The Official Newsletter of the

PAPAKURA RADIO CLUB INC.

August 2023

Lighthouse Time Again

CONTENTS ...

This Month's Meeting:

Wednesday 2nd of August will the next meeting for 2023. Following general business, we will look at the lighthouse weekend on the 19th, 20th and 21st of August (3rd weekend of August and enjoy video of a previous lighthouse activity) .

There will be a cuppa and biscuit afterwards so we can socialise, radios optional.

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

Dates:	**Wednesday 2nd August**	**General Meeting + SGM**
	Wednesday 9th August	**Project Night**
	Wednesday 16th August	**Committee Meeting**
	Wednesday 23th August	**Activity Night – See Club activity**
	Wednesday 30th August	**AREC Training**

CLUB ACTIVITY:

The Wet weather has limited the amount of work performed on the clubrooms, but despite this we have repaired the hot water unit in the kitchen, and have enjoyed several good Wednesday meetings with a number of interesting discussions or demonstrations of projects.

This month brings the International Lighthouse and Lightship weekend, While we are unsure if any club members will be at lighthouses, there will still be opportunity to make contacts with some of the lighthouses being activated across NZ and the world. See the article later in regard to the ILLW weekend.

Our Activity and Project nights swap over this month, with the Project nights now being on the 2nd week, and the activity nights (training and practice with systems and services) being on the 4th week

The first new week 4 activity nights will cover : Various speakers presenting topics which will include...

- Radio procedures... joining nets, passing back to net controller and how to finish etc.
- The Ham Bands... general talk on frequencies and how to call CQ or respond to a CQ call etc.
- Repeaters... Why they are used and how they work etc. and local repeaters in use.

This will be the first of several meetings aimed for those new to Ham Radio and others who are interested.

Later we may look at other topics, and will advertises these on the Sunday morning nets, as well as this newsletter. So keep listening and reading

DX CALENDAR MAY 2023

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1A0C								RI0FS																			V47JA			
TG4/KT8X																			9Q2WX										
WB8YJF/4																	RI0Z												
TF/SP7VC TF/SQ7OYL																														
												FO/F1SMB																		
JG8NQJ/JD1																														
FO/F6BCW																														
VK0AW																														
EH4VVK																														

Note: RI0Z DXpedition is cancelled

Featured DX

RI0FS SHIKOTAN ISLAND KURIL ISLANDS

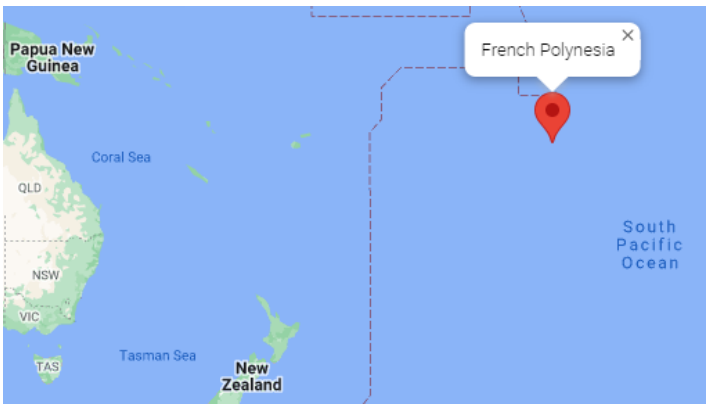
RI0FS. Radio Amateurs members of Russian Robinson Club will be active from Shikotan Island, IOTA AS-062, Kuril Islands 9 - 17 August 2023 as RI0FS.
Team - R6MG, R7MR, RN3BL, RU3FS, RX3F, UA0FAM.
They will operate on 80-10m Bands.

Shikotan is the northernmost island of the Kuril archipelago. Shikotan is a small piece of land lost in the Pacific Ocean. The area of the island is 225 square kilometres. Shikotan can be safely called a place where the sun wakes up. Its inhabitants are the first to greet the dawn among the population of our homeland. The entire Shikotan can be easily overcome by hiking. However, you can reach the island itself only with transfers. First, you have to fly to Yuzhno-Sakhalinsk, and then transfer to the ship, which takes 36 hours to the island of Shikotan.

And

FO/F1SMB FRENCH POLYNESIA

Yan, FO/F1SMB will be active from French Polynesia, 13 August - 5 September 2023.
He will operate on HF Bands.
QSL via LOTW, eQSL.



