RAMBLER

DECEMBER 2024

VOL. 67 ISSUE 4

NEWSLETTER OF THE OTTAWA VALLEY MOBILE RADIO CLUB INCORPORATED (OVMRC.CA)

WHAT'S INSIDE:

NEXT MEETING:
WEDNESDAY JANUARY 15
RAC HQ OFFICES, 720 BELFAST RD AT 7:00PM IN PERSON AND 7:15 PM VIA ZOOM

CHECK-IN TIME 7:15 P.M. MEMBERS AND INVITED GUESTS WILL BE SENT AN EMAIL INVITATION SEVERAL DAYS BEFORE MEETING DATE WITH LOGIN AND PASSWORD. OTHERS NOT ON OUR MAILING LIST PLEASE CONTACT NORM AT: VE3LC@MYRAC.CA FOR INVITATION.

OVMRC AFFILIATIONS

OVMRC EXECUTIVE AND OFFICERS 2024-2025

DIRECTORS

President:
Norm Rashleigh, VE3LC
ve3lc@myrac.ca

Vice-President:
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vicepresident@ovmrc.ca

Treasurer & Membership Records:
Nicole Boivin, VE3GIQ
ve3giq@myrac.ca

Corporate Secretary:
Kathleen Murphy, VA3WEX, murphy@ncf.ca

Director-at-Large:
Patrick Brewer, VE3KJQ
patbrewer@sympatico.ca

STANDING COMMITTEES

Club Projects & Bulk Orders: Barry Alison, VE3NA ve3na@myrac.ca

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OVMRC.CA & Social Media: Adam Bird, VA3IRD web@ovmrc.ca

OVMRC Repeater Keeper: Norm Rashleigh, VE3LC ve3lc@myrac.ca

Special Events:
John McGowan, VA3JYK
john.mcgowan1314@gmail.com

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OVMRC Groups.io Ongoing discussion Group at: https://ovmrc.groups.io/g/main; All radio amateur members and non-members are welcome

Ottawa Valley Mobile Radio Club Inc.,
PO Box 41145 Ottawa, ON K1G 5K9

OVMRC Life Members
Ralph Cameron, VE3BBM
Doug Carswell, VE3ATY
Bill Hall, VA3WMH
Ernie Jury, VE3EJJ
Doreen Morgan, VE3CGO
Bryan Rawlings, VE3QN
Maurice-André Vigneault, VE3VIG

OVMRC Repeaters

- **VE3RAM** Limited coverage to Orleans and East Ottawa 443.700 MHz (+) DMR CC1 & D-Star Network connected to Brandmeister
- **VE3TWO** Limited coverage to East and South Ottawa 147.300 MHz. +, PL 100.0 Hz. Analogue FM and C4FM

Special Event & Field Day Call Sign VE3JW

LOCAL WEEKLY NETS (ALL CHECK-INS WELCOME)

- **Rubber Boot Net,** VE3OCE 146.880 MHz (-)136.5 Hz tone weekday mornings at 7:30 AM conducted by Roger, VE3NPO
- **Ontario Amateur Radio Service organization (ONTARS)** - daily from 7am to 6pm daily on 3.755 MHz. See www.ontars.com
- **Pot Hole SSB Net,** 3760 kHz, every Sunday morning at 10:00 AM conducted by Ernie, VE3EJJ, or Glenn, VE3XRA.
- **Pot Lid Net,** Sunday night, 7:30 PM, 50.090 MHz., horizontal polarization. Join controllers Hugo (VE3KTN), Norm (VE3LC), Mike VE3FFK and Ante VA2BBW for accomplished and budding CW operators alike.
- **QCWA Chapter 70 Net,** VE3OCE 146.880 MHz (-) 136.5 Hz tone, Monday evenings at 7:30 PM conducted by John, VE3ZOV
- **Capital City FM Net,**VE2CRA 146.940 MHz -, (100 Hz tone), Monday evenings at 8:00 PM.
- **Champlain STP Net,** VE3STP 147.060 MHz -, (114.8 Hz tone), held Monday through Saturday at 7:00 PM. ***new antenna / better coverage***
- **Phoenix Net,** VE3OCE 146.880 MHz (-) 136.5 Hz tone, Tuesday evenings at 7:30 PM conducted by Pete, VE3XEM
- **Upper Frequency Net,** Simplex 144.250 MHz using USB, Tuesday evenings at 9:00 PM conducted by Glenn, VE3XRA. Following check in on 2 m you can check your radios on 6 m at 50.150 MHz and 70 cm on 432.150 MHz as well using USB. All check ins are welcome.
- **Almonte ARC's D-Star Net** Tuesday evenings at 8:40 p.m. carried on XLX197 and everything connected to it, including VA3AAR, HH 94152 & AllStar Node 564012. Dale VE3XZT presides.
- **OVMRC 2-Metre Net,** Thursday Evenings, 8:00 PM, Club Net on FM will be held through VE3OCE 146.880 MHz (-)136.5 Hz tone conducted by Hugo, VE3KTN.

INFORMAL AMATEUR RADIO RESTAURANT GATHERINGS

• **QCWA Chapter 70** Breakfast gathering every Tuesday morning at 7:30 to 10:00 AM, Summerhays Grill, 1972 Baseline Rd., Nepean - Restarted

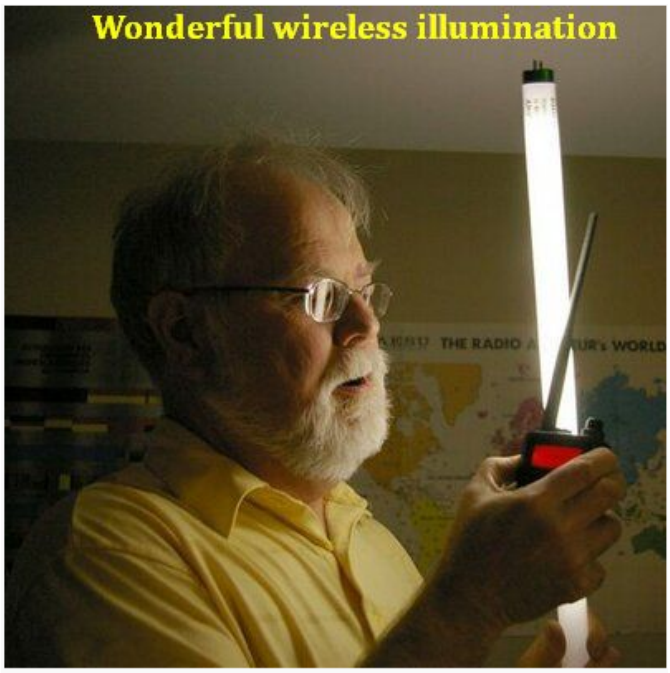
• **Orleans Coffee gathering** every Friday morning at 9:00 AM, McDonald's 1890 Innes Rd., Ottawa, K1B 3K5

• **QRP Group** Luncheon and Dinner meetings at Newport Restaurant are on again. See "OttawaValleyQRP" groups.io for details.

• **Phoenix Net monthly Breakfast gathering *(on hold)*,** usually the second Saturday every month at 9:00 AM, Check with Pete ve3xem@myrac.ca

President's Ramblings

I write this as the cold season is now in full force with 16 below zero forecast tonight. The only consolation of the cold dark days of December is at least after the 21st at 4:19 am (our time) the days start to become longer and in a few more months, spring will be here again. Hallelujah! With that thought, I wish all the members and friends of the Ottawa Valley Mobile Radio Club, Merry Christmas, Happy Hanukkah, or whatever else you may wish to celebrate at this time of year.



VE3LC

As I write this on Friday the 13th evening, the Geminid's meteor shower should be at its peak so I'm giving MSK144a try on 6m to see if I can hear and maybe work a few meteor scatter propagation contacts. As I compose a few more words, I just worked one station on MSK144 but it was tricky. Meteor scatter propagation is in short bursts and having a two way exchange is very difficult. At present, I'm copying several stations during their 15 second transmissions but the sporadic nature of the propagation is not always allowing a full exchange necessary to qualify as a contact. Interesting enough while I write this, OVMRC member Fern VA3LMA was receiving my MSK144 CQs and he responded and we contacted each other for a full QSO exchange. Bravo Fern for being on 6 m MSK144! Needless to say, the propagation between us was not by way of meteor scatter being so close together. And now as I write further, VA2BBW is calling CQ on 50.260 MHz. I had a full exchange contact with him too. The difficulty with close-in stations is they take over the entire 15 sec reception time slot which doesn't leave it open to hearing any other stations that may be coming in. If several local amateurs were all on 50.260 MHz (the standard frequency on 6m for MSK144 activity) at the same time trying to make those elusive distant meteor scatter contacts, they would have to take turns on the frequency lest they QRM each other out and nobody wins. Look for some of my WSJT-X, MSK144 screen shots elsewhere in the December Rambler.

And further as I write this message, I received an email from Ante VA2BBW to inform me he worked this evening TA2LG on 80 metres and the contact had just been confirmed on his Log Book of the World account. That makes 100 confirmed DXCC entities for Ante on 80 m and that qualifies

him for applying for the ARRL DXCC 5 band award. That is a remarkable achievement. At this point in time, I've only achieved 85 DXCC entities confirmed on the same band and know very well it's tough getting additional new ones because of the limited distance range and electrical noise we now suffer in urban Ottawa particularly on the 80 and 160 metre bands. Maybe the radio noise environment is less across the river where Ante lives. The five band award requires at least 100 DXCC entities worked and confirmed on LOTW or by physical QSL cards verified by an official ARRL card checker on each of the primary 5 HF bands of 80, 40, 20, 15, and 10 metres. A Big Congratulation to Ante!

I'm resuming writing these December Ramblings following our Christmas time breakfast gathering at Connors restaurant Saturday morning December 14 organized and hosted by Peter VE3XEM. There was a good turnout of 26 including a few spouses accompanying their OVMRC significant other. Thanks Peter for organizing the event. Several pictures are included in the Rambler of the Christmas breakfast affair at Connors.

I'll finish by wishing one and all the very best of the season and hoping the New Year brings you good health, happiness and good DX.

73 Norm VE3LC

Silent Key Submission Guidelines

https://www.rac.ca/silent-keys/

..also please inform ISED

https://ised-isde.canada.ca/site/amateur-radio-operator-certificate-services/en/contact-us

OVMRC November Meeting Minutes

LOCATION: RAC Headquarters

PRESENT: 26 in-person, 30 on-line, total 56

CALL TO ORDER: 19:15

1. GREETINGS: GUESTS AND NEW MEMBERS

Maurice, who is studying.

2. APPROVAL OF MINUTES OF OCTOBER MEETING

Moved by Bill VA3HWA, seconded by Peter VE3XEM. Carried.

3. REVIEW OF RECENT ACTIVITIES

a) **Club POTA November 16, with photos**. This will be the last one until next spring. Club has no intention of holding a formal activity on Winter Field Day.

b) **Field Day Results**: OVMRC entered in the "2A-Battery" category and came first in Canada and fifth in North America in that class.

4. TECHNICAL PRESENTATION: AMATEUR RADIO BALLOONING

Presenters' Introduction

Adrian VE7NZ and Scott VA7SL. Adrian and Scott co-founded the "Canada Hub" on Allstar. The North Fraser Amateur Radio Club (VE7NFR) does a variety of activities as well as ballooning: they run a blog, and have put up several repeaters on under-serviced bands. See: https://ve7nfr.com

They were presenters at a summer school for electronics, giving a presentation of amateur radio ballooning and making and launching a pico balloon with the campers, which the campers then tracked for several weeks.

Radio amateurs interested in a package of details of the software and circuit diagrams used, send an email to Adrian at VE7NZ@myrac.ca and join the Groups.IO page "pico balloons".

