Illawarra Amateur Radio Society

Propagator November 2022

Upcoming Meeting on the 8th Novemebr 2022

The next meeting will be at the Blue Scope Steel visitors centre ~~7.30pm.~~ from 6.30pm start see details within 😉

Blue Scope Northgate entrance off Springhill Road (See website for detailed map)

THE IARS FOLLOWS A COVID19 SAFE PLAN

AMATEUR RADIO IN THE ILLAWARRA SINCE 1948

VK2RUW (Knights Hill)
34.6231° S, 150.6942° E
QF55IJ

VK2RMP (Maddens Plains)
34°15'30.6"S 150°56'47.4"E
QF55LR

VK2AMW

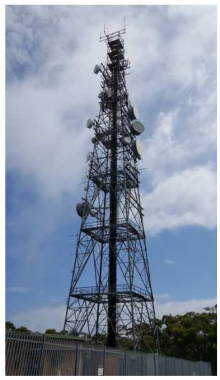
Our last meeting 11th October 2022

Illawarra Amateur Radio Society

IARS RADIO and ELECTRONICS TRIVA 2022

JUST 4 FUN

RUW



RMP

The IARS had their annual Trivia evening at the last meeting.
It turned out to be a really fun evening, we may have to change the name to "comedy evening" due to the laughter and comical comments that were flying around.

Question 4

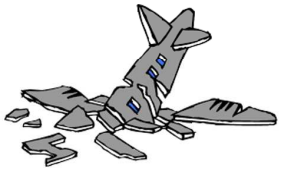
An antenna that is **longer** than a quarter wavelength is ?

A : Inductive and needs capacitance

B : Short of resistance and needs extra 45degree radials to work properly

C : Not allowed near airports as it's a danger to low flying aircraft

D : Capacitive and needs inductance



You can imagine the comments when this one came around 😊

It was also great to see many familiar faces that have not been to the meetings in a while due to covid, welcome back everyone.

1st Prize digital multi-meter went to Vaughn VK2KBI

2nd Prize handy pocket tool kit went to John VK2BHO

3rd Prize Shack desk mount Volt/Ammeter power combo went to Mal VK2DXM

We also had a surprise CAKE complete with a candle for a very surprised man ??

He didn't expect a cake and the singing chorus of Happy Birthday

Happy 80th Birthday John Bennet VK2AAL

John has been our technical repeater guru for many years and the IARS would like to thank John for all his efforts and innovations throughout this time.

After all the candle blowing and fun it was the usual meeting treats which included lamingtons, muffins, Tim-Tams and other goodies (diets went straight out the window)

John enjoying his birthday party on Saturday evening with family and friends

Next Meeting

8th November 2022 ~~7.30pm~~ 6.30pm

Yes early mark because it is the IARS most famous ……

Yes! it's that time of the year again where the bargains will be the order of the day.

Booking in your gear will commence from 6.30pm.

Only three rules

1. **Bring lots of money to buy stuff**
2. **Bring stuff to sell & make money, (not worthless Junk to save on tip fees)**
3. **HAVE Fun**

Our usual auctioneer, *King Simon VK2FO/XQX* will be the host with plenty of fun and humour planned.

As usual coffee, tea, biscuits, and nice goodies will be the refreshments of the evening with a nice bottle of local wine as a lucky door prize

(Snowball member numbers will be used to draw the lucky door prize, ensure you are at least a financial member. You do not need to participate in the snowball for the lucky door prize draw)

Last year's Auction with Covid rules still in place

If you want some good stuff at a good price, make sure you head along to the Blue scope visitors centre on the 8th of November at 7.30 (unles you are selling be there at 6.30 – 7pm)

SNOWBALL

For $5 you can earn some good cash and all monies go to your society, win-win.

As usual see Simon VK2KU, the fella with the coloured balls and big smile

+

+

=


The snowball was put on hold this time around but should be back next meeting.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

IARS

RES
RADIO & ELECTRONICS SCHOOL

Looking to Upgrade to Standard or advanced and even obtaining your Foundation license we have remote assessing available.

The IARS **can help** with obtaining your Foundation, upgrading to Standard or Advanced from *the comfort of your own home.*

We have approved AMC accessors that can offer remote assessments for the AMC.

Please contact Keith VK2KQB at iars.keithb@gamil.com for further information.

Your society supports further learning, please find out more on how we can help you. AMC website is Australian Maritime College - Australian Maritime College | University of Tasmania (amc.edu.au)

Don’t forget the two weekly IARS nets as below

TUNE IN **to the IARS NETS** Echolink

IARS Tuesday evening weekly 80m NET on 3.666MHz at 8.30pm hosted by Mal VK2DXM and Rob VK2MT

Don’t forget to join us every Tuesday evening, *expect the second Tuesday of the month* for a great get together on 80m. Signal reports, news and general discussions are the agenda.
There have been some really good conversations so if you are bored on Tuesday evenings, pop in for a chat.

Saturday Morning EAST COAST NET hosted by Steve VK2BGL

You are invited to join Steve every **Saturday at 9.30am** on our **146.850MHz** repeater (linked to 146.675MHz) or **VK2BGL-R** on Echo-link for a very enjoyable morning of general discussions from amateurs who log in from all over the world.
This NET is linked to multiple repeater systems including VK2RFS south coast. Join Steve and everyone for a very enjoyable 2 hours on Saturday morning.

++

Disposables Donation Table

Each meeting we have the disposables table with items donated to the club.

Please keep the support for this going and bring oddities in and take some home for a small donation to the IARS. With the next meeting please bring along an donate those old items that you no longer use and may even have thought about throwing it in the bin, someone else may be looking for that very part. Wire, pieces of coax, old parts, plug packs, power supplies, capacitors, resistors, coils, tubes, knobs, anything that someone can use.

If you have some trash*, please bring it along to the next meeting and give it new life**

**** Trash , just in case the wrong impression is given, it is not literlley trash 😊 no rubbish please*

REPEATERS

VK2RUW (Knights Hill) **VK2RMP (Maddens Plains)**

146.675 MHZ >>>>> *linked* <<<<< 146.850 MHZ

Current STATUS

- 438.225 with a - 5MHz offset. **OK**
- 146.975 with a -600kHz offset NO CTCSS, C4FM enabled **OK**
- 146.850 with a – 600kHz offset (linked to 146.675) NO CTCSS **OK**
- 146.675 with a – 600kHz offset (linked to 146.850) NO CTCSS **OK**
- 53.650Mhz with a – 1Mhz offset **Repaired, back on air soon**
- 438.725Mhz with a -5mHZ offset DMR only, **RF side OK, currently working with ARNSW to restore connection**
- 1296.850Mhz Beacon with simplex repeater function – **OK**

The IARS welcomes any feedback on our repeater systems.

