remainder of 2023 to be arranged

AREC:

PR

- SAR exercise carried out at Dip Flat under trying weather conditions which required rearranging some planned activities.
- Request for dedicated quality laptop including accessories & cables to replace PR's personal laptop presently being used. Fund raising to be followed up.
- Kaikoura SAR debrief held which identified communication issues

GENERAL BUSINESS:

- **Branch 22 Second Examiner** - As John Neal has resigned from this position another examiner needs to be appointed to assist Bill Cousins.
Motion: That Gerard van Antwerpen ZL2GVA be appointed *Moved: JE / Seconded: DL / Passed: All*
- **Replacement Tuner** - Stuart W proposed a LDG RT-100 remote antenna tuner to replace presently installed Paul R's personal unit.
Present pole box to be measured to confirm that can be installed. **SW/PR**
To get quotation to purchase and request reimbursement from AREC National
Moved: JE / Seconded: GB / Passed: All
- Chris Grant's Obituary – to be forwarded to NZART for publishing in Break-In magazine **DL**
- Don L submitted apologies for next General Meeting 8th June 2023. Graeme M to take MOM.

Meeting Closed: 21:07

Next Committee Meeting: 22nd June 2023 (via Zoom)

NEW ADVENTURES IN HAM RADIO: THE FIRST TWO YEARS FOR MATT KERR, ZL4HZ

Part 5: Low power mesh network chat.

I became aware of the existence of meshtastic - a firmware and software suite for use with low-power LORA boards on 433 or 900mhz bands for GPS location sharing and messaging. The system uses low (VERY low) data rates to achieve long range, low power data communication. What was appealing was the existence of smartphone applications which allow the use of your every day phone to interface with the lora board and send and receive GPS and text messaging from other users. Being a mesh network, I was intrigued to see what I could achieve using 100-150mw of power within the Wairau valley. In addition to using the boards with a smartphone to see locations on maps and communicate by text, the boards could equally operate as a GPS beacon. This is a feature that would come into use during a slight misadventure...

After ordering my boards from Ali Express, and a quick bit of soldering and configuration, it was into the field for testing. In short order I was pleasantly surprised at the resilience of these boards in being able to communicate effectively over distances beyond imagination for the power output and frequency of 923Mhz I was using.

From my home QTH under the Wither Hills, I was easily able to maintain a connection whilst mobile in central Blenheim. The town centre did pose difficulty with the higher buildings however. Wanting to push further afield I drove to Tuamarina and established a reliable connection back to the Wither Hills, over 11km away. I needed to go further afield and test it in a truly field environment.

My next testing involved taking my radios on a hunting trip. I left one at my vehicle on a ridge line and hunted down into a valley. Again, I was impressed that over several hundred metres through bush I could generally maintain a connection with a beacon. In effect, this would allow two users on different sides of a hill, or even linking back to home in Blenheim, to stay in touch. On the way to my hunting area I placed one radio under some trees in Wairau Valley township and was again pleased to see it pop up on my phone over 20km away in my hunting area. Unfortunately, not only was my hunt unsuccessful but I had managed to lose the radio board I was carrying in my pocket while bush bashing in the dark. It wasn't until I got home late that evening that I realised I must have lost it in the dense scrub.

I took my motorbike back to the hunting area the following day and was pleased to see the lost board, still with a little bit of battery power left and still sending me its GPS location every 15 minutes. I didn't realise it would be such a "needle in a haystack" situation of course... even with GPS coordinates.

I retraced my steps of the prior evening, carefully stalking through manuka and scrub to the coordinates I was receiving, several hundred metres down the hill. Searching the ground and retracing my steps from the evening prior I was coming up stumps. No radio to be seen. Frustratingly, but understandably, GPS accuracy was a factor and every 15 minutes the board would refresh its location on my phone to be up to 20m in another direction. Worryingly, the battery appeared to be depleting at a faster rate now that it was out of sleep mode and connected to another board on my person. I was down to single digits on the battery status...

Thinking quickly, I plotted each of the screenshotted coordinates from my phone onto a map. I was looking for two things - the first was to establish a bracket of the area I should be scanning the ground in - basically triangulation of the various positions it had reported. I then also wanted to know where the most commonly reported location was in all of the positions received and I would bias my last few minutes of searching into that area.