UPCOMING CONTESTS

Start - Finish Date-Time				Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	0100	1	0159	1.8-28,50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM/YL/Youth)	**wwsac.com/rules.html**
1	0300	1	0400	1.8-28	QCX Challenge	CW	RST, name, SPC, rig	**www.qrp-labs.com/party.html**
1	0800	1	0859	3.5	ZL Sprint	CW Ph	RS(T), outside temp (C)	**www.nzart.org.nz**
2	1700	2	2100	144	VHF-UHF FT8 Activity Contest	FT8	4-char grid	**www.ft8activity.eu/index.php/en**
3	0000	4	0300	7	Walk for the Bacon QRP Contest	CW	Max 13 WPM; RST, SPC, name, mbr or pwr	**qrpcontest.com/pigwalk40**
3	1700	3	2100	28	NRAU 10m Activity Contest	CW Ph Dig	RS(T), 6-char grid	**nrau.net/nrau-contests-in-general**
3	2000	3	2200	1.8-28,50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	**www.skccgroup.com**
5	0000	6	2359	3.5-28	Batavia FT8 Contest	FT8	4-char grid	**batavia-ft8.com**
5	0001	6	2359	28	10-10 Int'l Summer Contest, SSB	Ph	name, mbr or "0," SPC	**www.ten-ten.org**
6	1400	6	1700	3.5-14	SARL HF Phone Contest	Ph	RS, serial	**www.sarl.org.za**
7	1630	7	1729	3.5,7	OK1WC Memorial (MWC)	CW	RST, serial	**memorial-ok1wc.cz**
8	0100	8	0159	1.8-28,50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM/YL/Youth)	**wwsac.com/rules.html**
8	0100	8	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, pwr	**arsqrp.blogspot.com**
9	0030	9	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or pwr	**naqcc.info**
9	1700	9	2100	432	VHF-UHF FT8 Activity Contest	FT8	4-char grid	**www.ft8activity.eu**
12	0000	12	2359	3.5-28	FISTS Saturday Sprint	CW	RST, first name, mbr or "0," SPC	**fistsna.org**
12	0000	13	2359	2.3 GHz & up	ARRL EME Contest	CW Ph Dig	Signal report	**www.arrl.org/eme-contest**
12	0000	13	2359	3.5-28	WAE DX Contest, CW	CW	RST, serial	**www.darc.de**
12	0400	14	0359	144	144 MHz Meteorscatter Sprint Contest	CW Ph Dig	Signal report	**www.mmmonvhf.de**
12	1200	12	1300	7	SARL Youth QSO Party	Ph	RS, age	**www.sarl.org.za**
12	1200	13	2359	1.8-28,50	SKCC Weekend Sprintathon	CW	RST, SPC, name, (SKCC # or "none")	**www.skccgroup.com**
12	1400	12	2200	3.5-28	Kentucky State Parks on the Air	CW Ph Dig	KY park abbr, SP or DX	**k4msu.com/kypota**
12	1400	13	0400	1.8-28,50, 144,432	Maryland-DC QSO Party	CW Ph Dig	Entry class, county, SPC	**w3vpr.org/mdcqsop**
13	1400	13	1700	3.5-14	SARL HF Digital Contest	Dig	RST, serial	**www.sarl.org.za**
14	0000	14	0200	1.8-28	4 States QRP Grp 2nd Sun Sprint	CW Ph	RS(T), SPC, mbr or pwr	**www.4sqrp.com**
16	1700	16	2100	1.2G	VHF-UHF FT8 Activity Contest	FT8	4-char grid	**www.ft8activity.eu**
17	0000	18	0300	14	Walk for the Bacon QRP Contest	CW	Max 13 WPM; RST, SPC, name	**qrpcontest.com/pigwalk20**
17	1900	17	2000	3.5-14	NTC QSO Party	CW	Max 25 WPM; RST, mbr or "NM"	**pi4ntc.nl/ntcqp**
19	0000	20	2359	All	International Lighthouse – Lightship weekend	All	Call, RST Lighthouse# (Not a Contest, but an event)	**https://illw.net/index.php**
19	0000	20	1600	3.5-28	SARTG WW RTTY Contest	Dig	RST, serial	**www.sartg.com**
19	0800	20	0800	1.8-28	Russian District Award Contest	CW Ph	RS(T), RU district code or serial	**rdaward.org/rdac1.htm**
19	1200	20	1200	1.8-28,50	Keyman's Club of Japan Contest	CW	RST, JA prefecture/district code or CQ zone	**kcj-cw.com**
19	1600	19	1759	1.8-28,50	Feld Hell Sprint	Dig	(See rules)	**sites.google.com/site/feldhellclub/**
19	2100	20	2100	1.8-28	CVA DX Contest, CW	CW	RST, type/UF	**cvadx.org**
20	0000	20	2359	3.5-28	FISTS Sunday Sprint	CW	RST, first name, mbr or "0," SPC	**fistsna.org**
20	2300	21	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, (mbr or pwr)	**qrpcontest.com/pigrun**
23	0000	23	0200	1.8-28,50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	**www.skccgroup.com**
26	0400	28	0400	1.8-28	Hawaii QSO Party	CW Ph Dig	RS(T), HI district or SP	**www.hawaiiqsoparty.org**
26	0600	27	0559	3.5-28	ALARA Contest	CW Ph	RS(T), serial, name	**www.alara.org.au**
26	1200	27	0300	1.8-28,50	W/VE Islands QSO Party	CW Ph Dig	RS(T), island designation or SPC	**usislands.org**
26	1200	27	1200	3.5-28	YO DX HF Contest	CW Ph	RS(T), YO county or serial	**www.yodx.ro**
26	1200	27	1200	1.8-28	World Wide Digi DX Contest	FT4/8	4-char grid	**ww-digi.com**
26	1400	27	2000	3.5-28,50	Kansas QSO Party	CW Ph Dig	RS(T), KS county, SP or "DX"	**ksqsoparty.org**
26	1600	27	0400	1.8-28	Ohio QSO Party	CW Ph	RS(T), OH county, SP or "DX"	**www.ohqp.org**
26	2100	27	2100	1.8-28	CVA DX Contest, SSB	Ph	RST, type/UF	**cvadx.org**
26	2300	27	0300	50	50 MHz Fall Sprint	Not specified	4-char grid	**svhfs.org/2023VHFSprintRules.pdf**
27	1400	27	1700	3.5-14	SARL HF CW Contest	CW	RST, serial	**www.sarl.org.za**
27	1700	27	2100	3.5-28	NJQRP Skeeter Hunt	CW Ph	RS(T), SPC, mbr or pwr	**www.qsl.net/w2lj**

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.

RAMBLINGS FROM THE EDITOR'S DESK

Yes, It's August … Yes, it's still wet … Yes, it's still cold. In short, a good time to be indoors doing radio, rather than outdoors. It's hard to believe that more than half the year is gone, and we have already passed the shortest day. And apparently Barbeques hate winter …

But with this change comes the lighthouse theme of August, with both the US lighthouse weekend (5th and 6th of August) and the International Lighthouse weekend 19, 20 & 21 August (UTC messes with NZ timing) but a good excuse to get out and try to operate from a remote site if your keen, It also means we get to focus on some of the fun aspects of radio.

Space news stays interesting with no idea if an when SpaceX will be allowed to try for a second launch of the starship test vehicles, and Boeing's Starliner also delayed, so it looks like big rocket launches will be in short supply for a while anyway. If your interested check out the online discussions as to whether or not SpaceX launches have made holes in the Ozone layer … Or not. A SpaceX rocket blows a hole in the atmosphere (nature.com)

Betelgeuse, is changing its brightness again, after dimming for a long time, and is now bigger and brighter than ever, leading some to consider if the star may explode in our lifetime, which would be cool, but given that the light we see is already 600 years old. Maybe we have already missed it.

In this newsletter, I've made a few changes in direction, with some more radio focussed stories, But the solar cycles and a lot of lighthouse weekend stuff, and some security and hacker news (all radio related) so I hope you find something to keep your mind entertained.

I'm getting a bit light on cartoons, so if your feeling arty, maybe you may like to draw one or two for me. After all, contrary to popular opinion, I do not suffer from insanity … I love it.

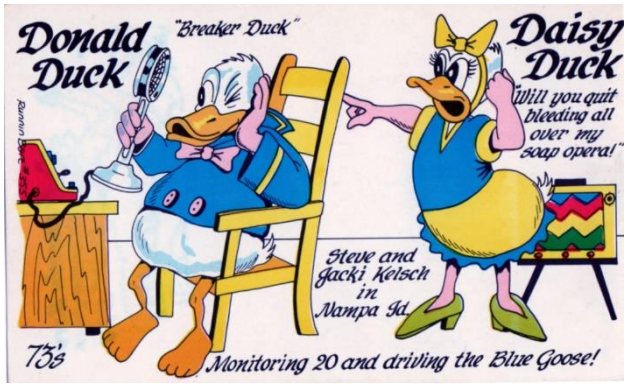
As the days get a little longer, and the weekend just a little less gloomy, with occasional outbreaks of sunshine, it's a reminder that the longer days of spring and summer are not too far away, and with that the hotter days, humid nights and fast-growing lawns, so It's always a good time to be inside and working the HF radio.

With the solar cycle still on its way up, and propagation improving every day, until a flare wipes it all out. The bands, especially 20 meters have never looked so good, yesterday afternoon, I was working long path into Europe on just 100 watts, so it's a great time to be playing on HF.

