Ottawa Amateur Radio Club

Groundwave

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

From the Editor:

January 2013

If you are a member of the OARC and are not receiving the Groundwave by email as you are expecting, please check the OARC website to make sure that we have your correct email address listed. If it is not correct, contact the membership secretary.

The speaker for the January meeting will be Bryan Rawlings, VE3QN, giving a presentation from the last AGM, "One Hundred Years of Radio Regulation".

Hope to see you at the meeting.

Happy New Year to one and all.

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

In This Issue....

Ottawa Amateur Radio Club
Groundwave
January 2013

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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 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.

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.

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.

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.

Ottawa Amateur Radio Club
Groundwave

January 2013

December Minutes

Meeting started around 19:35.

News or Announcements:
We now have 74 paid up members, compared to 59 at this time last year.

The 2012-13 project will be "working with transmission lines", headed by Dave Conn VE3KL. The project is expected to begin in late January and take place over 5 or 6 weekend mornings (likely Saturdays). About 10 members have paid their $20. deposits, with a similar number on the list but still unpaid. Contact VE3KL (his call sign at rac.ca) to join the project.

Preparations for the RAC Winter Contest at the Diefenbunker went well. About 10 members are signed up to participate on Dec 29.

This year's ARRL January VHF contest will have a new category for 6m to 70cm, FM only operators.

April 18 is World Amateur Radio Day. The theme this year will be "Amateur Radio: Entering its Second Century of Disaster Communications", recognizing the first recorded use of amateur radio to provide communications in a natural disaster that took place in 1913 during widespread flooding in the Midwest United States.

There will be no Joe Norton Award made in 2012. Recent amateurs (licensed in the last 3 years) are urged to look at the Joe Norton Award section of the web page and apply next year. It's free money for some new ham.

Haves and Wants:
Bob, VA3QV, reminds us that he is still accepting contest scores for comparison / publication in the Groundwave in the "Running with the OARC" activity.

Show and Tell:
Ian, VE3IGJ showed us a scale model of a helicopter heat diffuser. The model was built using 3D printer technology.

Dates to Remember

2013

Feb. 9, 10	Canada Ski Marathon
Apr. 10	Homebrew Night
Jun. 12	OARC AGM and Elections
Jun. 22, 23	Field Day
Jul. 1	RAC Canada Day Contest
Sep. 7	Hamfest
Sep. 30	Membership Renewal Deadline
Nov. 1	Joe Norton Award Subm. Due
Dec. 28	RAC Winter Contest

Interesting Contacts:
Mike, VE3FFK: Alaska and Hawaii on 160m, South Africa on 10m, Europe and South America on both, in contests.

Trivia contest:
Organized by Greg, VE3YTZ and hosted by Paul, VE3ICV. The teams were:
Roominators
Spark Gaps
Red Cups
H,R Puff & Stuff
Twenty Six Hundred
Weak Signal Beacons
Antenna Erections
Chief Heckler

The winner was the Red Cups, with Twenty Six Hundred second and a tie for third between the Roominators and Spark Gaps.

The 50/50 draw of $9.50 was won by Alan, VE3ZTU.

The meeting ended around 21:25.

-Mike Kelly VE3FFK

mk's Word

Up and down and back again: A cheapo dollar store audio adaptor committed suicide, blowing itself apart inside my cheapo Wouxun handheld. A little persuading with a needle convinced some of the bits to come out of the socket. Unfortunately the rest wanted to stay inside. With a T8 torx, a couple of prying tools, and considerable misgivings, I opened up the rig. Another down. The flex cable connecting the front to the back half of the radio came loose. Nothing to do about that now, just get the adaptor bits out of the radio and then worry about the cable. Time for an UP. After half an hour or so of struggle the last of the bits left the radio. Another hour got the flex cable back in place. Closing the radio was another small chore. Finally it's big test time. No smoke, the display lights up and wonder of wonders, audio comes out of the speaker. With the possible exception of reaching the other side of the tight rope (I wouldn't know), there's nothing like the feeling when you check out a piece of gear you have just finished and having it work. It doesn't matter whether you build, re-build or repair it, it's great to hear the thing work for the first time.

In the FUN department were the ARRL contests on 10 m and 160 m. There was a tune up session at the Diefenbunker. We got the vertical antenna to play, and got the amplifier to talk to the voice rig for the RAC winter contest out there. That was fun. I'm looking forward to even more fun when we actually do the contest as VA3RAC.