It worked, and after a few frantic minutes as the board died and came alive with some regeneration of the onboard 18650 cell, I found it sitting upside down amongst some manuka where the antenna had been caught and the board snared from my pocket the night before.

One of my favourite areas in Marlborough is Mt Patriarch so I drove up the following weekend, after a bit of viewshed modelling using GIS software, and set up a beacon with solar charging near the A4AL trig. It was a long drive and a bit of a bush bash to get to a rocky outcrop where I hoped the small radio would provide coverage effectively along the length of the Wairau Valley, at least to around the Rainbow turn off. I was not disappointed.

Returning home, I placed one of my boards on the dash of my vehicle and watched as the display read out the increasing separation distance between the beacon and my vehicle. I was amazed to find the little boards communicating GPS updates and battery status all the way to Blenheim - over 50km away. Clearly the line of sight and elevation of the beacon allowed such a robust connection. However, I had not put enough time into configuring the power consumption and solar charging aspects of my beach on the hill and watched sadly as the battery slowly dropped through the percentage range through the day and overnight, finally dying the following day. It would be some weeks before I could get back to retrieve the board, but it was still there when I returned.

Overall I was content to have explored the concept of mesh networking and long range, low power GPS and text communication.



*Current preferred configuration.
Mini PC remains in the bag, power supply,
screen and keyboard visible, FT8 QSOs to
USA on 5w.
Ballpoint pen for scale.*

The meshtastic programme continues to develop the possibilities of this technology and I'm sure I will return to it at some future point. In principle however, the small radios demonstrated that not only was a mesh text communication network possible across Blenheim and the Wairau Valley, but it also has utility as a low power safety and communication solution for backcountry recreation.

You can see my journey with photos of the story above on the Meshtastic Discord at this link: <https://meshtastic.discourse.group/t/hi-from-new-zealand/5292/18>

Many thanks to Matt for his 5 part article. Anyone else got anything to add to Interface? It does not have to be as long as Matt's, even short fillers are appreciated. If nobody sends me anything, the newsletter will be reduced to 2 or 3 pages of the cover page plus general and committee Minutes only.

The following report should have been in last month's Interface but the first time Paul sent it, it disappeared into the ether, never to be seen again (or not so far anyway). When he re-sent it, it was to the wrong email address so was found too late to put in May's newsletter. So here, better late than never, is some AREC news...

AREC news:

AREC members attended a meeting with Don Robertson, CEO AREC on the 27th of April at EOC. Don explained to all where, and how, the funding was acquired to support AREC members with clothing and updated ID cards. He also talked about where AREC will be going in the future. With technology changing rapidly it's an exciting time but one wonders if too much emphasis is being placed on the digital network. One only has to look at the latest storm on the East Coast around Gisborne, Napier, etc, as we all know most of the communication was carried out by Amateurs utilising HF. AREC have formed an online learning tool as well as a membership portal.

This coming week is the annual Dip Flat Police learning exercise with Gary, Greg and myself attending, along with the CCV. This will give us all some further experience to SARTRAC of which Greg and Gary have both attended a weekend of Sartrac learning. I am grateful to them both for giving up their time, whilst on holiday, to attend the course in Christchurch Branch 05 clubrooms.

The weekly CD radio checks are progressing well but Don is looking for more helpers, this only happens when school is in, so if you can spare 30 minutes on any of the school Thursdays, it would be appreciated. Keep in mind we have the use of the building for meetings, clubrooms for little effort but at NO cost.

Paul Rennie
AREC DISTRICT MANAGER



EOC CD radio check volunteers

Once or twice monthly Thursday mornings for 1 hour during school terms
More volunteers needed to spread the load

NEW ZEALAND STRAIGHT KEY NIGHT

New Zealand Straight Key Night (Winter Edition) will be held on Sunday 11 June from 8pm to 9pm NZT on 80 metres.



SKN honours the original amateur radio mode in an easy-going style. Operators send signal report, name, location, type of key, type of transmitter and power output. Stations are limited to 100W output power.

