



The Official Newsletter of the **PAPAKURA RADIO CLUB INC.**

February 2025



New Year, New Opportunities



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February Meetings:

The February Meeting will be followed by a presentation on Amateur Astronomy by Robert ZL4ROB. We hope you will join us for this fascinating presentation.

We hope you take the time to chat with someone new and make the most of the suppertime that follows.

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

Alternatively, ask zl1nux@outlook.com for the teams link, and you can join us from home.

December Dates

Wednesday 5th	General Meeting & Astronomy presentation
Wednesday 12th	Activity Night
Wednesday 19th	Committee Meeting
Wednesday 26th	Project Night



DX Calendar February 2025

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			
V47IA												KH6LC								ZW5W											
C5PL													TI7W Costa Rica								5H3DX										
5N9DTG												PI2/NF9V																			
																TY2AA															
DP1POL																				VK9XU											
												V73WW																			
FY/F4GPK																FS/VA3QSL															
C5SP																															
				VP2ECV																											
ZS7ANF																															
YS3CW																															
PI7/VA3QSL																															
												T04A																			
ZF2PG																															
												H44MS																			
TY5C																															
IG8NQJ/ID1																															
I52EC																															
ET4YM																															
RI1ANE																															

Click any link above for details on the expedition

FEATURED DX: V73WW MAJURO

V73WW Team will be active from Majuro Atoll, IOTA OC - 029, Marshall Islands, 12 - 24 February 2025.

Team - DK6SP, DJ4MX, HA8RT, M0SDV, E77DX, DK1YH.

They will operate on 160 - 6m Bands, CW, SSB, FT8, RTTY, including activity in ARRL DX CW Contest, 15 - 16 February 2025.

QSL via DJ4MX, ClubLog OQRS, LOTW.

Ads for direct QSL: Sven Lovric, Kampenwandstr. 13, 81671, Muenchen, Germany.

Planned freqs:

Band	CW	SSB	FT8	TRRY
160	1.818	1,850	1.840	-
80	5.503	3.790	3.570	-
40	7.025	7.170	7.056	-
30	10.105	-	10.131	10.146
20	14.025	14.260	14.084	14.088
17	18.070	18.150	18.096	18.102
15	21.025	21.300	21.091	-
12	24.892	24.940	24.923	-
10	28.005	28.555	28.091	-
6	50.095	50.150	50.313	-

Marshall Islands: sights, local cuisine and more



The Marshall Islands is a state in the Pacific Ocean, which is appreciated by tourists for its incredibly beautiful underwater world. Divers from all over the globe are eager to visit these islands, where they will enjoy sparkling beaches and mysterious reefs.

The islands are home to unusual vegetation and plantations of rare crops, of which coconuts and papaya are particularly significant. The Marshallese, the indigenous people of the Republic, are a distinct ethnic group. The country's distinct culture has been influenced by the constant change of rulers, who have been British, Russian, Japanese and American.



Majuro. Is the capital of the state. Due to very low tourist interest, there is almost no infrastructure here. There are only a couple of hotels in the main town, and there are no decent restaurants. However, this is both a bit of a highlight. Walking the empty streets and buying inexpensive handmade souvenirs immerses you in the unique atmosphere of the Marshall Islands. For tourists who are interested in the historical past, there is the Alele Museum.

The climatic characteristics of the region determine its weather. Although the region has a distinctly tropical climate, weather conditions are heavily influenced by cool sea breezes and frequent rainfall.

When travelling to the Marshall Islands, you should pack a summer closet that consists of lightweight clothing made from natural materials. Umbrellas, raincoats and waterproof clothing are also essential.

Cuisine of the Marshall Islands

The cuisine of the Marshall Islands has been heavily influenced by China, Korea, Japan, India, Germany and Spain. The cuisine of the local people is based on fish and seafood, and most often crab, lobster and squid are used for dishes.

Dishes that are always recommended to taste tourists are fish baked in banana leaves, Indian-style chicken, as well as barbecue limas, which is a representative of few meat dishes. The meal ends with desserts, which are usually made of coconut. The thirst is quenched here with juices and coconut milk, as well as drinking coffee. Alcohol is not openly drunk, and some islands prohibit its sale.

The most comfortable way to explore the Marshall Islands is by water transportation. Of course, if you spend your vacation only on one island, local buses and cabs will be enough. Since the islands are small, it is always possible to walk or ride bicycles.

Payments on the islands is done in US dollars. Prices are approximately as follows: a meal in a cheap restaurant costs about 7 dollars, and for a cup of cappuccino you will be charged about 2 dollars. A large bottle of water in the stores costs about 2 dollars and a bottle of wine about 24 dollars. When traveling by cab, a fare of about \$1 per kilometre is used.

Sea and beaches

Like the rest of the islands, the resort beaches are private areas with limited access, although in most cases the hotel management will go out of their way to let you onto the beach for a nominal fee. Also, paid permission or a simple verbal agreement is sometimes necessary to use when you need to visit community beaches, paths, coastal areas and some other places, so you should contact hotel staff or the islanders themselves to find out about such things.

Useful information:

- Marshallese or English can be used to make arrangements with someone in the Marshall Islands
- The Marshall Islands is in the UTC+12 time zone.

V73WW. Where is Majuro Atoll located. Map.

