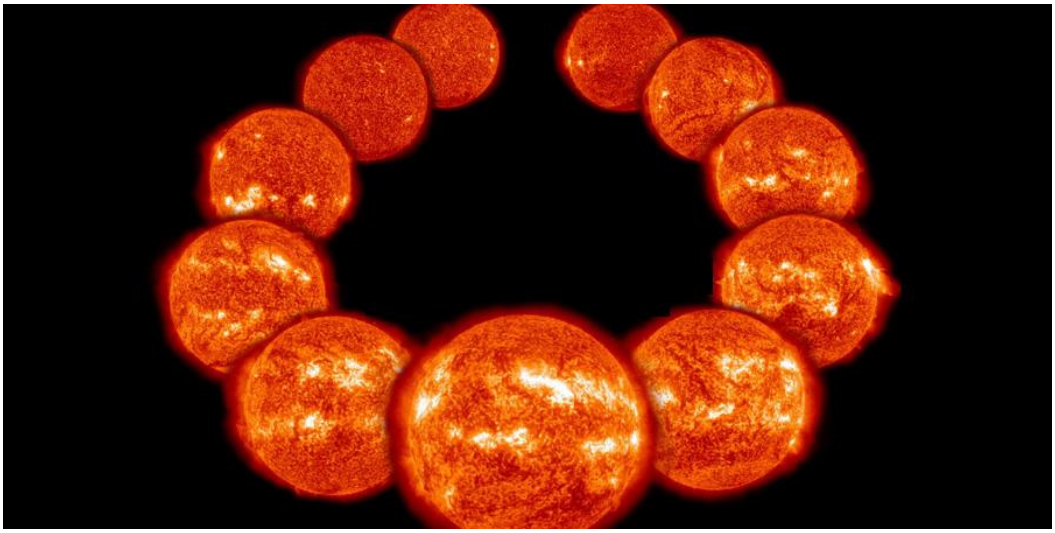
The Official Newsletter of the

PAPAKURA RADIO CLUB INC.

February 2024



The Solar Edition

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"I wish our *human played fetch."*

This Month's Meeting:

We will have our General meeting on Wednesday 7th of February, It would be great to see some of you there. Nigel will be discussing the improvements to WinLink (and Email client for use over radio)

There has been quite a lot of developments in Winlink for emergency communication over the last few years with quite a lot of excellent new features. Nigel will give us an update on its use, and how we can take advantage of these features for our emergency preparedness.

If transport is a problem, let the committee members know, and we may be able to assist with arranging a ride for you.

February Dates:

Wednesday 7th	**General Meeting – Guest Speaker Nigel ZL2SEA on Winlink**
Wednesday 14th	**Project Night**
Wednesday 21st	**Committee Meeting**
Wednesday 28th	**Activity Night**

CLUB ACTIVITY:

Our big activity for February is the Jock White Field Day. This even requires two teams of operators to work HF radios on 80 and 40 metres and make as many contacts as possible, it is an excellent practice, simulating the sort of activity where normal systems are not available, and we have to make our own emergency station.

All supplies are portable, in our case batteries, and even the antennas we use will be assembled and erected on the Saturday and taken down on the Sunday.

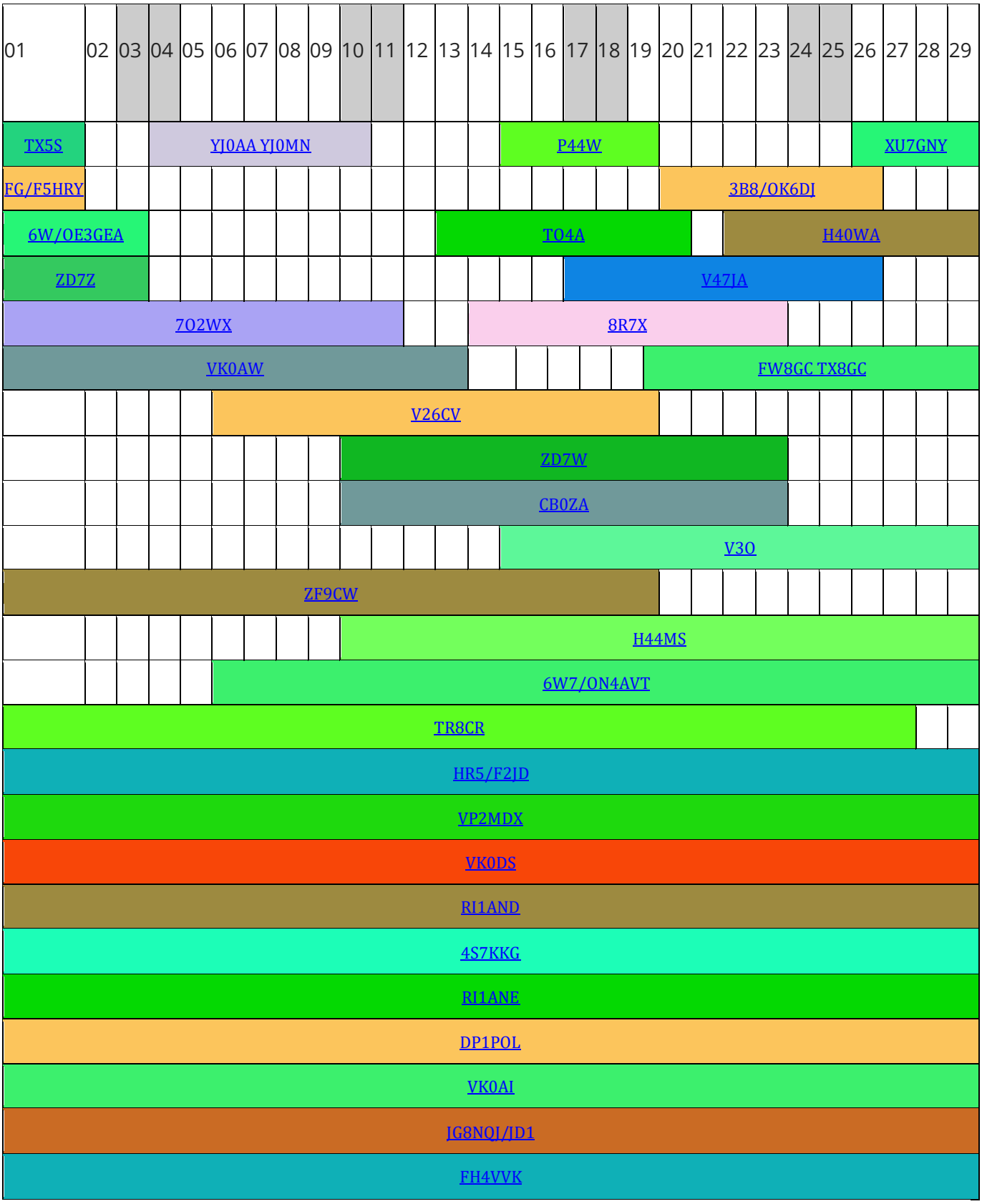
We then operate from 3pm on the Saturday until midnight, and then again Sunday morning (6am) to 3pm. This can be shared over multiple operators, but the goal is to work every contact you can, and all of the other clubs in NZ as well. (and yes, some of us will be sleeping overnight on site).

If you in any way interested, we would love to hear from you as its time to build a new team for 2024 and beyond, and the more of us there are the better it will be.

If your interested contact Gavin, ZL1NUX or Ian, ZL1IRC (contacts for both are on the contacts page at the back of this newsletter)

We would love to hear from you.

DX CALENDAR FEBRUARY 2024



1960 ——————————————————————————→ *2024*

Featured DX

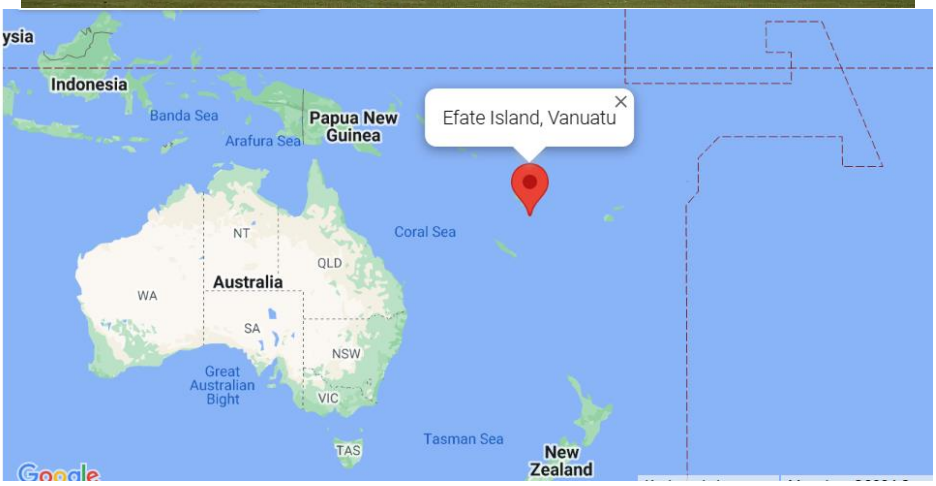
YJ0AA YJ0MN Efate Island Vanuatu

JH3QFL and JH3VAA will be active as YJ0AA and YJ0MN from Efate Island, Vanuatu, 4 - 11 February 2024.
They will operate on HF and Green Cube Satellite.