General

Two types of balloons have been tried. "Pico balloons" are 32" diameter (100" circumference). They go up 10-14 km and float in the jetstream for months. Pico balloons are made of mylar. They take very little gas, with buoyancy only 5 grams more than the payload weight. With such small balloons, only very light payloads can be carried. "High Altitude Balloons" (HAB) are

made of latex. They are larger and can carry greater payloads. HABs go up about 35 km and fly for about 2-3 hours before they burst.

In both cases, ballooning requires typical amateur radio knowledge of weak signal propagation and power management. But it also needs knowledge of wind and weather, chemistry, materials including handling of compressed gases, and precise measurement techniques.

Surprisingly, no permission is required in Canada so long as your balloons are below 115 cu. ft. of gas and your launching is not near an airport. In the USA, the regulatory environment varies between the States and in some cases this activity is not allowed.

The gas of choice is hydrogen. Surprisingly, helium is not an option: party-balloon helium contains up to 30% nitrogen and does not provide sufficient buoyancy for amateur radio ballooning; pure helium is a restricted substance not available to the general public.

Pico Balloons

Pico balloon payload consists of small solar panels with supercapacitors in lieu of a battery to hold a charge, a Raspberry Pi computer, a 27 mW WSPR transmitter usually for the 20 metre band, a GPS, and the antenna (half going up the tether from the payload towards the balloon and the other half hanging down from the payload). The antenna is made of very fine (38 ga.) wire to keep weight down. A swivel installed between the top of the tether and the balloon keeps everything from twisting.

When launched, the ascent of a pico balloon is rather slow, given that it only has 5 grams of buoyancy. Launching should be done on a clear day (rain or frost on the balloon will be too heavy and cause it to sink). Once the balloon gets up to altitude (10-14 km) it is above the weather layer and this is no longer a problem. However, radiation from the sun can warm up the balloon to the point where it will burst. On the other hand, extreme cold (up at 14 km the temperature is about -57°C) makes the mylar brittle, and it can crack and release the gas, and fall.

When the balloon drifts over war zones such as the Ukraine where GPS jamming is taking place, it's information is erratic. When the GPS detects the balloon is in an exclusion zone with radio silence (e.g. over North Korea) the software automatically will not transmit.

The WSPR transmitter relays the ID, temperature, and 6-digit gridsquare as determined by the GPS. At night, or when the balloon drifts into the arctic in winter, there is not enough light to get power out of the solar panels and the balloon stops transmitting.

The website https://sondehub.org/ tracks pico balloons worldwide (there are hundreds!)

Pico balloons cost about $100 to outfit. The goal is circumnavigation, and the current record for one of them is 744 days transmitting . Adrian and Scott have not had that much success, one of theirs went to the southern US and another as far as Russia.

High Altitude Balloons (HABs)

HABs are larger than pico balloons and can have heavier payloads. Typical contents will be a 1 Watt VHF/UHF cross-band repeater, 0.5 Watt APRS transmitter, GPS, cameras, and various sensors can be included in the package. These are placed in a styrofoam box with a small hole for thermal moderation. Up at 35 km, more than twice the height of a pico balloon, the temperature is a bit warmer. But the atmosphere is so thin there is no moderating convection from the surrounding air.

The volume of gas used for a HAB is designed to give a 5 m/sec rise speed.

To keep the payload from twisting, a tripod stabilizer is used. This is a NASA design, available on the internet, and was 3D printed.

At 31 km up from the ground, the horizon is 630 km away. This makes it possible for Vancouver and Calgary are line of sight at that point! They have had people check in to their repeater from Washington State, Idaho, and Oregon.

Software for these balloons will predict (fairly accurately too) where these will land given the data for amount of gas and location of launch (it takes into account the wind speeds and directions at different altitudes). Once the balloon bursts, the payload free-falls and is blown by the wind in known directions. Adrian and Scott have launched three of these so far, but have only been able to retrieve one as the others came down in inaccessible locations. (The one that was retrieved fell near a trailer park and a resident found the tag on the payload which had Adrian's phone number on it, and called). In other cases, Search and Rescue organizations have used recovering HABs as training exercises.

5. BUDGET (Nicole VE3GIQ)

Reviewed budget, which was published in October Rambler and some questions were answered. **Vote to accept**: moved by Richard VA3HBL, seconded by Glen VE3XRA. Carried.

6. NEW BY-LAWS (Alan VE3IAH)

Draft package was put out for comments and one member used ChatGPT to review the document. Comments were detailed and surprisingly good. Alan is revising and expects to have a final version in the new year.

7. COMMITTEE REPORTS

a) Club Activities

There will be no technical meeting in December, but President Norm VE3LC will be sending out an email to see if anyone is interested in a lunch get-together in Cumberland.

On December 14 at 10 AM, Pete's Café will be holding a get-together at Connors Irish Pub & Eatery in Orleans (2401 St. Joseph Blvd, just east of the intersection with Orleans Blvd.)

b) Website (Adam VA3IRD)

Allstar hub is now active.

On the website under the "social" tab, there is now a link to an IRC Chat Room, which can be used to send files and pictures to other members if needed.

The X (formerly Twitter) page for the OVMRC is now active again.

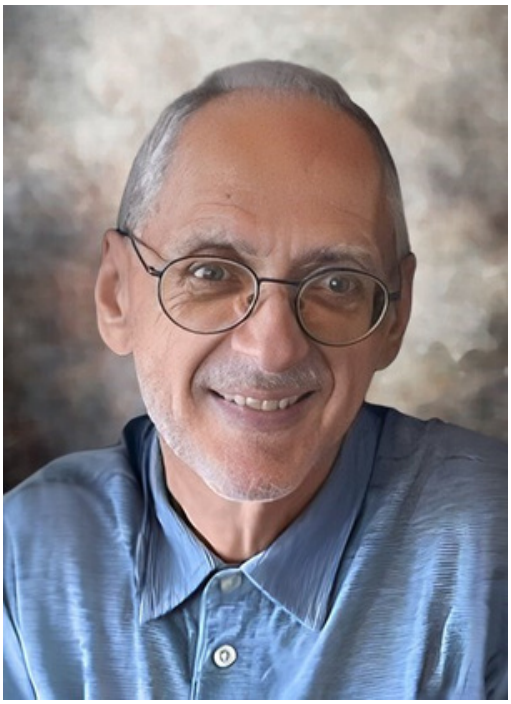
8. DOOR PRIZES

Won by: Roger VA3EGY, Rob VE3RXH, Tim VE3TXB, Pat VE3KJQ, Alan VA3IAH, Fern VA3LMA, Kathleen VA3WEX, and Donald VA3ZZI.

ADJOURNED: 21:30

Minutes recorded and prepared by
OVMRC Secretary, Kathleen VA3WEX.

Jean Pierre Desbiens VE2OCQ (SK)



Jean Pierre, known on the radio as Jean, was born December 30, 1950 and died on December 8, 2023.

He contributed to the radio community through participation in many local nets, providing translation support for OVMRC Field Day and travelling a few times from Gatineau to Ottawa to join a breakfast gathering of radio amateurs. Jean was also active in the Gatineau club, where Ante (VA2BBW) recalled his participation in club meetings.

Jean was heard on the STP Net on November 29, 2023 shortly before he became a silent key on December 8, 2023. He was just a few weeks away from his 73rd birthday and was always a pleasant operator to have on a net sharing many stories of his cats and his latest ideas for the plot of his book which he was kind enough to share via the CRRA website (https://champlainrepeater.ca/members-corner/).

The OVMRC would like to express our belated condolences to his wife Diane Bisson and his son Santy Simon Desbiens. He will be missed.

73, Alan VA3IAH

Link: Obituary

Christmas club gathering:
Connors Restaurant December 14th.

(All Pictures courtesy of Frank VE3YY)

Our host and organizer, Peter VE3XEM and XYL Jacquie


VEZZE
David


OPEN

Geminids Meteor Scatter activity

The following are screens shots of a Raspberry Pi-400 running WSJT-X in the MSK144 mode on the 6m band showing Meteor Scatter activity from the Geminids meteor shower the evening of December 13th.

Figure 1. This screen capture shows 3 decodes from W4IMD in EM84 calling CQ from a relatively long meteor scatter reflection during his 15 second transmission. The red circling on the bottom shows the reception burst resulting in the 3 decodes shown above also red circled.

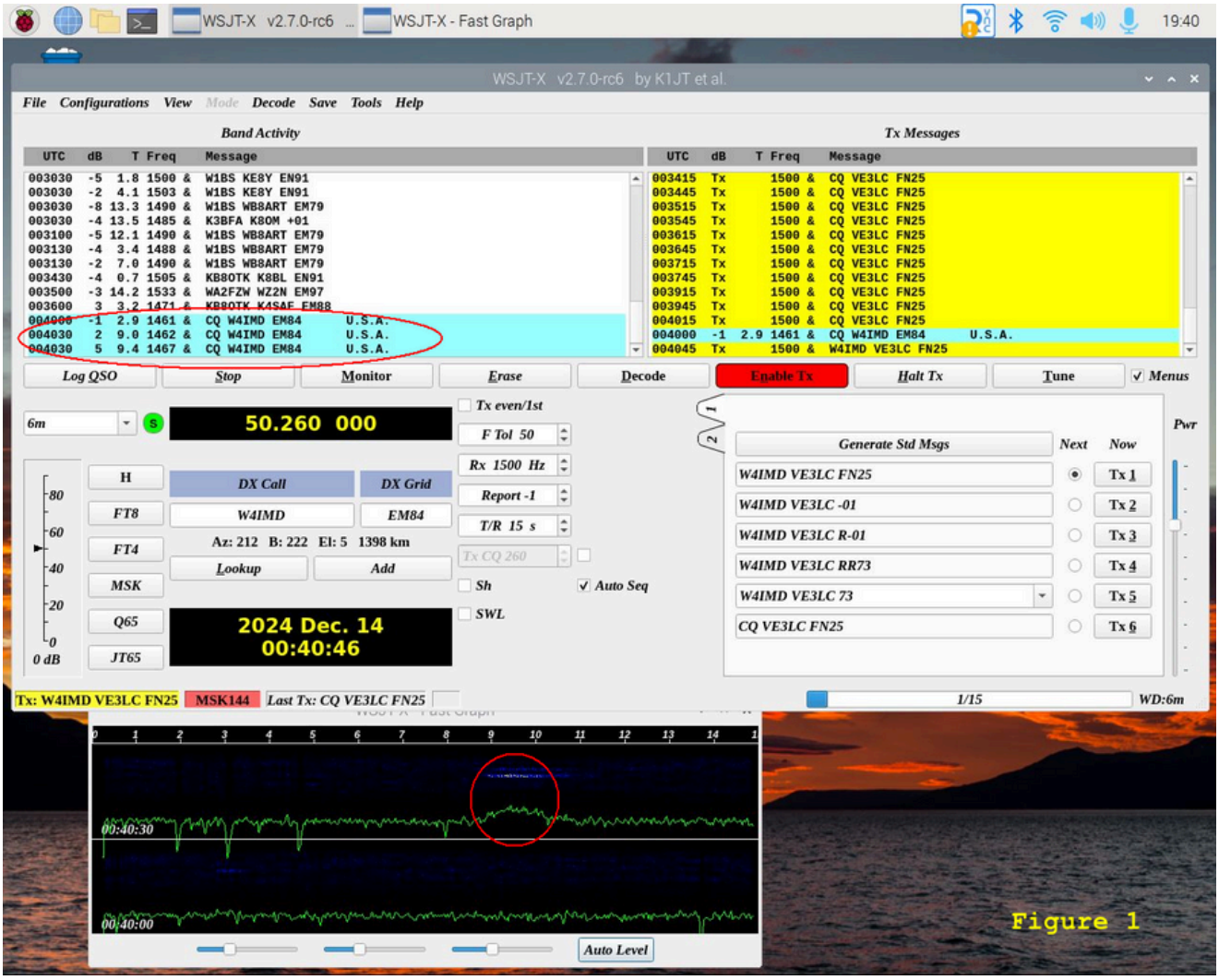


Figure 2, shows a completed contact with W2ZN in EM97 after reception of his final transmission of "RR73" acknowledging receipt of my signal report back to him. He was probably sending several 15 second transmissions before I was lucky enough to get a very short burst of meteor scatter reception (red circled on the signal tracing below) resulting in the RR73 decode. Note the logging window that popped up to record the QSO.