V73WW Majuro. Sunrise 02-02-2025 at 18:52 GMT sunset at 06:44 GMT



UPCOMING CONTESTS

February 2025

Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish		Bands	Contest Name	Mode	Exchange	Sponsor's Website
Date-Time	Date-Time					
1 0000	2 2059	3.5-28	LABRE-RS Digi Contest	Dig	4-char grid square	labre-rs.org.br
1 0000	2 2359	1.8-28,VHF/UHF	Vermont QSO Party	CW Ph Dig	RS(T), VT county or SPC	www.ranv.org/vtqso.html
1 0001	2 2359	28	10-10 Int'l Winter Contest, SSB	Ph	Name, mbr or "0," SPC	www.ten-ten.org
1 1200	2 1200	1.8-28	European Union DX Contest	CW Ph	RS(T), EU union region or ITU zone	www.eudx-contest.com
1 1200	2 1200	3.5-28,144	F9AA Cup, CW	CW	RST, serial	www.site.urc.asso.fr
1 1200	2 2359	3.5-28	Mexico RTTY International Contest	Dig	RST, XE state or serial	rtty.fmre.mx
1 1400	2 2359	1.8-28	Minnesota QSO Party	CW Ph Dig	Name, MN county or SPC	www.w0aa.org/mnqp-rules
1 1400	2 2359	1.8-28	FYBO Winter QRP Sprint	CW Ph Dig	RS(T), SPC, name, power, temperature	azscqrptions.org
1 1600	2 1900	3.5	AGCW Straight Key Party	CW	RST, serial, class, name, age	www.agcw.de
1 1600	2 2359	1.8-28	British Columbia QSO Party	CW Ph	RS(T), BC district or SPC	www.orcadxccc.org
3 2000	3 2130	3.5	RSGB 80m Club Championship, SSB	Ph	RS, serial	www.rsgbcc.org
4 0100	4 0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	ars-qrp.com
5 2000	5 2100	3.5	UKEICC 80m Contest	Ph	6-char grid square	www.ukicc.com
6 0000	7 0300	7	Walk for the Bacon QRP Contest	CW	Max 13 WPM; RST, SPC, name, mbr or pwr	qrpcontest.com/pigwalk40
6 1800	6 2200	28	NRAU 10m Activity Contest	CW Ph Dig	RS(T), 6-char grid square	nrau.net
6 2000	6 2200	1.8-28,50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
8 0000	9 2359	3.5-28	CQ WW RTTY WPX Contest	Dig	RST, serial	www.cqwxprtty.com
8 1100	8 1300	7,14	Asia-Pacific Spring Sprint, CW	CW	RST, serial	jsfc.org/apsprint/aprule.txt
8 1200	9 1200	1.8	KCJ Topband Contest	CW	RST, JA prefecture or district code	www.kcj-cw.com
8 1200	9 1200	1.8-28	Dutch PACC Contest	CW Ph	RS(T), PA province or serial	pacc.veron.nl
8 1200	9 2359	1.8-28,50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
8 1500	9 1500	1.8-28	OMISS QSO Party	Ph	RS, SPC, mbr (if any)	www.omiss.net
8 1900	8 2359	1.8	WAB 1.8 MHz Phone	CW Ph	RS, serial or country	wab.intermip.net/Top Band Phone.php
8 2000	8 2300	1.8	RSGB 1.8 MHz Contest	CW	RST, serial, UK district code (if UK)	www.rsgbcc.org
9 1300	9 1700	3.5,7	Balkan HF Contest	CW Ph	RS(T), serial	www.bfra.bg
10 0100	10 0300	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
11 1900	11 2029	3.5	DARC FT4 Contest	Dig	RST, 4-char grid square	www.darc.de
12 0130	12 0330	1.8	NAQCC CW Sprint	CW	RST, SPC, mbr or pwr	naqcc.info/sprint_rules.html
12 2000	12 2130	3.5	RSGB 80m Club Championship, Data	Dig	RST, serial	www.rsgbcc.org
14 0000	14 2359	1.8-7	PODXS 070 Club Valentine Sprint	Dig	Name, OM or YL, SPC	www.podxs070.com
15 0000	16 2359	All, no WARC	YLRL YL-OM Contest	CW Ph Dig	Serial, RS(T), SPC	ylrl.org
15 1200	16 1159	1.8-28	Russian PSK WW Contest	Dig	RST, 2-letter oblast or serial	www.rdrclub.ru
15 1900	15 2059	1.8-28	Feld Hell Sprint	Dig	See rules	sites.google.com/site/feldhellclub
16 2300	17 0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
19 1900	19 2030	3.5,7	AGCW Semi-Automatic Key Evening	CW	RST, serial, 2-digit year first used a bug	www.agcw.de
20 0000	21 0300	14	Walk for the Bacon QRP Contest	CW	Max 13 WPM; RST, SPC, name, mbr or pwr	qrpcontest.com/pigwalk20
20 1900	20 2000	3.5-14	NTC QSO Party	CW	Max 25 WPM; RST, mbr or "NM"	pi4ntc.nl/ntcqp
20 2000	20 2130	3.5	RSGB 80m Club Championship, CW	CW	RST, serial	www.rsgbcc.org
21 2200	23 2200	1.8	CQ 160-Meter Contest, SSB	Ph	RS, SP or CQ zone	www.cq160.com
22 0600	23 1800	3.5-28	REF Contest, SSB	Ph	RS, French department or serial	concours.r-e-f.org
22 1300	23 1300	3.5-28	UBA DX Contest, CW	CW	RST, ON section or serial	www.uba.be
22 1500	23 0159	1.8-28,50	South Carolina QSO Party	CW Ph Dig	RS(T), SC county or SPC	scqso.com
22 1800	23 0559	3.5-28	NA Collegiate Championship, RTTY	Dig	Name, SPC+DC	www.w9smc.com
23 0000	23 2359	3.5-28	World Wide Patagonia DX Contest	CW Ph	RS(T), 4-char grid square	wwpatagonia-arg-dx.com.ar
23 1400	23 1700	3.5-28	High Speed Club CW Contest	CW	RST, mbr or "NM"	www.highspeedclub.org
23 1500	24 0100	3.5-28,50,144	North Carolina QSO Party	CW Ph Dig	NC county or SPC	ncqsoparty.org/rules
24 2000	24 2200	3.5-28	RSGB FT4 Contest	Dig	Signal report	www.rsgbcc.org
26 0000	26 0200	1.8-28,50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
26 2000	26 2100	3.5	UKEICC 80m Contest	CW	6-char grid square	www.ukicc.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 MEMORIAL FIELD DAY

SATURDAY/SUNDAY 22ND & 23RD FEBRUARY 2025

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 aim is 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.

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

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.

Field station shelters may be one or more tents sited within 40 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. If a branch wishes to operate a field station at their clubrooms location, the above still applies. i.e. the radios must be set up and operated outside the clubrooms in temporary shelter.

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. E.g. Hills, trees, towers, buildings etc.

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

The Papakura team will be operating from outside the Clubrooms (Wellington Park Grounds) and interested persons are invited to join us, even if only for a short period of the contest

If you're interested, please communicate with either Gavin ZL1NUX or David ZL1DK to discuss your availability.

OVER 35,000 NON-COMPLIANT RADIO PRODUCT LISTINGS REMOVED FROM ONLINE MARKETPLACES

Press Release: Ministry of Business Innovation and Employment

- MBIE's Radio Spectrum Management team has successfully removed over 35,000 non-compliant radio product listings from online marketplaces.
- Individual consumers and essential services have greater protection from potential interference.

The Radio Spectrum Management (RSM) team at the Ministry of Business, Innovation and Employment (MBIE) has been partnering with major online marketplaces to ensure that prohibited and non-compliant radio devices are not available for purchase in New Zealand. Using techniques like geo-blocking, RSM has successfully removed over 35,000 non-compliant product listings from online platforms during the financial year from 1 July 2023 to 30 June 2024.

“With the increasing ease of purchasing products via global online platforms like eBay, Facebook, Amazon, Trade Me, Alibaba and AliExpress, New Zealand consumers are often unaware of the risks associated with buying non-compliant radio products,” says RSM National Manager Claire Smollett. “These products can operate on licensed channels, causing interference with critical communication systems, such as those used on aircraft and by ambulances.”

“It's important New Zealanders are aware of their responsibility when purchasing radios on overseas sites. Non-compliant devices could lead to interference and potentially hefty penalties,” says Ms Smollett.

“There was an incident last year when we identified an interference issue with OneNZ's network that we managed to track back to a baby monitor purchased through an e-commerce marketplace.

“The device was emitting signals that disrupted local communications services, which led to us having to request the owner to stop using it.

“This is an example of how everyday devices can cause disruptions if they don't meet local compliance standards. By working to remove such products, RSM is giving consumers the trust that what they buy online will not disrupt vital communication systems.”

RSM recommends consumers look out for the following when purchasing radio devices:

- A New Zealand compliance mark – either the Regulatory Compliance Mark (RCM) or the R-NZ on wireless/radio transmitting devices, or other electronic devices.
- GPS or cellphone jammers – these are banned in New Zealand.
- Products that require a licence – some licences are free, and some you need to pay for. [Find out which licence you need | Radio Spectrum Management New Zealand](#)

Notes:

Non-compliant devices could lead to interference and potential penalties of up to \$30,000 for an individual, or \$200,000 for a body corporate.

Radio Spectrum Management (RSM) is a business unit within the Ministry of Business, Innovation and Employment (MBIE). RSM is responsible for managing radio spectrum in New Zealand which includes allocating rights for the use of the spectrum, enforcing compliance with licensing requirements, contributing to policy advice to government on radio spectrum, and administering the Radiocommunications Act 1989 and the Radiocommunications Regulations 2001.

RAMBLINGS FROM THE EDITOR'S DESK

As we enter the second quarter of the century, It's a good time to consider how much the world has changed. Its been a Quarter of both highs and lows, With a global Financial Meltdown, the Covid Virus, and the chaos of the reaction to it, increased political unrest, wars in Europe and the Middle East, and tensions rising in other parts of the world. The social divisions have never been wider, and nations have never been more divided. On the other side we have seen the rise of Artificial Intelligence (should I mention the decline of normal intelligence? .. Better not) and the connectedness of social networks. Technology has marched on relentlessly, and electrification of everything is becoming a norm, but generation is busy catching up, causing technology like Tidal, wind and Solar generation to flourish, New Space exploration technology and rockets are making space easier and cheaper to access, not to mention making facilities like Starlink available, Giving us internet access in even the most remote places.



While many of these do not affect our daily lives, the technology behind these is making its way into everyday equipment, the Internet of Things (IoT), means a modern radio is part internet appliance as well as part Software Defined Radio (SDR) and some radio too. It also means we are spoilt for choice when it comes to radios and features. We can do more, and at a lower cost than any other amateur in history.



But the question, I want to consider as we begin this second quarter is what makes a good radio club?

It's a great time to be a Ham, we have modes, Frequencies and equipment to spare and we can make projects that previous generations can only dream of, but we are struggling to fill our clubrooms, and meetings are often not well attended. Why is this?