They will operate on 160 - 10m CW, SSB, FM, RTTY.
QSL info:
YJ0AA via LOTW.
YJ0FM via JI2UAY.
Ads for direct QSL:
QSL via JH3QFL direct, LOTW.
Ads for direct QSL:
Takio Hata, 921-25 Rokujio Yasu, Shiga, 520-2412, Japan.Shigehiko Mabuchi, 2349 Kamiishidacho, Higashiku, Hamamatsu, 435-0001, Japan.

Efate Island belongs to the New Hebrides archipelago, which is located in the Pacific Ocean. It is a part of the Republic of Vanuatu and attracts the greatest interest among tourists who get to this part of the globe. The peculiarity of Efate is its rather decent size (the area of the island reaches 900 km²) and the fact that the capital of this state is located here.

At the same time, Efate is a real paradise on earth, which will not leave anyone indifferent. It is surrounded by greenery and offers excellent views from its shores.



UPCOMING CONTESTS

Start - Finish Date-Time				Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	0000	2	0300	7	Walk for the Bacon QRP Contest	CW	Max. 13 WPM; RST, SPC, name, mbr or pwr	qrpcontest.com/pigwalk40
1	1800	1	2200	28	NRAU 10m Activity Contest	CW Ph Dig	RS(T), 6-char grid square	nrau.net/nrau-contests-in-general
1	2000	1	2200	1.8-28,50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
3	0000	4	2359	1.8-28, VHF/UHF	Vermont QSO Party	CW Ph Dig	RS(T), VT county or SPC	www.ranv.org/vtqso.html
3	0001	4	2359	28	10-10 Int'l Winter Contest, SSB	Ph	Name, mbr or "0," SPC	www.ten-ten.org
3	1200	4	1200	1.8-28	European Union DX Contest	CW Ph	RS(T), EU union region or ITU zone	www.eudx-contest.com
3	1200	4	1200	3.5-28,144	F9AA Cup, CW	CW	RST, serial	www.site.urc.asso.fr
3	1200	4	2359	3.5-28	Mexico RTTY International Contest	RTTY only	RST, XE state or serial	rtty.fmre.mx
3	1400	3	2359	1.8-28	Minnesota QSO Party	CW Ph Dig	Name, MN county or SPC	www.w0aa.org/mnqp-rules
3	1400	3	2359	1.8-28	FYBO Winter QRP Sprint	CW Ph Dig	RS(T), SPC, name, power, temperature	azscqrpions.org
3	1600	3	1900	3.5	AGCW Straight Key Party	CW	RST, serial, class, name, age	www.agcw.de
3	1600	4	2359	1.8-28	British Columbia QSO Party	CW Ph	RS(T), BC district or SPC	www.orcadxcc.org
5	2000	5	2130	3.5	RSGB 80m Club Championship, SSB	Ph	RS, serial	www.rsgbcc.org
6	0200	6	0400	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
7	2000	7	2100	3.5	UKEICC 80m Contest	Ph	6-char grid square	www.ukeicc.com
7	2300	11	2300	1.8-14	AWA Linc Cundall Memorial CW Contest	CW	RST, eqpt. year, input power	www.antiquewireless.org
10	0400	11	0001	VHF up	NZVHF-UHF-SHF-EHF Contest	All modes	RST + 3digit serial	https://www.nzart.org.nz/activities/contests/vhf/
10	0000	11	2359	3.5-28	CQ WW RTTY WPX Contest	Dig	RST, serial	www.cqwpxrtty.com
10	1100	10	1300	7,14	Asia-Pacific Spring Sprint, CW	CW	RST, serial	jsfc.org/apsprint/aprule.txt
10	1200	11	1200	1.8	KCJ Topband Contest	CW	RST, JA prefecture or district code	www.kcj-cw.com
10	1200	11	1200	1.8-28	Dutch PACC Contest	CW Ph	RS(T), PA province or serial	pacc.veron.nl
10	1200	11	2359	1.8-28,50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
10	1500	11	1500	1.8-28	OMISS QSO Party	Ph	RS, SPC, mbr (if any)	www.omiss.net
10	1900	10	2300	1.8	RSGB 1.8 MHz Contest	CW	RST, serial, UK district code (if UK)	www.rsgbcc.org
11	1300	11	1700	3.5,7	Balkan HF Contest	CW Ph	RS(T), serial	arabih.ba
12	0100	12	0300	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
14	0000	14	2359	1.8-7	PODXS 070 Club Valentine Sprint	Dig	Name, OM or YL, SPC	www.podxs070.com
14	0130	14	0330	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or pwr	naqcc.info
14	1900	14	2000	3.5	DARC FT4 Contest	FT4	RST, 4-char grid square	www.darc.de
14	2000	14	2130	3.5	RSGB 80m Club Championship, Data	Dig	RST, serial	www.rsgbcc.org
15	0000	16	0300	14	Walk for the Bacon QRP Contest	CW	Max. 13 WPM; RST, SPC, name, mbr or pwr	qrpcontest.com/pigwalk20
15	1900	15	2000	3.5-14	NTC QSO Party	CW	Max. 25 WPM; RST, mbr or "NM"	pi4ntc.nl/ntcqp
17	0000	18	2359	All, except WARC	YLRL YL-OM Contest	CW Ph Dig	Serial, RS(T), SPC	ylrl.org/wp/yl-om-contest
17	1200	18	1159	1.8-28	Russian PSK WW Contest	Dig	RST, 2-letter oblast or serial	www.rdrclub.ru
18	2300	19	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
21	1900	21	2030	3.5	AGCW Semi-Automatic Key Evening	CW	RST, serial, 2-digit year first used a bug	www.agcw.de
22	2000	22	2130	3.5	RSGB 80m Club Championship, CW	CW	RST, serial	www.rsgbcc.org
23	2200	25	2200	1.8	CQ 160m Contest, SSB	Ph	RS, SP or CQ zone	www.cq160.com/rules.htm
24	0600	25	1800	3.5-28	REF Contest, SSB	Ph	RS, French department or serial	concours.r-e-f.org
24	1300	25	1300	3.5-28	UBA DX Contest, CW	CW	RST, ON section or serial	www.uba.be
24	1500	25	0159	1.8-28,50	South Carolina QSO Party	CW Ph Dig	RS(T), SC county or SPC	scqso.com
24	1800	25	0559	3.5-28	NA Collegiate Championship, RTTY	Dig	Name, SPC+DC	www.w9smc.com/nacc
24	02:00	25	0200	3.5 – 7.2	Jock White Memorial Field Day	CW Ph	RST, serial	https://www.nzart.org.nz/activities/contests/jwfd/
25	1400	25	1700	3.5-28	High Speed Club CW Contest	CW	RST, mbr or "NM"	www.highspeedclub.org
25	1500	26	0100	3.5-28, 50,144	North Carolina QSO Party	CW Ph Dig	NC county or SPC	ncqsoparty.org/rules
26	2000	26	2130	3.5-28	RSGB FT4 Contest	FT4	Signal report	www.rsgbcc.org
28	0000	28	0200	1.8-28,50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
28	2000	28	2100	3.5	UKEICC 80m Contest	CW	6-char grid square	www.ukeicc.com

Note: All dates and times are in UTC, Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state.

JOCK WHITE FIELD DAY

This annual contest is named to honour Jock White ZL2GX, NZART Contest and Awards Manager for over 40 years, for the service that he gave to NZART during that time.

This contest is primarily to test Branch organisation and weld a team of workers together. Your team can aim to be as competitive or as social as it likes, or all points in between. There is work for all: spouses/partners, prospective members etc.

The next Jock White Memorial Field Day contest will be held on Saturday/Sunday 24th & 25th February 2024

Papakura Radio club has a long history with this contest, and until last year held the Hastings Trophy, "phone only" award, in 2023 we came in second.

