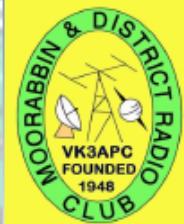


# APC NEWS

## Special Edition



Scout Radio & Electronics Service Unit

Scouts Australia - Victorian Branch



## Amateur Radio at VicJam 2022

VicJam 2022, Elmore, Victoria, Australia  
29 December 2021 to 08 January 2022

The Scout Radio and Electronics Service Unit ([SRESU<sup>1</sup>](#)) ran 2 Amateur Radio activity bases at the recent Scout Jamboree event.

### So what is a Jamboree?

A Jamboree is often described as an “experience of a lifetime”. How else would you describe ten days packed solid with adventure, excitement and fun? How else would you describe a city of 10,000 where everyone is a friend? How else would you describe a Scout camp that is so big it has its own medical centre, post office, newspaper, radio station, bus station and mall?

This describes an Australian Jamboree . . . The 2022 Jamboree (AJ2022) was supposed to be a full Australian Jamboree, held here in Victoria, with Scouts from all states, but due to the current uncertain situation re border closures/restrictions etc., it was decided to cancel AJ2022. States could decide to run state-based Jamborees if possible, so Scouts Victoria decided to continue with the existing planning, rescale it a bit and run it as VicJam 2022.

VicJam was nearly four years in the making, and the uncertainty of the past two years made planning harder than usual. But we delivered what we promised, for our Scouts and Venturers attending (all 5000 of them).

“We’re essentially building a town the size of Kyneton in the Macedon Ranges. It’s the equivalent of 200 school camps all happening on the same site at the same time, so we’ve had to build infrastructure, including recycling, a medical centre, a radio station, nightly concerts and lots of activities.” [See the full article from ABC news](#)

This was thanks to an incredible effort by 1100 adult volunteers who paid their VicJam fee and then gave two weeks of their holidays to work long days in Program (aka Activities), Catering, Site and Services, as Line Leaders with Scouts and Venturers, and in many other roles.

The Amateur Radio teams had a lot of competition from other Activities on offer – herewith a *partial* list of the Activities at VicJam 2022:

- Onsite activities
  - Vertical World – Abseiling, Rock Climbing, and Zip-lining
  - Outback World – Axe Throwing ?!, Archery
  - Water World – Water slide, Water cannons, Mud racing

<sup>1</sup>These are clickable links to more information

- Tech World – Amateur Radio, RadioActiv8, 3D printing, Drones, Electron Microscopes, Solar energy, Virtual Reality
- Active World – Outdoor Laser Tag
- The Village – VicJam FM radio station, Scout Heritage, Icecream & hotdogs, Chill out zone
- The Arena – The nightly Concert stage. Opening and Closing Ceremonies, Big bands (BABBA-the ABBA tribute band, Rock Academy Australia, . . . ), New Years Eve Party with fireworks, Class Clowns and Comedy Acts (by the Scouts), Master Chef and Magic (Scouts again), eSports Motocross Spectacular, and a DJ to fill in the gaps
- Offsite activities – 13 offsite activities in total, some were for Scouts who could not go to Elmore, some were for the Venturer Scouts assisting with the VicJam activities. VicJam Scouts bussed out to the sites, some were overnight camps, some were day trips.
  - Lake Nagambie – Paddle Away
  - Lake Nagambie – Wet, Wild and Windy
  - Whittlesea – Funfields Theme Park
  - Echuca - Echuca Explorer
  - Torrumbarry – Swim, Skim & Skim
  - Bendigo CBD - Amazing Race
  - Koolamurt Scout Camp – Bicycle Adventure, Hiking & Biking
- Visitors Day(s) – Mums, Dads, Siblings come visiting to see it all! One big day and 2 smaller days with about 1300 extra people onsite
- CubJam – a special 5 day ‘inner event’ for the Cub Scout Section, with each Region visiting for one day. About 2000 Cubs came to CubJam.
  - There was a Cub Scout activity area with about 8 dedicated activities
  - And time to wander around and look at what they might experience when they ‘grow up’ and come to the next Jamboree
  - They had a splash on the water slide
  - Some even came in and checked out the Amateur Radio activity! (And were given badges too! Special!)

