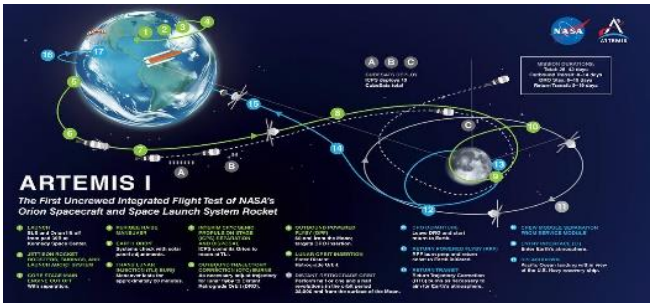


BARG News

Ballarat Amateur Radio Group

Inc. #6953T

September 2022 Monthly Newsletter

Next Meeting

11:00am, Friday 30th September 2022

At the Airport

All Welcome

Contacting us

You can e-mail the secretary

vk3bml@barg.org.au

We're on the web

www.barg.org.au

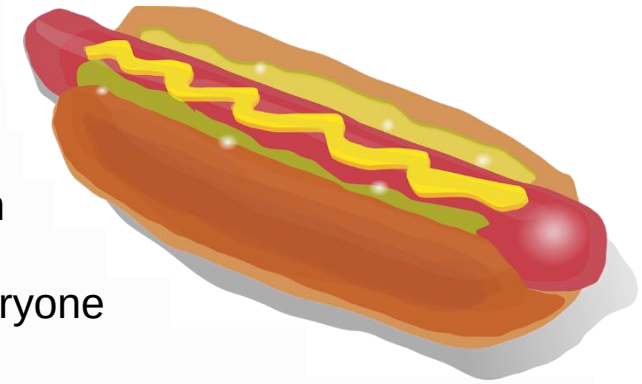
https://twitter.com/vk3_barg

https://www.facebook.com/groups/VK3BML/

CURRENT BARG OFFICE BEARERS FOLLOWING 2022 AGM

Positions:	Incumbents:
President	Ben Daniel VK3NRD
Vice President	Peter Gamble VK3PWG
Secretary	Mal White VK3OAK
Treasurer	Chris Huggins VK3QY
Ordinary Member 1	Craig Cook VK3KG
Ordinary Member 2	Ian Fairweather VK3YFD
Ordinary Member 3	Lachlan Macdonald VK3ALM
Ordinary Member 4	David Martin VK3KQT
Ordinary Member 5	Tom George VK3DMK
Ordinary Member 6	Colin Consiglio VK3NCC

FUTURE CLUB ACTIVITY – SAUSAGE SIZZLE



The club will hold another sausage sizzle on Saturday December the 3rd.
Bunnings Delacombe.
We need helpers to commit a few hours on the day.
The more we get to help, the less time everyone needs to participate.
A request for names will come out closer to the date. But if people can add into the diary, it will be appreciated.

Club Nets: **VHF NET:** Every Tuesday Night at 8 pm on 146.750 MHz - VK3RBA
HF NET: Every Thursday Night at 8 pm on 3.608 MHz - VK3BML
6m NET: Every Tuesday Night at 8:30 pm on 53.650MHz RX / 52.650MHz TX - FM with a 91.5 tone - VK3RWU
BEACONS: VK3RMB 432.536MHz & 1296.536MHz
REPEATERS: VK3RWA - 147.100, VK3RBU - 438.475, VK3RPC - 144.750, VK3RBT - 146.650
VK3RBA, Mount Buninyong - 146.750 & 439.275 & 1273.925
VK3RBA and VK3RWU on Mt William, VK3RCU on Mt Moliagul, VK3RBH in Geelong and VK3RAD in Mitcham are linked.
All on 70cm.
VK2RWB, Mt Gwynne added to the linked system.
The system can be accessed via IRLP node 9503

AMC LIST OF APPROVED EXAM ASSESSORS

https://www.amc.edu.au/industry/amateur-radio/assessors
(S) = An Assessor (Specialised) can conduct face-to-face, remote and special assessments.

Julian Perrin	0457 585 974	jp.bqt@bigpond.net.au	WERRIBEE VIC 3030
Michael Adams	0438 721 337	radmike@bigpond.com	TRAVANCORE VIC 3032
John Chenoweth	0401 716 069	jchenowe@bigpond.net.au	ABERFELDIE VIC 3040
Kent Cochran	0417 363 336	kent.cochran@bigpond.com	PASCOE VALE SOUTH VIC 3044
Neil Wilson	0408 882 399	wilson.neilr@gmail.com	PRESTON VIC 3072
Gregory Williams	0427 535 446	vk3vt@nerg.asn.au	GREENSBOROUGH VIC 3088
David Aston		david.aston1@outlook.com	ELTHAM VIC 3095
Phillip Vis	0448 499 988	philvis@outlook.com.au	ELTHAM VIC 3095
Philip Adams(S)	0478 708 246	vk3jni@gmail.com	WATTLE GLEN VIC 3096
Marc Hillman		VK3OHM@wia.org.au	MITCHAM NORTH VIC 3132
Ralph Parkhurst	0401 718 265	exams@parkhurst.com.au	RINGWOOD NORTH VIC 3134
Anthony Nance		anthony.nance@bigpond.com	RINGWOOD EAST VIC 3135
Peter Dernikos		vk3fn@outlook.com	ASHBURTON VIC 3147
Craig Carson(S)		craig.carson@outlook.com	WANTIRNA SOUTH VIC 3152
Peter Cossins(S)	0409 933 762	pcossins@bigpond.com	WANTIRNA SOUTH VIC 3152
Damian Ayers		dayers4@bigpond.com	BAYSWATER NORTH VIC 3153
Peter Hartfield(S)	0413 019 717	peter.hartfield@outlook.com	LYSTERFIELD VIC 3156
James McNabb	0497 291 927	james.mcnabb2@bigpond.com	UPWEY VIC 3158
Stephen Ireland(S)	0412 421 253	stephen.j.ireland@gmail.com	HUGHESDALE VIC 3166
Charles Savage	0409 310 320	vk3zd@charlie.com.au	OAKLEIGH SOUTH VIC 3167
Peter Mill	0428 178 640	pbmill@froggy.com.au	MORDIALLOC VIC 3195
Peter Andjelkovic	0407 096 163	vk3kpeter@gmail.com	CORIO VIC 3214
David Burden		david@vk3bdx.com	WANDANA HEIGHTS VIC 3216
Walter Cornell	0411 138 197	wcornell@bigpond.net.au	LAKE WENDOUREE VIC 3350
Bruce Kendall(S)		vk3wl@wia.org.au	BALLARAT NORTH VIC 3350
Christopher Huggins(S)		vk3exe@gmail.com	BELLELLEN VIC 3381
Peter Stewart	0490 532 571	vk3snr@gmail.com	BEULAH VIC 3395
David Timms	0427 316 821	vk3gp@bigpond.com	HORSHAM VIC 3400
Graeme Knight(S)	0417 389 357	vk3grk@wia.org.au	STRATHDALE VIC 3550
Michael Tobin(S)		michael_tobin@optusnet.com.au	KANGAROO FLAT VIC 3555
Erwin Bejsta(S)	0418 485 949	ebejsta@gmail.com	WODONGA VIC 3690
Michael Lammer		vk3uuu@yahoo.com.au	NARRE WARREN NORTH VIC 3804
Lee Moyle	0429 810 101	lee@noremac.com.au	NARRE WARREN SOUTH VIC 3805
Graeme Lewis	0418 171 601	vk3gl@bigpond.com	BUNYIP VIC 3815
Graeme Brown	0458 025 442	VK3BXG@gmail.com	DROUIN VIC 3818
John Morrissey	03 5195 5247	jbmorrissey@netspace.net.au	TRARALGON SOUTH VIC 3844
Dennis Ebery(S)	0408 064 462	bmw.den@hotmail.com	HASTINGS VIC 3915
John Remington	0449 030 704	john@secomms.com.au	MC CRAE VIC 3938
Andrew Johnston		vk6swr@gmail.com	EDEN HILL WA 6054

