Ottawa Amateur Radio Club

Groundwave

P.O. Box 8873, Ottawa, Ontario, Canada, K1G 3J2

October 2019

New Ham? - Apply for the $500 Joe Norton award. Entries must be received by Nov. 1. See all the rules at https://www.oarc.net/pages/about/awards-1/joe-norton-award/

Bryan Rawlings, VE3QN, is the speaker for the October meeting . His presentation, entitled "The Importance of Showing Up", will cover the principal agenda items impacting amateur radio which will be considered at the World Radiocommunication Conference (WRC-19) taking place later this year in Sharm El-Sheikh, Egypt.

Additionally, however, his presentation will provide an overview of the history of international radio regulation, the roles played by Canada's telecom regulator and by the International Telecommunication Union based in Geneva. There will be numerous photos of the ITU facilities, the delegates, our amateur representatives and the setting in Geneva. Also illustrated will be the ITU's amateur station 4U1ITU.

See you at the meeting.

Ian Jeffrey, VE3IGJ
Editor

Check out our Web Page: ***www.oarc.net***

Next Meeting 7:30 pm, Wednesday, October 9th in the Colonel By Room at Ottawa City Hall

In This Issue....

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Articles may be submitted for use in this publication provided that they portray events or activities that promote Amateur Radio. ***Letters*** *and comments are also welcome. Submissions may be made by mail addressed to the Editor care of the OARC, or by e-mail to "ve3igj@rac.ca". Deadline for submissions occurs three days after the regular monthly meeting of the OARC.*

Please support your local radio organisations. They support you!

Club Information

The Ottawa Amateur Radio Club Inc. is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communications in the National Capital Area and to the advancement and achievement of club members.

Regular Meetings of the OARC Inc. are held on the second Wednesday of each month (except July and August) in the Colonel By Room which is on the second floor of Ottawa City Hall, formerly Regional Municipality of Ottawa Carleton Headquarters, on Lisgar Street. Meetings commence at approximately 19:30 local. Further details about each meeting are noted elsewhere in this publication.

Executive Meetings of the OARC Inc. are normally held on the first Wednesday of each month at 19:30 local. Contact the President to confirm the date, time and place of the next meeting.

The CAPITAL CITY FM Net meets every Monday (except some holidays) at 20:00 local on the club repeater VE2CRA (146.940-, 100 Hz) to pass traffic and to make announcements of interest to amateurs in the National Capital Region.

The Rubber Boot Net runs week days at 07:30 local on VE3MPC (147.150+, 100 Hz CTCSS tone) hosted by Mike, VA3TJP. The Rubber Boot net has been running since the early 1980's and is popular for the early risers and the go to work crowd.

The POT-HOLE Net is a SSB/HF net sponsored by the Ottawa Valley Mobile Radio Club and is conducted every Sunday at 10:00 hours on 3.760 MHz**.** All amateurs are welcome to check in.

The POT-LID CW Net is an informal slow-speed **CW** net that meets every Sunday, except during July and August, at 11:00 hours on 3.620 MHz, to promote interest in CW and CW procedures.

The QCWA CHAPTER 70 Net meets every Monday evening at 19:30 local on repeater VE3MPC 147.150+, 100 Hz) You do not have to be a QCWA member to participate.

The Ottawa Valley VHF/UHF SSB Net is sponsored by the West Carleton ARC. Look for it every Tuesday night (except the first Tuesday of the month) around 21:00 local on 144.250, (roll calls after net on 50.150, 432.150, 222.150, and 1296.100.) Horizontal polarization is preferred.

The Phoenix Net meets Tuesday evenings at 20:00 local on VE3MPC (147.150+, 100 Hz CTCSS).

The regular **OVMRC net** meets Thursday evenings at 20:00 local on VE3TWO (147.300+, 100 Hz CTCSS tone) analogue FM.

VE3TEN

Tuning in the beacon so that it makes sense requires you tune to **28.175** on **CW** and read the tone that is there . The spaces between the elements are the higher tone. If that doesn't work, tune to **28.175.28** on **lower sideband** for better results.

