

# RAMBLER

MAY 2023



VOL. 65 ISSUE 9

NEWSLETTER OF THE OTTAWA VALLEY MOBILE RADIO CLUB INCORPORATED ([OVMRC.CA](http://OVMRC.CA))

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## WHAT'S INSIDE:

- 2 OVMRC EXECUTIVE
- 3 NETS AND EVENTS
- 4 PRESIDENT'S RAMBLINGS
- 5 APRIL MINUTES
- 10 EXEC NOMINATIONS
- 11 D LAYER
- 12 CORONATION
- 13 SQUIRREL VS LMR-195
- 14 MESHTASTIC
- 21 OVMRC NET ACTIVITY
- 23 LINKS & EDITOR'S NOTE

CHECK-IN TIME 6:45 TO 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@RAC.CA](mailto:VE3LC@RAC.CA) FOR INVITATION.

## MEETING: WEDNESDAY MAY 17 7:15 P.M. VIA ZOOM

### AGENDA

- OPENING 7:15 BARRY (VE3NA) GREETING TO GUESTS AND NEW MEMBERS, BARRY VE3NA
- PRESIDENT'S REMARKS AND ANNOUNCEMENTS
- APPROVAL OF APRIL MEETING MINUTES
- EXEC NOMINATIONS
- PRESENTATION AND DISCUSSION ABOUT FIELD DAY
- CHAIRPERSONS REPORTS
- MEETING ADJOURNMENT POSSIBLE Q&A AND RAGCHEW (TIME PERMITTING)

## OVMRC AFFILIATIONS





# OVMRC EXECUTIVE AND OFFICERS 2022-2023

## DIRECTORS

### **President:**

Barry Allison, VE3NA  
ve3na@myrac.ca

### **Vice-President:**

Norm Rashleigh, VE3LC  
ve3lc@myrac.ca

### **Treasurer &**

### **Membership Records:**

Nicole Boivin, VE3GIQ  
ve3giq@myrac.ca

### **Corporate Secretary:**

Alan Fricker, VE3KAE  
alanfricker@yahoo.ca

## STANDING

## COMMITTEES

### **Club Projects & Bulk**

**Orders:** Barry Alison,  
VE3NA ve3na@myrac.ca

### **Radio Course &**

### **Accredited Examiner:**

Norm Rashleigh, VE3LC  
ve3lc@myrac.ca

### **Meeting Reception:**

John McGowan, VA3JYK  
john.mcgowan1314@  
gmail.com

## **Nets & Radio**

### **Operations:** Hugo Kneve,

VE3KTN  
ve3ktn@myrac.ca

### **Rambler Newsletter**

### **Editor and Production:**

Alan Hotte, VA3IAH  
editor@ovmrc.ca

## **OVMRC.CA & Social**

**Media:** Adam Bird,  
VA3IRD web@ovmrc.ca

## **OVMRC Repeater**

**Keeper:** Norm Rashleigh,  
VE3LC ve3lc@myrac.ca

## **Special Events:** Roger

Egan, VA3EGY  
va3egy@gmail.com,  
John McGowan, VA3JYK  
john.mcgowan1314@gmail  
.com  
\*\*\*\*\*

## **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,**

### **Incorporated PO Box**

**41145 Ottawa, ON  
K1G 5K9**

## **OVMRC Life Members:**

Ernie Jury, VE3EJJ  
Maurice-André Vigneault,  
VE3VIG

Ralph Cameron, VE3BBM  
Doug Carswell, VE3ATY  
Doreen Morgan, VE3CGO  
Bryan Rawlings, VE3QN

## **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**



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## 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
- **Pot Hole SSB Net**, 3760 kHz, every Sunday morning at 10:00 AM conducted by Ernie, VE3EJJ, or Glenn, VE3XRA.
- **Pot Lid Slow Speed CW Net**, Sunday night, 7:30 PM, 50.090 MHz., horizontal polarization. Join controllers Hugo (VE3KTN), Norm (VE3LC) 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.
- **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. 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.
- **Weekend Allstar Nets**, on an ad hoc basis the EMV\_E repeater will be linked temporarily to the Allstar Canada Hub for weekend nets.
  - <https://thecanadahub.ca/>
  - <http://www.emrg.ca/repeater.s.htm>

## INFORMAL AMATEUR RADIO RESTAURANT GATHERINGS

- |  |   |   |  |
|--|---|---|--|
| • <b>QCWA Chapter 70</b><br>Breakfast gathering every Tuesday morning at 7:30 to 10:00 AM, Summerhays Grill, 1972 Baseline Rd., Nepean - Restarted | • <b>Orleans Coffee gathering</b> every Friday morning at 9:00 AM, McDonald's 4416 Innes Rd, Orléans, ON K4A 3W3<br><b>NOTE: Change in location as of <a href="#">May 19</a> to McDonald's 2170 Montreal Rd, Ottawa, K1J 1G4.</b> | • <b>QRP Group</b><br><b>Dinner meeting</b> , Second Wednesday every month, 5:00 PM, Newport Restaurant, 322 Churchill Ave N., Ottawa | • <b>Phoenix Net</b><br><b>monthly Breakfast gathering (on hold)</b> , usually the second Saturday every month at 9:00 AM, Check with Pete<br><a href="mailto:ve3xem@myrac.ca">ve3xem@myrac.ca</a> |
|--|---|---|--|