AMATEUR RADIO EQUIPMENT FOR SALE

Bruce VK3WL, vk3wl@wia.org.au

Benelec Adjustable Bonnet/Trunk Lip Antenna Mounting Bracket #027303.
New, unused, OEM packaging. https://www.strictlyham.com.au/benelec-adjustable-trunk-lip-bracket $25.00

MFJ-815B Deluxe HF Peak Reading SWR/Wattmeter.
https://www.universal-radio.com/catalog/meters/1338.html $60.00

MFJ-817 DELUXE VHF/UHF Peak Reading SWR/Wattmeter.
https://www.universal-radio.com/CAtalog/meters/1230.html $60.00

Digitech QC1922 20 MHz Dual Channel Oscilloscope (CRO).
EC, has had little use, sans probes. https://www.jaycar.com.au/20-mhz-dual-channel-oscilloscope-cro/p/QC1922 $130.00

bhi NEIM1031MKII DSP Noise Eliminating In-line modules.
Employ unique Digital Signal Processing (DSP) technology to remove unwanted background noise and interference from noisy speech signals to leave clear speech. The module fits inline between the radio/audio source and your speaker or headphones. c/w manual, stand, plug-in power pack. Excellent accessory for receivers without DSP, or addition to rigs with DSP where additional/audio processing is desired to reduce received noise.
https://www.dxengineering.com/parts/bhd-neim1031mkii https://bhi-ltd.com/markets/amateur-radio.html $150.00

Kenwood SW-200 peak/average SWR/Power meter.
c/w SWC-1 line sampler 1.8-150 MHz 200W, and SWC-2 line sampler 140-450 MHz 200W.
https://www.universal-radio.com/catalog/hamhf/sw200a.html
https://www.radioworld.co.uk/second-hand-kenwood-sw-200-swrpower-meter
https://www.ccarc.org.au/kenwood-power-swr-meter-model-sw-200/?utm_source=rss&utm_medium=rss&utm_campaign=kenwood-power-swr-meter-model-sw-200
http://www.radiomanual.info/schemi/KENW_ACC/Kenwood_SWC-1_SWC-2_SWC-3_user.pdf $170.00

Dingo Ranger 2m Vertical Base Station Antenna
(Australian produced version of Cushcraft Ringo Ranger Vertical Antennas ARX2). High quality, all aluminium metal components (no FG to deteriorate), 135-160 MHz, 5.5 dBd gain. EC. $100.00
https://www.dxengineering.com/parts/csh-arx2 https://www.universal-radio.com/catalog/hamants/0642.html

Yagi 5 element, 2m, gamma match. GC. $40.00

Yagi 8 element, 2m, gamma match. OKC. $50.00

Pick up Ballarat.

AMATEUR RADIO EQUIPMENT FOR SALE

IC211 2m faulty chopper.
IC451 70 cm 10 w low power
Alinco and Standard dual band handis with chargers, flat Nicads
FT2800 2m FM faulty display.
Various packet TNCs FREE to good home.
Offers,
BARG pickup club rooms sometime.

Steve Gregory
VK3O Contest Ops
VK3OT Home Station QF12
VK3OTR Remote Site QF02
VK3ZAZ VHF Ops

The answer to what the object is;

Contributed by Colin VK3KG

This device is known as a Meteorological balloon filling scale.

This one is used to fill the smallest met balloon used [known as a 20gm] and using Hydrogen gas is filled to a diameter of approx 500-600mm.

Balloons came in a colour selection of red, black or white (most common) and carried no payload when released. Colour selection is based upon the type of and colour density of the prevailing clouds at the time of release so that it can be easily seen by an observer through the tracking optical theodolite.

We used these in the army to test the initial launch direction and then the height levels where the layered wind bands would cause the rising balloon to change direction or maybe jump up or down due to the wind force on it at that point.

Once the direction of the flight is basically known a much larger balloon called a 350gm would be prepped and filled and a large radar reflector along with a meteorological Radio Sonde would be the payload.

We used to track all balloons with a special right angle tracking telescope because the special Plessey WF3 [Wind Finder radar] mounted on a light trailer body was rarely available.

More about these balloons some other time.

The mystery object filler has a automatic non return filler valve within the aluminium body.

Once the balloon is inflated the back pressure of gas keeps this valve shut so to lower the int pressure [or volume of gas] you can press that wire loop back into the tube and expel some hydrogen gas. So that you can assume a standard balloon rise rate (or speed) of ascent there are three brass screws on washers that add to the Al base tube mass and mean more gas is required to fill balloon for correct buoyancy and lift. The three washers weigh 20gm, 10gm and 5gm each. From memory the 20gm balloon had a rate of ascent equal to 100 feet per minute and the 350gm was 1000 feet per minute.

The method of filling the big 350gm one was a Beam balance scale to which the much bigger filling nozzle was attached and depending on the payload to be flown, i.e. balloon only or with Sonde, or with a radar reflector and for night time flights a small chemical water activated battery torch would all require extra weight added to the other side of the scale equipment.

In very turbulent weather or if launching a balloon train from a small opening in tall trees etc we also used a metal cord ratcheting device that oscillates like a clock escarpment to reel out a much longer cord length so that the sonde wouldn't be buffeted and tumble around and over the balloon because a longer cord would control the oscillation effect once all the string was wound out. As there is a Barometer cell and PCB linear switch scale therein any serious bouncing will affect stability and accuracy of the transmitted signal. Some of these trains could be 20 or 30 foot long in the trains especially with a radar reflector and sonde on.

The early Radiosondes used a valve and required large batteries which added considerable mass to the balloon and its train requiring MORE gas to fill balloons. Very early units operated on or near the 50-70MHz band although by the 1960s on, the allocation has been in the science and Technology band around 400-405 MHz.