What makes a good club? Fortunately its not a new question, and one that has been asked many times before. The opinion can be summarised as: A good radio club is one that is welcoming to newcomers, actively encourages participation from all skill levels, and offers a variety of activities including educational opportunities, technical projects, social events, and community outreach, while also providing a supportive environment for members to learn and share their passion for radio communication.



Key aspects of a good radio club:

- **Inclusive atmosphere:**
A club that actively welcomes new members, introduces them to the community, and makes them feel valued regardless of their experience level.
- **Diverse activities:**
A mix of technical workshops (antenna building, equipment repair), learning sessions (license preparation classes), social events (potlucks, field days), and community service opportunities (emergency communication support).
- **Active leadership:**
Dedicated leadership that plans engaging activities, promotes communication within the club, and ensures everyone has opportunities to contribute.
- **Mentorship and knowledge sharing:**
Experienced members are willing to share their expertise and guide newer members through the learning process.
- **Community engagement:**
Participation in local events, community radio projects, or volunteering for emergency communication needs.
- **Open communication:**
Clear communication channels, regular updates on club activities, and a transparent decision-making process.
- **Positive social environment:**
A respectful and supportive atmosphere where members feel comfortable sharing ideas and interacting with each other.

What to avoid in a radio club:

Exclusive cliques:

- A club where only a small group of experienced members are actively involved, excluding newcomers.
- Lack of structure:
- A club with no clear organisation, schedule, or goals for activities.
- Poor communication:
- Not keeping members updated on events, failing to address concerns, or not actively promoting the club.
- Discouraging environment:
- A club where members feel judged or criticised for their skill level or questions

Or to put it simply, Diversity. Amateur Radio operators are an incredibly diverse lot, we have many reasons for getting a license, and we all enjoy the hobby in ways that suit ourselves, or our lifestyle. Sadly the words diversity, and inclusivity have been hijacked by small groups to foster narrow interests, But these words do not belong to such narrow interpretations, they are simply seeing past the things that make us different and finding the things that are the same.



As we move into this year, I want to ask each member: Are we primarily driven by systems, processes, and procedures, or are we focused on enjoying our hobby and sharing that enjoyment with others who are equally interested in learning about it?

Clubs are easily captured by processes, as we are legally required to undertake certain actions, But when our compliance with a rule is excluding someone, then we may have to look at our method of compliance, and see if we can do it better.

Doing something just because we have always done it that way, or because it makes one persons life easier, is not always the best way to do things.

Amateur radio is about communication, and communication occurs between people, People all over the world, and with diverse backgrounds and views, and this should direct our club and its activities, So please make a point of talking to new people at every meeting, and if you're new to our club, feel free to say hello if we haven't noticed you yet.

You're all very welcome. Let's connect, In person and over the air. And don't be afraid to bring a friend either.

73 for now de ZL1NUX



AMERICANS SPLIT THE ATOM?

At President Trump's inauguration he made a passing comment on American innovation that set off a storm of controversy, But should it have? Who did split the atom? Was it really Earnest Rutherford? Did it happen in Nelson?

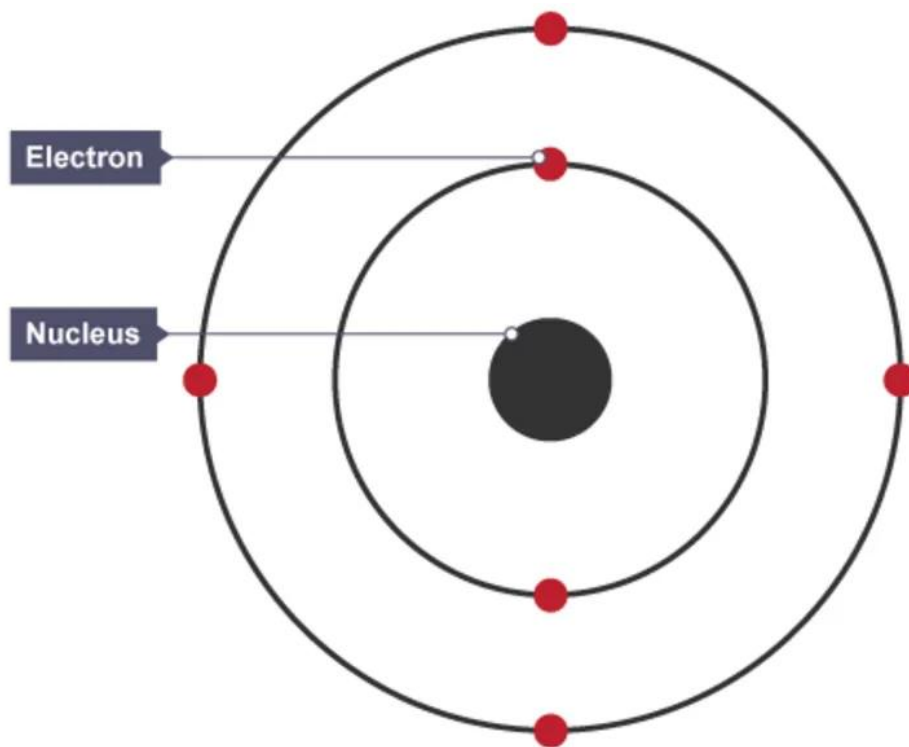
As with much science stuff, The truth may get a little murky. But when has that ever stopped mem, So let's jump on in.

The problem is actually in the term Splitting the Atom.

What is an atom?

Atoms are the building blocks of all matter and are made up of a nucleus and a number of orbiting electrons.

Originally proposed in Ancient Greek philosophy, they were originally thought to be the most minute particle in existence, with their name being derived from the Ancient Greek word for indivisible.



In 1803, John Dalton's atomic theory brought them into scientific view, but the Manchester scientist was clear that he agreed with the Ancient Greeks and believed they could not be broken into simpler, smaller particles.

Almost a century later, Joseph John Thomson, a fellow Mancunian working the University of Cambridge in 1897, discovered the electron, proving that the atom had smaller constituent parts.

That opened the door to subatomic hypotheses and experimentation.

What did Rutherford do?

Rutherford made a series of discoveries about the nature of atoms and, working with colleagues Hans Geiger and Ernest Marsden, presented a planetary model of the atom in 1911.

In it, he laid out how atoms have a central, positively charged nucleus with electrons orbiting like planets around a star.

Later, he and his team conducted experiments in Manchester between 1914 and 1919, which have been described as being the first to "split the atom".

He blasted beams of radioactive particles into nitrogen gas, which changed into oxygen while "spitting out" a hydrogen nucleus. Rutherford himself did not use the term splitting, referring instead to "disintegration".

Writing in December 1917, he said he believed his experiments would "ultimately prove of great importance" and would "throw a good deal of light on the character and distribution of forces near the nucleus".

"I am also trying to break up the atom by this method," he added.

"In one case, the results look promising but a great deal of work will be required to make sure."

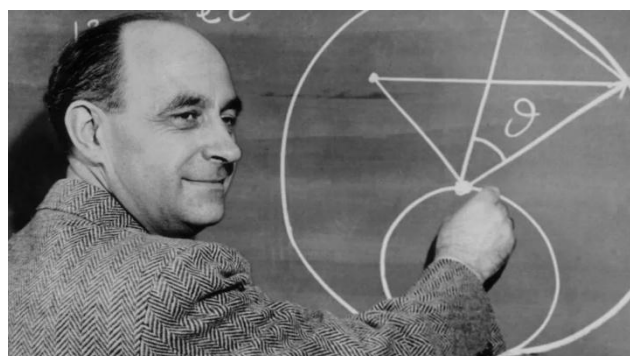
Why might US scientists have a claim?

Many people's understanding of atomic science is filtered through the lens of the top secret Manhattan Project, particularly since the Oscar-winning film about one of its most prominent figures, J. Robert Oppenheimer.

The US's research and development project was set up in 1942 with the aim of producing the first nuclear weapons which would harness atomic power. While it was headquartered and funded in the US, the project was made up of scientists from across the world who collaborated across national boundaries.

Among those recruited by Oppenheimer to join the team was Italian physicist Enrico Fermi. – Best known for his Famous Question – Where are all the aliens? – Now Called the Fermi Paradox.

It has been claimed he was first to split the atom during experiments in Rome in 1934, when he broke a nucleus into two or more smaller parts.