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## President's Ramblings for May 2023

Field Day is fast approaching, and while the flame is not fully out for an “in person” Field Day (FD) this year, it is diminishing. It seems there is interest again this year for a “DIY” FD for many reasons. While FD is not a “contest” per se, FD kind of is a contest of sorts. We must not forget however that the real emphasis of the event is the test of our individual, and /or group emergency preparedness capabilities. This can be done with individual or group participation. Having said that, FD will be a topic of discussion again at the May Zoom meeting. We will be looking for a commitment from the club members for help with an “in person” event and if the participation level is not sufficient, the group FD will have to be postponed for another year and a DIY FD will have to be the order of the day again. The group participation of the event of course hinges on obtaining official permission from the Aviation Museum to hold the event at their facility. Either way, it is a lot of fun and really shakes the bugs out of our individual kits of gear for the event.

The special in person event for presentations to Bryan Rawlings, VE3QN was a huge success. It was also the first time in three years we had a group meeting and the interest was evident by the great turn out we had for the event. Be sure to check the May-June TCA for more photos and info on the event where Bryan was officially presented with his induction into the CARHOF along with several other awards and certificates. Once again, a huge "thank you" goes out to club member Colin, VA3CSG for making the necessary arrangements for us to use the superb facilities of the IBEW local 586 to hold the event.

Congratulations and “thank you” Bryan for the years of dedication and hard work you have endured to support the hobby locally, nationally through RAC and internationally at the ITU.

Now on with what else is up for the May meeting. I have mentioned I will be stepping down as President of the OVMRC this year. Elections for a new president will be held at the June AGM. It is not too late for nominations, so you may want to consider taking on the position for a term. Check the club by laws available on the club web site for requirements to apply for the position.

**Reminder:** to everyone who has a RAC alias: change your address to “yourcall@myrac.ca”

Please note that OVMRC club members and all in the amateur community are very welcome to join our club, monthly Zoom meetings and club events. To join the monthly zoom meetings please be in contact with the OVMRC Zoom custodian, Norm, by email at [ve3lc@myrac.ca](mailto:ve3lc@myrac.ca).



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Year end door prizes: draws to be held at the June AGM. Be sure to attend!

That's everything for my May ramblings. Please join us at the 6:45 check in time on May 17 for the next OVMRC Zoom meeting. Anyone not receiving the check in credentials can do so by sending an email to Norm (Zoom custodian).

73, Barry, [ve3na@myrac.ca](mailto:ve3na@myrac.ca)

## OVMRC April 2023 Minutes

**Date / Time:** Wednesday, April 19, 2023 at 7:14 PM

**Location:** Via ZOOM on-line meeting

### 1) Call to order:

OVMRC President Barry Allison VE3NA, called the meeting to order at 7:14 PM. There were 51 official check-ins.

### 2) Welcome and Guest Greetings:

OVMRC President Barry VE3NA thanked Colin VE3CSG for making the IBEW facilities available to the club which really helped make the recent meeting successful. Barry then extended a welcome to any guests, visitors, and new hams who had checked into the meeting. There was one guest visitor, Shaun Lumley VE3VHU. Barry welcomed Shaun to the meeting.

### 3) Approval of minutes from previous meeting:

**MOTION:** Moved by Fred VE3LAF and seconded by Douglas VE3YDK that the minutes of the OVMRC meeting held Wednesday, March 15th be approved. The approval of the minutes proceeded with one noted exception to the March 2023 minutes in that Bill's call sign VA3HWA was incorrectly shown in that issue as VE3HWA. Error noted and apologies to Bill for the oversight.

**VOTE:** No Objections.

**CARRIED.**

### 4) Agenda and Meeting Content:

Barry, VE3NA outlined the agenda for the meeting that included a discussion about Field Day and also a presentation by Nicole VE3GIQ about coming 2023 Public Service Events, as well as software she is developing - Public Service Event Logger.



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## 5. Haves and Wants

Sandy VE3HAZ looking for a power supply for a small radio. 12.5 volts and 10 amps. Rylan VE3RVQ has a power supply that he is not using and could be available. Norm VE3LC also has a power supply he can part with. Sandy also mentioned he is doing a garage sale on 543 Apollo Way on May 6th. Radios, various antennas, wire, painter poles (20 ft plus), and fishing gear available.

Hugo VE3KTN mentioned he is winding a 49:1 unun and a 15kv capacitor is recommended at 100-200 pf. He is wondering if the club could buy some of those. Barry VE3NA says he may have a package of 10 that are 3kv. He noted that the purpose of the capacitor is to even out the SWR across the band. Hugo is welcome to have one. Barry VE3NA mentioned if worthy of a club project, he will order more.

