Rambler

Newsletter of the
Ottawa Valley Mobile
Radio Club
Incorporated

January 2020 Edition 57

President's Ramblings

Wow, 2020!

Since the modifications to the meeting format worked out favourably at the November meeting, we'll run with it for upcoming meetings.

That means one major presentation per meeting, a longer bio break for more eyeball QSO's and for January, some time will be required for the hand out of the surge suppressor kits. More work for Nicole (sorry Nicole) please bring exact change to make her job easier ($15.00 cash or cheque payable to "OVMRC").

Let's talk start time: for January and on, we will start at 7:00 PM. Aim to end at 9:45 PM. The museum desires that we are vacated by 10:00 PM. Let's not upset an apple cart here as we have a really low cost annual room rate for our meetings. Please help by assisting in putting chairs and tables away at the end of the meeting. Much appreciated!

If you are unsure of your status as a paid-up member you can always check with Nicole, VE3GIQ, club Treasurer. This is important since only paid up members are eligible for door prizes, 50/50, and subsidized club kit costs.

The surge arrestor project kits will be available for purchase at this meeting. I'll have the kits and payment can be made to Nicole. I'm working on assembly instructions and maybe a couple of videos to assist in assembly. Stay tuned! They will be posted on the club web site under the projects tab and on the groups.io page as well.

This month, Ron Smith, VE3LBG will be presenting on his QRP transceiver build / development and his antenna set up. Make sure you take a look at his handy work during the break.

Updates will be provided at the January meeting by Michael, VE3WMB for the Balloon project and Roger, VA3EGY for the transmitter hunt initiative. It was impressive to see that several club members were willing to invest in equipment required for the transmitter hunt project piloted by Roger. Bryan Rawlings, VE3QN may have a few words to say about WRC 2019 in which he participated as part of the Canadian delegation in Sharm El Sheikh, Egypt in November.

A special welcome to all the graduates from the Norm's radio course that are now full-fledged members of the Club with their call sign. Look for who they all are in Norm VE3LC's report in this issue of the Rambler. We hope they will become

(Continued on page 4)

INSIDE

Calendar

General Meeting
Wednesday
January 15th
7:00 P.M.

Science & Technology Museum
Studio 6

Feature Speaker: Ron Smith, VE3LBG
Subject: NorCal 40 DDS – QRP rig
also
Bryan Rawlings, VE3QN
Outcome update of WRC 2019

Next Meeting

Wednesday February 19th, 7:00 PM
Feature Speaker: Denis Rule, VE3BF
Subject: Activating Canadian Parks and Historic Sites Using a 35 foot Mobile Vertical

OVMRC Executive and Officers 2019-2020

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

Membership Services & Meeting Reception:
Tom Mercer, VE3LJS
tsmercer63@gmail.com
John McGowan, VA3JYK
john.mcgowan1314@gmail.com

Nets & Radio Operations:
Hugo Kneve, VE3KTN
ve3ktn@rac.ca
Rob Haddow, VE3RXH
rjhaddow@yahoo.ca
Nicole Boivin, VE3GIQ
nlboivin@sympatico.ca

Rambler Newsletter Production:
Norm Rashleigh, VE3LC
ve3lc@rac.ca
Robert Cherry, VA3AOD
cw527@ncf.ca
Bill Hall, VA3WMH
bmhall@rogers.com

Club Web Site & Social Media:
Darin Cowan, VE3OIJ
ve3oij@amsat.org

VE3TWO Repeater Keeper:
Norm Rashleigh, VE3LC
ve3lc@rac.ca

Special Events:
Roger Egan, VA3EGY
va3egy@gmail.com
John McGowan, VA3JYK
john.mcgowan1314@gmail.com

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 Repeater

VE3TWO

147.300 Mhz (+) 100 Hz tone
FM & Yaesu System Fusion Digital Operation

OVMRC Call Signs

VE3JW

VE3RAM

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:

Norm at ve3lc@rac.ca

OVMRC Affiliations

The Wednesday evening Cross Canada Weekly C4FM is again hosted on VE3TWO

OVMRC members can again check into the Wednesday evening Cross Canada C4FM net on Club repeater VE3TWO 147.300 (+ offset) thanks to a remote Wires X connection provided by Steve VA3MPS. Steve will be engaging his node station onto the repeater Wednesday Evenings at 9:00 PM. The Net can also be accessed in the west-end of town using the Fusion repeater VE3DRE on 146.805 (– offset) owned and operated by Denis VE3BF who is the Net Control Station. All check-ins are welcome using the Yaesu C4FM digital voice mode.