At the same time, I've sourced some DMR radios to play with, and as soon as the programming cable arrives, I'll be working out a new code plug for them and hopefully with 25 watts, I'll be able to reach the repeater out on the Waitakere's from home.

This and IRLP should mean that even without HF, I'll be able to work NZ and also overseas, even if the HF is blocked. The wonders of modern connectivity, and of course I can link my phone to these, and make calls even without a radio. I can even add a GPS antenna and my location can be tracked, Just Like APRS, but all built in, meaning I'll never know the joy of setting up the GPS, and the controller, and the modem, and connecting to the radio to get the same effect, I'll just activate a software setting in the radio … Maybe. Maybe its good, maybe its not… I'm unsure, but if we don't try some new things, how will we know?

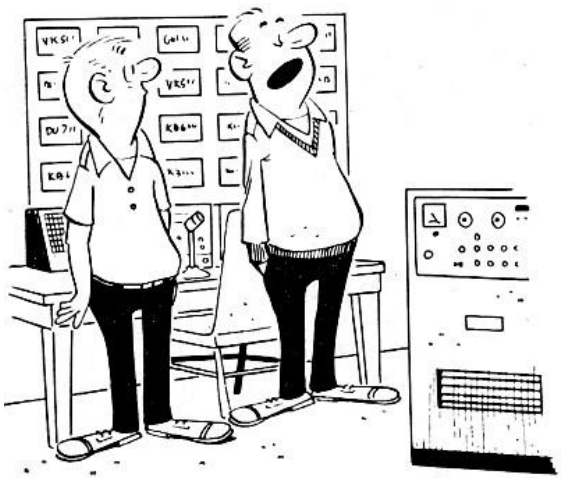
I have often wondered how the early hams felt about AM transmissions, after taking so much time to learn morse, what did CW operators think of the New Am modes? I have read how AM operators felt about the "Donald Duck" operators (SSB) with their focussed power in the sideband, the stations required less skills to set up, and reached further, so some felt it was cheating. That said, having a rig of that vintage, I can't see how much harder it could have been, Setting Plate currents and antenna loads and tuning the output stages to get your power out, OK, the AM filter has to be added, and then switch to AM, and then set the modulation depth, but its not that much less to run the rig on sideband… Maybe my valve rig is too new. Maybe that how we react to internet connected devices too.



I like AM, I love how it sounds, and I love the reduced power too, It feel more … Radio. It's a bit more of a challenge, but with a modern radio its too easy, the radio does all the hard work for me, but I'm not sue I miss twiddling with the extra knobs to keep the current right and compensate for the frequency drift. So, its usually on the Icom 7300, and a remote receiver to make up for my S9 HF noise at home.

But its still operating, and I don't sound like Donald duck to the others, or if I have they have not told me so.

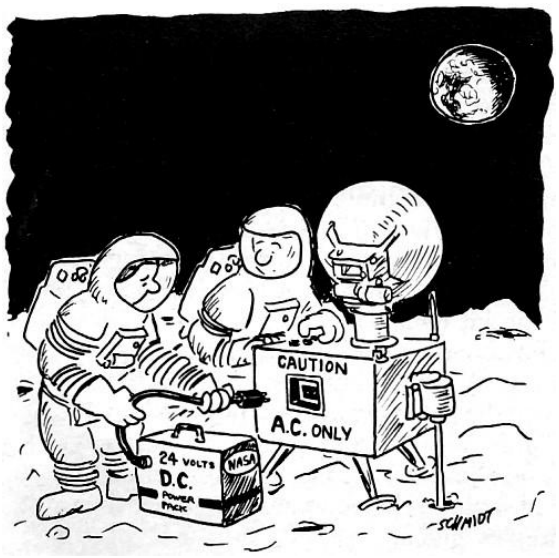
But with the S9 noise at my QTH, the temptation to operate form somewhere quieter is hard to resist, so, I've been playing with a go box, and hopefully soon a suitable small format HF radio will take pride of place in that too, along with the 2 Meter, 70Cm and PRS radios already installed. All ready for a park or lighthouse activation, to go with it are three different battery boxes, of various capacities, and a solar panel to keep them charged.



"Built it myself - just the basic tools; pliers, money, soldering iron, money, screwdriver, money..."

The days of building my own rigs, might be behind me, but the antenna (Aerials if you like them in the air) and power arrangements are still things I can play with, so as long as I stay within my budget, I should be alright. *Easier said than done, when radio gear is involved*

And I keep my systems running the right voltage, popping home for a spare part, may be a problem … hi hi



But as we said last month, change is inevitable, and adapting to our changing world, and its effect in changing our hobby is hard to predict. But if I'm going to be ready to take advantage of the warmer months by getting out and about with the radio, now is the time to get the hardware built, Otherwise I'll be building in summer instead of being out enjoying the fun.

So as you spend your winter keeping warm, what are you doing to be ready for the plans you have for summer. Even if its not a radio plan, will you be ready for the summer plans, if you wait to prepare?

After all the excitement of the last few months, floods, storms, power cuts … etc, I'm surprised that so many of us, are still not really prepared to look after ourselves for even a few days, yet alone a week . I hope that as Hams we are all better prepared than most, with some tech skills and a few dollars, we can be able to manage a few days off-grid. Or have we lost the experimentation part of the hobby?

There are many threats to our hobby, and loosing spectrum because we are either not using it, or we are not able to justify what we use it for, is a potential problem. Many see our antennas as eyesores that serve no purpose, so how do we ensure that councils see the value in what we do? How do we connect to our communities in a way that they can understand?

AREC, does a great job, but we all have a role to play. The main role is of connection, and experimentation. Most of the new equipment we take for granted, started as a ham radio idea, then later it became standard, but in a world where the "repair" person is sometimes confused with the "replace" person, what do we have to offer?

To me the main offering is still our community, our love for technology, and connectedness, allows us to do what others can't, and every time we try something new, we expand our horizons and learn something we did not know yesterday. To me it's more than just a hobby where people talk about their hobby, using their hobby. So, for starters, maybe we can start by making sure our community is a healthy one. Helping, guiding and supporting each other as we adapt to a changing world.

And maybe you can tell me your ideas. It is, after all, our future we're thinking about.

It's food for thought… and I'd love to know your thoughts

73 for now de ZL1NUX

INTERNATIONAL LIGHTHOUSE LIGHTSHIP WEEKEND - ILLW

For some reason or other August seems to have become the international weekend for lighthouses.

Countries all over the world have become involved in one for or another of lighthouse activity. Some years ago the United States Congress declared August 7th as their National Lighthouse Day and during that first week in August amateur radio operators in America set up portable stations at lighthouses and endeavour to make contact with each other. This event is known as the US National Lighthouse Week.

