



Ottawa Amateur Radio Club

# Groundwave

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## *From the Editor:*

December 2011

Instead of our usual speaker at the December meeting, we will be enjoying our annual Trivia Night. Details are on page 7 of this issue of the Groundwave and on OARC.net.

The OARC was given permission to use the VA3RAC all sign for the RAC Winter Contest. We will be operating from the Diefenbunker on December 17, 1011. If you are interested in operating please contact Dave Green by email at VE3TLY at rac.ca

And as this is the December issue of the Groundwave, I would like to take this opportunity to wish one and all Happy Holidays, Merry Christmas, and Happy New Year.

Ian Jeffrey, VE3IGJ, Editor

*Check out our Web Page: [www.oarc.net](http://www.oarc.net)*



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

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Ottawa Amateur Radio Club

# Groundwave

December 2011

*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 Honeywell 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 hours. Further details about each meeting is elsewhere in this publication.

**Executive Meetings of the OARC Inc.** are normally held on the first Wednesday of each month at 19:30 hours. 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 hours on the club repeater **VE2CRA 146.940(-)** to pass traffic and to make announcements of interest to Amateurs in the National Capital Region.

**The SWAP Net** is a service provided and conducted by Ed Seib, VA3ES. This feature appears on the Capital City FM Net. To list items and make inquiries, got to <http://www.ncswapnet.ca>. You may reach Ed at 613-738 8924 or e-mail him at [va3es@rac.ca](mailto:va3es@rac.ca).

**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 sponsored and conducted by Ed Morgan, VE3GX, and 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 hours on repeater **VE3MPC 147.150(+)**. 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 on **144.250**, (roll calls after net on 50.150, 432.150, 222.150, and 1296.100.) Horizontal polarization is preferred.

*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) 146.94/146.34 100Hz CTCSS required  
(UHF) 443.300/448.300

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

IRLP Node 2040 146.94/146.34 (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 Capital City Net each Monday. It is disabled from 2000 to 2145 Mondays except for May to August when the link is disabled from 2000 to 2020.

## **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.



## Dates to Remember

### November Minutes

#### Meeting Opens

chaired by Glenn

- 2011-11-09 19:40

#### Ottawa Antenna Policy

- Brief talk about new Ottawa antenna policy
- The City is developing a consultation process for erecting new towers
- all existing towers will be grandfathered.
- The city has received comments from a bunch of Ottawa hams

#### Joe Norton Award

- Thank you to everyone who has sent in submissions

#### Trip to Kingston

- Doing a return visit to the communication museum in Kingston, also going to the hamfest
  - more info available at <http://www.ve3kbr.com>
  - talk-in on 146.94 T:151.4 Hz
- For Carpooling, we'll meet at 580 Booth St.
  - 8:00 am for the people going to the tour.
  - 7:00 am for the people going to the hamfest too.
- we'll be monitoring VE2CRA 146.94 T:100 Hz
- a signup sheet for carpooling was passed

#### RAC Winter Contest

- Dec 17th, 0000z - 2359z
- Club operations: Sat, 0800EST - 1900EST
- 2 transmitters, CW and phone
- Block scheduling, 5 at a time

#### Award Presentation to Ed Sich

- Volunteer Recognition Award to Ed Sich
- Because of his ongoing efforts towards the annual Hamfest, thank you for all your effort.

#### Presentations for Club Project Ideas

- Mag Loop Antenna
  - 40m -> 10m
  - 90% efficient
  - We're also going to do a build a bias tee module for control of the tuning motor
    - worse case cost of \$350
    - 3 phases. 1) bias tee, 2) capacitor module 3) loop

#### 2011

- Sep. 10 Hamfest
- Sep. 30 Membership Renewal Deadline
- Nov. 4 Joe Norton Award Subm. Due
- Dec. 17 RAC Winter Contest

#### 2012

- Feb. 11, 12 Canada Ski Marathon
- Apr. 11 Homebrew Night
- Jun. 13 OARC AGM and Elections
- Jun. 23, 24 Field Day
- Jul. 1 RAC Canada Day Contest

- Big Wheel Antenna
  - horizontally polarized 2m antenna
  - omni directional
  - \$40 of material (from Metal Supermarket)
  - 3 full wave loops in parallel
  - stackable
- RF Components & Circuits
  - ferrite and powdered iron toroids
  - how to select your core
  - learn how to make inductors and transformers
  - build an SWR kit
  - build a 20m BPF
  - cost \$35
  - 6 days

#### December Meeting

- we are going to do trivia night
- form teams, bring a noise maker and brush up on your trivia

#### Haves and Wants

- VE3CBR : Looking for a good used DX60
- Mike has some items that people could use for center fed dipoles