Emergency Measures Radio Group: (EMRG)

Monthly Repeater Tests are conducted by Dave VE3KMV on the first Wednesday of each month at 8 PM on VE3OCE 146.880 MHz – (136.5 Hz tone). From initial contact on VE3OCE, you'll be asked to test VE3EMV/East 146.985 MHz – (100 Hz@ tone), VE3EMV/West 145.210 MHz – (123.0 Hz tone), VE3OFS 146.670 MHz – (136.5 Hz tone), VE3OCE 443.8000 MHz + 5 (136.5 Hz tone) and VE3EMU 444.9500 + 5 (136.5 Hz tone).
It is advisable that all the EMRG frequencies be programmed into your radio. All check ins are welcome.
See: http://www.emrg.ca/repeaters.htm

Informal Amateur Radio Restaurant Gatherings (All are welcome)

- **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 9:00 AM, McDonalds, 2643 St. Joseph Blvd, Orleans
- QRP **Group Dinner** meeting, **2nd Wednesday** every month, 5 PM, Newport Restaurant, 322 Churchill Ave N., Ottawa
- **Phoenix Net monthly Breakfast** gathering, usually the **second Saturday** every month at 9 AM, T-Basil Restaurant, 2440 St Joseph Blvd, Orleans. (get on Pete VE3XEM's mailing list for monthly reminder VE3XEM@RAC.CA)

OVMRC Repeater VE3TWO :

147.300 MHz +600 kHz, 100 Hz Tone and Yaesu C4FM Digital Voice

VE3TWO Scheduled Nets:

- **Thursday Evenings, 8 PM**, Club Net on FM conducted by Hugo, VE3KTN and Rob, VE3RXH.
- **Sunday Evenings, 8 PM**, Ottawa C4FM Digital Voice Round Table Net.

Other Local 2 Metre Repeater & Simplex Nets: *(all check-ins welcome)*

- **Rubber Boot Net**, VE3MPC 147.150 ++, (100 Hz tone) mornings at 7:30 AM conducted by Mike, VA3TJP
- **Phoenix Net**, VE3MPC 147.150 Mhz +, (100 Hz tone), Tuesday evenings at 8:00 PM conducted by Pete, VE3XEM
- **QCWA Chapter 70 Net**, VE3MPC 147.150 MHz +(100 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), every evening at 6:45 PM.
- **Upper Frequency Net**, Simplex 144.250 MHz using USB, Tuesdays 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.

OVMRC HF Nets

- **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**, 3620 kHz, every Sunday morning at 11 AM conducted by Roger, VE3XRR.

(Continued from page 1)
regulars attending the Club's monthly meetings.

The coax project is ongoing and as a reminder here are the costs to paid up members:

LMR 400 Cost $1.35 per foot.
LMR 195 Cost $0.80 per foot.

Connecters: PL259 (male uhf type) $ 2.00 ea including heat shrink tubing for environmental sealing. BNC connectors are also available for the LMR 195 cable at the same $2.00 cost.

The club also has about 30-40 sets of Anderson Power Pole connectors available for a cost of $1.00 per set (red + black + 2 pins).

All prices are tax included.

I also have received a number of SMA male to BNC female connectors available for sale at $2.00 ea. Perfect for your 2 M portable or NanoVNA.

Anyone interested in trying your hand at installing your own connectors, remember to contact Pete VE3XEM. He retains the club tool kit and we now have the proper crimp tools to install connectors on both the LMR 400 and LMR 195 coax cable and the power pole connectors.

That's about it for now. I hope to see many club members at the January meeting, Wednesday, January 15, 7:00 PM, at the Science and Tech Museum.

HAVE A SAFE AND HAPPY NEW YEAR!

73,
Barry, VE3NA

Happenings

Canadian Ski Marathon, February 8th and 9th, 2020

Communications volunteer wanted.