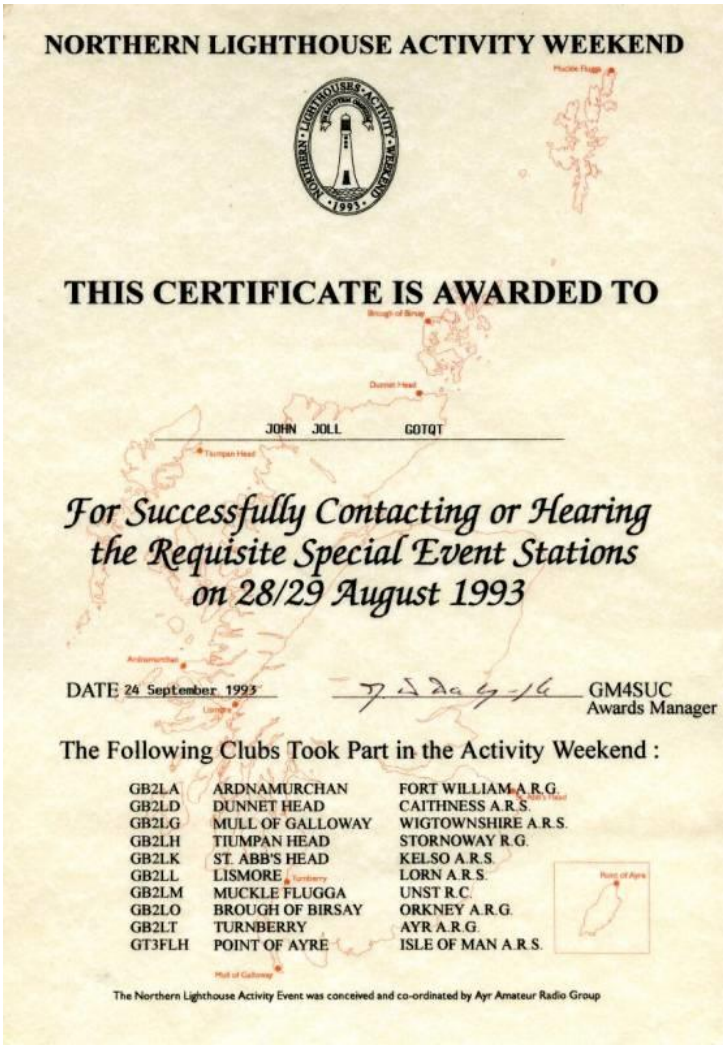
In Britain the Association of Lighthouse Keepers, ALK, conducts International Lighthouse Heritage Weekend on the same weekend as the ILLW in August. Their objective is to encourage Lighthouse managers, keepers and owners to open their lighthouse or lightstation and related visitors centres to the public with a view to raising the profile of lighthouses, lightvessels and other navigational aids, and preserving our maritime heritage.

However, the major event which takes place in August is the International Lighthouse Lightship Weekend, ILLW, which came into being in 1998 as the Scottish Northern Lights Award run by the Ayr Amateur Radio Group. The history of this event can be found elsewhere on this site. The ILLW usually takes place on the 3rd full weekend in August each year and attracts over 500 lighthouse entries located in over 40 countries. It is one of the most popular international amateur radio events in existence probably because there are very few rules and it is not the usual contest type event. It is also free and there are no prizes for contacting large numbers of other stations. There is little doubt that the month of August has become "Lighthouse Month" due largely to the popularity and growth of the ILLW.

History of the Lighthouse Weekend

It all started in 1993 during a wet wintry evening when two members of the AYR Amateur Radio Group in Scotland, John GM4OOU and the late Mike GM4SUC, after a club meeting were talking about creating an event in the summer when club members could get out on a sunny weekend and play radio. Various themes were considered; ports, airports, historic Scotland sites, the Firths of Scotland, castles etc. but it was finally decided that lighthouses of Scotland would be ideal.

Following research it was discovered that the lighthouses of Scotland were controlled by the Northern Lighthouse Board in Edinburgh who were not only responsible for the lighthouses of Scotland, but also around the Isle of Man. Approval was sought and obtained from the Northern Lighthouse Board to establish amateur radio stations adjacent to their property. In February 1993 an invitation was sent to all Scottish clubs and the Isle of Man club to join in the fun of a weekend, to be called the Northern Lighthouse Activity Weekend, by establishing an amateur radio station at a lighthouse during the third weekend in August. This first year's event saw 11 stations established at lighthouses, operating primarily on the HF bands, with each station making approximately 750 QSOs over the weekend.



NORTHERN LIGHTHOUSE ACTIVITY WEEKEND

THIS CERTIFICATE IS AWARDED TO

JOHN JOLL GOTQT

For Successfully Contacting or Hearing the Requisite Special Event Stations on 28/29 August 1993

DATE 24 September 1993 GM4SUC Awards Manager

The Following Clubs Took Part in the Activity Weekend :

GB2LA	ARDNAMURCHAN	FORT WILLIAM A.R.G.
GB2LD	DUNNET HEAD	CAITHNESS A.R.S.
GB2LG	MULL OF GALLOWAY	WIGTOWNSHIRE A.R.S.
GB2LH	TIUMPAN HEAD	STORNOWAY R.G.
GB2LK	ST. ABB'S HEAD	KELSO A.R.S.
GB2LL	LISMORE	LORN A.R.S.
GB2LM	MUCKLE FLUGGA	UNST R.C.
GB2LO	BROUGH OF BIRSAY	ORKNEY A.R.G.
GB2LT	TURNBERRY	AYR A.R.G.
GT3FLH	POINT OF AYRE	ISLE OF MAN A.R.S.

The Northern Lighthouse Activity Event was conceived and co-ordinated by Ayr Amateur Radio Group

The following year the Scottish clubs were involved in a weekend activity with the theme of Scottish Firths (river estuaries), so two years elapsed before the next Northern Lighthouse Activity Weekend. During this period Anne-Grete OZ3AE enquired through a letter to Practical Wireless if there was any lighthouse activity on amateur radio. Following discussions with her it was decided that Danish stations could join in the fun of the weekend. Quickly Germany, South Africa and France asked to join, so the name of weekend was changed to The International Lighthouse/Lightship Weekend . It was at this time that John, GM4OOU, due to pressure of work, had to cease his connections with the event. The weekend became an annual event taking place over the third full weekend in August and has slowly grown in popularity and in 1999 there were 204 lighthouse/lightship stations in 36 countries until now when some 450 stations in over 50 countries take part. Full statistics and guidelines for participation can be found elsewhere on this web site.

The main reason the event has become so popular is because it is NOT a contest. It is a relaxed fun weekend without the pressure of a contest. The guidelines are simple and the onus is on the operators to act within the spirit of the weekend which is simply to expose amateur radio and the plight of lighthouses to the public. This is why it is important for the ham station to be as close to the lighthouse/lightship as possible and with the controlling body's approval.

