Ottawa Amateur Radio Club

Groundwave

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

February 2018

The speaker for the February meeting is Dave Conn, VE3KL, whose topic is "Setting Up an HF Radio Station for Visually Impaired Hams".

See you at the meeting,

Ian Jeffrey, VE3IGJ
Editor

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

Next Meeting 7:30 pm, Wednesday, February 14th in the Colonel By Room at Ottawa City Hall

In This Issue....

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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.

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+, no tone) 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+, no tone).

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

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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January Minutes

January minutes are unavailable.

From the Desk of the Membership Secretary

Greetings to OARC Members. That time of the year has come again and I have a new batch of badges available for pick-up at the February meeting. The call signs include:

VE3NA, VA2EEK, KB2FJS, VE3LGD, VA3FSS, VE3ZTU, VA3AE, VE3BOW

If you were expecting a badge and don't see your call sign on the list, please drop me an email and I will fix you right up. You can write me here: ve3ytz at rac.ca. Please don't forget that new hams with free memberships are not eligible for a free one-time badge until their second year.

Also, on a more sombre note, those members who have yet to pay their 2017-2018 membership dues will soon discover that they no longer receive the Groundwave. To avoid this sad event, you can see me (or my deputy) at the February meeting and we will easily rectify the situation.

73 and wishing everyone the best for February,

Greg/VE3YTZ

Dates to Remember

2018

Feb. 9-11	Canada Ski Marathon
Apr. 11	Homebrew Night
May 18-20	Dayton Hamvention
Jun. 13	OARC AGM and Elections
Jun. 23-24	Field Day
Jul. 1	RAC Canada Day Contest
Sep. 8	OARC Hamfest
Sep. 15	Portable Demo Day
Sep. 30	Membership Renewals Due
Nov. 1	Joe Norton Award Subm. Due
Dec. 29	RAC Winter Contest

CW Improvement Course

The OARC is planning on running a CW improvement course This is a course those wanting to improve their speed, not for learning Morse code.. A sign up sheet will be passed around at the February meeting looking for those interested in attending the course. The dates, location, and cost have not yet been determined. It is expected the course will last six weeks.

Anyone who cannot attend the February meeting should contact either Mike Kelly, VE3FFK, or Diane Bruce, VA3DB, by email to express his interest.

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mk's Word

Last month I mentioned two upcoming contests. Well what a difference. Two weekends, two contests, two results. First was the ARRL VHF test. The following weekend was the CQ 160m contest at the other end of the spectrum. Just as in December, two back to back weekends span the spectrum. In December, it is 10m to 160m. In January, it's V/UHF to 160m. So anyway, weekend one was a bit of a bust. We were logging on paper, which is just as well, as I'm not sure we would want to record just how many (many) hours we spent calling and listening to not much of anything. In the end we made a total of FIVE contacts on two bands over the weekend - and two of those were with VE3LC back in FN25. (We (Dave, VE3AV, and I) were operating VA2LGQ from his cottage in FN15.) That second weekend was at the other end of the spectrum, and not just in frequency. On 160m we had more operators (VE3AV, VE3OP, VE3ICV, and VE3FFK). We had a good antenna, our shiny, freshly tuned up folded inverted L, and a good set of toys in the shack as well. As is traditional in contests from rural Quebec, we had a power outage. For once, it happened during a time when we were off the air, since there aren't many contacts to be had on 160m at high noon anyway. Murphy missed a great opportunity to toss a wrench into the works when the power was restored by mid-afternoon. Our result once we decided to stop was: 936 contacts, 59 states and provinces, 43 DXCC entities. Of course the final totals will likely fall a bit in the official tally, due to mis-heard and mis-typed call signs and the like. But it sure is fun to have stations lined up to give you a contact.

Next up is the CSM, the Canadian Ski Marathon, with a new route and a new way of operating, using the skills of hams and the hardware of commercial suppliers. After 30 consecutive years of volunteering for the event, this year I will be not be joining them. While I wish them success, I'm not convinced the event will be as safe as it should be. I hope I'm wrong.

73 wish them luck
mk VE3FFK

Fact-of-the-Day

Noise Blanker Effectiveness

A noise blanker blocks signal processing in a receiver for the duration of each noise pulse that exceeds a user-adjustable amplitude-threshold. That process provides highly-effective suppression of narrow noise pulses, such as ignition noise pulses, if the blanking is done prior to highly-selective IF filtering. However, a noise blanker is much less effective and often even degrades the quality of received signals if blanking is done after highly-selective IF filtering. The reason is that all highly-selective IF filters ring after being excited by each noise pulse. The ringing widens each noise pulse, causing a noise blanker to block receiver signal processing for longer periods of time than the durations of the input pulses.