.**BARG From the Past, AR January 1984.**

BALLARAT AMATEUR RADIO GROUP AND WORLD COMMUNICATIONS YEAR

1983

Dick Forrester, VK3VU/A35RF
Box 600, Ballarat, Vic 3350

In the period 1980-1982 I had the opportunity to visit the Kingdom of Tonga in the South Pacific. This idyllic location seemed to be a perfect place to operate from so I took the opportunity to obtain a licence and unleash A35RF on the DX world. When the bands were in good condition I was able to have thousands of QSOs on 10 m with a dipole and an FT-7. As conditions worsened I graduated to an IC-720A and the lower bands.

Willing helpers manning the jin-pole.

One evening while having dinner with John Lee A35JL I was surprised to discover that there was no mechanism for local people to sit an examination and obtain an Amateur Transmitting Licence. It seemed that the only way to obtain permission to operate on the amateur bands was to submit a valid overseas licence and then operate under reciprocal conditions. This of course prevented anybody who lived locally from obtaining a transmitting licence unless they were able to travel overseas. For the majority of the population this would almost be impossible. There was also the problem that there was no technical instruction suitable for budding amateur operators. Incidently, the same problem occurs in Western Samoa (5W).

Erecting the tower which came from the T and T Department for a nominal fee.

John had already had discussions with the Telephones and Telegraph Department but nobody had any real idea in which direction to go, especially since a number of the decision makers had very little interest in amateur radio. I then suggested to John that perhaps I could help by furnishing copies of the Australian syllabus for both Novice and Full Call examinations along with a quantity of study material. Armed with this information he would then be able to present an informed case to the relative authorities. At this stage it was pointed out that since a lot of inter-island traffic was sent by hand Morse a pool of trained operators might not be such a bad idea. People began to take notice.

When I returned to Australia in April I put it to the Ballarat Amateur Radio Club meeting that it would not be such a bad idea if we could assist the Tonga Club along the lines outlined above, as our contribution to World Communications Year. They agreed and study material, text books, lesson outlines, Morse keys, oscillators and sundry items were on their way. The net result is about six qualified Tongan nationals being able to operate the club station in Nuku'alofa (A35AA). The station consists of an FT-101B, FL-2100B and a TH6 at 25 metres. Low band antennae are provided and the station will be available to visiting amateurs. The technical staff of the National Radio Station A3Z provided the much needed technical expertise and guidance.

TH6 antenna at 25 metres.

I would like to thank all the BARG members who helped with material and time and the BARG committee who helped me with the postage. I think it is a worthwhile project for the Ballarat Club and we are all very pleased that we were able to personally be involved in World Communications Year. After all, that is what this hobby is all about.

AR

From Colin VK3NCC- email

I recently applied for a change to my Amateur Licence from Standard to Advanced.

One part of the all knowing grapevine told me it would cost me a $51 variation fee payable to the ACMA and my current expiry date would stay the same.

A telephone call to the ACMA soon set me right.

The process is now to apply for a new licence @ $80, and then surrender the other licence and apply for a refund of the unused portion.

The lovely ACMA customer service people explained that this (usually) ends up being cheaper for the client, because the "variation" process is a manual one, and so more expensive.

There is one main proviso though.

If the refund amount is less than $30, you're out of luck.

The ACMA won't refund anything less than $30. Also they won't refund any part of the amount that constituted an "Administrative fee".

By way of example the recurrent fee for an Amateur Radio licence is $55. This is made up of a $4 administrative fee, and $51 tax.

The only portion that might be subject to a refund is the prorata "unused" portion of the tax, that is $51.

The $30 minimum refund equates to roughly an Amateur licence still having around 214 days until expiry.

The ACMA will record details for refund based on the date that you "surrender " the licence that is no longer needed.

So the message is if you want to apply for a refund, do it earlier rather than later.

Start by sending a message to info@acma.gov.au staying that you wish to surrender a particular licence as at a particular date and wish to apply for a refund of the unused portion.

You should receive an email confirming the surrender of the licence and a statement of the amount of refund due. If you don't have your EFT details registered with the ACMA you will eventually receive a cheque in the mail.

I was told it was possible to provide a one off notification so that the refund is made direct to a bank account if you wish. I did do this, but it seems that since my EFT details were not registered at the time of surrender the " system " created and delivered a refund cheque in the mail about two weeks later.

All in all, it was a relatively painless process.

All it cost me was $80 for a new licence, less $40 (refund on surrendered licence) = $40 for the new licence that has an expiry 12 months from today.

I'm grinning at my shiny new licence,

Refund policy details are viewable on the ACMA web pages using your favourite search engine and look for the words ACMA, GIVE UP YOUR LICENCE . no quotes, just the words.

A post Script,

The issue of a NEW licence costs $80. This is made up of $51 tax, and another $29 identified as a "charge".

Since Administrative Charges are not subject to a refund, surrendering a licence in it's first year of existence is less advantageous than in later years.

Moral: if you are thinking of upgrading and surrendering licences avoid doing this multiple times within the period of the currency of a NEW licence.

Best 73

DON'T FORGET

7:00pm, Friday 30th September 2022
NEXT GENERAL MEETING

ALSO

10:00AM EVERY THURSDAY MORNING
BARG COFFEE CLUB
ALL WELCOME

Food Seduction on Doveton
524 Doveton Street North

ALSO

FREQUENT FRIDAY NIGHT
PUB DINNERS
KEEP WATCH ON BARG CHATTER EMAIL FOR NEXT OUTING.