Plus of course camping, eating, sleeping, and the opportunity to meet and make long term friendships, and to grow as a stronger, more confident individual.

Here is a link to the VicJam website for some more information: <https://www.vicjam.com.au/>

## Contact! with the ISS

17 lucky Scouts at the Victorian Scout Jamboree participated in an Amateur Radio contact with US Astronaut Mark VandeHei aboard the International Space Station on the evening of January 4th 2022.

This is ‘our’ camera recording of the ISS session, with “Compere” Phil VK3JNI at the microphone and “Floor Manager” Murray VK3MJT in the background.

<https://www.youtube.com/watch?v=0VYmahPSl1s>

Here is the ‘official’ clip shot from a different angle that is more focussed on the participants ... (has audio sync issue – sigh technology)

<https://youtu.be/xQWL1ma1G3I>

## The ISS connection

What does it take to connect to the ISS? About 9 months of time for overall co-ordination between Phil VK3JNI and Shane VK4KHZ, the local end practical setup managed by Kent VK3TER, and then the event requires the assistance of a series of Amateur Radio volunteers around the world.

Details here <https://www.ariss.org/contact-the-iss.html>

**Elmore** Scouts used the ARISS Telebridge box connected to a POTS line (actually a VOIP connection) into the Internet →

**Queensland** Shane Lynd VK4KHZ, the Australian co-ordinator—located in Queensland continued the linkage into the ARISS Telebridge network and provided overall moderation of the contact →

**New Hampshire** Fred Kemmerer AB1OC, at the ARISS ground station in Hollis, New Hampshire, USA, managed the tracking antennas and the initial contact →

**ISS** Mark VandeHei NA1SS, onboard the International Space Station !

**Worldwide** The contact was also broadcast worldwide via the Amateur Radio Echolink and IRLP networks by Bob Pittman VK2ADF

**Sponsor Agencies** ARISS is supported by the following agencies (some were listening in also):

**ARRL** American Radio Relay League

**AMSAT** Amateur Radio Satellite Corporation

**CSA** Canadian space Agency

**ESA** European Space Agency

**JAXA** Japanese Space Agency

**Roscosmos** Russian Space Agency

**NASA** National Aeronautics and Space Agency

## Amateur Radio Bases - Activities and demonstrations

### Main base

- The SSTV link. This was operated on the 6m band, between the central Tech World activity site and the AR base. The challenge was to initiate the image, then race to the end point to see (some of) the picture being received. Transmission time – about 2 minutes. Distance (by radio) – 183m, (on foot) – 200m or 250m via the ice-cream stand . . . the success rate climbed as the temperature dropped ( the first 3-4 days > 35°C and no shade! )
- KiwiSDR stations x 2. Very popular with Scouts once they found the first one or two signals. Mental images of kids playing with a crystal set from the days of yore... many of them noted down the URL for later use at home. This was a Night Owl favourite! The link to the KiwiSDR site <http://kiwisd़.com/public/>
- Morse code practice station – on a Raspberry Pi. A major hit also, especially when they achieved sending the complete A-Z alphabet with the morse key. Great comments re how “my name sounds like music” when listening to the Pi sending morse. (And in the quieter times (less people about), some real Morse code on sounders via two morse keys courtesy of MDRC). The link to the code and setup for the Pi <https://github.com/YesmynameisPerry/MorsecodeGUI>
- WSPR demo – running on a big Flex radio via program control, with realtime monitoring on the **WSPRNET** web page. Many incredulous looks when they realised how far 2 watts goes, especially when contrasted with the typical mobile phone.
- Echolink station – this worked via the radio, but struggled on the PC’s with a initially flakey internet link.

