

The Official Newsletter of the

PAPAKURA RADIO CLUB INC.





Longer Days, But Colder Nights





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This Month's Meetings:

Wednesday 7 July will be our general meeting at the clubrooms, following general business there will be a brief conference report, and then Rob ZL1RJH will be discussing his ride in a WW2 Spitfire

Meetings for July.

Meetings will only occur at alert level 2 or lower. We cannot have social meetings at level 3. This means we will only open the clubrooms on Wednesdays when at we at alert levels 1 or 2 in accordance with current government guidelines.

Wed 7 June – General Meeting, Conference Report & Spitfire Flight ZL1RJS Wed 14 June – Activity Night – TBC Wed 21 June – Committee Meeting Wed 28 June – Project Night

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CLUB ACTIVITY:

Don't forget the AREC exercise night Wednesday 30th June. And have a look at the progress on the broadband antenna poles – Almost there

UPCOMING PROJECTS:

PROJECT AND ACTIVITY NIGHTS

Project nights have been building Flowerpot antenna's with same six metre antennas in development. Listen out on 53.725 repeater for some new voices soon – We Hope. We will also, later, be building some satellite antenna designs for working off the ISS or other satellites. Also an updated version of the flower pot Portable VFH/UHF ground independent dual band antenna

We have an offer of Arduino programming classes later in the year, (we have some parts to order) so watch this pace for dates. Arduino boards are small but powerful boards with many applications in Ham Radio, and other electronic applications.

And we have a DC power distribution project, still in the pipeline. – So, a busy year if you chose to be part of it.

UPCOMING ACTIVITIES:

(ALERT LEVELS PERMITTING) WEDNESDAY 7 JUNE - GENERAL MEETING WEDNESDAY 14 JUNE - ACTIVITY NIGHT WEDNESDAY 21 JUNE - COMMITTEE MEETING WEDNESDAY 28 JUNE - PROJECT NIGHT

As I walk through

the valley of the

Shadow of Death, I

remind myself that

you can't always

trust Google Maps

PLEASE LISTEN FOR UPDATES ON THE SUNDAY MORNING CLUB NETS (SEE BACK PAGE FOR FREQUENCIES AND TIMES)



DX Calendar July 2021

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Click on the link (CTRL + Click for some PDF readers) in the PDF versions for information on the Expeditions



Or check them out at DX News.com



CONTESTS JULY 2021

Date	-Time	Dat	o-Timo	Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	0000	1	2359	1 8-144	RAC Canada Day Contest	CW Ph	RS(T) VE province/territory or serial	www.rac.ca
1	1700	1	2100	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-char grid square	nrricontest.no
1	1900	1	2100	1.8-50	SKCC Sprint Europe	CW	BST SPC name mbr or "none"	www.skccgroup.com
2	0145	2	0215	1.8-21	NCCC RTTY Sprint	Dig	serial name OTH	www.ncccsprint.com
2	0230	2	0300	1.8-21	NCCC Sprint	CW	serial name, QTH	www.ncccsprint.com
3	1100	4	1059	3.5-28	DI -DX RTTY Contest	Dig	RST serial	www.drca.de/dldxrtty
3	1400	4	1400	1.8-28	Marconi Memorial HE Contest	CW	RST serial	www.arifano.it
3	1500	4	1500	3.5-14	Original ORP Contest	CW	BST serial power category	www.grpcc.de/contestrules
3	2000	4	2000	7	PODXS 070 Club 40-Meter Firecracker Sprint	Dig	RST, SPC	www.podxs070.com
5	0000	5	0100	1.8-14	K1USN Slow Speed Test	CW	Max 20 WPM. Name, SPC	www.k1usn.com/sst.html
5	1900	5	2030	3.5	RSGB 80-Meter Club Championship, CW	CW	RST, serial	www.rsgbcc.org/hf
6	0100	6	0159	1.8-50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or youth)	wwsac.com/rules.html
6	0100	6	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
6	1700	6	1900	3.5-14	RTTYops Weeksprint	Dig	Other's call, your call, serial, name	rttyops.wordpress.com
7	1300	7	1400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
7	1700	7	2000	144	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	t8activity.eu/index.php/en
7	1900	7	2000	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
8	0300	8	0400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
8	1700	8	1900	3.5-14	RTTYops Weeksprint	Dig	Other's call, your call, serial, name	rttyops.wordpress.com
9	2000	9	2100	1.8-14	K1USN Slow Speed Test	CW	Max 20 WPM. Name, SPC	www.k1usn.com/sst.html
10	1200	11	1200	1.8-28	IARU HF World Championship	CW Ph	IARU HQ: RS(T) + IARU Society. Non-HQ: RS(T) + ITU Zone.	arrl.org/iaru-hf-world-championship
10	1200	11	2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
11	2000	11	2300	1.8-28	QRP ARCI Summer Homebrew Sprint	CW	RST, SPC, mbr or power	qrparci.org
12	0000	12	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
14	1700	14	2000	432	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
14	1900	14	2030	3.5	RSGB 80-Meter Club Championship, SSB	Ph	RS, serial	www.rsgbcc.org/hf
15	0030	15	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
17	0700	17	1459	7-28	Russian Radio Team Championship	CW Ph	RS(T), RRTC code or ITU zone	srr.ru/chempionat-rossii-po- radiosvyazi-na-kv-rrtc
17	0800	17	1400	1.8-7	Trans-Tasman Low-Bands Challenge	CW Ph Dig	RS(T), serial	wia.org.au/members/contests
17	1000	17	2159	3.5-28	YOTA Contest	CW Ph	Age	ham-yota.com/contest
17	1200	17	1359	1.8-50	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	sites.google.com/site/feldhellclub
17	1800	18	0559	3.5-28	North American QSO Party, RTTY	Dig	Name, SPC	www.ncjweb.com
17	1800	18	2100	50, 144	CQ Worldwide VHF Contest	CW Ph Dig	4-char grid square	www.cqww-vhf.com
18	0900	18	1600	3.5-14	RSGB Low Power Contest	CW	RST, serial, power	www.rsgbcc.org/hf
18	2000	18	2159	14	CQC Great Colorado Gold Rush	CW	RST, SPC	www.coloradoqrpclub.org
18	2300	19	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
22	1900	22	2030	3.5	RSGB 80-Meter Club Championship, Data	Dig	RST, serial	www.rsgbcc.org/hf
24	1200	25	1200	3.5-28	RSGB IOTA Contest	CW Ph	RS(T), serial, IOTA # (if applicable)	www.rsgbcc.org/hf
25	1700	25	2100	7-28	ARS Flight of the Bumblebees	CW	RST, SPC, power or bumblebee number	www.arsqrp.blogspot.com
26	1900	26	2030	3.5-14	RSGB FT4 Contest Series	Dig	4-char grid square	www.rsgbcc.org/hf
28	0000	28	0200	1.8-50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
31	1200	1	1159	1.8-28	Russian WW MultiMode Contest	CW Ph Dig	RST(Q), oblast or serial	www.rdrclub.ru
31	1400	1	2000	1.8-UHF	Missouri QSO Party	CW Ph Dig	RS(T), MO county or SPC	www.w0ma.org

All dates and Times are in UTC and are not adjusted for local time

Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state.