Please send all your feedback to iars.keithb@gmail.com and it will be passed on to our repeater team.

Any donations to help us maintain our great repeater system will be greatly appreciated. Please check our banking details on our website at www.iars.org.au under the Contact details page.

As reference of the donation please add your Call sign and the words “Repeater Donation”

LOOKING FOR SOMETHING to SWAP, BUY, SELL, an OLD PART

Parts you may need for repairs or some radio gear you no longer need that could go to a new home…….?
Email iars.keithb@gmail.com

Share it with us, this could be suggestions, technical ideas, circuit diagrams, IARS community projects, pictures of your latest shack project, in fact ANYTHING of interest

Let us know by return email iars.keithb@gmail.com

Also, if you have some IARS related pictures or information that we can put on the IARS website, please let us know and we can get that happening.

Batteries, the energy saviour ?

Working in the power industry for over 40 years including batteries and chargers, I have come across many different systems. Most people always want to know how, why or can we? on systems and battery capabilities. With so much talk these days about different batteries for EV's, solar systems and even portable amateur radio equipment, Lipo battery packs, Fast charging and life expectancy being the main topics, I thought I would share some information.

I recently read an article which was basic but detailed enough to get some kind of idea.

This article's aim is not political but technical, it is not intended to sway anyone for or against the use of battery storage, it is merely an interesting read to the challenges of high-speed charging industry is faced with.

Super-fast Charging

Nowhere is super-fast charging in bigger demand than with the electric vehicle (EV). Recharging an EV in minutes replicates the convenience of filling 50 litres of fuel into a tank that delivers 600kWh of energy. Such large energy storage in an electrochemical device is not practical as a battery with such a capacity would weigh 6 tons. Most Li-ion only produces about 150Wh per kg; the energy from fossil fuel is roughly 100 times higher.

Charging an EV will always take longer than filling a tank, and the battery will always deliver less energy per weight than fossil fuel. Breaking the rule of law and forcing ultra-fast charging adds stress, even if the battery is designed for

such a purpose. We must keep in mind that a battery is sluggish in nature. Like an aging man, its physical condition becomes less ideal with use and age. So is the ability to fast-charge. One assumes that all charge energy goes into the battery, whether charged slowly, rapidly or by ultra-fast method. Batteries are nonlinear devices and most chemistry accepts a fast charge from empty up to about 50% state-of-charge (SoC) with little losses. NiCd does this best and suffers the least amount of strain. Stresses occur in the second half of the charge cycle towards full charge when acceptance becomes laboured. An analogy is enjoying the dessert after the hunger is stilled.

Applying an ultra-fast charge when the battery is empty and then tapering off the current when reaching 50% SoC and higher is called step charging. The laptop industry has been applying step charging for many years, so does the EV. The charge currents must harmonize with the battery type as different battery systems have dissimilar requirements in charge acceptance. Battery manufacturers do not publish charge rates as a function of SoC. Much of this is proprietary information.

Research companies claim to achieve benefits with pulse-charging Li-ion instead of applying the regular CCCV charge rate. The scientific community is sceptical of alternative charging and takes the "wait-and-see" approach.

Whether you own an EV, e-bike, a drone, a portable device or any battery powered amateur radio gadget, the following conditions must be respected when charging a battery the ultra-fast way:

- *The battery must be designed to accept an ultra-fast charge and must be in good condition. Li-ion can be designed for a fast charge of 10-minutes or so but the specific energy of such a cell will be low.*
- *Ultra-fast charging only applies during the first charge phase. The charge current should be lowered after the battery reaches 70 percent state-of-charge (SoC).*
- *All cells in the pack must be balanced and have ultra-low resistance. Aging cells often diverge in capacity and resistance, causing a mismatch and undue stress on weaker cells.*
- *Ultra-fast charging can only be done under moderate temperatures, as low temperature slows the chemical reaction. Unused energy turns into gassing(VRSLA), metal-plating(Li-ion) and heat.*

An ultra-fast charger can be compared to a high-speed train (Figure 1) traveling at 300km per hour, Increasing power is relatively simple. **It's the track that governs the permissible speed of a train** and not the machinery. In the same manner, the condition of the battery dictates the charging speed.

Figure 1: Ultra-fast charging can be compared to a high-speed train
Powerful machinery is easy to build, but it's the track that limits the speed.

A well-designed ultra-fast charger evaluates the condition of the “chemical battery” and makes adjustments according to the ability to receive a charge. The charger should also include temperature compensations and other safety features to lower the charge current when certain conditions exist and halt the charge if the battery is under undue stress.

A “smart” battery running on SMBus or other protocols is responsible for the charge current. The system observes the battery condition and lowers or discontinues the charge if an anomaly occurs. Common irregularities are cell imbalance or the need for calibration. Some “smart” batteries stop functioning if the error is not corrected.

The 10-minute Charge

The automotive industry is demanding ultra-fast charging. Research laboratories are responding by heating Li-ion batteries to a temperature that prevents lithium plating while limiting the growth of solid electrolyte interphase (SEI) that occurs at elevated temperatures. The chosen charging temperature is 60ºC (140ºF), heated by heating elements for the duration of the charge and then cooled to about 24ºC (75ºF) with the onboard cooling system of the EV to limit the time the battery dwells at high heat. This enables charging Li-ion at a C-rate of 6C to 80% SoC in 10 minutes.