More ups, in the past week, three new hams have joined us, all with excellent marks, all look like they will fit right in with the culture of amateur radio. Who knows, I have a feeling there may even be a future Joe Norton winner among them. Maybe it's New Year's resolutions for 2012 running out, or advance knowledge of new toys under the Christmas tree, but there seem to be an unusual number of candidates these days. Conducting exams is one of the fun things that mark up my calendar, so I hope there are more to come.
The Rally guys are thinking of doing a weekend "cram session" course in Ottawa. The idea is that candidates study on their own or in groups, more or less independently, then get together for a weekend to go over the parts they don't understand, then write the test. I'm a little skeptical about this sort of course. On the one hand, it gives them a good chance of passing the test, but on the other, it doesn't teach them much of the day to day operating side of things. Maybe that isn't so important for hams who are on the air for only one or two days a year. It is also perfectly possible to pass the exam by studying just the question bank, with no prior exposure to amateur radio. Some people do this and are pretty good, active hams when they come out the other side. Some of the "one day a year" hams who got into it so they can use radio for their other hobby, whether car rallies, sailing or snowmobiling actually ended up becoming what the old folks call "real hams" after a while. So what do you think? Are weekender cram courses a good thing on balance or not?

Sorry about the changes of tense in the previous paragraphs, but that happens with all time travelers.

By the time this reaches you it will be time to start gearing up for the Ski Marathon. There may be another "test and tune" session before then, as there was before the Tall Pines car rally. Stay tuned. Stay warm.
73.. mk

RAC Bulletin - Distracted Driving Update – Ontario Regulations Changed

In light of the prorogation of the Ontario Legislature on October 15, 2012, the amateur radio community in Ontario has raised questions regarding the status of the 5-year extension to the amateur radio exemption in the Display Screens and Hand-Held Devices Regulations that was announced by Minister of Transportation Bob Chiarelli on Septem-

(Continued on page 8)

Wires and Wireless

In the beginning, all realtime communication across distances was wireless - bonfires, smoke signals, semaphores. Centuries of wireless passed before Samuel Morse pioneered telegraphy in 1837 with electrical transmission over wires. By the time Alexander Graham Bell invented the telephone in 1876, wires had already crossed the American continent and the Atlantic Ocean.

Guglielmo Marconi demonstrated modem wireless telecommunications in Italy in 1895. Then in 1899 he sent the first radio signals in America from a ship covering the America's Cup race to a receiver at a lighthouse overlooking New Jersey's Sandy Hook Bay. Standing at that very lighthouse, looking down on the bay below, I have wondered: Why demonstrate wireless in this way?

I tried to put myself in Marconi's shoes. He aspires to be a great entrepreneur. He has this magic new box that sends telegraphy without the need for wires, but what is it good for? Is there a market? After all, there are already wires everywhere of importance, and have been for decades. The answer seemed to lie below me, there in the bay. No wires can stretch out to ships at sea.

Many of Marconi's early deployments featured ship-to-shore and ship-to-ship transmission, culminating on the infamous day of 15 April 1912, when the Titanic sank and Marconi's wireless telegraphy played a critical role in the rescue of the survivors. However, wireless became mainly a conduit for commercial broadcast. For most of the 20th century, personal, point-to-point communication was done through wires, and with the rise of the cable industry, even television transmissions moved from air to earth.

Eventually, plans for cellular telephony began to emerge. AT&T was pondering the same questions as Marconi - what was wireless good for, and was there a market for it? The answers came back from a consultant: Wireless phones were good only for emergency communications, and the market would be small. But we have since learned the opposite - that wireless is equally good at the trivial ("I'm here already, where are you?") and the market is huge.

I can hardly fault the consultants. On the day that Apple introduced the iPhone in 2007, I got a call from a journalist representing a large newspaper. What did I think of Apple's new phone? I told him that this phone would revolutionize the wireless business and create a whole new vision of phones as smart appliances.

Well, no, I didn't tell him that; I only wish that I had. I actually said something not worth printing either in the newspaper or here. Apparently I was not alone. A designer from another cellphone maker has told me regretfully that its own focus groups had not liked the idea of a touchscreen - the screen was small, and people don't have pointy little fingers.

After a century wires, now everything is wireless. I see the forlorn public phones at airports. I'm not even sure if they work anymore, and if you try to use one, passersby would look on you with pity. I think that the whole idea of being tetherless is a compelling state of mind. Take the wireless mouse. It's confined to its pad. It doesn't go out and roam the world. Why does it need to be wireless? Yet I like it that way. Give the little creature some freedom. When I am in a hotel room there is usually a choice of wireless or wired, right at the desk where I set my laptop down. I invariably choose wireless, even though the connection is almost surely worse.