Those wanting to participate in providing volunteer radio communications for the 54th Canadian Ski Marathon please goto: https://hambone.ca/index.php/CSM2020/HomePage for information or contact Neil Herber, VE3PUE at ve3pue@hambone.ca

&

Contest Club of Ontario (East) Annual CCO/DX Luncheon – all are welcome

Date: ***Saturday February 1st.***
Place: Barley Mow Pub, 1541 Merivale Rd

Time: Noon to 3:30

Speakers: Chris VE3FU on his contest station in Labrador and Vlad VE3JM on construction of his 2-element 160 M Yagi.

OVMRC Course Students Write their Basic Qualification Exams

We've now concluded another OVMRC amateur radio course. Two group examination sessions were conducted December 9th the December 16th.

The following is the list of OVMRC graduates from our 2019 course so far; most achieved Honours and HF operating privileges. We expect we'll be adding a few additional folks that will be writing their test in 2020.

Michel	Aspirot	VE3MBB	Brian	Miles	VE3BMT
Normand	Chenard	VA2NCH	Richard	Nolet	VA3VGR
Tanya	Fleming	VA3FFS	Jeff	Robb	VE3MDC
Jean Pierre	Fournier	VA3JPE	Paul	Scott	VE3VCZ
Alan	Hotte	VA3IAH	Lisa	Sgoifo	VE3SGJ
Branham	Kasasni	VA3DZA	Colin	Stephens	No call yet
Denis	L'Heureux	VA3DIL	Peter	Szczuczko	No call yet
Richard	Lorenz	VE3FRL	Walter	Szyc	VE3SYZ
Mitch	Lunge	VE3PTF	Phil	Tanguay	VE3PTG
Nathan	Maddin	VA3BZN	Cristian	Valentini	VA3FCV
Patrick	Mikolajczak	VE3PMM	Rick	Yates	VE3RYX

Please give all these new amateurs a warm welcome when you hear them on-the-air.

Norm, VE3LC

December OVMRC Christmas Dinner

For the third December in a row, the OVMRC hosted their Christmas Buffet Dinner at KS on the Keys Restaurant. Thanks to John VA3JYK for making the arrangements with the restaurant. We had 30 people attending and there were door prizes galore thanks to Barry VE3NA.

Pictures by Dave Scott, VE3ZZU – thanks Dave!

(Continued on page 6)

(Continued from page 5)

Door prize winners were: Ron VE3LBU, Douglas VE3YDK, Alan VE3KAE, Dave VE3ZZU and lady friend Shirley, Roger VA3EGY, Wray VA3EO, Pat VE3KJQ, Bryan VE3QN and his wife Louise. Roger VA3EGY also won the 50/50 .

Lightning Transient In-Line Coaxial Cable Surge Suppressor Kit.

Barry VE3NA has been buying parts and packaging kits to distribute at the January meeting. This kit is based on a commercial product design using a gas tube transient suppressor device rated to conduct at 350 volts allowing it to be used on with radios up to 200 watts. The design uses input and output SO-239 connectors and should not introduce significant SWR up to 500 MHz. The kit should be installed in-line for each coaxial cable needing protection just before entrance to the premises where the grounding connection is tied directly to a good grounding system of rods or plates. Each kit will be available to OVMRC Club members signed up for the project for the Club subsidized cost of $15 each. There may be additional kits available on a first come, first serve basis after delivery to those on the initial sign-up sheet.

Thanks Barry, VE3NA for kits parts procurement and project management and to Peter, VE3XEM for preparing the kit box by drilling the holes for SO-239 connectors.

Norm, ve3lc

The Grid Dip Meter (Oscillator) – What is it and what we can do with it.

At the November meeting, Claude Bastien, VA2ZCB showed me a Millen Grid Dip Oscillator (GDO) he had purchased at the Longueuil, QC Hamfest in October. He got it for the modest sum of $30. Claude asked me, what is a Grid Dip Meter used for? I explained to him a few of the basic applications of the instrument at the meeting but I am expanding the story with this article for the benefit to all that are interested.

Claude's Grid Dip Oscillator is a Millen model 90651 manufactured by the James Millen Mfg. Co. Inc., Malden, MA between 1949 to 1962. This was a premium GDO of the day. Claude's GDO looked in great shape and appeared to be a complete kit with all the coils and storage case. Based on its good appearance, I would consider it a valuable "Collector's" item.