Decibels and Logarithms

Most people seriously interested in technical aspects of radio know that a decibel is one-tenth of an Alexander Graham Bell 'Bell' unit, which is the logarithm of the ratio of two power levels, and that decibels therefore are logarithmically related to power ratios. Many who routinely use decibels (signal strength S9+35, gain flat to within 3dB, etc.) probably assume they are using a relatively modern method of expressing large ratios -- at least, a method used only since the time of Bell. If so, they are wrong. Old Babylonian tablets contain tables that are exactly analogous to modern tables of antilogarithms. Logarithmic tables that list the first ten powers for various bases also have been found. A student examination on a Babylonian tablet asks 'What is the logarithm of the given number in a system with the certain number as a base?'

Quantum Radio

Quantum Radio May Offer New Twist on Communicating in Problematic Environments

Researchers at the National Institute of Standards and Technology (NIST) have demonstrated that quantum physics might enable communication and mapping in locations where GPS, cell phones, and radio are not reliable or don't work at all, such as indoors, in urban canyons, underwater, and underground. NIST announced the technology advance on January 2. The technology may have marine, military, and surveying applications. The NIST team is experimenting with very low frequency (VLF) digitally modulated magnetic signals, which propagate farther through buildings, water, and soil than conventional electromagnetic signals at higher frequencies.

"The big issues with very low-frequency communications, including magnetic radio, are poor receiver sensitivity and extremely limited bandwidth of existing transmitters and receivers. This means the data rate is zilch," said NIST project leader Dave Howe, AD0MR.

"The best magnetic field sensitivity is obtained using quantum sensors. The increased sensitivity leads in principle to better range. The quantum approach also offers the possibility to get high-bandwidth communications like a cellphone has. We need bandwidth to communicate with audio underwater and in other forbidding environments," he said.

NIST researchers have demonstrated detection of digitally modulated magnetic signals by a magnetic-field sensor that relies on the quantum properties of rubidium atoms. The NIST technique varies magnetic fields to modulate or control the frequency — specifically, the horizontal and vertical positions of the signal's waveform — produced by the atoms.

NIST developed a direct current magnetometer that uses polarized light as a detector to measure the "spin" of rubidium atoms in a tiny glass cell induced by magnetic fields. Changes in the atoms' spin rate correspond to an oscillation in the dc magnetic fields, creating alternating current voltages at the light detector that are more useful for communications.

"Atoms offer very fast response plus very high sensitivity," Howe said. "Classical communications involves a tradeoff between bandwidth and sensitivity. We can now get both with quantum sensors." Howe speculated on an Amateur Radio application.

"The quantum radio is great fun, far better sensitivity than any other receiver, at room temperature, anyway," Howe told ARRL. "The atoms in the gas cell replace the 'antenna' and detection in the classical sense. It would be nice to try modulation in the 2200-meter band using the quantum receiver for detection." In the future, the NIST team plans to develop improved transmitters.

In the NIST tests, the sensor detected digitally modulated magnetic field signals with strengths of 1 picotesla — one millionth of Earth's magnetic field strength — and at frequencies below 1 kHz.

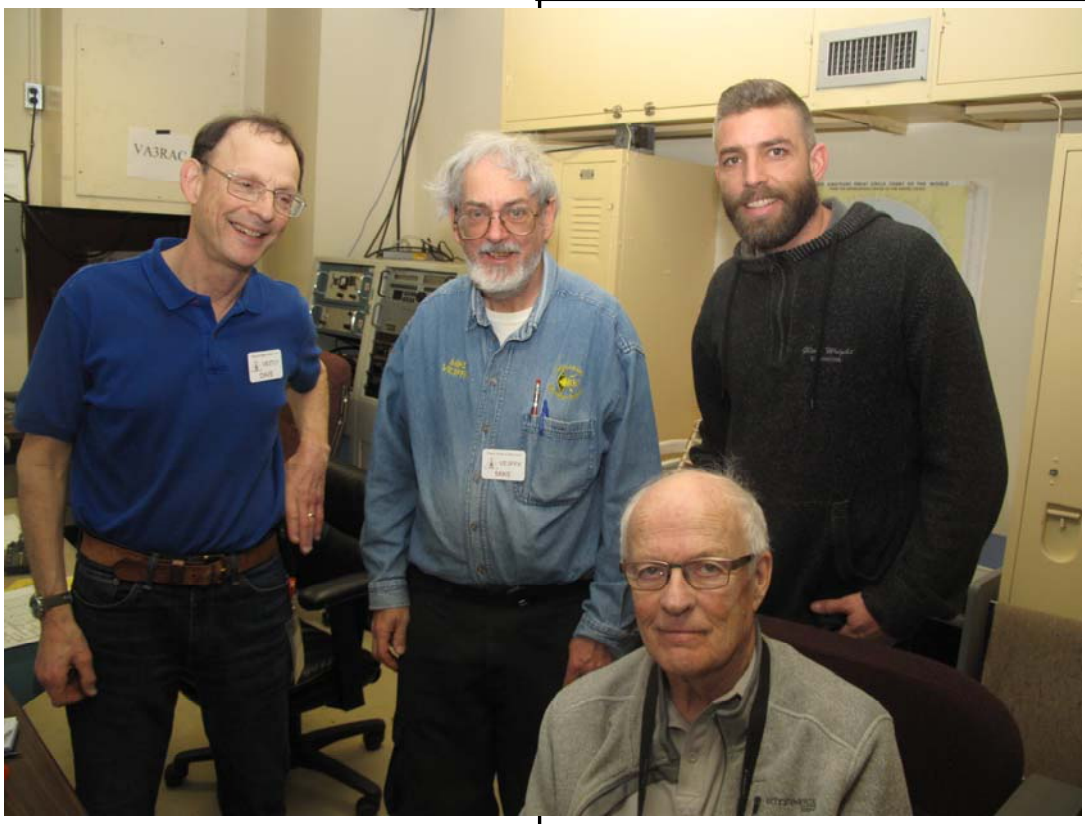
To further improve performance, the NIST team is building and testing a custom quantum magnetometer. Like an atomic clock, the device will detect signals by switching between atoms' internal energy levels as well as other properties, Howe said. The researchers hope to extend the range of low-frequency magnetic field signals by boosting the sensor sensitivity, suppressing noise more effectively, and increasing and efficiently using the sensor's bandwidth.

