

Ottawa Amateur Radio Club

# Groundwave

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September 2016

Since this is the first newsletter of the 2016/17 year I would like to thank my regular contributors to the Groundwave, Mike Kelly for his entertaining monthly column, and Greg Danylchenko for various news items. On behalf of the whole club I would also like to thank the executive for its work over the past year. A special thank you goes to outgoing executive member Janice Neelands who is retiring from the executive after 13 years—11 as treasurer, and never forgetting her role as Field Day chef.

Remember Hamfest is on Saturday, September 10 at 09:00 and the Portable Station Demo is Saturday, September 17.

The speaker for the September meeting is Dave Green, VE3TLY. The title of Dave's talk is "Off Grid at VA2GN".

See you at the meeting in the Councillors' Lounge.

Ian Jeffrey, VE3IGJ  
Editor

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



**Next Meeting 7:30 pm, Wednesday, September 14th  
in the Councillors' Lounge at Ottawa City Hall**

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Ottawa Amateur Radio Club

# Groundwave

*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 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 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 Rubber Boot Net** runs week days at 07:30 on VE3MPC, 147.150 + 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 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 Phoenix Net** meets Tuesday evenings at 20:00 on VE3MPC (147.150+, no tones).

**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.



## Dates to Remember

### June Minutes

19:40 Meeting started by Glenn VE3XRA

#### Guests

Nicolas (no call)

#### Reports

Membership (Janice)

Lots of leftover badges available.

#### Dayton Hamfest (Wayne VE3CZO)

35th year for Wayne. Goes down on Thursday and stays at the local KOA. Checked out the Air Force Museum amongst many other places. Goes to Dayton to get unusual items. This year got a 1.5AH rechargeable battery for only one dollar. Also a USB port meter (us\$4) for measuring USB voltage and current/power. Plus a bunch of other things. Friday afternoon and Saturday, it rained. Seems that there were less vendors both inside and outside this year, but still at least 10 times the size of our hamfest in September. Checked out several seminars such as an ARRL one targeting children. Glenn: Glenn spent most of his time at The RAC booth. Probably 150 Canadians came by the booth (already members, so didn't sell many memberships). But Glenn did manage to get several Americans to buy memberships in RAC.

#### IEEE Robotics Competition (Glenn)

Dave VE3KL, Glenn VE3XRA, Barry VE3NJK and Norm VE3LC participated from OARC/OVMRC. Glenn's impression is that it was definitely worth our time to be there, especially to meet the children's parents, who expressed lots of interest in OVMRC's course next fall. Several parents requested a presentation on amateur radio targeted to their children.

Norm: Fair amount of interest expressed by kids (grades 5-12) in amateur radio. Parents attending the competition seemed more interested in getting their children interested in technical matters rather than sports. Norm had an RF spectrum chart that was of significant interest to both kids and parents, especially one particular physics teacher. Norm had on display several kits including a Raspberry Pi SDR transceiver. Norm has al-

#### 2016

- Sep. 10 Hamfest
- Sep. 30 Membership Renewals Due
- Nov. 1 Joe Norton Award Subm. Due
- Dec. ?? RAC Winter Contest

#### 2017

- Feb. 11, 12 Canada Ski Marathon
- Apr. 12 Homebrew Night
- Jun. 14 OARC AGM and Elections
- Jun. 24, 25 Field Day
- Jul. 1 RAC Canada Day Contest

ready received several inquiries about the OVMRC ham radio course.

Barry: Lots of computer-oriented kids who were fascinated by the linking of the Raspberry Pi with SDR and ham radio.

Dave: Praised Norm & Barry's booth setup. Lots of high-tech stuff. Our table was just "buzzing" with lots of people coming by. Lots more interest in our booth than a nearby commercial table which was mostly a static display.

Jeffery, VA3PEW: Glad that the ham booth worked out, and hopes that we can do the same thing last year.

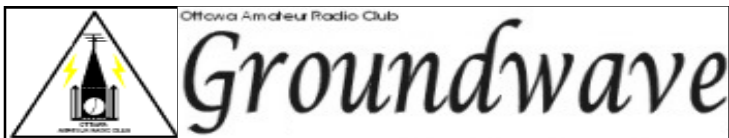
Rideau Lakes Cycle Tour (Margaret VA3VXN) Assignments have been sent out, but Gord VE3FRB would probably appreciate having volunteers on standby. If you're volunteering, bring your red hats.