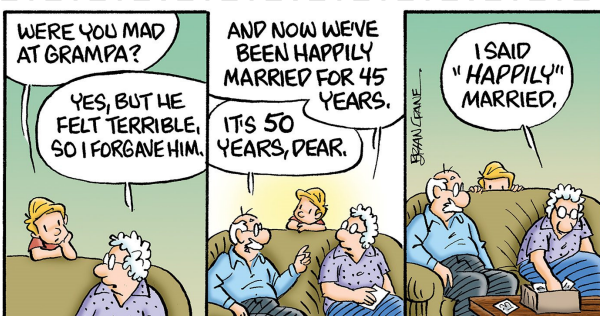
SKN is not a contest - but the operator who gets the most votes for the quality of their sending will win the Bruce Scahill Best Fist Award. This certificate honours Bruce ZL1BWG, a dedicated supporter of SKN, who died last December.

Due to popular demand, this SKN will see the return of the QSY Rule. Any station that calls CQ must QSY after making a contact. This will keep everyone on their toes!

Full details about SKN are available at <https://zl1.nz/skn> or you can email neil@zl1.nz or call ZL1NZ during or after the NZ Net.

SKN is open to all straight key operators, regardless of skill level or speed. I hope to work you on 11 June!

Neil ZL1NZ, SKN Manager



I'm noticing a theme here! All in good fun though :-)



SARTrack Exercise Dip Flat 6-12 May 2023

(Thanks to Greg Barton, Gary Lodge & Garth Haylock for this report and photos & Paul Rennie for OK-ing it)

As many readers will know, Dip Flat is an annual Search and Rescue Exercise organised by Police, involving Civil Defence Landsar, NZ Army, RNZAF and AREC. Based at the RNZAF training facility at Dip Flat next to the upper Wairau River at an altitude of approximately 900 metres above sea level (similar altitude to The Ned) the camp is 16 km up the Rainbow Road and lies between the St. Arnaud and Raglan Ranges (1800 to 2000m above sea level). Rugged bush that is unforgiving to lost trampers. Even the names of some of the creeks sound scary, Misery Stream, Lost Creek, Hellfire Stream.

AREC provides communications for the exercise and our team this year consisted of Paul Rennie, Greg Barton and Gary Lodge from MARC Branch 22, Steve Davis and Tony van Poppel from Christchurch Branch 05, and Ross Pedder, Area Manager from Wellington. A key component of the exercise is SARTrack, a computer-based search and rescue tool. As Greg and Gary had completed training on SARTrack in Christchurch a couple of weekends earlier it was decided that we would “tag-team” the duties at Dip Flat, Greg helping with setup and operations for the first 3 days and Gary doing the latter part of the week and pack-up. Steve Davis had been the trainer in Christchurch and Tony had also been on the course so we knew pretty much everyone on the team already.



The SARTrack course at Branch05 run by Steve and Don Robertson, AREC CEO.



On a grey and drizzly Saturday Paul picked up Ross, who had flown over from Wellington, at the airport. They drove the EOC Comms truck up to Dip Flat followed by Greg in Paul's 4WD. There are several fords on the road up the valley and some of them were showing the impact of a week of rain. After a quick induction at the headquarters we set up the truck and HF antennas at the far end of the flat.

During the afternoon, mostly between showers, we set up two dipoles, one for the “day” frequency and one for the “night” frequency and a long-wire and remote tuner to use as backup. Later in the afternoon Steve and Tony arrived from Christchurch in their Comms bus and they set up nearer the headquarters to operate VHF and interface to the SARTrack system. We established wifi links between the HF truck, the VHF bus and the headquarters and got our laptops operating into the SARTrack system.



The 50 or so police staff who were the “students” had already spent a week on classroom theory and practice and were getting into the practical “field exercises” with a group of senior instructors in charge. While the instructors (and our comms team) slept in cabins, the trainees lived in tents nearby and endured two weeks of almost non-stop rain.

On the Sunday the trainees, in 6 teams, did a practice walk up over the St Arnaud Range and down to Lake Rotoiti. This was a chance to check comms. The conditions were not good for HF – the teams could hear us with 100 watts but we found it hard to pick them up with just 5 watts on field dipoles strung mostly under or near wet tree canopies. The last team finished about 7.30pm in darkness. It is traditional for teams to take a “quick dip” in the lake on completion of the exercise, but most felt they had already had enough exposure to water!



Greg, Ross, Tony and Paul wait in front of SARTrack screens for the last of the field teams to check in.

Steve coordinates comms while the rain persists outside.



