



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

November 2023



Setting the direction for 2024



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This Month's Meeting:

Wednesday 1st of November will be the next meeting for 2023. Following general business, we will have our annual general meeting. Please note this is an important event, so we would appreciate as many members as possible attending.

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 1st November**
Wednesday 8th November
Wednesday 15th November
Wednesday 22th November
Wednesday 29th November

General Meeting & AGM
Project Night
Committee Meeting
Activity Night
AREC Training Night

CLUB ACTIVITY:

We have another 3 Hams who passed their exams, and a few more to chase up and get exam dates arranged, In addition we have a few more who are looking at some night class options.

We have a 12 volt power board project underway, using Anderson power pole connectors to connect multiple radios (or other 12 volt equipment) to a single power supply or battery project coming to an end. Although there is still time to join in, and build one of these, We still have some extra kits available on a first come, first served basis.

Also its time to book your spot at the combined Christmas dinner, with Franklin. Keep December 1st free. See heard about the scenes for full details. We will be seeking numbers to confirm our bookings, so please consider this and let our secretary know how many are attending with you. Its always a good evening out.



DX CALENDAR MAY 2023

DX Calendar October 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
PZ5TW			VP9/AA1AC						T88PB															S79K Mahe Island Seychelles					
YI0TT									ZL7A						3B8M														
E51JAN																											TO9W		
EG4KH																											HR5/F2JD		
YI0CA																											TO0T		
			E6AI																								5H3FM		
			A25R																								9L5M		
			TJ9MD																								VK9XGM		
			TXZL																								FW2CW FW5N		
			TX7K																								V48A		
																											3B9KW		
																											XW4DX		
																											H44WA		
																											T32TT		
																											VK0DS		
																											EG/OK6RA		
																											5H3MB		
																											4W8X		
																											PR0T		
																											VK0AW		
																											FH4VVK		

Featured DX

S79K MAHE ISLAND SEYCHELLES

S79K Team will be active from Mahe Island, IOTA AF - 024, Seychelles in CQ WW DX SSB Contest, 25 - 26 November 2023.

Team - G3WPH, G4IRN, G4PVM, GD4XUM.

Before and after contest they planning to operate as S79/G3WPH, S79/G4IRN, S79/G4PVM, S79/GD4XUM.



And

E6AJ NIUE ISLAND

Michael, DF8AN will be active as E6AJ from Niue Island, IOTA OC - 040, 3 - 10 November 2023.

He will operate on HF Bands, CW and Digital Modes..

There are several ancient names for the island, but two main ones survive today. Niue means "here's a coconut" or "look, a coconut". There is indeed an abundance of coconut palms here. Savage means "savage island." This name was given to it by the British explorer, navigator James Cook, who discovered it to the world in 1774. The locals met the navigators very hostilely, throwing stones at them, for which they were called savages. Ancient legends say that the local discoverer Huanuqui called this piece of land "a lonely island", which is entirely appropriate to its location