The pendulum has swung, and anything that can be wireless must be wireless. With 4G, more and more people are even getting their broadband access through the air. Nevertheless, all that wireless access is but a surface coating over a gigantic, unseen, wired infrastructure beneath. One of my research friends used to say, "Wireless isn't." So the curious thing is that in the last century, broadcast was all wireless and personal communication all wired; now it's exactly the reverse - but stay tuned.

Robert Lucky, IEEE Spectrum, vol 49, no 11

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Transmitter Power, Antenna Gain, and Coax Loss Trade-offs

By Ken Larson, KJ6RZ

[Ed. I think I may have published this before. But it bears repeating!]

Introduction and some background:

In the 1950s and 60s many hams built their own transmitters for the simple reason that commercial transmitters were too expensive. For example, a Johnson Viking II transmitter cost $300, which doesn't sound too bad until you stop to consider that a new Ford or Chevy cost $1,000. The alternative was to buy cheap war surplus radios and use the parts to build one of the transmitters shown in the Radio Amateurs Handbook. In a way, that was more fun. As far as power was concerned, you had control! You could push your transmitter as hard as you dared, to squeeze every bit of power out of it, even to the point where the plates of the transmitters output vacuum tubes glowed cherry red.

I was convinced in those days that if I could just get another 20 watts of output from my transmitter that it would make all the difference in the world at the receiving end. If I could just get those extra 20 watts that rare DX operator in a distance land would see my signal jump from a pitifully weak whisper to a loud boom that he could not ignore, and I would get that contact. Today I know that little extra power would not have made any difference at all. However, I still have an intense desire to push my transceiver to its maximum power output to get a DX contact. But it doesn't stop there. I want every dB of gain that I can possibly get out of my antenna. As far as coax is concerned, I want that big, heavy, hard to handle, expensive coax because I don't want to loose any of my valuable watts getting from my transmitter to the antenna. Does all of this pushing, shoving, and optimization really make a difference? Probably not!

It turns out that you must increase the output power of your transceiver by at least 3 dB in order for the person you are talking with to notice any change in your signal strength. For your signal to sound twice as loud, you must increase your power out by about 9 db.

How much is a 3 dB increase in power?

A 3 db power gain is equal to a times 2 increase in power (3 dB = x2). So, if your transceiver is running 100 watts, you must increase your transceivers output to 200 watts in order for the person you are talking with to notice any increase in your power.

Sound twice as loud!

If you wanted your signal to sound twice as loud, you must increase your power to 800 watts from 100 watts (9 dB = 3 dB + 3 dB + 3 dB = x2 x2 x2 = x8)! Clearly, increasing power by 20 watts, say from 100 to 120 watts, is not going to make any difference at all to the person receiving your signal. On the other hand, if you cut your power in half from 100 watts to 50 (a 3 dB decrease in power), the other operator will hardly notice any drop at all in your signal strength.

So why beat your transceiver into the ground by running it at full power?

If you run at 75 watts instead of 100, your transceiver will run cooler and no one that you talk to will know the difference. There is someone who may notice the difference however, your neighbors. If you are having interference problems, cutting your power level in half could solve those problems without having any noticeable affect on your ability to make contacts. For example, when I operated on 10 meters at 100 watts, my lawn sprinklers would turn on whenever I keyed my transceiver. When I dropped to 50 watts, the problem went away. Running at 50 watts turned out to be a great water conservation technique.

What about antennas?

The same 3 dB rule applies. You can go to a lot of trouble and expense on 40 and 80 meters putting up phased vertical arrays to achieve 2 or 3 dB of gain. But 3 dB of gain will hardly be noticeable to anyone listening to your signal, so why bother? The threshold in antenna cost versus performance gain is around 6 dB. If your antenna provides 6 dB of gain, operators listening to your signal will notice a difference. Your signal will not be twice as loud, remember you have to get 9 dB of gain for that to happen, but at 6 dB the gain will be noticeable.

Comparison Table

The table below puts antenna cost versus performance gain somewhat into perspective. This table compares various yagi beam configurations to the performance of a dipole. The table shows the dB gain, relative to a dipole, achieved by each of the antennas. The antennas get more expensive as you go down the table. The table also indicates the increase in signal strength observed by the S-meter

on a distant transceiver that is receiving your signal.

What about transmission lines?

The cost verse performance trade-off for the transmission line connecting a transceiver to an antenna is similar to the antenna cost trade-off. However, this time the trade-off relates to the difference in loss between two types of transmission lines, for example, between two different grades of coax cable. As an illustration, 100 feet of LMR 400 coax used to connect a transceiver with a 10 meter antenna will produce a loss of 0.7 dB. If standard RG-8/X coax is used instead, the loss will be 2.0 dB. The difference in loss between the two types of coax is 1.3 dB. Is it worth buying the more expensive LMR 400 coax to reduce loss by 1.3 dB? Probably not.