- Satellite tracking – automated. This was a system based on the SARCNet satellite tracker created by Joe (VK3YSP) and Julie (VK3FOWL) Gonzales. Image captures from the ISS and several QSO's were achieved. The link to the current tracker <https://www.sarcnet.org/products.html#SARCTRACKit>
- Satellite tracking – handheld. An activity with an Arrow VHF/UHF Yagi and a Yaesu handheld. Several ISS images were captured by holding a mobile phone (with the decoder app) in the same hand as the HT, as well as some QSO's.
- HF Station **VI3JAM** – Thanks to Icom for loaning 2 HF radios (IC-7600, and IC-7610) to the Unit for the Jamboree (the dust will blow out – really!). Many QSO's made by Scouts at various times – and some learning about propagation too. The explanation of why we could not talk to Melbourne, yet get to Adelaide ok took some doing, until it was proved (by a Scout) that reception in Adelaide was fine (picked up in KiwiSDR) while we talked to Joe in Melbourne on a mobile, where he could hear nothing on the same frequency. Practical demonstrations work the best. We also linked in the WSPR maps, and the grey line effect.
- Foxhunts – With 6 fox transmitters, and 10 sniffers, this was a popular activity, especially in the early evening when the temperature dropped. It became a challenge for the Scout christened 'Fox-Meister' (Murray VK3MJT) to find better (more obscure) hiding places over the course of the Jamboree, as many hunters kept coming back to try again. A look of joy when the penny dropped as to how the sniffer worked, and the fierce concentration that often followed as the hunters went on the chase.
- Construction – We supervised several Scouts making a Milo-tin antenna, including tuning it with careful trimming while checking the analyser SWR value. The vertical is swapable on our version. Looks silly – works well! [http://www.amateurradio.bz/coffee\\_can\\_antenna.html](http://www.amateurradio.bz/coffee_can_antenna.html)
- Badges - All Scouts who came to our base and spent some time 'playing radio' with us at any / all of the activities received a set of old (some say pre-historic) Jamboree-On-The-Air (JOTA) badges. We had 5 different sets which we rotated daily. Notably, the avid badge collectors actually came and stayed for an appreciable time, and were interested and involved in our hobby.

## Contacts Summary

After a slow start due to the heat, and noting that most of our contacts were made in the late afternoon or by the 'night owl' Scouts after teatime, we racked up 89 solid contacts in our logs.

	Band	mode	count	Locale	count
The breakdown of the logs	80m	SSB	13	VK1	1
	40m	SSB	51	VK2	12
	20m	SSB	10	VK3	60
	6m	SSTV	lots	VK4	8
	6m	FM	1	VK5	4
	2m	FM	7	VK7	2
	2m	PKT	1	ZL3	2
	70cm	FM	5		

Some specific log notes:

- VK3KIM, VK3PDC, VK3SRC – MDRC members
- VK3PF/P – SOTA VK3/VE-265 on 40m
- VK3BSE – Parent helper with one of the VicJam Scout Troops
- VK3EHG – Via PO-101 satellite
- VK3SAT – AR operator onsite with VicJam Troop 225
- VK4FNQ – Via AO-92 satellite
- VK4ZPK – was actually portable VK6
- Many VK3s appear multiple times while working on skeds

## RadioActiv8

RadioActiv8 was part of the broader TechWorld activity rotation and included STEM activity bases and puzzles. The concept, equipment and program was designed and built by members of Scout Radio Victoria.

RadioActiv8 involved youth members participating in a site-wide scavenger hunt challenge co-ordinated over commercial radio frequencies by youth members themselves. Scouts in the field called back to Mission Control via Ammo Box radios – commercial units mounted into ammo boxes providing an all-in-one radio solution in the field.