The Ottawa Amateur Radio Club bulletin "Groundwave" is published and distributed to club members. Publication dates may vary but it is hoped that the bulletin arrives at its destination before the events listed in it have expired. The bulletin is not published for July and August when meetings do not occur. Every effort is made to provide accurate information in the bulletin, however we are all human and mistakes can be made. The OARC accepts no responsibility for any damages that may result from this. The opinions expressed in this bulletin are those of the author.

Voice (VHF) 146.940/146.340 100Hz CTCSS required
(UHF) 443.300/448.300 100Hz CTCSS required

VE3TVA Amateur Fast Scan Television Repeater
Currently off the air and looking for a new home.

IRLP Node 2040 146.940/146.340 (VE2CRA/VE3RC)
(Code 411 for info) (Code 204 for activity)
(Code 88 for time)
For further information please contact the Repeater Chair.

Note: The IRLP link is not connected to ECHOLINK. Please do not try to connect using the alpha keys on your keypad. It just confuses the operator.

Note: The IRLP link is disabled during the Monday night Capital City FM Net from 20:00 to about 21:45 .

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October 2019

September Minutes

September 11, 2019

19:33 Meeting started by Dave VE3BOW

Dave introduced himself as OARC's new president.

Hamfest summary (Ed VE3WGO)
+ One of the best hamfests we've ever had in terms of attendees, vendors and volunteers
+ 457 attendees
+ 60 vendors
+ Seven clubs and public service organizations
+ Mike, VE3FFK, reports nine license test candidates for both Basic and Advanced, of which six passed (4 new hams)
+ Very high attendance when compared to the past 15 years
+ Financially successful (ie, more than covered our costs)
+ Large number of door prizes:
+ Main prize ID-4100A V/U D-Star mobile radio donated by Icom.
+ Comment by Jeffrey. VA3PEW, that a visiting ham from Niagara Falls thought it was the best hamfest he'd attended in Ontario.

Field Day 2019 (Greg VE3YTZ)
+ Preliminary results indicate our second best year since Greg started keeping records in 2002. Total QSO's: 961 with an estimated 4464 points. Vast majority of contacts were with CW and FT8, with only about 70 phone contacts.

Emergency Exercise (Jeffrey VA3PEW)
+ Inter-agency exercise on Sat, Oct 5 at Pinhey's Point
+ Simulating a major disaster.
+ Eight agencies may be invoved: CASARA, OVSAR, Salvation Army, etc
+ City is involved to a limited extent.
+ Looking for lots of operators, but don't have a communication plan set up yet.
+ Need volunteers both as ham radio operators and as casualties.
+ Please contact Jeffrey or Harrie VE3HYS for more info.

Dates to Remember

2019

Sep. 7	OARC Hamfest
Sep. 14	Radio in the Park
Sep. 30	Membership Renewals Due
Nov. 1	Joe Norton Award Subm. Due
Nov 21-23	Tall Pines Rally
Dec. 28	RAC Winter Contest

2020

Feb. 8-9	Canada Ski Marathon
Apr. 8	Homebrew Night
May 15-17	Dayton Hamvention
Jun. 10	OARC AGM and Elections
Jun. 27-28	Field Day
Jul. 1	RAC Canada Day Contest

Presentation: Emergency Communications by Michael, VE3QMC.
Michael based his presentation on his role as president for SBO-OVSAR (Sauvetage Bénévole Outaouais - Ottawa Valley Search and Rescue)
+ Tasking agencies: Ontario Provincial Police, Sécurité du Québec, Gatineau & Ottawa police services, MRC des Collines, Ottawa and Gatineau emergency measures organizations
+ Described communications aspects related to SAR emergencies
+ OVSAR is involved with Ground SAR and Wilderness SAR
+ Michael explained why grid searches are inefficient. OVSAR uses advanced techniques based on statistics to search areas with high probability of finding persons.
+ Communications during searches: cellphones when coverage allows (best privacy), VHF FM most of the time (possibly transitioning to DMR or NXDN), portable repeater, vehicle radios, handhelds.
- Garmin InReach (text via Iridium satellites)
- Amateur radio: currently about 20 licensed volunteers
+ Described Incident Command System (ICS) in general terms