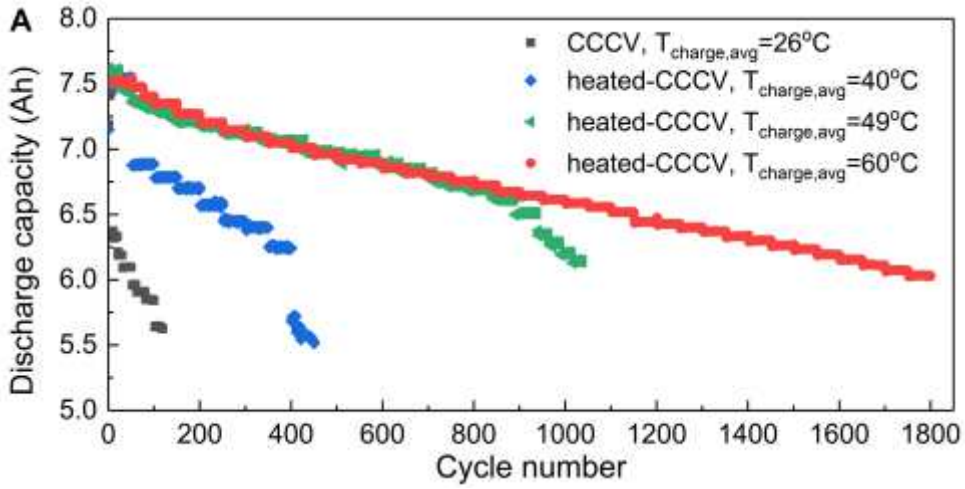


Figure 2: Cycle performance of Li-ion with 1C, 2C and 3C charge and discharge

Charging at 60ºC prevents lithium plating while deterring SEI growth because of the short duration at high temperatures.

A technology called Aligned Graphite® Technology claims to reduce a charge time of 25 minutes to only 15 minutes by organizing the graphite flake on the negative electrode into vertical order. Battrion, a spin-off of the Swiss Federal Institute of Technology (ETH Zurich), says that this orientation reduces the distance lithium travels, enabling very high charge and discharge currents without degradation.

Limitations to ultra-fast charging Li-ion

The maximum charge current a Li-ion can accept is governed by cell design, and not the cathode material, as is commonly assumed. The goal is to avoid lithium-plating on the anode and to keep the temperature under control. A thin anode with high porosity and small graphite particles enables ultra-fast charging because of the large surface area.

Power Cells can be charged and discharged at high currents, but the energy density is low. Energy Cells, in comparison, have a thicker anode and lower porosity and the charge rate should 1C or less. Some hybrid Cells in NCA (nickel-cobalt-aluminum) can be charged above 1C with only moderate stress.

Apply the ultra-fast charge only when necessary. A well-designed ultra-fast charger should have the charge-time selection to give the user the option to choose the least stressful charge for the time allotted. Figure 3 compares the cycle life of a typical lithium-ion battery when charged and discharged at 1C, 2C and 3C rates. The longevity can further be prolonged by charging and discharging below 1C; 0.8C is the recommended rate.

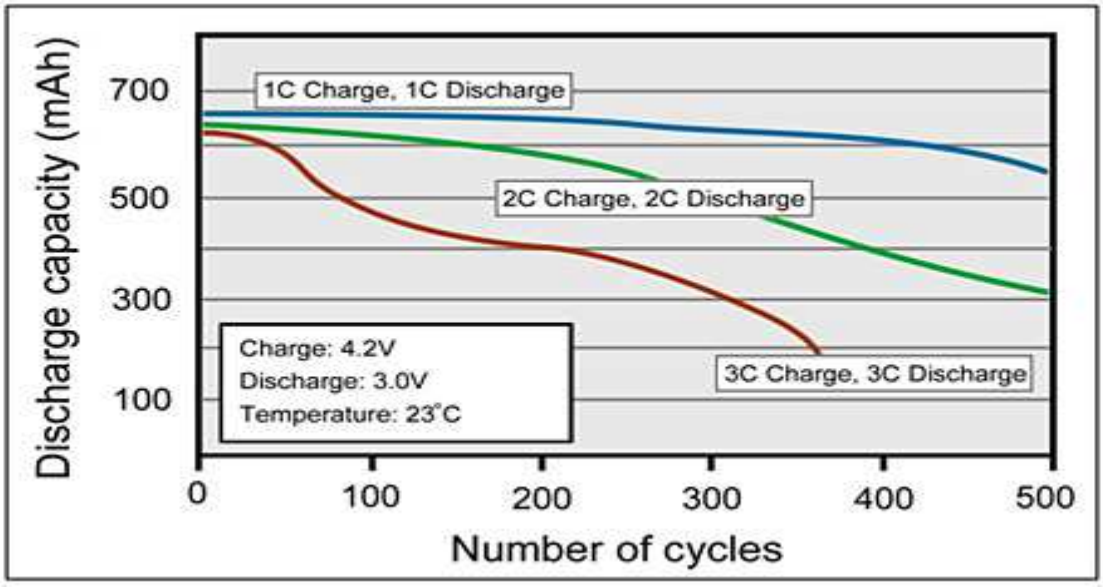


Figure 3: Cycle performance of Li-ion with 1C, 2C and 3C charge and discharge

Charging and discharging Li-ion above 1C reduces service life. Use a slower charge and discharge if possible. This rule applies to most batteries.

Lithium deposition

Lithium deposition forms if the charge rate exceeds the ability by which lithium can be intercalated into the negative graphite electrode of Li-ion. A film of metallic lithium forms on the negative electrode that spreads uniformly over the host material or gravitates to one region in planar, mossy or dendritic format. The dendritic form is of concern because it may increase self-discharge that in extreme cases can create a short and lead to venting with flame.

Environmental conditions affect the deposition of lithium as follows:

- Lithium deposit grows when Li-ion is ultra-fast charged at low temperature
- Deposition develops if Li-ion is ultra-fast charged beyond a given state-of-charge level
- The build-up is also said to increase as Li-ion cells age due to raised internal resistance.

Consumers demand fast charging at low temperatures and this is especially critical with the electric vehicle. Solutions include special electrolyte additives and solvents, optimal negative to positive electrode ratios, and special cell design.

The question is often asked; “Why do ultra-fast chargers charge a battery to only 70 and 80 percent?” This may be done on purpose to reduce stress but is also caused naturally by a lag between voltage and state-of-charge that amplifies the faster the battery is being charged.

This can be compared to a rubber band lifting a heavyweight. The larger the weight, the wider the lag becomes. The ultra-fast charge forces the voltage to the 4.20V/cell ceiling quickly while the battery is only partially charged. A full charge will occur at a slower pace as part of saturation.