Listings in blue indicate contests sponsored by ARRL or *NCJ*. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. Data for Contest Corral is maintained on the WA7BNM Contest Calendar at **www.contestcalendar.com**

Check for updates and a downloadable PDF version online at www.arrl.org/contests.

CONFERENCE REPORT

AGM opened on Saturday with 1361 members represented exceeding the Quorum of 1070 members required.

Break-In awards were presented to Best Article : John Moriarty ZL2JPM – Why ARO should be concerned with Power line noise, Best Columnist: Craig Crawford – ZL3TLB, while Best Technical Article went to ZL1BPU – Murray Greenman

Council Highlights included the fact that there will be a Paper Call Book for 2021 which will be delivered with the Nov/Dec Break In delivery it will be in an 80 Pages Stapled format. This means all members need to ensure that their details at RSM are accurate as the data is from a download from the database. NZART are not able to alter it after the download.

Subs were last increased in 2012, but must increase to cover operating costs. 2020 Fees will be:

Category	Prompt Payment	Full Fee
Transmitting Member:	\$99.00	\$115:00
Student:	\$45:00	\$49:00
Family Top Up	\$30:00	\$30:00 (New Total 145:00)
Overseas	\$150:00	\$150:00
Rebate for transmitting:	\$16:00	

There is a vacancy for Northern Region councillor:

The NZART exam Question Bank & Materials under review for 2021 end, and a supervisor review will be conducted to ensure all is above board. In most cases this should have little impact on most supervisors

Amateur of the year was awarded to ZL2TYR – John Robinson. For work bringing AREC into the 21^{st} century development

Finances – Some fighting Funds in reserve, But Rebates and lost revenue/ costs from Covid means a loss in 2020 - 2021 will be bad, too, even with fee increase, so cost will need to be managed. Accounts as presented in Break in – were accepted.

Reminder that Antenna rights may yet be affected by RMA reforms -3 New pieces of legislation. Sub-Committee to monitor how the new legislation may impact our transmitting rights

Conference 2022: Greymouth very unlikely – for multiple reasons, so most likely to be in Wellington. Potentially not over Queen's Birthday weekend Sat / Sun Format likely, meeting still sat for AGM/AREC Sunday??? Then what? Is it sightseeing or is it the conference – Forums? Possible Conference Committee run them all the time.

Jim Godfrey Award Recognition of work in the club, never seeks reward – ZL2 Greg Banks

Best Exam Result –100% Wolfgang ZL2WRF Branch 63, Hui ZL2HGI Branch 20, ZL3PEB – 05, Paul ZL1PDS – 29 Youngest Pass: Joshua Judkins ZL3MHZ – 57/60 – 9 Years old Branch 05

Branch 05 in Christchurch – Story was told of supporting older hams in later years, Having this connection with people was awarded the Rothschild cup with 34 passes in the year.

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Annual Reports:

As Per Break-In: March/ April Break -in – Editorial Team – Possible new editor, next year – Learning Now

Lakes Award being Revamped. - More later in this newsletter

Administration Liaison Report

Updates Since report 60 Metres – 5MHz license International Frequencies have been cleared License on a Trial Basis –Must get a sub-License to operate. International Primary Licensing is still in Australia & there is a risk of international interference. 15-Watt eirp so users must reduce power to match antenna gain. Keeping a clean nose will mean that we can apply for a permanent addition to GURL

1296 – Secondary Allocation – Primary to GPS Navigation – Galileo overlap – Under investigation by ITU Currently focussed on co-existence, but there is a strong weight for GPS priority

3.3 GHz - Allocated to 5G Cellular - Seeking RSM approval at 3.3GHz

Unrestricted 2-way radios. There was an update. The current arrangement is a compromise, and RSM still prefer a total band. Amateurs are only approved, if the set is provided by a licensed person. RSM are not getting reports from dealers, and this is affecting any claim that they are of value. If we can't show we are using them, we could loose the right to have them

Info-line - Requesting more content from branches

Local Government Liaison.

Discussion on Council Plans – Antennas 15 areas blindsided, Councils are happy to keep it off the radar, and make rules in secret. We need members to read what councils are doing and make submissions every new council plan is a start from scratch, make sure you have antenna rights mentioned in every plan.

Remit: Carried on Voice without objections There was a discussion re: possible solutions for a reduced Council *Proposals, Not plans yet – No Remits – This is a big change if it is to go ahead. Discussion Only*

Chair sits outside this council.

Option 1: 5 councillors from anywhere in NZ

Option 2: 3x anywhere 1x North 1x South

Option 3: 2xSI, 2xZL1 2xZL2

Option 4: Current Situation: 3xZL1, 3xZL2, 2xZL3, 1xZL4

Two Questions – Do we reduce representation? Do we change the way you are represented? We need to consider what we need in the future.

The Stirrer award was given to the chairman Mark Gooding.

It was my pleasure to represent all Branch 65 members at the AGM in Napier this year, and will be happy to answer any questions at the July general meeting.

RAMBLINGS FROM THE EDITORS DESK

Well, if we thought the passing of the shortest day would mean a warming of the weather, the current cold snap has reminded us that winter is still far from over. This month has seen me travel to conference, and travel for work, and the wellington Delta variant reminds us that covid uncertainty remains and ever-present threat, even as the vaccine supplies run low, or maybe even out.

At a time when many personal details of staff and patients of the Waikato health system are being posted of various website and the impacts of the system outages are still being felt, it is remarkable that many feel posting even more data into on-line systems is the way to keep safe, the more we have on-line, the greater the risk of security breaches, but as cheques, paper and face to face become unfashionable, are we ready for the changes that we will face in a world that is never going to be as it once was. The world is changing, and its harder than ever to see that we will be able to keep much of what we know.