## 6. Feature Presentations:

### **OVMRC Treasurer Report and 2023 Public Service Events - Nicole VE3GIQ**

Nicole VE3GIQ provided an update of the OVMRC finances and provided a presentation about 2023 Public Service Events. Bank - cash in deposits - \$7,660.00. GIC Investments - \$15,000. She informed that there are some outstanding bills and deposits to be dealt with. Current membership - officially 129 members. She anticipates that there will be 5 new memberships related to aspiring hams to follow. Attendance this evening is 51.

Nicole mentioned that the 2023 Public Service Events are all are needing more volunteers.

This includes the CN Cycle for CHEO Sunday May 7th, and the Rideau lakes Cycle Tour Sat/Sun June 10/11. Details and information about volunteering and a volunteer list may be found at the Radio-1 Volunteer Portal at [radio-1.ca](http://radio-1.ca). Those interested in volunteering may also contact Richard Hagemeyer VE3UNW at [hagermeister@gmail.com](mailto:hagermeister@gmail.com). Nicole mentioned she has volunteered for both events.

In addition, the MS Bike Tour is scheduled for Saturday and Sunday Aug 19/20. The event will be from from Kars to Brockville. This year a 30km loop has been added. For those who are interested, please send an email to [ve3giq@myrac.ca](mailto:ve3giq@myrac.ca) to volunteer for the 2023 MS Bike Tour.

Nicole mentioned that last year the focus was on tracking the ride marshals. This year will focus on handling dispatch and will include improvements to clearly identify all the vehicles. Last year, tracking was done on whiteboards and that did not work out so well. Software development was then seen as a potential way to improve this situation.





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A computer will be used to do all the logging this year. The display will show an easy to read graphic representation of various desired event statuses. The software is based on a database. “Amateur Radio Public Service Event Logger” will track many things. Standard messages are included and easily selected. The software will track net control, locations, marshals, mobiles, support vehicles, bike counts, calls for dispatch, incidents and event progress etc., and will illustrate event progress on a graphical route line. The various sites and the latest status are shown graphically in colour with symbols and logged times. This demo version in Nicole’s presentation shows radio messages, and will be designed to log phone message content as well. Further work needs to be done on this aspect. She informed that the system is designed to periodically email the “status graphic” to the volunteers to keep them updated. The system keeps a complete and ongoing record as well.

Nicole asked if there were any questions? Barry VE3NA asked about how do you add the loop for the longer run. Nicole says the people doing the loop will go to St Lawrence college – the end point and another quasi rest stop will be added – called the Loop. Nicole will then get numbers about how many people are in the loop – these will be counted as out and returns. She will then have an idea about when the last person should be back in.

Nicole mentioned she has two upcoming meetings with the entire team to discuss details. One of those meetings is to ensure an internet connection is available to support sending of email updates. Neil VE3PUE had a question about the software used to develop the database? Nicole VE3GIQ informed that the it is written in Object Pascal and that the database is a special database. It is Delphi Object-Oriented language based, and it is incredibly fast and updates very quickly. Nicole says further development is required and she is unsure if it will be ready for the Rideau Lakes event.

Barry VE3NA thanked Nicole VE3GIQ for her work on the database and her presentation.

### **Field Day Discussion - Norm VE3LC**

In his opening remarks, Norm VE3LC noted we have quite a few new amateurs and some have not participated in Field Day previously? Bill VA3WBR says it would be new to him and he is excited by it. Norman Siemens VE3NPP and Jim VA3BJO are new, and Rylan VE3RVQ has done one Field Day. Walter VE3SYZ and Patrick VA3LTN mentioned they have not done a Field Day either. John VE3DNU is also new and has not participated in a Field Day and looking forward to it.

Barry VE3NA mentioned that Field Day is a lot of fun, and that while scores are important, the event is an important test of emergency preparedness.



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Norm VE3LC mentioned that the club would like to run an in-person Field Day for 2023, but there are some issues to resolve. The club would like to set up as in previous years at the Aviation Museum site. To this, Barry reminded that the museum people need to be informed about what the club will actually be setting up there.

It was further noted that Marc VE3BOE is unable to contribute his trailer this year. The question then went out to the members about who could possibly supply a trailer. Rob VE3RXH said he could bring his 36 foot trailer for Field Day. In addition, Jim VA3BJO says he can bring his 43 foot RV trailer.

Norm VE3LC then provided a brief presentation based on previous years Field Day activities and results.

### **OVMRC Field Day 2018 Report - Presentation - Norm VE3LC.**

Norm described the 2018 location - the Aviation Museum site field just west of the hangar that included a tent set up by the museum, a 43 foot antenna, Marc's VE3BOE trailer, Peter's VE3XEM RV, and a tower with a 3-element beam. Ops were mostly conducted in the trailer. It was noted that Peter's trailer will not be available this year.

Concerning field day, the club had a sign-in sheet for participants. Norm VE3LC outlined the post-field day score summaries. CW, phone and bonus points were shown along with satellite and GOTA points, all displayed by band.

Norm then showed a comparison sheet of scores including bonus points from 2015 to 2018, for discussion and commentary purposes, and briefly described how to get bonus points and take advantage of multipliers. Norm provided a graph of ARRL Sections Worked (FD 2018) and briefly explained the significance of it.