You can now get, Doug VK3VBA Macadamia and White Chocolate Cookies at

Food Seduction on Doveton

SOME VHF AND UHF WORLD RECORDS AMONGST US

Contributor Steve VK3OT

6 Metre Band Record

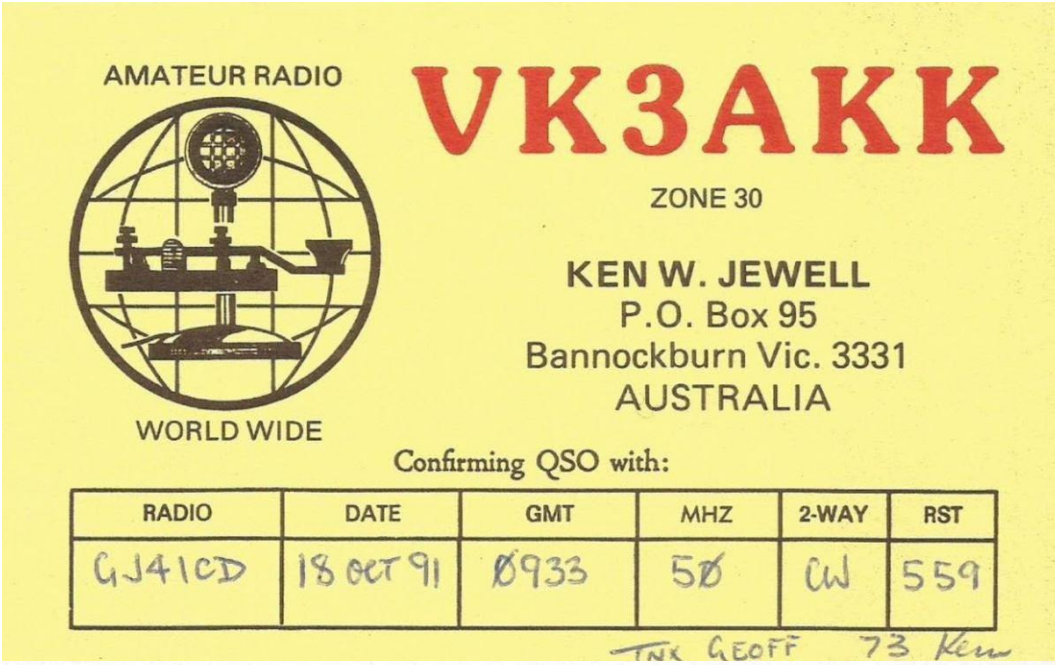
The details of this record are up on https://www.qrz.com/db/VK3AKK, a very nice tribute by Lou VK3ALB.

I was tasked with encoding many if Kens, VK3AKK, 43 Logbooks into ARRL LOTW.

He was mainly a VHF DXer and often told me he had to be content with listening to me working the European DX from his QTH in Bannockburn Victoria..
So, imagine my surprise when I discovered many EU QSOs in his 6M Log.

I emailed Geoff Brown GJ4UCD and received his QSL card.
This was submitted to FTAC and Ken and Geoff were given the new VJ3 DX record.
It is the only recorded distance over 17000km worked from Victoria.

The distance between QF21CW & IN89WF is 17067.73 km (10605.887 miles).



AMATEUR RADIO

WORLD WIDE

VK3AKK

ZONE 30

KEN W. JEWELL
P.O. Box 95
Bannockburn Vic. 3331
AUSTRALIA

Confirming QSO with:

RADIO	DATE	GMT	MHZ	2-WAY	RST
GJ4ICD	18 OCT 91	0933	50	CW	559

TNX GEOFF 73 Ken

50MHz DX STATION LOC = IN89WF

Geoff Brown, TV Shop, Belmont Road,
St. Helier, Jersey, Channel Isles.

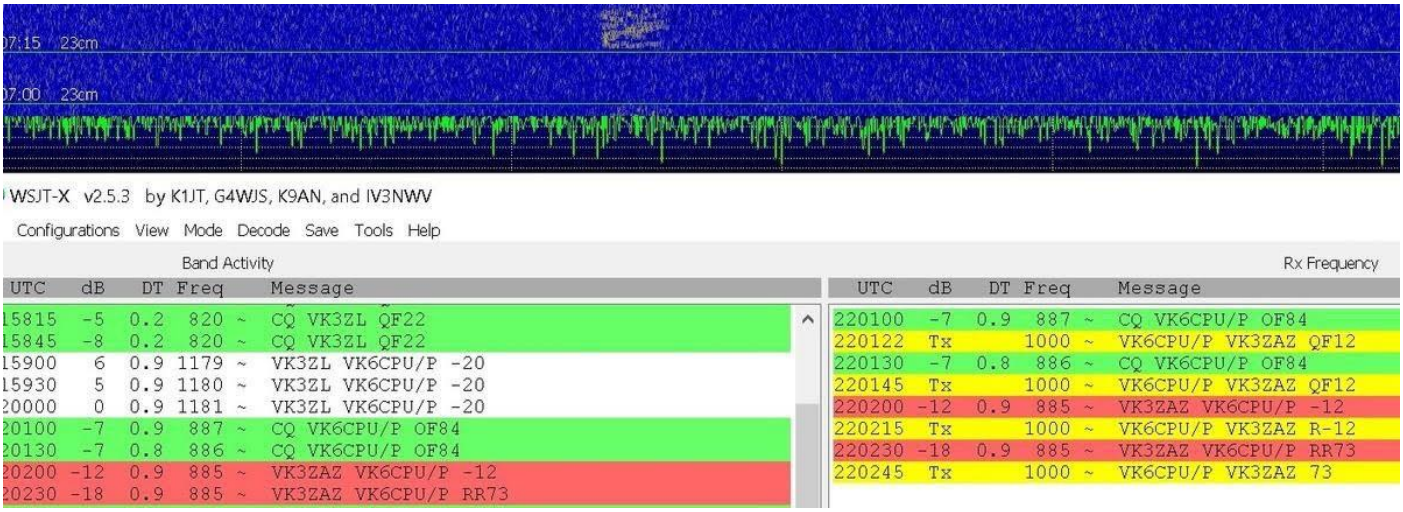
JERSEY BEACON 50.065MHz

50MHz VUCC 50MHz DXCC #33 50MHz 600+ Grids
120 "GJ" Firsts RSGB 50MHz 140 Countries

To VK3AKK Confirming our QSO on 18/10/91 at 09.33z
Frequency 50MHz Ur Sigs 5 5 9 SSB/CW EQ
FT 726/102/736 + PA. Ant. 7 El

Pse/Tnx QSL via RSGB or PO Box 100, Jersey 73 de Geoff GJ4ICD

Over 2000kms on 23cm, 70cm and 2m.



Rig ic9700 both ends
Grid packs 200 Watts rep both ends..

VK3ZAZ to VK6CPU/P on 2022-02-18 at 22:00:00, 23CM, FT8, 1296.32000, 2176.5 km

VK3ZAZ to VK6CPU/P on 2022-02-18 at 21:51:00, 70CM, FT8, 432.32000

VK3ZAZ to VK6CPU/P on 2022-02-18 at 21:47:00, 2M, FT8, 144.32000

Dish simple and effective

Winter wrap six meters dxcc #145

Contributor Steve VK3OT

This winter was hard going with conditions much poorer than previous years and the lack of Ukrainian operations.

Best dx again was up into Norway with new countries worked in North Macedonia Crete and Bulgaria.

Using my remote ftdx10 and Nine Element Yagi at The Wannon Falls Site.

FT8 CLUB LOG CONFIRMATIONS

DX Call	Entity	QSO Date	Band/Mode
LA7HJA	NORWAY	2022-07-09 08:10:00	6M Data
Z37CXY	NTH MACEDONIA	2022-07-02 05:40:00	6M Data
Best Summer DX			
TI5CDA	COSTA RICA	2021-12-29 01:00:00	6M Data
W4DXX	UNITED STATES	2021-12-26 00:41:00	6M Data
XE1MEX	MEXICO	2021-12-21 22:33:00	6M Data

Arise as you can see was heard first but did not respond to the call.
Remarkable signals from him to me off the back of my dish 49 dB down, so his signal would have been s9 off front

73 Steve Gregory
VK3O Contest Ops VK3OT Home Station QF12 VK3OTR Remote Site QF02
VK3ZAZ VHF Ops

Artemis 1 Mission Radio Frequency Allocations

Artemis I is the first in a series of space missions to build a long-term human presence at the Moon for the future.