If you have read the conference report than you will see that this is impacting NZART and all who operate in the amateur bands, Antenna's are no longer "interesting" but are "Visual Pollution" amateurs, for all their technical skill are seen as dinosaurs, and uncontrolled communications are seen as threat to the "Peace of the people" the Individual is no longer ensure the right to be different, Hold a different view, or communicate outside the official censored and regulated media systems. But like it or not we are different. The very equipment we use is designed to be used by persons with integrity, skills and ethics, but others who do not hold these values are using it to disrupt and bring the name of the amateur into disrepute, and sadly its not just cheap imported radios being used, Ex estate equipment, ex commercial radios, and other items sold by trademe, ebay and even classified adverts are making their way into hands that do not share the hobby.



Cancel all my meetings.	
Someone on the internet is wrong.	

Like many threats, the change is not immediately obvious, or directly aimed at us, it's a by-product of a changing culture where choice and expression are limited, in the interests of promoting the one true message, and we are simply unwilling participants.

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The biggest areas of immediate threat are of course frequencies and antennas. Both are under treat, and there are interests that would like to see these totally removed from us. Spectrum has already been lost, and more may yet also be taken by international agreements. If we are to retain these, we must be seen to be using them. But the antenna on will be much harder. With intensified housing, the HF antenna becomes difficult to hide, and the noise in the band will limit our option, while D-Star, Fusion or DMR offer alternatives for those who cannot set up HF, how sad would it be if HF was to become only a memory.

I don't have the answer, but we must first see the problem, if we are to find the answer.

This week a good illustration of how the information flow is controlled came into my inbox, I received, from multiple sources, two very different versions of the same story, a story about electric cars.



One version is that the cars, which are all abandoned in the field are there because the batteries have failed and the cost of replacing them was higher than the cost of the cars, so they are dumped and left to rot. But I also received a "Fact-Check" which states this si a lie, the cars were there because the business failed, and they are fine to fix (they clearly are not).. Since these cars are in France, and details are hard to find, it took some research to find out who is right ... And both versions are right, and both are wrong.

The cars did come from a failed company and were in "working" order when placed in the field. It seems the rental of electric cars was not a thriving business to be in. While the company was being liquidated, the covid lockdowns hit, and the cars were left, being Lithium batteries, they should have been fine left part-charged, and should have recovered, But post lockdown they were found to be not only unable to hold a charge, It seems parts of the electrical system did not switch off, and the batteries were over discharged. but also found to have suffered weather and vandal damaged and most were no longer saleable. Even in France the small size and poor build quality made them unsalable, to this day they sit awaiting a solution. Due to the fire danger of the batteries, no scrap dealer is equipped to dismantle them for parts. They are a problem that we have yet to address. One that will impact all electric cars one day ... And then what

While to story is boring, the two distinct versions of the story show the danger of social media as a source of information, yet the mainstream media has also not told the story well. But the debate showed that there was a story to look into (and as hard as that was, even this version may not be the whole story), but what if there was only one side of the story? If the fact checkers also only tell one side of the story, can we trust the fact checkers too? How do we find the news, and not the editorial?

Amateur radio is facing its very own crossroads, the hobby is changing, and I do not know where we will be in days ahead. Home operations are becoming more challenging, and even with stealth antenna systems, the future may be very different from what it is now, but if we are to protect ourselves, we need to be much more aware of how changes are impacting us, and we need to be heard at council meetings, seen at public events, and show that we are not just old men is ramshackle shacks restoring antiques, but a vibrant diverse community united around a love of technology and experimentation.

Part of that change is however becoming more and more obvious. The portable HF radios, and the NZ lakes award (more later in the newsletter) SOTA, as well as parks and Huts are making portable operation easier and more attractive for all to use. While not everyone can get to a Summit or a DoC Hut, or even many of the regional or national parks (but there are plenty of accessible ones in Auckland- so we have no excuse) there is not one of us, who cannot access at least one of the 1,184 lakes currently on the list. The only requirement is to get within 500 metres, so operating from a vehicle is possible, with only 2 simplex contacts required, this is a great chance to get involved without the challenges of other "One the air" awards. So portable operation (which will be a bonus for AREC operations) should be part of our future planning.



Getting this close to an NZ lake means most hams could work this award

But what next? Digital Voice (DV) modes require money on new rigs or hardware that most of us don't have, who will be helping our member adapt? How many hams are off air as they have an aerial fault, and no-one to help them get it fixed? How will we know? Who is helping them?

And what can we do for those who cannot get a dipole or a vertical in the air? Do we go with stealth designs, or do we need internet (mesh maybe) systems that allow us to access remote stations, maybe even club equipment?

Like so many challenges we face, the answer is not mine to give, The expertise lies in the many of you who have walked along these lines before, who have experimented with different systems and antennas, and who are looking to solve their own problems, because if you can find a solution to your own problem, then maybe you have the solution for someone else problems.

Its part of our DNA to be different, and its part of our DNA to be creative, We need your creativity to shine, now more than ever, to be examples of what a true ham is, and to bring your ideas to the table, and help one and other to enjoy our hobby in spite of all the challenges. I know I could benefit from your ideas, and I know others are keen to hear how we can be more. See you ate the club, Or the equipment sale, or on air. Till then 73

De ZL1NUX

THE MID -WINTER MADNESS EQUIPMENT SALE

SATURDAY JULY 3RD **AT THE CLUBROOMS – WELLINGTON PARK 1 GREAT SOUTH ROAD, PAPAKURA** DOORS OPEN AT 10:00AM - CLOSE 1PM

FREE ENTRY FOR BUYERS AND SELLERS A CAFETERIA WILL OPERATE BETWEEN 10:00 AND 12:30

As space is very limited, Tables in the clubrooms will only be offered by application, however, boot sales, in the car park will be available to any private sellers, while there is no charge, bookings are required, and each seller will be allocated 1 car park, and must provide their own rain/shade cover. Sales are to be at the read of vour vehicle.

To book a space contact: zl1nux@outlook.com

PAPAKURA RADIO CLUB WILL BE CLEARING UP A COLLECTION OF EQUIPMENT AND EVERYTHING MUST GO !!! **ANYTHING LEFT IS OFF TO E-WASTE**

THIS MAY WELL BE THE BEST PRICED SALE OF THE YEAR.

Sellers are to be on site by 9:00 AM for set-up, as the sales area will be closed off to all vehicle traffic after this time.