He then provided Field Day photos that included the setup crew, operations - including GOTA operations station, CW HF station operation and HF SSB Phone Operation (100 watts), and satellite setup. He also showed photos of the public information display table, QRP on display, equipment for show and tell, antenna setup - 43 foot pop-up mast for 80/40 metres, the tower set up, solar power and generator set up, and food service activities.

Any questions? Do we have enough funds to rent a porta-potty? Nicole VE3GIQ says the club can afford to rent a porta-potty. This would have to be discussed with the museum regarding site use and permissions.





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Norm VE3LC says he wants to know about all those are interested in coming out and all those who can offer a trailer. It is important to know the resources that are available.

Peter VE3XEM asked if his generator would be needed – Norm says possibly for something like making coffee but not for operations. Norm noted that if the club goes QRP – generators are not allowed.

Norm is interested in operating QRP if possible. The rules permit using AC power for computers just for logging. If used for digital modes they have to be powered the same way as the radio. He noted that the 6, 10 and 15 metre bands should work well on low power. Having some solar panels of a useful capacity would be good to have as well. Also, Norm says he is willing to bring his electric car to provide power via an 800 watt inverter.

Norm noted that operating on one mode with a given power will apply to other modes as well. We need to sort this out. Nicole reminded this is a 24 hour event and if operating 3A – we need 3 operators.

Norm mentioned the club has two 43 foot pop up masts – part of the club's kit. A short tower with a 20 foot mast is available. It is useful for a tri-band beam. It can be rotated manually if desired. A 16 foot vertical on a picnic table works well. Norm noted the WARC bands – 30, 17, 12 meters are out for field day. He noted that is possible to make a lot of contacts on 6m if the band opens.

At this juncture, Barry VE3NA informed that it was time to close the official meeting, however, the general discussion regarding Field Day planning and activities continue after the meeting.

## **7. Chair Reports:**

**OVMRC President** - Barry VE3NA: No report this meeting.

**OVMRC Vice-President** - Norm VE3LC: No report this meeting.

**OVMRC Treasurer** - Nicole VE3GIQ: Presentation and finance update.

**OVMRC Secretary** - Alan VE3KAE: No news to report.

**Rambler Update** - Alan VA3IAH: No report this meeting.

**Web Site Update** - Adam VA3IRB: No report this meeting.

**Net Operations** - Hugo Kneve VE3KTN: No report this meeting.

**Other Business** - No report this meeting.



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## 8. Adjournment:

**MOTION:** Moved by Nicole VE3GIQ to adjourn the meeting at 8:43 PM and seconded by Joe VA3JHT, with the discussion about Field Day to carry on after the meeting.

## 9. Next Meeting:

The next monthly meeting of the OVMRC will be held via Zoom Wednesday, May 17, 2023.

*Minutes recorded and prepared by Secretary, Alan Fricker VE3KAE.*

# Executive Committee Nominations

The following incumbent Directors of the Club have agreed to offer their services again for the next season and will need to be nominated collectively at the next club meeting, May 17, 2023.

President: Norm Rashleigh VE3LC for one year  
Vice President: Rob Hadow VE3RXH for 1st term  
Treasurer: Nicole Boivin VE3GIQ for a 6th term  
Secretary: Alan Fricker VE3KAE, for 2nd term

The following incumbent Committee Chairpersons will need to agree to another term should they wish to continue in the position:

**Club Projects & Bulk Orders:** Barry Allison, VE3NA  
**Membership Services:** Nicole Boivin, VE3GIQ  
**Accredited Examiner:** Norm Rashleigh, VE3LC  
**Reception & Welcoming:** John McGowan, VA3JYK  
**Nets & Radio Operations:** Hugo Kneve, VE3KTN  
**Rambler Newsletter:** Alan Hotte, VA3IAH  
**Club Web Site & Social Media:** Adam Bird, VA3IRD  
**Special Events:** Roger Egan, VA3EGY



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According to the Bylaws of the Club, see <https://ovmrc.ca/club-info/ovmrc-by-laws/> the executive committee is open to nominations from the membership to challenge any of the above Director incumbents by sending the nomination(s) via email to one or more for the members of the executive committee of the OVMRC.

Any such nominations will be reviewed based on the candidate's willingness and eligibility to hold office for a particular position according section 8.2 of the Bylaws. Such nominees determined eligible by a special meeting of the executive committee will be so notified and put on the ballot for a particular position at the June Annual General Meeting of the Club. After election that may be required for any particular position (by a show of hands on Zoom), there will be a motion and vote of acceptance for the entire slate of Directors and Chairpersons to serve your Club next season starting September 1, 2023.

## **A 21st Century Look at The D Layer**

Most radio amateurs who work the HF bands will know what the ionospheric D Layer is and how it affects HF propagation. To summarise, the D layer, which is the lowest altitude ionisation layer, is largely responsible for absorption of radio energy at frequencies below roughly 10 MHz. The greater the ionisation, the greater the absorption and consequent degradation of communication paths. The ionisation is a result of solar ultraviolet radiation; the higher the UV emitted, the greater the ionisation.

