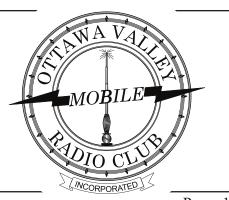
# Rambler

### Newsletter of the Ottawa Valley Mobile Radio Club Incorporated



Volume 64 Issue 5 Page: 1

## President's Ramblings

### Happy New Year!

k, ok, I'm trying to be as optimistic as possible given the current pandemic conditions. No one wants to get together more than I do. My hope is to have a club get together in front of a real audience before I step down as President in June. Realistically however, I doubt that will happen. Museums have been closed again so that venue is not even on the table for a meeting at present.

I also think we should start planning for another DIY Field Day this year. The club had epic attendance last year and I see no reason why we can't strive for even greater participation this year. We will review this as we get closer to the June AGM, but for now, I'm less than hopeful for a group club Field Day.

Enough, already! There is good news. I was not sure how the December Zoom meeting would go but in the end we had banner attendance again and everyone was eager to have a word about what they were up to in and out of the hobby. We were wondering how to get the meeting going and then Norm VE3LC had the idea of making the meeting a "video net" (thanks for that Norm). He acted

as net controller and I monitored the comments to make sure no one was missed. The meeting was a huge success. Thanks to all who were able to participate.

I'm a little late out of the gate preparing the Ramblings for this newsletter but we have secured Hugo, VE3KTN as this month's guest speaker. He will be talking about "NEC simulation of the end fed antenna". Should time permit, we also plan to have Georges-André VE2VAB talk about the upcoming Québec QSO Party. There will also be the necessary club business, but you know how I strive to keep that to an absolute minimum.

Since the December Zoom meeting revealed many club members are up to some very interesting projects, don't be shy about writing something up for the Rambler, and, maybe even a club presentation. You can always contact Alan (Rambler editor) va3iah@rac.ca for some guidance.

Last month I said I would finalize the year end door prizes so here goes. The third prize will be not one but two Nano VNA's and appropriate interface cables. Not the mini version, but the 4.3" display version (much more useful in standalone mode). Now let's say you already have a Nano and don't need another one.

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### **Notice of Meeting**

Wednesday Jan. 19<sup>th</sup> 2021 via **Zoom** 

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 for invitation.

#### Agenda

- Call to Order at 19:15 by Barry, VE3NA;
- Greetings to Guests and New Members;
- Chairperson Reports;
- Feature Presentation: NEC simulation of the end fed antenna (Hugo, VE3KTN)
- Brief Presentation on the Québec QSO Party (Georges-André, VE2VAB)
- Meeting adjournment to be followed by Rag Chew for those interested

## OVMRC Executive and Officers 2021-2022

President: Barry Allison, VE3NA ve3na@rac.ca

Vice-President: Norm Rashleigh, VE3LC ve3lc@rac.ca

Treasurer & Membership Records: Nicole Boivin, VE3GIQ nlboivin@sympatico.ca

**Corporate Secretary:** Ron Smith, VE3LBU

rjs3.smith@gmail.com

The above four positions are "Directors" and officers in charge of running the Corporate affairs of the Ottawa Valley Mobile Radio Club Inc.

### **Standing Committees**

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

Radio Course & Accredited Examiner: Norm Rashleigh, VE3LC ve3lc@rac.ca

Meeting Reception: John McGowan, VA3JYK john.mcgowan1314@gmail.com

Nets & Radio Operations: Hugo Kneve, VE3KTN ve3ktn@rac.ca Nicole Boivin, VE3GIQ nlboivin@sympatico.ca

Rambler Newsletter Production: Alan Hotte, VA3IAH va3iah@rac.ca Bill Hall, VA3WMH bmhall@rogers.com

#### Club Web Site & Social Media:

Darin Cowan, VE3OIJ ve3oij@amsat.org

OVMRC Repeater Keeper: Norm Rashleigh, VE3LC ve3lc@rac.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/topics; if you are not a member please subscribe. <u>All</u> radio amateurs are welcome.