#### Meeting Presentation

- P25 : The Standards for Public Safety Radio Communications , Peter Gamble, VE3BQP

#### Meeting Closed

- 2011-11-09 21:57



## mk's Words

It's another busy time around here, starting with a meeting on Monday, about future issues of TCA. Then two days of exercises at the Emergency Management College (Collegeville). Then RIGHT after that it's a Long weekend up by Bancroft for the Rally of the Tall Pines. With a record number of entries, it promises to be a challenge for competitors and radio operators alike. As soon as I get back from that, it's unpack/repack for the ARRL 160 CW contest with the VE2OJ crew. After all that, the new compact loop for 160 is ready to go into the sky. I'm holding off until the weather gets worse. (actually, I'm using the coax for something else, and don't want to have to pull it through the attic twice.) Another stint at Collegeville follows on December 8 and 9. It may be routine, but it's always interesting around here.

Looking back, it seems that I have been doing some of these events for a rather long time now. This column, over the years has become the equivalent of what is now a blog. It started somewhere between dial up BBS systems like FIDOnet and the emergence of the Internet. There are other records kicking around here at the station. I keep a calendar on a spreadsheet that grew out of one of those pocket electronic organizers that held phone numbers in the days before cell phones held hundreds of numbers and could access [canada411.com](http://canada411.com) if you needed more. The calendar shows entries for the Tall Pines rally since 1997 - not a long time in the eyes of the old timers, but still a good percentage of the rallies they have held. There are entries for 160 contests also back in 1997. The wallpaper from 160 cw contests starts in 1999. Similarly, the Ski Marathon has been an annual event at VE3FFK every year since 1987. Some of you may have noticed that there is always a notebook in my pocket to record the things I'm likely to want to remember for a day or so. Those go back to the mid 1970's, and so hold fragments of memories of events that go even farther back than the electronic record. Then, there is the good old logbook, which, for all it's faults and omissions, reaches back to the dimmest days of the teen years. I wonder how your long term

memory is doing. Is it all in your head? If so, you're better at it than I am.

73 mk VE3FFK

## Metallic Micro-lattice

A **metallic micro-lattice** is a synthetic porous metallic material, consisting of an ultra-light form of metal foam.<sup>[1]</sup> Its creators claim it is the "lightest structural material" known, with a density as low as 0.9 mg/cm<sup>3</sup>.<sup>[1]</sup> It was developed by a team of scientists from HRL Laboratories, in collaboration with researchers at University of California, Irvine and Caltech, and was first announced in November 2011. The prototype samples were made from a nickel-phosphorus alloy.

To produce the metallic micro-lattice, a polymer template was first prepared using a technique based on self-propagating waveguide formation,<sup>[2]</sup><sup>[3]</sup> though it was noted that other methods can be used to fabricate the template.<sup>[4]</sup> The process passes UV light through a perforated mask into a reservoir of UV-curable resin. Fiber-optic-like "self-trapping" of the light occurs as the resin cures under each hole in the mask, forming a polymer fiber along the path of the light. By using multiple light beams, multiple fibers can then interconnect to form a lattice. The process is similar to photolithography in that it uses a 2D mask to define the starting template structure, but differs in the rate of formation: where stereo-lithography might take hours to make a full structure, the self-forming waveguide process enables templates to be formed in 10–100 seconds. In this way, the process enables large free-standing 3D lattice materials to be formed quickly and scalably. The template is then coated with a thin layer of metal by electroless nickel plating, and the template is etched away, leaving a free-standing, periodic porous metallic structure. Nickel was used as the microlattice metal in the original report. Owing to the electro-deposition process, 7% of the material consisted of dissolved phosphorus atoms, and it contained no precipitates.

Metallic micro-lattices are composed of a network

## SBX-11A SSB Radio

### Spilsbury Communications Ltd.

#### SBX-11A SSB Radio

While trolling around the internet, and in particular, Crown Assets disposal, I came across a fixed channel, SSB, 10-watt radio for sale. Thinking it would make a good QRP rig I put in a bid for \$50 and waited for my winning notification to claim it. Well, when I didn't hear back I went on-line again to see what it sold for and the winning bid was over \$500! Subsequent unit sold for up to \$1,000. This seemed a little high so I did a little research and came up with the following.

It turns out that the Spilsbury SBX-11A Portable SSB Transceiver is a bit of a legend in the Canadian North. This seems to be one of the standard radios for regular and emergency communications in the arctic and other out-of-the-way places.

Mathew Kendall, who worked with the product, (<http://www.matthewkendall.com/electronics/sbx-11a>) has developed a web site (<http://www.matthewkendall.com/electronics/sbx-11a>) devoted to the SBX-11A. The radio design was purchased by A.J. (Jim) Spilsbury (1905-2003) of Spilsbury Communications Limited of Vancouver. The original design was not reproducible and the company had to re-design it extensively. It was manufactured from about 1967 to 1999 initially by Spilsbury Communications and later by Racal Canada in Vancouver. In all about 10,000 units were produced.