This year we would like to operate on both Bnds, but currently have only a single operator team, so we are looking for a second operator team, We should have enough radios to run the event, but may need a shelter for the second station.

If you are keen to know more or help, contact Gavin ZL1NUX, will be arranging this years event, and we will have a meeting of interested people in February. This is great chance to train the next team of HF operators for this event, so it does not matter how "Green" you may be, It's a great time to gain that HF ear.

DETAILS OF THE JOCK WHITE MEMORIAL FIELD DAY

1. AIMS and OBJECTIVES:

For NZART Branches and clubs (hereafter referred to as branches) to establish effective temporary HF radio stations, to work as many other New Zealand stations as possible and to learn to operate in an abnormal situation in less than optimal conditions.

Home stations can also participate but are strongly encouraged to make a minimum of either 50 phone and/or 20 CW contacts on 80m and/or 40m and submit logs.

2. WHEN:

The last full weekend in February each year: on Saturday 1500-2400 NZDT and Sunday 0600-1500 NZDT.

NOTE: when February only has three full weekends then field day will be held on Saturday 28th February and Sunday 1st March. This is to avoid a clash with the ARRL International CW contest. This will next occur in 2026.

3. BANDS, MODES and POWER:

40 and/or 80 metres, PHONE (SSB) and/or CW, 100 watts PEP maximum.

Stations using two transmitters may operate simultaneously on both bands, however only one transmitter may be operated on a single band at a time. Single transmitter stations may operate on one or both bands.

4. SITES and SHELTERS:

Field station shelters may be one or more tents sited within 10 metres of each other and erected on the weekend of the contest. Caravans, mobile homes or other vehicles may also be used, but may only be moved on to the site on the weekend of the contest.

5. ANTENNAS:

Field station antennas may not be raised earlier than 1200 NZDT on the Saturday of the contest. Some stations may chose to erect antenna supports while others may use natural or standing supports. Eg. Hills, trees, towers, buildings etc.

6. ELECTRICAL POWER:

For field stations this must be from an independent source. i.e. batteries, portable generator engine alternators, solar power, wind or water powered generators, etc.

8. EXCHANGE:

- RS(T) report plus a serial number starting with 001 and incrementing by one for each successive contact, plus an NZART Branch number
- Simultaneous two-band operating stations must use separate serial number series for each band
- The same serial number series must be used for both Phone and CW contacts on the same band

9. MULTIPLIER NUMBERS:

Field day stations are usually at sites within the 'local area' of the Branch that the operators and others associated with the station are members of and use the number allocated to that Branch . If the chosen location is within the 'local area' of another Branch, care must be taken not to clash with the other Branch station. The onus is on the 'moved' station to ensure that there is no clash.

The numbers of Branches in recess may be used.

Individual operators or groups of operators may not have an affiliation to a particular NZART Branch but wish to operate a field station. In these cases it is suggested that they approach nearby Branches that don't normally operate in this event and seek permission to use their Branch number.

The Field Day Contest Manager should be contacted well before the event if there are potential problems with the use of Branch numbers. Contact details are under point 14 below.

Home stations must use 00 as a Branch number.

10. OPERATING PERIODS:

Each hour will be an operating period with a total of 18 operating periods.

Contacts may be made with any other field, ZL home or overseas (Oceania) station, once each operating period, on each mode on each band.

11. SCORING:

Contact Points:

Phone - 3 points, CW - 5 points (note change from 2024 onwards)

Multiplier Points:

- Each different Branch contacted on each band and mode counts as a multiplier. i.e.: a maximum total of four multiplier points may be claimed for each Branch
- Only one station per Branch may be claimed as a multiplier per band and mode. However, in cases where a Branch has more than one station active, different stations contacted, may be claimed for multiplier points, up to a maximum of four multiplier points per Branch, not four per station
- Contacts between stations using the same Branch number count for contact points only. Multiplier points cannot be claimed
- Field stations must make a minimum of 50 contacts on Phone or 20 contacts on CW on each band that the station is active on, in order for the multiplier points for their station to be valid for other stations

Total Scores:

The sum of the contact points multiplied by the total Branch multiplier point numbers worked.

12. LOGS:

- Separate logs must be submitted for each band in time and serial number order, regardless of the operating mode
- Head each log sheet with; Station Callsign, Branch number or HS for Home Station, Page Number, Operator Callsign and Name
- Log sheet layout order; date – time – station worked – mode, CW or PH – band – exchange sent – exchange received. The total of PH/CW contacts on each page will be useful for log checking purposes
- Use a separate log sheet per hour period, except that where there are very few contacts in a period, several periods (ruled off between periods) can be on one sheet
- Highlight or underline each contact claimed as a Branch multiplier number
- Sample log sheets are provided in PDF on this page, to the right
- N1MM UDC that has been updated for the 2024 scoring change file can be downloaded here. Note that Log/Summary sheets are still required to be submitted

RAMBLINGS FROM THE ~~EDITORS DESK~~ ROAD

As I write these ramblings from the South Island, parked in a motorhome on the west coast (yes we have experienced the rain, but so far its been a storm in a teacup), It really is a ramblings as not only my mind, but also my body has been heading off in all sorts of crazy directions.

We have enjoyed meeting our newest granddaughter and catching up with our grandson (and of course their mum and dad) and have taken the opportunity to visit some of the places we missed on our last visit.

Ann-Maree has collected more postcards, and diligently sent these off to our grandchildren up north so they can experience the surprise of something in the letterbox that isn't advertising, and our fridge has additional magnets for the places we have stayed.

We have walked more tracks than I cared to remember and have even found a large area of the southern west coast without any cellular coverage. So, we have managed to make this journey very different from the last one.




But I have also seen that the joy of camping, especially freedom camping seems to be more and more difficult, and this as the South Island desperately seeks to bring tourists back to the region. It seems that businesses have taken up the challenge, with more freedom camping site being set up by companies, than by councils.

This may seem weird, but when you consider that cost of motorhomes (yes even the small ones in vans) and the costs in fuel, the purchases made by these tourists quickly build up, the areas that allow freedom campers are busy, and the supermarkets, cafes and restaurants are doing a booming trade, while those who have shunned these, in the hope of higher quality tourists are seeing this business pass by.

It's funny, but to me not surprising, I have long recognised that in business, its volume, not spend per customer, that keeps you in business, a large number of people in a lower cost course is always easier to repeat and keep the cash flowing, rather than targeting high cost, but low volume courses, of course in a perfect world you can offer both, and everyone can win.

It's a bit like my radio here, or rather my lack of it, I've actually had more contacts on PRS (and few at that) than I have had on ham radio this trip, My HF antenna is still not performing as well as I hoped, hopefully it will be better tonight, as I try again, This time with a bit more effort on the setup. But I suspect the challenges may test my patience.

But at the end of the day, it's not about any one of us, it does not matter how much we each put in, it's about all of us adding a little. Just like the club, if we each do a little, then together we can achieve a lot. It's not what the committee does, its what each member chooses to do that makes any club successful.

A repeater contact may not be as amazing as working multiple worldwide contact when the bands open, but it means just as much to the person you connect with as any other contact, radio only works when you have someone to talk to, and every conversation adds to the overall experience. It seems that quiet repeaters are a common problem, no matter Where we travel.

With now less than 2 more weeks before I return to Auckland and the business that comes with a full-time job, I still have a few more things to try, and a few contacts in the log is one I would like to achieve. We will see how that works out.

One thing living in the confines of a motorhome has done is to make me think twice about "Stuff" and I can see some serious de-cluttering on the cards when I get back. The Motorhome has shown me that less can be more if you use it right, and the batteries and solar arrangements, of the motorhome have not missed a beat, we have enough power to do all we need, even to running the 230 volt devices we brought with us.

It made me wonder just how many of the things I have at home are really needed.

We all like to have the latest toys, but what do we really need? Some power, a radio and of course the antenna. In fact, I would say the antenna is everything, but the problem is how do you carry an optimised antenna when working portable?

Which reminds me that I still have a vertical antenna to trial, Mybe tonight I can give that a whirl.

And this is what the Jock White Field Day is about. We run a bare bone station and try to get all the contacts we can. It's all about making the most out of not much, so that when the normal isn't working we can still put our skills to use.

