



...wait for this...30 years and still going strong...Is this not a club that needs your aid and support?

## The Gavel – November 2014

Welcome MARC members to another Gavel. November has arrived and the weather has definitely turned colder. That means it's the ideal time to either erect an antenna or do maintenance! And I don't know about you but it is hard to believe we're entering the home stretch on 2014. I'd like to take this opportunity to recap a few important club items from the past year.

Ham-Ex 2014 – This year's event proved to be one of our more challenging in a long time. While we had an excellent turn out in terms of MARC volunteers, Mother Nature really threw us a curveball. After an unusually cold and harsh winter the hamfest grounds were certainly the worse for wear. Parking vehicles proved difficult as much of our main lots were under several inches of slushy water. Yours truly realized quickly he should have worn hip waders! In addition, a late-season snowfall (this winter just never seemed to end...) made actually getting to the hamfest trickier. The end result was a slightly smaller crowd than usual. And while we earned much needed revenue for the club our final numbers were affected. We're looking forward to Ham-Ex 2015 under the very capable guidance of veteran co-manager Rick VE3IMG and we're keeping our fingers crossed Mother Nature is kinder to us next year!

Field Day 2014 – Due to an administrative mix-up by the City of Mississauga we lost our regular event location. Field Day Manager David VE3MDX took charge and lobbied the city hard to locate an alternate site for us. We ultimately secured Pinchin Farm which was an historic apple orchard along Mississauga Road just north of the 403. Those involved with Field Day worked hard to redraw site maps and locate the various stations to keep within the ARRL rules and to minimize interference. Media coverage was a big plus this year in part due to the efforts of Mike VA3EMW to contact local print, radio and tv outlets. In fact, I give an interview on a Rogers Community TV show to discuss emergency communications and preparedness. In the end I think David and the crew did a great job getting the MARC Field Day 2014 organized and squared away. We're looking forward to Field Day 2015!

Just a reminder:

Don't be like yours truly, and keep putting off sending in your membership renewal.

I have not been able to make it to any meetings lately due work commitments, but the old fashioned snail mail still works. Now how do you write a cheque again?

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**And more to come in the December issue!**

Don't forget, get yourself published, and submit some content to the



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Silent Keys – This year saw the untimely loss of two dedicated MARC members: Don Meaker VE3KHN and Scott Gregory VA3NMI. From his years at Bell Canada, Don had provided his electronics expertise to the club and its members. And, due to a downsizing of his home a few years ago, spearheaded (with his friend Don VE3BOW) the concept of a club remote HF station to allow other MARC members without a station of their own to get on the air. Working with present and past club members Don's dream came to fruition and a prototype was built. However, Don was unable to fully enjoy this new aspect of his hobby. As for Scott, he joined MARC to augment one of his other hobbies: sailing. But he was not content to simply be a member. Scott was club Treasurer and President, and played an important role in the continued growth and advancement of the club. His witty sense of humour will never be forgotten. And in a small way both Don and Scott continue to give to MARC: on November 27 we will be holding a silent auction of their personal ham radio gear for the benefit of their families and MARC. The memories of Don and Scott will never be forgotten.

Finally, as I eluded to above, the remote HF station project originally started by Don VE3KHN (SK) and Don VE3BOW has been continued by Michael VE3TKI, Ed VA3TPV and Bob VE3CWU. It has been a learning experience for everyone involved and a lot of time has been dedicated to this project including configuring the Ham Radio Deluxe and Skype software, locating and installing an appropriate antenna and wiring everything together. I am pleased to report that the remote HF station is up and running. In short, it will soon be possible for someone located anywhere with a high speed internet connection to connect to the radio (the club's Kenwood TS-480) and get on the air on any band from 80M to 10M. Over the next while Michael and his team will be putting the equipment through a series of tests to ensure the stability and robustness of the setup. And because the remote HF station is located at the club station a mechanism to prevent the simultaneous operation of both it and the club station radios will need to be configured. Stay tuned for more updates on this important and exciting club resource!

That's all I have for now. Please remember to get your membership renewals in soon. And don't forget the Club nets on Sundays at 8:30 pm on 7.179 MHz and Tuesdays at 8:30 pm on the VE3MIS 2M repeater.

73 --- Jeff Stewart VA3WXM



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VE3MIS/VE3RCX

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November 2014

**Please Take Notice this Thursday November 27, 2014**

### **Mississauga Amateur Radio Club Silent Auction**

We will be carrying out a silent auction of radio equipment from the estates of Scott Gregory VA3NMI and Don Meaker VE3KHN at the club meeting on Thursday November 27, 2014. Items not sold at the auction will later be offered for sale on the KWARC On Line Swap Shop, and anything remaining will be sold at the club's table at Hamex 2015. The proceeds of sales will be shared equally between the club and the estates.