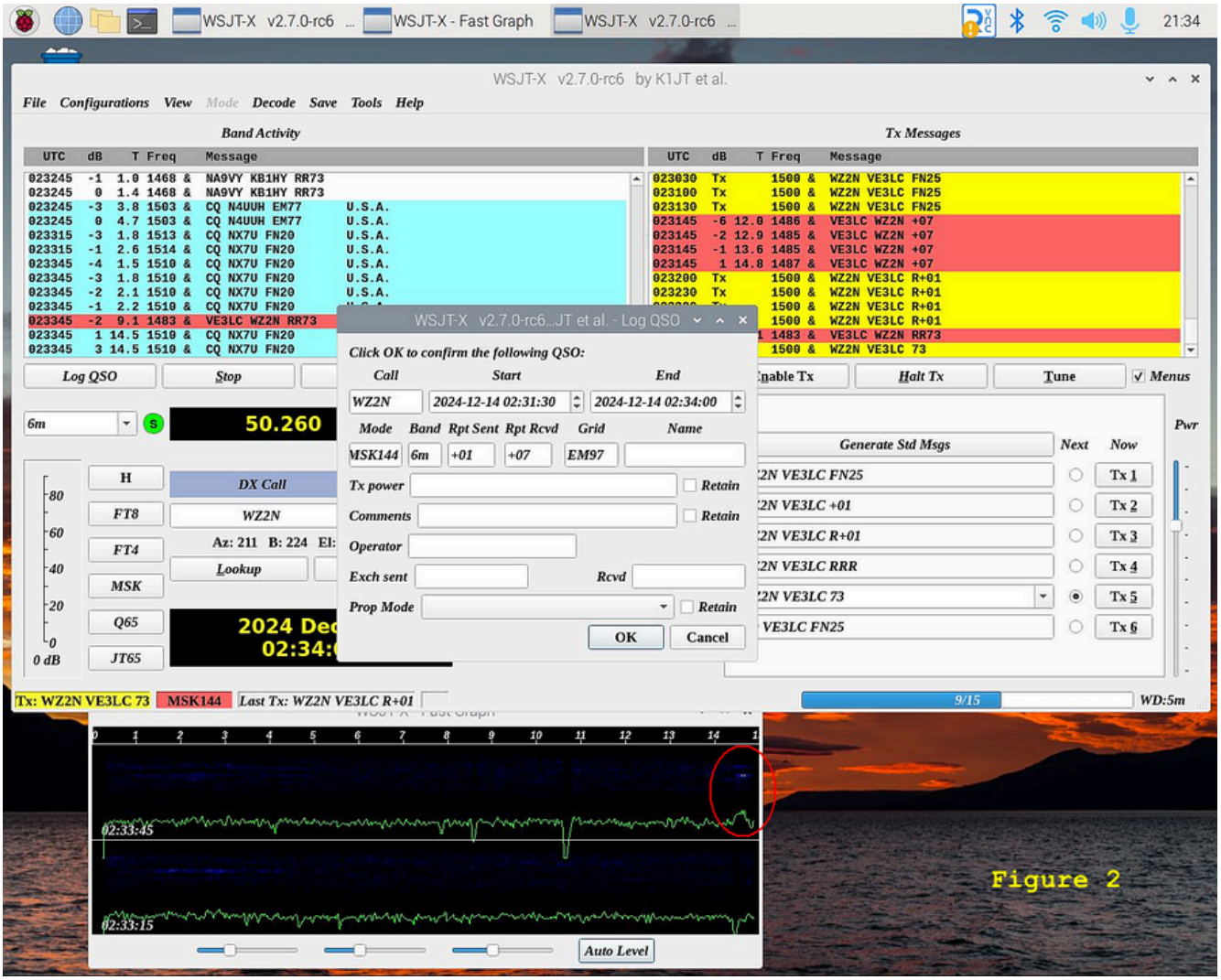
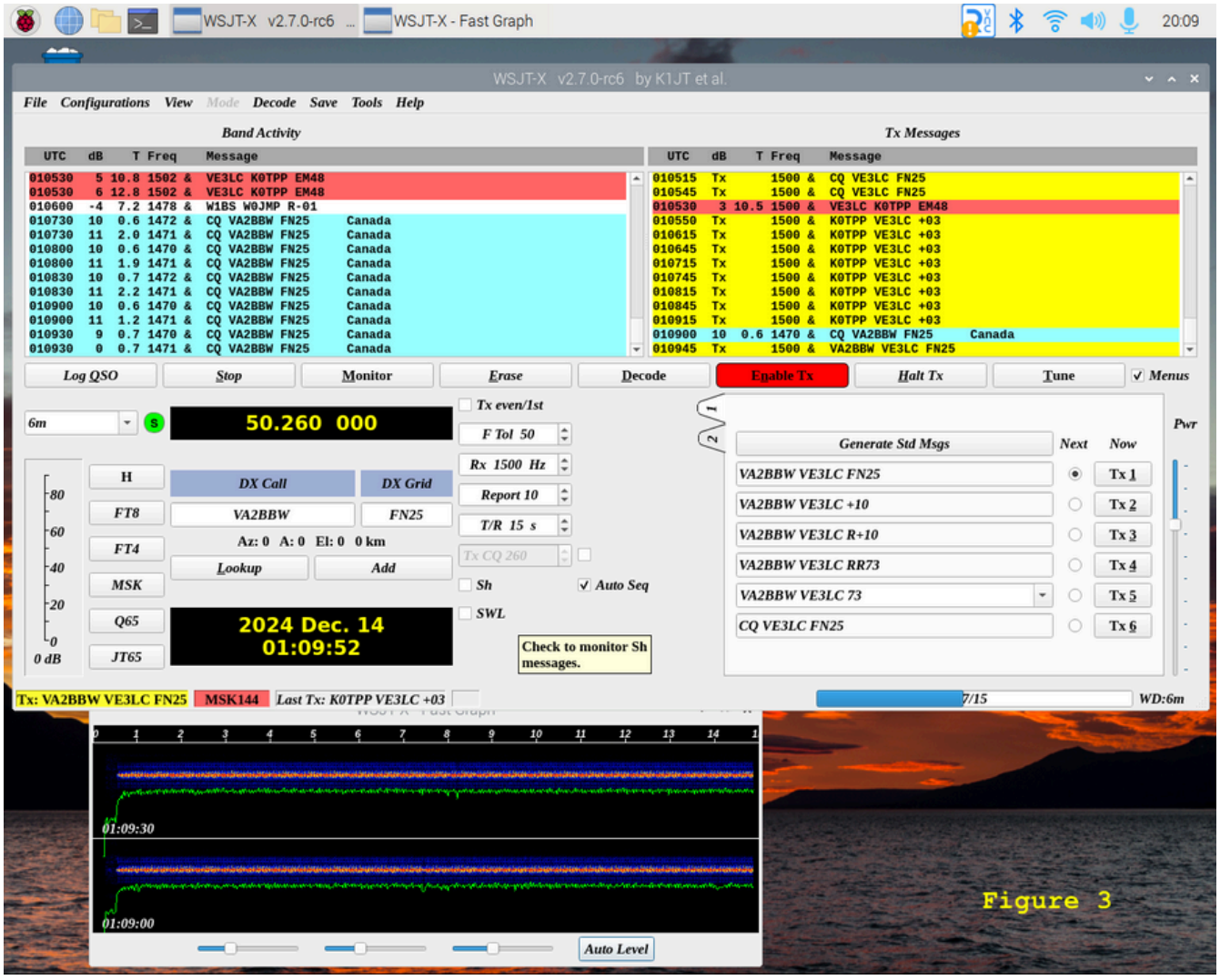


Figure 3, shows Ante VA2BBW calling CQ. Ante's signal is direct and strong at my QTH in Orleans during his 15 second CQ transmission. There was absolutely no meteor scatter propagation involved. Note the series of decodes resulting from his signal during his 15 second transmission cycle.



73, Norm VE3LC

APRS Superheroes!

Photo 1 - APRS creator Bob Bruninga, WB4APR (SK) on the Appalachian Trail.

APRS - WB4APR (SK)

The Automatic Packet Reporting System (APRS) has been around for over 40 years, with roots going back to the early 1980s when its author, Bob Bruninga, WB4APR (SK) created the system to track navy ships. He then deployed it to report the status and position of horses in a 100 mile endurance run. At the time Bob was a senior research engineer at the United States Naval Academy and the system was known as the Connectionless Emergency Traffic System (CETS). As the system developed and GPS became more available the system became the Automatic Position Reporting System and finally the Automatic **Packet** Reporting System.

Quoting from APRS.org:

"*The Automatic Packet Reporting System was designed to support rapid, reliable exchange of information for local, tactical real-time information, events or nets.*"

Background
Although based on the original packet system and using the same AX.25 protocol, APRS uses a different type of networking since it is not designed for a one-to-one connection like packet, but for a many-to-many connection. Although APRS is fully functional in direct 'user to user' RF mode, it is enhanced by APRS digi-peaters (digital repeaters) that are the backbone of the wider network, using 'store and forward' to retransmit packets on the same frequency (simplex), unlike most voice repeaters that need more complex filters and separate uplink and downlink frequencies.

As well as APRS, Bob was also a proponent of alternative power sources, authoring the ARRL book "Energy Choices for the Radio Amateur" in 2018 which covers solar power, heat pumps and both hybrid and electric vehicles as well as being involved in the launching of Amateur Radio satellites beginning with PCsat in 2001, which was the first satellite to accurately report its position using GPS. He also played an important role in developing APRS on the ISS which is still in use today.

APRS Frequency
Here in North Amerca the APRS designated frequency is 144.390 MHz but different frequencies are allocated in other IARU regions such as 144.800 in Europe and there are a number of Amateur Radio satellites with APRS digipeaters such as the ISS using 144.825 MHz.

APRS Enabled Radios
There are many APRS enabled radios currently on the market, with favourites from Yaesu's including the FT-5DR HT, and FTM-100, 200, 300, 350, 400 and 500 mobiles (not all in current production). Kenwood HTs such as the current TH-D75 as well as their previous D72 and D74 HTs and their mobiles the TM-D700 and D710 are sought after. Anytone also produce an APRS mobile the D578 and a fully APRS enabled HT the D878UVII Plus. A newcomer to the market is the VGC VR-N76 also sold as the BTECH UV-Pro that is fully ARPS enabled, but also has a Bluetooth link to a smartphone app that allows full access to the TNC for APRS messaging etc using the smart device's screen and keyboard that is much easier to use than the front panel of the radio.

The above radios allow the operation of APRS directly from the radio using a built in Terminal Network Controller (TNC) which translates the desired text to/from the AX.25 protocol for transmission as audio tones. However, it is also possible to access APRS without having a built in TNC by either utilising an external TNC or a software TNC on a computer such as Direwolf or Soundmodem. Many modern HF and VHF radios include a soundcard and thus the same connection that enables HF digital modes such as FT-8 can be used for APRS. There is also a growing HF APRS network on the 30 metre band.

APRS-IS

With the advent of the internet, it became possible to port the APRS packets to and from the internet using iGates and thus the APRS Internet Service (APRS-IS) was born sometime in 1997. Today we can make use of this information backbone through portals such as https://aprs.fi/, https://aprs.to/ or http://www.findu.com to visually see icons representing the APRS stations on a live map and access the attached information such as status messages eg “monitoring 146.52 MHz”, course, speed etc; weather reports, messages and telemetry.