UPCOMING CONTESTS

Start - Finish		Date-Time	Date-Time	Bands	Contest Name	Mode	Exchange	Sponsor's Website
Date-Time	Date-Time							
1	0600	1	0859	3.5,7	Silent Key Memorial Contest	CW	RST, SK call sign you wish to recognize	www.skmc.hu
1	2000	1	2100	3.5	UKEICC 80-Meter Contest	Ph	6-char grid square	www.ukeicc.com
2	0000	3	0300	7	Walk for the Bacon QRP Contest	CW	13 WPM max; RST, SPC, name, mbr/pwr	qrptest.com
2	1800	2	2200	28	NRAU 10-Meter Activity Contest	CW,Ph,Dig	RS(T), 6-char grid square	nrau.net
2	2000	2	2200	1.8-28,50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
4	0000	4	2359	7,28	YB Banggai DX Contest	Ph	RS, age of operator	banggaidxcontest.com
4	0600	4	1800	3.5-28	IPARC Contest, CW	CW	RST, serial, IPA, US state (if USA)	www.iparc.de
5	0600	5	1800	3.5-28	IPARC Contest, SSB	Ph	RST, serial, IPA, US state (if USA)	www.iparc.de
5	0800	5	1200	Any	EANET Sprint	CW,Ph,Dig	RS(T)	fediea.org
5	1400	5	1700	3.5-28	High Speed Club CW Contest	CW	RST, mbr or "NM"	www.highspeedclub.org
6	2000	6	2130	3.5	RSGB 80-Meter Autumn Series, Data	Dig	RST, serial	www.rsgbcc.org
7	0200	7	0400	3.5-28	ARS Spartan Sprint	CW	RST, SPC, pwr	arsqrp.blogspot.com
9	1900	9	2000	3.5,7	EACW Meeting	CW	RST, mbr, nickname, EA province or DXCC prefix	www.eacwspain.es
11	0000	11	2359	3.5-28	FISTS Saturday Sprint	CW	RST, name, mbr or "0," SPC	fistsna.org
11	0000	12	2359	3.5-28	WAE DX Contest, RTTY	Dig	RST, serial	www.darc.de
11	0000	13	2359	1.8-7	PODXS 070 Club Triple Play Low Band Sprint	Dig	RST, SPC	www.podxs070.com
11	0001	12	2359	28	10-10 Int'l Fall Contest, Digital	Dig	Name, mbr or "0," SPC	www.ten-ten.org
11	0300	12	0900	50,70,144,432,1296	SARL VHF/UHF Analogue Contest	Ph	RS(T), 6-char grid square	www.sarl.org.za
11	0700	12	1300	1.8-28	JIDX Phone Contest	Ph	RST, JA prefecture number or CQ zone	www.jidx.org
11	1200	12	1200	1.8-28	OK/OM DX Contest, CW	CW	RST, 3-letter OK/OM district code or serial	okomdx.crk.cz
11	1200	12	2359	1.8-28,50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
11	1900	13	0500	1.8-28,50,144,432	CQ-WE Contest	CW,Ph,Dig	Name, location code, years of service	w8zpf.com/cqwe
11	2300	20	0300	1.8-14	AWA Bruce Kelley 1929 QSO Party	CW	RST, name, QTH, equipment year/type/pwr	antiquewireless.org
12	0000	12	0400	3.5-14	North American SSB Sprint Contest	Ph	Other's call, your call, serial, name, SPC	ssbsprint.com/rules
12	0700	12	1700	3.5-28	FIRAC HF Contest	Ph	RS(T), serial	www.firac.de
13	0100	13	0300	1.8-28	4 States QRP Group Second Sunday Sprint	CW,Ph	RS(T), SPC, mbr or pwr	www.4sqrp.com
14	1900	14	2000	3.5	DARC FT4 Contest	FT4	RST, 4-char grid square	www.darc.de
15	2000	15	2030	3.5	RSGB 80-Meter Autumn Series, SSB	Ph	RS, serial	www.rsgbcc.org
16	0000	17	0300	14	Walk for the Bacon QRP Contest	CW	13 WPM max; RST, SPC, name, mbr/pwr	qrptest.com
16	0130	16	0330	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or pwr	naqcc.info
16	1900	16	2000	3.5-14	NTC QSO Party	CW	25 WPM max; RST, mbr or "NM"	pi4ntc.nl
18	1200	19	1200	3.5-28	LZ DX Contest	CW,Ph	RS(T), 2-letter LZ district or ITU zone	lzdxbfira.org
18	1600	18	2359	1.8	All Austrian 160-Meter Contest	CW	RST, serial, OE district code (if OE)	www.oevsv.at
18	1700	18	2359	1.8	REF 160-Meter Contest	CW	RST, serial, department code	concours.r-e-f.org
18	1800	19	2100	3.5,7,21,28	South American Integration Contest CW	CW	CWSP members: RST, "M"; QRP: RST, "QRP"; YL: RST, "YL"; all others: RST, ITU zone no.	sacw.cwsp.com.br
18	1900	18	2059	1.8-28,50	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	sites.google.com/site/feldhellclub
18	1900	18	2300	1.8	RSGB 1.8 MHz Contest	CW	RST, serial, UK district code (if UK)	www.rsgbcc.org
19	0000	19	2359	3.5-28	FISTS Sunday Sprint	CW	RST, SPC, name, mbr or "0"	fistsna.org
19	1300	19	1700	3.5,7	Homebrew and Oldtime Equipment Party	CW	RST, serial, class	www.qrpcc.de
19	2300	20	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or pwr	qrptest.com
22	0000	22	0200	1.8-28,50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
23	2000	23	2130	3.5	RSGB 80-Meter Autumn Series, CW	CW	RST, serial	www.rsgbcc.org
25	0000	26	2359	1.8-28	CQ Worldwide DX Contest, CW	CW	RST, CQ zone	www.cqww.com
25	0100	26	0059	50Mhz up	WIA VHF/UHF Spring Field Day	CW, Ph, Dig	RS(T) Serial, 6 Character Maidenhead locator	https://www.wia.org.au/members/contests/vhfuhf/
27	2000	27	2130	3.5-14	RSGB FT4 Contest	FT4	Signal report	www.rsgbcc.org
29	2000	29	2100	3.5	UKEICC 80-Meter Contest	CW	6-char grid square	www.ukeicc.com

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

RAMBLINGS FROM THE EDITORS DESK

This months newsletter is mostly focussed on the AGM this month, and as such its mostly reports. And In that spirit I will try to keep this rambling short.

With the years end knocking on the door, (along with local youth who seem to have adopted a strange american habbit of dressing up and begging candy) and the soon to be heard flash of fireworks, we are reminded that the year is rapidly coming to a close, and we should be making plans for how we will spend our forced holiday period.

I'm probably going to spend the main part of the holiday period locally, maybe a short trip on the motorhome, but for most of the time we will be staying local, mostly due to a major trip planned for January, to meet a new grandchild. Hopwfully this time the HF will be working, and I will be able to make some much-needed on-air time with the HF rig.



As I do I will be thinking a the sudden and unexpected passing of one of our more colourful characters of the hobby. Ashley ZL1AG passed suddenly and very unexpectedly this month, and while he was mostly head on the Rodney or Musick point repeaters, those who knew him were familiar with many of his fun loving, yet passionate Rag Chews on the radio. Even on HF, Ashley was never one for contesting or short overs, he was interested I all topics, and had opinions in most, yet despite his passion for controversy he was a true gentleman, and loved his radio, almost as much as his TV cameras. He will be missed by his partner "affectionately known as blondie" on the airwaves, and I know she will miss his cheeky mannerisms. I will miss his conversations, and his constant reminder that we are an association of transmitters, not one of listeners. So I will try to remind myself to take some time to transmit, even if I'm not in the car. Godspeed and Rest In Peace my friend.

This was also a reminder of others who we lost in the last few years, and shows how life is one of constant change, While there are still many voices I manage to chat with, who I have known since I was welcomed into the hobby family, there are many new voices too, and these new voices are learning the hobby, and I hope are also finding pleasure in making new contacts, and meeting some of our other characters. After all, like it or not, we are all characters with a strange hobby of chatting with complete strangers, until we get to now them.

Getting these new voices on air, should be one of the greatest delights that we as hams get to enjoy. We get to share our hobby our passions with others, and the more involved they get, the more people we get to work, and know. And the circle grows.