I was very pleased to receive a web link to a NOAA web site recently from another ham acquaintance and provide it here for your information. This is a very direct and, I believe, helpful tool to predict propagation on the lower frequency HF bands in particular and on all HF bands in general. The overlay on the world map gives an immediate view of how things are doing. To the right of the map is a bar chart showing numerical values of predicted absorption in dB. against frequency.

<https://www.swpc.noaa.gov/communities/radio-communications>

This will certainly be a web site I'm going to check prior to the Sunday morning Pot Hole Net on 3760 kHz. in order to get a feel for how rotten conditions might be. I trust this will also be generally useful to our Club members as well.

73, Hugo, VE3KTN



# Special Event Call Sign for the Coronation



The Coronation of His Majesty King Charles III took place on Saturday May 6 at Westminster Abbey, London, and was conducted by the Archbishop of Canterbury.

Innovation, Science and Economic Development (ISED) Canada has approved the use of special call event prefixes from May 5 to July 2.

These dates correspond to the early summer busy operating season and will be available to all Canadian Amateurs who wish to use the special event prefixes on all occasions including Field Day and the RAC Canada Day Contest.

Examples of the special event prefixes can be seen on the right. For more see: <https://www.rac.ca/special-event-call-signs-for-the-coronation-of-king-charles-iii/>

To use the special call sign, substitute the prefix normally assigned to your province or territory by the special prefix. For example, VE3 become CK3, VA7 becomes CJ7, VY2 becomes CZ2, and so on.



A great example of a local operator using a coronation special call sign is Johnathan CK3OTW, from whom I received the colourful e-QSL card, appearing above. For more information on the coronation see Johnathan's CK3OTW QRZ page.

73, Alan VA3IAH

- VE1 (NS) – CK1
- VA1 (NS) – CJ1
- VE2 (QC) – CK2
- VA2 (QC) – CJ2
- VE3 (ON) – CK3
- VA3 (ON) – CJ3
- VE4 (MB) – CK4
- VA4 (MB) – CJ4
- VE5 (SK) – CK5
- VA5 (SK) – CJ5
- VE6 (AB) – CK6
- VA6 (AB) – CJ6
- VE7 (BC) – CK7
- VA7 (BC) – CJ7
- VE8 (NT) – CK8
- VE9 (NB) – CJ9
- VO1 (NF) – CY1
- VO2 (LAB) CY2
- VY0 (NU) – CZ0
- VY1 (YT) – CZ1
- VY2 (PEI) – CZ2

CY0 Sable Island – N/A

CY9 St-Paul Island – N/A



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## Squirrel VS LMR 195

On OVMRC.groups.io Daniel VA3GLB shared the damage he experienced this spring to his LMR195 HF and 6M feedline and his ARDEN CAT5E. The root cause apparently was a squirrel attempting to build a nest in a nearby chimney, which was remedied with a double layer of metal screening.



**Of general interest were the the suggestions received from other member of the ovmrc.groups.io, including:**

- Using conduit, old garden hose or irrigation piping (Rick and Micheal VE3WMB)
- Lee Valley plastic owls with rotating heads (JD VA2OJD)
- Doktor Doom Original Rodent Repellent II from Canadian Tire (Micheal VE3WMB)
- Honda Rodent tape - an electrical tape infused with capsicum developed to wrap automotive electrical wiring (Micheal VE3WMB)

Anyway, an interesting issue with creative solutions provided by the local amateur radio community.

73, Alan VA3IAH



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## Meshtastic: An “appliance” operator’s foray into off-grid messaging

While some may consider Meshtastic to be their “solarpunk dream” (1) other views include the old trope that it’s not amateur radio but still “.. interesting stuff done with radio, worthy of interest.” (2). More formally Meshtastic is a platform agnostic software application that is an “..open source, off-grid, decentralized, mesh network built to run on affordable, low-power devices.” (3). The Meshtastic software can be configured to allow for amateur radio application with slightly increased power levels.

The radios automatically rebroadcast messages they receive in order to create a mesh network so that everyone in a group or “mesh” can receive messages - even from the furthest member. Depending on settings used, the Meshtastic mesh can sustain up to 80 device nodes.

While enthusiasts have used this technology at major off-grid events such as Burning Man and Glastonbury festivals and the tech of keen interest among “preppers”, there is also interest among amateur radio operators in the Ottawa Valley, exploring alternate communications technologies beyond cellular and satellite communications.

Among those involved are some members of the Almonte Amateur Radio Club (AARC) who have been promoting interest in a local amateur radio mesh network on 433MHz. Currently there are 8-12 hams operating in a mesh network as part of their amateur radio stations that spans generally from Ottawa to Arnprior. The AARC has also established a group list which the Meshtastic software identifies via a QR code. This might be potentially available for other clubs wishing to establish their own club group lists.

The device that I purchased was the Lilygo T-Beam (V1.1 ESP32 LoRa Wireless Module) from Lilygo for around \$50 CDN. While not strictly necessary to run the device I also purchased a specialized 3.7V ICR18650 2600mAh Pkcell battery from a local Total Battery outlet for around \$18 CDN. As a note on the battery, I bought the button top style, and a better recommendation was made from Cristian VA3CTQ and Jeff VE3EFF to go with the flat end version of 18650, which fits better in the battery holder attached to the back of the T-Beam board.





