Ottawa Amateur Radio Club

Groundwave

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

January 2019

A quick puzzle to start this issue.

Find the message in the following:

$$PPY = \log_A E + \log_A \frac{WN + RAY}{H}$$

This month's speaker is Glenn MacDonell, VE3XRA who is speaking about space related radio.

See you at the meeting.

Ian Jeffrey, VE3IGJ, Editor

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

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

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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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December Minutes

December Monthly Meeting and Christmas Social & Mini Fleamarket

Held in the Colonel By Room at Ottawa City Hall

19:35 Meeting started by Diane VA3DB

RAC Winter Contest (Dave VE3TLY). Friday & Saturday, December 28 & 29. OARC volunteers will be operating as VA3RAC. Setup on Friday. Looking for volunteers to operate on Saturday. Operating hours restricted to Diefenbunker Museum opening hours.

Womens March (Marnie; spouse of Dave VE3BOW). Saturday, January 19. Would love to have amateur radio operators involved. Hams are welcome at the organizing meetings; contact Marnie or Jeffery VE3PEW to provide your contact info.

Canadian Ski Marathon (Harrie)

Event can use 3-4 more hams. Please contact Neil VE3PUE or hambone.ca/csm

Winter Field Day (Diane VA3DB). January 26-27, 2019. Gatineau ARC (Club Radioamateur Outaouais) would consider setting up VHF/UHF gear if they know OARC and other Ottawa club members are planning to participate.

VE2CRA Hamnet Upgrades (Dave VE3BOW). 2.4 & 5.8 GHz links to Kemptville from the tower at Camp Fortune appear to be possible. Upgrade will happen when the weather cooperates and when Harrie figures out how to drive the Snowcat up the hill.

OVMRC Christmas Dinner (John VA3JYK). December 17 at 6pm at KS on the Keys $35 buffet anyone welcome.

Greg VE3YTZ announced he is accepting membership renewals.

Dates to Remember

2019

Feb. 9-10	Canada Ski Marathon
Apr. 10	Homebrew Night
May 17-19	Dayton Hamvention
Jun. 12	OARC AGM and Elections
Jun. 22-23	Field Day
Jul. 1	RAC Canada Day Contest
Sep. 14	OARC Hamfest
Sep. 21	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

Formal meeting ended at 19:50.

Coffee, socializing and perusing the flea market items followed...

Door Prize Winners:

1. Rick VE3IHI: $50 gift from Radioworld

2. Al VE3ZTU: $50 gift certificate from Radioworld

3. Bill VA3HWA: $50 gift certificate from Radioworld

4. Douglas VE3YDK: $50 gift certificate from Radioworld

No 50/50 draw.

The last of the revellers departed the room at about 22:30.

Minutes taken by VA3BIT.

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mk's Word

Hammy New Year

Those of you who were at the Diefenbunker know how much fun we all had. The work on the antennas in the rain / snow / cold was worth it. The remote antenna let us operate on phone and CW on the same band at the same time, even with the amplifiers going. The 2/6m ground plane got us VE2 and VE3 multipliers on phone and CW. We moved some of those guys over to 10 and 15m to grab a few more multipliers on bands that weren't open to anywhere. The 160 addition to the 80m dipole gave us another mitt full of contacts as well as VE2, 3 and 9 multipliers on that band. We had 4 good CW operators, so nobody got burned out by operating too long. Greg made sure we were well supplied with food and snacks. That alone was worth the trip.

So what can we do for next year to make it better? -Maybe put the 2/6m antenna in the sky, instead of just off the ground.

There seemed to be more participation this year, so maybe we need to try to get permission to operate overnight. We are constrained in the number of feedlines that poke out through the top of the bunker so maybe we need to look at a remote coax switch, although it has to be rated for a kilowatt. KL is already working on filters to remove what remains of the breakthrough between the phone and CW stations. Although it was possible to work through it, some of the weaker stations would be easier with more filtering. There were a lot of European stations in the contest. Should we try to work more of them? Tuning up the amplifiers was a bit of a chore, because the antenna match, amplifier tuning, and input tuning all interacted. I wonder if some sort of "pre matching" for each antenna might help, so the amplifier output always sees a 50 ohm antenna, and we can use the output tuner just as a fancy antenna switch.

Anyway, as I said at the top, it was all fun.
This month (January) I expect to be doing the VE2OJ thing again for the CQ 160m CW contest, as well as Winter Field Day on the same weekend.

Not sure how much winter field day-ing I will be doing, but the 160m contest has allows lots of free time during the daylight hours.

There is also a VHF contest on, the same weekend as the women's march. I expect to put in some time on that as well. The only other thing on my calendar is another W1AW qualifying run - IF I remember it on the day, and IF I can crack the 35 WPM barrier.