German chemists Otto Hahn, a former student of Rutherford's, and Fritz Strassmann, repeated his experiments over the next four years and by 1938, realised what Fermi had discovered was nuclear fission.

Fission sees the nucleus of unstable elements like uranium and plutonium split to release lots of energy.

Fermi fled Italy in 1939 and after arriving in Chicago, he built the first nuclear reactor, which induced and controlled a nuclear chain reaction, causing uranium atoms to continually split.

These, and the earlier efforts of Rutherford, laid the groundwork for the creation of atomic weapons, which harnessed the process of nuclear fission to devastating effect.

Regardless of who was first to split the atom, the work of Rutherford, Walton, Cockcroft, Oppenheimer, Fermi, Geiger, Marsden and a host of other scientific pioneers paved the way for the nuclear age and the biggest science experiment in world history.

And not just Nuclear weapons, as the ability to smash atoms together has allowed us to look deep inside the nucleus, to find smaller and more exotic particles.

So perhaps, we might be best to let the comment go, after all, It's not a Pavlova.

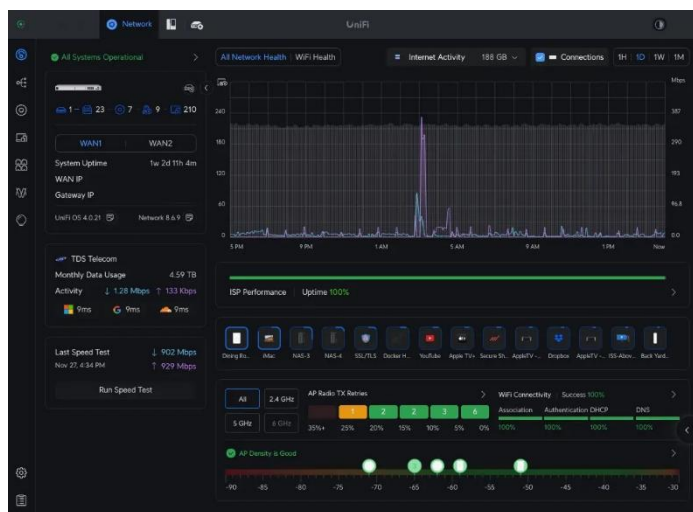


LET'S NOT FORGET AREDN

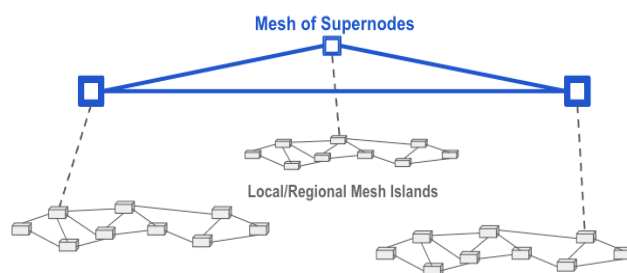
Amateur Radio Emergency Data Network (AREDN) provides high-speed Mesh Networking and related services using Amateur radio links in the 900 MHz UHF and several microwave bands (including 2.4GHz and 5.6GHz Bands. AREDN networks are built using commercial data networking equipment and RF data linking gear, which runs software provided by the AREDN development team. The hardware uses inexpensive routers and RF linking nodes from several vendors, including MikroTik and Ubiquity. The AREDN system is well-documented, and it is not hard to get started.

Both AREDN networks and Meshtastic create private networks that become stronger and more resilient as they grow in size. However, unlike Meshtastic, which is limited to text messaging, IP based AREDN networks can support a wide range of internet services, such as messaging, Email, File sharing, Websites and Voice over Internet Protocol (VoIP) services

Setting up an network requires a router to connect the IP networks, and of course the Wi-Fi based radio system such as a ubiquity network. In most cases configuring the networking hardware can be done with a web interface.



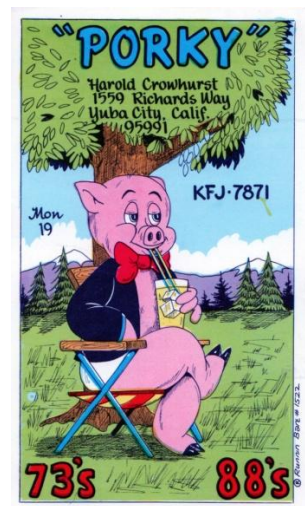
Compared to Meshtastic, AREDN is not a simple plug and play task, but if set up correctly and configured well, you can do a lot.



And it may be possible to get the old Auckland network back up and running, with all of the

nodes connected.

We once had a working network in Papakura, but over time it's fallen into disarray, Perhaps it is time to get it back running again



DEEPSEEK IS CONFUSING EVERYONE. WHY IS IT SO DIFFERENT?

DeepSeek, the new "it girl" in GenAI, was trained at a fractional cost of existing offerings, and as such has sparked competitive alarm across Silicon Valley. This has led to claims of intellectual property theft from OpenAI, and the loss of billions in market cap for AI chipmaker Nvidia. Naturally, security researchers have begun scrutinising DeepSeek as well, analysing if what's under the hood is beneficent or evil, or a mix of both. And analysts at Wallarm just made significant progress on this front by jailbreaking it.

The above paragraph, taken verbatim from a syndicated press feed, has been repeated without alteration in many news feeds, But it is fair?

Let's evaluate the key comments.

1. Is deekseek so popular? Well, in part yes. Unlike GPT Chat, Claude, Gemini, Dall-E Jasper AI, otter.AI ... or many of the others, you don't need a token to use it, It's free as in Beer. But It's also free as in, the entire source code is open source, You can read the code line by line if you're interested, You can even make your own project based on it. So unlike the closed source models, you know exactly what it won't do

But Many commercial users have already inked deals with AI companies to be able to use the AI, without the risk of their confidential data being used by the AI outside the company, or having other users get access to it. So we have yet to see its commercial impact (Microsoft have already adopted DeekSeek into its Windows OS.)

2. Was Trained at a Fractional Cost. This is sort of true and for a couple of reasons.
 - It is Chinese-trained, which to some makes it bad, but it has been trained by a country known for low-cost work, and willingness to do what it takes without much concern about political correctness. In short it lacks some of the moral guidelines (Censorship) of other AIs possess, so you may not get "responses that align with modern politically correct thinking. (However the lack of ability to answer questions about Chinese politics, such as Tieman square has been noted)
 - It was developed after a lot of AI training had already been done, so there were many ways to shorten the training process. And many other language model were available to use to jump start the process. But remember this is only training, not the Billions spent on the Server Hardware
3. "This has led to claims of intellectual property theft" This one made me laugh out loud, Given the current lawsuits against Open AI (GPT Chat) which was trained, without consent or remuneration, on copyrighted works. But suddenly, after arguing that copyright law allowed this training, they suddenly feel it now does. So far no proof of this has surfaced, despite researchers, who managed to convince the AI that it was GPT Chat, however, Training an Ai to say something, does not prove it's a clone, or that it was trained using another commercial AI.
4. Researchers Jailbroke DeepSeek. Sadly, no-one knows what jailbreaking an open-source AI is, and Wallarm who opened the security hole, advised DeepSeek, who have patched the code issue. By breaking its controls, the researchers were able to extract DeepSeek's entire system prompt, word for word. And for a sense of how its character

compares to other popular models, it fed that text into OpenAI's GPT-4o and asked it to do a comparison. Overall, GPT-4o claimed to be less restrictive and more creative when it comes to potentially sensitive content.

So next Time Open AI creates a picture of World War 2 Nazi Officers, Including Jewish, Black and Female officers, I'll know it's just being Open and Creative, just not accurate. Yep, I can't see any possible problem with an AI evaluating a competing AI.

But given the "All things from China are evil mindset, I'm sure many countries will try to ban it anyway. But what about derived works, like Microsoft copilot PCs, after all, it is already built into Azure, and soon Windows 11. Will they be forced to remove it?



DeepSeek has had a whirlwind ride since its worldwide release on Jan. 15. In two weeks on the market, it reached 2 million downloads. Its popularity, capabilities, and low cost of development triggered a conniption in Silicon Valley, and panic on Wall Street. It contributed to a 3.4% drop in the Nasdaq Composite on Jan. 27, led by a \$600 billion wipeout in Nvidia stock — the largest single-day decline for any company in market history.