#### VHF Contest (Glenn VE3XRA)

WCARC organizing a 50+ MHz station, including laser communications. Visitors most welcome as are volunteers to help operate on the weekend and set up on Friday and Monday. Please let Glenn know if you're interested. Rovers are also welcome. Will check local repeaters for rovers at 20 minutes after each hour.

Lap the Gats (Mike VE3FFK)

*(Continued on page 4)*



## mk's Word

It's half past August, and by the time you read this, summer will be even closer to being done. So what happened to all those plans from the spring? Around here, not much. A few chores got done, more didn't. One project that wasn't on the agenda got started... I decided I needed a 6m Moxon, so got the first 80% of that built. If things go the way they usually do around here, the second 80% will likely be finished the morning of the next VHF contest. Along the way a little 2m version got put together. A few exams got written, resulting in a few new hams. The usual events, such as the Canada Day contest and the MS bike tour went on without any drama. The Capital City Net and others have continued on 2m without fail on weekday evenings through the summer. A lot of books got read, and the porch got a lot of use but not much hamming went on. Maybe the low sunspot numbers have something to do with it, but I don't think so. Among everything else I have been reading was a piece in an old CQ magazine about one's "personal sunspot low", where for what ever reason a ham gets to the point where they can walk by the rig without turning it on to see what is going on in the spectrum. There was a time when I dreamed of having a rig like my current one, nearly wore out the ads in the magazines, and imagined that every spare minute would be spent tuning around, and making contacts with interesting and rare stations. Somehow that pull toward the chair in front of the rig has given way to the pull of the chair with the bookshelf beside it. Looking at the logbook, it has happened before. The longest was a decade, although even then I was occasionally stopping in at the Carleton U club in my early years as a university employee. Even during these down times, there was still an occasional flyer from a dealer, and the reminder from the Government department of the day about renewing the licence. Somehow I always managed to find the money to keep my call sign alive, even if I wasn't using it from one year to the next. That means I must have been planning to get around to operating again some day.

Anyway, here is something to do when you just don't feel like turning the rig on....

Imagine you are a ham from 25, 50, or 100 years ago, brought into a modern ham shack. What surprises you? What dismays you? What is still familiar to you even after that big a jump? What would you want to bring back to your own time? Now imagine your 2016 ham self being transported back a similar distance and ask the same questions. (For some of you, it is easy enough to imagine the first two jumps, since you were already hamming back then - I don't think we have anyone around here who was hamming a century ago)

Let me know what you come up with.  
73  
mk VE3FFK

*(Continued from page 3)*

Sunday, June 19. Can still use some more operators. Please contact Mike at [ve3ffk@rac.ca](mailto:ve3ffk@rac.ca).

Field Day (Greg VE3YTZ)

June 25-26. Greg had a presentation prepared, and described the purpose of Field Day.

Location: Corkery Community Centre (location shown on OARC website).

The Field Day search committee (Dave VE3KL, Harrie VE3HYS, Mike VE3FFK, and Greg) spent much time checking out various locations, including taking RF noise level checks. Lees campus location (uOttawa) was the best candidate and negotiations initially went very well. However, they eventually told us that the location was unavailable due to security concerns. Due to the short time frame, we have resorted to the Corkery CC.

Setup: Looking for a team to help with setup on Friday afternoon. Looking for a tent suitable for operating CW/phone, ie, large enough to stand up in and sit at a large table. Anyone that can come out at 10:00 on Saturday to help set up would be appreciated. We eat at 13:00 and 18:00 Saturday, and breakfast at Sunday. We operate as 2 Alpha Eastern Ontario (2A EON), ie, we will be operating two main transmitters independent of commercial power comprised of CW and phone stations, and a VHF/UHF station. We may also have a GOTA station.

*(Continued on page 5)*



(Continued from page 4)

**Operating:** Scores are recorded on computers, then amalgamated for a total combined score which is then submitted to ARRL.