Photo 2 - Lynn Deffenbaugh, KJ4ERJ (SK).

APRSISCE/32 and ANSRVR - KJ4ERJ (SK)

The development of APRS connectivity to a radio through a TNC allowed many computer applications to be implemented. One such application is APRSISCE for Windows mobile devices and APRSIS32 for Windows machines developed by Lynn Deffenbaugh, KJ4ERJ (SK). APRSISCE/32 is an advanced APRS Client for Amateur Radio allowing the user to make use of their PC connected to their radio using an external TNC and soundcard (or one of the software TNCs) to display APRS information, set automated beaconing, send and receive APRS messages. An internet connection enhances APRSIS32’s functionality, with connectivity to the APRS-IS internet backbone for receiving and sending APRS data to/from the internet.

Linked to the development of APRSISCE/32 is the APRS Announcement Server (ANSRVR) which was also created and maintained by Lynn. ANSRVR allows a user to ‘join’ an APRS group, much like a chat group or Groups.io, although connections are considered more temporary. Messages sent to the group address are forwarded over the APRS network to all members, which make it a powerful ‘all informed’ net.

Appalachian Trail Golden Packet
Bob founded the Appalachian Trail Golden Packet (ATPG) event, where about 16 portable Amateur Radio APRS stations are carried to hilltops all along the approx. 3000 km Appalachian Trail that runs down the US east coast from Mount Katahdin in Maine at the north end to Stone Mountain in Georgia at the southern terminus. The ATGP takes place annually on one day in mid July and has been running since about 2010. Bob created the ATGP event to be a showcase for APRS, despite it not being optimised for use in a linear fashion. The Golden Packet is the APRS packet that reaches from one end of the trail to the other, digi-peating through between 15 to 17 portable ham radio APRS stations, manned by keen amateur radio operators. Success has not been achieved every year due to weather, equipment failure or RF path failure.

Lynn was also a staunch supporter of the Appalachian Trail Golden Packet, using his APRSIS32 software and his system knowledge to analyse where the links had failed and helping operators to correctly programme their radios in advance, using a special APRS path and separate frequency so as not to overload the regular APRS system.

Application of APRS?
Wouldn't APRS be a very useful communications system for use when supporting public service events? YES! Not only would real time location information from check points and vehicles be very useful, but a messaging backbone that would receive and store messages would keep everyone informed throughout the event without needing operators to actively listen and write down messages as they came in. Tools such as APRSISCE/32 or YAAC allow the creation of a route on a live map, that can be shared to all APRS users and gives the ability to add icons for traffic congestion, weather reports etc to be displayed on the map by operators at check points and in the Operations Centre.

APRS Thursday and the APRS Net
APRS Thursday was started during the COVID 19 pandemic by a group of hams that got together on the social media platform Instagram, they formed 'Hams on the Gram' (HOTG) and created an APRS checkin "net" on Thursdays using Lynn's ANSRVR. All ham radio operators are welcome to join the net by sending a simple APRS message addressed to ANSRVR: "CQ HOTG and add a short message of your choice". Note you will receive replies from all future checkins that day! Send "U HOTG" to ANSRVR to unsubscribe.

APRS Superheroes
So why APRS superheroes? Sadly, recently we have lost two of the APRS superheroes. In February 2022 Mr APRS himself, Bob Bruninga passed away, and just last month we lost Lynn Deffenbaugh, KJ4ERJ who was the author of APRSISCE/32.

On Thursday 5 December 2024 operators were encouraged to send a special APRS Thu net message commemorating Lynn's passing. As I have joined the net previously and am planning to take part in the ATGP in summer 2025, I sent my special message to the ANSRVR system, via the APRS digi-peater on the ISS using APRSIS32 on my Windows laptop, the Dire Wolf 'software' TNC and my Yaesu FT991A on the 2m ISS APRS frequency.

My APRS packets were picked up by the ISS and retransmitted back to earth to be received by the KD4ADC-2 iGate that forwarded them to the APRS-IS where they reached ANSRVR and the HOTG APRS Thursday Net.

A path view from APRS.to. Note that the ISS is shown at position 00 degrees west and 00 degrees north for simplicity. At the time of my transmission the ISS was passing from south-west to north-east almost overhead.

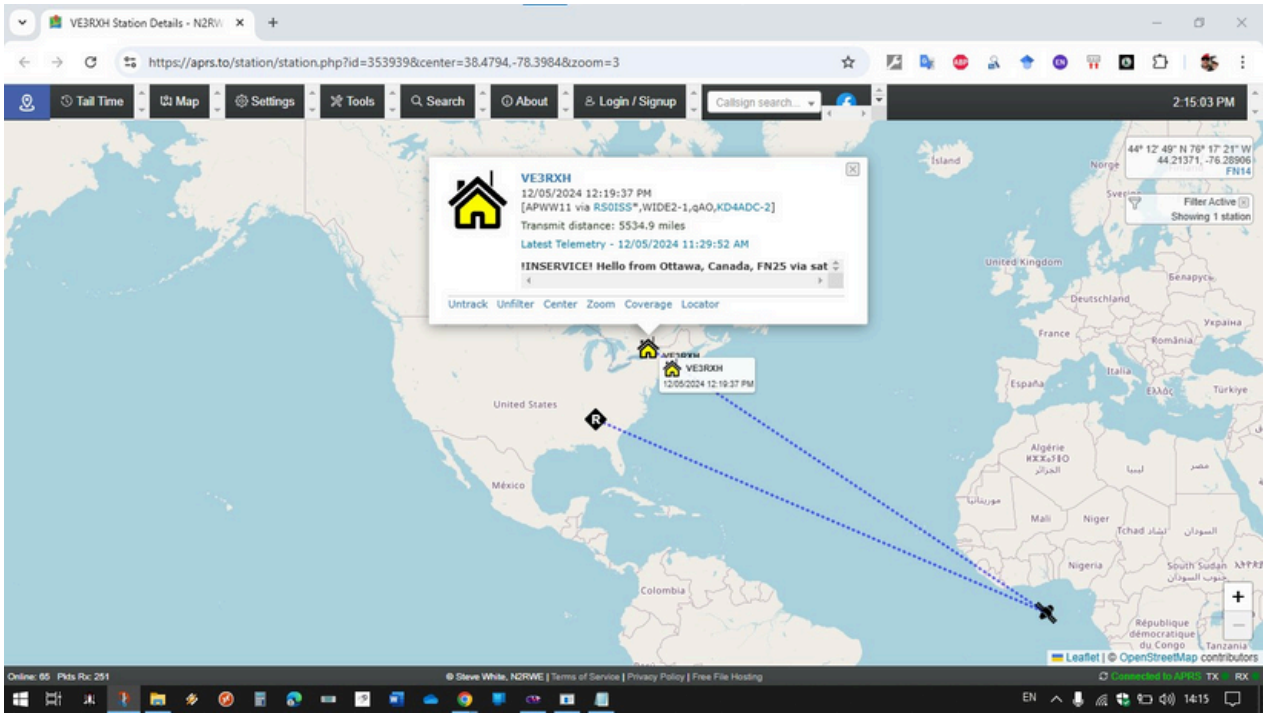


Photo 3 - Message path through the ISS to KD4ADC-2

And this is how the checkin appears at APRS Thursday:

Photo 4 - APRS checkin message for the HOTG group and APRS Thursday.

Conclusion

Often thought of as simply a vehicle tracking system, APRS is much more, providing an effective text messaging system, group messaging/bulletin board and access to the Winlink email system and more. In short it is a full service digital communication system. Our hobby is much enhanced by some thoughtful and committed individuals such as Bob and Lynn, that can see a need, envision a solution and bring it to fruition … all for the benefit of amateur radio operators.

RIP Bob and Lynn, 73 and thanks for your huge contributions to APRS.

Rob, VE3RXH

References

APRS: http://aprs.org/
APRS-IS: https://www.aprs-is.net/
APRSISCE/32: http://aprsisce.wikidot.com/
ARRL: APRS Developer Bob Bruninga, WB4APR, SK: https://www.arrl.org/news/aprs-developer-bob-bruninga-wb4apr-sk
Wikipedia: https://en.wikipedia.org/wiki/Automatic_Packet_Reporting_System
ATGP: https://www.atgoldenpacket.net/
Appalachian Trail: https://appalachiantrail.org/explore/hike-the-a-t/interactive-map/
YAAC: https://www.ka2ddo.org/ka2ddo/YAAC.html
APRS Thursday: https://aprsph.net/aprsthursday/

Ham radio classes at Scout Headquarters

Since the spring of 2019 Thane, VA3TTM and I have been giving the basic amateur radio certification course. The initial goal was to raise funds for an antenna system for Scout Headquarters, VE3SHQ. The year before Thane had run a course for about 6 people at the Bunker using the 2008 edition of the OVMRC Course Guide.

Since giving the first course, course offerings have expanded to twice a year. We are very grateful to the OVMRC for the use of the club course guide. If anyone has an electronic version, be it Word or Word Perfect, we would love to have it so that we can make corrections easily. Our first course had about 15 students for an in-person-only program but now we are starting with about 40 students, 20 in the classroom at Scout Headquarters and 20 online using Zoom. Unfortunately, only half the group will stick with the course to end. Teaching a class on Zoom and in person is a bit strange. The Zoom folk don't quite get the same attention as those in class that we can easily see.

Then comes the challenge of getting Zoom folk to write the exam. Everyone seems to want to practice until they are getting a perfect mark so some of them never come out. The last couple of courses we have set a day for everyone to show up and write the exam. The current course will write the exam on December 22nd. Additionally, if you are aware of anyone else who wants to write the exam just have them send an email to Harrie,VE3HYS (harriej59@gmail.com) so I will know they are coming.

We have divided the course up into 12 weeks of 3 hours each in the hope that we don't overwhelm anyone. This time we also decided to break in a new instructor, Matt, VA6MRH, who took one of our COVID courses. We are always experimenting, last January we gave all the graduates a Pixie to build with our help. This time we are going to give a dual band radio to those who pass. Who knows what incentive we'll use in the the next course.

Morse Code Class

This fall we tried something new. Scott, VE3NPX, has run a Morse code course while Thane and I are running the basic course. Hearing the code in the background has been fun while we teach and several of our students have said they want to take the code course next term.

Scott had 13 sign up and I think most have stuck with it. I think Fred,VE3LAF, just wanted to show off however I understand that he has become a great mentor and a supply instructor. Way to go Fred, we can give you your own class in February! Just give us the word.

I have included a picture of some of our students in the Basic class (previous page) and also one of code group (see above), all lined up on one side of the tables with Scott on the other.

73, Harrie, VE3HYS

XIEGU G90 REVIEW

This is a review of the Xiegu G90 radio I bought just last week for use during Parks On The Air POTA excursions. This is intended to be a 2 part article with the 2nd part covering actual field use during POTA trips that I am planning over the coming weeks.

I was looking for a 2nd HF radio that would be more rugged than my IC-7300, and inexpensive enough such that damage or loss of the radio would not be a big deal. After researching all the radios on the market the G90 appeared to be what I wanted, so I bought it.

Two vendors sell the G90 in Canada, Radioddity and DXCanada. I went with Radioddity as they provided an 18 month warranty, while DXCanada did not. The price was $718.37 including tax and shipping. The G90 was shipped from Hong Kong, and took 2 weeks to arrive.

The G90 is very compact. This photo shows the G90 attached to my improvised POTA mount, sitting on top of my IC-7300. The G90 chassis has good frame ears at each corner that are great for fastening the radio to whatever mount you may need.