Then, right on cue, given its suddenly high profile, DeepSeek suffered a wave of distributed denial of service (DDoS) traffic. Chinese cybersecurity firm XLab found that the attacks began back on Jan. 3, and originated from thousands of IP addresses spread across the US, Singapore, the Netherlands, Germany, and China itself.

On Jan. 28, while fending off cyberattacks, the company released an upgraded Pro version of its AI model. The following day, Wiz researchers discovered a DeepSeek database exposing chat histories, secret keys, application programming interface (API) secrets, and more on the open Web.

Elsewhere on Jan. 31, Enkrypt AI published findings that reveal deeper, meaningful issues with DeepSeek's outputs. Following its testing, it deemed the Chinese chatbot three times more biased than Claude-3 Opus, four times more toxic than GPT-4o, and 11 times as likely to generate harmful outputs as OpenAI's O1. It's also more inclined than most to generate insecure code, and produce dangerous information pertaining to chemical, biological, radiological, and nuclear agents.

Yet despite its shortcomings, It's an engineering marvel, the fact that it's open source also speaks highly. They want the community to contribute, and be able to utilise these innovations. I think that's why a lot of closed-source model providers are sort of scared.

At the end of the day there are worse models than deepseek to try, and its free if you want to use it.

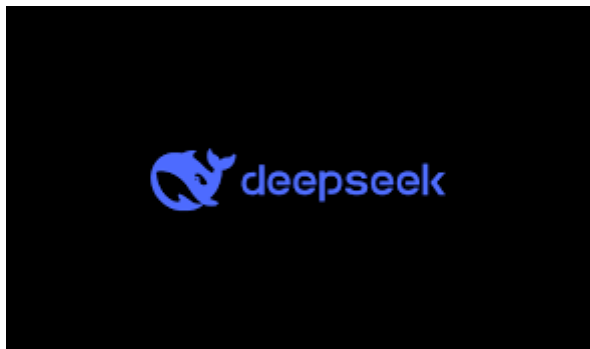
And I'll let Deepseek have the final word as to why an amateur might want to give it a try.

A ham radio operator might find DeepSeek AI useful for several reasons, depending on the specific capabilities of the AI. Here are some potential use cases:

1. **Signal Processing and Analysis:** DeepSeek AI could assist in analysing and processing radio signals, helping operators identify weak signals, filter out noise, or decode complex modulation schemes.
2. **Automated Monitoring:** The AI could be used to monitor specific frequencies or bands continuously, alerting the operator to interesting or important transmissions, such as emergency signals or rare DX (long-distance) contacts.
3. **Language Translation:** For operators communicating with international stations, DeepSeek AI could provide real-time translation of conversations, making it easier to communicate across language barriers.
4. **Logging and Data Management:** The AI could automate the logging of contacts, including details like call signs, frequencies, and signal reports, making it easier to manage and search through logs.
5. **Antenna Optimization:** DeepSeek AI could assist in optimizing antenna configurations by analysing signal strength and quality, suggesting adjustments to improve performance.
6. **Emergency Communication:** In emergency situations, the AI could help prioritize and manage communications, ensuring that critical messages are transmitted and received efficiently.
7. **Learning and Training:** For new operators, DeepSeek AI could serve as a training tool, providing guidance on operating procedures, regulations, and best practices.

8. **Predictive Analysis:** The AI could analyse propagation conditions and predict the best times and frequencies for making contacts, based on current solar and atmospheric conditions
9. **Digital Mode Assistance:** For operators using digital modes like FT8, PSK31, or RTTY, DeepSeek AI could assist in encoding and decoding messages, managing contacts, and troubleshooting issues.
10. **Community Engagement:** The AI could help operators connect with other hams by suggesting local clubs, events, or nets (scheduled on-air meetings) based on their interests and location.

Overall, DeepSeek AI could enhance the ham radio experience by automating routine tasks, providing advanced analytical capabilities, and facilitating communication and learning.



Is DeepSeek AI safe to use?

DeepSeek AI, like any AI system, is designed with safety and ethical considerations in mind. However, whether it is "safe" to use depends on several factors, including how it is implemented, the specific use case, and the precautions taken by the user. Here are some key points to consider regarding the safety of using DeepSeek AI:

-
- **1. Data Privacy and Security**
 - **Data Handling:** Ensure that DeepSeek AI adheres to strict data privacy standards. If the AI processes sensitive information (e.g., personal details, location data, or communication logs), it should use encryption and comply with data protection regulations like GDPR or CCPA.
 - **User Control:** Users should have control over what data is shared with the AI and how it is stored or used.
-
- **2. Ethical Use**
 - **Bias and Fairness:** Like all AI systems, DeepSeek AI may have biases based on its training data. Users should be aware of potential biases and ensure the AI is used fairly and responsibly.
 - **Transparency:** The AI's decision-making process should be transparent, especially in critical applications like emergency communications or signal analysis.
-
- **3. Reliability**
 - **Accuracy:** DeepSeek AI should provide accurate and reliable results, particularly in time-sensitive or critical situations (e.g., emergency communications).
-

- **Error Handling:** The system should have mechanisms to handle errors gracefully and alert users when something goes wrong.
-

- **4. Compliance with Regulations**

- **Ham Radio Rules:** Ham radio operators must comply with regulations set by organisations like the FCC (in the U.S.) or Ofcom (in the U.K.). Ensure that using DeepSeek AI does not violate any rules, such as unauthorised automation of transmissions or interference with other communications.
 - **AI-Specific Regulations:** Depending on your region, there may be specific regulations governing the use of AI systems, especially in communication technologies.
-

- **5. Cybersecurity**

- **Vulnerabilities:** Ensure that the AI system is secure from cyber threats, such as hacking or unauthorised access. This is especially important if the AI is connected to the internet or other networks.
 - **Updates and Patches:** Regular updates should be provided to address security vulnerabilities and improve functionality.
-

- **6. User Responsibility**

- **Proper Training:** Users should understand how to use DeepSeek AI correctly and responsibly. Misuse of the system could lead to unintended consequences.
 - **Monitoring:** Even with AI assistance, operators should remain vigilant and not rely solely on the AI for critical tasks.
-

- **Conclusion**

DeepSeek AI can be safe to use if it is designed with robust security and ethical practices, and if users take appropriate precautions. Before integrating it into your ham radio operations, consider the following:

- Review the AI's privacy policy and terms of use.
- Test the system in non-critical scenarios to ensure reliability.
- Stay informed about updates and best practices for using AI in communication systems.

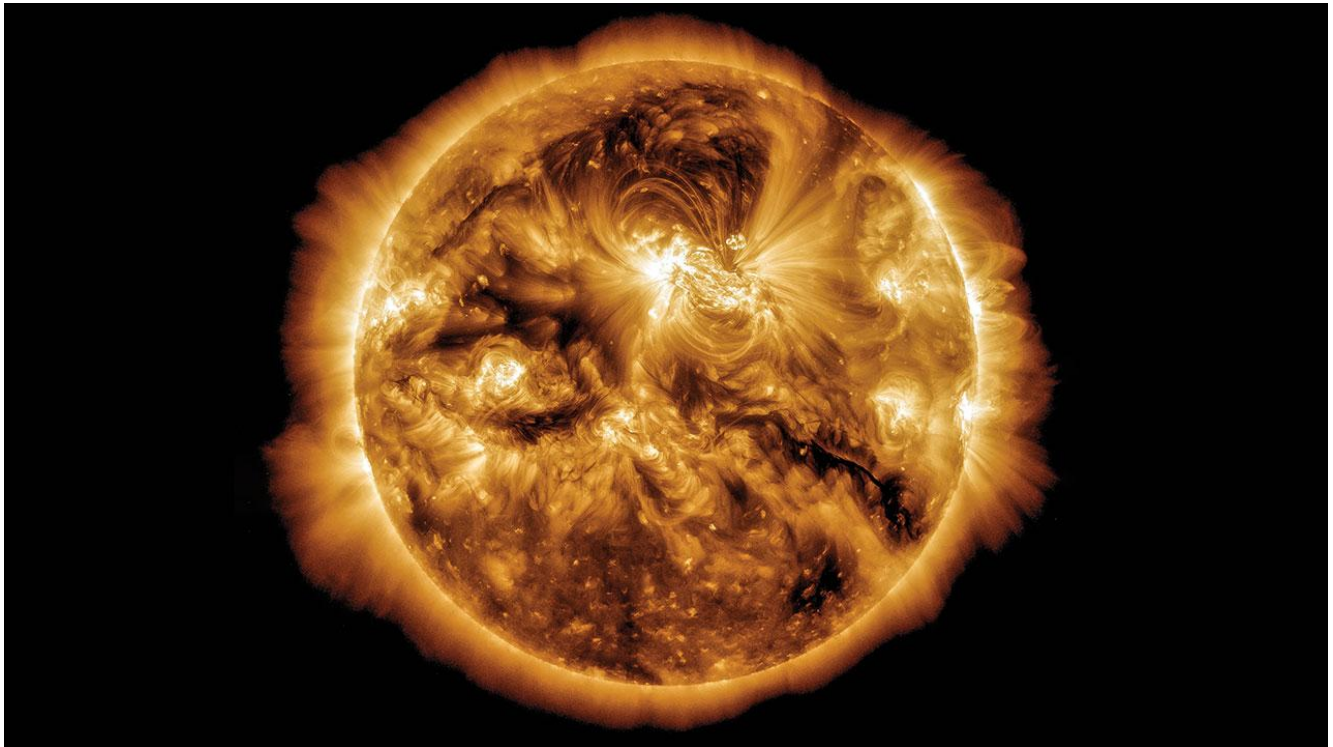
The logo for DeepSeek, featuring the word "deepseek" in a blue, lowercase, sans-serif font.The tagline "Into the unknown" in a dark blue, bold, sans-serif font, positioned below the logo.