A number of bases were setup around the Jamboree site with either an activity to do (an Active base) or a question sheet (a Passive base). Each base had either a UHF or VHF ‘ammo box’ radio to talk back to ‘Mission Control’. The Scouts were to report the ‘intelligence’ provided to them by the activity team at the completion of the activity, or the answer to a question from the sheet. It was great to hear how many of the Scouts picked up on radio procedure during the course of the activity session and ‘learned by doing’. It was very satisfying to be able to walk around the site and hear the ammo box radios blasting some very capable operating by youth members.

Mission Control was staffed by Venturer Scouts and Activity Leaders. The Leaders were expecting to do most of the radio operating work for at least a few days, but within 10 minutes into the second of approximately 20-odd sessions of the game, the Venturer Scouts took over the operator and logging chairs and were capably managing the net, dispatching up to 41 Patrols using about 10 radios across 3 channels – a great effort to build confidence on the air!

We used a custom-developed logging program called RadioActiv8 to record the intelligence received from Patrols and allocate associated score values. The program was also used to determine and assign the next destination for the Scout patrols, based on the real-time capacities at the Active bases. Each Patrol was also allocated a LoRaWAN GPS tracker which provided Mission Control with locations of each Patrol as they moved around during the challenge.

Overall, it’s clear that radio communications is a very present interest in young people – the more we do to make the process accessible to younger participants, the more our hobby will naturally grow.

<https://github.com/radio-active-scout/radioactiv8>

## The Antennas

A comment was heard that our site looked a bit like a “spiky hedgehog” with all the antennas that we stood up – and which stayed up through out all the windstorms we had ( one downdraft blast was apparently clocked at approx 200 kph )

- 80m OCF oriented N-S for the IC-7610
  - Mast #1 (9m) at North end
  - Mast #2 (12m) at the balun (shared mast)
  - Mast #3 (9m) at South end
- 40m OCF oriented E-W for the IC-7600
  - Mast #2 (12m) at East end (shared mast)
  - Mast #4 (12m) at West end
- A 10m squid pole with wire spiral and local ATU for HF on the Flex radio
- Mast #5 (9m) with a Diamond X-series antenna for VHF/UHF for Echolink
- Mast #6 (5.5m) actually a pool brush pole, with a Diamond CR-8900 whip for the 6m SSTV link receiver
- Another CR-8900 on a mag mount up at the fibreglass panels near the roof inside(!) the remote shed for the 6m SSTV transmitter

- Mast #7 (9m) and mast #8 (9m) located at the RadioActiv8 activity Master control site with several antennas – a J-Pole, a folded dipole, and another vertical
- The repeater trailer mast #9 (10m) carrying a dual band VHF/UHF vertical, a DMR node, and a GSM antenna for Echolink/Internet connectivity. (Repeaters VK3RSR and VK3RSS)
- A late entry, mast #10 (3m) with a WiFi point-to-point link on it to improve our internet connectivity–installed for ‘Plan C’ when it looked like the ISS contact would need to be run at our base, rather than on the stage for all to see.

## Examinations

We ran a Foundation theory and prac exam for several Scouts, as well as an Advanced theory exam, and two sittings for the Marine operators license for the Scout Water Activities team leaders. The Pracs were all passed ok, now waiting on AMC for the theory results, and (hopefully) AOCP certifications. We think the candidates did a good job, so fingers crossed for them.

**Stop Press:** Just heard one result–96%, AOCP(F) and a new callsign soon to be on the air !

## The VicJam teams

### Main base

- Philip Adams VK3JN1
- Murray Taylor VK3MJT
- Kent Cochrane VK3TER
- David Timms VK3GP
- Neil Wilson VK3IG
- Daniel Gutsell VK3NZD
- Ross Swinton VK3ZNR
- Peter Watkins VK3TKK

### RadioActiv8 base

- Luke Byrnes VK3BYR
- Andy King VK3KAJ
- Matt Cengia VK3MCN
- And a team of Venturer Scouts trained up ‘in situ’ as Controllers.