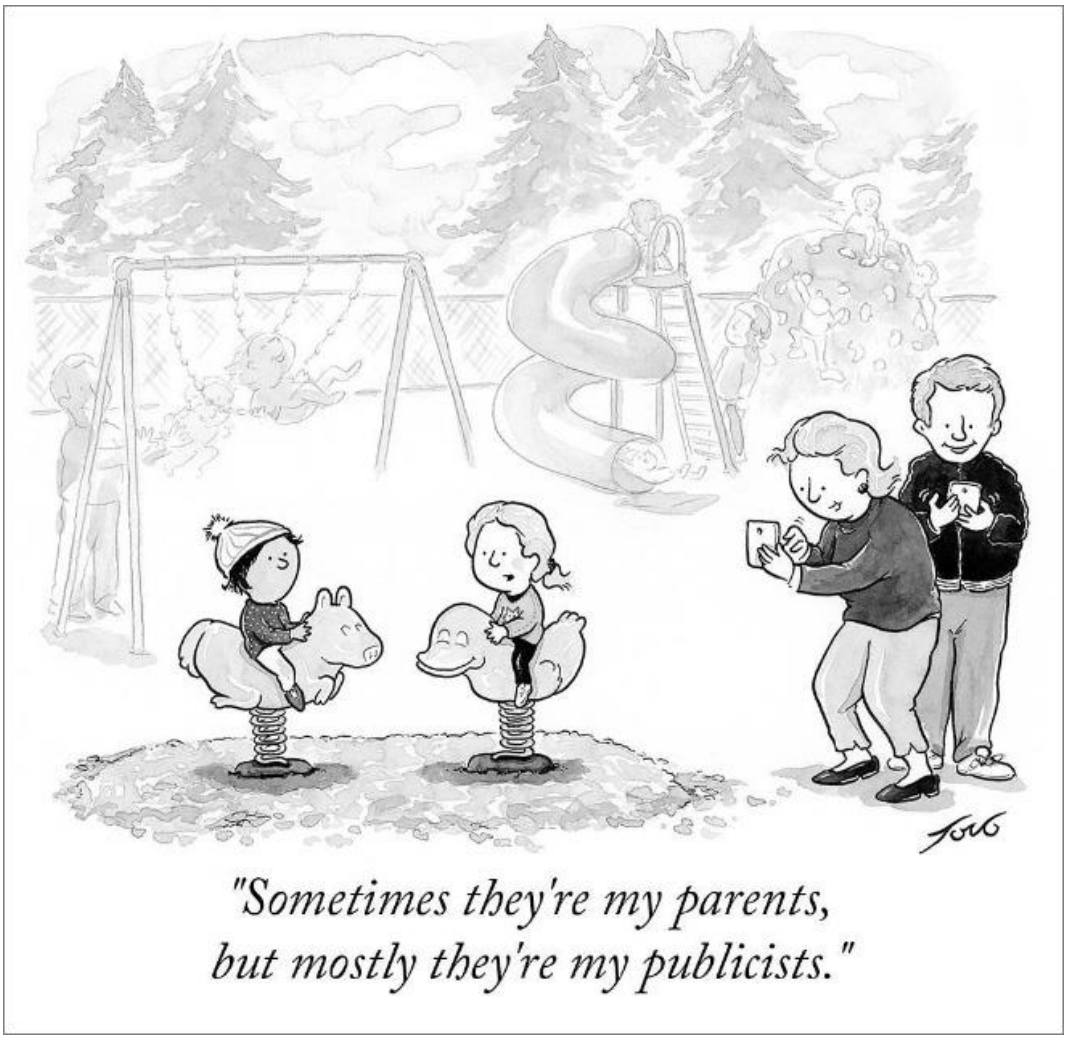
Even if you're not really into contesting, please think about whether you might like to come and give the field day a go, we are all still learning, and none of us are experts, but that's part of the fun. And given the solar conditions this cycle, 80 and 40 metres will be tough for everyone, so it's a great time to give it a go, and see what we can achieve.

Even if you can't join our team, you can catch us on HF as a home station, and if you don't have HF at home yet, this is a good chance to get up on HF and start developing that HF ear, especially when you have some extra hands along side to support you. Hopefully this will be a weekend to remember, and a lot of fun too.

So a big thank you to the committee, and to Richard for standing in for me as I've been travelling, and I look forward to seeing you all again soon.

Till then have fun with your radios, and keep your lines tight and may the ionosphere be kind.

73 for now de ZL1NUX



INSTALLING A HOME SOLAR GENERATION SYSTEM

Warning, the following tale is completely true, and may be a cautionary tale for those who may be considering installing solar.

Note too that the author is a registered electrician and if solar is installed in a home, it is normally "High Risk" electrical work requiring installation by a suitably trained electrician and inspected by an inspector familiar with Solar installation requirements.

It all started, as so many cautionary tales do with helping a friend. In this case one who was tasked with designing a training programme for electricians. After many discussions, I decided to investigate the costs of a solar system for my own home. There were many good reasons to think this was a good idea.

1. My power bill is substantial, so any reduction would be positive.
2. With suitable design, it was possible to have the system as a backup power supply so that if power went off, I would have my own supply.
3. Any excess power could be sold back to the grid, allowing additional cost recovery.
4. It would be an excellent opportunity to upskill myself on the latest technologies.
5. It would be good professional development for me.

So the next step was to design the system. As I was not seeking to fully power the home off-grid, I did not need to have a system that could run all the loads of the house at once. I did feel that batteries were needed for the backup mode to work correctly, and it would provide a more stable daily average load. The north roof of the house could hold the panels, and the size allowed for a nice layout that should easily fit on the roof. North was selected as superior to East/West for our predicted solar exposure.

So, we came up with a package consisting of 16 x 400 watt panels, arranged in 2 banks of 8 allowing 6,400Watts of power. A 5KW inverter, capable of supply just over 21 amps of household load, and a "low voltage" 50 Volt, battery with a capacity of 8KWh.

The beauty of this is once the design work was done the plan was sent to the electrical wholesaler, who then added all the mounting hardware and cabling to the equation and provided a quotation based on a kitset solution, with all parts included.

So with a quotation, and a couple of thousand extra for additional parts that might be needed, we placed the order an waited for the parts to arrive. The plan was that with 3 of us involved we should be able to complete the job in two weekends. It should be no surprise that while we had two perfect weekends, the parts were only delivered once these had passed, and two weekends that followed were too wet to climb on the roof. Sadly, this warning omen was missed, and then the fun began.

The clenergy rails system for the solar in actually quite ingenious, made of several interlocking parts secured to the trusses of the roof. Given that these panels can act like wings, and can cause a roof to experience lift, there are design rules that must be kept, and this means the layout is quite critical. We have planned on panels of a given size, sadly what we received was a bigger panel, not only in capacity,

being 415 watts each out also in physical size, so now the design would not layout as planned. The meant we could install panels, but we would need some additional parts, so we started with the first panels and installed the special solar conduits and cables for both sets.

And while we waited for those, started setting up the inverter and batteries.

The inverter was easy to set up and configure, apart from the communication with the battery system. Remember “Lithium” batteries must be managed to prevent overcharging and the risk of fire, so the inverter charging must be controlled by the battery management system, The units were listed as compatible but the BYD battery box, and the Goodwe inverter required some time to get them talking, this required a lot of experimenting with the configuration tool, with is all done via Bluetooth from a phone. But the battery box surprised everyone in a much more substantial way, The unit was supplied without any cables to connect to the inverter, This was new to all of us, it seems that in order to save costs, the suppliers left these out, suppling only the connectors, So after some manual reading, we ordered the 35mm stranded welding cables that would connect the battery box to the inverter.

In the meantime, with the extra rails and parts on site, we completed the install of the solar panels

One good feature of the battery box, is that I can increase its capacity by adding single batteries (the middle light grey bits) into the same box if I later find I need to.

It was also time to apply for the vector network paperwork, Called a “Distributed Generation Agreement. The inverter was listed so the forms were completed and sent off to vector. This was to be another fun journey.

The first problem was that the address to which our connection and metering was loaded in the database, was a unit at 100 settlement, unit 100A our subdivided land package, this prevented the agreement being processed, So it was off to genesis to get this sorted, another weeks delay, once this was done, we advised vector, expecting a quick approval, but, it was not be.