Completing my set-up I have about 75 feet of LMR-195 to a Comet GP-9 at about 30 feet above the ground. To continue with the use of my GP-9 antenna for VHF I tried using a Comet VHF/ UHF duplexer, but wasn't able to make any successful text message contacts with this arrangement. Without the dulexer in-line I found a greater chance of making successful contacts as indicated by the message status symbols that the Meshtastic app. provided the operator.

I installed the Android version of the Meshtastic software which provided a range of views that the operator can use to "see" other node operators on the network. An example of one of these screens along with an explanation on what some of the metrics indicate is included on the next page.

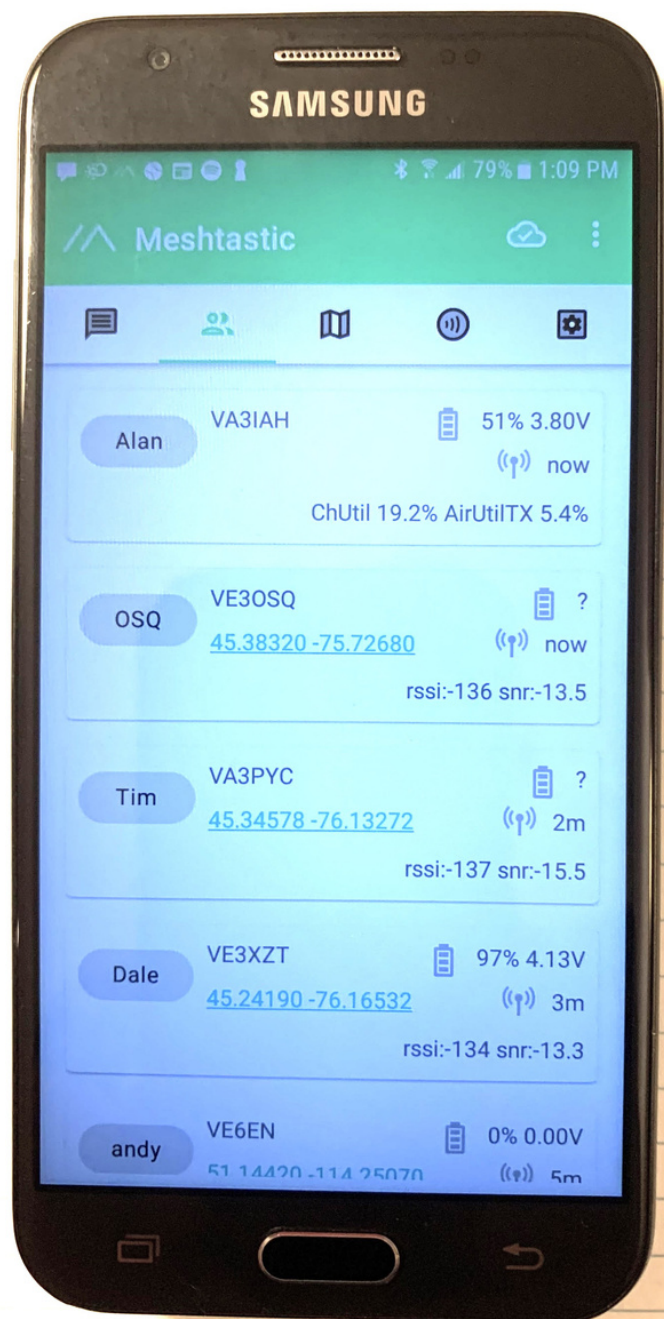


Jeff VE3EFF provided an explanation that:

- **Chanutil %** is all packets on the channel for the last minute as a percentage, and
- **Airutil %** is the total duty cycle of device transmissions over the last hour.

Otherwise you can see call signs, lat / long coordinates, a battery strength indication as well as what I take to be signal strength indicators (rssi and snr-) - but I could be wrong on that!

As an "appliance" operator attempting to learn a little more about how I could improve the performance of my mesh device I asked others on the network to provide descriptions and some photos of their set-ups and what has worked for them. Some of these descriptions and pictures are captured on the following pages.





**VA3CTQ Cristian:** As each LoRa device is a node in the Meshtastic network, they act both as a transmitter and a repeater. With a couple of LoRa nodes (devices) nearby (7-9 km), this helps sending and receiving messages from anywhere in the network. Living in rural area also helps with generally lower QRM than urban environments. In general terms the number of nodes in the network, and the space between those nodes determine the speed and the quality of the signal inside the network.

**VA3CTQ's set-up includes:**

- Tablet connected to the LILYGO® TTGO T-Beam LoRa device using Bluetooth.
- T-Beam LoRa device with Meshtastic software installed, connected to a Comet GP-3 VHF/UHF antenna using ~6m (20ft) of RG-213/U coaxial cable.
- The antenna is placed outside of the house, 4m (~13ft) above the ground.