These photos below show what Claude's Millen GDO looks like:

The "stock" plug-in coils supplied with the Millen GDO determine the frequency range of operation from 1.5 to 300 MHz in 7 bands. An 8th dial range is used for 4 optional coils to extend the range down to 220 kHz. Of course, in the days of Grid Dip Meters like when this instrument was for sale, MHz was known as MC (mega-cycles)

Grid Dip Meters were popular with folks that home brewed their own equipment. When I was first licenced in 1963 as a teenager, I would often borrow and return and borrow again a home brew GDO from a local ham, Ron Witty VE3FBM, who lived nearby in our Downsview neighbourhood. I used the instrument to determine the proper resonant frequency of the various LC circuits in the receivers and transmitters I was building to get-on-the air at the time. The Grid Dip meter was very useful for winding the coils on a trial and error basis. However, I guess I borrowed Ron's GDO once too often as the old guy finally told me to keep it and not bug him again.

For winding a coil connected across a given fixed or variable capacitor, the desired frequency of resonance could be determined by bringing the GDO coil in close proximity, end to end, with the coil of the resonant circuit under test. When the dialed GDO frequency was swept across the resonance of the LC circuit, the Grid Current of the GDO would dip at which point, frequency would be read on dial range for the associated GDO plug-in coil used and that was the resonant frequency of the LC circuit under test. GDO's were also useful designing and fabricating LC circuits used for antenna "Traps" or determining the resonant frequency of dipole or other resonant antennas. Of course, by way of the formula determining the resonant frequency of a LC circuit, knowing either the inductance of a coil or the capacitance of the parallel capacitor and knowing the frequency of resonance as determined by the GDO, the unknown value of L or C could be determined

The Millen manual gives the full range of testing applications including:

- Resonance of Receiver and Transmitter Tuned Circuits
- Neutralization

- Parasitic Oscillations
- Parallel and Series Resonant Traps
- R.F. Chokes including their self resonance
- Measurement of Circuit Q
- Relative Q at a given Frequency
- Measurement of the Capacitance or Inductance of R.F. Coils
- Resonance of Antennas
- Testing for resonance of quarter wave and half wave open and shorted lines
- Working as a relative Field Strength meter
- RF signal generator

For a full explanation on how to make the above measurements with the Millen or other similar GDO, download the Millen manual at:
http://bama.edebris.com/manuals/millen/90651/

In the era of the Millen GDO, many other companies made and marketed Grid Dip Oscillators.

Measurements Model 59 "Megacycle Meter"

I purchased this example of a Measurements Corp. Model 59 GDO several years ago at a local fleamarket for $15. The design is unique because it has a separate oscillator head to which the various coils plug-in to; this makes it very convenient to use. The Measurements GDO is a highly desirable and collectable and still a very useful instrument for the hamshack. Its design and production dates back to the 1940's and has been described by some as the best GDO ever produced commercially. A label on my Model 59 indicates it once belonged to the "General Electric Co." probably as a lab instrument.

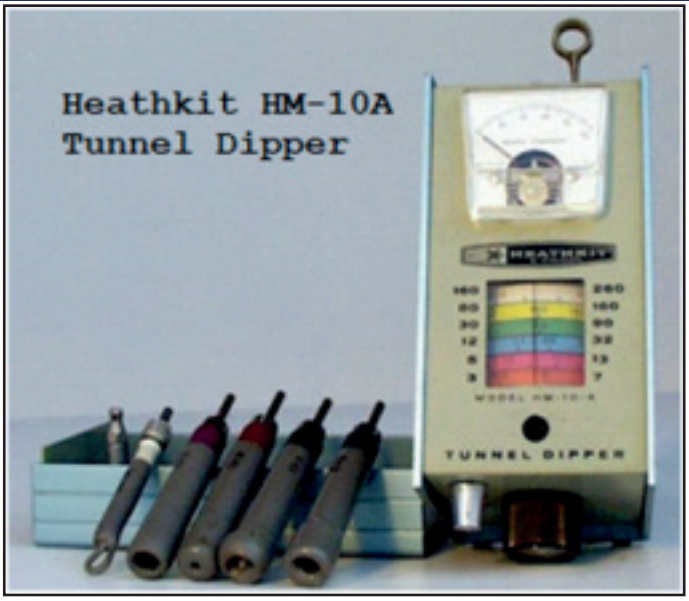
PACO Electronics Model G15 GDO

I acquired this instrument at an estate sale. According to the markings on the box lid containing the coils, it once belonged to VE3ARE in 1953 which was the call sign of the Northern Technical – Commercial School in Toronto. Inside the box, VE3AUU is recorded.