Ottawa Valley Mobile Radio Club, Incorporated PO Box 41145 Ottawa, ON K1G 5K9 www.ovmrc.on.ca

#### **OVMRC Life Members**

Ernie Jury, VE3EJJ Maurice-André Vigneault, VE3VIG Ralph Cameron, VE3BBM Doug Carswell, VE3ATY Doreen Morgan, VE3CGO

## 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

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 va3iah@rac.ca

## **OVMRC Affiliations**









## Informal Amateur Radio Restaurant Gatherings

#### (All Cancelled until Further Notice)

- QCWA Chapter 70 breakfast gathering every Tuesday morning at 7:30 to 10:00 AM, Summerhays Grill, 1972 Baseline Rd., Nepean
- Orleans Coffee gathering every Friday morning at 900 AM, McDonalds, 2643 St. Joseph Blvd, Orleans
- QRP Group Dinner meeting, 2<sup>nd</sup> Wednesday every month, 5:00 PM, Newport Restaurant, 322 Churchill Ave N., Ottawa
- Phoenix Net monthly Breakfast gathering, usually the second Saturday every month at 9:00 AM, T-Basil Restaurant, 2440 St Joseph Blvd, Orleans. (get on Pete VE3XEM's mailing list for monthly reminder ve3xem@rac.ca)

## Canadian Ski Marathon (CSM 2022): February 5 and 6, 2022

The Canadian Ski Marathon (CSM) in-person event has been cancelled due to pandemic restrictions. In place of the in-person event, the CSM Board has decided to run a world-wide virtual event starting Feb 5.

Unfortunately, this means that volunteer radio operators are not required, but keep your calendar open for Feb 2023! For details see https://hambone.ca/CSM, https://skimarathon.ca/the-canadian-ski-marathon-returns-to-virtual-format-for-its-56th-edition/ or contact Neil Herber VE3PUE directly (ve3pue@hambone.ca).

## \*NEW\* QSO Party for the Province of Québec

The Club Radioamateur Outaouais (CRO) is pleased to announce the launch of the Quebec QSO Party (QQP) which takes place on April 17, 2022, the same day as the Ontario QSO Party. For more information please see the links below:

https://wp1.quebecqsoparty.org/

https://wp1.quebecqsoparty.org/reglements-quebecqso-party-2022/

https://wp1.quebecqsoparty.org/rules-quebec-qso-party-2022/

#### **Local Nets**

(all check-ins welcome)

- **Rubber Boot Net**, VE3OCE 146.880 MHz (-)136.5 Hz tone 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, This net is suspended until further notice. Roger, VE3XRR retired from leading the net each Sunday morning last season and a new Net Control Station has not come forward. If and when the Pot Lid Net resumes, we will advise in the Rambler.
- QCWA Chapter 70 Net, VE30CE 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 Mini Net, VE3STP 147.060 MHz -, (114.8 Hz tone), held Monday through Friday at 7:00 PM.
- 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.
- **Phoenix Net**, VE3OCE 146.880 MHz (-) 136.5 Hz tone, Tuesday evenings at 7:30 PM conducted by Pete, VE3XEM
- 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.

(Continued from page 1)
In that case, you will have two options: 1) take the prize or 2) put it back in the draw and your ticket will go back into the mix for one of the other prizes. (How much of a gambler are you?) Two lucky winners for prize # 3. The second place prize will be a full featured, large scale, base station SWR/Wattmeter. There will be two of these as well. Same rules as prize #3. Two more lucky winners for prize # 2. Prize number one is a full featured, DMR portable from DX

Canada. All in all, there will be 5 lucky door prize winners this year. Last year's door prize win-ners have to sit it out for a year, but every other club member in good standing is in the draw. Good luck to all!

That's it for my January ramblings. Everyone is invited to join the OVMRC January Zoom meeting Wednesday, January 19<sup>th</sup>. Check in will start at the usual ~ 6:45 PM with a start time as close to 7:15 as possible. Anyone not receiving the meeting credentials to join the Zoom

meeting can receive these by making contact with Norm, our Zoom, custodian at ve3lc@rac.ca.

The OVMRC meetings are open for all to attend. Club membership is not required (but of course we would like to have you as a new member). Guests wishing to attend can submit a request to the Zoom custodian (see above) and meeting credentials will be sent to you.

73
Barry, VE3NA

## Shorted Dipoles for the balcony

Maurice-André, (VE3VIG)

Our Rambler editor, Alan VA3IAH, recently wrote to me:

"Given that many operators, as time goes along, may have reduced space to put up antennas, there should be a great amount of interest among club members in reading about your project and the properties of the antenna for small operating spaces."