**VE3HOA Phil:** The "VE3HOZ" T-beam is connected to a bi-directional 2 watt amplifier unit which also has a built-in receive pre-amp. The output of that is fed through a few Sinclair filter cans to reduce local noise and also to reject Phil's HOZ DMR repeater (which can overwhelm the T-beam receiver). This is fed to an external vertical antenna on his tower. This is configured as a LoRa "repeater" to reduce the broadcasts it makes.

The other picture below is a T-echo unit set up as "VE3HOA". It is a little self contained unit with the same capabilities as the T-beam...but comes packaged in a case and has a small 850 ma/h rechargeable battery with a usb charging port.

Phil connects to it via bluetooth using the Meshtastic app on his Android cellphone. That is what he uses for his meshtastic daily ops. It's set for very low power since it only needs to communicate with his HOZ T-beam repeater. Phil can easily move the T-echo around the house as necessary to maintain the bluetooth connection.





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**VE3EFF Jeff:** Prior to the advent of Starlink Jeff VE3EFF lacked reliable cellphone and internet connections which is what led him to explore the utility a 433Mhz Lora T-beam with some of the members of the Almonte Amateur Radio Club.

Jeff VE3EFF already had a dual band fibreglass vertical he used for VHF and decided to duplex a t-beam mesh unit to the UHF side of the vertical. He also used 30ft of LMR400 to reduce line loss.

**Jeff VE3EFF's set-up include:**

- T-Beam Board - running about 100mw in Licensed amateur mode.
- A 18650 3.7v 2000-3000mah flat top battery (flat top fits more easily into the t-beam battery carrier).
- 433 MHz bidirectional amplifier provides about 1 watt of power and some receive gain. Jeff Ve3EFF advises that while this may be fine in a rural area that in an urban area the receiver may be overloaded with an rx amplifier as he suspects the T-Beam has very little front end filtering.

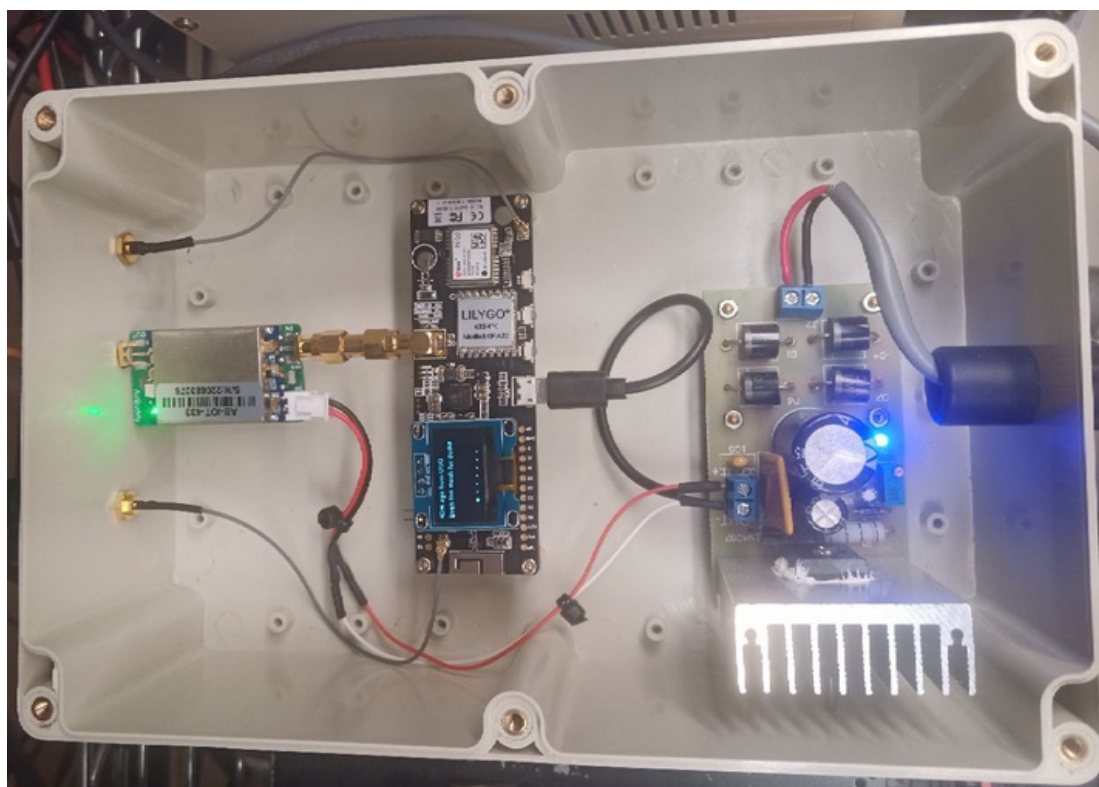
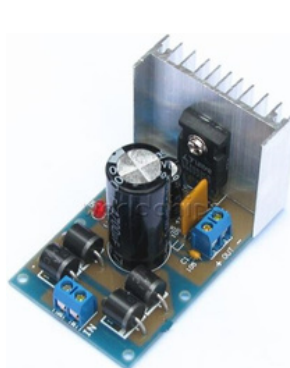


- For an urban area a 433Mhz band pass filter in front of the amp is advisable as it passes 75Mhz 400-475Mhz and reduces all the other frequency traffic.