In addition to the radio, Spilsbury himself is something of a legend. He was an amateur radio operator in British Columbia in the 1930's holding call sign VE5BR. He started his own airline company and he received the Order of British Columbia in 1993. He operated the following companies starting in 1941: Spilsbury & Hepburn Ltd., Spilsbury & Tindall Ltd., Spilsbury Communications Systems Ltd., and Spilsbury Communications Ltd. The latter was bought by Racal Canada in 1994.

No longer in production, the SBX-11A seems to have

been replaced by a product from another BC company, Paracomm Technologies of Kelowna. Their model PCX-250 Portable HF SSB transceiver looks almost identical to the SBX-11A and is targeted at the same market - desert and arctic travelers. The specifications are very similar but updated for the 21<sup>st</sup> century (eg PLL-based tuning instead of different crystal and coil kits).

For more information on the two radios and Spilsbury the man:

*Spilsbury's Coast* is Jim Spilsbury's autobiographical account of his life on the west coast, including the formation of the radio business. It is co-written by Howard White, published by Harbour. Jim Spilsbury grew up in a tent on Savary Island, squatting on crown land. His story is one of the classic "rags-to-riches" stories in Canadian history. As well as being a brilliant inventor and an ambitious, astute businessman, he had the intangible gift of being in the right place at the right time. In 1923, at the age of 18, primed with a correspondence course in electrical engineering, Jim Spilsbury began building sophisticated radio telephones. Fishermen bought them, loggers bought them, and eventually homesteaders, explorers and even governments bought them. "Radio boomed," Spilsbury recalls, "and it carried me with it." Two other books by Spilsbury are *The Accidental Airline* and *Spilsbury's Album*.

Mathew Kendall's web site (<http://www.matthewkendall.com/electronics/sbx-11a>) has a wealth of information on the SBX-11A including schematics, manuals, sales brochures, and production information.

The Society for the preservation of Antique Radio in Canada also has a web site (<http://mypage.direct.ca/f/fcaery/Spilindex.htm>) devoted to Jim Spilsbury and his company.

The PCX-250 is described on Paracomm Technologies website <http://www.hfradio.ca>.



(Continued from page 4)

of interconnecting hollow struts. In the least-dense micro-lattice sample reported, each strut is about 100 micrometres in diameter, with a wall 100 nanometres thick. The completed structure is about 99.99% air by volume,<sup>[1]</sup> and by convention, the mass of air is excluded when the micro-lattice density is calculated.<sup>[4]</sup> Allowing for the mass of the interstitial air, the true density of the structure is approximately 2.1 mg/cm<sup>3</sup> (2.1 kg/m<sup>3</sup>), which is only about 1.76 times the density of air itself at 25 degrees Celsius. The material is described as being 100 times lighter than Styrofoam.

Metallic micro-lattices are characterized by very low densities, with the current record of 0.9 mg/cm<sup>3</sup> being the lowest value for any solid yet discovered. The previous record of 1.0 mg/cm<sup>3</sup> was held by silica aerogels. Mechanically, these micro-lattices are behaviorally similar to elastomers and almost completely recover their shape after significant compression.<sup>[6]</sup> This gives them a significant advantage over current aerogels, which are brittle, glass-like substances. This elastomeric property in metallic micro-lattices furthermore results in efficient shock absorption. Their Young's modulus  $E$  exhibits different scaling, with the density  $\rho$ ,  $E \sim \rho^2$ , compared to  $E \sim \rho^3$  in aerogels and carbon nanotube foams.

Metallic microlattices may find potential applications as thermal and vibration insulators such as shock absorbers, and may also

prove useful as battery electrodes and catalyst supports.<sup>[4]</sup> Additionally, the micro-lattices' ability to return to their original state after being compressed may make them suitable for use in spring-like energy storage devices.

From Wikipedia

## North Pole Network

In the spirit of the holiday season, some Amateur Radio (ham) operators across the United States have found a way to bring joy to hospitalized children. Thanks to the world-wide range of Amateur Radio equipment, it's possible for hams to communicate with other hams almost anywhere on earth, including the North Pole. Fortunately, Santa Claus is able to take time from his busy gift production duties to speak individually to the hospitalized kids.

In southern California, members of the Hospital Disaster Support Communications System (HDSCS) annually take their portable ham sets to Children's Hospital of Orange County (CHOC). Using the North Pole Network (NPN), which purports to use a special amateur satellite link, ionospheric propagation and VHF relays, kids can talk one-on-one to St. Nick without having to leave their hospital rooms.