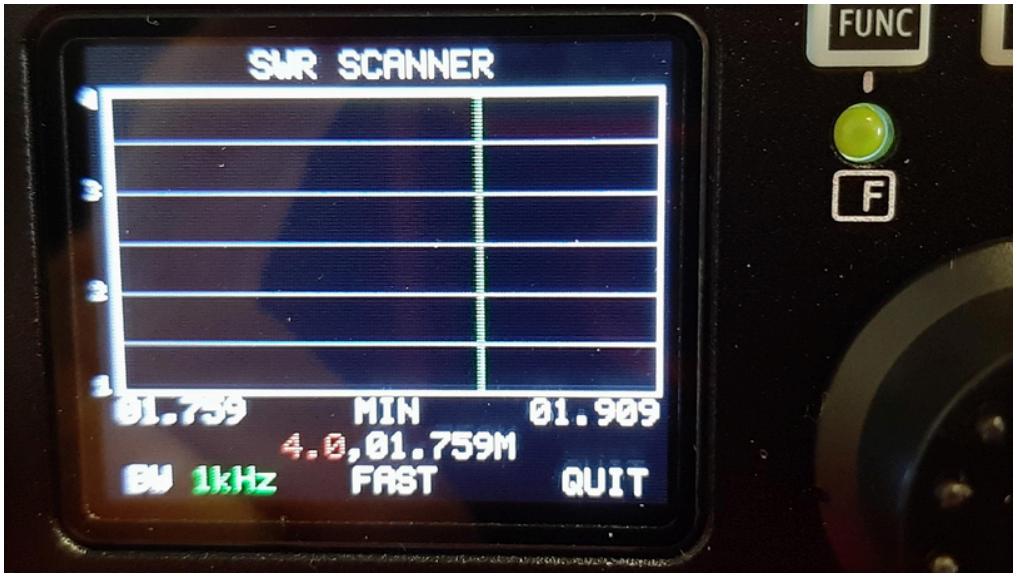
For POTA use I wanted a rugged and stable mount to keep the radio safe. Using tie wraps, small wooden blocks, and drilling some holes, I was easily able to attach the radio to a lid for a small 11 litre size Rubbermaid storage container. The container will provide great protection while travelling, and the lid provides a stable mount to hold the radio in operating position.

The screen, while tiny at 1.8 inches, adequately displays all the info needed for a good POTA radio experience. The spectrum display with waterfall is fixed at 48 kHz wide and can't zoom in or out like on an IC-7300.

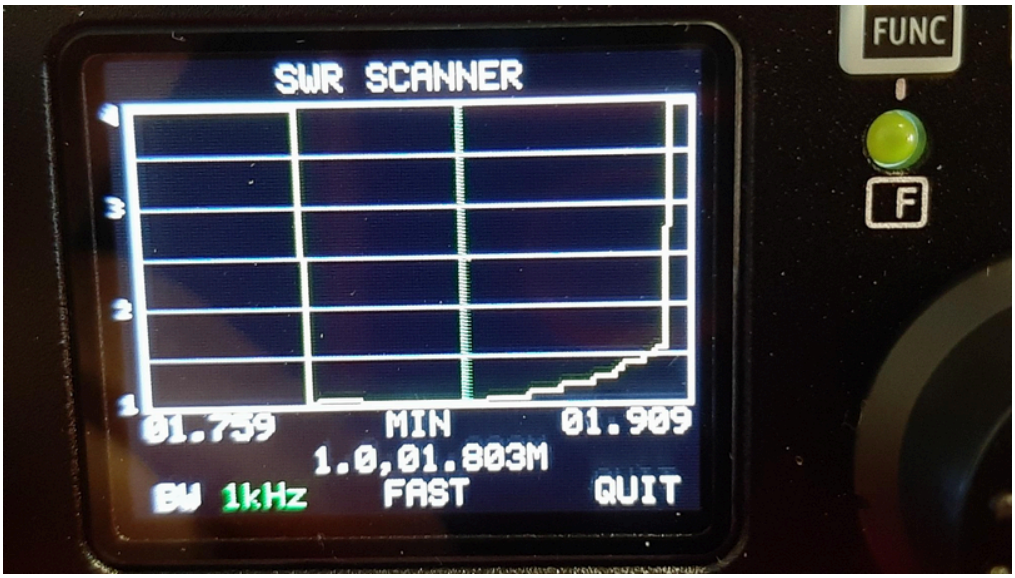
The manual that came with the G90 radio is well written and covers all the important aspects of operating the radio. Radioddity has a more detailed manual that they wrote that is free online. I recommend any potential buyer to read the Radioddity manual to see the extensive features of this radio, as they are well beyond what I can detail in this article (see the link at the end of this article).

A very important feature of the G90 is the built in Antenna Tuner (ATU). This will tune antennas with an SWR of up to 5. My home antenna is a 41 foot end fed wire job. The antenna manufacturer says it can't be used for 160 or 80 meter bands, but the G90 is able to tune the antenna and transmit on 160 and 80 meters no problem.

Below is a picture of the SWR scanner function. It is scanning the 160 meter band before the "TUNE" button has been pressed, and the graph shows SWR flatlined at 4. Below the "MIN" it is showing the lowest SWR point is 4 at 1.759 MHZ. The SWR is on the vertical scale, and only goes to 4 so we can't really tell how bad the SWR is.



When the "TUNE" button was pressed, the result can be seen in the picture on the top of the next page. The G90 was able to achieve an SWR of 1 at 1.803 MHZ. The Antenna Tuner will tune for the frequency the radio is set to, but frequencies too far from this will be out of tune just like in this graph.

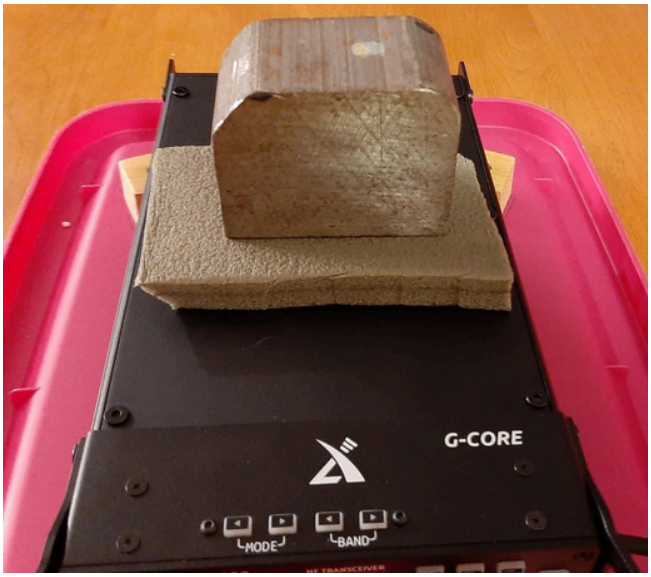


A cool feature is CW decoding. The decoded characters appear at the bottom of the screen like in this photo. To make it work the frequency must be set exactly to the incoming signal, with the LED over the triangle flashing in step with the code being sent. Weaker or noisy signals will not make the LED flash correctly and the CW will not be decoded.

The tiny tuning knob takes some getting used to. Pressing in the knob will select which digit is the lowest digit changed by the knob. It can be 10hz, 100hz, 1khz, 10khz or 100khz. The receiver appears to have similar receiving sensitivity to my IC-7300. It is hard to get a good comparison with only 1 antenna, but a quick check of one signal showed about the same reception. The transmitter power is 20 watts, and can be adjusted down in 1 watt increments to a minimum of 1 watt. The power supply connection uses PowerPole style jacks, and the G90 will work over a range of 10.5 to 16.5 volts. The power supply voltage is shown on screen in the upper right corner.

I have made a number of contacts with the G90. Other stations told me I sounded okay, but my signal was weak (to be expected with only 20 watts). I found I was not being heard by stations with a signal level below 5 as they were too far away to hear my 20 watt signal.

My #1 dislike is the volume control. It is a multi-position switch rather than a variable POT. The 2nd lowest position is rather loud, enough that the G90 can be heard in the next room at my house. The lowest position is silence. My work around is a piece of foam over the speaker, held down with a steel weight to get a tight seal as shown above. This gives an acceptably quiet volume, with static noise down considerably too.



I did notice an occasional glitch in the radio software that causes the frequency to not change even though the indicated frequency is changing with the frequency tuning knob. Turning off and on the radio cleared this. My radio is running the latest software version so I am assuming this is an unfixed bug. At this point I doubt that I will ever risk updating the software as this is a minor issue.

In conclusion I feel the radio is good value for the money. It would be a good choice for a beginner on a limited budget, or for somebody looking for an inexpensive, compact, rugged and portable rig.

Stay tuned for part 2 when I take the G90 out on some real POTA excursions……

73 until next month
DONALD VA3ZZI

G90 manual written by Radioddity can be obtained at:
https://radioddity.s3.amazonaws.com/Xiegu_G90_User_Manual_V4.34_20241023.pdf

Collins 51J-4 Receiver

See the Specification Sheet at: https://www.rigpix.com/collins/51j4.htm

I am now the owner of a vintage Collins 51J-4 HF receiver. When I was a young fellow and first on-the-air in 1963, I would have lusted over one of these receivers if indeed I knew such a make and model existed at the time. The 51J series receivers were manufactured by Collins Radio Company, Cedar Rapids, Iowa from mid 1948 as the -1 version using common octal base tubes of the time. It later evolved as the 51J-4 version that used the then common 7 and 9 pin miniature based tubes; it ceased production in 1964.

These receivers were known for their frequency stability and dial accuracy over their reception range of 0.5 to 30.5 MHz (designated Megacycles in the era of production). The radio covered this range by selection of one of thirty 1 MHz bands by rotation of the large “band change” knob on the front panel of the radio. The radio design also incorporated an IF variable crystal notch filter and selection of up to 3 mechanical band pass filters. At the time of last production, the purchase cost of a 51J-4 was approximately $1200 so this radio was generally unaffordable by the average radio amateur. Most of the production was sold to commercial users as well as the military for their HF RTTY network stations. For US military service, the 51J series receiver was designated the R-381 to R-388 during the evolution of the product line. For the amateur market, Collins offered a similar looking more affordable receiver designated the 75A-4 that covered only the HF amateur allocations as they were then which did not include the 30, 17 and 12 metre “WARC” bands nor the 60 metre band.

I could say more here from my brief research but the full history of the of the 51J series radios is best covered in detail at the following URL:

link or manual address https://www.radioblvd.com/collins_r388_and_51j_series.htm#:~:text=Most%20of%20the%2051J%2D1,with%20general%20coverage%20reception%20from%20.

The radio I acquired was the result of a luncheon gathering of fellow retired folks from my old RCMP workplace in mid November. Of course, at the luncheon I was avidly talking about my activities in amateur radio and the fellow that sat beside me mentioned he had this old radio that his deceased father-in-law had owned and it was just collecting dust and cluttering his basement and he wanted to get rid of it. He wasn't sure what it was and he never used it. He phoned his wife at home who snapped a picture of it sent it to his phone. I recognized the picture of the radio as being a Collins and by enlarging the photo could resolve that it was a 51J-4 from the stampings on the label on the front panel. I had experience using this same make and model of radio in my schooling in the RF communications lab at the Ryerson Polytechnical Institute where I graduated in 1969. I offered the fellow $50 for the set and he agreed and after the luncheon I picked up the radio at his place of resident in Wendover. Needless to say, the radio set was very dusty and dirty inside. Having it at home and on the work bench a few days later, I dared to apply AC power to it to see if it would work from probably several decades of non use. Ramping up the AC voltage slowly using my Variac, it indeed came to life with no smoke or smell and tuned in the AM broadcast band very well and even the volume and RF gain controls operated smoothly and not a bit raspy. I have since cleaned up the chassis, all 19 tubes and front panel and knobs. Unfortunately, the radio does not have a full complement of the famous Collins mechanical filters. These radios were all designed for 19" rack mounting but optionally could be fitted to a cabinet for desk top use. There was no cabinet with the one I have. I may fabricate wooden sides and top for it if I decide to keep it for a while. Ultimately, I may donate it to the Cold War Museum at the Diefenbunker in Carp.