Turnberry Lighthouse ILLW UK0000

A few years ago the International Association of Lighthouse Keepers decided to have an annual open day for lighthouses all around the world to encourage visitors to visit at their lighthouses. They decided that no better day could be decided upon other than the Sunday of the ILLW. This move has been highly successful as the media have become involved in quite a few of the countries involved in the event.

This year's event takes place on the 3rd full weekend in August so if you haven't done so already, find a lighthouse nearby and get a group together or do it solo and fire up a lighthouse station. In most cases if you don't intend operating from within the lighthouse itself or one of its cottages, you really don't need to get any approval. Most first time entrants are so enthused with the event that they return year after year. A report from the Burlington ARC, Canada summed their first participation in these few words:

"The greatest delight of the day was the active participation of the visiting children who showed a remarkable interest in the whole idea of amateur radio, especially the use of Morse Code.
It was an honour and a delight to participate in this adventure and we look forward with increased enthusiasm to next year's participation."

Sadly, Mike Dalrymple passed away in December 2005. He was the Treasurer of the Ayr Amateur Radio Group. The event is now dedicated to Mike's memory as is this official ILLW web site where you will find the event guidelines, an on line entry form and lists of participating lighthouse since 1999. In recognition of the link between Mike and Turnberry lighthouse, it now carries the unique ILLW identification number UK0000. Mike's friend, John Forsyth GM4OOU, is still in Scotland and is quite impressed and amazed the way their "baby" has grown over the years.

US NATIONAL LIGHTHOUSE-LIGHTSHIP WEEKEND (NLLW).

Celebrating National Lighthouse Day

Coinciding with the US National Lighthouse Day, the US National Lighthouse-Lightship Weekend (NLLW) is an annual lighthouse operating and activation opportunity celebrating the anniversary of the establishment of the United States federal lighthouse service. This is a day to celebrate lighthouses, lightships and the commitment and service of those who tended America's lights for generations.

Dates

National Lighthouse Day is unofficially August 7th each year. This is Monday August 7th for 2023 making this year's weekend event August 6th and 7th. If you are considering operating for the NLLW for 2023, put these dates on your calendar … August 5th & 6th, 2023

What are suggested ARLHS calling frequencies?

The suggested calling frequencies for SSB are: 1.970, 3.970, 7.270, 14.270, 18.145, 21.370, 28.370 On digital modes, the common operating frequencies for these are used. On VHF and UHF, repeater operation is allowed, but the usual national calling frequencies are encouraged.

NOTE: These frequencies can get rather crowded, especially during operating events and contests. Please spread out! Remember, these are suggested calling frequencies only, and in reality we use any clear frequency +/- 20 kc of these.

Be courteous and use good operating practices. Listen before you transmit.

Radio 'Weather' for the NLLW weekend

As usual there is no shortage of other operating activities this weekend including the popular North American QSO Party CW mode. 10-10 Int'l Summer Contest, SSB, and the SARL HF Phone Contest Are some of the other events competing for the bands.

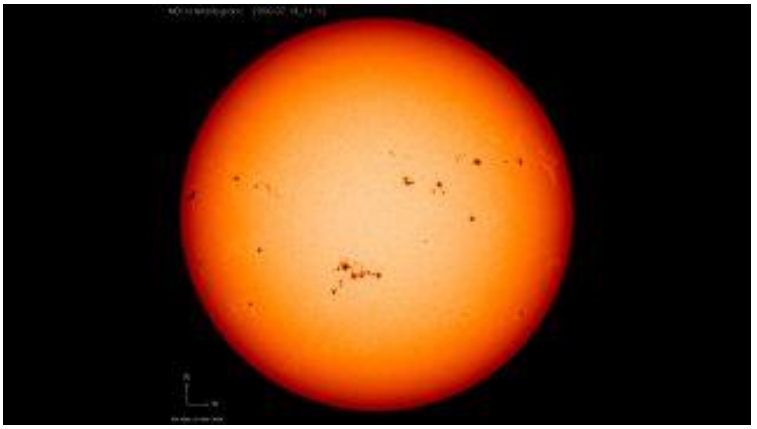
As this is an operating event and not a contest, all amateur radio bands are available including the WARC bands.

It's a chance for those of us in New Zealand to practice chasing some lighthouses, especially if they work the 20-metre band, which has been very active of late.

Once the NZ stations are set up, hopefully the 80 and 10 metre bands will also get used, to seek out any new hams near an HF rig.

80 Metres will, as always, be best at night.

Will Solar Cycle 25 Peak Early?



The sun may reach the peak of its current activity cycle in 2024, one year ahead of official predictions, new research suggests. But even after the sun reaches its peak, its effects will be felt for at least the next five years.

A team of researchers who had previously released an alternative solar cycle prediction that turned out to be more accurate than official forecasts by NASA and the National Oceanic and Atmospheric Administration (NOAA) recently published improved estimates of the current solar cycle's strength and progress.

The team's finalized forecast for the current cycle expects it to peak in late 2024, one year earlier than NASA and NOAA had predicted. The cycle, the team thinks, will reach about 185 monthly sunspots during its maximum and thus be somewhat milder than what the team originally forecasted. This peak intensity will place this cycle at about the average compared to the historical record.

The current cycle, the 25th since records began in 1755, kicked off in 2019 and, according to official predictions, was supposed to be extremely mild, peaking with about 115 monthly sunspots in 2025. The solar cycle is the approximately 11-year ebb and flow in the sun's magnetic activity that manifests in the number of sunspots, solar flares and eruptions. These cycles vary in intensity, with the weakest on record having produced less than a hundred spots per month during the maximum and the strongest peaking with nearly 300.

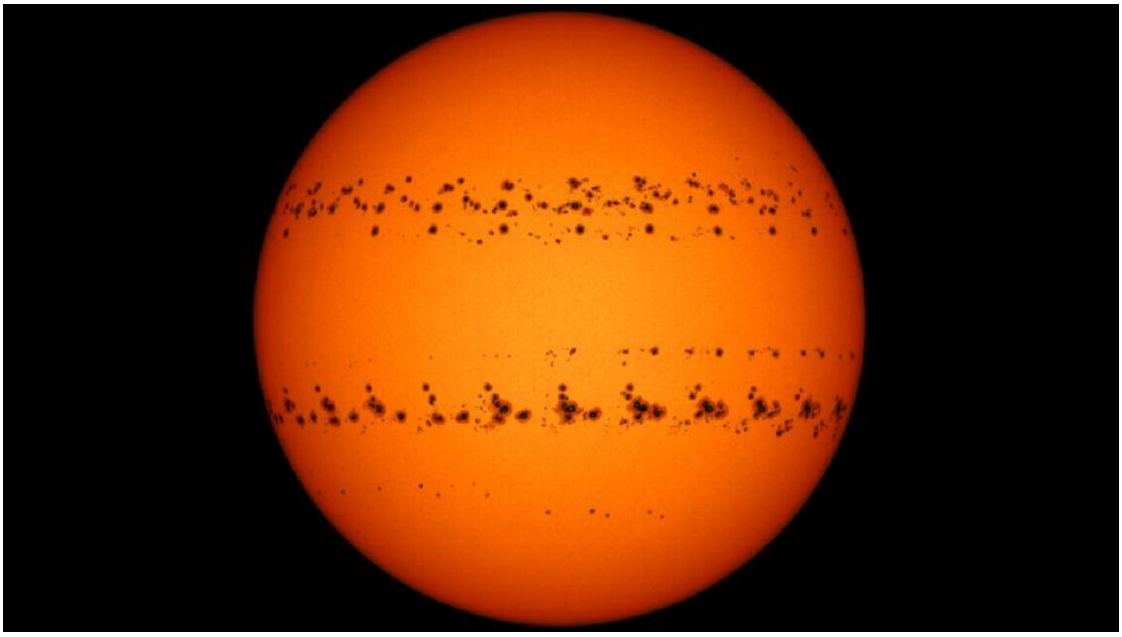
Cycle 25 followed the extremely weak Cycle 24, and NASA and NOAA thought it would be just as underwhelming. However, since Cycle 25 picked up momentum in 2022, it has been steadily outpacing the official predictions in line with the alternative forecast issued by a team led by NASA research scientist Robert Leamon and Scott McIntosh, the deputy director at U.S. National Center for Atmospheric Research (NCAR).