SO ... GET THAT JUNK INTO THE TRUNK



2021

WAITAKERE SPRINTS 2021

The Papakura Radio Club Inc. is pleased to provide the rules for the 2021 Waitakere Sprints. The Sprints will be the same as previously held,

The Phone Sprint will be on the last Saturday in July and The CW Sprint will be on the first Saturday in August.

The Sprints are of one-hour duration on 80m, and are open to all licensed amateurs in ZL, VK and Oceania call areas.

Object of the Sprints

The operator's basic goal in the sprints is to make as many contacts as possible, without duplication, during an hour of operation on a single band. Any contact with ZL, VK or Oceania stations on 80m during the contest period can be counted, a station may be claimed once on SSB and/or CW.

Eligibility

The Waitakere Sprints are open to all licensed amateurs anywhere in the ZL, VK and Oceania call Areas. SWL logs will also be welcome.

2021 Contest Periods Phone 1000 to 1100 UTC, on Saturday 31st July CW 1000 to 1100 UTC, on Saturday 7th August

Frequencies Phone: 3.550 to 3.700 may be used. CW: 3.500 to 3.550 may be used.

Power

In fairness and consideration to others, radio output power must be restricted to a maximum 100 Watts during the contest.

Contest call CQ Contest, CQ Sprint or CQ Test... or whatever gets you contacts!

Exchanges

Minimum exchange for a valid contact will consist of signal report and a serial number, sent and received and the serial numbers which must start at 001 and increment by one for each contact made.

Awards

Certificates will be awarded to the overall winner and to the best operator in each ZL operating area and to the

best three scores from VK/Oceania

Shortly after the event an operators 'Participation Certificate' will be posted on and can be downloaded.the web site

Scoring.

All Phone contacts are 1 point

All CW contacts are 1 point

All logs will be recorded and scored as phone or CW. They will be added for the overall winner.

Logs

A separate log must be submitted for each Sprint and must be clearly marked PHONE or CW. Contest logs must show for each contact:- Date, Time, Callsign of station worked, Signal report and Serial Number received, Signal Report and Serial number sent.

SWL logs must show both Callsigns in the QSO also both Signal Reports and Serial numbers. Logs are to be in the hands of the Manager, Waitakere Sprint by 1 September.

Sample Log

Date	Time (UTC)	Stationworked	RS(T) reced	Serial reced	RS(T) sent	Serial sent

Postal address: Manager Waitakere Sprint PO Box 72 397 PAPAKURA 2244

Email is the preferred method of log receipt.

An email confirming receipt of logs will be sent as logs are received. Plain text file named (yourcallPh.txt or yourcallCW.txt) with a tab or space between each column. email logs to... zl1vk.club@gmail.com

Closing Date For Logs No later than 1st September.

Operator Information. Each log must show the following details. Mode Callsign Name Address Operating area (must be shown..Eg./ ZL1,ZL2,VK, Oceania) Total Number of contacts claimed.

It is taken that by forwarding your log, you have made the declaration that the operator has abided by the rules and spirit of the contest.

Any entry which is clearly in violation of the rules or spirit of this contest or which contains an excessive number of duplicate contacts (this does not refer to duplicates which have been indicated as such and are not claimed) may be disqualified.

The decision of the Waitakere Sprint Manager in respect of interpretation of these rules, the granting of awards and disqualifications will be final and no correspondence will be entered into.

Rules updated 14th June, 2021.

TECH-TIPS CORNER

In the never ending attempt to keep things fresh, I'm starting a new column for your inner tech.

This month we will start with the Curly question of how you work out the State of charge of a battery. (Based in no small part with some issues I've been having with some of my Motorola handhelds lately.) Hope you enjoy it.

TESTING OF BATTERIES

There are three main methods used to test batteries, and they are in no way the best methods Batteries are extremely complex, and, in spite of what some battery testing hardware manufacturers claim, no practical method exists to quantify all conditions of a battery in a short, comprehensive test.

State-of-health (SoH) cannot., in reality, be measured, it can only be estimated to various degrees of accuracy based on available symptoms. If the symptoms are vague or not present, a reliable measurement is not possible. When testing a battery, three SoH indicators must be evaluated:

- Capacity, the ability to store energy
- Internal resistance, the capability to deliver current, and
- Self-discharge, reflecting mechanical integrity and stress-related conditions

Batteries come in many conditions and a charge can easily mask a symptom allowing a weak battery to perform well. Likewise, a strong battery with low charge shares similarities with a pack that exhibits capacity loss. Battery characteristics are also swayed by a recent charge, discharge, or long storage. These mood swings must be clearly identified when testing batteries.

Figure 9-1 demonstrates the usable battery capacity in volume that can be filled with a liquid, permanent capacity loss in the form of "rock content" that reduces the volume, and internal resistance in tap size symbolizing current flow.



Conceptual battery symbolizing the usable capacity, the empty portion that can be refilled, permanent capacity loss as "rock content" and the tap symbolizing power delivery as part of internal resistance.

The leading health indicator of a battery is capacity, a measurement that represents energy storage. A new battery should deliver 100 percent of the rated capacity. This means a 5Ah pack should deliver five amperes for 1 hour. If the battery quits after 30 minutes, then the capacity is only 50 percent. Capacity also supports warranty obligations with a replacement due when falling below 80 percent. Most importantly, capacity defines the end of battery life.

Lead acid starts at about 85 percent and increases in capacity through use before the long and gradual decrease begins. Lithium-ion starts at peak and begins its decline immediately, albeit very slowly. Nickel-based batteries need priming to reach full capacity when new or after a long storage.

Manufacturers base device specifications on a new battery. This state is temporary and does not represent a battery in real-life situations because fading begins from the day it is made. The decrease in performance only becomes visible once the shine of a new device has worn off and daily routines are being taken for granted. An analogy is an aging man whose endurance begins to wear off after the most productive years.



Knowing when to replace a battery is a blur for many battery users. When asked, "At what capacity do you replace the battery?" most reply in confusion, "I beg your pardon?" Few are familiar with the term capacity as a measurement of runtime, and fewer know that capacity is used as a threshold for retiring batteries. In many organizations, battery problems only become apparent with increased breakdowns, which may be caused by a lack of battery maintenance.

Battery retirement depends on the application. Organizations using battery analysers typically set the replacement threshold at 80 percent. Some industries can keep the battery longer than others and a toss arises between "what if" and economics. Scanning devices in warehouses may go as low as 60 percent and still provide a full day's work. A starter battery in a car still cranks well at 40 percent, but that is cutting it thin.