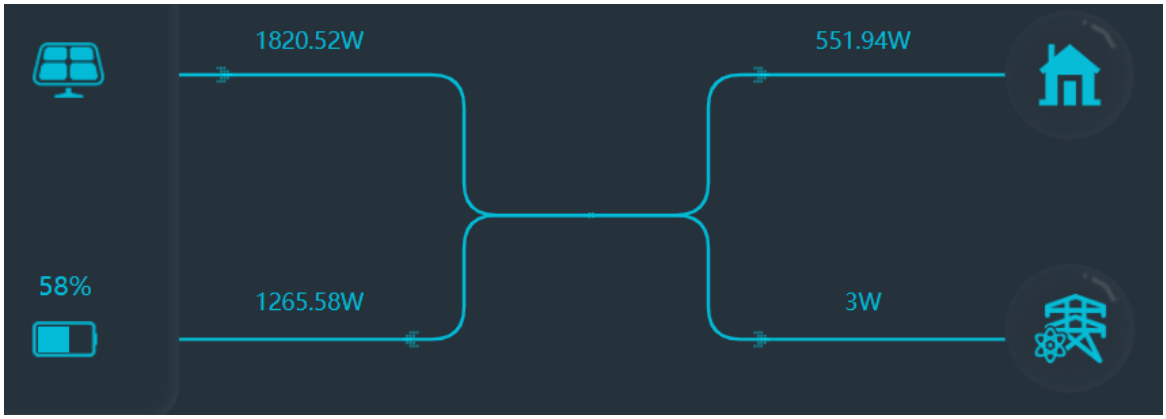
It now turned out that the inverter model we had purchased, was an improved version with the capacity to charge the battery at a faster rate than earlier models (a feature we would not be using due to our battery) but as this was 1 letter different from the approved model, I was now required to complete a new application, with a great deal more detail, and copies of manufacturer data. (Why this was not raised at the same time as the meter problem, I will never know). So I now had to collect and supply all tis information too. This stretched out the install another 2 weeks. Meanwhile Genesis could not progress the meter install until the vector agreement was completed.

When all this was finally sorted out, we had completed the installation, including the 35mm battery cables, even though the battery box came with connectors designed for 70mm cable. (so much for buying a kitset system.)

Finally with the paperwork compete, I contacted Genesis, to arrange the meter install. But yes, it was another problem, Due to the approaching Christmas, break, the meter would not be installed until mid January, and we had already booked a ferry crossing for the first week of January. In the meantime vector was now chasing me for the signed off paperwork, as you have to complete the install 10 days from their approval, Even when their paperwork says 30 days.

So it was now looking like my holidays were in jeopardy. So imagine my surprise, when the first good news occurred. I had a phone call from the metering company, to ask if it would be ok, to install the meter early, It seems they were undergoing a quality audit, and needed a meter job that could be arranged at short notice, which I agreed to rapidly. So we finally had the system working. Now all that was needed was a final sign off from the inspector, and we could go live.

And yes, You guessed, The inspector was no longer available. All the delays left me high and dry again. Fortunately, I have some industry contacts, and I soon had another inspector, familiar with solar, available to check the job, and hopefully sign it off. In fact, thanks to all the issues, and the guidance of many “Experts” we flew through the inspection (which I’m pleased to say was very exhaustive, with every part well checked) and we finally powered the system live.



So there it is, All working at last. Only it’s not yet working. We have to pay an estimated bill, as it seems that genesis, still can’t get our meter connected to their billing computers, and we cant see how much

power we are using, or selling, or …. Anything. Maye, when I get home, I'll be finally able to get that part working.

So how easy is it to install solar?

If I was doing installs full time, and had encountered all these issues previously, my vehicle would be equipped with all the spare parts to solve unexpected issues, but the challenges caused by the systems would drive most electricians to madness.

But overall, it's not as difficult as many jobs I've done, but harder than others.

How effective is it?

Well, having watched it both while I was at home, and also while I was away, Yes it should have lowered my power bill (Not that genesis can tell that yet) and if we did not have 2 hot water cylinders, we may even have been operating without nighttime power purchases, but with electric hot water, we would either need a bigger battery, or isolate the cylinders at night. I'll be looking at that when I get home.

I expect a break even window of 10-15 years, but will keep you posted once I have some hard data on savings, But when you pay 27c/KWh and sell at 12c/KWh, you really want your system to provide all your power, So I may need to upgrade that battery. … Where is that manual again?

Can it provide power during a power cut?

This one requires a No, but yes answer.

There are two outputs on my inverter, One is the one that connects to the grid, and supplies power to me, and allows me to sell excess power onto the grid. If the power goes off, this system isolated itself to prevent me from trying to liven all the neighbourhood. Its called anti-islanding, and its important, so not this switches off if the main supply is lost.

But I have a second Output called Backup, and this can supply the house, so long as I manually change my supply over from the network supply to the backup, or I wire parts of the house to the backup, rather than the network, so Yes. Parts can still run in a power cut, but only once your isolated from the network.

Again this is additional work, that an electrician can arrange, and it's above the cost of the unit

Over the coming months, we will update you on how it works over summer, and more importantly, how does it cope over winter.

Its going to be a fun journey.

Can Solar Really Power Your EV?

It's a scene designed to poke fun as Elon musk, and Tesla's auto drive feature. The movie was called, "Leave the word behind", and the scene shows how communities can be isolated by hacking the cars and technology we know rely on every day

But what caught my attention, was Elon's response, He pointed out that in a dystopian future with the grid down, and no gas in pumps, the EV could be charged by Solar panels.

And this got me thinking. Could you really charge an EV with solar panels, Certainly the internet had a lot to say, most of it not very scientific, even at CES (Consumer Electronics Show in the US) there was a tesla with solar panels, but these added only small additional drive distances to the vehicle. So how realistic is the solar panel charging scenario.

For the moment lets ignore battery charging voltages, and just look at the battery capacity.

The Model S has a 100KWh battery (remember my home currently has an 8KWh battery)

The Tesla Home Charger station is rated for 25 KW charging the Model S in 4 hours.

My inverter can output 5KW peak, so 100/5 gives me a charge time of 20 hours. But solar only has between 8 and 12 hours of capacity today. And that assumes a full sun day.

So to fully charge a Model S will take 2 days, using an entire north facing roof of panels.

The CES charger, offered a full charge in 10 days of full sunshine. And in a day would only get a maximum of a 10% boost to the battery, But the extra weight costs about 2 % of that battery capacity. (and no, you could drive with it up)

An enterprising Tesla owner has built his very own solar panel array that can be mounted on the roof of his Model Y and deployed while stationary.

The project, dubbed DartSolar, is made out of 3D-printed parts and a telescoping carbon fiber tube. According to the builder, the nine 175 watt panels can add 6 kilowatt hours to an EV's battery per day, which is enough to drive roughly 20 miles.
However, at this point, all we can do is take the inventor by his word, and there are several reasons to be skeptical.

In 2017, Musk pushed to have solar panels integrated into the Model 3, but engineers found it simply wasn't worth it. After Musk hoped to integrate a solar roof in the company's much-hyped Cybertruck, the final truck also didn't end up having such an option when it was made available late last year.

And that's unfortunately for a simple reason.

"It’s a surface area thing," Musk told Joe Rogan during a November podcast episode. "It's about a kilowatt per square meter."

"You don't have enough surface area to keep the car going just from the car's surface area," Musk added at the time. "But if you had something that folded out, you could make it self-sustaining," likening it to SpaceX's Starlink satellites. "You just need more surface area."

Another attempt at solar vehicle power involved a team of scientists driving a Tesla the 9,400 miles around Australia in 2022 — but their 18 rollable panels measured a whopping 59 feet each.

The inventor behind the DartSolar is already looking to come up with a new version, which will be "fully made out of carbon fiber" and almost half as tall, according to a recent Reddit update. "Under version two, I should be able to charge about 50 to 75 miles per day," he wrote.

So sadly No. I can’t see the current technology solve the issue.