I'm glad to write about my experience with shortened antennas for the HF bands, but first, let me say that this is not my project. Claude Jollet, VE2DPE, has written several e-books, including "Amateur Radio HF Antennas for Limited Space" available for \$5.99 through a link provided on his QRZ page.

For Claude's notes on shortened dipoles see,

https://www.hamradiosecrets.com/short-ham-antennas.html. With

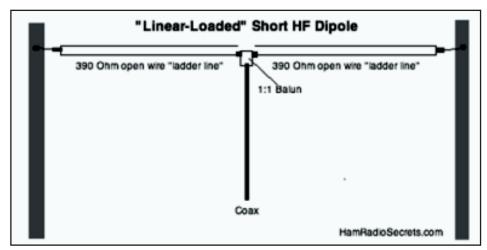
Claude's permission, I will be using some of his graphics.

I have already written about a dipole that I installed on my balcony in a The Canadian Amateur (TCA) article entitled The Homebrew Whiskey Antenna (TCA, Sep-Oct 2012, page 40). Because of the limited space on my balcony, I had bent this dipole in a W configuration. Bending and using hooks installed on the ceiling at the back of my balcony made it possible to fit the length of a classic dipole in the space available.

interested in giving it a try. His shortened dipole is somewhat similar to a folded dipole, except that the ends returning towards the feed point are not connected. They are open, as shown in this graphic. Note that the wires at the far end of the dipole are joined together to provide a continuous circuit/path.

This antenna has a 35 ohm radiation resistance. Therefore, an antenna tuner is needed.

I shared this information with my friend, Joe VE3EUS, who is also limited for space on his balcony.



When I read about Claude's shortened dipole, which is 70% the length of a classic dipole, I was

He was immediately interested in trying this type of antenna. Claude recommends using ladder line for the antenna but other types of wire seem to work with minimal loss in efficiency.

Joe used speaker wire for his experiments. He operates mainly on CW, RTTY, FT4 and FT8 using a Yeasu FT-991A transceiver and an LDG autotuner. He cut all his shortened antennas for the bottom of bands. He mounted an LDG RBA-11 1:1 balun at the end of a painter's pole as a central support



For 20 m, he ran the speaker wire down as an inverted V towards the railing of his balcony and then up to hooks on the ceiling, forming a W pattern. I call it a 20 m shortened/bent dipole. He was able to tune this antenna to different bands and easily connected with Europe, the Middle East, Africa, the Caribbean, North and South America.

Joe had an extra roll of speaker wire and he offered it to me. I cut a 15m dipole length based on the measurements given in the table below, but a bit longer to work the bottom of the band (CW portion). The graphic above and the list for the length of the antenna are

provided courtesy of Claude VE2DPE.

### **Linearly-Loaded Dipole**

Approximate Dimensions:

• 10M (28.5 MHz) 3.5 m (11.5 ft) • 12M (24.9 MHz) 4.0 m (13.2 ft) • 15M (21.1 MHz) 4.73 m (15.5 ft) • 17M (18.1 MHz) 5.51 m (18.1 ft) • 20M (14.1 MHz) 7.08 m (23.2 ft) • 30M (10.1 MHz) 9.89 m (32.44 ft) • 40M (7.1 MHz) 14.06 m (46.14 ft) • 80M (3.6 MHz) 27.74 m (91.0 ft)

I spread the shortened dipole on the couch next to my radio desk, measured it for SWR with my antenna analyzer and then connected it to my radio. What a surprise to make a solid QSO with a station in Alaska, KL2A, from inside the building!

I installed my 15 m shortened antenna on the balcony in an inverted V configuration, using a tent pole for central support and an LDG RBA-11 1:1 balun which I had just received from Radioworld. I surfed the band and completed other 15 m contacts.

But also of interest to me, was the 20 m band. I cut another length of speaker wire and installed it on the balcony in a Whiskey configuration. For this, I had help from Joe who glued two small wooden blocks with hooks screwed into them to the ceiling of my balcony, just above but inside the railing. He used Lepage No More Nails (available at Home Depot). The glue will work in temperatures above 10 degrees Celsius.