The strength of your signal in this example will sound the same to other hams regardless of which type of coax you use. Notice in making a comparison between two types of coax (or two types of antennas, etc.) it is the difference in loss (or gain) that is important, not the actual loss (or gain). At UHF frequencies, the differences in loss will be greater. 100 feet of LMR 400 coax at 440 MHz has a loss of 2.7 dB. In comparison, RG-8/X has a loss of 8.1 dB. The difference in loss is 5.4 dB. In this case the more expensive LMR 400 coax may be worth the money. LMR 400 coax is relatively thick, stiff, and difficult to work with compared to RG-8/X, particularly inside the radio shack. Suppose that you use 75 feet of LMR 400 to get from your 440 MHz antenna to the wall outside your radio shack. Then you use a 25 foot length of RG-8/X to come through the wall and into the radio shack because RG-8/X is smaller and easier to handle in the shack. What performance penalty will you pay for doing this? The loss of 25 feet of RG-8/X is about 2.03 dB. If you brought the LMR 400 all the way into the shack, the loss associated with the additional 25 feet of LMR 400 would be 0.68 dB. The difference in loss is approximately 1.36 dB, a negligible amount. Using RG-8/X within the radio shack is thus a good choice since it simplifies cable management within the shack and provides negligible additional loss.

Antenna	Gain dB	S-unit	Comment
Dipole	0	0	Baseline
2-element Yagi Beam	4	0.6	Marginal performance in-
3-element Yagi Beam	6	1.0	Good performance
10-element Yagi Beam	12	2.0	Excellent performance in-

The Total System!

In making trade-off comparisons, you have to look at the total system as well as the individual components. For example, a 2-element 10 meter yagi antenna (4 dB gain over a dipole) fed by LMR 400 coax (1.3 dB gain over RG-8/X coax) produces a total system gain of 5.3 dB compared to a 10 meter dipole feed with RG-8/X coax. The total system gain of 5.3 dB probably is worth the effort, even thought the gains between the individual components was not that attractive.

The system trade-off can easily go the other way as well. At 440 MHz, 100 feet of LMR 400 coax has a 5.4 dB performance gain over RG-8/X coax and is clearly better. However, if your transceiver has power settings of 5, 10, and 50 watts, and you can hit all of the area repeaters at 10 watts using RG-8/X coax, why upgrade to LMR 400? Unless you are running off batteries, using LMR 400 coax so that you can drop your transmit power to 5 watts probably is not worth the trouble or cost.

In conclusion, when making trade-offs between transmitter power, antenna gain, coax loss, and total system performance, it is the dB difference between the options available to you that is important. A difference of 3 dB will not be apparent to the hams that you are communicating with. They will hardly notice the difference if you run your transmitter at 50 watts instead of its maximum 100 watt output power.

Bottom line!

A difference of 3 dB or less between two antennas, two types of coax, or two system implementations is usually not sufficient to justify higher costs. However, a difference of 6 dB may justify the more expensive approach.

Antimagnet

It is quite amazing that almost 160 years after Maxwell equations were first developed, we are still finding new solutions based solely on them!

(Alvaro Sanchez of the Universitat Autonoma de Barcelona, Spain)

Can Maxwell's equations be harnessed to design an "antimagnet" : a cloak that would, on one hand, conceal the static magnetic field produced by an object inside and, on the other, would not perturb an external static magnetic field? If such a cloak were to be realized, one could imagine passing a forbidden metal object undetected through a metal detector (thereby creating a security nightmare) or, on a grander scale, hiding a submarine from a magnetically triggered underwater mine.

Inspired by earlier work from John Pendry's metamaterials group at Imperial College (London), Alvaro Sanchez (Universitat Autonoma de Barcelona) and his colleagues have reported in *Science* both the theoretical design for an "antimagnet" and an experimental set up to demonstrate the concept:

Invisibility to electromagnetic fields has become an exciting theoretical possibility. However, the experimental realization of electromagnetic cloaks has only been achieved starting from simplified approaches (for instance, based on ray approximation, canceling only some terms of the scattering fields, or hiding a bulge in a plane instead of an object in free space). Here, we demonstrate, directly from Maxwell equations, that a specially designed cylindrical superconductor-ferromagnetic bilayer can exactly cloak uniform static magnetic fields, and we experimentally confirmed this effect in an actual setup.