Any battery-operated mission must plan for a worst-case scenario. Although manufacturers include some reserve when specifying runtime, the amount is seldom clearly defined. Critical missions demand tighter tolerances, and the battery must be replaced sooner than when a sudden failure can be tolerated.

Medical and military devices are considered critical and batteries are often replaced too soon. Rather than testing them, device manufacturers prefer to use a cycle count or a date stamp to mandate retirement. To cover all eventualities, the service duration on a date stamp is often limited to 2 or 3 years.

Many batteries and portable devices include a fuel gauge that shows the remaining energy. A full charge always shows 100 percent, whether the battery is new or faded. This creates a false sense of security by anticipating that a faded battery showing fully charge will deliver the same runtime as a new one. Batteries with fuel gauges only indicate SoC and not the capacity.

Battery failure is not only limited to portable devices. Starter batteries in vehicles have also become failureprone. In 2008, ADAC (Allgemeiner Deutscher Automobil-Club E.V.) stated that 40 percent of all roadside automotive failures are battery-related. A 2013 ADAC report says that battery problems have quadrupled between 1996 and 2010.

ADAC, Europe's largest automotive club, says further that each third breakdown involves either a discharged or defective battery. The report, published by German Motorwelt in May 2013, also mentions that only a few starter batteries reach the average age of five years, and this applies to all cars. The statistic was derived from the more than four million breakdowns that the ADAC car club typically receives in a year. The study only included newer cars; service-prone vehicles more than 6 years old were excluded.

Battery failure in Japan is the largest single complaint among new car owners. The average car is driven 13km (8 miles) per day and mostly in congested cities. The most common reason for battery failure is undercharge, developing sulfation. Battery performance is key; problems during the warranty period are recorded as component failure and tarnish customer satisfaction.

i apakuta Kauto Ciuo inc.

1 aze 15



A German manufacturer of luxury cars reported that one in two starter batteries returned under warranty had no problem. A German manufacturer of high-quality starter batteries stated that factory defects account for only 5 to 7 percent of all warranty claims. Battery failure during the warranty period is seldom a factory defect; driving habits are the main culprits. A careful assessment with advanced battery test instruments capable of looking at various failure symptoms can greatly reduce warranty claims.

The mobile phone industry experiences similar battery warranty issues. Nine out of ten batteries returned are said to have no problems. Rather than troubleshooting a customer complaint because of lower-than-expected runtime, the clerk simply replaces the battery. This burdens the vendor without solving the problem; it may also lead to repeat complaints.

The Dilemma of Battery Testing

Part of the problem lies in the difficulty of testing batteries, and this applies to storefronts, hospitals, combat fields and service garages. Battery rapid-test methods seem to dwell in medieval times, and this is especially evident when comparing advancements on other fronts. We don't even have a reliable method to estimate state-of-charge, which is based mostly on voltage and coulomb counting. Assessing capacity, the leading health indicator of a battery, dwells further behind. Measuring the open circuit voltage and checking the internal resistance do not provide conclusive evidence of battery state-of-health.

The battery user may ask, "Why is the industry lagging so far behind?" The answer is simple: "Battery diagnostics are complex." As there is no single analytical device to assess the health of a person, nor are instruments available that can quickly and reliably check the state-of-health of a battery. Like the human body, batteries can have multiple hidden deficiencies that no single test method can identify with certainly.

A dead battery is easy to check and all testers are 100 percent accurate. The challenge comes in evaluating a battery in the 80–100 percent performance range while on duty. Regulators struggle to introduce battery test procedures. This is mostly due to the unavailability of suitable technology that can assess a battery on the fly. The battery is labelled "uncontrollable" for good reason; this gives it immunity.

The battery world devotes much effort on the super battery, but this improved battery is incomplete without being able to check performance while in service. Improving performance and reliability does not rest in a better battery alone, but in tracking the performance as it ages.

The complexity of testing batteries, can be compared with the Indian tale in which blind men touch an elephant to learn what it is. Because each man only feels a part of the body, disagreements arise among them. Battery testing is complex even for the sighted man but progress is being made. Better technologies will eventually immerge.

Story of blind men trying to figure out an elephant through touch. The tale provides insight into the relativism and opaqueness of a subject matter, such as a battery.



But what about measuring the terminal voltage?

Measuring state-of-charge by voltage is simple, but it can be inaccurate because cell materials and temperature affect the voltage. The most blatant error of the voltage-based SoC occurs when disturbing a battery with a charge or discharge. The resulting agitation distorts the voltage and it no longer represents a correct SoC reference. To get accurate readings, the battery needs to rest in the open circuit state for at least four hours; battery manufacturers recommend 24 hours for lead acid. This makes the voltage-based SoC method impractical for a battery in active duty.

So simply measuring the terminal voltage of battery does not reveal it's capacity or its state of charge, But it can show when a battery needs replacement.



An example is the 12 Volt Sealed Lead acid battery, If you tested the battery that was in a backup application (say an alarm panel) and found that the charger voltage (float voltage) was 13.5 Volts (2.25 volts per cell), but when the charger was disconnected the terminal voltage fell to around 10 volts, we could conclude that one of the cells had developed a short circuit between the battery plate, and the battery must be replaced.

If the voltage fell to around 12.4V we would conclude all resistance?

plates were ok ... But what about the internal resistance?

(Every battery has resistance, and over time it increases, lowering the terminal voltage). We could only know by attaching a load to the battery, and seeing how much the battery voltage fell. This type of load charging (without a current meter) will give a quick idea of state of charge, and the basic testers that are sold widely, and used to test lead acid batteries (and other types too) work on this principle.

The battery tester uses an internal resistor (which is why you can only test for 10 seconds) to load the battery. This load gets very hot and if connected too long, can burn out.)

Watching the meter we could then see how far the terminal voltage falls under load; this would reveal any higher than expected internal resistance, or any faulty cell, But in reality, it is revealing only the Cold Crank Ability of the battery, Its ability to start the vehicle, not the capacity of the battery.

So it will reveal a faulty battery, But still does not give us much information on how good a battery really is. There are complex testers that will test a battery, but in most cases the cost of the battery does not justify the time spent testing it.



Batteries over 5 years of age should be replaced as a matter of course, and a lifespan of 3-5 years is normally considered acceptable, some will outlast this, but if tested correctly, you will find they are operating at reduced capacity. Car start batteries for example can often operate until they reach 30% capacity, but will fail overnight if a simple electronic device is left connected.