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mk's Word

After hamming for 49.3 years, I didn't expect to come across any situations I hadn't dealt with before somewhere along the line. I have dealt with organizations that were running events for the first time and realized that hams are a good source of communications capability. I have dealt with organizations that have been running events for a while and wanted to add our capability to their toolbox. But exercise "Rendezvous" on Oct. 5 turns out to have been one for the record books. Originally planned for last May, it didn't seem to be helped by the addition of all that extra planning time. The idea was to get as many as possible of the volunteer emergency response agencies to inter-operate. From a communications point of view, at its heart was a contradiction:

A: all of the agencies were to follow their own communications plan, using their usual methods, meanwhile,

B: Amateur radio, using a typical, ARES styled, controlled net was to be integrated into their plan.

Many of the agencies involved already used amateurs and amateur radio in their plans, and in the interest of accomplishing their objectives, rightly ignored part B. They got the jobs done. The hams embedded in those organizations did their job, and did it well. Searches were conducted, casualties were found and treated, volunteers got fed. More importantly, links were formed between agencies, and people. From an EMRG / Ottawa ARES point of view there was some value in the exercise, as the system of calling on our mutual aid partners was tested. More experience operating in the field was gained, and overall skill and competence was improved, but was it worth all that effort, and all those hours in meetings going nowhere? I'm not convinced.

So what else happened in the past month? Well, the Hamfest happened, and I bet you saw more of it than I did. As an examiner, I was kept busy behind the scenes conducting exams, a very satisfying way to spend a Saturday, with hams coming out with one or more Basic, Basic with Honours, Advanced and even a new Morse qualification for one.
Although I didn't get to see the Hamfest, I got to go to the fleamarket in Rockland later in the month. It was small by Ottawa standards, but still a very enjoyable outing. It was nice to just take in the event, buy a few trinkets, and chat with other hams, and not "work" the event for once. Having spoken to a few others who routinely volunteer their time to such things, it seems to be a common feeling.

Anyway, the 40-20 dipole is finally working as I want it to, the homebound antennas are a bit of a mess, as are the front and back yards. The bicycle still wants to go and play outside if it ever stops raining, and all is right with the world.

73
mk VE3FFK

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Visitors
Marcel VE3FNG
Natalie VE3IBX
VE3JBO/VE3RDA Rich
Braham Kasasni
VK3ACM/VE3EMI Emily

Radio in the Park (Arthur VA3BIT)
Radio in the Park (previously known as the Portable Radio Demo) will be held at Walter Baker Park in Kanata this coming Saturday, September 14 from 10:00 to 12:00. We have the gazebo, not the picnic shelter this year. Setup is at 09:00 and teardown is expected to be completed by 13:00. Breakfast, for those that want to join us, will be at Rockin Johnnies at 08:00. Rockin Johnnies is just down Hazeldean from Walter Baker Park.

To give away (Wayne VE3CZO)
Phase detector, LNA, a very high input impedance variable amplifier, plus some miscellaneous manuals

Show & Tell (Tyler VA3DGN)
Repeater transceiver gear for upgrading

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New Antenna Uses Saltwater and Plastic to Steer Radio Beams

A new antenna that uses saltwater and plastic instead of metal to shape radio signals could make it easier to build networks that use VHF and UHF signals.

Being able to focus the energy of a radio signal towards a given receiver means you can increase the range and efficiency of transmissions. If you know the location of the receiver, and are sure that it's going to stay put, you can simply use an antenna that is shaped to emit energy mostly in one direction and point it. But if the receiver's location is uncertain, or if it's moving, or if you'd like to switch to a different receiver, then things get tricky. In this case, engineers often fall back on a technique called beam-steering or beamforming, and doing it at at a large scale is one of the key underlying mechanisms behind the rollout of 5G networks.