The globe-spanning NPN link means that HDSCS doesn't have to rely on ordinary Santa-helpers who can only ask, "What is your name and what do you want for Christmas?" As one patient put it, we talk directly to "the Man, the real one!" During NPN contacts, Santa is in his North Pole office where he has access to his mega-computer system. Thanks to the computer and lots of advance "elf" work by hospital staff, Santa already knows which patient is in each hospital room and he has a lot of information already stored about each child and family. The NPN connection gives Santa a chance to make final updates to his gift request database before loading his sleigh on Christmas Eve. It also affords him a chance to send greetings and wishes for happiness and a return to good health.

From <http://www.hdscs.org/npn/npn73.html>

## Spilsbury SBX-11A Radio





Ottawa Amateur Radio Club

# Groundwave

December 2011

## Radio Amateur Hall of Fame

### Trivia Night

In what is now an annual tradition for the December meeting, Trivia Night will be held on December 14 and just the way you like it - loud and crazy. So form your teams, and make a noisemaker!

For the benefit of new members, this means that, instead of listening to a speaker, you will be challenged to answer a broad range of questions related to Amateur Radio, à la Reach for the Top. As per usual, you can either play individually, or else form teams of any manageable size (max 4 players). Don't forget to come up with a goofy radio-related name for your team (how about "One Antenna with Three Radials"?).

Prizes will be given to teams who answer the most questions correctly and to runners-up. Each individual or team will need to bring a noisemaker of some kind, in order to signal the moderator when you have a right answer. Your noisemaker could be as primitive as a boy scout whistle or as complex as a buzzer circuit. The more homebrew it is, the better; that way you can enter it in the mini homebrew contest afterwards. If you forget your noisemaker, don't worry—one will be assigned to you. However we're not promising anything dignified: remember the squawking rubber chicken?

The evening promises to be great fun as always.

Janice Neelands, VA3PAX

### Japanese Ham Radio Team on Christmas Island

A group of seven Japanese ham radio operators consisting of Takeo JA3BZO (VK9XA), Hiroko JH3PBL (VK9XL), Shimatake JI3DNN (VK9XN), Masumi JA3AVO (VK9XO), Nakasako JA3UJR (VK9XJR), Kunio JA1CJA (VK9XXY), and Nishimura JA3HJI (call not yet known) - will be active January 14th through 20th from Christmas Island (OC-002). They will operate on 160 through 6 m using CW, SSB and digital modes. QSLs via home calls. Find more information at [www.nakade.jp/vk9x.htm](http://www.nakade.jp/vk9x.htm) <<http://www.nakade.jp/vk9x.htm>>.

The Board of Trustees of the Canadian Amateur Radio Hall of Fame has appointed John S. (Jack) Belrose VE2CV / VE3CVV of Ottawa, ON to the Hall of Fame. Jack will be presented with this award at a meeting to be arranged in Ottawa in early 2012, at which time a more detailed summary of his contributions to amateur radio will be published in The Canadian Amateur magazine.

Nominations for the Hall of Fame must be submitted by Sept. 30th annually. The appointment is to recognize an amateur for outstanding achievement for sustained service to amateur radio in Canada, or amateur radio at large.

The Board of Trustees consists of an amateur radio representative from each province of Canada.

Ed Frazer VE7EF  
Chair, Board of Trustees  
Canadian Amateur Radio Hall of Fame  
Radio Amateurs of Canada

### Aircraft Detection Technology Before the Invention of Radar



## 2011-2012 Membership Application/Renewal

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

- Single \$25 (\$20 after Feb 1, 2012)
- Family \$30
- Junior \$15 (under 18 years of age)
- New Ham - Free (if licensed in current Membership year)
- Emailed *Groundwave*     Mailed *Groundwave* (add \$10.00)

**Please Note: Membership year is September 1, 2011 to August 31, 2012.**

Family Name: \_\_\_\_\_ First Name/Initials: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Prov: \_\_\_\_\_ Post Code: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Work Phone: \_\_\_\_\_

E-mail address: \_\_\_\_\_ (For *Groundwave* mailing)

Callsign(s): \_\_\_\_\_

Qualifications:  Basic     Advanced     Morse Code  
Year Licensed: \_\_\_\_\_ RAC Member?    Yes

### Other Family Members

Name: \_\_\_\_\_ Callsign(s): \_\_\_\_\_

Qualifications:  Basic     Advanced     Morse Code  
Year Licensed: \_\_\_\_\_ RAC Member?    Yes

Interests: \_\_\_\_\_

Comments/Suggestions: \_\_\_\_\_

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.

Do you want an **OARC NAME TAG**?    Yes     Second or Replacement    Yes

ORDER DETAILS - As to appear on badge:

First Name \_\_\_\_\_ Call Sign \_\_\_\_\_