Although the old receiver is quite sensitive and stable, it is no match in performance and ease of use to the equipment we use on the HF ham bands nowadays. For one, the 51J-4 is big and heavy (it weighs 43 lbs), it is not agile switching from band to band, and although it has a "BFO" (beat frequency oscillator), it doesn't receive CW or SSB very well. The modulation detector is solely based on diode type detection that is ideal for good for AM reception with a steady carrier wave to govern the AVC (automatic volume control) for signal sensitivity control. For CW and SSB, it is best to have product detector with AGC governed by the demodulated audio. That said, I found the web site of VE7CA who is a real

Collins 51J aficionado and provides there through reference to other material several modifications to the radio to provide better AGC performance and mods to the BFO to replace the 6BA6 tube with a 6BE6 pentagrid oscillator/mixer tube and other circuit changes to affect a Product Detector. Reference: https://www.qsl.net/ve7ca/Bot51J.htm

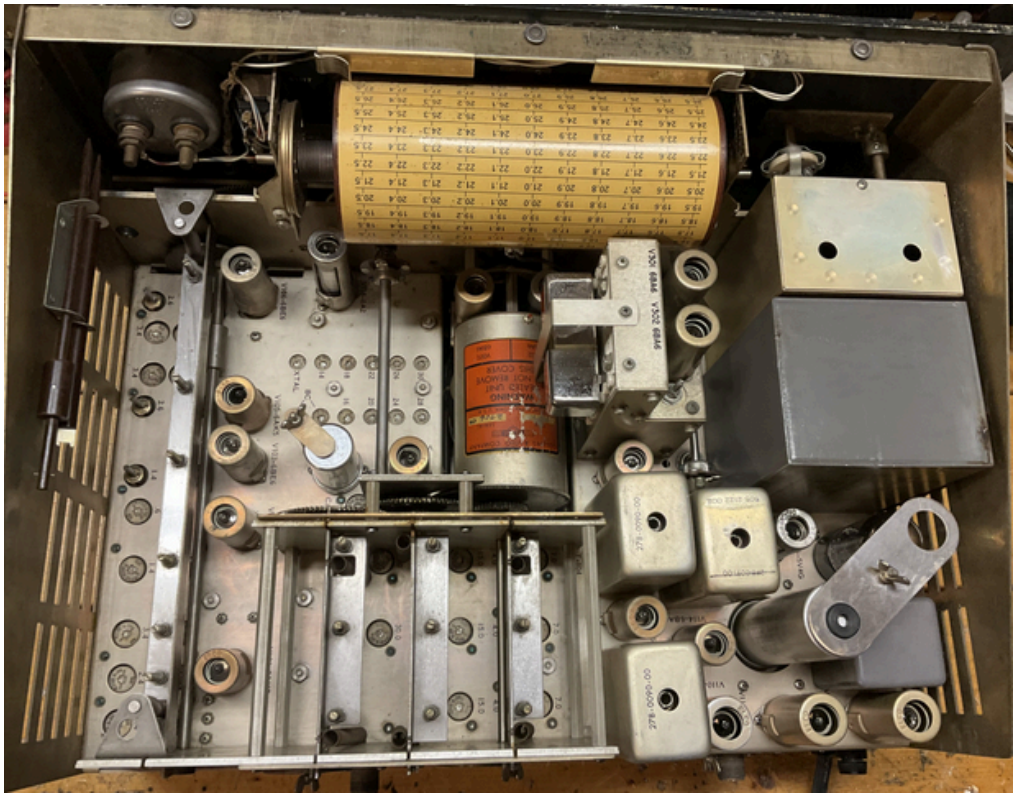
I may do this mod to the receiver I have here. I also found a more modern plug-in (to one of the tube sockets) solid state circuit board kit to add a product detector to the radio. I am not sure if it is still available. Reference: https://www.treetopcircuits.com/docs/PD3Manual.pdf

So my old new Collins 51J-4 looms as project in my spare time, as if I have any spare time any more. I'll keep folks posted on my travails to fix it up better.

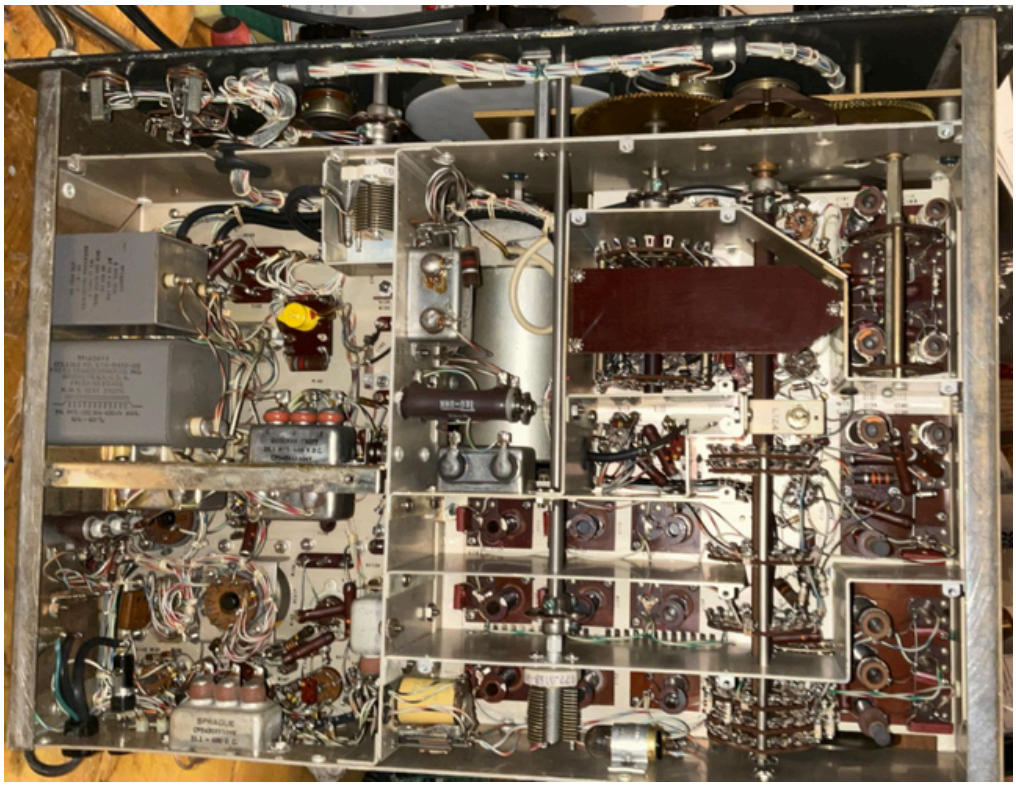
I close this article with several pictures of my 51J-4, inside and out. Of particular interest is the mechanics of the radio. The gearing rotating the various shafts that actuate several cams that move the "powdered iron slugs" up and down thereby tuning to resonance the band filter inductors with a change in bands and frequency is a marvel. See also the many associated trimmer capacitors. Indeed, I would not want to perform a complete alignment on this radio and I will leave the old radio well enough alone in that regard. Enjoy the photos of this yesteryear radio and appreciate the way it was when things were big and heavy.

My Collins 51J-4, Serial 1748

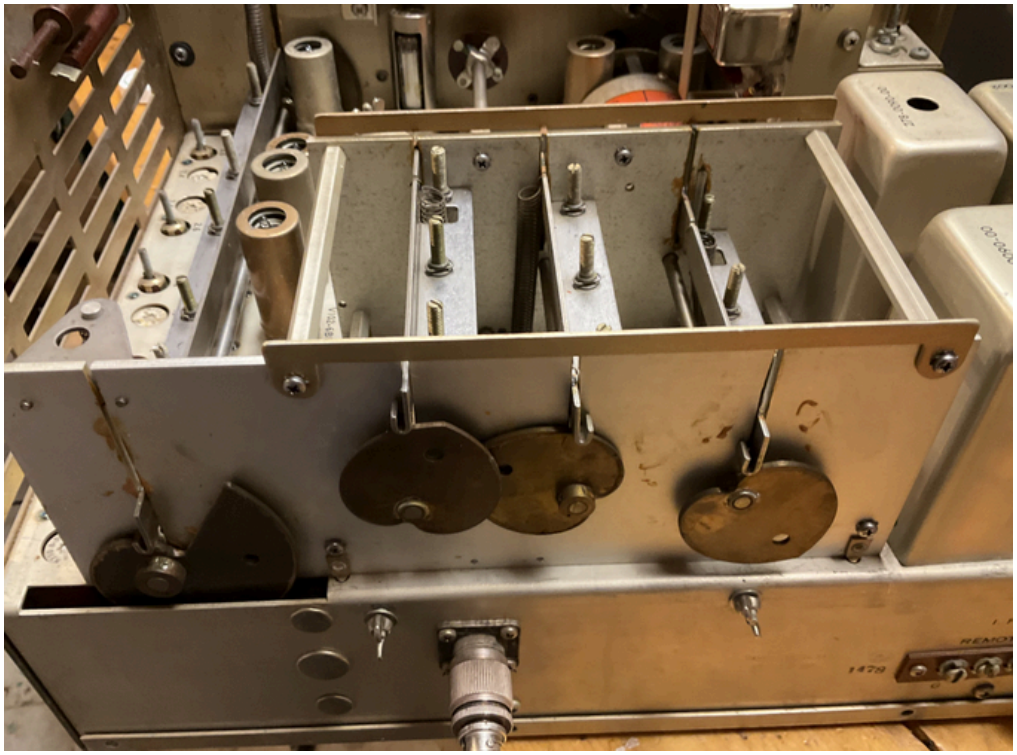
Top view of 51J-4 radio chassis. Can you location all 19 tubes? One is partially blocked from view by one of the mechanical filter plug-in modules.



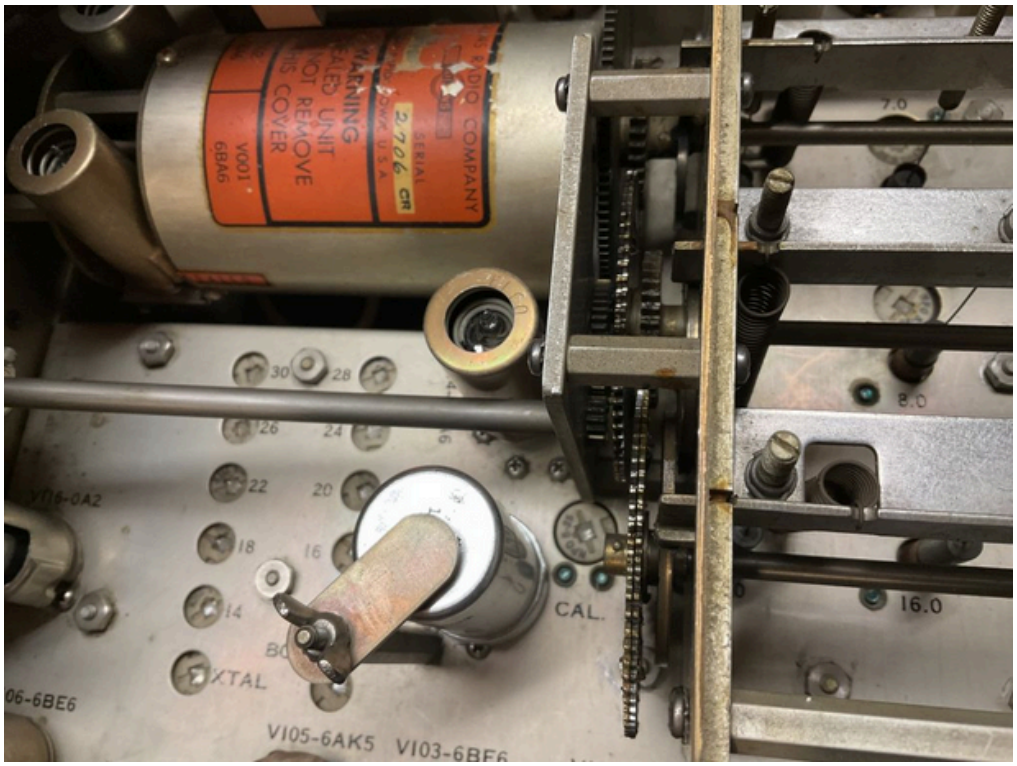
This is the bottom view of chassis with cover removed; notice the laced wiring harness. Most components are labeled on the chassis frame of the receiver.