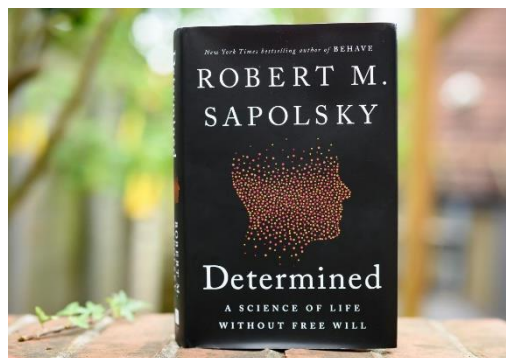
Of course, Maybe I'm wrong after all, Robert Sapolsky, a Stanford Neuroscientist, has declared that we all have no free will, we are just random dots, and what we do, and how we behave is shaped by nothing more than chance.

In his latest book, *Determined*, he goes so far as to say: “This means accepting that a man who shoots into a crowd has no more control over his fate than the victims who happen to be in the wrong place at the wrong time. It means treating drunk drivers who barrel into pedestrians just like drivers who suffer a sudden heart attack and veer out of their lane.”

“The world is really screwed up and made much, much more unfair by the fact that we reward people and punish people for things they have no control over,” Sapolsky said. “We’ve got no free will. Stop attributing stuff to us that isn’t there.”

The book breaks down the neurochemical influences that contribute to human behaviours, analysing the milliseconds to centuries preceding, say, the pulling of a trigger or the suggestive touch on an arm.

“*Determined*” goes a step further. If it’s impossible for any single neuron or any single brain to act without influence from factors beyond its control, Sapolsky argues, there can be no logical room for free will.



If you reach out right now and pick up a pen, was even that insignificant action somehow preordained?

Yes, Sapolsky says, what the student experiences as a decision to grab the pen is preceded by a jumble of competing impulses beyond his or her conscious control. Maybe their pique is heightened because they skipped lunch; maybe they’re subconsciously triggered by the professor’s resemblance to an irritating relative.

You may have had the uncanny experience of talking about an upcoming camping trip with a friend, only to find yourself served with ads for tents on social media later. Your phone didn’t record your conversation, even if that’s what it feels like. It’s just that the collective record of your likes, clicks, searches and shares paints such a detailed picture of your preferences and decision-making patterns that algorithms can predict — often with unsettling accuracy — what you are going to do.

Something similar happens when you reach for that pen, Sapolsky says. So many factors beyond your conscious awareness brought you to that pen that it’s hard to say how much you “chose” to pick it up at all.

While this may be great news for defence lawyers all over the world, I’m far less than convinced. We each have the capacity every day to decide if we will act in a positive or negative way. We can decide to be positive or negative, to commit to good, or to commit evil. So, I will not be making excuses for bad behaviours, or treating people as mere machines, instead I will embrace that we are all different, and celebrate the differences. If we all, do this to the next person who rubs us the wrong way, Who Knows, maybe we will lay foundations for a better 2024 year.

Its food for thought.

73 for now de ZL1NUX

FINE TUNING A 10MHZ AND A 1MHZ FREQUENCY REFERENCE

WHY ACCURATE FREQUENCIES?

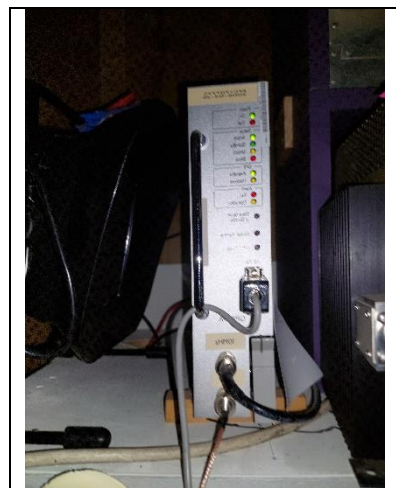
Radio transmission requires two stations to be on the same frequency at the same time. For most purposes the frequency can be 'near-enough' to satisfy adequate voice communication needs. Things get interesting though when you want to do some experimentation between stations.

As part of the challenge of being on the correct frequency NZART used to run the Doug Gorman Memorial Frequency Measuring contest on HF. Back in 2004 using some fairly basic equipment, I managed to get the average accuracy over a number of frequencies at 0.7Hz! In 2011 I was only third at an average of 0.1620 Hz. We had reached then end of practical contesting as the only significant variable for the well-equipped ham now was the role of the ionosphere.

Receiver accuracy was achieved by replacing the standard 20MHz master oscillator in my trusty old Kenwood TS-50, with a Rakon 20MHz Temperature Compensated Crystal Oscillator (TCXO) I think it cost \$20. That brought my receiving frequency accuracy down to parts per million once warmed up. The modification was relatively simple so no big deal and errors in the radio were then calibrated out.

Around that time Murray ZL1BPU got me involved in monitoring some precision transmissions of his on exactly the correct frequency.

If you remember in radio we count the number of cycles per second as frequency. So not only do you have to be able to count really fast, but you also need to have extremely accurate measurements of time.



My GPS disciplined 10MHz frequency standard running 24/7

However, these efforts all sucked me into a seemingly endless, and probably pointless, effort to get ever more accurate frequencies which in turn requires ever more accurate measurements of time.

Where do normal people get accurate time from?

There are several sources of accurate time. The most readily available solution is to listen to the time pips on Radio NZ National every hour. NZ standard time is maintained by the IRL laboratories in Wellington who then send the pips to Radio NZ. Of course, you will have delays due to the time it takes the signals to travel around the system until they reach your ears.

If you want to you can synchronise your computer to NZ Standard time through the NTP server function in your PC. Instead of accepting the standard time server provided by Microsoft you link to the Master NZ Clock. Further information about NZ based NTP services can be found here:

<https://www.measurement.govt.nz/about-us/official-new-zealand-time/about-time/>.