Lithium Titanate may be the exception and allow ultra-fast charging without undue stress. This feature will likely be used in future EVs; however, Li-titanate has lower specific energy than cobalt-blended Li-ion and the battery is very expensive.

Nickel-cadmium is another battery chemistry that can be charged in minutes to 70 percent state-of-charge. Like with most batteries, the charge acceptance drops towards full charge and the charge current must be reduced.

All ultra-fast methods need high power. An ultra-fast EV charge station draws the **equivalent electrical power of five households.** Charging a fleet of EVs could dim a city. This will become the next big engineering challenge and it won’t be easy with current power crisis situations.

Summary

All batteries perform best at room temperature and with a moderate charge and discharge. Such a sheltered lifestyle does not always reflect real-world situations where a compact pack must be charged quickly and deliver high currents. Such typical applications are drones, remote-control devices, two way radios and power tools.

- Expect a short cycle life when a small pack must give all it has.

If fast charging and high load requirements are prerequisites, the rugged Power Cell is ideal; however, this increases battery size and weight. An analogy is choosing a heavy diesel engine to run a large truck instead of a souped-up engine designed for a sports car. The big diesel will outlive the light engine even if both have the identical horsepower. Going heavier will be more economical in the long run. Table 4 summarizes the charge characteristics of lead, nickel and lithium-based batteries.

TYPE	CHEMISTRY	C RATE	TIME	TEMPERATURES	CHARGE TERMINATION
Slow charger	NiCd Lead acid	0.1C	14h	0°C to 45°C (32°F to 113°F)	Continuous low charge or fixed timer. Subject to overcharge. Remove battery when charged.
Rapid charger	NiCd, NiMH, Li-ion	0.3-0.5C	3-6h	10°C to 45°C (50°F to 113°F)	Senses battery by voltage, current, temperature and time-out timer.
Fast charger	NiCd, NiMH, Li-ion	1C	1h+	10°C to 45°C (50°F to 113°F)	Same as a rapid charger with faster service.
Ultra-fast charger	Li-ion, NiCd, NiMH	1-10C	10-60 minutes	10°C to 45°C (50°F to 113°F)	Applies ultra-fast charge to 70% SoC; limited to specialty batteries.

Table 4: Charger characteristics.
Each chemistry uses a unique charge termination.

Simple Guidelines Regarding Chargers

- If possible, charge at a moderate rate. An ultra-fast charger should provide the option to charge at a regular rate when time allows reducing stress.
- Fast and ultra-fast charge fills the battery only partially; a slower saturation charge completes the charge. Unlike lead-acid, Li-ion does not need the saturation charge but the capacity will be a bit lower.
- Do not apply a fast charge when the battery is cold or hot. Only charge at moderate temperatures. Avoid fast charging an aged or low-performing battery.

Surprising discovery during ICOM IC706 repair

I was recently asked by a good friend of mine to repair his IC706 prized rig as it had stopped working.
The Rig would not power up with the front push button, first assumption was, check the fuses of course 😊
After checking the fuses and noting that at 13.8Volts supply, the unit was drawing 200mA, I knew something much worse was at play.

After opening up the rig and testing for the main voltages, the immediate suspect was the 8Volt TO-220 regulator and its circuits, finding the regulator faulty put a huge **"gotcha"** smile on my face. However, my joy was very short lived as further testing proved that for some reason the Main microcontroller (the heart of the IC706) would not awaken from its sleep when the "power on interrupt" from the power button was presented to its pins, the supply voltages were present. The micro is meant to energise the main DC bus. I continued my testing by bypassing this circuit and operating the power relay from an external signal. With all the power busses operating within spec, the rig was still dead as a doornail.
A few hours later I had come to the conclusion that almost every logic semiconductor device in this IC706 was destroyed ☹ ,

Holy cow how did this happen? Was it hit by lightning? 

After speaking to the IC706 owner, my heart sank when he advised what power source he had been using when it failed. *A battery connected to an 8 stage smart charger.*
At first if someone told you that you would say "so what's the problem with that? I connect my rig to a battery and charger all the time with no problems"
Having experience in this part of the engineering field, the culprit for the damage was immediately exposed.

The 8-stage charger 

So called 8 stage smart chargers have a nasty feature called "De-sulphation mode". Its effectiveness of de-sulphating batteries has long been questioned by industry professionals and is rather seen as a gimmick and "increase your charger sales tool", rather than something that really works well. The percentage of reclamation is much lower than the boasted claims. But this poor result is not really a problem other than having to eventually purchase a new battery and most probably paying more for a charger with features that you didn't really need. (or work)

The **BIG** problem is that putting up to **60V into a 12V** battery, even for a fraction of a second(pulsing), is enough to damage the electronics of your prized possession. This is exactly what happened to destroy this once pristine piece of equipment ☹

No matter the type of rig or piece electronic equipment you connect to a battery, **never ever** leave it connected whilst charging with any type of charge system that can exceed 15Vdc, even if for a short time, especially any charger that has a de-sulphation stage. Turning the rig OFF at the button does not always disconnect the electronics and they may still be connected directedly to the input DC. **Always physically disconnect your radio when using one of these charging devices.**

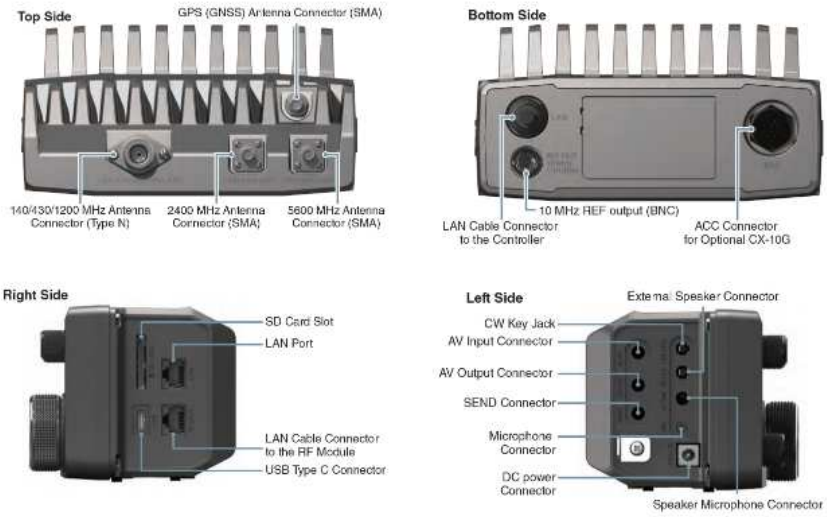
NEW STUFF

Innovative, Unprecedented, Pioneering: The new IC-905

Specifications:

- The industry first VHF/UHF/SHF all mode transceiver with 144/430/1200/2400/5600 MHz and 10 GHz* coverage.
- Output power of 10 W for 144-1200 MHz, 2 W for 2400 and 5600 MHz, as well as 0,5 W for 10 GHz*.
- Colour LCD touch display, waterfall and intuitive menu modelled after the IC-705.
- Power over Ethernet (PoE) technology improves the RF-module installation
- ATV (Amateur TV)

*10 GHz possible with the optional CX-10G transverter



This device has not been approved by the Federal Communications Commission. This device may not be sold or leased, or be offered for sale or lease, until approval of the FCC has been obtained.

Price $??? , Not available at time of this propagator, all we can suggest is start saving now 😊

I WANT ONE!

STEVE VK2BGL

In appreciation of Steve's commitment to running the East Coast Net every Saturday, the IARS committee though it would be a good idea to surprise Steve on a Saturday morning, just before he started the net and present him with a small thank you gift, Steve was pleasantly surprised, including Steve's XYL Wendy who was very forgiving of us knocking on the door so early in the morning 😊

We also got the opportunity to see the MAIN ENGINE ROOM

complete with hundreds of QSL cards from around the world

Thank you Steve and Wendy

Reminder that you are invited to join Steve every **Saturday at 9.30am** on our **146.850MHz** repeater (linked to 146.675MHz) or **VK2BGL-R** on Echo-link for a very enjoyable morning of general discussions from amateurs who log in from all over the world.
This NET is linked to multiple repeater systems including VK2RFS south coast. Join Steve and everyone for a very enjoyable 2 hours on Saturday morning.

The IARS would also like to thank Doug VK2XLG, who stands in for Steve when he is away.

Remember to send us your suggestions, technical ideas, circuit diagrams, IARS community projects, pictures of your latest shack project, in fact ANYTHING of interest.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

BLAST FROM THE Past — OLD PROPAGATOR MEMORIES

THE PROPAGATOR

Newsletter of the Illawarra
Amateur Radio Society

Registered for posting as a publication
CATEGORY B.

I.A.R.S.
POSTAGE PAID
WOLLONGONG
N.S.W.
AUSTRALIA
2500

MR.L. PATISON VK2ALU 98
98 HEASLIP STREET
WOLLONGONG 2500

I.A.R.S.
P.O. Box 1838,
WOLLONGONG, NSW 2500

Sideband Electronics Sales

Distributors of COMMUNICATIONS TRANSCEIVERS

HF TRANSCEIVERS

ASTRO - 200 digital solid state 200 W.P.E.P. $1000

TRIO KENWOOD new model TS-520-S 160 to 10 M, with optional digital readout connected externally. Can be used as a frequency counter self contained separately powered by 12 volt DC. $700

TRIO KENWOOD model TS-820S AC only 160 to 10 M with digital readout. $1,100

TRIO KENWOOD model TS-820 AC only 160 to 10 M. $930

TRIO KENWOOD model MC-50 Microphone. $ 50

TRIO KENWOOD model TS-600 A FM AM. SSB transceiver full 50-54 MHz coverage 10 Watt output variable from 1 Watt to full power. VFO controlled AC-DC operation. Styling as TS-700-A. $700

TRIO KENWOOD model TR-7400 2 meter FM tranceiver 10 to 25 watts output. Frequency range 144.00 to 147.995 MHz No. of channels 800, Double conversion super-heterodine sensitivity better than 0.4 UV for 20 DB. $440

ICOM

VHF TRANSCEIVERS SSB

ICOM model IC-202 2 M SSB portable transceiver 144-144.4 MHz $215

ICOM model IC-502 6 M SSB portable transceivers 52-53 MHz. $215

ICOM IC-22-S synthesized 22 channel 2 M transceiver 10 channel pre programmed. Supplied with 50 extra diodes for the programming. $269

ICOM model IC-245 $450

ICOM model IC-211 $750

YAESU MUSEN model FT-101-E AC-DC transceivers 10 to 160 M with speech processor $850

YAESU MUSEN model FT-301. $960

YAESU MUSEN model FT-301-D $1140

YAESU MUSEN model FT-301-S $660

YAESU MUSEN model FL-2100 BLineal Ampl. $525

YAESU MUSEN model FP-301 $165

YAESU MUSEN FRG-7 Uses Wadley loop princ. $300

YAESU MUSEN FT221-R 2 meter all mode transceiver. $628

FREQUENCY COUNTERS

YAESU MUSEN model YC-500-E-S-J P.O.A.

SWR METER

Twin meter model. Y.M. - I.E. 3.5 to 145 MHz prof quality $ 28

DRAKE TV-3300 TVI lowpass filter $ 34

SSR-1 Receivers $270

AUSTRALIA'S SOLE DIST. OF KLM PRODUCTS

KLM SOLID STATE POWER AMPLIFIERS

(MHz) 144-148	PA10-80BL	80	OUTPUT (watts)
"	PA10-140BL	140	"
"	PA10-160BL	160	"
"	PA 2-70BL	70	"
400-470	PA10-70CL	70	"
	PA 2-12-B	12 Watts	
	PA 2-25BL	25 Watts	P.O.A.

NOW AVAILABLE

New range of beam antennas from Western Communications U.K. model DX33 3 element tri-bender $238

HIDAKA model VS-33 3 element tri-bender including Balun $258

VERTICALS:-

HIDAKA model VS-41 80 through 10m. Vertical antenna incl. $115

Guide wires (Radial Kit additional $30)

MARK MOBILE ANTENNAS

HW-80, 6' long for 80 M. $ 28

HW-40, 6' long for 40 M. $ 25

HW-20, 6' long for 20 M. $ 23

Swivel mounts & chrome plated springs for all $ 13

CUSH CRAFT ANTENNAS

A144-11 11 Element 2M Yagi $ 50

A147-11 11 Element 2 M Yagi $ 50

A147-20 combination horizontal vertical 2 M $ 75

ANTENNA ROTATORS

Model CDR Ham-11 for all hf beams except 40 M $240

Model CDR AR-22 L junior rotator for small beams $ 75

KEN model KR-400 for all medium size hf beams with internal disc brake $120

All models rotators come complete with 230-volt AC indicator-control units.