If DeepSeek AI is used responsibly and in compliance with regulations, it can be a valuable tool for enhancing ham radio operations. However, always prioritize safety, privacy, and ethical considerations.

WHY IS THE SUN BEHAVING SO BADLY?

If you have been watching the solar flare activity, or using the HF bands, you will have experienced the sudden and dramatic effects of a very active sun.

It's uncertain right now if we are approaching, at or have already past solar maxim, the point at which the poles of the sun flip. The reason is that we can only tell after it's happened as the polarity of the sunspots change. Until then we are guessing. But what does this flip mean?



We are all aware—or should be—that the sun operates on an 11-year cycle. However, its magnetic cycle flips every 22 years, a phenomenon known as the Hale Cycle. This flip is not instantaneous; it typically takes an average of 1 to 2 years to complete, although the most recent flip took 5 years. The 22-year cycle coincides with the peak of the 11-year cycle, which can lead to tumultuous effects. For reasons we still don't fully understand, the sun tends to be significantly more chaotic after the peak of the 11-year cycle than before it. So, unless we have already passed the peak, we should prepare for more interesting developments.

The effect of this flip is:

- Increased solar activity, including more frequent and intense sunspots, solar flares, and coronal mass ejections (CMEs).
- The Sun's magnetic field becomes more chaotic and less dipolar (two-pole) during the transition.

For us, this means:

- Auroras: Increased solar activity can lead to more frequent and vivid auroras (Northern and Southern Lights) as charged particles interact with Earth's magnetosphere.
- Space Weather: The pole flip can contribute to stronger space weather events, which may affect satellites, communication systems, and power grids.
- Sudden Ionospheric Disturbances (SIDs): Solar flares release X-rays and ultraviolet radiation that ionize the lower layers of the ionosphere (D-layer), causing short-term HF radio blackouts on the sunlit side of the Earth.
- Radio Blackouts: Strong solar flares can completely disrupt HF communications for minutes to hours, especially on higher frequencies.
- Radiation Exposure: Astronauts and high-altitude flights may experience increased exposure to solar radiation during periods of heightened solar activity.
- CMEs and high-speed solar wind streams can trigger geomagnetic storms. These storms can:
 - Distort the Earth's magnetic field, causing ionospheric disturbances that degrade HF communications.
 - Lead to auroral activity, which can absorb HF signals and create a "radio blackout zone" at high latitudes.
 - Cause fading and signal distortion due to irregular ionospheric conditions.

So what can we do to improve HF comms?

1. **Monitor Space Weather:**
 - Use resources like NOAA's Space Weather Prediction Centre (SWPC), NASA, [Australian Space Weather Forecasting Centre](#) or ham radio networks to stay informed about solar activity, geomagnetic storms, and ionospheric conditions.
2. **Adjust Frequencies:**
 - Be prepared to switch to lower frequencies during disturbances or higher frequencies during periods of enhanced ionisation.
3. **Use Digital Modes:**
 - Digital modes like FT8, PSK31, or JT65 can be more effective during poor propagation conditions, as they are designed to work with weak signals.
4. **Antenna Optimization:**
 - Ensure your antenna system is optimised for the frequencies you plan to use. Directional antennas can help improve signal strength and reduce interference.
5. **Avoid High Latitudes:**
 - During geomagnetic storms, HF communications at high latitudes (near the auroral zones) may be severely disrupted. Focus on lower latitudes if possible.

Long-Term Outlook

While the solar maximum and magnetic pole flip can create challenges for HF radio operators, they also offer opportunities for enhanced long-distance communication due to increased ionisation. By staying informed and adapting to changing conditions, operators can continue to enjoy successful HF communications during this dynamic period.

HOW CAN A LOSSY WIRE ON THE GROUND WORK BETTER THAN A QUARTER WAVE VERTICAL ANTENNA?

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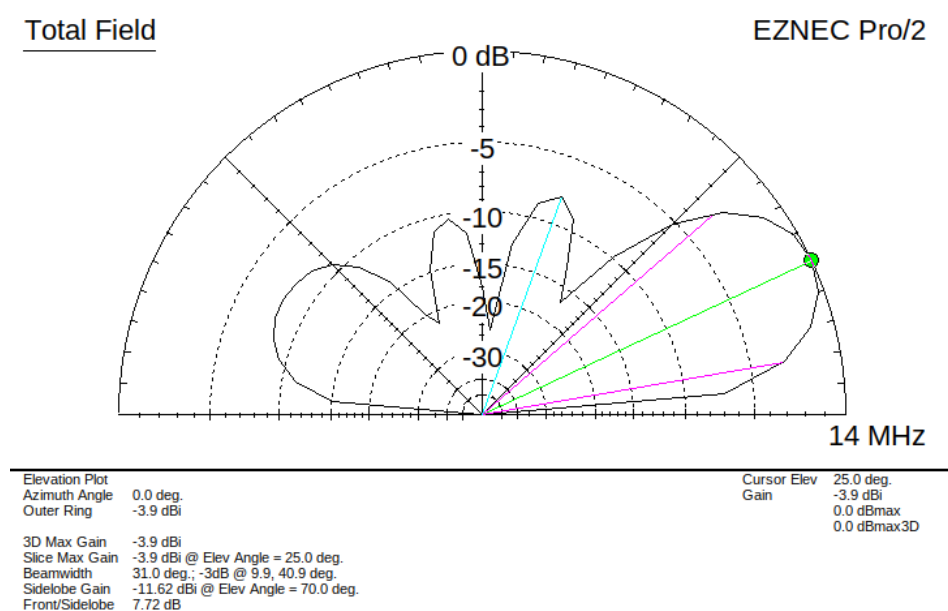
Let's get real here! If we lay a wire antenna on the ground, surely It can't radiate more power than that cool-looking, expensive quarter-wave whip you just spent a small fortune to buy? Well, yes it can – but with a few caveats.