Beam-steering lets you adjust the focus of antenna without having to move it around to point in different directions. It involves adjusting the relative phases of a set of radio waves at the antenna: these waves interfere constructively and destructively, cancelling out in unwanted directions and reinforcing the signal in the direction you want to send it. Different beam patterns, or states, are also possible—for example, you might want a broader beam if you are sending the same signal to multiple receivers in a given direction, or a tighter beam if you are talking to just one.

Now, researchers have developed an advanced liquid-based antenna system that relies on a readily available ingredient: saltwater.

The configuration allows for 360-degree beam-steering and works for frequencies between 334 to 488 MHz.

To be sure, this is not the first liquid antenna: these antennas, which use fluid to transmit and receive radio signals, can be useful in situations where VHF or UHF frequencies are required (frequencies between 30 megahertz and 3 gigahertz). They tend to be small, transparent, and more reconfigurable than conventional metal antennas. For these reasons, they are being explored in for some internet of things (IoT) and 5G applications.

Liquid antennas that depend on salty water have even more benefits, since the substance is readily available, low-cost and eco-friendly. Several saltwater-based antennas have been developed to date, but these designs are limited in how easily the beam can be steered and reconfigured.

However, in a recent publication in IEEE Antennas and Wireless Propagation Letters, Lei Xing and her colleagues at the College of Electronic and Information Engineering at Nanjing University of Aeronautics and Astronautics in China have proposed a new saltwater-based antenna that achieves 12 directional beam-steering states and one omnidirectional state. Its circular configuration allows for complete 360-degree beam-steering and works for frequencies between 334 to 488 MHz.

The proposed design consists of a circular ground plane, with 13 transparent acrylic tubes that can be filled with (or emptied of) salt water on demand. One tube is located in the center to act as a driven monopole (the radio signal is fed in via a copper disk at the base of the tube). Surrounding it are 12 so-called parasitic monopoles. When only the driven monopole is excited, this creates an omnidirectional signal. But the 12 remaining monopoles, when filled with water, work together to act as reflectors and give the broadcasted signal direction.

"The most challenging part of designing this antenna is how to effectively and efficiently

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control the water parasitic monopoles," Xing explains. To do so, her team developed a liquid control system using micropumps, which she says can be applied to other liquid antennas or antenna arrays.

"The attractive feature of using water monopoles is that both the water height and activating status can be dynamically tuned through microfluidic techniques, which has a higher degree of design flexibility than metal antennas," explains Xing. "More importantly, the antenna can be totally 'turned off' when not in use."

When the antenna is switched completely off and drained, it is nearly undetectable by radar. In contrast, this effect is hard to achieve with metal antennas.