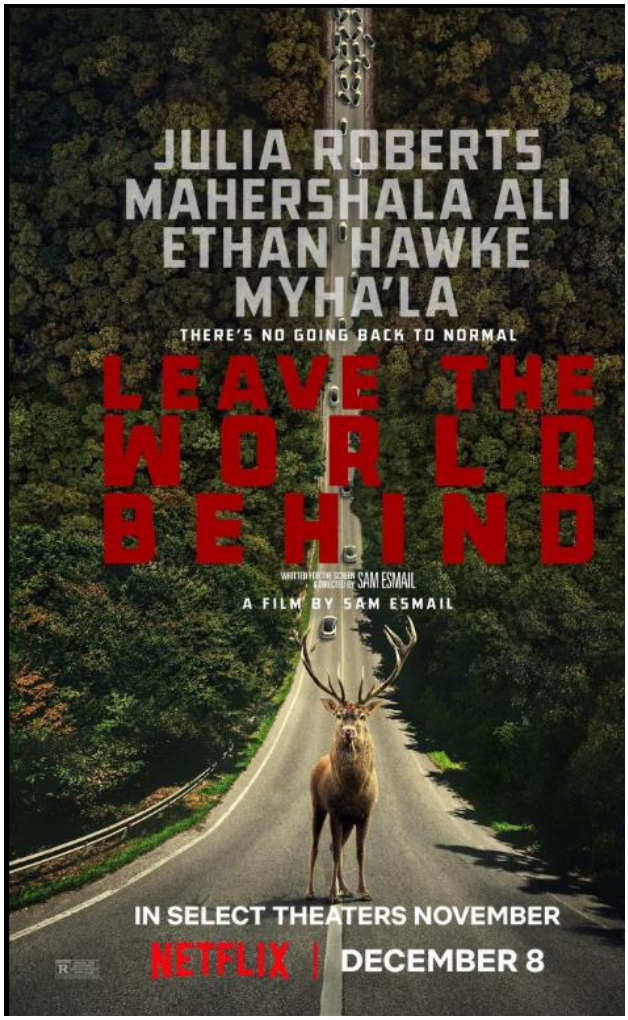
Even worse, if the car computer is hacked, how do you get access to it, to drive it in the first place?

While this might seem all very esoteric and maybe a thought project with very little real world application, the South Island, And some rural North Island communities have faced this very challenge when EV owners have arrived at holiday campgrounds trying to find ways to charge their EVs. While campsites offer powered sites allowing up to 16 amps per customer, there is a big difference between occasionally boiling a jug, and having vehicles plugged in for 10 hours at the dame time, and circuit breakers, In some cases the Transformer HT fuses, have triped or blown, isolating the entire campsite.

It seems that rural power systems still have a long way to go to be ready for EV charging.

So sadly for all of Elon’s genius at times, this one is no, Current solar tech, just won’t cut it.

So watch “Leave the world behind” and enjoys the discarded EV’s with good conscience, while waiting for the “Perovskite” panels, to shrink the size of solar panels.



After all, It really is only the end of the world.

And the kicker … wait until you see who is behind the plot.

Li-Fi gets a tech boost from old TV technology.

If you are like most of us you probably connect more often by wi-fi than by networking cables. But another technology has been under development for some time called Li-Fi

This uses LED lights to transmit and receive data between devices and the host servers/routers, the data speeds are dramatically higher than most other technologies, and as the link is optical, and normally vertical, the path is seen as more secure than radio signals.

One problem that Li-Fi has always experienced is noise, the LEDs are affected by normal lighting, and flicker of lighting increases the noise floor, limiting transfer speeds in real worl applications.
But a recent change was to make the optical senders our of red, green and yellow (or red, blue and yellow) sources to create the white light, rather than a single white LED. The results has been a dramatic increase in data throughput as the component colours are easier to detect than a single led.

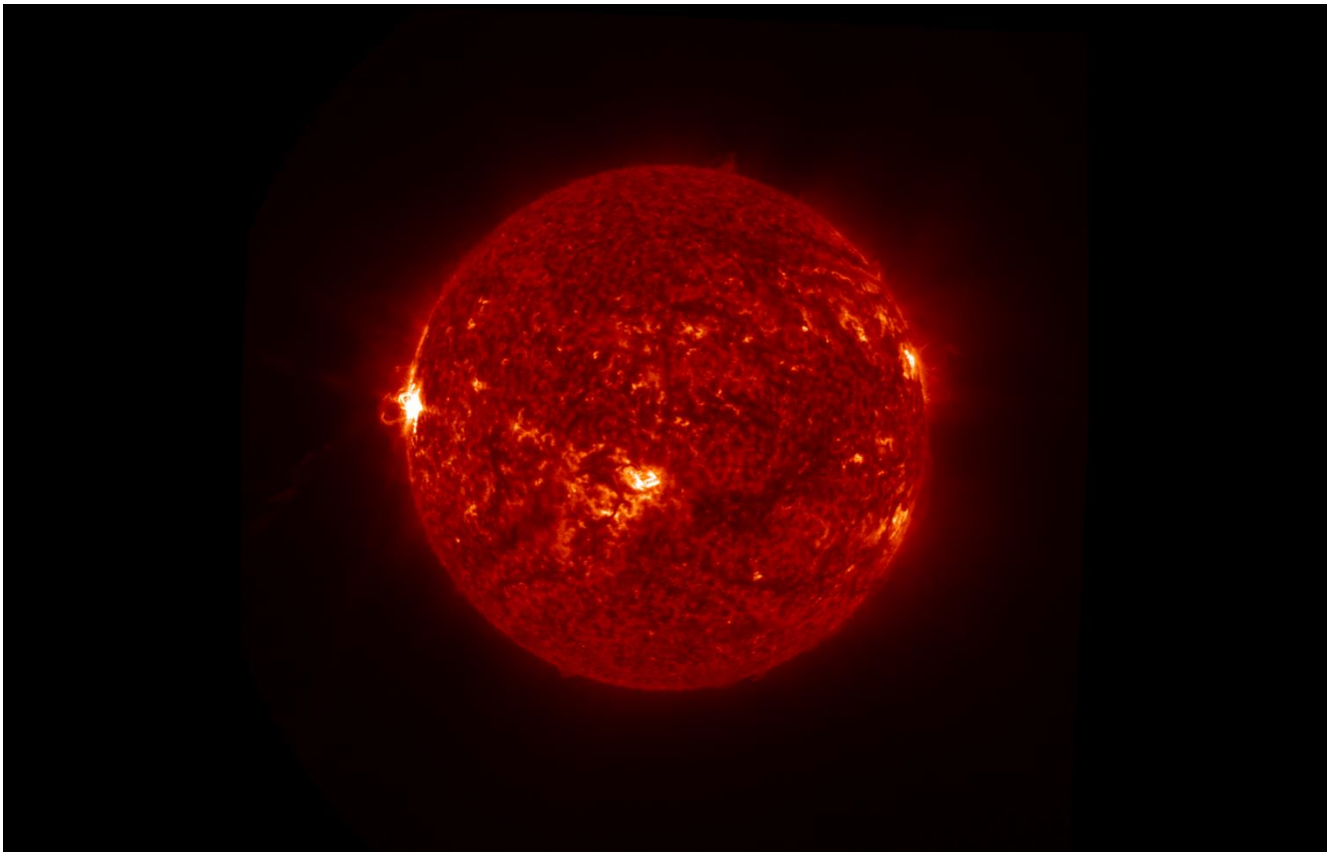
As if that wasn't enough, the next step is to include NIR (Near Infra-red receiver) into the path to further act as an error checker. Corrector and additional data channel.

So your Old TV set with 3 colour guns and using an infra red remote, may have a new life as a high speed data transfer system. Ok so not the hardware, Just the technology.

Its not solar. But it is a bright idea never the less, and its nice to know that the tech still has a future.

SOLAR CYCLE 25

It seems only yesterday (actually it was 8 months ago) that NOAA was predicting the early end of cycle 25, and a ramping down of activity, but while many cities and towns across the globe ended 2023 with fireworks, the sun was busy producing some excitement of its own —an X5 solar flare. This was the largest solar flare observed by NOAA's Space Weather Prediction Center (SWPC) since 2017.



Face on the X5 flare may not have created much of an image, But it wiped out HF propagation for almost 14 hours

As we approach the peak of Solar Cycle 25, we should expect to see more sunspots, each of which is a region of intense magnetic activity capable of producing solar flares and coronal mass ejections, or CMEs. This period of elevated activity can last up to several years, with impactful space weather events possible in 2024.

Solar flares emit radiation, mostly in the form of ultraviolet light and X-rays. The radiation reaches the sunlit side of Earth within 8 minutes, traveling at the speed of light. According to the SWPC, these energetic blasts can interfere with radio signals, which is what happened after a strong solar flare briefly interrupted aircraft communications on December 14, 2023.

Some flares are accompanied by CMEs, which are highly-charged bubbles of the sun's plasma emerging from the sun's outer atmosphere, known as the corona. As this bubble radiates outward, it carries the sun's magnetic field with it, taking between 15 hours and a few days to close the gap between the sun and Earth. A CME can collide with Earth's magnetosphere, the barrier that protects us from the harshest impacts of space weather. It is this collision between a CME and Earth's magnetosphere that produces geomagnetic storms.

Aurora borealis with silhouette of couple on a mountain. (Image credit: iStock)

This is the type of space weather that we can see! The beautiful Aurora Borealis (Northern Lights) or aurora Australis (Southern Lights), is produced by electrons from geomagnetic storms colliding with Earth's atmosphere.