Heathkit (Grid) Dip Oscillators

Heathkit marketed several Grid Dip Meters starting with the Model GD-1 in 1951 followed by an improved GD-1A in late 1951 and then the GD-1B in 1952; it continued in production until 1960.

In 1961, Heathkit produced a solid state version of the Grid Dip Meter called the Model HM-10 "Tunnel Dipper" based on a Tunnel Diode oscillator circuit and then the improved HM-10A that remained in production until 1970. Later, Heathkit produced the HD-1250 Dip Meter from 1975 until 1991



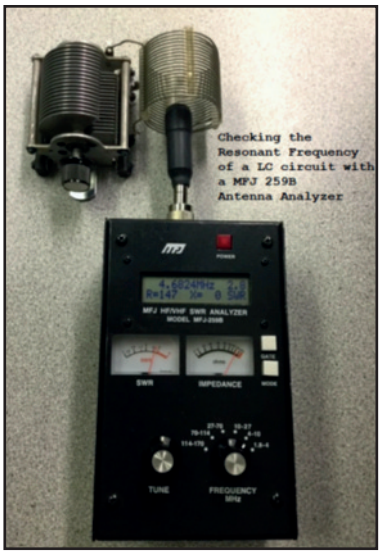
These later Dip Meters had the advantage of working portable on batteries, something the older true Grid Dip Meters couldn't do since they were powered by 110 VAC. The Heathkit products are also good finds at Ham Fleamarkets so don't pass up the opportunity to get one.

MFJ Dip Oscillator is still available

Nowadays, the only simple Dip Meter type instrument in current production and available is the MFJ, Model -201 with a frequency range of 1.5 to 250 MHz.

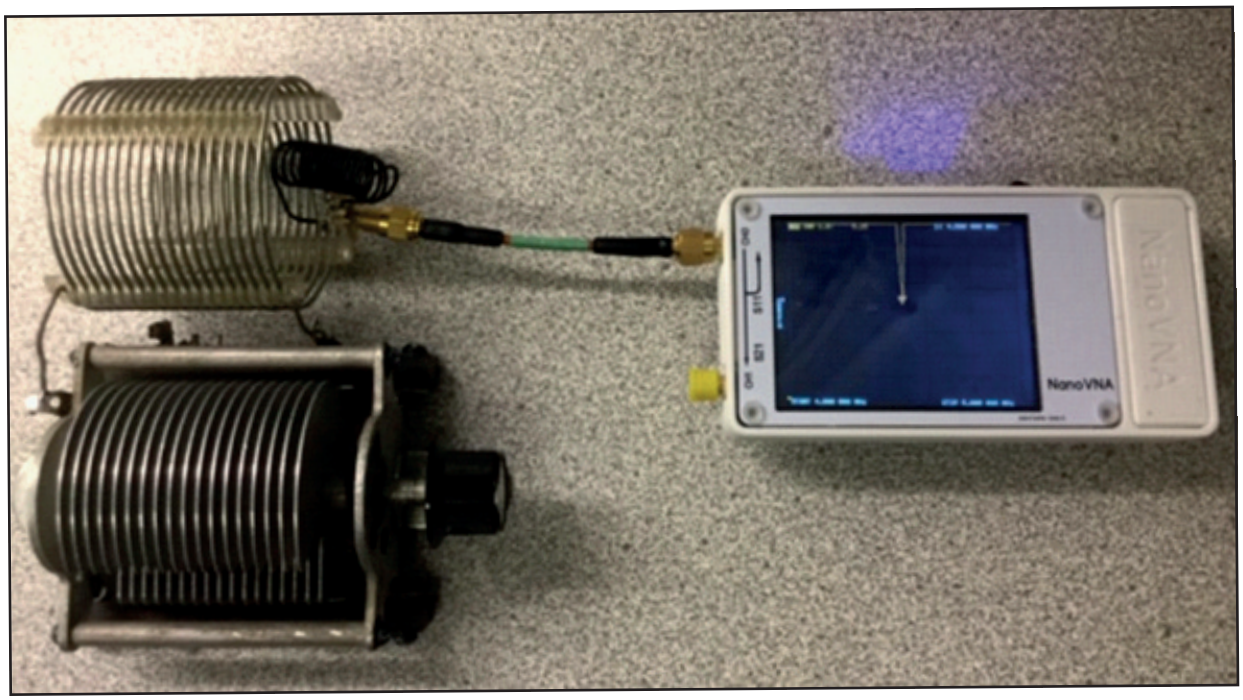
Using the MFJ 259B antenna analyzer as a Dip Meter