But why do Leamon and McIntosh's results diverge so much from the official estimates, and why are they closer to reality than what the bigwigs agreed on? It turns out that solar cycle forecasting is still rather crude and with only 25 cycles on record, the amount of data available for computer modeling is limited.

In their studies, Leamon and McIntosh therefore explore alternative ways of predicting the sun's behavior based on the star's magnetic activity. By analyzing historical records, they found that the strength of every subsequent cycle depends on the time when the magnetic field of the previous cycle completely dies. This event, which the team dubbed the terminator, doesn't happen exactly at the minimum, but up to two years later when the next solar cycle is slowly waking up.

The terminator events are part of what scientists call the Hale cycle, a 22-year cycle of magnetic activity that encompasses two 11-year solar cycles. During the Hale cycle, magnetic waves of opposing polarity move from the sun's poles toward the equator where they meet and cancel each other out. When these magnetic field lines are about halfway through their journey, the sun's magnetic field flips, which corresponds with the approximate time of the solar maximum. The Hale cycle is complete when the magnetic field returns to its original state after two solar cycles. The terminator, the

cancelling out of the magnetic waves at the equator, can be observed in historical records of sunspot generation as a complete disappearance of sun spots in the star's equatorial region.



Two major sunspot groups tracked across the surface of the sun between Dec. 2 and Dec. 27, 2022 in this mosaic created by Şenol Şanlı.. (Image credit: Şenol Şanlı)

Since Cycle 25 is odd, we might expect the most effective events to happen after the maximum, in 2025 and 2026," said Leamon. "This is because how the poles of the sun flip every 11 years. You want the pole of the sun in the same orientation compared to the poles of Earth so that then causes the most damage and the best coupling from the solar wind through Earth's magnetic field."

The biggest solar storms of the current cycle, Leamon added, are therefore mostly likely going to happen after the maximum.

"We need to be vigilant for about five more years," he said. The team's latest forecast was published in January 2023 in the journal Frontiers in Astronomy and Space Sciences.

But for hams the band conditions are a mixed blessing. With solar flux reaching highs in excess of 200, the bands, when open, allow very good communication, even at low power level (not that many international hams are reducing power levels). But the highly active sun, also puts out sudden bursts of fast solar wind, Coronal Mass Ejections (CMEs), and even bursts of radio emissions, that can make the bands noisy, or in some cases stop all radio communication by ionising the D-Layer so heavily, that radio waves are absorbed before they can be refracted back to the earth of the E and F-Layers that make long range communication possible on HF.

This means the bands can go from active to dead in a matter of seconds. This manes a slightly less active sum may actually improve HF comms. But sadly, the jury remains out on the high, with other predictions still putting the peak in the 2025 year. But either way there will be plenty of HF activity in the months and years ahead to keep HF bands exciting, for those who want to give them a go.

Famed US hacker Kevin Mitnick N6NHG dies at age 59

The United States' reformed hacker, Kevin Mitnick, who was once one of the FBI's "most wanted" cybercriminals, has died at the age of 59. He breathed his last on Sunday following a 14-month long battle with pancreatic cancer, reports BBC.

The federal sentenced him to five years in jail for computer and wire fraud following a two-year manhunt in the 1990s. He reinvented himself as a renowned "white hat" hacker, cybersecurity consultant and author after his release in 2000.

"Kevin was an original; much of his life reads like a fiction story," his obituary reads. "He grew up brilliant and restless in the San Fernando Valley in California, an only child with a penchant for mischief, a defiant attitude toward authority, and a love for magic."

In the 1990s, Mitnick gained notoriety breaking into government websites and corporate networks, including Pacific Bell, and stole corporate data and credit card information. He was involved in the theft of thousands of credit card numbers and data files across the country in addition to working his way into the country's cell networks, vandalizing corporate, government and university computer systems.

A brief history of hacking

He was dubbed as the "most wanted" computer hacker in the world by investigators.

A two-year-long nationwide FBI manhunt led to his 1995 arrest and he eventually pleaded guilty to computer and wire fraud. Authorities believed he had access to corporate trade secrets worth millions of dollars.

In his 2011 memoir, Ghost in the Wires, Mitnick denied using his skills to steal or exploit information for financial gain. "Anyone who loves to play chess knows that it's enough to defeat your opponent. You don't have to loot his kingdom or seize his assets to make it worthwhile," he wrote.

His arrest sparked a 'Free Kevin' movement in the hacking community, which lobbied on his behalf, including with rallies outside the prison where he was held. Following his release from prison, he became a "white hat" hacker, writer and public speaker. A "white hat" hacker aims to use their skills and identify vulnerabilities or security issues of organisations to test security configurations.

In 2003, he founded Mitnick Security Consulting, which advised Fortune 500 companies and government agencies on cybersecurity. In 2011, he became "chief hacking officer" and part owner of KnowBe4, which offers phishing security awareness training.

"Kevin will always remain 'the world's most famous hacker' and was renowned for his intelligence, humor and extraordinary skill with technology, surpassed only by his talent as the original 'social engineer,'" the company said in a statement on Thursday.

Love him or loathe him, He was a man worthy of respect – RIP Kevin.

TETRA CODE REVEALS ITS FLAW—A BACKDOOR

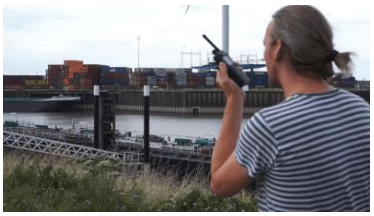
FOR MORE THAN 25 years, a technology used for critical data and voice radio communications around the world has been shrouded in secrecy to prevent anyone from closely scrutinizing its security properties for vulnerabilities. But now it's finally getting a public airing thanks to a small group of researchers in the Netherlands who got their hands on its viscera and found serious flaws, including a deliberate backdoor.