- For a 5V power supply cut from an old micro USB cable and used it for the t-beam from the power supply kit. The amplifier connects to the 5v output. If not using the amplifier, then all you really need is a cheap USB 12v to 5v buck converter to charge the t-beam, or an old cellphone charger.
- An external GPS antenna is also recommended since the small antenna supplied with the t-beam is not that sensitive.
- An external Bluetooth (BT)/WiFi antenna for better BT coverage to Jeff's phone around the house, although typically the antenna on board is fine for general use.
- Finally, for the complete unit in its case - see below.



## REFERENCES

1. Tyler Cipriani's Meshtastic review - see <https://tylercipriani.com/blog/2022/07/31/meshtastic-a-review/>
2. Richard G7LEE as written a great piece on Meshtastic for the Isle of Avalon Amateur Radio Club - see <https://www.avalonarc.org.uk/2022/12-07-trying-out-meshtastic.html>
3. For more information on Meshtastic see <https://meshtastic.org/>
4. For more technical information on the hardware in use by local Ottawa Valley operators: <https://www.lilygo.cc/products/t-beam-v1-1-esp32-lora-module?variant=42204034891957>





# OVMRC Net Activity, Check-ins for April, 2023

Prepared by: Hugo Kneve VE3KTN

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

April 6	April 13	April 20	April 27
VE3KTN - NCS	VE3KTN - NCS	VE3KTN - NCS	VE3KTN - NCS
New & Visitors	New & Visitors	New & Visitors	New & Visitors
	Sergio – VE3KSM		
<b>General Check-ins</b>	<b>General Check-ins</b>	<b>General Check-ins</b>	<b>General Check-ins</b>
VE3RUU VE3LAF VA3WBR VE3WNX VE3ZZU VA2BBW VE3NA VE3LC VE3KAE VA3IAH VE3LBU VE3NPO VA3EO VA3PSI VE3FFK VA2OJD VE3OTW VA3HJR VE3VIG	VE3RUU VE3LBU VA3WBR VE3RKB VE3ZZU VE3NPO VE3NA VE3LC VA3IAH VA3PSI VE3CWM <sup>1</sup> VE3VIG VE3VHU VA3EO VA2BBW VA2OJD VE3OTW VE3KJQ VE3KSM VE3DNU VE2OCQ VA3HJR	VE3RUU VE3ZZU VA3LUI VA3GFY VE3NA VE3LC VE3KAE VA3IAH VA3EO VA3PSI VE3LBU VE3NPO VE3OTW VE3DNU VA2BBW VE3CWM <sup>1</sup> VE3KJQ VA2OJD VE3VHU VA2EV	VE3RUU VE3OKD VE3ZZU VE3NPO VE3NA VE3KAE VE3LC VA3IAH VA3FSB VE3VIG VE3LBU VE3HAZ VA3PSI VA2BBW VA2OJD VE3DNU VE3OTW



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

<b>April 2</b> <b>SFI:125 A:13</b>	<b>April 9</b> <b>SFI:136 A:6</b>	<b>April 16</b> <b>SFI:176 A:9</b>	<b>April 23</b> <b>SFI:141 A:7</b>	<b>April 30</b> <b>SFI:156 A:20</b>
VE3EJJ - NCS	VE3EJJ - NCS	VE3KTN - NCS	VE3EJJ - NCS	VE3EJJ - NCS
<b>New &amp; Visitors</b>	<b>New &amp; Visitors</b>	<b>New &amp; Visitors</b>	<b>New &amp; Visitors</b>	<b>New &amp; Visitors</b>
<b>General Check-ins</b>	<b>General Check-ins</b>	<b>General Check-ins</b>	<b>General Check-ins</b>	<b>General Check-ins</b>
VE3NPO VA3GFY VA3EO VE3OWV VE3KTN VE3LC VE3CWM <sup>1</sup> VA3IAH	VE3LC VA3EO VE3KTN VE3SYZ VA3IAH VE3CWM <sup>2</sup> VA3WBR	VE3LC VE3EJJ VE3NPO VE3CWM <sup>2,3</sup> VA3IAH VE3YY VA3BGO VA3EO	VE3KAE VE3CWM <sup>2,3</sup> VE3LC VE3YY VE3NPO VA3IAH VE3SYZ VE3KTN VA3GFY	VA3EO VE3LC VE3NPO VE3SYZ VE3KTN VE3YY VE3OWV VA3WBR VA2OJD

Notes:

VE3CWM is the “Diefenbunker” Cold War Museum station operated by volunteer Ottawa radio amateurs.

- 1 - Norman, VE3NPP at the mic.
- 2 - Fred, VE3LAF at the mic.
- 3 - Eric, VA3DXP at the mic.

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



## General Links of Interest:

- YOTA Camp on the RAC web site: <https://www.rac.ca/youth-on-the-air/>
- Volunteer opportunities - see <https://radio-1.ca>
- For various local amateur radio related information and volunteering opportunities, don't forget to bookmark <https://hambone.ca/>

### 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:

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73, Alan VA3IAH

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