Which reminds me, I'm supposed to get going on that CW receive course. After all this time, I'm starting to fit into that retired guy saying "I don't know how I found time to go to work".

73
mk VE3FFK

Contest Club Ontario East

The annual winter gathering of the Contest Club Ontario East will beheld on Saturday, February 2, 2019. The location is the Barley Mow pub, 1541 Merivale Avenue (it's in a small plaza at the corner of Capilano), from 12 noon to 3:30pm. They have a lunch and breakfast menu on Saturdays.

The programme includes a talk on the 160m contest station, VE2OJ.

CCO members and those interested in contesting or DX are welcome to attend. Please let Dave Parks know if you are attending (davidrobparks at gmail.com).

Regards, Bob MacKenzie VA3RKM

RAC Winter Contest

OARC Enters RAC Winter Contest, Operating as VA3RAC

This was the 11th activation of the Diefenbunker in the Canada Winter Contest. We all had lots of fun on the air, and chatting with visitors who passed by. This year we operated as VA3RAC, a call sign that always seems to generate much interest judging from the number of pile-ups we ran into.

The claimed results presented here are subject to the usual checking and verification from the contest organizers. Final results will be posted on the RAC website and in TCA.

The numbers:
QSOs 986
Multipliers 64
Claimed Score 301,056

For those interested in statistics:
- the 15 and 10 m bands were in the doldrums again this year. No surprise there.
- we scored 27 QSOs on 160 m CW. That far exceeds our previous best of 11 in 2012.
- we scored 138 QSOs on 80 m phone. This far exceeds 105 from 2010 and demonstrates why we went to so much trouble installing the remote 80/40/20 multiband.
- we had our 2nd best year ever on 40 m phone with 264 QSOs. Last year was the best with 379.
- this was our 2nd best year for phone QSOs with 554, compared to 687 last year, our best.
- this was our 3rd best year for multipliers, 64 vs 79 in 2015 - even though we're almost at the bottom of the sunspot cycle...
- this was our 2nd best year for total QSOs, 986.

A special thanks to Nick, VE3OWV, for his assistance and support in all aspects of the preparations, including the antenna adventures. Thanks to Dave, VE3KL, Mike, VE3FFK, and Nick, VE3OWV for the many hours spent in the wind, rain, and sleet installing antennas and with all the gear preparations. Thanks too to Hunter, VE3HVB, for his help with the antennas. All this background work really does make a difference.

As usual comments, questions and suggestions for the future are welcome. I hope to see you all in the next Canada Winter Contest on December 28 2019.

73 Dave VE3TLY

1946: Trackball

Ralph Benjamin (b. 1922), Kenyon Taylor (1908-1986), Tom Cranston (c. 1920-2008), Fred Longstaff (dates unavailable)

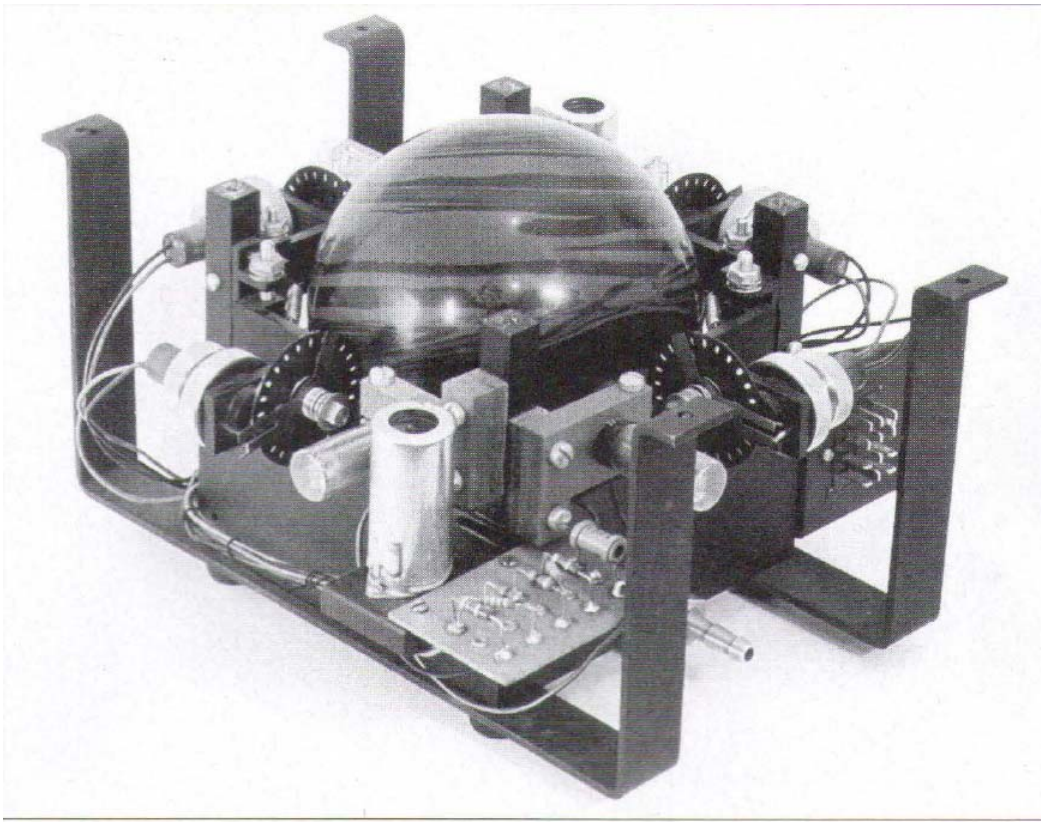
The trackball was one of the first computer input devices to enable freeform cursor movement by the user, simultaneously over both the x- and y-axes on a computer screen. But there was a long time between its invention and its widespread use.