The backdoor, known for years by vendors that sold the technology but not necessarily by customers, exists in an encryption algorithm baked into radios sold for commercial use in critical infrastructure. It's used to transmit encrypted data and commands in pipelines, railways, the electric grid, mass transit, and freight trains. It would allow someone to snoop on communications to learn how a system works, then potentially send commands to the radios that could trigger blackouts, halt gas pipeline flows, or reroute trains.

Three Dutch security analysts (who go by the name Midnight Blue) discovered the vulnerabilities—five in total—in a European radio standard called TETRA (Terrestrial Trunked Radio), which is used in radios made by Motorola, Damm, Hytera, Airbus and others. The standard has been used in radios since the '90s, but the flaws remained unknown because encryption algorithms used in TETRA were kept secret until now.

The vulnerabilities and backdoor lie within TETRA or Terrestrial Trunked Radio, a European radio standard used by several large radio vendors. This standard has been in play since the mid-1990s, and given its age, it has found its way into use by law enforcement, militaries, critical infrastructure, and other fields, according to the researcher's report. This is especially concerning when it comes to the backdoor, which allows the easy cracking of the encryption of communications.
TETRA was developed in the '90s by the European Telecommunications Standards Institute, or ETSI. The standard includes four encryption algorithms—TEA1, TEA2, TEA3, and TEA4—that can be used by radio manufacturers in different products, depending on their intended use and customer. TEA1 is for commercial uses; for radios used in critical infrastructure in Europe and the rest of the world, though, it is also designed for use by public safety agencies and military, according to an ETSI document, and the researchers found police agencies that use it.

TEA2 is restricted for use in Europe by police, emergency services, military, and intelligence agencies. TEA3 is available for police and emergency services outside Europe—in countries deemed "friendly" to the EU, such as Mexico and India; those not considered friendly—such as Iran—only had the option to use TEA1. TEA4, another commercial algorithm, is hardly used, the researchers say.



Although the standard itself is publicly available for review, the encryption algorithms are only available with a signed NDA to trusted parties, such as radio manufacturers. The vendors have to include protections in their products to make it difficult for anyone to extract the algorithms and analyse them. To obtain the algorithms, the researchers purchased an off-the-shelf Motorola MTM5400 radio and spent four months locating and extracting the algorithms from the secure enclave in the radio's firmware. They had to use a number of zero-day exploits to defeat Motorola protections, which they reported to Motorola to fix. Once they reverse-engineered the algorithms, the first vulnerability they found was the backdoor in TEA1.

All four TETRA encryption algorithms use 80-bit keys, which, even more than two decades after their release, still provides sufficient security to prevent someone from cracking them, the researchers say. But TEA1 has a feature that reduces its key to just 32 bits—less than half the key's length. The researchers were able to crack it in less than a minute using a standard laptop and just four ciphertexts.

In reverse engineering TAA1 and TEA, Midnight Blue said it was able to discover five shortcomings, ranging from low to critical in severity, that allows for "practical interception and manipulation attacks by both passive and active adversaries"

The identified issues were:
CVE-2022-24400 - A flaw in the authentication algorithm allows attackers to set the Derived Cypher Key (DCK) to 0.
CVE-2022-24401 - The Air Interface Encryption (AIE) keystream generator relies on the network time, which is publicly broadcast in an unauthenticated manner. This allows for decryption oracle attacks.
CVE-2022-24402 - The TEA1 algorithm has a backdoor that reduces the original 80-bit key to a key size which is trivially brute-forceable on consumer hardware in minutes.
CVE-2022-24403 - The cryptographic scheme used to obfuscate radio identities has a weak design that allows attackers to deanonymize and track users.
CVE-2022-24404 - Lack of ciphertext authentication on AIE allows for malleability attacks.

While ETSI claim the most anyone can do with the backdoor is decrypt and eavesdrop on data and conversations. TETRA has strong authentication, he says, that would prevent anyone from injecting false communication. Researchers disagree pointing out that TETRA only requires that devices authenticate themselves to the network, but data and voice communications between radios are not digitally signed or otherwise authenticated. The radios and base stations trust that any device that has the proper encryption key is authenticated, so someone who can crack the key as the researchers did can encrypt their own messages with it and send them to base stations and other radios.

In addition, the network broadcasts the time in packets that are unauthenticated and unencrypted, As a result, an attacker can use a simple device to intercept and collect encrypted communication passing between a radio and base station, while noting the timestamp that initiated the communication. Then he can use a rogue base station to contact the same radio or a different one in the same network and broadcast the time that matches the time associated with the intercepted communication. The radio is dumb and believes the correct time is whatever a base station says it is. So it will generate the keystream that was used at that time to encrypt the communication the attacker collected. The attacker recovers that keystream and can use it to decrypt the communication collected earlier.

The researchers don't know if the vulnerabilities they found are being actively exploited. But they did find evidence in the Edward Snowden leaks that indicate the US National Security Agency (NSA) and UK's GCHQ intelligence agency targeted TETRA for eavesdropping in the past. One document discusses an NSA and Australian Signals Directorate project to collect Malaysian police communications during a climate change conference in Bali in 2007 and mentions that they obtained some TETRA collections on Indonesian security forces' communications.

Another Snowden leak describes GCHQ, possibly with NSA assistance, collecting TETRA communications in Argentina in 2010 when tensions rose between it and the UK over oil exploration rights in a deep-sea oil field off the coast of the Falkland Islands. It describes an operation to collect high-priority military and leadership communications of Argentina and reveals that the project resulted in successful TETRA collections.

"This doesn't indicate they exploited these vulnerabilities that we found," Wetzels says. "But it does show … that state-sponsored actors are actively looking at and collecting these TETRA networks, even in the early 2000s."

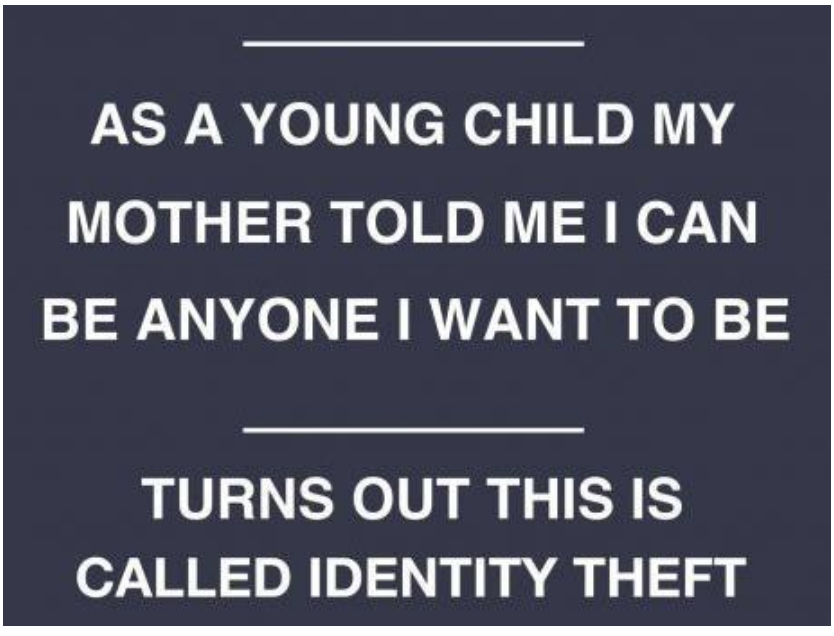
However, the issue runs deeper than merely fixing a vulnerability. The discovery has further fuelled the debate over the use of "closed, proprietary crypto" versus "open, publicly scrutinized standards." In the interest of avoiding such security pitfalls in the future, organizations might have to reassess their security infrastructure and lean towards adopting open cryptographic systems, which can be vetted by external experts and the wider security community.