However, the most common time and frequency reference for amateurs is the time pips that come from the US National Institute of Standards and Technology <https://www.nist.gov/>. NIST provide standard time and frequency broadcasts from WWV at Fort Collins, Colorado and WWVH Kauai, Hawaii on tightly controlled frequencies of 2.5, 5, 10 and 20MHz. Note these transmissions are also good for checking propagation day and night. Further information on the two stations is here:

<https://www.nist.gov/pml/time-and-frequency-division/time-distribution>.

The master clocks they use to control official world time and frequency are pretty weird and involve lots of complicated physics and experimentation. NIST continue to build ever more accurate time sources: <https://www.nist.gov/pml/time-and-frequency-division/time-realization>.

GPS Time

The US launched a set of navigation satellites that use atomic clocks with encoded accurate radio transmissions that allow extremely accurate navigation. Interestingly the process of fixing a position means the GPS receiver ends up having a time accuracy approaching that of an atomic clock. GPS receivers have many uses with one being the provision of time synchronisation for mobile phone systems. They need to have accurate frequency and time control to correct operation.

In the late 1990's cellular phone systems started changing from analogue to the digitally based Long Term Evolution (LTE) systems allowing broadband data to become hand-held. This meant a large number of cell sites had all their equipment pulled out and replaced by the latest technology.

The old analogue GPS standard frequency control units were in the process of getting dumped but several hams that were in the know managed to capture dozens of these laboratory grade 10MHz GPS disciplined oscillators at the old sites. They are so accurate that they are able to hold the cell site locked to the correct frequency/time for well over 24hours even if the GPS signal failed.

An Australian ham saved a large number of units from the scrap heap and for a nominal donation to a charity they were distributed to live on in Ham shacks across VK and ZL including my shack.

Going slightly crazy with accuracy of frequency.

If you are slightly interested in physics like me you soon get sucked into time and frequency challenges. Over time I've ended up with two of these GPS disciplined oscillator plus a couple of stand-alone oscillators.

One standalone unit was built up by Ted Minchin ZL1MT and upon Ted's death ended up with Murray Greenman ZL1BPU. When Murray died it looks like I've taken over the time nut legacy and have been ensuring these units remain operational.

Ted took the very precise and stable 10MHz 'hockey puck' oscillator from out of a defunct GPS disciplined unit and replaced the GPS trim control with a manual resistor trim system using a vernier dial. He did a beautiful job of making the unit as can be seen in the attached photos.

As these standalone units tend to subtly change their frequency when not in use, I have spent the past week getting this unit back up to speed. It took a bit of time but I now have a portable 10MHz standard that would be good enough for most purposes at around 1 part in 10^{-8} which in day-to-day terms at 10MHz is around $1/10^{\text{th}}$ of a Hz, or put another way, 1Hz out at 100MHz.

If you want to get within 1Hz at 1GHz (1 part in 10^{-9}) then you need the GPS disciplined unit which in most cases will give you around a predicted accuracy after 24 hours without GPS of $2.4\mu\text{S}$ which is 2.4 Hz at 10MHz, pretty impressive for a crystal in a tin box!

Some pictures



10Mhz standalone GPS oscillator ex Ted Minchin ZL1MT



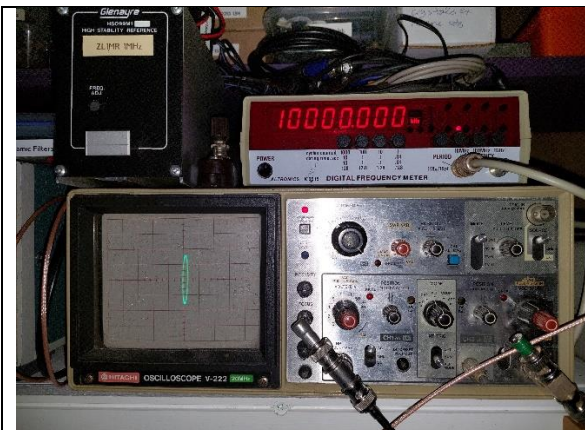
Rear of unit showing vernier frequency trim control.



Top view of 10Mhz unit. Power supply on left oscillator on the right, rear view of blue vernier trim resistor



HP E1938A 'Hockey puck' oscillator as used in the HP Z3815A GPS disciplined 10MHz frequency standard



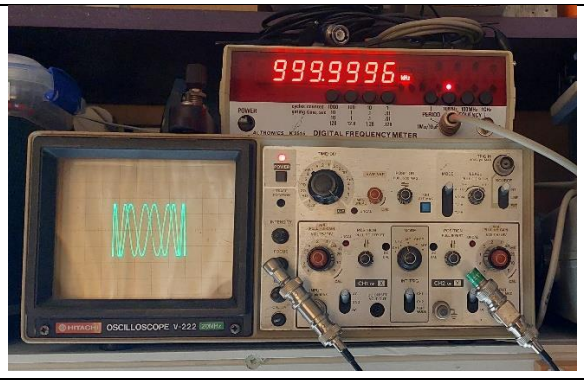
Using an old 20MHz analogue oscilloscope to monitor the phase shift between the GPS disciplined 10MHz from a Z3801A time standard and the Hockey Puck unit.



This shows a frequency count from the Hockey Puck unit obtained using a gate from the 1pps square wave output from the Z3815A GPS disciplined oscillator



1MHz frequency standard ex an old Telecom system.
Calibrated against the GPS 10MHz oscillator



1MHz calibration against the 10MHz reference
resulting a stable 10:1 Lissajous figure accuracy $\sim 1:10^{-7}$
i.e., $\sim 1/10\text{Hz}$

Conclusion

You can spend a lot of time sorting out old equipment, but isn't that is what retirement is for?

When it comes to high precision test equipment though you either put the time in and give it the respect it is due, or give/sell the equipment to someone who is really interested and will keep it going and make good use of it.

So, if you want to calibrate anything to a reasonably accurate level in terms of frequency get in touch. Further reading for those who may catch the bug: <http://www.leapsecond.com/time-nuts.htm> - there are a number of good links to other sites.