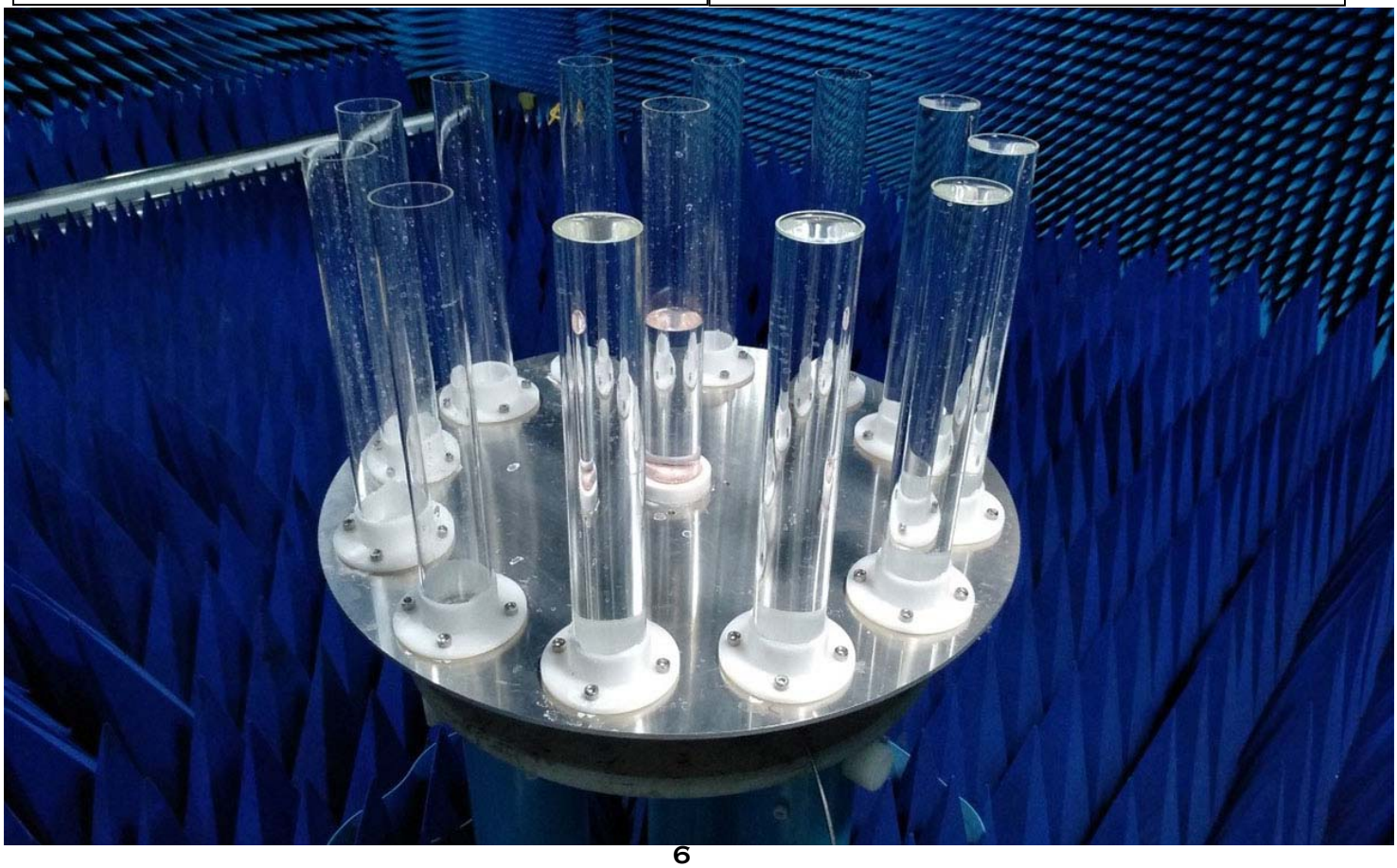
The new antenna's operating range of 334 MHz to 488 MHz makes it a promising candidate for very-high frequency applications such as IoT and maritime applications, says Xing. One limitation of saltwater-based antennas, she notes, is that that the permittivity of saline water (a measure of how it interacts with electric fields) is sensitive to temperature variation. Xing says she plans to continue to explore various liquid-based designs for antennas moving forward.

Michelle Hampson

IEEE Tech Alert, September 20, 2019

Read the complete article for free until Oct. 25 at

https://ieeexplore.ieee.org/document/8822465



Hammond Radio Museum

In late August your editor was fortunate to receive a personal guided tour of the Hammond Radio Museum in Guelph. Volunteer guide Larry Asp, VE3RF, provided an exceptionally informative overview of the massive collection of broadcast, military, and amateur radios and recounted numerous interesting anecdotes about the origins and history of several of the most unusual pieces. A highly recommended outing for those like me who may have missed the club's organized tour a few years ago.

The photo below shows us in the museum's amateur radio station that uses Fred Hammond's original call sign.

Copper Wire Hardness

Most people are familiar with soft and hard-drawn copper wire. However, there are more grades than just those. Soft is also called dead-soft. It has a hardness number of zero, because it isn't drawn through a hole in a plate or otherwise worked to harden it. Quarter-hard is drawn through a hole in a plate once. Half-hard is drawn through progressively-smaller holes twice. Hard is drawn through progressively-smaller holes four times. Spring wire is drawn through progressively-smaller holes eight times.