Joe was very careful in installing these hooks and he never used a step ladder. Instead, he cut a slit in a bamboo pole, slid the hook into the slit and held it tight against the slit with a piece of rope. This allowed him to reach the ceiling while keeping his two feet on the balcony floor. Safety first, one can never be too careful working on a balcony 155 feet up. That's a long way down. Step ladders should never be used near railings. Here is a picture of my 20 m dipole below.



I can easily tune this antenna to 10 m, 15 m, and 20 m. Shown here are some of my recent contacts on 10 m and 20 m. I made QSOs with

Puerto Rico, Argentina, and Trinidad and Tobago -- a good reach into the south. I also made a QSO with Montana to the west. My balcony is facing south.

KR7Q 10M CW
 LW2DOD 10M CW
 KP4EJ 10M CW
 9Z4Y 20M CW
 WP4L 20M CW
 WA9AGG 20M CW
 Al6O 20M CW

Just now, before I started writing this article, I completed a nice contact on 10 m with L21RCA, a special event station in Argentina. Radio Club Argentino is celebrat-

ing its 100<sup>th</sup> anniversary. Buenos Aires is at almost 9000 kilometers. This would indicate that the take-off angle of the radiation pattern is sufficiently low to provide such a good skip.

The radiation pattern of this antenna, in free space, is found to be closely similar to that of a full length dipole. When located near buildings or on a balcony, and bent in whatever way, as with a normal dipole, the radiation pattern will vary. It would be interesting to run a study of the radiation pattern for each configuration and location. You can have an idea of your own antenna radiation pattern by

participating in one of the many contests and find out in what direction and distance your signal reaches.

You can also configure this antenna as an inverted "U" which is less noticeable, or as a normal "U" or "M". I still have a fair length of speaker wire for anyone interested.

I say it's worth trying shortened antennas if you're limited in space. Good DX!

73, VE3VIG Maurice-André ve3vig@ncf.ca

### Fifty-years of Rambling: On-air activities, ONTARS and "Doc" Haycock

The editor for the January 1972
Rambler was "Hutch" Hutchinson (then VE2ZD) and the OVMRC was led by Ron Belleville (then VE3AUM) as President, Trevor Hagan (VE3BMC) as Vice-President, and Past-President, and current OVMRC lifemember, Doreen Morgan (VE3CGO).

The OVMRC club call, VE3RAM, was identified on the title page along with the OVMRC logo and monitoring frequencies of 3760 kHz and 146.940 MHz, see the picture to the right and in the OVMRC archive at

https://www.ovmrc.on.ca/Rambl er/Archive/Ram1972-01.pdf for the full January 1972 issue of the Rambler.

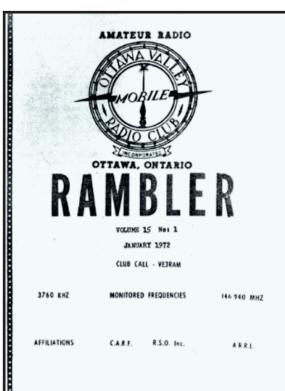
On-air OVMRC activity was noted as including:

• the Pot Hole Net described as the "official club net" held Saturdays and Sundays at 10:00 on 3760 kHz;

- the club sponsored Swap Net conducted by Ed Morgan (VE3GX, now held by Doreen Morgan) on 3760 kHz, with Ed also coordinating the swap net portion of the Capital City FM Net on Mondays at 2000 on 146.940 MHz; and
  - •The OVMRC also sponsored a "Monitoring Facility" as a service to the general public and amateur radio community provided by Doreen, VE3CGO who monitored 3760 kHz and 146.940 MHz daily from 0800 to 1830.

A "new Ontario Net" was also announced in the January 1972 issue of the Rambler:

"The Ontario Amateur Radio Service, ONTARS, is now operating all day, every day, on 3775 KHz. Stations with or without traffic are welcome to check-in. This is a calling and answering frequency only. Once you establish



contact with the area or station you desire you are requested to QSY from the net frequency. This service should be a boon to the Ontario Amateur and everyone should make an all out effort to support it."