Only a full timed discharge load test will show this value. But terminal voltage testing, and load test have a place, especially for Lead acid, Or Sealed Lead Acid batteries

Safety:

- Always remember that load testing batteries must be performed only with the right tester, Drawing excessive current from a batter, due to too low a resistance as the tester was designed for higher capacity battery, or a different type of battery may warp the plates and damage the battery, cause electrolyte to leak, or even cause a fire.
- Also note that testing for too long a period even on the correct tester, can overheat the load, and damage the tester.
- Remember Most batteries have acidic or alkaline materials in them, and either of these can cause chemical burns

BUT WAIT - DON'T NI-CAD'S GET MEMORY EFFECT ?

There are a few hot potatoes in the battery world and memory effect in NiCad Cadmium batteries is one of them. The story goes that if you discharge a Nickel Cadmium battery to exactly the same point thousands of times and then recharge it, the battery will remember this discharged point. As a result, if you then discharge the battery to the moment when it expects recharging to start, but instead of recharging you continue to discharge, the voltage will suddenly drop.

How the rumour started



The memory effect was first discovered in batteries used on satellites.

This idea did not come out of nowhere. NiCad batteries were used in satellites during the 1960s where their lives would follow a very exact pattern – recharging for 12 hours via solar panels and then discharging for 12 hours. The discharge and recharge patterns would be virtually identical every day and they would repeat this thousands of times as they orbited the earth.

Pensabene and Gould, two scientists working at GE, studied these batteries after they had been in use and noticed the voltage drop when they were discharged below the point when charging would have normally started. In 1976 they published a paper called "*Unwanted Memory Spooks Nickel Cadmium Cells*" outlining their findings.

From there the myth took hold and almost any Ni-Cad issue suddenly got blamed on memory effect.



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July 2021
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Finding the real memory effect

Widely ignored is that Pensabene and Gould also attempted to repeat the memory effect in the laboratory by subjecting NiCad cells to over 5,000 cycles of identical charge and discharge cycles but failed to see the same result that they had observed in used satellite batteries. A similar attempt in 1996 by scientists Sato, Arakawa and Kobayakawa also could not produce cells that exhibited the memory effect.

Despite this, many people still pointed to the memory effect as a shortcoming of Nickel Cadmium. General Electric attempted to correct this in a technical notice where they pointed out that in order to even have a remote chance of the memory effect occurring, three steps were required:

- 1. The battery must be discharged to exactly 25% (+/- 1%) of its capacity
- 2. The battery must then be recharged to exactly 100% and then the recharging must be cut off.
- 3. This pattern must be repeated hundreds of times.

It is clear that there are very few real-world applications, perhaps none, where such a situation would occur. Users of battery powered devices never discharge to exactly 25% hundred of times and it is also common place for batteries to be overcharged (left charging even after they have reached 100%). This latter practice is even thought to clear any memory effects anyway.

So what can we test for?

Capacity-fade of nickel-based batteries correlates, in part, with a rise in internal resistance. NiCd and NiMH share similarities with lead- and lithium-based batteries in that the internal resistance remains low at first and then rapidly increases towards the end of life.

Measuring resistance could serve as a simple rapid-test method to detect end-of-life but this would not provide dependable state-of-health (SoH) information.

Therefore the correct test for this effect would be to perform a controlled discharge at a constant current, and record the time that it takes for the battery voltage to fall to 80%, after the battery has been fully recharged. - This, when compared to an initial battery test, would give us the battery capacity as a percentage.



And in My case- Prove that I need to repack the battery case with new cells, or maybe just purchase some new battery packs already made from China – Either way, these Ni-Cads are destined for the local tip.



Papakura Radio Club Inc.

1960

SEEN OR HEARD AROUND THE SCENES

INVITATION FROM FRANKLIN CLUB

Greetings to our friends and neighbours, The Papakura Radio Club

Franklin is staging a dinner next month, and we would like to see some amateurs and families from Papakura come along to join us.

We are pleased to announce that the mid-winter dinner will be held at the Waiuku Cosmopolitan Club, 4 Victoria Avenue, on Friday 23 July. The aim is to meet at 6:00 pm to be ready to sit down at 6:30 pm. I am attaching the menu so that you can plan ahead.

Please RSVP to Durlene ZL1ULK by Wednesday 21 July.

73

Tom ZL1TO Secretary - Franklin Amateur Radio Club Inc

FRANKLIN RADIO CLUB EQUIPMENT SALE - AUCTION

The Franklin Junk Sale is back again.

It will be held in the clubhouse, 19 Stadium Drive Pukekohe. Start time is 7:30 pm prompt.

Our sale is led by a sales conductor. Vendors are encouraged to bring their items in saleable lots.

Buyers are asked to pay to the cashier, on the night, or register with the cashier prior to the sale if making electronic payment.

The Club's account with the BNZ is 02-0404-0157944-00 Please identify payments with your callsign and Junk Sale in the reference fields.

The door will open at 7.00 pm.

Vendors may arrange for items to be delivered ahead of the sale by contacting the Secretary at 09-2388580 or 0210-8186962 or <u>zllto@nzart.org.nz</u>

At the conclusion of the sale a complimentary supper will be served.

Although the third Tuesday is usually given over to a general meeting, there will be no general meeting in July. The entire session is Junk Sale.





INTERNATIONAL LIGHTHOUSE LIGHTSHIP WEEKEND - ILLW

Normally held on the 3rd full weekend in August

Next ILLW: 00.01 UTC 21st August to 24.00 UTC 22nd August 2021 (48 hours)



For some reason or other August seems to have become the international weekend for lighthouses. Countries all over the world have become involved in one for or another of lighthouse activity.

The ILLW usually takes place on the 3rd full weekend in August each year and attracts over 500 lighthouse entries located in over 40 countries. It is one of the most popular international amateur radio events in existence probably because there are very few rules and it is not the usual contest type event. It is also free and there are no prizes for contacting large numbers of other stations. There is little doubt that the month of August has become "Lighthouse Month" due largely to the popularity and growth of the ILLW.

If you thinking of activating a lighthouse, It's time to start the planning

DIÝ SATELLITE DESIGN

Hi Gavin

Preparing for later project nights, I have found a great design for a cube satellite which we could make at the club, but not sure if Rocket Lab would launch it for us!

Mike ZL4MDE

Maybe if we add a few more fireworks, it could self-launch? Bigger might be better (Editor)



MY CUBESAT PROPOSAL WAS THE FIRST TO BE REJECTED FOR VIOLATING EVERY DESIGN AND SAFETY REQUIREMENT SIMULTANEOUSLY.