The primary goals for Artemis I are to demonstrate Orion's systems in a spaceflight environment and ensure a safe re-entry, descent, splashdown, and recovery prior to the first flight with crew on Artemis II.

Mission Facts:

- Mission duration: 37 days, 23 hours, 53 minutes
- Total distance travelled: 1.3 million miles
- Re-entry speed: 24,500 mph (Mach 32)
- Splashdown: October 11, 2022

Some interesting facts;

• 562 cables in the core stage; The largest number—231—are located in the engine section;

• 45 miles of cabling in the core stage, and more than 18 miles in the engine section alone;

• 775 independent sensors that have wire routing to them; and • approximately 100,000 clamps and ties securing wires and cables throughout the core stage.

• The liquid hydrogen tank shrinks about 6 in (152 mm) in length and 1 in (25.4 mm) in diameter when filled with cryogenic propellant.

• The liquid oxygen tank shrinks approximately 1.5 in (38.1 mm) in length and 0.5 in (12.7 mm) in diameter when filled with cryogenic propellant.

• Roughly 14,500 fasteners need to be drilled and filled in the intertank.

• Each flight computer is rated to operate over a temperature range of minus 11 degrees to 97.7 degrees Fahrenheit (minus 24 degrees to 36.5 degrees Celsius).

Hardware Passengers.

Artemis will carry onboard a number of CubeSats that will be deployed around the moon, in orbit and a JAXA Japanese Surface Probe.

https://www.isas.jaxa.jp/home/omotenashi/JHRCweb/jhrc.html?fbclid=IwAR2YmYFb5dFdV7ob3HzSuFMLzPgxuiFVFFeZeClrQu3qPe8xcyWX1rJN8E0

Frequency Allocations to each CubeSat;Allocation summary

Mission	Frequency (MHz)	Bandwidth (kHz)
Lunar-IceCube UHF beacon	400.6	200
OMOTENASHI orbiter	437.31	80
OMOTENASHI lander	437.41	160
Orion RPOD	2203.2	6000
Orion TDRS 1	2216.5	6000
Orion TDRS 2	2287.5	5000
Team Miles	2295.74	20
LunIR	8200	400000
NEA-Scout	8402.78	162
BioSentinel	8409.57	2400
CuSP	8416.36	2000
EQUULEUS X-band	8443.52	43920
LunaH-Map	8451.7	512
ArgoMoon	8475	2000
OMOTENASHI X-band	8494.53	10920
Lunar-IceCube X-band	8498.95	2080
EQUULEUS Ka-band	32085.4	46460

The Payloads.

Orion

The primary payload, Orion CM-002, is an uncrewed Orion lunar vehicle. It has three frequency allocations, one for its docking system and two TDRS return links.
2203.2 MHz @ 6000 kHz - RPOD docking system
2216.5 MHz @ 6000 kHz - TDRS return link
2287.5 MHz @ 5000 kHz - TDRS return link

ArgoMoon

ArgoMoon will perform imaging sessions of the SLS cryogenic upper stage as it is carrying Orion to lunar orbit. After that it will transition to an elliptical orbit around the Moon and perform lunar imaging.
8475 MHz @ 2000 kHz

BioSentinel

BioSentinel will study the effect of deep space radiation on genetically modified yeast. It will carry several instrument for radiation measurements.
8409.57 MHz @ 2400 kHz

CuSP

Space weather satellite that will drift into the interplanetary space, measuring high energy particles and radiation that could potentially be harmful to future astronauts.
8416.36 MHz @ 2000 kHz

EQUULEUS

The spacecraft will be observing lunar impacts of meteors, measuring dust particles resulting from such impacts, and will carry an extreme-UV telescope with a photon counter. It will also be using water thrusters for orbit changes and attitude control.
8443.52 MHz @ 43920 kHz
32085.4 MHz @ 46460 kHz

Lunar-IceCube

Mission for measuring lunar water and ice features from a low lunar orbit (100 km). Carries a deep-space UHF beacon.
400.6 MHz @ 200 kHz - deep space beacon
8498.95 MHz @ 2080 kHz

LunaH-Map

Mission to map distribution of hydrogen on the lunar surface using two neutron spectrometers. Will operate in a very low lunar orbit (5 km). Also carries a wide angle camera.
8451.7 MHz @ 512 kHz

NEA-Scout

Will utilize a large solar sail to attempt a near-Earth asteroid flyby.
8402.78 MHz @ 162 kHz

OMOTENASHI

Lunar impactor mission, the satellite will perform a lunar flyby, then deploy a lander that will perform a semi-hard landing on the lunar surface using a retro rocket motor and an airbag. Use of both X-band and UHF.
437.31 MHz @ 80 kHz - orbiter
437.41 MHz @ 160 kHz - lander
8494.53 MHz @ 10920 kHz