The SWPC produces an Aurora forecast, which will come in handy the next time a CME is predicted to impact Earth. *Sadly we neither had suitable alerts, nor clear sky's at lake Tekapo to view these)*

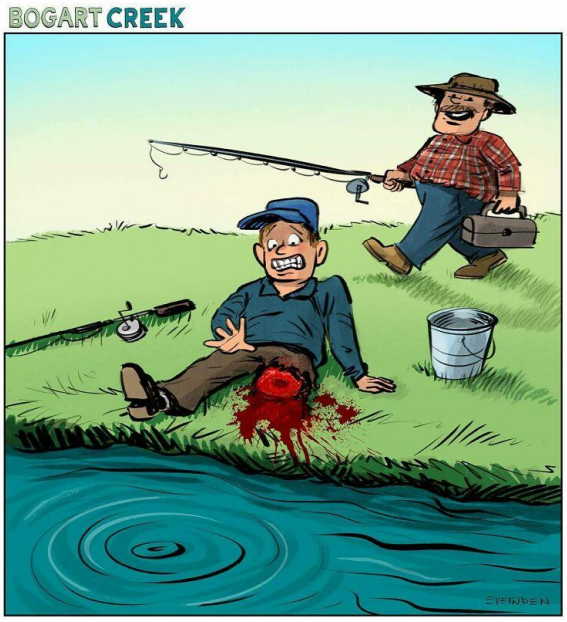
On April 8, 2024, a total solar eclipse will give some parts of the earh a rare chance to see the sun's magnificent corona. Two solar phenomena to look for: Prominences, or large arcs of plasma suspended above the sun's surface; and if it happens during totality, we could see a CME in real time.

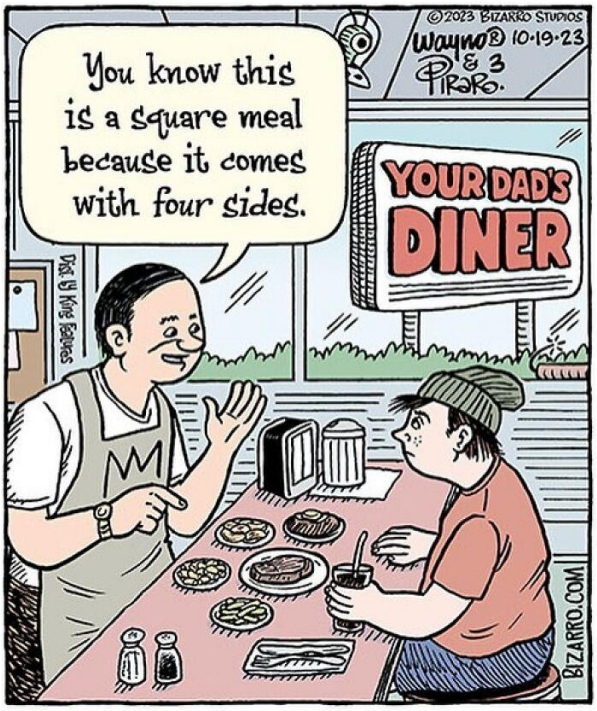
Otherwise if you want to see what's happening in terms of solar events, check out either the Space Weather by SolarHam website or YouTube or visit the website for the last weather forecast from Space Weather Woman – Dr. Tamitha Skov

And yes, Cycle 25 is not yet past its peak, more space weather is most certainly on its way.

Thanks NOAA for finally admitting this cycle is not a minor one. Let's see if our tech is space weather ready.

JUST FOR A LAUGH





HEARD AROUND THE SCENES

ESTATE SALE BY TENDER

On behalf of the Phil McGechie Estate, the NZVRS forwards the following information of items available via tender on the followingterms:

Please note carefully all of the following terms of sale:

a All items are available via tender through the estate lawyers Harkness Henry.

b Tenders are be sent to Harkness Henry either via email to **harknesshenry@harkness.co.nz** or by post to Harkness Henry, Private Bag 3077, Hamilton 3240.

c Please ensure that your tender clearly states the item (ie item numbers as listed in this catalogue) you wish to tender on, the tender price, your name and contact number.

d Photos of the items below are indexed by number at http://www.nzvrs.pl.net/bbb/PhilMcGechieEstate

e All items are offered, as is, where is, untested and as described in good faith. E&OE

f Tenders close at 5pm on 9 February 2024

g Successful tenders will be advised via email along with the payment and collection details.

h The items are stored at Paeroa and it is the purchaser's responsibility to arrange collection of their items by Thursday 29th February 2024.

95 lots

1	Collection of 18 metal filing cabinet drawers loaded with various components
2	Collection of various (power) transformers & Q Max coils in entertainment unit
3	Eddystone 750 with external speaker (& tap-on power cord)
4	Crystal set (replica 1931, made by PM)
5	Philips large (16 inch) Bakelite speaker in mottled brown colour
6	Precision E200 signal generator 95k - 44Mhz (with black tap-on)
7	NZPO receiver type 944 LMHHB (8 valve + eye tube)
8	Valves 1.4 & 2 volt US, and English valves mixed
9	Valves pre-octal 27, Arcturus etc
10	GE reproduction AM/FM cathedral radio
11	HeathKit valve tester TC2 with roller chart, complete with 110/230 isolation transformer and information folder
12	Bell Colt (Cream) 4 valve radio
13	Hitachi V212 20 MHz oscilloscope with IEC power lead
14	BC Radio - Amazon (Aerial Radio Ltd, Akld) 8 transistor
15	Collier and Beale 842DW NZP&T 12 volt Radio with internal inverter
16	VSWR peak power meter and leads
17	Speaker Crossley Dynacone type F - 11 inch
18	Box of numbered valves pre octal (some Arcturus) inventory attached
19	2 x boxes - one assorted speakers (4-8 inch), other assorted resistors in containers
20	AC voltmeter, RMS reading, HP 2400
21	Trio AG 203 audio signal generator (sine and square wave output) 1 MHz max
22	Eddystone S807a smaller 5 band receiver (Cabin Radio) 24 MHz max
23	ZC1 mk 2 (tropicalised) with lid, headphones and manual
24	2 valve Vulcan receiver (UK) with tubes English oak cabinet with removable back
25	Ham rig Yaesu FT 707 with South Cross SCE DC30 power supply (230 volt, 13 amps)
26	Bench amplifier with output level meter
27	Philips HT supply 3009 with rectifier and tap-on mains lead
28	Bench power supply variable 20 volts 2.5 amps
29	Eddystone S710 (green) with tap-on power lead
30	Green crate of random valves

31	Red crate of random valves
32	Horn speaker N&K, includes N&K driver, free standing
33	Hinemoa (Johns Limited) Dargaville 5 valve Neutrodyne 3 dial, TRF receiver, oak cabinet
34	Multimeter Yokogawa
35	2 x boxes of transmitting tubes 807, 1625 & assorted
36	Receiver AR77e Kingsley, Canada
37	Box of AK20 compact parts, photo info and more (X band magnetron and rheostat)
38	Horn speaker "Brown" by SG Brown, London, in black
39	R&C Bridge HeathKit C3U with eye tube
40	Collier & Beale 938 with 3 coil boxes (serial #95)
41	Hikers One with 49 valve and Omega phones
42	Box of display tubes (approx 20)
43	Advance B4B Signal Generator and manual 300k - 30MHz and Belling connector mains lead
44	RCA LF AR88 Receiver (Black) & info file (inside)
45	HP 606b signal generator 50k - 65MHz with info file
46	Box of various tools, capacitors, batteries etc
47	4 x boxes of speakers, RF coils, PW4 tuning gangs for HRO and various variable etc
48	TRF Receiver, Hammarlund Roberts 4 valves regenerative, Johns Limited Akld 1926
49	Valves - drawer of general assorted types
50	Gilfillan GN1 1924 3 dial battery operated 5 valve Neutrodyne Receiver
51	Wire - 2 x containers of remit hook-up wire and some shielded
52	Metal vales in metal drawer cabinet
53	Horn speaker (Brown?) Type C2 form C (two tone alloy flare on Bakelite base)
54	Valves - drawer mixed small 9 & 7 pin valves
55	Philco 1958 Alabama valve radio, cream
56	RCA AR77E with info inside
57	Yaesu Musen FRG7 communications receiver
58	HRO No.686 Octal conversion plus 5 x coil boxes & info file
59	Valves - drawer of mixed valves including 01As, 201s, octals, 2 & 6 volts, 4 & 8 pin etc
60	Drawer of display valves and quartz crystal
61	Valve tester Triplet 210a (110 volt?) & info file
62	Trio 9R4J communications receiver
63	Drawer mixed rectifier valves
64	Wooden cabinet broadcast radio, octal valves, mid 30's
65	1932 purchased, Atwater Kent radio 527 chassis with 567 escutcheon
66	Collier and Beale NZP&T Type 440 SW transmitter with 641 SWB receiver & PSU 24V DC (transistorised) in excellent order. Complete with back panel.
67	Drawer of various display valves etc including TWT
68	Set of 25 metal drawers containing various components
69	2 x boxes various display transmitting tubes
70	Collier and Beale 941 HRO No.470 + 2 coil sets
71	Drawer of miscellaneous things, vibrators, rheostat, capacitors etc including EICO 710 GDO
72	4 boxes of valves - 01As, 9 pin minis, 866s etc 6 & 12 volt, plus 1946 Sylvania Tube Manual
73	Eddystone Communications Receiver model 840c
74	Drawer of misc meter movements, Dick Smith digital multimeter etc
75	EICO RF Signal Generator 324 150k - 435Mhz (tap-on plug lead)
76	Tungar charger 6 volt 2 amp minus rectifier tube
77	Collier and Beale 941 HRO No. 330 + 1 coil box (2.5 - 3.5 MHz)
78	Canadian Marconi CSR 5 communications receiver & info sheet
79	Box misc things including digital clock, calibration oscillator, meters, Model T induction coil, project power supply & small speaker box
80	Extension speaker in wooden cabinet with Plessey CX80X PM speaker