**Summary:** A very relaxed event. You can come & go as you please. If

an operating position is vacant, don't hesitate to pick up a mic! Bring a lawn chair. Janice would like to know if you plan to be there (for meal planning). But most importantly: Have Fun!

Janice VA3PAX: The Corkery CC has many benefits, it's cheap & no bureaucracy.

**Portable Station Demo (Greg VE3YTZ)**

September 17. Andrew Haydon Park. Breakfast at Kristie's at 08:00. Setup 09:00 to 10:00. Operate from 10:00 to 12:00, then teardown. Done by 13:00. A foxhunt will also occur simultaneously with the Portable Station Demo.

**Carp Hamfest (Ed VE3WGO)**

Saturday, September 10. Ed commented that he is short volunteers this year and could use some more. Ed passed around a volunteer sign-up sheet.

**Foxhunt/bunnyhunt/transmitter hunt (Norm)**  
Held last Saturday (June 4) at Petrie Island. Two microtransmitters sending CW ID's on FM frequencies. Good participation with lots of different directional antennas on display. Norm commented particularly on Dave VE3KL's antenna and Dave VE3TLY's antenna.

**Haves & Wants**

None

**Interesting Contacts**

Bryan VE3QN: LY2KR in Lithuania on 20m CW this week. Confirmation of the LY2 station was Bryan's 100th confirmed CW contact to finally get his CW DXCC.

**Show & Tell**

Jeffery: Presentation of his Kenwood TM-D710 radio installation in his Mazda 3.

**Awards**

Glenn presented Dave VE3KL with the Home

Brew judges award. Glenn commented that the Home Brew Peoples Award was awarded to Ying

VA3YH. Ying was not present, so he will be presented his award at a later date.

Glenn then announced that Bryan VE3ZRK is this year's Volunteer Award recipient. Bryan's award will be formally presented to him at the Carp Hamfest.

**AGM**

**Annual Summary of OARC Achievements (Tyler VA3DGN)** Tyler presented a summary of what we did over the past year.

**Budget (Margaret VA3VXN)**

Currently we have four GIC's for a total of about \$57,187 and \$709 cash in the bank. With unexpected income from Peter Hafichuk's estate, Carp Hamfest, and costs less than expected, last year's budget ended up with a surplus. For the next year, income and costs are projected to be result in a deficit of about \$600, but if the year is similar to the last several years, we will probably end up with a small surplus. Moved by Dave VE3TLY, seconded by Bryan VE3QN. Carried.

**Elections (Bryan VE3QN)**

Bryan listed the following as standing for the executive for the next year:

**President: Glenn VE3XRA**

**Vice President: Tyler VA3DGN**

**Treasurer: Margaret VA3VXN**

**Secretary: Arthur VA3BIT**

**Director: Ed VE3WGO**

**Director: Wayne VE3CZO**

**Director: Greg VE3YTZ**

**Move: Mike VE3FFK**

**Seconded: Al VE3ZTU**

Carried

**Meeting ended at about 21:33**

No 50/50.

**Minutes taken by VA3BIT.**



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## Field Day Results

I have now completed the OARC FD Submission and no doubt you are interested in the results. I have provided a high level comparison between 2015 and 2016 results:

2015 Number of CW contacts: 450  
2015 Number of Phone Contacts 599  
2015 Score 3,848 pts

2016 Number of CW contacts: 580  
2016 Number of Phone Contacts: 168  
2016 Number of Digital Contacts: 8  
2016 Claimed Score: 2,448 pts  
Bonus points 2015: 850  
Bonus points 2016 1,170

Thank for all your help in making FD a memorable event.

73, Greg/VE3Ytz

## Correction to Email Address from May Minutes

VE2REH is looking for 220MHz amplifiers or preamps.

Contact [va3ldc@gmail.com](mailto:va3ldc@gmail.com) for more information.

## Portable Station Demo

The Portable Station Demonstration will be held on Saturday, September 17 at Andrew Haydon Park at the Gazebo. Breakfast is at 08:00 at Kristie's, setup starts at 09:00 and the event itself runs from 10:00 to 12:00 with teardown to follow. Each participant is expected to set up their own portable station. No power or gear is provided other than picnic tables and the gazebo.

Everyone is welcome to come and visit. You do not need to bring a station.