For folks that own a MFJ 259B or similar MFJ antenna analyzer; it can also perform the traditional purpose of a GDO to test the resonant frequency of an LC circuit using one of the two plug-in coils that come with the instrument. These coils are for coupling and do not determine the frequency range of operation as was the case in the old traditional GDOs. The dip is shown on the SWR meter when the frequency is adjusted through the resonance of the coil /capacitor combination under test. The frequency of the dip is read off of the instrument's LCD display. Note the pickup coil of the instrument must be in close "mutual inductance" coupling with the LC circuit under test as shown in the photo below.



NanoVNA used as a Dip Meter to show resonant frequency of an LC circuit

In a similar fashion as using the MFJ 259B as a GDO, I tried using the NanoVNA instrument (the subject of my article in the November Rambler) in the same way as a Dip Meter to measure the resonant frequency for a LC circuit under test. Setting the VNA display to show SWR over the frequency range of interest, I wound and connected a low inductance coupling coil to the VNA CH0 port. As can be seen in the photo below, the VNA very nicely identified the resonant frequency of the coil and variable capacitor combination under test.



For more on using "Dip Meters" and the theory involved in their operation, a good read can be found at:

https://hackaday.com/2015/11/30/the-grid-dip-meter-forgotten-instrument/

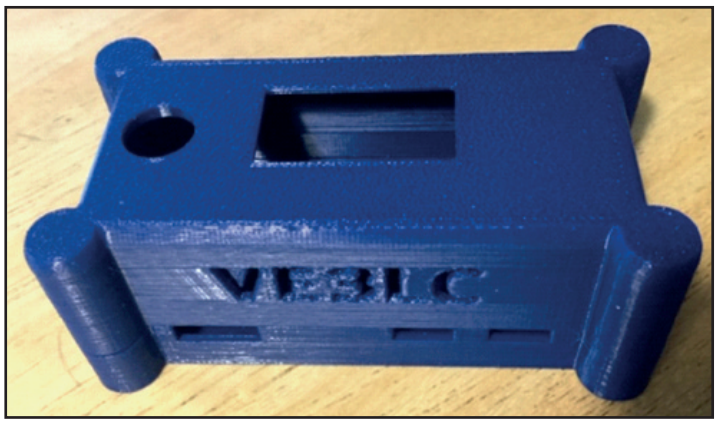
73 Norm, ve3lc@rac.ca

3D Printing for Amateur Radio Projects

I don't have a 3D printer yet and unfortunately Santa didn't bring me one this year, but I'm starting to appreciate the sorts of custom plastic things and doodads that can be graphically designed and fabricated for our amateur radio projects.

Examples:

- Last season, one of our OVMRC Radio Course honours grad, Gina Bies, VA3GNB gave me a 3D custom printed case for my "Jumbo" Hot Spot with special engraving of my call sign.. Thanks Gina!



- At the final lesson of this year's OVMRC Course, honours grad, Tanya Fleming, VA3FFS gave me a nice 3D custom printed desk display of my call sign using a plastic material that looks like wood. Thanks Tanya!

• And finally, Peter Carss, VE3XEM printed me a plastic case for my newly acquired NanoVNA. Evidently, Peter knew he was getting a NanoVNA from Santa and a month ago, he was anxious to print a case as a trial-run ahead of the one he will be printing for himself. Thanks Peter, my NanoVNA fits in your printed case very nicely!

I see there are all sorts 3D printed projects and devices for ham radio "on-file" at : www.thingiverse.com I may be shopping for a 3D printer for myself very soon.