The new "antimagnet" cloak has an inner layer fabricated from a high-temperature superconducting tape, which, on its own, repels the magnetic field. The outer ferromagnetic layert is made from a thick FeNiCr alloy sheet and, on its own, it draws in the magnetic field lines. The dimensions and the material properties are computed based on Maxwell's equations, so that the counteracting effects of the layers are balanced to eliminate any distortion of the external static magnetic field. Since for a static (dc) situation, the magnetic and electric fields decouple, the design of the cloak involves only the magnetic permeability of the materials.

The Sanchez group tested their "antimagnet" cloak on a small scale (12.5 mm x 12 mm) in a static magnetic field of 40 mT. Since the design is magnetostatic, there is wavelength dependence and, in principle, the cloak can be scaled up and down in size. However, the so-called high-temperature superconducting tape used in the fabrication requires liquid-nitrogen temperatures, so real-life applications to metal detectors and submarines are still futuristic.

Rajeev Bansal, *IEEE Antennas and Propagation Magazine*, vol 54 no 5

(Continued from page 4)
ber 24, 2012.

To further address the concern, Radio Amateurs of Canada is pleased to inform Ontario hams that Ontario Regulation 253/12, which can be found at: http://www.e-laws.gov.on.ca/html/source/regs/english/2012/elaws_src_regs_r12253_e.htm has amended the amateur radio exemption sections of former Ontario Regulation 366/09. Specifically, the “January 1, 2013” portion of section 13(1) and the entirety of section 13(2) of Ontario Regulation 366/09 were struck out and replaced with section 3(1) and 3(2) of Ontario Regulation 253/12, stating the new January 1, 2018 deadline.

Radio Amateurs of Canada will continue to pursue a permanent exemption for Amateur Radio operators in Ontario. Similar exemp-

Solution to Propagation Problem

The problem was correctly solved by Doug Leach, VE3XK.

The solution to the December 2012 problem given in Groundwave by VE3KL about propagation (Critical Frequency and MUF) can be found by applying the following formulas which can be found in http://en.wikipedia.org/wiki/Plasma_oscillation.

Fc = 8980*Sqrt(n) which is the maximum frequency for total reflection (vertically travelling waves) in an ionized layer, where Fc is the frequency in Hz, and n is the electron density in number per cubic centimeter.

Frequencies above Fc will not be reflected and the wave travels right through the ionized layer without attenuation. Note that for very low electron densities at the bottom of the F2 layer, Fc will be very small and most HF frequencies will not be reflected. The wave continues travelling until it approaches higher densities.

MUF(Maximum useable frequency between two radio stations) = Fc/sin(alpha) where alpha is the take-off angle of the radio wave.

In our case the maximum electron density equals 500,000 so Fc = 6.35 MHz. Alpha = 25 degrees so the MUF = 15 MHz.

Note that these are approximate answers since the model of linearly increasing and decreasing electron density only approximates the real situation where the electron density increases and *gradually* decreases smoothly.

In physics and chemistry, plasma is a state of matter similar to gas in which a certain portion of the particles is ionized. This means that the F layers in the ionosphere contain free electrons which are capable of interacting with radio waves under certain circumstances.

Here are a few references about propagation that you might find interesting.

http://en.wikipedia.org/wiki/F_region
http://www.spacew.com/www/fof2.html
http://en.wikipedia.org/wiki/Atmosphere_of_Titan

Dave Conn, VE3KL

Canadian Ski Marathon

CSM 2013 - 40 Years of Amateur radio

February 9 and 10, 2013 are the dates for the 47th Canadian Ski Marathon. This will be the 40th year that amateur radio has supported the event.

Each year we provide more than 25 amateurs for communications support for operations. We would like to see you out there.

You can get more information at http://www.radio-1.ca/

For those who have volunteered in the past you can update your record at : http://db.radio-1.ca/volunteer_list.php

If you would like to volunteer this year and your name is not on the current volunteer list you can contact Harold at:

radio1@admin2.ca or va3unk@rac.ca.

Hope to see a lot of you out this year. Bye for now,

Harold, VA3UNK, CSM Radio Coordinator

RAC Bulletin - Regulations Amending the Contraventions Regulations

There has been an announcement in the Canada Gazette as to changes in the Contraventions regulations concerning the enforcement of the Radiocommunication Regulations.

These changes will allow peace officers including Municipal, Provincial and RCMP police officers to issue tickets for certain offences under the Radiocommunication Regulations.

The changes may be seen at:

<http://www.gazette.gc.ca/rp-pr/p2/2012/2012-11-21/html/sor-dors236-eng.html>

Bill Gade, VE4WO , Regulatory Affairs

2012-2013 Membership Application/Renewal

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

☐Single $25 ($20 after Feb 1, 2013)
☐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, 2012 to August 31, 2013.

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 _____