6-conductor cable for KR-400-500 65 cents per metre

COAX CABLE CONNECTORS

PL-259	$1.20
SO-239 Chassi Mount	$1.20
Male to male joiner	$1.20
Female to female joiner	$1.20
Angle connector	$2.00
T-connector	$2.50

COAX CABLE

RG-8-U foam filled per metre $1.20

CRYSTAL FILTER, 9 MHz, similar to FT-200 ones. With carrier crystals. $ 35

APOLLO 3 position co-ax switches $ 15

All prices quoted are net SYDNEY, N.S.W., on cash-with-order basis, sales tax included in all cases, but subject to changes without prior notice. ALL-RISK INSURANCE from now on free with all orders over $100; small orders add 50c for insurance. Allow for freight, postage or carriage; excess remitted will be refunded.

Sideband Electronics Sales

For personal attention: **24 KURRI STREET, LOFTUS** **OPEN ON SATURDAYS TILL 12 NOON**

P.O. BOX 184, SUTHERLAND, 2232 **TELEPHONE: 521-7573**

PETER SCHULZ, VK2ZXL

THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

P.O. BOX 1838 WOLLONGONG N.S.W. 2500

IARS is a Member Club of the Wireless Institute of Australia

PRESIDENT	SECRETARY	EDITOR
Keith Curle, VK2OB 24 Beach Drive Woonona 2517	John Doherty, VK2NHA 7 Risley Road Figtree 2525	Kieran Kennedy, VK2DAN 166 Osborne Parade Warilla 2528

MONTHLY MEETING- Second Monday of each month, 7.30pm at:-

The Congregational Hall, Coombe St. Wollongong.

CLUB STATION- VK2AMW

CLUB REPEATERS- VK2RAW, Channel 5 2 metres.
VK2RUW, Channel 1 70 centimetres.

MONTHLY BROADCAST- 7.15pm EAST on the Sunday preceeding the meeting night. IARS Broadcast frequency:-
Repeater Ch5 or Simplex Ch40
Relay on 28.460 MHz & UHF repeater Ch1

CLUB NETS- 6 Metres 8.30am Sundays - 52.525 MHz FM.
10 Metres 8.00pm Sundays - 28.460 MHz USB.

MURPHY'S LAW ;

IF ANYTHING CAN GO WRONG, IT WILL.

COROLLARIES:-

1. Nothing is as easy as it looks.
2. Everything takes longer than you plan.
3. If there is a possibility of several things going wrong, the one that will cause the most damage will be the one to go wrong.
4. If you perceive that there are four ways in which a procedure can go wrong, and circumvent these, a fifth way will promptly develop.
5. Left to themselves, things tend to go from bad to worse.
6. Whenever you set out to do something, something else must be done first.
7. Every solution breeds new problems.
8. It is impossible to make anything foolproof because fools are so ingenious.
9. Nature always sides with the hidden flaw.

CONCLUSION:-

1. Smile.....tomorrow CAN be worse.
2. Murphy was an optomist.

Murphy has been around for a very long time, 😊

Will share more oldies next month

WIA NEWS and other information

ACMA proposals on Class Licensing and high power – WIA working on response

Author: Roger Harrison VK2ZRH

A Working Group has hit the ground running to develop the Wireless Institute of Australia's response to the ACMA's proposal on Class Licensing and high power operation by Advanced amateurs.

Deadline for responding to the ACMA's proposals is 29 November. The ACMA intends to implement the proposed arrangements from 1 July 2023.

Leading the Working Group is the WIA's Regulatory Counsel, **Peter Young VK3MV**.
Peter has been licensed since 1965 and has a background in maritime communications engineering. He is a former Regional Manager with the ACMA in Melbourne and, since retiring, held positions with the WIA as a director in the WIA Board, director with the Region 3 International Amateur Radio Union (IARU) and on the Spectrum Strategy committee.

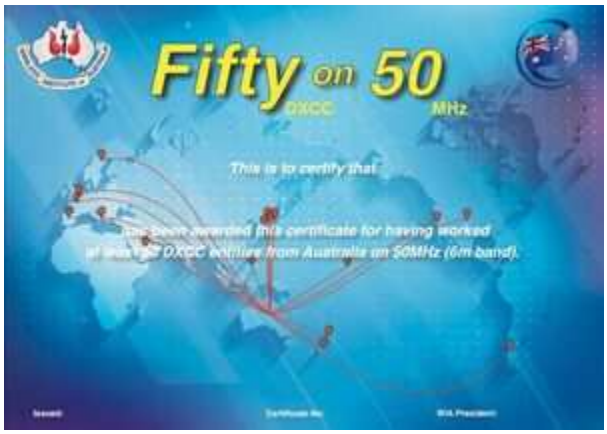
Members of the Working Group come from a wide variety of backgrounds and experience, but particularly having experience in preparing persuasive responses to government proposals, expertise in RF engineering, in science, and in the machinery of government. Members also have interests in contesting and DX, home design and construction, and propagation.

The first meeting of the Working Group was held by Zoom on Monday 3 October, which identified key issues to be addressed in developing the WIA's response and setting regular meetings.

Firstly, it is clear that we will have to address the Class licensing questions, and the matter of Advanced amateurs wishing to use high power, as separate issues.

As we've done before, a survey of the Australian radio amateur community will be held to gather viewpoints and suggestions from individuals, groups and WIA Affiliated Clubs.

Look out for regular despatches from the WIA Working Group on the ACMA's Class Licensing proposals.



The WIA DX Awards Program is pleased to announce a new award, the "Fifty on 50 Award".

The WIA DX Awards Program is pleased to announce a new award, the "Fifty on 50 Award".

This award recognises 50MHz (6m) contacts from VK and its territories with Amateur Radio stations from at least 50 DXCC Entities around the world.

Confirming 50 DXCC entities on VHF is extremely difficult. This award recognises those elite operators who have invested considerable time and expertise, as well as knowledge of 6m propagation, on both terrestrial and space paths.

This award is only available for Australian members of the Awards program.