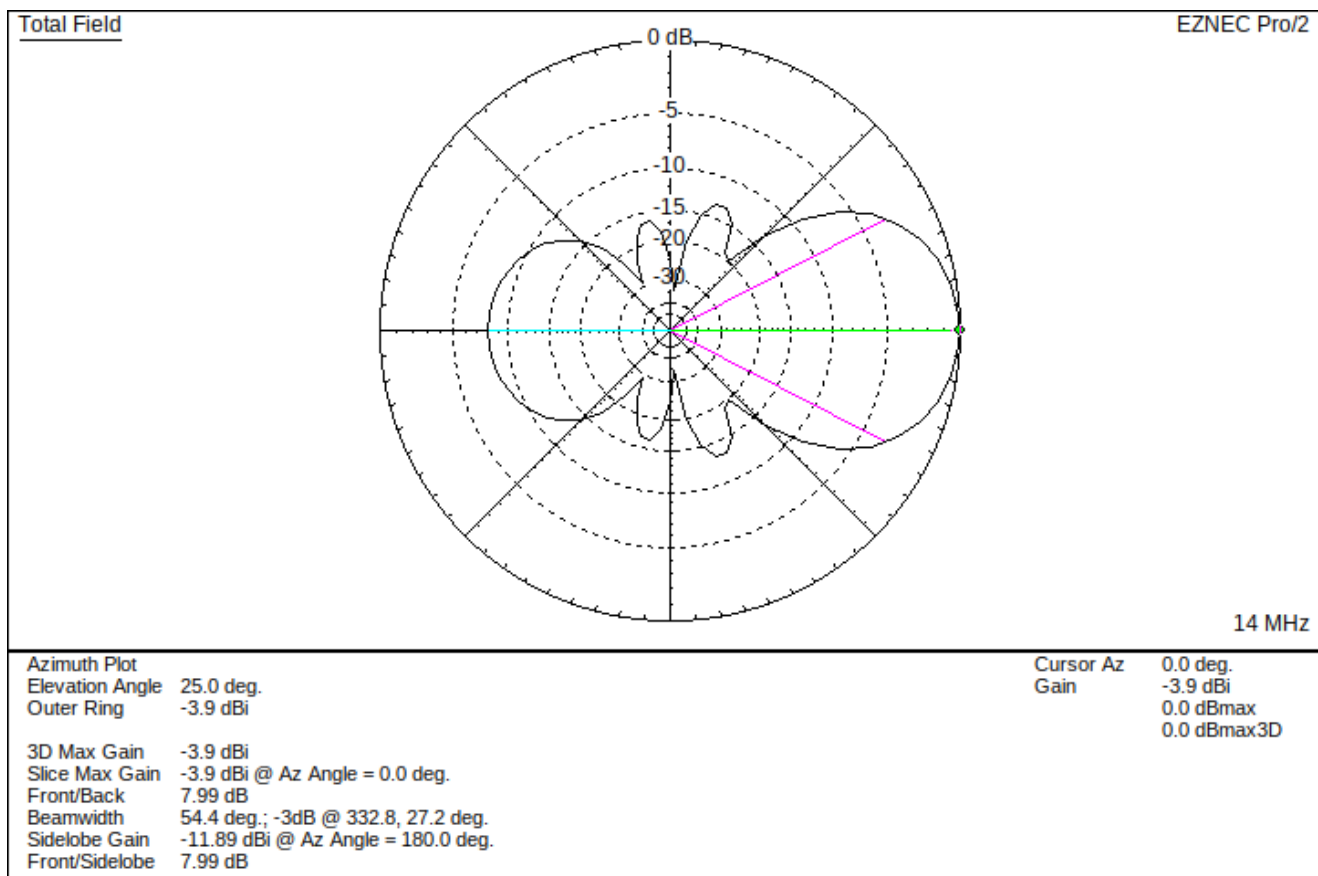
We can use a trick of geometry to support our claim. Our magic wire antenna has a footprint on the ground of only one square foot. The cool, costly ground-mounted whip has a footprint on the ground of only one square inch (ignoring the radial field). Bigger is better yes? Not convinced?

Okay, let's unravel the geometric trickery while still maintaining our original claim. You might picture one square foot as a small square with equal sides of one foot. Therein lies the trickery. If we take 144 feet of wire of 1/12 inch diameter and tightly wind it into a square with sides of one foot, we'll have a footprint on the ground of one square foot. Now let's unwind that wire and stretch it out in a straight line along the ground. It is now 144ft long and 1/12 inch wide which is still one square foot.

Enough of the mathematical sleight of hand; there is a much more convincing way of proving our point. Everybody knows that an antenna wire laid directly on the ground is lossy and, for once, everybody is right. But, only a few of us know how to take advantage of such a wire and make it a very useful antenna. I have personally enjoyed multiple QSOs with wires on the ground – despite the losses. I too was a skeptic until I actually tried it.

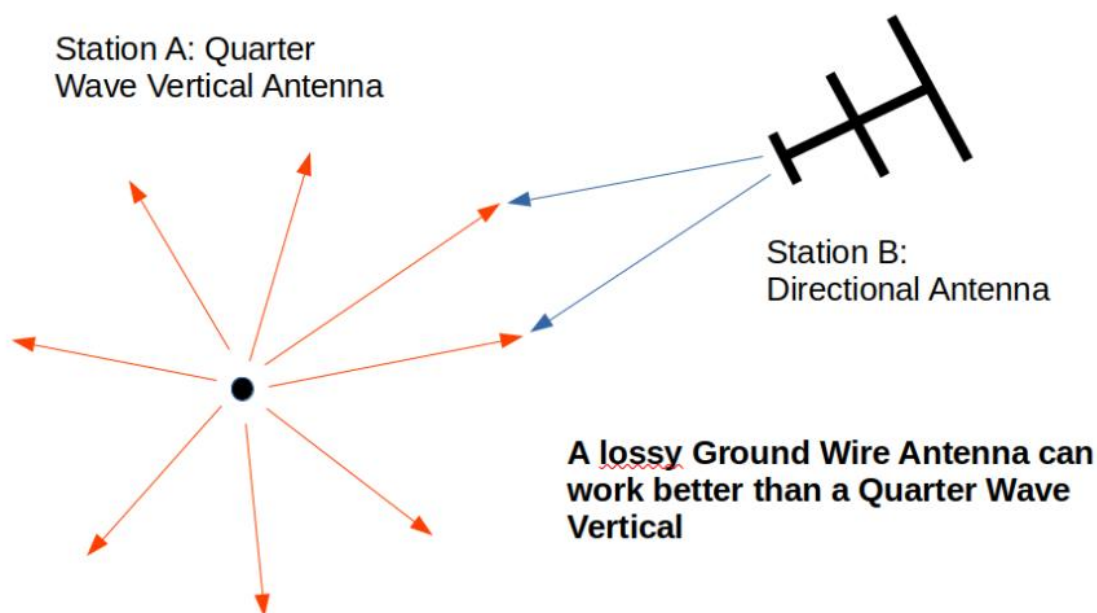
The theory of why it works has been covered in [previous posts on this blog](#). The secret is that the wire has to be at least one wavelength (and preferably multiple wavelengths) long. The radiation pattern is a directional beam with low elevation.





As we can see in the far field plots above, EZNEC predicts an elevation angle of 25 degrees and a beamwidth of 54 degrees. However, the antenna has a loss of 3.9dBi. If we allow for the fact that some signal is also radiated outside the main beam, let's treat that loss as, say, 5dBi.

Now compare that to our quarter-wave vertical for which we can estimate unity gain with a beamwidth of 360 degrees.



Now a clearer picture is beginning to emerge. If we calculate the RF energy within a beamwidth of 54 degrees for both antennas we can see how they compare. Let's say our transceiver puts out 100 watts (I can hear QRP diehards loading for bear here). The lossy wire on the ground will only radiate 30 watts. The quarter-wave vertical will radiate all 100 watts but spread over 360 degrees. Within the beamwidth of 54 degrees, the vertical will radiate only 15 watts!

Gadzooks! A reel of wire costs only a few bucks but can radiate twice as much power as a shiny whip costing significantly more? Date check: yes it's still January, not the first of April. Admittedly, this is a theoretical analysis lacking rigorous procedures for a proper engineering investigation. But, once again, I have personally made QSOs with more than one wire-on-the-ground antenna. Were my signal reports very poor? Absolutely not. This is not a spoof post, trust me.

There is another advantage of this wire-on-the-ground antenna when compared to a quarter-wave whip. Vertical antennas are generally considered to be susceptible to vertically-polarized noise. A wire on the ground is relatively immune to noise because of its inherent signal loss.

I don't recommend selling your shiny, expensive whip and replacing it with some wire strewn across your backyard. However, imagine the possibilities when operating out in the Big Blue Sky Shack. A long wire can be concealed in a ditch, or in tall grass. Store it on a fly-fishing reel, then when you have finished operating simply reel it back in. It is the ultimate stealth antenna which could also be useful in a HOA situation.