LunIR

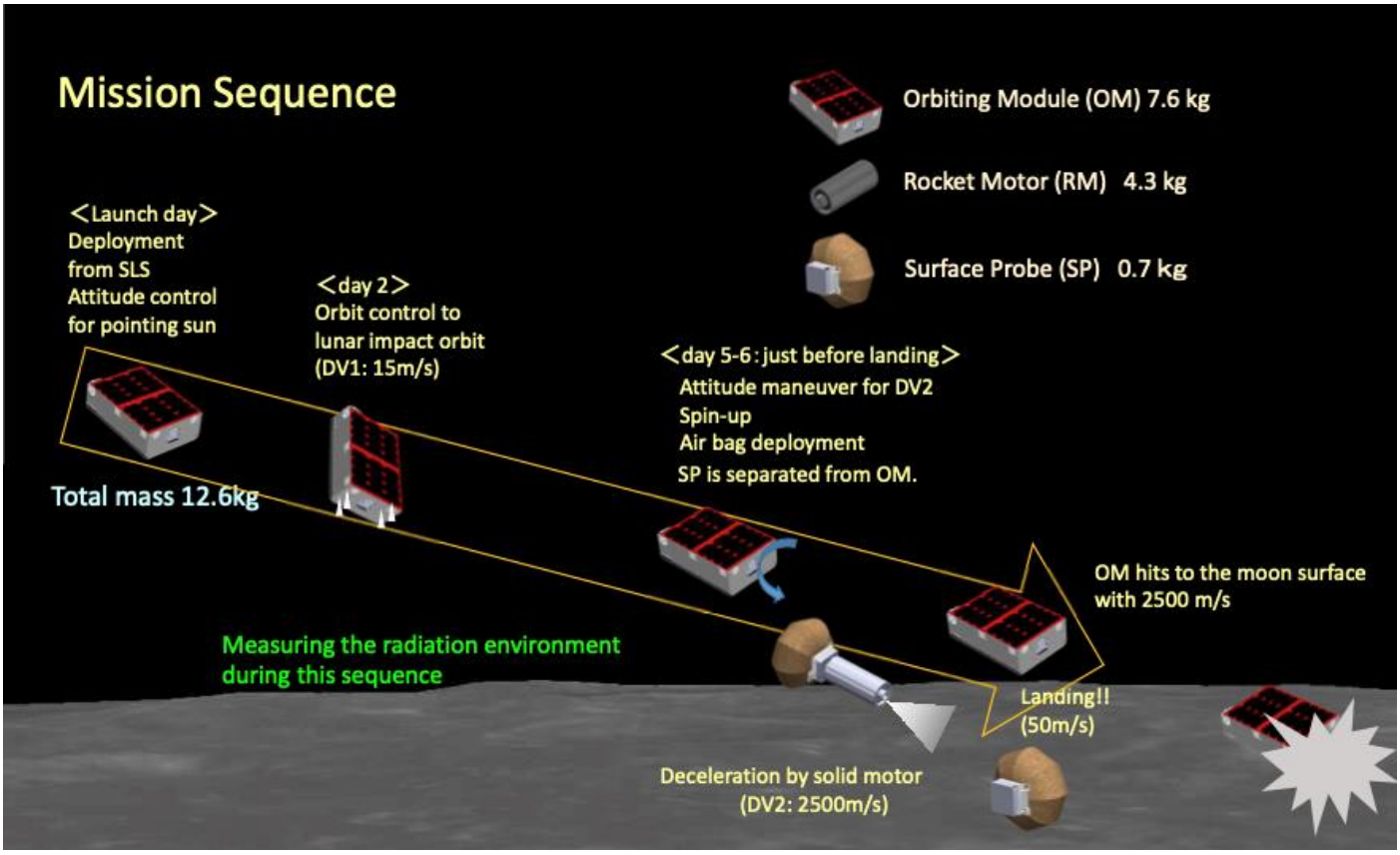
Demonstration of instruments to survey possible future landing spots on the Moon, and eventually Mars.
8200 MHz @ 400000 kHz

Team Miles

Fully autonomous mission to test new plasma thrusters and software-defined radio transmitter. It will use the USRP B200 Mini SDR to transmit S-band telemetry. Interestingly has no uplink allocation. 2295.74 MHz @ 20 kHz

OMOTENASHU Mission Information

- Verification of the semi-hard landing with airbag and others
- Development of ultra-compact transponder and solid motor
- The trajectory design for robust horizontal landing baesd on precision orbit determination
- Measuring the radiation environment near the Earth and the Moon



The Operation of OM-Communication

It will transmit beacon or telemetry data with PSK31 in somewhere path on the way to the Moon.

That antenna gain is too small, so it is not easy to receive telemetry data. JHRC sends everyone who succeeds in capturing the beacon or carrier signal.

Decode

Orbiting Module transmits in PSK31 mode in UHF-band. If you do receive alphabet and numbers, please send us those characters. If you couldn't get any characters, please send us following data;

[Please Send Us Info as Below;]

- The screenshot proves your success recording the signal or telemetry data.
- The date and location(country) when you record.
- We could introduce you on our HP or SNS, if you could inform us your receiver equipment and the above.

Either via email or Twitter DM. Of course, with your callsign!

The Operation of SP-Communication

OM turns on the power of SP before separating from OM. Until landing on the Moon, SP emits radio waves with FM modulation by the 3-axis accelerometer in SP. In FM mode, it occupies about 100kHz bandwidth. After landing, the transmission mode is automatically switched to PCM-PSK/PM and sends the digital telemetry.

Send Info as Below;

- FM mode: Please record the analog data in 100kHz bandwidth. Centre frequency is 437.41MHz.
- PCM-PSK/PM: The screenshot proves your success recording the signal or telemetry data.
- The date and location(country) when you record.
- We could introduce you on our HP or SNS, if you could inform us your receiver equipment and the above.

Either via email or file server. Of course, with your callsign!

Australia's Contribution;

CSIRO's Canberra Deep Space Communication Complex (CDSCC)

NASA's Canberra Deep Space Communication Complex, which is run by Australia's national science agency CSIRO, will be along for the whole ride - providing 24/7 coverage of the mission with its sister deep space stations in the US and Spain.

The communication complex will receive the acquisition of signal from the Orion spacecraft shortly after is separates from the launch vehicle - about 50 minutes after take-off in Florida, according to the CSIRO.

References;

https://www.gizmodo.com.au/2022/08/artemis-1-and-the-first-launch-of-nasas-megarocket-what-to-know/

https://www.theguardian.com/science/2022/aug/29/australian-scientists-keep-an-eye-on-nasas-artemis-1-on-historic-space-mission-to-moon

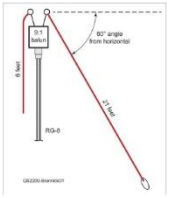
https://www.canberratimes.com.au/story/7878275/australians-to-help-return-man-to-the-moon/

1 "The Set Fades a Lot!"

QST 9-2022 September 2022 Review

P99 Second Loyalty. The CEO talks of loyalty, which is a two way thing, but compares the need for memberships of groups to consider why they need to stick together during times of need as well as during good times.
P13Member spotlight on Jacek SP3L. You can follow on his web site all of his career interests.

P24 Letters: Always an interesting page and covers many comments from around the world's members.



P30 DUAL BAND SLOPER FOR 60 and 17METERS. Have some space concerns for antennas then look here first.

P32 Modifications for the TUNA TIN "S" QRP TRANSMITTER. From the DEC 2020 edition by author which he based upon Doug DeMaws W1FB [now SK] design in QST May 76. This offers the following: Freq extension with Tuning increment. Some Precision Calibration and adding EPROM recovery and some Improved Drive level. A QRP rig still good for Parks and mountain tops. More update available at www.arr[.org/feedback and www.arrl.org/qst-in-depth

P34 A Radio Controller on a Budget. The CTR2-Mini. Initially introduced by author KU7Q in the sister QEX journal of Sep/Oct 2021 and Jan/Feb 2022 this latest version is a mini and allows same controls for a single op two radio system with control via WIo Terminal that allows Key, paddle or other third party device via USB and displays on a mini screen with WIFI and cable access. A CATS connection to a four port RJ45 switch is shown which allows a number of controls for Radio I/O, CAT, Key, PTT to the shack equipment. The example shows pinout for an FTDX101 buy users can make their own to suit radios. See https://youtube.com/lynovation

P39 REVIEW: Elecraft K4D HF/6M SDR Transceiver. A highly rated review [but of course W5OV already has a K4 and his praise is expected for this new Alpha version. All the standard lab tests are given here, and the price is yet to be announced but the other K4 versions sold from US$3,599-95.