ONTARS (see https://ontars.com/) was started by Bruce Carveth, (then VE3BC) 50 years ago this month on January 8<sup>th</sup> 1972, at 0700. Originally operating at 3775 kHz, until October 23, 1972, when ONTARS moved to its current frequency of 3755 kHz. The intent of ONTARS is to help provide coverage across the province during the daylight hours and encourages check-ins from all areas of the province and beyond to provide a resource for all amateurs throughout the region. In

1972 daily average check-ins numbered in the hundreds and during the Christmas holidays of 1972 the weekly total was over 3000 check-ins. There was also a Radio Society of Ontario (R.S.O) Bulletin at 1700 on Saturdays and Sundays between issues of The Ontario Amateur. See https://ontars.com/ONTARS%20H istory/index.html for an article by Bruce Carveth describing the 1972 launch of ONTARS.

Of note in the movement of ONTARS to 3755 kHz was the negotiation that took place with the VE2 Professional Loafers (PL) net which was operating on 3755kHz, with the VE2PL Net graciously moving to another frequency. Currently the PL Net is held at 3787 kHz daily from 0800 through 0900 with Wayne VE2WHH

(Dorval) acting as net control station. For more on the PL Net see https://www.rac.ca/nets/.

Finally, the January 1972 Rambler mentioned a presentation by "doc" Haycock 1900-1988 (VE3LC) called "Historic Points of Interest in the Arctic" something he was eminently qualified to report on as an artist, scientist and radio operator. For more on this fine operator, please see a fitting tribute provided by the current holder of VE3LC, Norm, which appeared in the September 2018 Rambler (https://www.ovmrc.on.ca/Ramble r/Archive/Ram2018-09.pdf)

Hope you have enjoyed this sample of our club's activity from fifty-years ago!

73, Alan VA3IAH

### CW heritage of Straight Keys, Good Things to Know and an RAF training manual

Based on the chatter from several local FM nets there was talk of participating and listening to Straight Key Night, an ARRL CW event held every January 1 from 0000 UTC through 2359 UTC. This 24-hour event is billed not as a contest but rather is dedicated to celebrating amateur radio's CW heritage with participants being encouraged to get on the air and simply make enjoyable, conversational QSOs. The use of straight keys or bugs to send CW is preferred. Points are not scored and all who participate are considered winners.



This was a great opportunity to revisit CW away from electronic keyers and the intimidatingly fast software generated code often encountered on the airwaves. This approach spawned some brief informal on air discussion of reestablishing a weekly slow-speed CW session possibly on 2 m, 6 m or 80 m. Time will tell whether this kick-off to the New Year may lead to a replacement for the Potlid net which was discontinued this fall due to Roger Rose, VE3XRR, retiring as the lead net controller

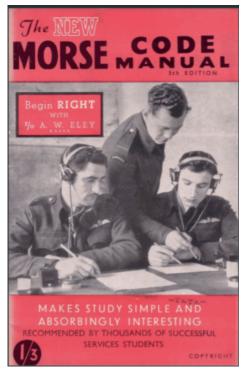
with no replacement having come forward.

A great OVMRC resource "GOOD THINGS TO KNOW ABOUT OPERATING CW" for those starting out or revisiting CW was prepared by Norm (VE3LC) for a 2018 club meeting presentation. See the website link below to save out a copy of this valuable resource for any amateur working toward becoming more proficient in CW.

Within the theme of CW heritage, there was a posting to a Facebook group known as "The Slow Morse Club" by Richard Smith who shared a link to a WWII vintage RAF CW training manual with the promising title of "The New Morse Code Manual - Begin right (5th edition)" by Flying Officer A.W. Eley. The manual also had the promising byline on the cover "MAKES STUDY SIMPLE AND ABSORBINGLY INTERESTING RECOMENDED BY THOUSANDS OF SERVICE STUDENTS". If that promising endorsement wasn't enough to engage you, you also might notice that the central figure on the cover, apparently giving some instruction, wore a uniform with "Canada" as the shoulder badge, indicating once again the presence Canada had in WWII even in an RAF training manual.

The manual itself is worth a peruse for its history of signals in warfare, photos of service students engaging in learning Morse Code, lessons for group or individual use, circuit diagrams for constructing individual and two person practice oscillators, a pre-NATO phonetic alphabet, a series of 23 lessons and a buzzer test.

True today as it was then, Flying Officer Eley completes his introduction with the admonition that "Speed can be obtained by carefully following the lessons laid down in this Manual coupled with MAINTAINING CONTINUED INTEREST, but of importance besides learning the actual code characters themselves is practice ...... PRACTICE . . . . . AND MORE PRACTICE."