## Wrapup

It was a busy, exhausting, hot and windy/dusty event, but well worth it. Many Scouts now have a much greater appreciation of what our hobby is about – it’s not just what they see at JOTA …

And a number of Scouts took away the Foundation Manual, hopefully to get ready for their license. “This radio science stuff isn’t hard – it’s fun.”

I am still getting the Elmore dust out of things, and looking for a new tent – mine did not survive the second windstorm. It became a tent with a large ‘skylight’ as a pole snapped and tore through the tent fly – sigh. Slept in the van for the last 3 nights.

## **Odd moments**

-- Here are the winds at VicJam as seen by some fixed video stream cameras!

[https://fb.watch/ahdAbamI\\_c/](https://fb.watch/ahdAbamI_c/)

-- From the CubJam team: "A special note of thanks to those at VicJam who helped with the reconstruction of the CubJam base after the windstorm the day before we opened. It was Scouting at its best with everyone pitching in to ensure the Cub Scouts could enjoy their 'Big Day Out!'"

Their very open-plan activity base was almost completely flattened by the downdraft windstorm the day before the first busloads of Cubs, and was rebuilt and ready for action by the time the buses arrived. (Lots of tied down marquees traumatically buckled under the very high wind load).

-- An announcement from the Emergency Management Team: "Please *DO NOT* try to dash into a willy-willy!"

Several 50-60m tall willy-willy's visited the camp site one day, and managed to take a marquee or two on a surprise trip.

-- It did rain once. About 42 drips worth – just enough to settle the dust for an hour or so.

-- The grandson of the Founder of Scouting came to VicJam to visit his own grandson. Lord Baden Powell, the 4th Baron of Gilwell, and Lady Baden Powell came up from Melbourne for the day to visit their grandson in Unit 122.

Lord Baden Powell stressed the importance of Scouting, particularly in the last two years. "The spirit of Scouting is the one thing in the world that has the ability to bring us together," he said. "Keep enjoying life, keep living life and keep meeting Scouts from not only your Group but other Groups. That's important."

-- Jamboree in Space? Maybe... (Items below from the Camp Newsletter after the ISS contact)

What do Neil Armstrong and Buzz Aldrin have in common? They were the first people to walk on the Moon and both were Scouts. So were nine of the 10 other moonwalkers, plus the entire crew of Apollo 13.

As NASA said in 2011: "Of the 312 pilots and scientists selected as astronauts since 1959, at least 207 have been identified as having been Scouts or active in Scouting."

Fun fact: although Neil Armstrong was an Eagle Scout (like a Queen's Scout), one badge he never got was Space Exploration.

## **Covid**

The camp was also inspected a number of times by COVID-19 Compliance & Enforcement Authorised Officers from the Department of Health Events team, and local health authorities. Despite our rigid protocols, some contracted Covid. But with 99 per cent of eligible attendees double-vaccinated, VicJam was one of the safest places in Victoria, and our infection rate was well below the rapidly growing State rate.

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Murray Taylor VK3MJT  
SRESU member – MDRC member  
Cub Scout Commissioner – Melbourne Region  
**VicJam 2022 Survivor!**