If you're into HF frequency measurement we could do a mini contest for the club?



Crazy Fact:

Did you know Cassio still make the "Databank", a watch with a built-in calculator And, almost 40 years later, I still don't know why ... OR why a smart watch comes with a calculator either.



THE FUTURE OF ANTENNAS MAY BE IN A VAPOUR

By UNIVERSITY OF OTAGO OCTOBER 19, 2023



Physicists have developed a new type of radio wave antenna using a glass bulb filled with atomic vapor. The team demonstrated that these atomic radio frequency sensors, utilizing a Rydberg state, are more sensitive and versatile than current antenna technologies. Their compactness and broad frequency coverage make them ideal for defense, communication, and satellite technology.

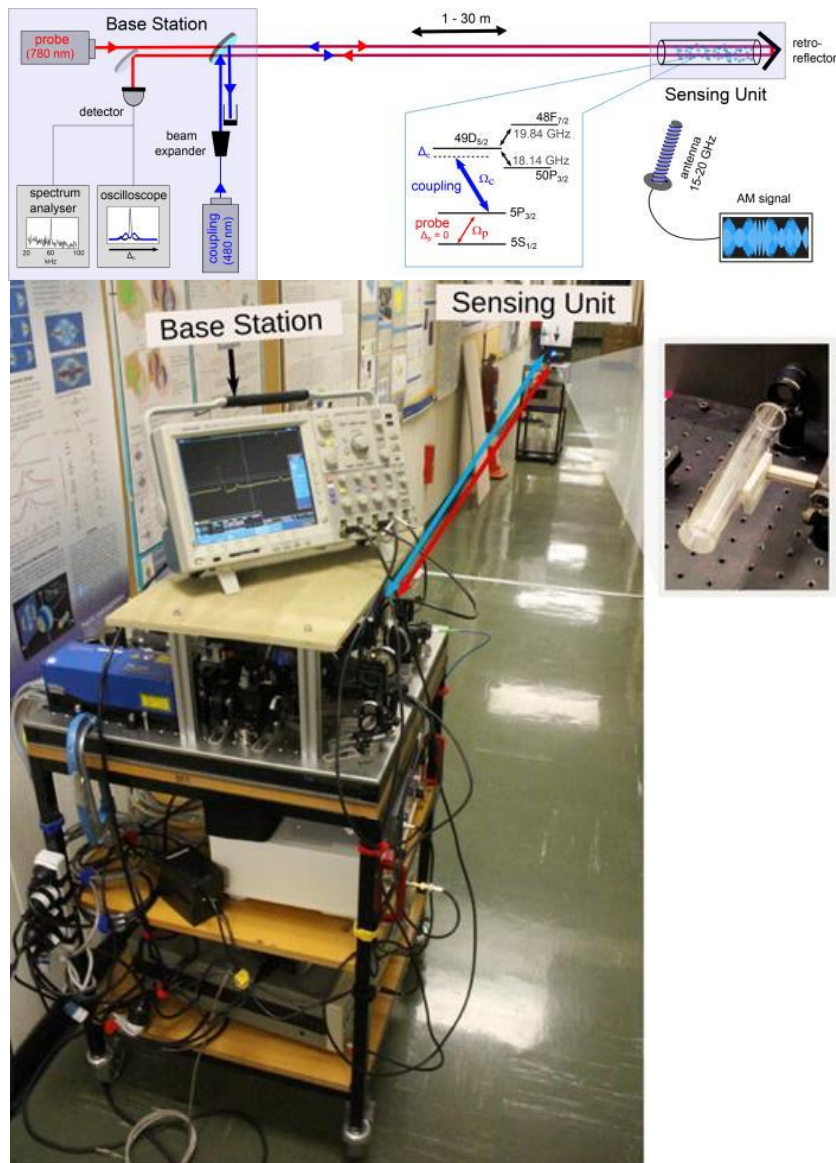
Physicists have developed a groundbreaking atomic radio frequency sensor for radio waves, offering enhanced sensitivity and versatility. Ideal for defense and satellite technology, this metal-free, laser-powered design promises real-world applications, as documented in *Applied Physics Letters*.

University of Otago physicists have used a small glass bulb containing an atomic vapor to demonstrate a new form of antenna for radio waves. The bulb was “wired up” with laser beams and could therefore be placed far from any receiver electronics.

Innovative Radio Frequency Sensor

Dr. Susi Otto, from the Dodd-Walls Centre for Photonic and Quantum Technologies, led the field testing of the portable atomic radio frequency sensor.

These sensors utilize atoms in a unique Rydberg state. Due to this state, they can outperform current antenna technologies in terms of sensitivity, tunability, and compactness. This makes them particularly suitable for defence and communication applications.



Passive Rydberg-atomic transducer. Credit: University of Otago

Applications in Defence and Satellite Technology

A key advantage is their ability to cover the entire spectrum of radio frequencies. This means radio operators could potentially use just one of these sensors instead of multiple antennas tailored to different frequency bands. Their heightened sensitivity and accuracy also enable them to detect a vast array of essential signals. In the realm of satellite technology, the elimination of the need for multiple sensors is a game-changer.

Advantages Over Traditional Sensors

Another significant benefit of Rydberg sensors is their metal-free composition. Traditional sensors contain metal components that can disrupt the radio frequency field. In contrast, the atomic sensor in the Rydberg state uses laser light, eliminating the necessity for electric cables.

Portability and Real-World Application

The Otago group's new design is portable and can be taken outside the laboratory. In a first out-of-lab demonstration, the sensor was able to efficiently measure fields at a distance of 30m (100 feet) using a free-space laser link. This adds important flexibility to Rydberg-atom based sensing technologies.