Monday was a quiet day; the trainees being briefed on the main exercise and the afternoon was allocated to helicopter training. While the fuel tanker and support truck arrived and set up base, the very low cloud base mean the NH90 chopper couldn't get up the valley so, to much disappointment, the winch training etc was cancelled. We used the time to do some tests with the HF field radios and our antenna systems.

The main exercise involved a party of 4 community volunteers who had entered the bush a few days previous and then split into two teams, and they became “the lost parties”. The students were allocated to either the Incident



Management Team (IMT) or one of the 6 search teams and had to locate the “lost parties” using their new skills.

On Tuesday morning the IMT set up and ran a SARTrack Operation and equipped and dispatched the field teams to begin the search.

SARTrack is a New Zealand developed computer system which logs and captures all communication between the field teams and the IMT. Location and progress of each team and any clues they have found are shown on a real-time map which is available on big screens or laptops. This allows the search controllers to quickly assess areas of interest and focus the search teams.

Greg checking the HF field radio while Ross holds the end of the dipole, the other end was hung from a tree

We began logging calls to and from the field teams as they started and completed tasks, did sitreps and reported any clues. As the choppers were still grounded one of the first tasks was for the teams to set up and test a VHF repeater system along the road to improve coverage up valleys to be searched. This comprised two repeaters and a linking repeater and was completed during the morning. Ideally the repeaters would have been positioned on high-points with the helicopter.

At lunchtime Greg left Dip Flat to return Paul’s vehicle to Blenheim. It was still raining steadily, and the fords were getting “interesting” to say the least. After a damp trip (wipers on full till Renwick!) the swap with Gary was completed around 2pm, and he set off for the return journey.

The trip to Dip Flat was not without some excitement, heavy overnight rain had caused many of the fords to become impassable. Even the Unimog drivers were surprised at how quickly small streams had become raging torrents. The Surf was left to be picked up later and the rest of the journey was completed in a more capable police vehicle, finally arriving at camp around five o’clock.

The next morning after a good sleep (very warm cabins) and breakfast (catering all week was excellent) operations commenced at 7.30 am. There had been a dusting of snow overnight and heavy rain resulting in more impassable rivers. There were 6 teams of searchers out in the bush all with allotted tasks, eg. “Proceed to a given GPS position”, because of the conditions some of these tasks were reshuffled.



As radio operators we logged all responses during the day from the teams, recorded requests, grid references and actions from search coordinators, helicopters, Unimogs etc. through to the final wellbeing checks at the end of the day.

Our communications were on HF channels using both day and night AREC frequencies. The Marlborough Emergency Communication vehicle is extremely well set up with space for radio operators and equipment and a separate area at the rear of the vehicle for search co-ordination.

Thursday dawned very cold and wet, teams who had been out since the first day reported that there was light snow still falling. By late afternoon teams had completed their tasks and were told to make their way to specific points either to be picked up by a Unimog or airlifted out.



After final wellbeing checks and assurances that all teams were out of the bush we packed up our antennas and gear and made our way back to camp as it was getting dark. Far preferable to packing up frosty poles in the morning.

The exercise concluded with the organisations and teams involved holding their own debriefs followed by awards and a bonfire.

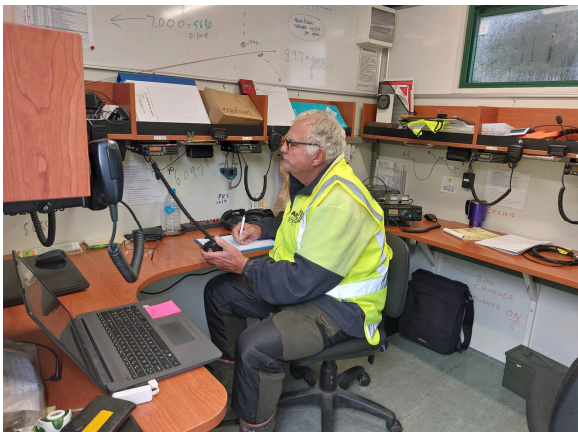
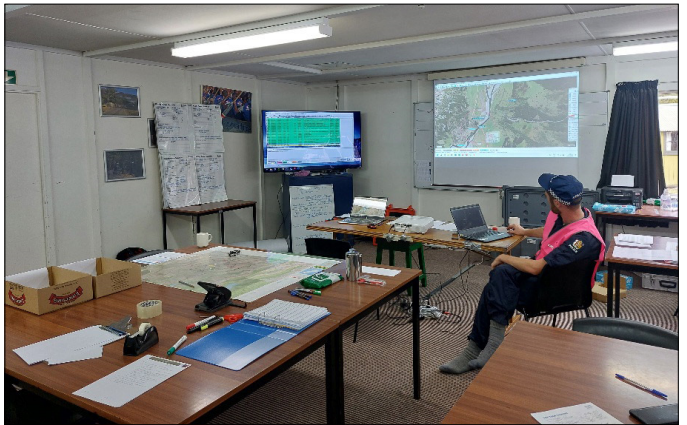
The next morning our group returned to Blenheim, we held our own debrief at the Runway Café - everyone’s phones going berserk after a week with no cell phone coverage.