Greg, VE3Ytz

## Speech Compression

The audio bandpass of communication systems can be limited where the objective is merely to communicate regardless of perceived sound quality. Consonants contribute the most to intelligibility, but have weak amplitudes compared to much stronger vowels. Vowel energy is concentrated primarily in the lower frequencies, so restricting low frequencies increases the consonant-to-vowel amplitude ratio, increasing articulation and intelligibility where signals are masked by noise. Note that articulation and intelligibility are not equivalent. Practical tests have shown that on average 30 percent syllable articulation permits 90 percent full-sentence intelligibility. Tests also have shown that removing all frequencies below 200 Hz has almost no effect on intelligibility, while reducing average speech power 20 percent. If the speech power is then amplified to restore the original level, articulation and intelligibility both improve compared to unprocessed speech. The penalty for that improvement is lower perceived sound quality.

## Coast to Coast Canadian Amateur Classifieds

Aaren Jensen, VA7AEJ, has just launched RASwap.ca - Radio Amateur Swap Canada . It is a coast to coast Canadian classified ad site just for ham radio gear. Think of it like Craigslist or Kijiji without the used cars and old refrigerators.

A one stop shop to list your For Sale or Wanted items. Accounts are free and the classified ad's are free to post. Access is limited to Canadian Amateurs (via their call sign at registration).

Shop without having to ship across international borders (no customs and duty fees) and all items are listed in Canadian dollars.

[raswap.ca](http://raswap.ca)



## US Opens High-Band Spectrum for 5G Networks

Aug 5, 2016 by Maria Guerra in *Charged Up*

The Federal Communications Commission (FCC) made history last month by unanimously voting to pass the proposal of the Spectrum Frontier Proceeding. With this move, it allocated unprecedented amounts of bandwidth for 5G wireless communications.

The new allocated spectrum includes the 28 GHz (27.5-28.35 GHz), 37 GHz (37-38.6 GHz), and 39 GHz (38.6-40 GHz) bands, as well as a new unlicensed band at 64-71 GHz. The new spectrum will provide new business opportunities, encouraging both entrepreneurs and engineers to develop and deploy additional 5G network technologies and services.

"Carriers and entrepreneurs alike now have a true wireless fiber opportunity for fixed and mobile, and our work at NYU WIRELESS has proven both the physics and the potential of 5G," says Ted Rapaport, the research center's founding director. "There is no doubt that giant new businesses and applications that exploit this unprecedented spectrum will change our world in amazing ways over the next decade."

It remains unclear what form 5G will take, as a standard does not yet exist. But that has not stopped wireless companies from engineering and testing wireless outdoor transmissions. Verizon Communications and AT&T have announced that they will begin deploying 5G trials in 2017. It is now up to the network companies, carriers, and operators to figure out and agree on what works best for 5G networks, and what should be included in a 5G standard.

The FCC has taken the first steps to accelerate the development of 5G networks by setting flexible rules that will allow the technology to evolve. In a not-so-far-off future, we will see a whole new reliable cellular architecture with faster data rates, lower latency, and better energy efficiency (see fig-

ure).

Benefiting from the launch of 5G will be the semiconductor industry, which will help drive 5G through technology advances. Semiconductors also have a big role to play in future 5G services, such as smart city cameras, smart grids, 3D video, augmented reality, work and play in the cloud, industry and vehicular automation, mission critical broadcast, and self-driving cars, to name a few.

Exactly how 5G becomes a reality and enhances our society remains to be seen, but it will be fascinating to watch.

## ARRL Editorial: Radiosport vs. Pokémon GO

From the ARRL website 2016-07-22

Though it has only been 2 weeks since Pokémon GO™ was introduced, it is already a social phenomenon. The augmented-reality video game, developed by Niantic for your smartphone, has received praise for luring gamers outside of their homes and into the streets to play. Maybe you count yourself among the players. Or maybe you are feeling a little left out because you are not playing the game, or have vowed never to play the game, or (not admittedly) don't get it. Well, if you are an Amateur Radio operator (or "ham"), this Pokémon GO article is for you!