They envision these developments will make quantum sensors more robust and cost-effective, enabling them to move out of labs and into the real world. [A paper on the creation was recently published in Applied Physics Letters.](#)

A RADIO SIGNAL FROM THE EDGE OF THE UNIVERSE

Every day and night, hundreds of thousands of intense, brief flashes of radiation suddenly flicker on and then off all across the sky. These "fast radio bursts" are invisible to the naked eye, but to a radio telescope many almost outshine everything else in the sky for a few thousandths of a second.

In new research published in Science, we have found the most distant fast radio burst ever detected: an 8-billion-year-old pulse that has been travelling for more than half the lifetime of the universe.

What makes these so fascinating is that we don't know why they happen. The bursts are a trillion times more energetic than the things that look most like them: rotating neutron stars called pulsars, in our own galaxy. But let us study the "cosmic web" of matter floating in the space between galaxies. This matter is very hot, diffuse gas and almost invisible, but it subtly slows down fast radio bursts as they pass through it. (This is ordinary matter, the same kind that makes up stars, planets and humans, not the invisible "dark matter" that also lurks throughout the universe.)

The degree to which bursts slow down correlates with the distance they have travelled.

In 2020, analysis of fast radio bursts revealed that the cosmic web actually contains more than half of the normal matter in the universe - which astronomers had previously thought was "missing"

But on the 6th of June, an Australian team, using the Pathfinder telescope found a bright burst with a lot of slowing, following checks showed a redshift had a value of just over one, meaning it was emitted about 8 billion years ago based on a steady speed of travel in a straight line. This would mean a transmitter putting out as much energy as our sun emits over 30 years.



So, if its aliens, then they have, or maybe had, awesome technology, and if its nature, then imagine what we might find when the future telescopes like the Square Kilometre Array (SKA) will be used to detect bursts at ever greater distances. These detections will be used to map the structure of the universe and resolve the tale of a modern astronomical mystery.

Maybe the missing material is neither as dark, nor as missing as we once thought.

PRESIDENTS REPORT 2023

Looking back at last years report, we had to make some decisions on our direction, we had welcomed 4 new hams, and sadly almost matched these in terms of silent keys, our membership was static, and like many clubs had to face an aging membership.

Our financial position remains strong, our club is in good health. I would like to express thanks to all the committee members who have served this year, while we have had many divergent views, and some strong debates, these have only served to ensure that we have considered all possible outcomes and views. I would also express my personal thanks to Ian, or secretary for his tireless commitment to the club, and to David, our treasurer for keeping us on track financially, and to Richard for filling in and covering for me when other commitments made it impossible for me to perform all the roles expected of your president.

Without a strong committee our club would not be in the state it is, and the committee that has served this year has done so diligently, and it has been a pleasure to serve with them. I'm pleased to report that this year sees us with 25 new hams and even better, few silent keys, there is also still a chance that a few more may yet achieve a license before the year is over.

This change means that we are now a club of two halves. A number of experienced operators who will be interested in highly technical projects and activities, and many newer operators who will be looking to learn about some of the basics of contesting and HF activities. So, if 2023 was to be a year of growth, the challenge of 2024 will be one of upskilling and equipping for the changes occurring within ham radio.

Some of these changes, include the need for stealth antennas, an increasing use of digital technologies, like D-Star, DMR and Fusion. So, topics like building hot spots, will sit along side HF operation, and introductions to contesting. This will make for a challenging task of selecting speakers at club meetings in 2024.

This may lead some to wonder if clubs are relevant in 2024, but if the covid lockdowns taught us anything, we learnt that while we can do a lot without physically meeting, there is no substitute for gathering together, and contributing to your club. To make the club successful in the new year, we will need your contribution. It dos not matter if you are new, or if you've been around for an extended period, we need your input, we need your ideas, your questions and your hunger to learn.

While your committee will do their best to guess what you might enjoy, the best projects and activities come from your input. If we are to be an active and energised club, we must hear what you want to do within the hobby, and even better, see what you can bring to help the club grow.



Maybe you might like to think about ...

- Portable power
- Back up power
- Using IRLP to connect to other repeaters (even overseas)
- Building an echolink node
- Operating an HF radio
- Building an HF antenna
- Learning Morse code
- Magnetic Loop antennas
- D-Star operation
- DMR operation
- Building a DMR (Brandmeister) hotspot
- Jock White Field Day
- Lakes awards, POTA or SOTA activities
- AREC

Or any other project you can think of, including building digital mode interfaces.

There are very few limits to what we as amateurs can achieve, so dream big, and ask, there is always, someone who will know some of what you are looking for.

The hobby is not getting any smaller, simpler, or any less technical, so there's no reason for us to say there's nothing left to learn.

Amateur radio is journey, one that can take you to many different destinations, you will never master every possible part of the hobby, but you can make the most of the parts that interest you.

To make the most of it, all we need is you. Let's make 2024 the year we become the best Hams we can be.



TREASURER'S REPORT 2023

The year has been notable in that we made a small trading loss. This was due to Healing Hands paying their hall hire in advance but then not being able to use multiple Sundays due to Covid-19. We credited them for the last remaining missing days, hence the lower than normal amount of hall hire this year. We have gained a couple of additional regular hirers so future hall hire income should be slightly higher.

Interest rates have increased so interest income from our term deposits has increased. The bank generally deducts Resident Withholding Tax automatically so we don't usually have to top-up the tax payments by much each year. Because we made a trading loss the RWT that was deducted should be refunded and we can carry the loss forward, reducing our taxable income for the 2024 tax year (October 2023 to September 2024).

We have gained a number of complimentary non-voting club members from the ham-crams earlier in 2023. We need to make our meetings interesting and ensure the hobby remains vibrant and attractive so they continue to be club members and pay membership fees. Whilst the radio hobby can be a solo activity at times (picture a person in the semi-darkness holding a soldering iron whilst trying to figure out why their radio no longer works); our meetings provide us with a great opportunity to socialise and keep in touch. So let's ensure we remain a welcoming and pleasant group of hams.