P44 REVIEW: Zach Tec WSPR desktop Transmitter. Given that most amateurs use WSJT-X which ties up the station rig this tiny unit has a couple of options and runs just 200mW output.
Options are

1. LOW 2190 and 630M.
2. Midplus for 160.80.40.30 and 20M.
3. HighPlus 17,15,12,10 and 6M.

Current ratings were 100mA at idle and 250mA on transmit. Test was done using a Highplus. For accurate timing which is so important the device has its own GPS installed. Listen for the ARRL Eclectic podcast no 37 at www.arrl.org/ecletic for interview with the author Carl WA1KPD.
Priced at just US$139 from www.zacgtek.com A narrative to set up the computer is given in the article although NOTE it's only Windows compatible now.

P7 REVIEW: MFJ-212 Matchmaker.

P49 REVIEW: dx Engineering ISO-PLUS Ethernet Filter.

P51 Eclectic Technology. The Long and the Short of USB Cables. Looking at best way to get your control or Data between space apart equipment.

P52 ASK DAVE> Balloons for 60M. Audio Hum on Linear power Supplies and Pacemakers and Ham Radio. The later topic has a web page at www.arrl.org/pacemaker soif you have one installed June 2021.

P54 Hints and Hacks. Telephone lines as Data lines. Dummy batteries. An easy Voltage Reference, A Dual Speaker bracket.

P56 Picnic in POLAND. ***"If you go down to the woods today"*** Amateurs are practicing their Emergency preparedness down in the woods. Hidden transmitter hunts, small handheld beams. Further activities can include a balloon launch with transmitters and radiosondes for data send back to ground just like groups do at home.

P58 Boats on the Air. Inaugural one on San Francisco Bay Oh Anchors away boys." Trying out SSB, WSJT-X, FM simplex and repeaters BUT CW was more difficult after getting out beyond protection of the land and the strong wester;ey brought the CW operator to a jittery end with his paddle then the motion of the boat sealed his fate. The days activation produced a total of 40 contacts of which 25 were on HF. The group have decided to try another BOTA again.

P62 New Product Overview. Has several different products but I looked at the Alfa Radio Ltd, Mini RAS az/el rotator using a double worm gear that eliminates need for a separate breaking mechanism. No price known but look at www.altaradio.ca Another item of interest was the Eagle One telescopic antenna. Suitable for 6 to 80M it collapses down to a mere 48" from its 31-foot max. With connection to a tripod [similar to a projector stand] the price appears to be US$170.

P66 Practice a Simulated Emergency Test on 1-2 October 2022. A chance to iron out any bugs within the local and overall disaster planning levels.

P70 Radio Mounting solutions for efficient station interchangeability. Looks at Pelican cases and mini rack for quick removal. Another device is the "iPortable Pro2 Equipment Rack system 6UM "box. Another cheaper way is the Equipment Rack Mount Flight Storage case found on eBay for $129 US. Its worth looking about for someone else's design ideas for safe storage.

P78 How to rebuild an Amateur Radio club for the future provides some good ideas for members to focus on and use to see your club hasn't fallen by the wayside and no one has noticed.

P80 How's DX. "Activities in the south. Macquarie island. VK0 and then ZL7 The Chatham Islands. Teres' read photograph of the aura australis (or great southern lights) By Mat VK0M.

P82. World above 50 Mhz. Looks at the opening we had 14 April 2022.

P92 Look Back at Sept 1972. Ham Radio scout style.

P96 How to predict OSCAR DX.

P98 Classic Radio. Phasing in SSB Transmitters. In the early 1950's to 1960's the side band was produced using a phasing shift network then the 9MHz crystal filter arrived to make its mark,

P100 QST index from 100, 50 and 25 years AGO.

QST 10-2022 October 2022 Review

P4/5 EDITORIAL

P9 Second Century. CEO of ARRL looks at the new membership of the ARRL group and marvels at how many members are ready and prepared to step up and take responsibility for various jobs.

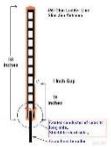
P13 Member spotlight. Keith Farley WA8ZWJ. Born in 1951 to a ham member father WA8BNW encouraged him as many did back then. With the FM craze starting to infiltrate in the 1960s and a well-known trader at Hamvention's around net operations and into his retirement activities like photography.

P24 Letters from members: 2-meter repeaters, Temp controlled soldering irons and a spiral counterpoise experiment

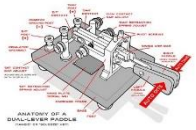
P30 Constructing an Accurate Digital QRP Wattmeter.

P33 Scavenger Antenna Tuner uses switched inductors and capacitors for matching to your external antenna. Saving the purchase of large roller inductors and wide spaced tuning capacitors. www.arrl.org/qst-in-depth with photos.

P38 450 Ohm Ladder line J pole fot144 and 440 MHz. Resonating on both bands it has a nominal Gain of 2,5 dBi when vertical. And measuring just 56 inches from tip to bottom of the stub section it is quite simple to roll it up and stow away quickly.



P40 Review. 3D Printer reviews. An Introduction to what you need and compare users and materials needed. Example shown are the iambic morse keys and cable winders.



P52 Ask Dave. DX, Ohms Law, Noise, various Verticals

P54 Eclectic Technology How Much RAM do you need? What about future expansion size?

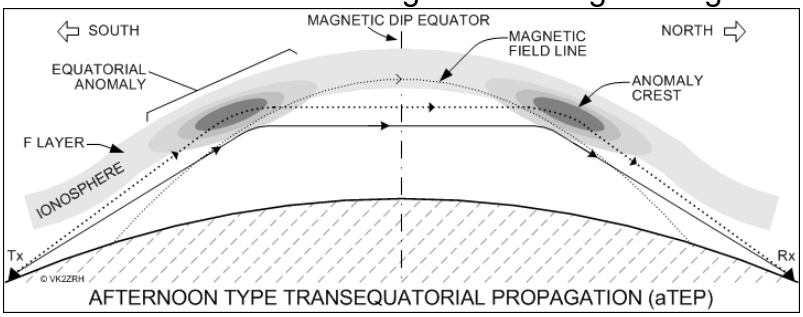
P55 DX BY Rain scatter on 10 and 47GHz plus 78 GHZ.

P57 3D Printing for Hams 101.

P60 Students experience Amateur Radio and Hands on STEM camp;

P74 Creating an Effective system for Virtual Meetings. Many clubs have already kept lectures on tapes, and from Online talks. Functional. Some ideas for meetings and other gatherings.

P78 World above 50MHz. Looks at TEP or Trans Equatorial Propagation during the afternoon and Early nighttime. Looking at the Spring of 2022. Opening on 6M from VK to North America on the 10 July this year. VK4MA Paul and VK4WTN also listed. Paul logged up 27 stations into north America. A distance of 9,676 miles for Paul using FT8.



AFTERNOON TYPE TRANSEQUATORIAL PROPAGATION (aTEP)

P91 QST magazine of November 1972. Some tips on successful QRP operation.