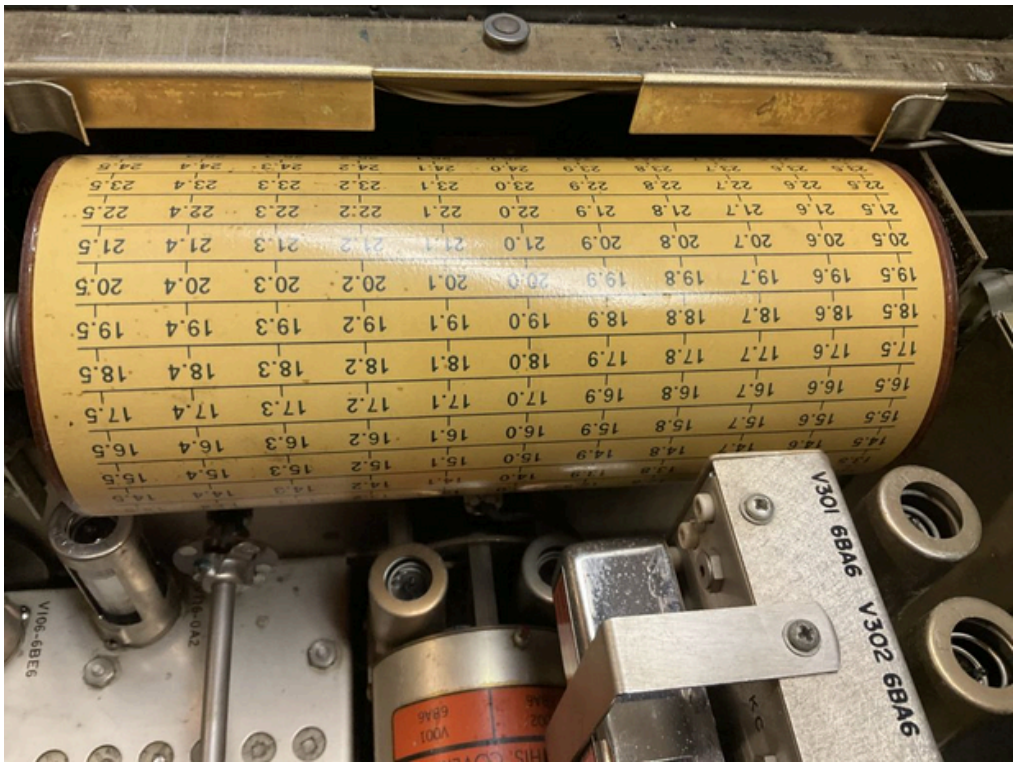
This is the back view of chassis showing cams that actuate positioning of inductor cores for pre selector tuning depending on band and frequency.



Shown here is the gear works that follows band and frequency tuning and rotates the shafts that actuates the cams that moves up and down the powdered iron slugs for receiver front-end inductor tuning. The plug-in "can" is the 100 Hz crystal for the receiver's crystal calibrator.

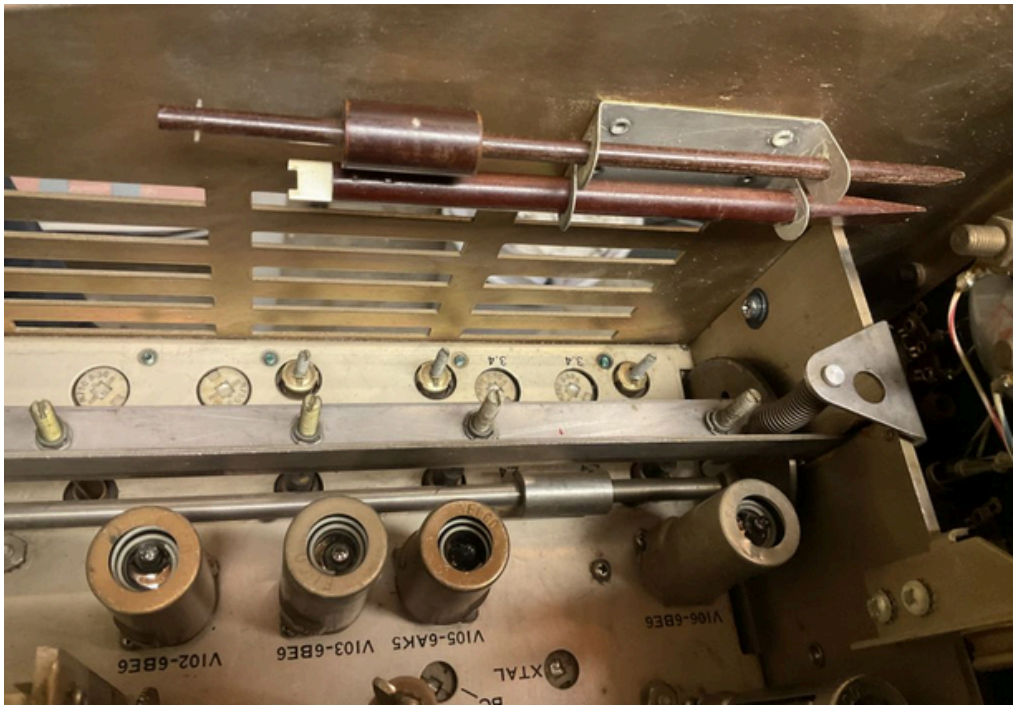


Here shown is the drum that rotates with “band change” knob to display in a front panel window the chosen frequency band of operation. There are 30, 1 MHz wide bands on the drum.

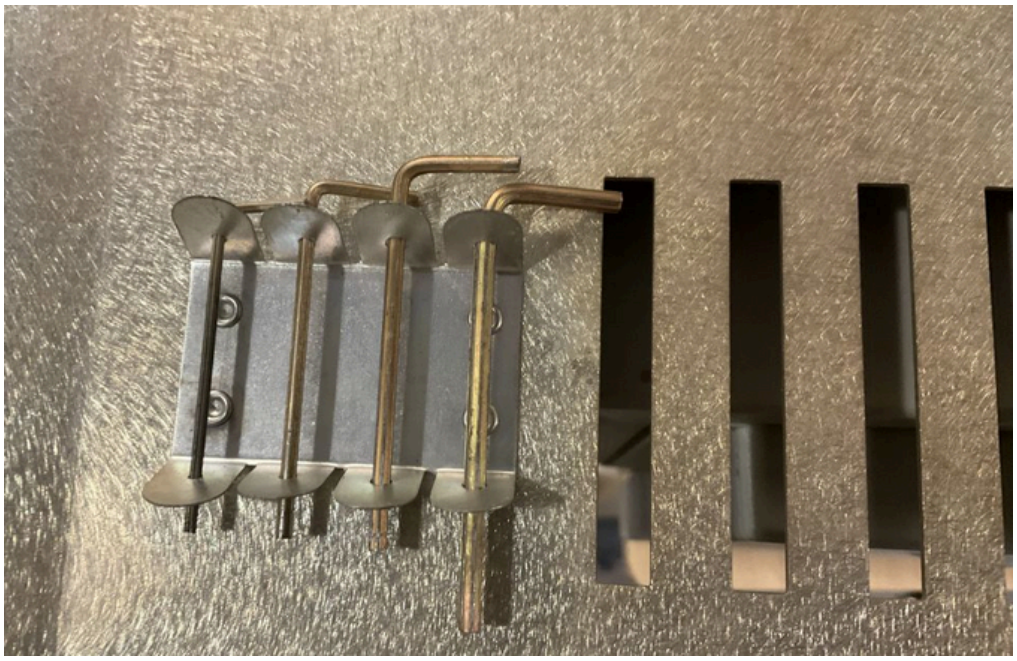


The heart of the 51J is the “Permeability Tuned Oscillator” (PTO). This oscillator is a 1 MHz span VFO coupled to the main tuning knob of the radio. It’s tuning is a linear function of rotation vs frequency and is highly stable. The bottom of the picture shows the frequency display drum that rotates to show the band in play through the window on the front panel.

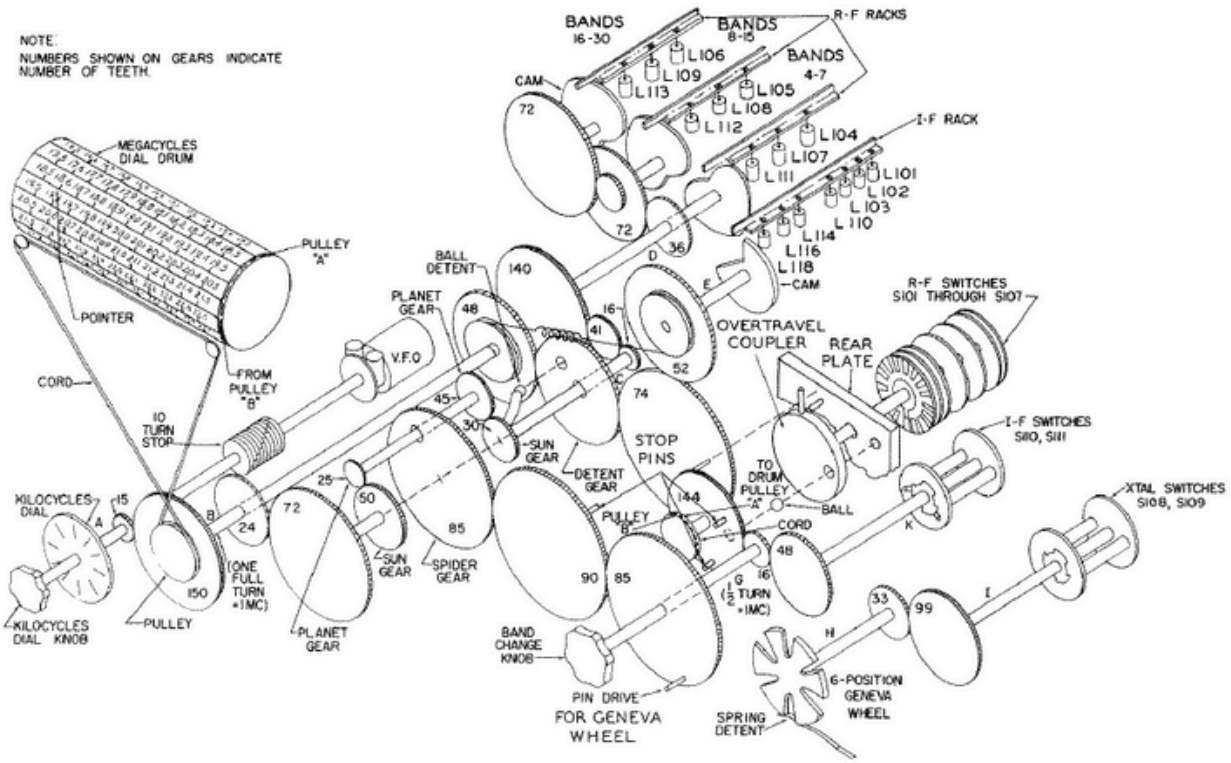
Non-conductive alignment tools are provided with the radio and are stored in special clips on the inside of the chassis side panels.