Editors Note:

*Re-printed from John's excellent **HamRadioOutsidetheBox** Blog, which I now intend to follow more closely.*

With my current interest in NVIS operation, and the need to be able to get an antenna that can operate when I'm parked in the motorhome, the lossy wire on the ground has been an antenna of interest to me offering both ground wave, and NVIS operation. I have every intention of trying this out.

If you beat me to it, Please let me know how it goes.



HEARD AROUND THE SCENES

FOR SALE

At the Clubroom this Wednesday, we will be clearing lots of parts, much will be on a simple offer basis, (All proceeds will support club funds) but one item that will be up for sale will be competitive offers. The item is a Diamond D130J Duper Discone Antenna. This antenna is an ultra-wideband antenna covering amateur radio, commercial 2-way, cellular, air traffic control and various utility frequency bands. Rust-free stainless steel is employed in major component parts

The antenna includes the coaxial cable fitted originally with an N connector.

Frequency coverage on RX 25 – 1400MHz and on TX 50 – 1200MHz

Max power 20W Max at 50MHz and 200W Max above 140MHz. (HF transmission is not permitted) *This is primarily a receive antenna.*

A new Unit from MFJ, would value at about \$250 from the US before freight, and Tecsun copies sell on trademe for \$190 each (also before freight)



TE PUKE AMATEUR RADIO CLUB INC. BRANCH 53 OF NZART MARKET DAY 2025 SATURDAY MARCH 8TH,

Paengaroa Community Hall
4 Old Coach Road, Paengaroa.

Venue opens for Vendors at 6.30am

Table Prices Pre-Sale 1.8 Table \$20.00 On The Day 1.8 Table \$25.00

Pre-Sale ½ Table \$12.00 On The Day ½ Table \$15.00

Sale time 9.30am

Door Charge \$2.00 per person.

Bank Account for Table Payment 03—0474—0030113—00 Use Your Call Sign As Reference.

For further information contact ZL1LWR Syd Rowe (07) 533 1029 or 027 248 8664,

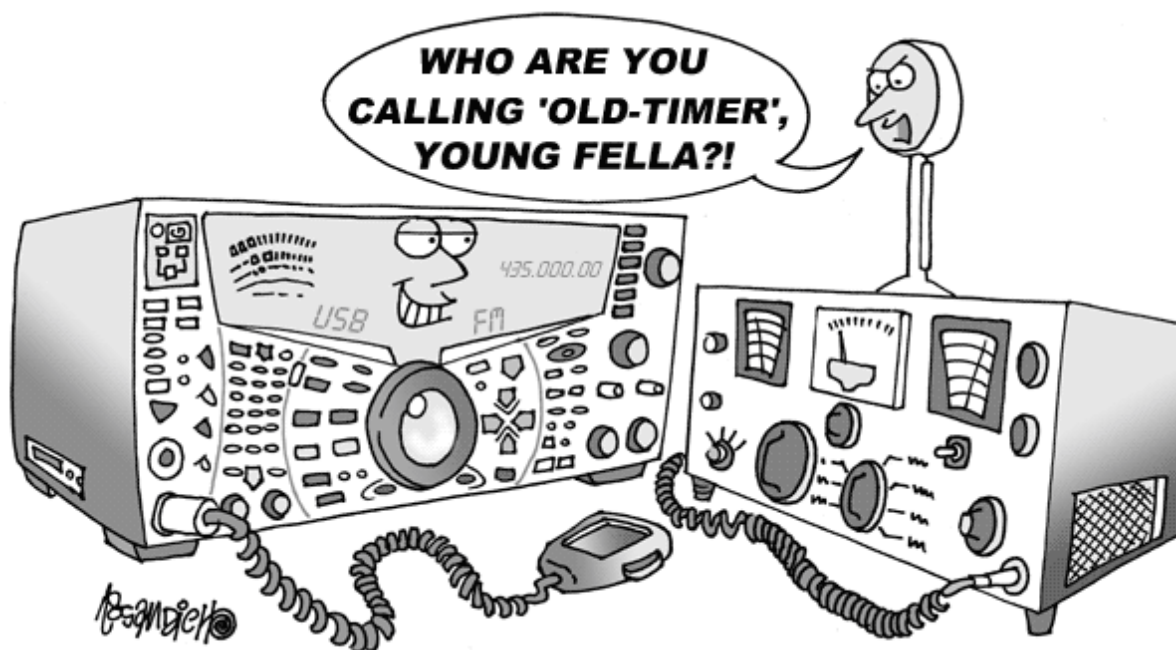
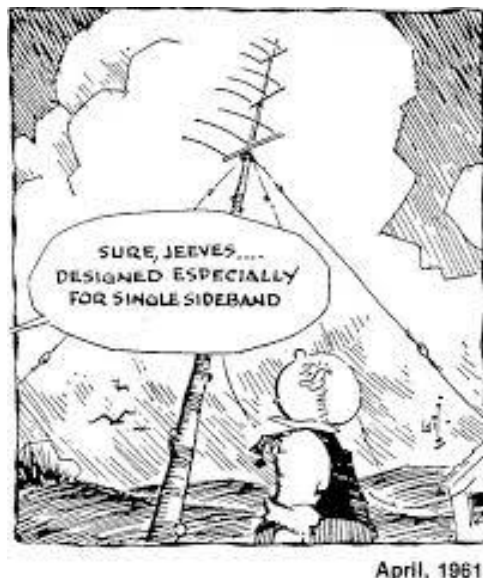
Email: sydrowe@xtra.co.nz

Breakfast available from 7.30am to 11.00am at reasonable prices.

THE NEXT NZART BROADCAST IS ON THE 24TH NOVEMBER 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](#)



SOME NETS – FOR WHEN YOU ARE LOOKING FOR SOME COMPANY

Day	Time (NZST)	Freq (MHz)	Group
Sunday	08:00	3.750	Southern Net
	08:00	146.625	Br 65 – Papakura Net
	09:00	3.700	Br 10 - Franklin
	09:00	3.755	Br 65. Papakura.
	09:30	146.900	Br 10 – Franklin ZL1SA
	19:00	146.700	Auckland YL Net
	19:45	145.575	Thames radio club ZL1DF
	20:00	3.710	Br 42. Titahi Bay
	20:15	146.625	Sunday News and Net (Auckland)
	21:30	146.900	Franklin Net (ZL1-SA)
Monday	11:30	3.850/7.125	Br 12. Hamilton
	19:30	3.757	Br 12. Hamilton
	20:00	Echolink	Basic Morse (ZL1PX)
	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
	19:30	3.690	QRP ZL3TK
	20:00	3.581	CW improvers Net
	20:00	7.025 – 7.040	VK CQ QRS Group (CW)
	21:00	1.850	160m Net
Wednesday	11:30	7.125	SPAM Net
	18:00	14.049	VK CW NET
	19:30	146.700	ZL1AB Net
	20:00	3.660	Geek Net
	20:00	3.645	Br 02. Auckland
	20:30	146.525	W.R.S.C
Thursday	09:00	7.096	Ex Post Office Techs
	18:00	7.0674	SAS Net (CW)
	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 (AK Based)
	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
	08:00	3.730	ZL3DAC
	20:30	3.725	ZL2HN / ZL4RF
	21:00	3.677	Counties Net ZL2MA
	21:00	3.535	New Zealand Net (CW)

Our desire is that this will be a living list,
Please email zl1nux@outlook.com any updates, deletions or changes required.

Papakura Radio Club Inc.
Branch 65 NZART Club Directory
Wellington Park, 1 Great South Road.
PHONE 09 296 5244
Westpac 03-0399-0019896-00

Club website: <http://www.qsl.net/zl1vk> Club email: zl1vk.club@gmail.com

President	ZL1NUX	Gavin Denby	021 459 192
Vice President	ZL1BNQ	Richard Gamble	021 729 270
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	
	ZL1BNQ	Richard Gamble	021 729 270
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.

Activity Nights are held on the 2nd Wednesday starting at 7.30 pm.

Committee Meetings are held on the 3rd Wednesday of each month at 7.30 pm unless advised.

Project Evenings are on the 4th Wednesday of each month.

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). 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 8.00 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)