Expenses have been fairly consistent with other years. Electricity costs continue to creep up. We have spent a lot more on Repairs and Maintenance (R&M) through painting materials and Zip parts. Thanks to John Feenstra and Ian Clifford for providing their labour for free to carry out the repairs and the painting.

We increased hall hire last year and given the current rate of inflation and increases in costs, I think we can wait at least another year before we consider any further rental increases.

The increase in membership, if sustained will mean that we don't really need to increase subs yet. But we need to be mindful that without our current hall hirers all the costs of running the hall would fall on the shoulders of the club members and that would require a considerable increase in membership fees.

With our current level of funds on term deposit we have sufficient to tide us over for any major maintenance that may arise. Our insured value includes the cost of demolition and rebuild so if we did suffer a catastrophic loss we should be able to rebuild in a timely manner. We must remain vigilant though and ensure we increase our insurance every now and then to match expected replacement costs.

Thanks to the reviewers of their diligent oversight of the club accounts, and to the committee members for putting their time and effort in to managing the affairs of the club in a sensible and conservative manner.

Financially the club is in good heart and members can look forward to another successful year in 2024.

David Wilkins ZL1MR
Treasurer Papakura Radio Club

2023 EXAMINATION ADMINISTRATION REPORT:

This year we have had a record-breaking of new hams passing the exam, resulting in a total of 25 candidates who sat and passed the radio exam at Papakura Club rooms this year. Thanks again to Gavin ZL1NUX who did three ham crams this year. Congratulations to all the following candidates: -

- Andy Dickson ZL1HIR
- Isolde ZL2ISO
- Anna Rippon ZL4KAOS
- Helen Styles ZL1HOW
- Vivienne Laura Berry ZL1VLB
- Kimiora Nooroa ZL1KIM
- Matthew Simon Webb ZL1NZA
- Darrin Jeffrey Nelson ZL4ESX
- Mark Cain ZL1KEA
- Zachary Robert Nelson ZL2HSQ
- Antonia Mary Whitehead ZL3ASE
- Scott Michael Creighton ZL3SLD
- John David Gilmour ZL1JDG
- Ethan Michael Creighton ZL3ETH
- Guy Euden ZL1HFE
- Miguel Charette ZL2UAP
- Thomas Joseph Van Der Laan ZL4VL
- Rolfe Booth ZL1RLF
- Bruce Craig Whitehead ZL1SRX
- Michelle Heather Whitehead ZL1MIRA
- William Frederick Thresher ZL3WILD
- Martina Helena Webb (Tina) ZL1NZB
- Greg Quaife ZL2GCQ
- Trish Murray ZL1TTM
- Kristen Whitehead ZL1KDK

If you hear them up, on the air, please listen out and give them a call. Welcome to the Airwaves and the Papakura Radio Club.

Well done and enjoy the hobby.

If you know of anyone interested and wanting to become a radio ham, please let me or any of the committee know and we can do the rest. Our contact details are always on the back of the Papakura Club's newsletter. Remember it's one of the safest ways to communicate.

73 de Rob ZL1RJS

SECRETARY'S 2023 REPORTS

Awards Report:

No applications for awards were received this year.

Hall Custodian: Ian ZL1AOX.

Two key boxes were installed in October 2015 to make it easier for access by Members and Committee when required and this seems to be working OK.

Hall Cleaning duties were carried out by David ZL1DK and John Feenstra Thanks to all others for helping out. We thank the Healing Hands for maintaining the hall in a clean condition.

Our main user is the Healing Hands Spiritualist Church who use the Hall every Sunday and on some Friday evenings.

The Papakura Floral Art Group and the Papakura Garden Club are our other two regular users on the second and third Tuesday of each month.

Other groups aligned to Healing Hands have also used the Clubrooms during the year.

The Papakura Branch of the National Party have signed up for regular meetings on the 3rd Sunday of each month for this year and 2024. Times 1500 to 1700

The Coastguard made use of the hall for their Crossing the Bar forum as their clubrooms were under repair.

NZ First Party have also used the hall three times during the year and Ambulance EMT training have used the Hall and may hold more refreshers in the future.

The installation of three air conditioners was a major improvement to the Clubrooms in 2019-20 are working well.

The Club's Audio Visual & sound system has been improved during the year thanks to Ian ZL1IRC, Rob ZL1RJS and David ZL1DK.

Thanks also to Rob ZL1RJS for the new 75-inch TV screen which will be installed soon.

Ian ZL1AOX, Secretary, Papakura Radio Club Inc.

PAPAKURA AREC REPORT

Not an overly busy year, members of Auckland search and rescue group attended approx. three searches, one the person was never found, second, the person was found by the public a long way off search area, and the last search the person was found deceased by a contractor mowing a park.

David ZL1DK and myself attended the annual Rally of Whangarei, issues were had with the moving of our HQ operating area which made it had to erect our antennas.

A stage was cancelled on the second day due to road damage cause by the recent cyclone.

We were not directly involved with Cyclone Gabrielle but two of us were on standby. We are currently looking at upgrading the clubrooms to be a more ready for such an event should it happen again. More antennas are needed outside and three more radios are to be installed to cover the AEM repeater channels.

Richard Gamble ZL1BNQ/ZK1ES




HEARD AROUND THE SCENES

CHRISTMAS DINNER 2023

Franklin/Papakura Radio Clubs shared Christmas Dinner is booked for Friday 1 December at Pukekohe Cossie Club. The cost is likely to be \$38.00. All welcome.

This is a great time to meet with our friends at franklin, as well as meeting some of our newer hams too.



Christmas Function Menu 2023
(Children under 5yrs dine free)

Honey & Maple Glazed Champagne Ham, & Roast Chicken, all served with condiments and gravy/sauces.