Have your say – proposed amateur class licence and considerations for higher power operation

ACMA proposed single CLASS LICENCE to replace current individual NON-ASSIGNED licences.

The WIA has liaised extensively and productively over many months with the ACMA on the proviso that the WIA could only support a proposed class licence on a **"no disadvantage"** basis.

As this consultation has just been released by the ACMA, the WIA has yet to review the details embodied in the new proposal and will release an assessment as soon as practicable.
We look forward to engaging the support of our members for this consultation process.

Excellent news from ACMA. See below:

ACMA News Release 29 September 2022

Have your say – proposed amateur class licence and considerations for higher power operation.

Following the extensive 2021 public consultation and associated response to submissions, we have released a consultation paper on the proposed **amateur class licence** and supporting operational arrangements, along with considerations for **higher power operation.**

This is the next step in our review of regulatory arrangements for the operation of non-assigned amateur stations. Link

The draft class licence for amateur radio has been amended to incorporate changes suggested by representative bodies, amateur radio clubs and individual amateurs during the 2021 consultation.

The consultation paper, proposed class licence and details about how to make a submission are available on the ACMA website.Link

Submissions close COB, Tuesday 29 November 2022.

Questions about the consultation
If you have an important question about this consultation, please send it directly to: spectrumlicensingpolicy@acma.gov.au.

Further reading https://www.wia.org.au https://www.acma.gov.au

Upcoming events ……………………………………………………………

5th November 2022 9AM start

Besides being Guy Fawkes day, he used gunpower in an attempt to blow up the house of lords
(unlike amateur radio operators who use electrons to blow things up 😊)

Shack 1 Simon VK2KU
Shack 2 Dan VK2FDSD
Shack 3 TBA (there are a couple waiting to be confirmed)
Shack 3 Keith VK2KQB finish with a lunch

Please send your interest to join the convoy so that address details can be share with you.
I have 4 seats available in my car to travel to the different shacks contact me to book ASAP.
We will finish off with some lunch and drinks 😊 and need your RSVP before the 3rd November 2022

^^

10 years of VKFF

Invitation from the MSCARC and IARS

26 – 27 November is a big weekend
WIA VHF/UHF Field Day VKFF Parks Activation weekend

Each operator will be responsible to follow up for there own certificates if they wasn't them, by following the steps set in place by the VKFF. See their web site for further information….

URL https://www.wwffaustralia.com/20221.html

Let the Secretary know what activities you are planning for that weekend so we can inform all our members
IARS are planning to open the remote site at Penrose for a barbecue lunch and get together from 13:00 Saturday. If your plans include activating a nearby Park drop in for lunch and a chat.

Note the 26 & 26 November 2022 is the celebration 10 years of VKFF Activations and special certificates will be issued.

Common frequencies that will be used

20 Meters
14.244 SSB

2 Meter
144.200 MHz SSB Call Frequency
144.220 MHz SSB Working Frequency
146.500 MHz FM Call Frequency
146.525 MHz FM Working Frequency

70 cm
432.200 MHz SSB Call Frequency
432.220 MHz SSB Working Frequency
439.000 MHz FM Call Frequency
439.020 MHz FM Working Frequency

23 cm
1296.100 MHz SSB Call Frequency
1296.120 MHz SSB Working Frequency
1294.000 MHz FM Call Frequency
1294.020 MHz FM Working Frequency

LIST OF INTENDED ACTIVATIONS.

SATURDAY 27th

- Alpine National Park VKFF-0619.....Phil VK3VB
- Chiltern Mount Pilot National Park VKFF-0620.....Malcolm VK3OAK
- Coolah Tops National Park VKFF-0111.....Joel VK2MOE
- Croajingalong National Park VKFF-0119.....Tony VK3YV
- Mount Billy Conservation Park VKFF-0912.....Marija VK5MAZ & Paul VK5PAS
- Myponga Conservation Park VKFF-0921.....Marija VK5MAZ & Paul VK5PAS
- Nixon Skinner Conservation Park VKFF-0923.....Marija VK5MAZ & Paul VK5PAS
- Seven Mile Beach National Park VKFF-0447.....Colin VK2VAR & Bob VK2BYF & VK2HQ
- Spring Mount Conservation Park VKFF-0789.....Marija VK5MAZ & Paul VK5PAS
- Warby Ovens National Park VKFF-0742.....Malcolm VK3OAK

SUNDAY 28th

- Alpine National Park VKFF-0619.....Malcolm VK3OAK
- Alpine National Park VKFF-0619.....Phil VK3VB
- Bruce Ridge Nature Reserve VKFF-0835.....Mat VK1MF
- Burrowa Pine Mountain National Park VKFF-0069.....Malcolm VK3OAK
- Coolah Tops National Park VKFF-0111.....Joel VK2MOE
- Coopracambra National Park VKFF-0113.....Tony VK3YV
- Cox Scrub Conservation Park VKFF-0824.....Marija VK5MAZ & Paul VK5PAS
- Cox Scrub Conservation Reserve VKFF-1701.....Marija VK5MAZ & Paul VK5PAS
- Nurrragi Conservation Reserve VKFF-2247.....Marija VK5MAZ & Paul VK5PAS

Scott Conservation Park VKFF-0934.....Marija VK5MAZ & Paul VK5PAS

100 Years of Amateur Radio Transatlantic Communications

Transatlantic Centenary Tests

The RSGB are hosting an International Radio event, The Transatlantic Centenary Tests, on the HF bands, for the month of December 2022, to celebrate the centenary of the Transatlantic success of the RSGB in December 1922.

24 December 1922 was when the very first verified amateur radio signal from Europe was heard in North America; this was from the RSGB station (G)5WS which was established at Wandsworth in South London, as part of the Third Transatlantic Tests.

Unlike the tests of the 1920s, which consisted of one-way communication, the 2022 tests will encourage world-wide two-way communication with UK & Crown Dependency based stations by having a series of awards available for making QSOs with those who are activating special call signs. The Club Log team have kindly agreed to provide the supporting infrastructure.

In anticipation of this centenary celebration, the RSGB have renewed five call signs which they held in the 1920s:

- G5WS, from the 1922 tests – "the first to get across"
- G5AT, from the 1923 tests
- G6XX, from the 1923 tests
- G6ZZ, used for the first amateur tests on a moving railway train in 1924
- G3DR, Scottish Highlands Call - GM3DR.