NZ LAKES AWARD

With a revamped look the NZ lakes award (and no it's not Lakes on the Air) joins Parks, Huts and Summits as potential activation and hunter sites.

Geoff ZL3GA, Chris ZL4RA and Mark ZL3AB in conjunction with Andrew Barron ZL3DW the NZART Awards manager, have revamped the rules for the NZ Lakeside Award.

There are a number of people keen on portable operation but who, for various reasons, are unable to undertake SOTA activations. They saw the Lakeside Award as a good alternative and one which we all hope will increase participation in portable operating.

The New Zealand Association of Radio Transmitters NEW ZEALAND LAKESIDE AWARD

The New Zealand Lakeside Award is designed to promote operation from New Zealand's scenic freshwater lakes and to stimulate mobile and portable operation. Estuaries and inlets are not counted as lakes. The award is open to all amateur radio operators.

General Rules

1. Contacts can be made on any band or mode, but not via repeaters or the Internet. Satellite contacts are valid for this award.

2. The LOG must contain the date, band, mode, station worked, and LINZ lake number (or name) for each QSO.

Endorsements are available for all contacts being achieved on a single band, or mode, or for satellites.

Rules for Hunters

- 1. For the Basic Hunter Award, contacts are required with stations operating from 10 unique freshwater lakes in New Zealand. There are currently 1184 lakes on the list
- 2. You can only Hunt one lake at a time and you can't go back to it once you move on to the next one.
- 3. Hunter endorsements are available for each additional group of 10 lakes.
- 4. A Hunter Honour Award is available for contacts with 50 or more lakes.
- 5. Activating Stations must be located within 500m of the lake shore.

Rules for Activators

- 1. The Basic Activator Award is awarded for 10 unique lake activations. A minimum of 2 contacts is required to qualify as an activation.
- 2. An Activator must supply each contact with at a minimum the lake number or the name of the lake
- 3. Activator endorsements are available for each additional unique 10 lakes activated.
- 4. An Activator Honour Award is awarded for 50 unique activations.

SUGGESTED OPERATING PROCEDURE

CW: CQ NZLA

SSB: "CQ New Zealand Lakes Award"Activator:[Callsign] e.g. ZL1ABCHunter:[Callsign] e.g. ZL1ABCActivator:R 59(9) TUHunter:Roger 59(9) also thank you

Common Frequencies:

CW 5353 kHz (with permit), 7032 kHz, 14,062 kHz, SSB 5363 kHz (with permit), 7090 kHz, 14,310 kHz

Unlike SOTA you do not have to set up away from your vehicle although you can obviously do so if you wish.

https://ontheair.nz/(thanks to Matt ZL4NVW), has an alert & spotting facility along with the full list of Lakes & Parks. If you wish you can record your activations/hunting here. (The site can also be used to locate active POTA, SOTA and HOTA activators and spot them. This site shows just how many possibilities there are to get out and operate ... As soon as its warmed up of course)

This shows that now there is a great opportunity for a family to go for a picnic/bbq by a lake or in a park & do some "Hamming" whilst also being outdoors in the fresh air.

Choose the right spot, and you can POTA after you activate the lake





IT'S A C



NASA MIGHT PUT A HUGE TELESCOPE ON THE FAR SIDE OF THE MOON OBSERVING THE SECRETS OF THE UNIVERSE'S "DARK AGES" WILL REQUIRE CAPTURING ULTRA-LONG RADIO WAVELENGTHS—AND WE CAN'T DO THAT ON EARTH.

NASA is in the early stages of planning what it would take to build an automated research telescope on the far side of the moon. One of the most ambitious proposals would build the <u>Lunar Crater Radio</u> <u>Telescope</u>, the largest (by a lot) filled-aperture radio telescope dish in the universe. Another duo of projects, called <u>FarSide</u> and <u>FarView</u>, would connect a vast array of antennas—eventually over 100,000, many built on the moon itself and made out of its surface material—to pick up the signals. The projects are all part of NASA's Institute for Advanced Concepts (NIAC) program, which awards innovators and entrepreneurs with funding to advance radical ideas in hopes of creating breakthrough aerospace concepts. While they are still hypothetical, and years away from reality, the findings from these projects could reshape our cosmological model of the universe.

There are clues about what happened during the Cosmic Dark Ages whizzing around, hidden in hydrogen, which still makes up the majority of the known matter in the universe. Each time the spin of a hydrogen's atom's electrons flips, it gives off a radio wave at a specific wavelength: 21 centimeters. But those wavelengths released during the Cosmic Dark Ages are not actually 21 centimeters long by the time they reach Earth. Because the universe is rapidly expanding, hydrogen wavelengths also expand, or "red-shift," stretching out when they travel across vast distances. This means each wave's length functions like a timestamp: The longer the wave, the older it is. By the time they reach Earth, they are more like ten or even 100 meters long, with frequencies below the FM band.

Despite their low frequency, these waves could be captured by a radio telescope—if our atmosphere wasn't in the way. The ionosphere, ionized by the sun's electrical energy, absorbs or reflects this information before it reaches us. Our radio communications on Earth disrupt it, too. So imagine it: From the Dark Ages of the cosmos they travel, ready to tell us what exactly was going on when they were made, and then *BLAM*—ionosphered. Bye-bye, cosmic truths.

That's where the moon comes in. On its far side, it blocks Earth's radio signals. There is no ionosphere. For incredibly long wavelengths, it's a perfect port of call.

Full story can be found at: <u>NASA Might Put a Huge Telescope on</u> the Far Side of the Moon | <u>WIRED</u>

Now if they will only let us set up a repeater on the day side at the same time. And thanks Mike for the link





Would the person who keeps leaving my tools in the sun, Please stop.

60M SUB LICENCE - IT'S BACK, BUT DIFFERENT

NZART is pleased to announce that negotiations with RSM have been successful in obtaining a licence to allow operation for all New Zealand amateur operators to use in the 60 m (5 MHz) band using the WRC-15 allocation.

Thanks again Bob Vernall ZL2CA for all your work in this area.

Maximum allowable power is 15 W EIRP (effective isotropic radiated power).

Amateurs are secondary users in this band. These frequencies are, or may be, allocated for use by other services. Amateur operators must accept interference from, and must not cause interference to, such other services.

As with the old 60m trial, all those who wish to operate on the band **must complete and sign** the <u>new sub</u> <u>licence</u> which sets out the terms of operation before you can operate. For a full list of FAQ's please <u>click</u> <u>here</u>

Due to the new licence, NZART cannot grandfather those under the old sub-licence and ALL users of this band must complete the new sub-licence application.