P96 Classic Radio: looks at Restoring a BEARCAT VHF/UHF Scanner. By replacing one electrolytic cap in the power supply and a small rewire for a 1.5V AA memory battery as the original button battery holder had disintegrated. Works perfectly now.

P98 Index from 100-, 50- and 25-year editions of QST. Want to read them we may have them in the BARG library still.

P126 Index to all Advertisers in this edition.
And plenty of adverts for all types of Radios and accessories you may like to purchase.

Silicon Chip September 2022 Review

P14 Display Technologies, Part1. A two-part series looking at the development of displays from the Nipkow disc, through the era of CRTs to Laser and LCD Displays. Very good content on mechanical displays associated with TVs to the large video screens seen in the Apollo Space craft control room at JPL in Houston, Texas.

P30 WiFi Programmable DC Load, Part 1. A load that can handle 150V and up to 30A, 300W. Designed with automated testing in mind, it can be controlled from the front panel or via WiFi. Includes case design and operating theory and development. Uses a microcontroller and an available tower PC cooler assembly. Operates in Constant voltage, current or power mode.

P44 Creality CR-X Pro 3D Printer, Review. A product available from Jaycar with good print area and uses 1.75mm filament. A very good look at assembly and setting up the printer and some of its capabilities.

P56 GPS-Synchronised Analog Clock. Using a regular battery powered wall clock, the project converts it over to a super accurate time piece, using a V.KEL GPS module and PIC16LF1455 controller. Nice to have in the shack, one or two or three…

P66 History of Silicon Chip, Part 2. Leo Simpson continues with the story of the evolution of SC and its entry to the UK and US market and SCs series of audio amplifiers. Includes EA and ETI magazines that appeared and disappeared at the time. Some interesting a

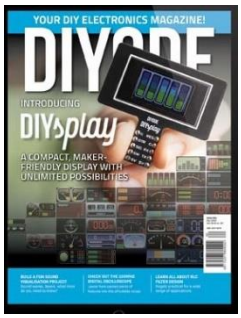
P76 Mini LED Driver. Using a relatively low-cost DC-DC converter and a current sense IC to control its output. Output current adjustable to 1A/20V from a XL6009 Buck/Boost converter from 5V DC supply.

P82 Wide-range Ohmmeter, part 2. Finishes off the project with test and trouble shooting procedures, all on a single PCB with case dimensions.

P98 Circuit Notebook. Using a Picaxe as an Arduino co-processor, as simple example of using Arduino controller with Picaxe modules. Simple USB power delay timer. A switch unit to use with museum displays that turns on and off displays automatically.

P100 Vintage Equipment, AVO Valve Tester Restorations. An interesting look at some of the valve testers developed by AVO and how to go about restoration. Great images of wiring techniques of the time.

DIYODE September 2022 Review



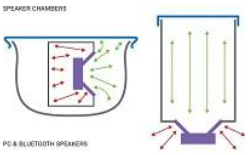
P7 Jaycar's 100MHz Digital scope, Review. A comprehensive look at what you get in a modern LCD digital scope. Data storage, Digital Voltmeter and frequency counter, 7inch LCD display and USB connectivity. A competition to win one of these scopes.

P13 LoRaWAN battery monitor, Part 2. Completion of the project, construction, the Rasp Pi progamming and connecting to a Dashboard for display.

P29 Meet DIYsplay. A unique LCD screen custom built with over 70 customisable layouts in colour.The module comes on a PCB ready to plug into protoboard or PCB, or fit a 0.1inch pitch plug/socket. Examples on how to use it and program an Arduino controller to make your own professional looking piece of equipment.

P41 Making for Beginners, Part 3. Troubleshoots failed prints and how to learn from printing mistakes. Including bed Temperatures, filament types and print speeds. Different types of infill patterns are compared.

P54 Visualising Sound. A short and simple project to convert sound into visual patterns using a small laser, balloon and speaker.



P67 The Classroom, RLC Filters. Shows the reasons for a filter, the types, how they work and how to calculate component values to roll your own.

P86 Kid's Basics, Electric Field Detector. A project to make an EMF detector from basic available components showing various construction methods and how they work.

Lo-Key Journal of the VK QRP Club September 2022 Review

Front Cover; Phil Davey VK3VB's Tentec Argonaut V
Back Cover; Peter Parker VK3YE's Portable QRP Checklist

P8 QRP Hours 40M Contest Rules. Sunday 23rd October 2022.

P11 Tentec Argonaut V review. VK3VB, Links to manuals and info on its capabilities.

P14 Prepare for Spring, Five tips for QRP DX, VK3YE. Showing some of the gear he uses for different QRP expeditions, including pedestrian mobile on HF.

P19 Down to Earth" portable operation. VK5BUG shows how he gets a good ground using some ground mats that he has built and some sneaky modifications to his campervan along with Hid portable radio rack.

P24 For Sale;
Kenwood TS-440SAT and Ten Tec 539 Argonaut VI.

P25 Chris-Crossword with last editions solution.

OTN Journal of the Radio Amateurs Old Timers Club Aust. Inc. September 2022 Review

P7 Melbourne March 2022 Luncheon. A great attendance after the September 2021 was cancelled due to the pandemic.

P8 The Active Life of William (Bill) Mitton Rice VK5BP/VK3ABP. Comprehensive look at the many faceted life of a passed amateur.

P15 Wood borers hate Herman's Morse Key. Looks at the restoration of an early PMG morse key by Herman VK2IXV and the processes to keep its original PMG markings.

P17 Radio Australia Shepparton, A short history, Part 3. Includes the 21MHz moon bounce and the variety of transmitters and modulation techniques used on the site over the years.

P23 Refurbishing a Collins R-390-A/URR. Some history of the coming about of the receiver from the US Army Signal Corps in the early 1950's. Followed by the report on bringing one of these units up to original performance. Photographs of the outside and inside of the well thought out mechanical construction of the chassis.

P27 Wires without Wires. A well written piece on Marconi's contribution to the art/field of wireless and history.

P33 Obituaries. Ken Morgan VK3CEK, Peter Swarecz VK6APZ

P34/35 Obituaries. Tom Moore VK7FM, Colin Durrell VK3UDC

P36 Celebrating 90 years of the ABC-Australia's Public Broadcaster. History of the ABC, including the "synthetic" test cricket broadcasts and some of the memorable radio and TV programs it has produced.

P42 Two-Way communication – a brief look at where we have come from. Looks at some of the early mobile/portable radios that include the 1926 Police Wireless Patrol car and to solid state Philips and Motorola models.

P45 Radio VNG – Australia's own time and frequency service. Discusses the concept and implementation of VNG and what services it provided and its location.

P49 A patient waiter is no loser. A history of Samuel Finely Breese Morse and the process of getting his system to fruition and the devices built to send and receive the dit-dah.

P53 Celebrating 100years of the BBC. A walk through the history of t he BBC from first transmissions to the war years to TV and the technology that evolved.