These historic call signs will be activated by RSGB members and Clubs, using G5WS, G5AT, G6XX, G6ZZ and G3DR (England), GM5WS (Scotland), GW5WS (Wales), GU5WS (Guernsey), GD5WS (Isle of Man), GJ5WS (Jersey) and GI5WS (Northern Ireland).

Full details of how to participate are available on the RSGB website via the following link

https://rsgb.org/main/activity/transatlantic-tests/

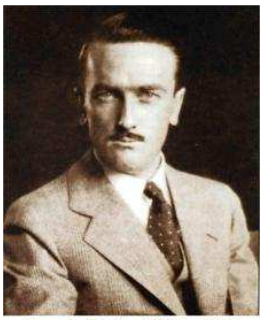
Contests

VHF UHF Field Days

Spring 2022 - 0100 UTC Saturday 26 through 0059 UTC Sunday 27 November (0400 / 0359 in VK6).

- The Field Days provide VHF-UHF operators with the opportunity to "head for the hills" and see how far distant and how many stations they can work.
- The Field Days have separate sections for single and multiple operator stations. The duration of the Field Day is 24 hours, but there are also 8-hour sections for operators who may not be able to camp overnight.
- Most club stations prefer to operate for the full 24 hours. The Field Days also generate plenty of activity from home stations, so there is also a separate Home Station section.
- All contacts must be simplex: contacts through repeaters or satellites are not allowed. There is plenty of FM activity, but one feature of the Field Days is a high level of SSB activity.

More info https://www.wia.org.au/members/contests/vhfuhf/


Ross A. Hull 1902 - 1938

Ross Hull Memorial

VHF/UHF Contest January 2023

Contest Introduction

The Ross Hull Contest is a VHF/UHF++ DX contest, with points awarded for distances worked. There are also band multipliers to encourage activity on the higher bands.

Aim Of The Contest

The aim of the contest is to encourage and to reward achievement in working the greatest possible distances on the VHF, UHF and microwave bands.

Upcoming Contest Date & Time

The month of January 2023.

More information link https://www.wia.org.au/members/contests/rosshull/

WINNER OF THE ROSS HULL 2022

Category A Best Score Seven Days
Brendan Bryant VK3MH Total Score 9011
Second Place VK3WRE 2439
Third Place VK3ZYC 2229

Category B Seven Day Phone
VL2Z (VK2AH) 1220
VJ2E (VK2ARA) 611
VK3WRE 436

Category C Seven Day CW - NO ENTRANTS

Category D 7 Day Digital
VK3MH 8782
VK3ZYC 2229
VK3WRE 2003

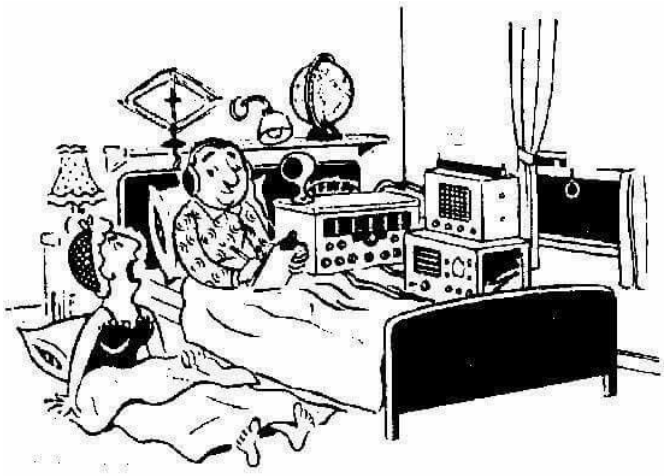
Category E 2 Day ALL MODES
VK3MH 5368
VK3WRE 1043
VK3ZYC 816

Category F 2 Day Phone
VL2Z 550
VK3WRE 363
VK3BDL 279

Category G 2 Day CW No Entrants

Category H 2 Day Digital
VK3MH 1359
VK3ZYC 816
VK3WRE 680

Send us a pic of your shack



Even though the SHACK CRAWL is a great outing and opportunity to *"share your shack"* , not everyone can participate.

Due to the large interest we had last time, we are revisiting

"Send us a picture of your Shack"

It will be great to have everyone send in a picture of their shack again, or you're your antenna system.

Even if your shack only consists of a handheld, send it in 😊

(Thanks Arthur VK2BBI 😊)

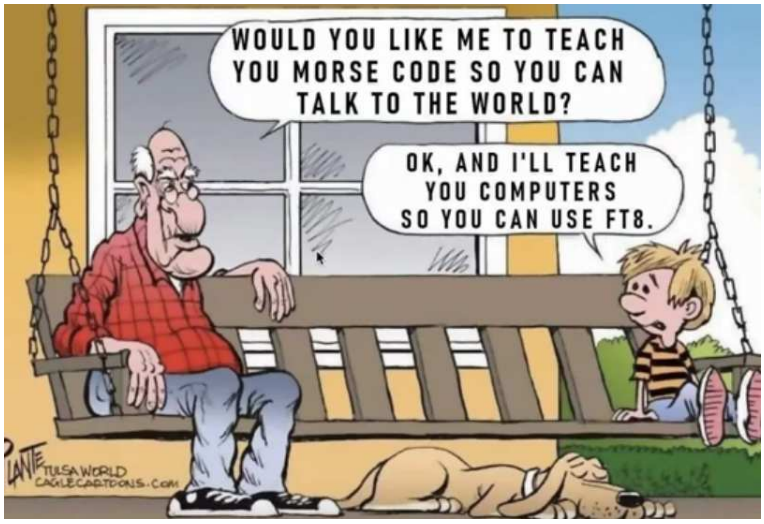
iars.keithb@gmail.com or secretary@iars.org.au

Upcoming meeting presentations ……

- November 2022 : IARS annual auction with auctioneer Simon VK2XQX
- December 2022 : Christmas dinner with show and tell (pizza night, $5 donations for non IARS members)
- February 2023 : TBA

Fun Corner

Please send in your funnies to iars.keithb@gmail.com



That's all for now, hopefully catch you all at the **Blue Scope visitors centre on the 8th of November 2022**

Stay Safe

73's

Keith VK2KQB

IARS Secretary

IARS, Amateur Radio in the Illawarra since 1948