The NIST strategy requires inventing an entirely new field, which combines quantum physics and low-frequency magnetic radio, Howe said.

From the ARRL website

http://www.arrl.org/news/quantum-radio-may-offer-new-twist-on-communicating-in-problematic-environments

RAC Winter Contest at Diefenbunker



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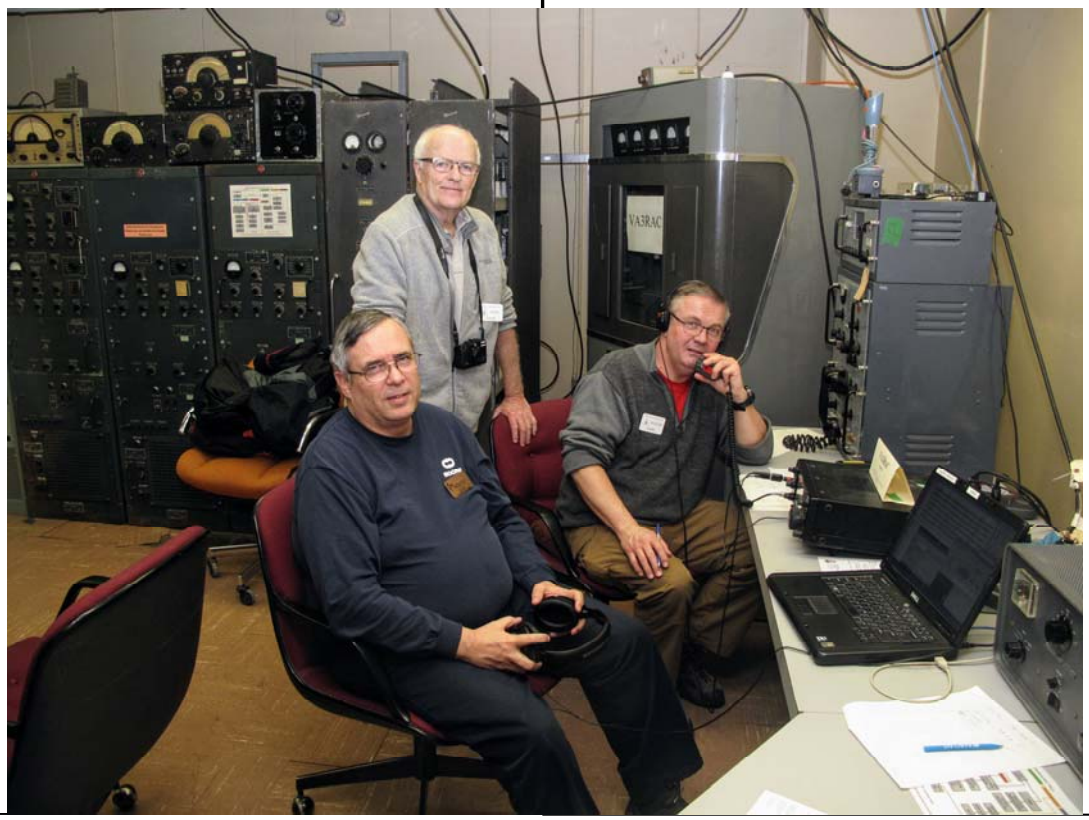

2017-2018 OARC Membership/Renewal Form

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

◯ 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, inclusive. All members who are in good standing on or before the December General Meeting will be eligible for a free one-time name badge. Members who wish a second or replacement badge may purchase one at the club price (approx. $7.50 plus tax). Ordered badges will be available in January.

First Name on badge _____ Callsign on badge _____

First Name on badge _____ Callsign on badge _____

Notes _____