81	Box of 5 x National HRO coil boxes
82	RF 24 unit front end, plastic tub of test leads and headphones, capacitors etc
83	Plastic tub of car radio, fans & speakers, headphones etc
84	Smart-pack battery charger 12 volts 10 amps
85	Dick Smith 1GHz frequency counter
86	Power supply 6.3 volt & 240 Volts at 60mA
87	Capacitors large & small, plugs & sockets & connectors, 10kHz crystal calibrator
88	NS1 valve (klystron?)
89	Collier & Beale 941 No.986 in matching grey coloured cabinet with 3 coil sets
90	Bundle of books - JWS 70 yrs of Valves, GAR, MGAR and more
91	Bundle of books - NZPO training books pt2 & pt3, Radio comms Vol1 & 2, Radio Handbook 11 th ed 1947
92	Bundle of books - NZ radio related periodicals, Radio listeners Guide 1929, 30, 34 etc
93	Bundle of books - NZ radio related periodicals Lamphouse Guides & Catalogues
94	Bundle of books - NZ Radio guides, ZC1 working instructions etc
95	Bundle of books - ARRL Handbooks 1947, 50, Towers transistor Handbook, Telegraphy Handbook 1936, Geloso Technical Bulletin

THE NEXT NZART BROADCAST IS ON THE 25TH FEBRUARY 2024 AT 8:00 PM (REPLAYED AT 9:00 PM) AND WILL BE POSTED ON THE WEBSITE ABOUT THE SAME TIME.

The HF broadcast is made on 3900 kHz, LSB at the top end of the 80m band. It will be rebroadcast in the Auckland area on the 6625 Repeater, and is available on the NZART website: [NZART-Official Broadcast]

"I think it's nice that people think we're healthy and not just mentally ill enough to need this."

SOME NETS – FOR WHEN YOU ARE LOOKING FOR SOME COMPANY

Day	Time (Local)	Freq (MHz)	Group
Sunday	08:00	3.750	Southern Net
	08:30	**146.625**	**Br 65 – Papakura Net**
	09:00	3.700	Br 10 - Franklin
	09:15	3.755	Br 65. Papakura.
	09:30	146.900	Br 10 – Franklin ZL1SA
	19:00	146.700	YL Net
	19:45	145.575	Thames radio club ZL1DF
	20:00	3.700	Br 42. Titahi Bay
	21:30	3.595	Duran WIA Net.
Monday	11:30	3.850/7.125	Br 12. Hamilton
	19:30	3.757	Br 12. Hamilton
	20.00	3.540	CW Practice Net
	20:00	3.605	Br 80. Hibiscus Coast
	20:30	3.870	O.T.C (Old Timers Club)
Tuesday	09:00	7.096	Ex Post Office Techs
	21:00	1.850	160m Net _ Ron ZL4JMF
	19:30	3.690	QRP ZL2BH
	20:00	3.581	CW improvers Net
Wednesday	11:30	3.850/7.125	SPAM Net
	19:30	146.700	ZL1AB Net
	20:00	3.660	Geek Net
	20:00	3.645	Br 02. Auckland
	20:00	3.745	Br 84. Bay of Islands
	20:30	146.525	W.R.S.C
Thursday	09:00	7.096	Ex Post Office Techs
	19:30	3.690	QRP ZL2BH
	20:00	3.540	CW Practice Net
	20:00	3.615	Br 89. REG Net
	20:30	3.696	ZL1OA
	20:30	3.666	LF Net ZL2CA
	20:00	3.690	ZL QRP SSB Net
Friday	20:30	3.850	SPAM (AM Mode)
	20:30	3.650	W.S.R.C.
	20:30	3.560	Digital Modes Net
Saturday	10:30	28.530	10-10 Down Under
	19:30	3.650	Christian Fellowship
	20:30	3.600	Br 62. Reefton/Buller
Daily or Other	07:30	3.696	ZL2OA
	08:30	3.730	ZL3RP
	15:00	14.300	Pacific Seafarers
	17:30	3.760	Home Brew
	05:00 Zulu	14.183	ANZA DX Net
	18:00	7.115	VK7OB
	19:30	3.720	ZL1MO
	18:30	3.766	ZL3LE
	08:30/20:00	3.730	ZL3RP
	20:30	3.725	ZL2HN / ZL4RF
	21:00	3.677	Counties Net ZL2MA
	21.00	3.535	New Zealand Net (CW)

This is designed to be a living list, Please send me any updates whenever you are able:

Papakura Radio Club Inc.
Branch 65 NZART Club Directory 2017
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PO BOX 72-397 Papakura 2244
PHONE 09 296 5244
Westpac 03-0399-0019896-00
Club website: http://www.qsl.net/zl1vk Club email: zl1vk.club@gmail.com

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Secretary	ZL1AOX	Ian Ashley	021 198 1810
Treasurer	ZL1MR	David Wilkins	021 185 7903
Committee	ZL1DK	David Karrasch	021 560 180
	ZL1IRC	Ian Clifford	021 082 48400
	ZL1RJS	Rob Stokes	021 307 005
	ZL1RIC	Ricky Hodge	027 533 8155
	ZL4MDE	Mike Enderby	021 529 895
	Zl1KIM	Kimi Nooroa	
AREC Section Leader	ZL1BNQ	Richard Gamble	021 729 270
CD Liaison	ZL1AOX	Ian Ashley	021 198 1810
Newsletter Editor	ZL1NUX	Gavin Denby	021 459 192
Hall Custodian	ZL1AOX	Ian Ashley	021 198 1810
Newsletter.	Contact:	zl1nux@outlook.com	

Our newsletter is published monthly and normally distributed just before the club meeting. Please forward articles etc to the editor Wednesday 1 week before the general meeting. Please notify any change of address. Including E-Mail Address to the secretary.

Meetings
General Meetings are held at the Clubrooms on the 1st Wednesday of each month, starting at 7.30 pm. Look at your calendar and mark these nights. The speaker follows the General Meeting.
Project Evenings are on the 4th Wednesday of each month.
Committee Meetings are held on the 3rd Wednesday of each month at 7.30 pm unless advised.
Activity Nights are held on the 2nd Wednesday starting at 7.30 pm.
AREC Meetings are on the 5th Wednesday night, also starting at 7.30 pm
AGM: Held in November

Subscription: Full membership and newsletter $25.00 Family Membership and newsletter $40.00
Bank Account number: 03-0399-0019896-00 Working Bees As required.
Branch 65 21 Award: For contacts with ZL1VK (5 Points) and 8 Papakura Radio Club Members (2 Points each) after January 2011. Total 21 Points. Cost $5-00. Certified list and $5-00 to Secretary, Papakura Radio Club. Address above.

ZL1VK Club Nets
146.625 MHz Sunday at 8.30 am. Controller ZL1NUX, Gavin Denby. If the repeater is not available, listen 146.475MHz simplex.

3.755 MHz Sunday at 9.15 am. Controller ZL1BNQ Richard Gamble. (Linked to 146.675 & 438.775)