Sliced Roast Beef in a Red Wine Gravy

New potatoes in mint butter, roasted kumara & pumpkin, MGB Cheffing honey glazed carrots, buttered baby peas, steamed long beans.

Seafood Pasta Salad, Green Salad Leaf, Greek Salad.
All served with a variety of dressings.

Shrimp Cocktail w Seafood Sauce

Christmas Plum Pudding, Brandy Custard, Fresh Strawberries, Pavlova, Fruit Salad, Xmas Mince Pies.

\$38 per person including GST
(\$12 price children 5yrs-12yrs)

Tea & Coffee Supplied

WESTERN SUBURBS RADIO CLUB USED EQUIPMENT SALE

The popular equipment sale will be held Saturday 4th of November at the Rosebank School Hall. Doors open to the public at 9 a.m.

So mark your calendar and keep the date clear.

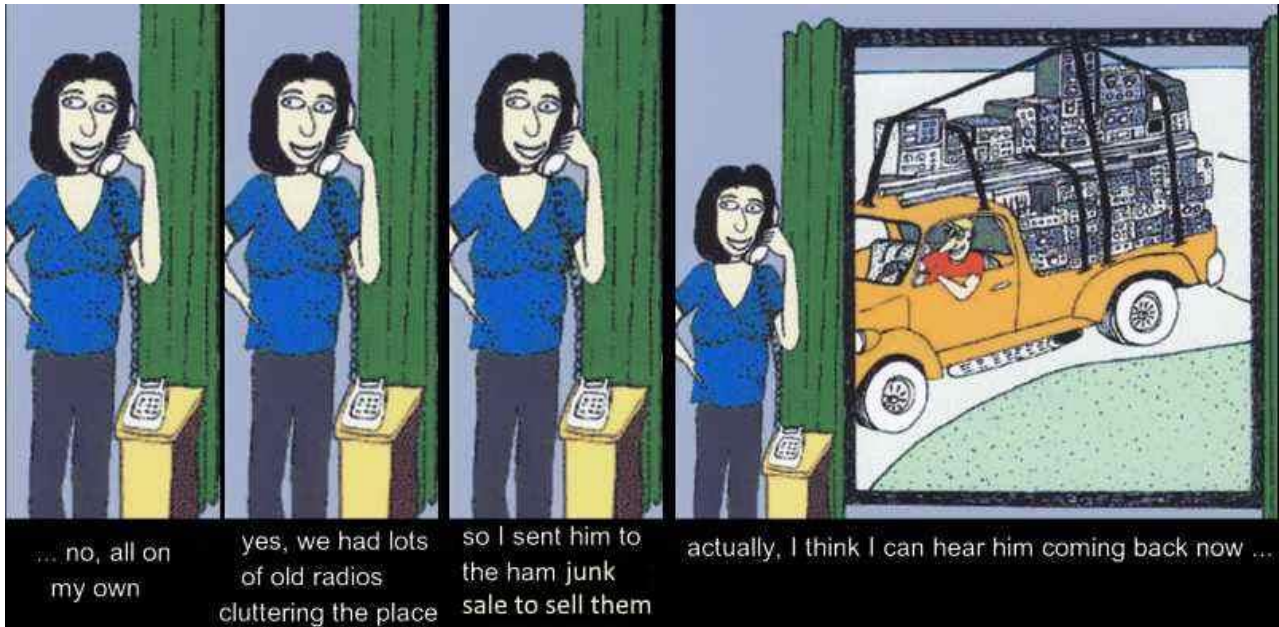
This is one sale that you don't want to miss.

THE NEXT OFFICIAL BROADCAST WILL BE HELD SUNDAY 26TH NOVEMBER 2023 AT 8:00 PM.

It will be rebroadcast in the Auckland area on the 6625 Repeater, available on the NZART website: [NZART-Official Broadcast](https://www.nzart.org.nz/Official-Broadcast)



and is



LIFE IS SIMPLE



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	ZL10A
	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	ZL20A
	08:30	3.730	ZL3RP
	15:00	14.300	Pacific Seafarers
	17:30	3.760	Home Brew
	05:00 Zulu	14.183	ANZA DX Net
	18:00	7.115	VK7OB
	19:30	3.720	ZL1MO
	18:30	3.766	ZL3LE
	08:30/20:00	3.730	ZL3RP
	20:30	3.725	ZL2HN / ZL4RF
	21:00	3.677	Counties Net ZL2MA
	21:00	3.535	New Zealand Net (CW)

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

**Papakura Radio Club Inc.
Branch 65 NZART Club Directory 2017
Wellington Park, 1 Great South Road.
PO BOX 72-397 Papakura 2244
PHONE 09 296 5244**

Westpac 03-0399-0019896-00

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

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
	AREC Section Leader	ZL1BNQ	Richard Gamble
CD Liaison	ZL1AOX	Ian Ashley	021 198 1810
Newsletter Editor	ZL1NUX	Gavin Denby	021 459 192
Hall Custodian	ZL1AOX	Ian Ashley	021 198 1810
Newsletter.	Contact:	zl1nux@outlook.com	

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

Meetings

General Meetings are held at the Clubrooms on the 1st Wednesday of each month, starting at 7.30 pm. Look at your calendar and mark these nights. The speaker follows the General Meeting.

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

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

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

AREC Meetings are on the 5th Wednesday night, also starting at 7.30 pm

AGM: Held in November

Subscription: Full membership and newsletter \$25.00 Family Membership and newsletter \$40.00

Bank Account number: 03-0399-0019896-00 Working Bees As required.

Branch 65 21 Award: For contacts with ZL1VK (5 Points) and 8 Papakura Radio Club Members (2 Points each) after January 2011. Total 21 Points. Cost \$5-00. Certified list and \$5-00 to Secretary, Papakura Radio Club. Address above.

ZL1VK Club Nets

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

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