Tall Pines Rally Volunteer Notice

Guess what time of year it is. That's right – time to open up Volunteer Registration for the 2019 Lincoln Electric Rally of the Tall Pines. Please be sure to mark the November 22-24 weekend on your calendar. That is the weekend for the 2019 Rally of the Tall Pines. The Tall Pines committee has been hard at work and it's time to get the volunteers signed up.

Check out the Pines website at www.tallpinesrally.com for details.

While on the website, if you have not already registered for 2019, please go to the worker section and register. We have tried to keep the process very straightforward for you. So whether you registered as a worker previously or are a first-time registrant, go to the Volunteer tab on the website, then click on 'Register' and follow the cues from there to either update your profile or to create a new profile. If that doesn't work, use 'Worker Registration'. Note – be sure to answer at the top 'Yes' to "I am registering as a worker for the Rally of the Tall Pines 2019." If you are stuck, email the registration team at worker_registration@tallpinesrally.com for assistance. When you have completed your registration or update, **click on 'Submit' at the bottom of the page**.

If you have questions, one of us will be sure to reply. You can contact Jane directly at accommodations@tallpinesrally.com or Greg at greg.mcgrath@tallpinesrally.com In addition there are many other volunteer perks including free Tall Pines merchandise and a free post-rally dinner.

If you have questions email me at ross@tallpinesrally.com

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VE2CRA to add digital modes.

NVIS Event (Jocelyn VE3JCT)
NVIS Quebec is organizing a Near Vertical Incident Skywave experiment for Saturday, October 5, from 10:00-14:00. Organized by Club Radio Amateur Drummondville. Expect to operate on 40m and 80m, and possibly 60m.

Canadian Ski Marathon (Neil VE3PUE)
February 8-9, 2020
Last year's event had 17 hams. Neil anticipates needing many more in 2020. Comms setup (private digital, analog ham) radio is not yet confirmed. The website - https://hambone.ca/index.php/CSM2020/HomePage - should be ready in a few days.

Meeting ended at about 21:30, followed by brief coffee and social.

Pre- and post-meeting announcements displayed on the screen:
+ Welcome to a new year of Ham Radio! Please renew your membership.
+ Radio in the Park on Saturday, September 14 at Walter Baker Park in Kanata, from 10am to noon.
+ October 5 (All Day): Operators needed for emergency exercise. Location: Pinhey's Point. See Jeffrey VA3PEW to volunteer.
+ 2019 Amateur Radio Course offered by OVMRC. Registration Sep 16 @19:00 at Science & Tech Museum. Contact Norm VE3LC for info.
+ Active Electronics permanently closed.
+ New hours for Gervais Electronics: Mon-Fri: 08:30-17:30, Sat: 09:00-17:00, Sun: closed.
+ LRT operational as of Saturday. Closest stops to City Hall: uOttawa (700m, 10 minute walk), Parliament (950m, 12 minutes), Rideau Centre (950m, 12 minutes)

Minutes taken by VA3BIT.

2019-2020 **OARC Membership Application/Renewal**

Ottawa Amateur Radio Club Inc., Box 8873, Ottawa, ON, K1G 3J2, Canada

◯ Single $25 ($20 after February 1)
◯ Family $30
◯ Junior $15 (under 18 years of age)
◯ New Ham $0 (licensed in current membership year)

◯ Emailed Newsletter $0 ◯ Mailed Newsletter $10

Name _____ Phone _____

Callsign(s) _____ Year Licensed _____

☐ Basic ☐ Honours ☐ Advanced ☐ Morse ☐ RAC Member

Email Address _____

Name _____ Phone _____

Callsign(s) _____ Year Licensed _____

☐ Basic ☐ Honours ☐ Advanced ☐ Morse ☐ RAC Member

Email Address _____

Postal Address _____

Membership year is September 1 through August 31. Paying members who are in good standing by the December General Meeting will be eligible for a free one-time name badge. Members who wish to purchase additional replacement badges may do so through the club for $10 each. Ordered badges will be available in January. All prices are listed in Canadian Dollars (CAD).

First Name on badge _____ Callsign on badge _____

First Name on badge _____ Callsign on badge _____

Notes _____