Shown are the Bristol type keys fastened to the inside of the top cover for change-out or repositioning of the front panel control knobs.



This diagram from the Collins manual shows the mechanical complexity of the 51J-4 receiver.



73, Norm VE3LC

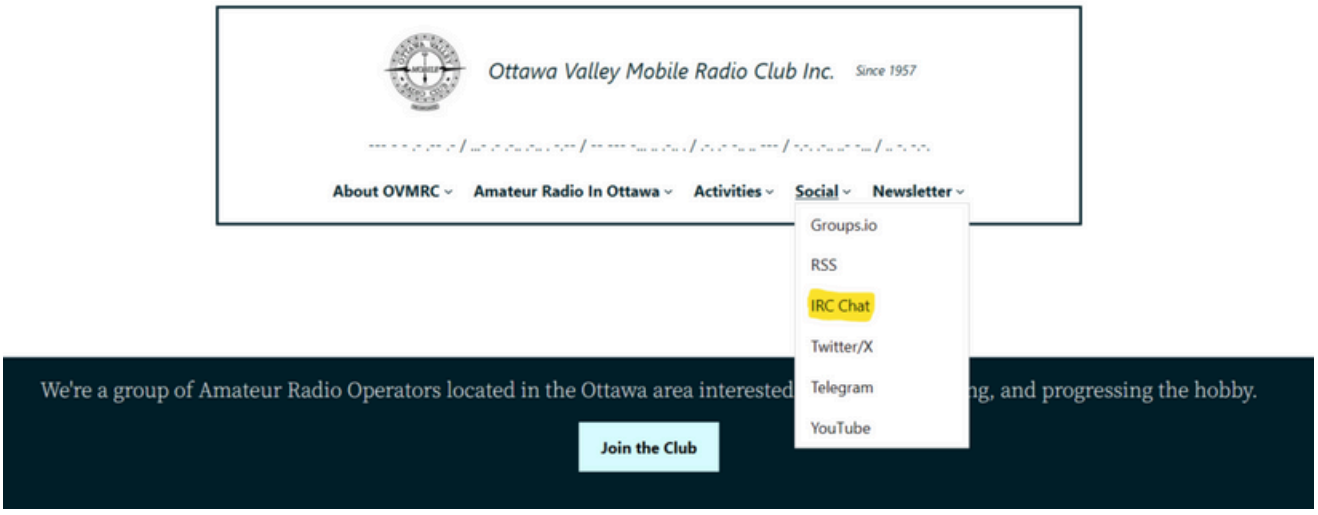
Website Feature Highlight 3: IRC

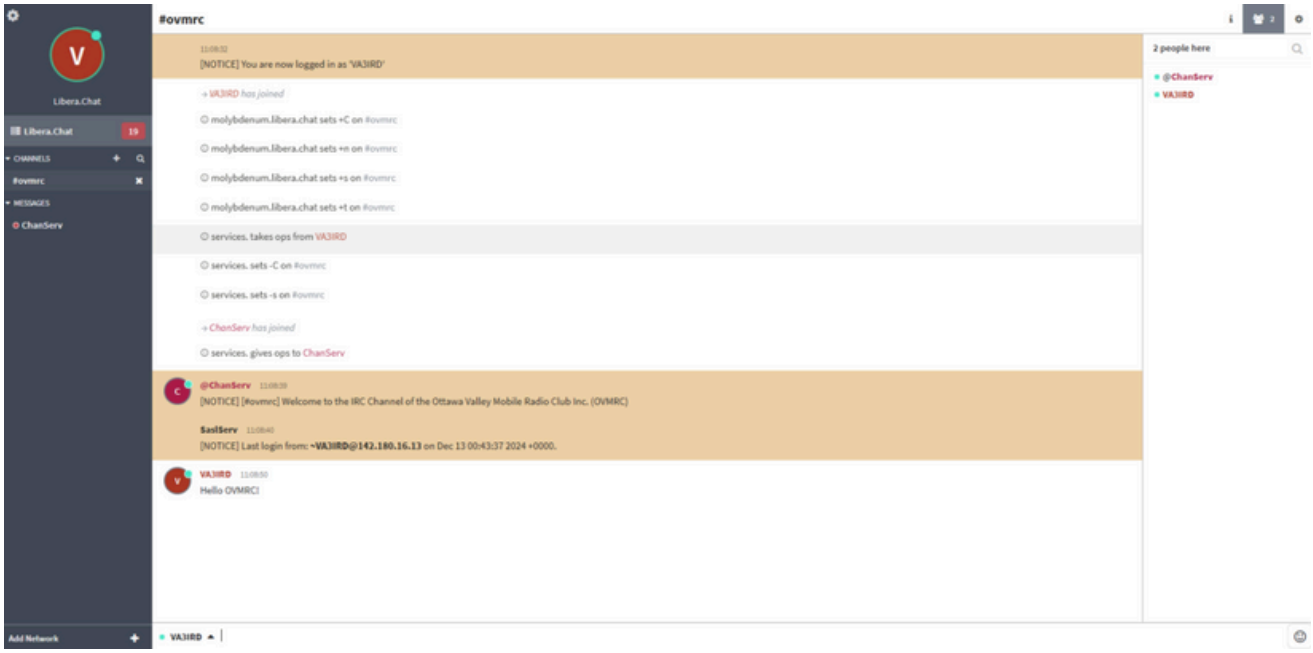
The OVMRC now has its very own Internet Relay Chat (IRC) Channel! This channel can be used as a meeting place for local hams to have text-based conversations while in the shack, or on their mobile devices. It can be accessed via our web client at the link below, no installations or registrations are necessary:

Launch IRC Web Client

IRC is an older chat protocol that has its roots in the early days of the social internet way back in the 1980s. Despite its age, IRC still has many distinct advantages over more modern chat platforms including simplicity and flexibility. For example, IRC does not require account creation or registration to use it, instead users pick a Nickname ("Nick" for short) at the time of connection. Easy!

IRC chat rooms are traditionally used very similarly to amateur radio repeaters. You can drop in and out, have long conversations, short conversations, or just monitor. This room can also be used to quickly send files or links, or act as a backup channel when troubleshooting issues over RF.





Hopefully this can be another helpful real-time meeting place for local amateurs. Looking forward to seeing you there! More information is available on the website at the link below:

https://ovmrc.ca/social/irc-chat/

Adam, VA3IRD

Quick Tip # 3 - Window draft stop for stationary mobile operation

Many POTA activators prefer to operate from their cars over the winter months to stay warm. For those of us who don't have a permanent HF mobile setup we have to use either a mobile antenna on a mag-mount, or a portable antenna hastily erected in the cold. For such setups you need to temporarily route your coax into the car without damaging it. In theory, it should be possible to just close the car door on RG-58 sized coax without issue, but I don't like to take the chance. I prefer to run the coax through a back seat window. To mitigate the drafts and snow blowing into the car I cut an appropriately-sized length of foam pool noodle and then split it length-wise with an exacto-knife so that it can slip over the window. (see attached photo). You'll want to trim it so that there is just enough room to fit the coax through in a corner when the window is closed. In a pinch you can use foam pipe insulation, which is more readily available this time of the year, but the pool-noodle is a superior solution.

Cheers and Happy Holidays!
Michael VE3WMB

OVMRC Net Activity, Check-ins for November, 2024

Prepared by: Hugo Kneve VE3KTN

OVMRC 2 Metre Net: VE3OCE 146.880- 136.5 Hz. tone, Thursdays 8 p.m. local.

November 7	November 14	November 21	November 28
VE3KTN - NCS	VE3KTN - NCS	VE3KTN - NCS	VE3KTN - NCS
New & Visitors	**New & Visitors**	**New & Visitors**	**New & Visitors**
Mohammad – VA3ECP			
Check-ins	**Check-ins**	**Check-ins**	**Check-ins**
VE3RUU VE3LC VE3RXH VA3WEX VE3KJQ VA3IAH VA3EO VE3KAE VA3ZZI VA3PSI VA2TXZ VE3ZZU VE3NA VE3VIG VA3HBL VA2BBW VE3OKD VE3OTW VE3HVA VE3RVV	VE3RUU VE3LC VE3RXH VA3IAH VE3CWM[1] VA2TXZ VE3KAE VA3WEX VE3NA VE3KJQ VA3BVO VA3ECP VE3ZZU VE3OTW VE3FFK VE3LAF	VE3RUU VE3CWM[2] VE3OTW VE3LC VE3RXH VA3IAH VE3ZZU VE3FSN VA3CJO VE3NPO VA2TXZ VA3ZLA VE3KAE VE3NA VA2BBW VA3HBL VA3BVO VA3ZZI VE3KJQ VA3EO VA3LMA VA3WBR VE3VIG	VE3ZZU VE3RUU VE3LC VE3RXH VA3WEX VA2BBW VE3NPO VA3CGF VA3PSI VE3LAF VE3NA VA2TXZ VA3EO VE3XEM VA3HBL VA3IAH VE3FSN VE3OTW VE3VIG

Notes:

1 - Cold War Museum. Norman, VE3NPP at the mic.
2 - Cold War Museum. Fred, VE3LAF at the mic.

OVMRC Pothole Net: 3760 kHz. LSB Sunday mornings at 10 a.m. local.

November 3 SFI:251 A:13	November 10 SFI:221 A:32	November 17 SFI:140 A:8	November 24 SFI:200 A:8
VE3EJJ - NCS	VE3EJJ - NCS	VE3EJJ - NCS	VE3EJJ - NCS
New & Visitors	**New & Visitors**	**New & Visitors**	**New & Visitors**
		Dan – VA3GLB	
Check-ins	**Check-ins**	**Check-ins**	**Check-ins**
VA3EO VE3RXN VA3ZLA VA3PSI VA3IAH VA2TXZ VE3SYZ VE3KTN VE3CWM[1] VE3LC	VE3YY VA2TXZ VA3PSI VE3KTN VA3EO VE3LC VE3RXN	VE3YY VA3QV VE3KTN VA3EO VE3LC	VA3IAH VA3ZLA VA2TXZ VE3KTN VE3YY VA3NAH VE3CWM[1]

The "SFI" and "A" values are the Solar Flux Index and Geomagnetic A-Index respectively as reported on the N0NBH Space Weather web site: https://www.hamqsl.com/solar.html. Values are taken within 30 minutes prior to net start time.

Notes:

1 - Cold War Museum. Fred, VE3LAF at the mic.

OVMRC Pot Lid CW Net: 50.090 MHz. Sunday evenings at 7:30 p.m. Ottawa local.

November 3	November 10	November 17	November 24
VE3FFK - NCS	VE3KTN - NCS	VE3LC - NCS	VA2BBW - NCS
New & Visitors	**New & Visitors**	**New & Visitors**	**New & Visitors**
Check-ins	**Check-ins**	**Check-ins**	**Check-ins**
VA2BBW VE3FFK VE3QO VE3VIG	VE3LC VA2BBW VE3FFK VE3QO	VE3KTN VA2BBW VE3FFK VE3QO VE3VIG VA2OJD	VE3KTN VE3LC VE3FFK VE3QO VA2OJD

General Links of Interest:

ARDF Ottawa

Go t-hunting with ARDF (Amateur Radio Direction Finding) Ottawa

RCJ

Volunteer radio ops help scouts on the Rideau Challenge Journey

New Hams Ottawa

Information for new hams with an Ottawa focus

Editor's Note:

The Rambler is the official newsletter of the Ottawa Valley Mobile Radio Club Incorporated and is published 10 times a year (monthly, except for July and August). Opinions expressed in the Rambler are those of the authors and not necessarily those of the OVMRC, its officers or its members. Permission is granted to republish the contents in whole or in part, providing the source is acknowledged. Commercial use of the contents is expressly prohibited. Submit articles and notices to: Alan at **editor@ovmrc.ca**
73, Alan VA3IAH