In the meantime, it would be nice to see how many folks in the OVMRC have a 3D printer already. If there is sufficient interest, we should start an OVMRC 3D-printer user group on Groups.IO

Norm ve3lc

NOTES

OVMRC Net Activity, Check-ins for Last Month.

Prepared by: Hugo Kneve VE3KTN

OVMRC 2 Metre Net: VE3TWO 147.300+ 100 Hz. tone, Thursdays 8 p.m. local.

December 5	December 12	December 19	December 26
New & Visitors	**New & Visitors**	**New & Visitors**	**New & Visitors**
	VE3SYZ - Walter VA3FCV - Cristian		
General Check-ins	**General Check-ins**	**General Check-ins**	**General Check-ins**
VE3RXH - NCS	VE3KTN - NCS	VE3KTN - NCS	VE3RXH - NCS
VE3NA	VE3BQ	VE3FNG	VE3NA
VE3BF	VA3ORL	VE3LC	VE3LC
VE3LC	VA3DEF	VE3NPO	VE3OKD
VE3TXB	VE2OCQ	VE3LBU	VE3LBU
VA3ZZW	VE3KMV	VE3NA	VE3SYZ
VA3DEF	VE3KAW	VA3RLA	VA3ZZW
VE3KAE		VE3HAZ	
VA3RLA		VE3KAE	
VE3GIQ		VA2EEK	
VA3EO		VE3SYZ	
VA2EEK		VE3KAW	
VE3KTN		VA3BIT	

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

December 1	December 8	December 15	December 22	December 29
VE3EJJ - NCS	VE3XRA - NCS	VE3EJJ - NCS	VE3XRA - NCS	VE3EJJ - NCS
VA3ZTF	VE3BAE	AB3ZI*	VA3NAH	VA3QV
VE3BAE	VE3EJJ	VA3ZTF	VE3LC	VE3BAE
VE3KTN	VE3LC	VE3LC	VE3EJJ	VE3KAE
VE3LC	VA3BGO	VE3EKN	VA3BGO	VA3ZTF
VE3XRA	VE3KAE	VE3KAE	VE3KTN	VE3NPO
VA3RLA	VE3EKN	VA3RLA	VA3RLA	VA3BGO
VE3KAE	VE3KTN	VE3XRA	VE3EKN	VE3LC
VA3BIT	VE3EUR	VA3NAH	VA3BIT	VE3EKN
VE3EKN	VA3NAH	VA3QV		VE3KTN
VA3BGO		VA3BGO		VA3NAH
		VE3KTN		VA2EEK
		VA3BIT		

* - John, operating portable from Lackawana State Park, Pennsylvania.

MEMBERSHIP FORM

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

- ✓ *The membership year starts 1 September, and runs until 31 August of the following year.*
- ✓ *Regular membership is open to licensed amateurs.*
- ✓ *Associate membership is open to all unlicensed radio enthusiasts.*
- ✓ *Membership includes a digital subscription to the club newsletter, the OVMRC Rambler.*

NEW ☐ **RENEWAL** ☐ **UPDATE/CHANGE** ☐

Please print legibly

Call Sign	Surname	Perferred first name

Street	Apartment

City	Province	Postal Code

Home/primary phone	Work/other phone	E-mail address

Are you a member of Radio Amateurs of Canada (RAC)? Yes / No

RAC ID: Expiry (YYYY-MM-DD):

Do you wish to order an OVMRC name tag? (+$12.00) Yes ☐ No ☐

Callsign for name tag	Name for name tag

Full Membership (Not a Member of RAC) $35.00/yr ☐
Full Membership (RAC Member) $25.00/yr ☐
Associate Membership (Unlicensed) $25.00/yr ☐

Amount Enclosed
$_____
Cheque / Cash

Circle your interests

Bands	**Modes**	**Building**	**Other**
Microwave	CW	RX	Teaching
UHF	Digital	TX	Speaking/Presenting
VHF	Phone	Antennas	DF/Fox hunting
HF	EME	Test equipment	Contesting
LF and below	Satellite	Other	DXing
	Experimental		Computers/IT
			Other

Signature _____ Date _____ Initials

By initialing this box, I confirm that I consent to receiving e-mail messages from the Club.