In conclusion, this revelation serves as a stark reminder of the inherent risks of proprietary cryptography and the urgent need for a shift towards more open, transparent, and scrutinized security standards. After all, in an increasingly interconnected world, the cost of complacency towards cybersecurity can be catastrophically high.

While Amateur radio operators are not permitted to encrypt messages, it's a warning to anyone who believes that any communication is secure.

We only hope those listening in, do not have malicious intent, after all identity theft only requires knowing enough about you to fool someone else to release even more information about you. Once your life is online, it's a target for cybercrime, and therefor, so are you, and your identity.

So remember, when you are on air, always assume everyone, Including a hacker is listening and discuss only things you would happy to say in a crowded room



HEARD AROUND THE SCENES

THE NEXT OFFICIAL BROADCAST WILL BE HELD SUNDAY 27TH AUGUST 2023 AT 8:00 PM.

It will be rebroadcast in the Auckland area on the 6625 Repeater, and is available on the NZART website: [NZART-Official Broadcast]

THE MAN IN THE MOON

Did you know, there really is a man in the moon? His name is Eugene Shoemaker, a geologist and pioneer of planetary science who named many of the Moon's valleys, craters and mountains and prepared Apollo astronauts for its terrain. Therefore, it is appropriate that some of his ashes are 'buried' on the Moon, delivered there in 1998 in a capsule aboard the Lunar Prospector that was deliberately crashed on the Moon during its mapping mission.

Space burials are now possible, and you can choose the 'Earth orbit plan' where a symbolic portion of cremated ashes are sent into space before returning to Earth's atmosphere, burning up and appearing briefly like a falling star, or get launched into the Milky Way and beyond. The first Moon burials are also scheduled for later this year. Prices are surprisingly affordable from 1,500USD to be a 'star' and approximately 12,000USD for the Moon burial.

Flight schedules are available online and bookings are in advance with a PayPal deposit!

As any Aucklander knows

A friend was recently stopped while driving home late at night. As the officer approached the cars he stated, “I stopped you because you were veering all over the road! What do you have to say for yourself?”

My friend replied “Of course I was, I was trying to avoid the potholes. “

Apparently, the officer laughed and just walked away

Underground Antenna?

You may be familiar with the earth probe antenna, these very low frequency antennas are used to send signal below ground into caves and were used during the rescue of the footballers trapped in the flooded caves in Tham Luang, Thailand.

But what about putting an HF radio underground, or at least into the sand. *(see link below)*

Underground Dipole - the COLLAPSE of my ideas of Ham Antennas

While here is no description or attempt of any description as to how it works, there are 3 things that would be worth considering.

1. The antenna is placed into sand, not soil … so it may be some sort of very low to the ground antenna
2. Being close to the sea, would mean a ground plane is very close
3. The antenna is now very short (effect of the capacitance to the ground)

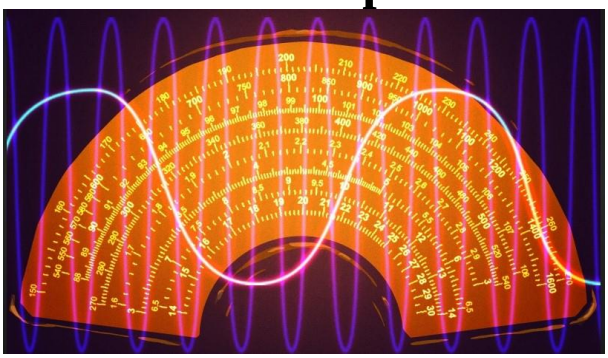
My first thoughts are NVIS of some sort, and then I wondered if it might be some sort of ground wave effect over the water, But if anyone has any ides, I’d be keen to hear them.

Contacts from Finland into Russia and Belgium, so it’s covering some reasonable distances, but possibly not impossible from NVIS transmission.

In the meantime, I’m thinking of repeating the experiment myself. But maybe not in the current Auckland mud pit we call a lawn. Maybe just above it?

If anyone tries it, let me know what happens.

2023 ZL Sprint



The T20 of ZL contesting is back with the latest edition of the ZL Sprint kicking off on Tuesday, the 1st of August 2023 at 0800hrs, and running for the five consecutive Tuesdays in August on 80m.

The format is the same as last time, i.e. work as many other stations as you can in an hour with the first half hour being CW and the second half hour SSB. You can work the same station once in each half hour (or you can just do the CW or SSB segment).

The exchange is signal report and outside temperature (if it is below zero then record the number with an 'M' in front of it, e.g. M1 is minus 1). Each QSO is worth one point and there are no multipliers.

Logs must be emailed to ZL3AB Mark Sullivan within 24 hours of each round to be counted. Scores will be posted weekly.

Recommended frequencies are: CW 3520-3550kHz SSB 3630-3650kHz

This is a good chance to have a go at contesting in a very low key way, or improve your operating skills.

The full rules can be found at https://www.nzart.org.nz/activities/contests/sprints/

If you have any further questions, please contact Mark Sullivan

SOME NETS – FOR WHEN YOU ARE LOOKING FOR SOME COMPANY

Day	Time (Local)	Freq (MHz)	Group
Sunday	08:00	3.750	Southern Net
	09:00	3.700	Bch 10. Franklin.
	09:15	3.755	Bch 65. Papakura.
	19:00	146.700	YL Net
	20:00	3.710	Bch 42. Titahi Bay
	21:30	3.595	Duran WIA Net.
Monday	19:30	3.757	Bch 12. Hamilton
	20.00	3.540	CW Practice Net
	20:00	3.605	Br 80. Hibiscus Coast
	20:00	Nat System	W.A.R.O
	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	SPAM Net
	20:00	3.660	Geek Net
	20:00	3.645	Bch 02. Auckland
	20:00	3.745	Bch 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	Bch 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
	20:00	3.760	???
	20:30	3.600	Ch 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:

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Westpac 03-0399-0019896-00
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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
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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)