## Images

### On the Air



Joining into a net for about 20 minutes



I can do this

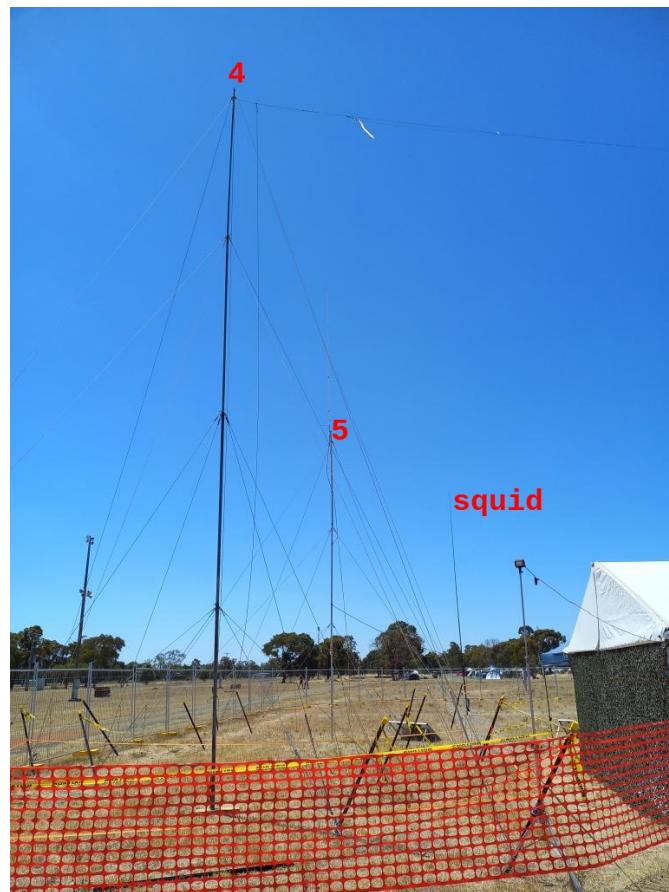
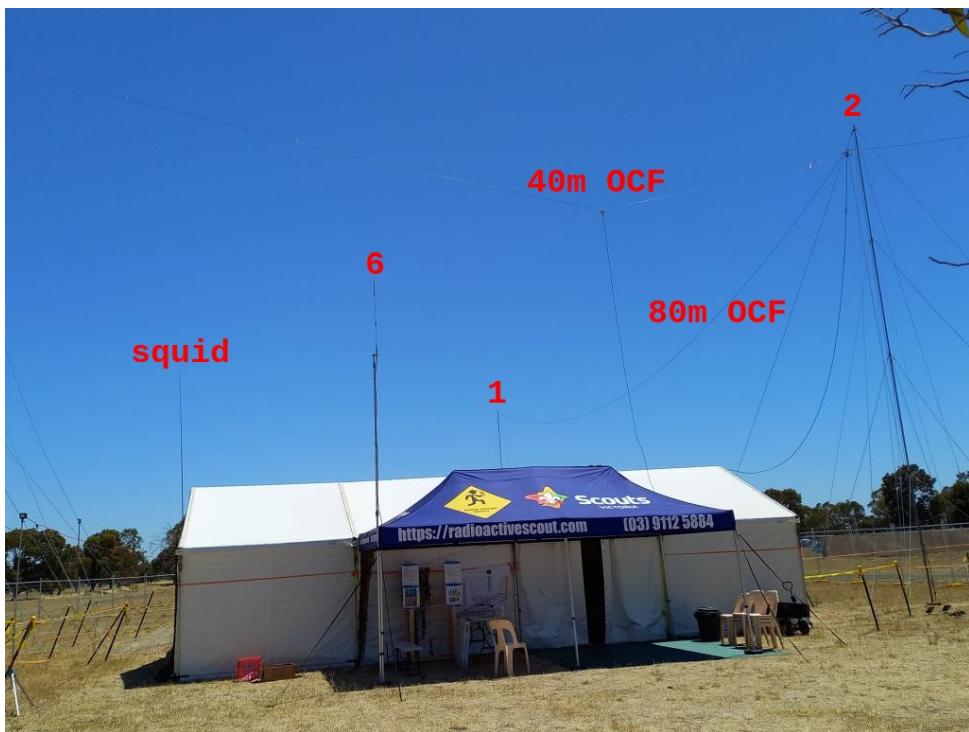
## Night Owls



## KiwiSDR and MorsePi



## Antennas



## ISS contact



Shane VK4KHZ



Fred AB1OC



The ground station antennas – New Hampshire

## The Storm . . . and the 'skylight'



Uh oh .....



Sigh