A British engineer named Ralph Benjamin designed the first prototype trackball while working on a radar project for the Royal Navy Scientific Senice in 1946. The radar project was called the Comprehensive Display System and enabled ships to monitor low-flying aircraft on x and y coordinates using a joystick as the input device. Benjamin tried to improve upon this method of input with an invention he called the roller ball, which consisted of a metal casing containing a metal ball with two rubber wheels. It allowed users to control their onscreen movements with greater precision to input location data about a target's aircraft. The British kept the device a military secret until 1947, when it was patented in Benjamin's name and described as a device that correlated data between electronic storage and displays.

In 1952, Canadian engineers Tom Cranston, Fred Longstaff, and Kenyon Taylor built upon Benjamin's concept and designed a trackball for the Royal Canadian Navy's Digital Automated Tracking and Resolving (DATAR) system, a computerized battlefield information system. The design, based upon the Canadian five-pin bowling ball, allowed an operator to control and track the location of user input on the screen.

Benjamin's roller ball eventually had a large influence on the development of the mouse and the modern trackball. The roller ball differed from the mouse in that it was a stationary object that was controlled by the user's hand and fingers moving over it, rather than repositioning the entire device to different locations in physical space.

From *Computing Outside the Box* by Simon Garfinkel and Rachel Grunspan



CNPOTA

Radio Amateurs of Canada is pleased to announce its support of the Canadian National Parks on the Air (CNPOTA) event which will be held from January 1 to December 31, 2019.

The CNPOTA Event Committee describes the event in this way:

> All Radio Amateurs worldwide will have an opportunity to operate portably from any of Canada's 48 National Parks and 171 National Historic Sites (these are 'activators').
>
> Amateurs around the world will be able to chase these adventurous operators in an effort to confirm the most QSOs (these are 'chasers').
>
> Activity for activators and chasers will be tracked on a dedicated website and real-time leader board and other statistics will be available throughout the year.
>
> Activators and chasers will be able to compete for and collect online awards and certificates created specifically for the event.
>
> Come join the fun and plan to visit one of Canada's beautiful Parks and Historic sites!".

RAC will be playing a supporting role and will be assisting the organizers in promoting the event through the RAC website, in social media and in the pages of TCA.

If you have any questions or inquiries about the event please visit the Canadian National Parks on the Air website at https://cnpota.ca/ and specifically the "Contact Us" at https://cnpota.ca/about-us/contact-us/. Stay tuned to their website for News and Progress Reports information as this exciting event unfolds throughout 2019.

Adcock Antennas

Small, perfectly-balanced vertical loop antennas are useful for vertically polarized radio signal direction finding, because they have a figure-of-eight receiving pattern with two sharp nulls where the output goes to zero. Unfortunately, in those two null directions they are sensitive to horizontally polarized waves and ionospheric refraction polarization shifts commonly rotate signals transmitted from vertically polarized antennas so that returning skywaves are not perfectly vertical. In 1919 F. Adcock was granted British Patent 130490 for his solution to that problem which involved removing the top and bottom horizontal portions of a vertical rectangular loop, so that only the two vertical sides remained. That proved to greatly reduce sensitivity to horizontally polarized waves and caused 'Adcock Antennas' to replace loops in many sea and air radio navigation applications.

Microphone Directivity

All microphones respond primarily to changes in air pressure or air velocity, but not to both unless they internally contain two different types of transducers, which is very rare. The distinction is important to microphone directivity. Pressure-responding microphones respond to absolute changes in air pressure caused by passing sound waves. They always have non-directional response-sensitivity patterns. In contrast, velocity-responding microphones are pressure-gradient transducers that respond to differences in air pressure between two sides of a diaphragm. Velocity microphones always have directional polar response-sensitivity patterns. Furthermore, sound waves propagating toward the back of a velocity microphone diaphragm produce an electrical output signal that is out of phase with respect to the output produced by sound waves propagating toward the front.

2018-2019 **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 _____