Among those operators attempting to learn and practice, I found the RAF manual refreshingly straight forward with some wonderfully practical information. This will end my Morse Code ramblings for January, please send me some of your ramblings if you have been inspired to engage or re-engage with CW practice and on-air use.

#### Alan VA3IAH

Links of Interest:

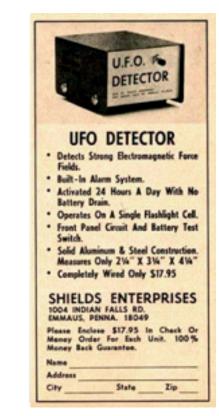
http://www.arrl.org/straight-keynight

https://www.ovmrc.on.ca/Presentations/Operating\_CW.pdf

http://www.g4dmp.co.uk/atcmorse.pdf

## **UFO detector** (1960s advertisement)

Your new amplifier might get the neighbours animated for a whole new reason!



Found at: https://imgur.com/JwtjZkN

## **OVMRC Net Activity, Check-ins for December 2021.**

Prepared by: Hugo Kneve VE3KTN

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

December 2	December 9	December 16	December 23	December 30
VE3KTN - NCS	VE3KTN - NCS	VE3KTN - NCS	VE3KTN - NCS	VE3KTN - NCS
New & Visitors	New & Visitors	New & Visitors	New & Visitors	New & Visitors
		Leonard VE3LPH/M		
General Check-ins	General Check-ins	General Check-ins	General Check-ins	General Check-ins
VE3LAF VE3RUU VA2OJD VE3ZZU VE3OKD VE3NA VE3LC VE3LBU VA3IAH VA3HBL VA3PYT VE3KAE VE3NPO VE3BOE VA3GLB VE3OTW VA3AL* VE3VIG VE3KJQ	VE3RUU VA3GLB VA2OJD VE3ZZU VE3NPO VE2OCQ VE3NA VE3LC VE3LBU VA3IAH VA3AL VE3OTW VE3YY VA3PSI VE3LAF VE3BOE VE3KJQ VA3WEX VE3VIG	VE3RUU VE3OKD/M VE3ZZU VE3NA VE3LC VE3LBU VA3IAH VA3AL VE3NPO VE3YY VA3PSI VE3SYZ VA3WEX VA2EV VE3KAE VA3EO VE3OTW VE3KJQ VE3VIG	VE3RUU VA3LUI VE3KAE VE3ZZU VE3NA VE3LC VE3LBU VA3IAH VE3LAF VE3YY VE3VIG VE3NPO VE3BOE VA2EV VE3OTW VA3AL VA3VGR	VE3RUU VE3ZZU VA3VGR VA3LUI VE3YY VA3EO VE3NA VE3LC VE3LBU VA3IAH VE3BOW VE3KAE VA3AL VE3OTW VE3KJQ VE3VIG
VE3YY VE3BOW VE3RXN				

<sup>\* -</sup> Matt, formerly VA3KXA

### OVMRC Pothole Net: 3760 kHz. LSB Sunday mornings at 10:00 A.M.

December 5	December 5 December 12		December 26
SFI:95 A:8	SFI:77 A:5	SFI:121 A:4	SFI:131 A:7
VE3XRA - NCS	VE3XRA - NCS	VE3EJJ - NCS	VE3KTN - NCS
New & Visitors	New & Visitors	New & Visitors	New & Visitors
General Check-ins	General Check-ins	General Check-ins	General Check-ins
VE3YY	VA3QV	VE3KTN	VE3MKX
VE3MKX	VE3EJJ	VE3LC	VE3LC
VE3LC	VE3LC	VE3EKN	VE3EJJ
VE3NPO	VE3RXN	VE3YY	VE3BOW
VA3PSI	VE3YY	VA3PSI	VA2EV
VE3KTN	VA2EV	VE3SYZ	VA3IAH
VE3SYZ	VE3SYZ	VE3RXN	VE3EKN
VA3EO	VE3KTN	VA3BGO	VE3SYZ
VA3BGO	VE3CWM	VE3BOW	VA3PSI
VE3RXN	VA3EO	VA3EO	VA3BGO
VE3EJJ	VE3NPO	VE3KAE	VE3RXN
VE3CWM	VA3BGO	VE3XRA	VE3NPO
VE3WMB	VE3BOW	VA2EV	VE3YY
	VE3EKN	VE3CWM	
		VE3ICV	

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.