It should come as no surprise that ham radio operators are drawing comparisons between Pokémon GO and Amateur Radiosport. If you have not been following the Pokémon GO hype, though, you are going to need a small amount of background about the game. Playing requires downloading the free Pokémon GO app for your iOS or Android device. Players are called "Trainers," and walk around their neighborhoods using their smartphones to discover and capture small creatures, called Pokémon. The app's integration with Google Maps data makes real-life associations with your surrounding environment. Trainers (players) visit PokéStops, which are local



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landmarks, to stock up on virtual supplies needed to play the game. Achievements are earned by advancing levels, by earning badges, and through team challenges at virtual Pokémon Gyms. All of this happens while walking around with your head in your smartphone screen, which is a skill already mastered by most smartphone users. Okay, now you know enough about Pokémon GO to sound like an expert at the office water cooler.

Now let's compare the video game to ham radio. Hams operate their radio equipment from fixed and portable locations; from home and on-the-go. While ham radio itself is not a game, it is fun. In the findings of a study completed by Readex Research for ARRL in 2015, the most cited reason for becoming involved with Amateur Radio is "fun." Survey respondents could choose multiple reasons for becoming a ham, and the runners up included, "to expand interests in electronics, communications, or other technologies," and "to support communications during disasters and other emergencies." So, in a nutshell, people become ham radio operators to advance their interests in (1) technology, (2) public service, and (3) to have fun!

One particular interest area in ham radio is Amateur Radiosport — an overarching term for on-air ham radio contests and operating events that will earn you various achievements and awards. Take, for instance, ARRL's year-long National Parks on the Air (NPOTA) operating event, which celebrates the centennial of the US National Park Service. NPOTA encourages hams to operate their portable radios from official park locations. Hams who are park "Activators" are sought by park "Chasers," who are other hams trying to make radio contact with activated parks. Sounds vaguely familiar, huh? Pokémon GO has trainers chasing and capturing Pokémon; and NPOTA has chasers collecting national park activations.

Similar to collecting Pokémon creatures, the lure of radiosport is logging each radio contact for scores. Hams use computer logging programs, such as ARRL's online Logbook of The World, to track their radio contacts. Achievements are

earned by the total number of contacts confirmed with other hams in qualifying categories.

There is a calendar full of weekend ham radio contests, annual operating events, and ongoing award programs including the premier challenge, ARRL DXCC, awarded for confirming radio contacts with a minimum of 100 countries ("entities"). And, pop-up special event stations entice hams to make contacts with stations set up at lighthouses, on islands, and atop mountain summits.

Radiosport is a tradition as old as ham radio. In the early days of pioneering the airwaves, hams recognized their peers for making the first radio contact across town, and then across country, and eventually across the world. Today, that same innovative spirit is found among hams whose signals travel by wavelengths considered by some to be unusable, or at extremely low power levels that require sophisticated software to extract the weak signal. High-tech fun!

While radiosport is chock full of fun and achievement, the side effect is that hams who participate in radiosport improve their own technical and operating skill, and advance their station readiness. The competitive nature of radiosport encourages hams to assemble better radio stations, build more effective antennas, and to operate skillfully on the air.

I tried Pokémon Go. But I thought, "I'm being drawn into the touchscreen on my smartphone for fun that's being calculated by some clever computing." By contrast, hams participating in radiosport have a higher amount of control of the game. The search-and-pounce is shaped by the station you've set up, your operating skill, signal propagation, and who else might be listening. Already, for instance, the leading "Chaser" for National Parks on the Air has made confirmed radio contacts with 435 national park activations. Impressive, and it didn't require any data charges!

Check out Pokémon GO so you can tell your children or the neighbor's kids that you, too, were part of the fad. But if you're a ham radio operator, and specifically a ham turned on to radiosport, you know that the lure of the next radio contact won't fade away as easily.

Bob Inderbitzen, NQ1R

ARRL Marketing Manager, Life Member





**2016-2017 Membership Application/Renewal**  
 Ottawa Amateur Radio Club Inc., Box 8873, Ottawa, Ontario K1G 3J2

- Single \$25 (\$20 after Feb 1, 2017)
- 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, 2016 to August 31, 2017.**

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 \$10.00 plus tax). Ordered badges will be available in February.

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

ORDER DETAILS - As to appear on badge:

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