Once completed, please scan and email to NZART HQ <u>nzart@nzart.org.nz</u>. Once acknowledged by return email, you can begin operation.

Also attached are the FAQs (Frequently Asked Questions) which you are strongly encouraged to read to ensure you stay within the terms of your sub-licence.

The NZART licence (and your sub-licence) is for a twelve month period to allow RSM to assess if there are any interference issues.

If not, then NZART will negotiate with RSM to having the 60 m (5 MHz) band allocation added to the GURL (General User Radio Licence). If this negotiation is successful then the need for the sub-licence will not be required in the future.

NZART President Mark ZL2UFI



41st ALARA CONTEST 2021

ELIGIBILITY: All licensed operators throughout the world are invited to participate.

Scout and Girl Guide groups are encouraged to participate using their Club's equipment and callsign.

OBJECT: Participation: YLs work everyone, OMs work YLs only.

CONTEST: Combined phone and CW runs over 24 hours:

STARTS:Saturday 28th August 2021 at 0600 hours UTCENDS:Sunday 29th August 2021 at 0559 hours UTC

SUGGESTED FREQUENCIES: All HF Bands except 160 m & WARC Bands. Contacts made on Echolink will also be accepted.

OPERATION:

- YL's operating with their own callsigns
- YL's from Scout and Girl Guides groups using their Club's equipment/callsign with a licensed Amateur present.
- Second operators. If YL is operating as a 2nd operator, her husband/partner CANNOT participate in the contest.
- Every individual phone or CW contact may be counted.
- There must be an interval of greater than 1 hour between contacts with any one station on any one band and in the same mode.
- All contacts must be made in accordance with operator and station licence regulations.

PROCEDURE:	Phone:	call "CQ ALARA CONTEST"
	CW:	YLs call "CQ TEST ALARA"
		OMs call "CQ YL"

EXCHANGES:ALARA member:RS or RST, serial no. starting at 001, ALARA member, name.YL non-member, OM:RS or RST, serial no. starting at 001, name and whether YL or OM.OMs work YLs only.RS or RST, serial no. starting at 001, name and whether YL or OM.

SCORING:	Phone:	5 points for ALARA member logged
		4 points for YL non-member logged or Scout and Guide groups (YL's)
		3 points for OM logged including from Scout groups (OM's)
	CW:	All contacts made on CW count for double points
	OM or So	cout group (OM's):
		5 points for ALARA member logged
		4 points for YL non-member logged or Scout and Guide groups (YL's)

LOGS:

- Single log entry. Logs must show date, UTC time, band, mode, call sign worked, report and serial number sent, report and serial number received, first name of operator of station worked and points claimed.
- Scout and Girl Guide participants should also include their patrol name.
- Please note in mode if contact is on Echolink.
- Paper logs or electronic logs are both welcome.
- LOGS MUST show full name, call sign and address of operator, and show final score (points claimed).
- ELECTRONIC LOGS MUST BE IN A FORMAT WHICH CAN BE PRINTED BY MICROSOFT WORD OR MICROSOFT EXCEL.
- Logs must be legible. No logs will be returned. Decision of the Contest Manager will be final, and no correspondence will be entered into.

Logs must be received by the Contest Manager by: 30TH SEPTEMBER, 2021.

CONTEST MANAGER:	Mrs Sue Southcott PO Box 708	VK5AYL
	Goolwa SA 5214 AUSTRALIA	OR: alaracontest@wia.org.au
Certificates will be award Top score YL overall	ded for the following:	Top score Australian YL CW
Top score YL phone onl	у	Top score DX YL CW
Top score YL Echolink		Top score DX YL

Top score OM in each continent & VK call area

TOP SCORE vk yl Foundation Licence Holder

Top score ALARA member in each country & VK call area

SOME NETS - FOR WHEN YOU ARE LOOKING FOR COMPANY

Day	Time (Local)	Freq (MHz)	Group
Sunday	08:00	3.750	Southern Net
	09:00	3.700	Bch 10. Franklin.
	09:00	3.755	Bch 65. Papakura.
	16:00	7.125	SPAM Net (AM Mode)
	19:00	146.625	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
updated	20:00	3.605	Br 80. Hibiscus Coast
updated	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	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	20:00	3.850	SPAM (AM Mode)
	20:30	3.650	W.S.R.C.
	20:30	3.560	Digital Modes Net
Saturday	10:30	28.530	10-10 Down Under
	19:30	3.650	Christian Fellowship
	20:00	3.760	???
	20:30	3.600	Ch 62. Reefton/Buller
Daily or Other	07:30	3.696	ZL2OA
	08:30	3.730	ZL3RP
	15:00	14.300	Pacific Seafarers
	17:30	3.760	Home Brew
	17:30	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 update whenever you are able:

Also: Calling Frequencies:	Daily	Sunset-Sunrise	3580 USB	NZ FSQCall
Courtesy of Murray ZL1BPU	Daily	Sunrise-Sunset	7105 USB	NZ FSQCall
	Daily	24/7	7104 USB	International FSQCall

I'm told the last of these sees some amazing DX, especially around sunset.

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

Elected Officers				
President	ZL1NUX	Gavin Denby	021 104 6946	
Vice President	ZL1BNQ	Richard Gamble	021 729 270	
Secretary	ZL1AOX	Ian Ashley	021 198 1810	
Treasurer	ZL1MR	David Wilkins	021 185 7903	
Committee	ZL1RJS	Rob Stokes	021 307 005	
	ZL1IRC	Ian Clifford	021 082 48400	
	ZL1ASN	Rolly Adams	021 042 7760	
	ZL1DK	David Karrasch	021 560 180	
	ZL1RIC	Ricky Hodge	027 533 8155	
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 prior to the club meeting. Please forward articles etc to editor Wednesday 1 week prior to the general meeting. Do notify any change of address. Including E-Mail Address.

Meetings

Flocted Officers

General Meetings are held at the Club rooms on the 1st Wednesday of each month, starting at 7.30pm. 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 3rd Wednesday of each month at 7.30pm, unless advised.

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

AREC Meetings are on the 5th Wednesday night, also starting at 7.30pm AGM: Held in November

Subscription: Full membership and newsletter\$25.00Family Membership and newsletter\$40.00Bank Account number: 03-0399-0019896-00\$40.00

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

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

3.755 MHz Sunday at 9.00am. Controller ZL1BNQ Richard Gamble. (Linked to 146.675 & 438.775)

Papakura Radio Club Inc.

July 2021

2021

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