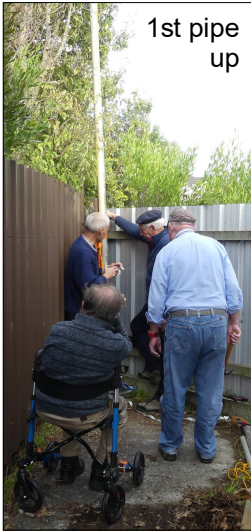


Paul, Ross and Steve outside the headquarters building

The teams said that as an exercise it was as close as possible to the real thing, driving rain, wind, snow, no cell phone coverage and dense bush. It was a great learning experience and a privilege to be able to observe the expertise and professionalism of all the sectors involved in the exercise.

Additional photos below courtesy of Garth Haylock





1st pipe up

Thanks to Don Laing, Neville Marr & Greg Barton for coming to erect 3 ex-irrigation pipes for Grant's HF antenna. The pipes have pulleys at the tops to make it easy to experiment changing the aerials.

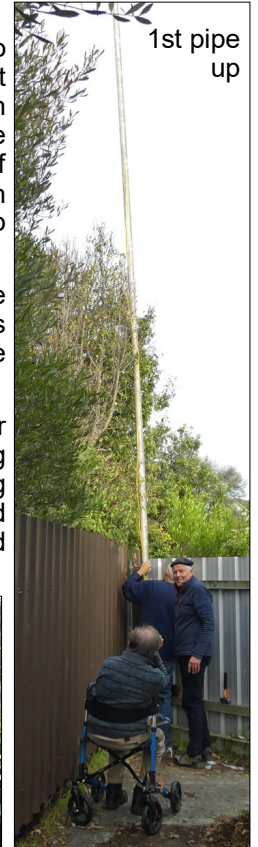
Two of the wooden posts (ex pergola) the pipes were to be attached to were about 3mm oversize so they had difficulty with the U bolts Grant had had made to support the poles. This meant it took longer than anticipated (doesn't it always?) while different ideas were tried. In the end, a small wood saw was used to cut a shallow V notch in the sides of each post and the problem solved. The centre pole had no problem with the wooden post size so it only took a few minutes to get that pipe up and clamped into place.



2nd pipe ready to cross pond

Unfortunately, nobody fell in the pond, so the pictures are not as exciting as they could have been.

Extra thanks to Don for organising this mini working bee. Grant appreciated being able to sit on his walker and watch while everyone else did all the work.



1st pipe up



2nd pipe up



2nd pipe going up



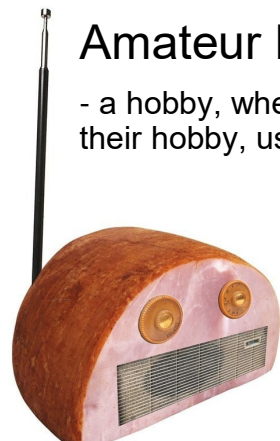
2nd pipe crossing the pond

There are no photos of the 3rd pipe going up as I went to lunch with family to celebrate my brother's birthday.

I did leave them some freshly baked morning tea to keep their strength up though - carrot and pineapple muffins and shortbread.

It's a shame nothing is made in NZ any more.
I bought a new TV which said "Built In Antenna".
I don't even know where that is!

First ever photograph of a newly hatched electrician (with the eggshell still on top of its head)



Amateur Radio / noun/

- a hobby, where people talk about their hobby, using their hobby.