The items for sale have been organized into lots. A spreadsheet in pdf format with a description and the reserve price for each lot has been uploaded to the Mississauga club member's yahoo group in the "Silent Auction" folder in the "Files" section. As well, photos of each lot may be viewed on Daniel Goodier's website.

The link to the photos (<http://ve3ni.com/auction.html>) is included in the spreadsheet for easy reference. To look at the photo of a lot, click on the lot number thumbnail.

The auction rules are:

- The reserve price is the minimum bid allowed for the lot.
- You must bid at or higher than the reserve price to participate in the bid for a lot
- Club members only are eligible to participate in the auction
- You must be present at the auction, or have another member bid for you.
- That person will be required to pay for the item if the bid is successful
- Bids via email are not allowed
- Items are as is, where is (at the meeting), all sales final
- Payment will be by cheque or cash only, at the end of the auction
- Successful bidders must remove their items at the end of the evening
- A form will be provided for bid submissions.
- You must indicate the lot number, your bid price, your name and call sign on the form, and sign the bid.
- A box for bids will be provided.

If you have any questions please call me or email me directly ([ve3tki@sympatico.ca](mailto:ve3tki@sympatico.ca))

Michael VE3TKI  
905 826 5176  
647 746 5176 cell

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**The Editors column:  
from the keyboard of editor in chief  
Valentine Stubbs  
VE3VVS**

**MARC Members Yahoo Group**

The MARC Members Yahoo Group is the primary way to disseminate club information about upcoming events.

Join the MARC  
Members Yahoo Group

-----  
To receive club related  
communications  
and to contact  
other club members

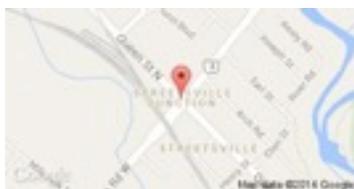
[http://groups.yahoo.com/group/marc\\_members](http://groups.yahoo.com/group/marc_members)



**Club Breakfasts**

This much loved event happens the first Sunday of every month.

All you have to do is show up at Bobby's restaurant 20 Queen Street just North of Britannia Road.



Well last month I was late by a week putting the news letter together due to upgrade problems with my MacBook Pro, Well I'm happy to say that is not the reason for me being again a week late. My 2009 MacBook is ten times faster than it ever was, the changing of the old hard disk for a SSD was just the ticket. I was even more pleased when I had read that apple was trying to discourage third party SSD's and push apples own, (like they make them anyway). Apple had made the new version of OSX 10.10, not allow turning on a program feature that allows for garbage collection on the SSD. But I found out the Drives sold by Crucial and by OWA have the ability built in to drive itself. And by chance that's what I bought.

Oh and as to the reason I'm late, I just ran out of time and my apologies.

Also would everyone please note the silent action is coming up on the 27th and the notice is on page three, wish I could be there, but the rest of you have some fun

Valentine Stubbs - Chief Editor - Communicator - VE3VVS



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## Radio Beacons – what and from where?

If you have ever wondered is a band is open for long distance propagation.

Yes, I know the answer today is to look it up on another hams web page that is devoted to such information dissemination.

But you once had to listen for a beacon. A beacon is a fixed transmitter that broadcasts a fixed sequence of signals. Often the frequency is fixed, the broadcast sequence is fixed and the output power goes through a series of decreasing power down steps, before it cycles again to full power. By listening you can figure out how signals are propagating from that direction. As an example: If one day you hear only the most powerful sequence, and the next week you check back and hear three steps, and you know that step 1 was 100W, step 2 was 10W and step 3 is 1W, then get on the air on the band the beacon is on, because propagation conditions are ripe if you can hear the 1W signal.

Amateurs are alleged to have started beacons to gauge DX (Distant Contact) opportunities. There are also military and scientific beacons that are used for radio propagation research and modelling. As with many technical situations, wartime accelerates the rate of advances, and the use of beacon transmitter is no exception.

In WW2 by 1942 Germany's forces were spread out across Europe, and the Allies had, from the German perspective, the nasty habit of attacking telephone exchanges to disrupt land line communications. So the communications to headquarters over the radio had at times a long way to go, and which band was best suited to make the link? So a large transmitter farm that operated continuously was put up near Berlin, which transmitted beacon signals at the top of 10M and the bottom of 80M bands. They were designed by Herbert Salbrunn D4WYF, a ham who worked in the high command communications team. To validate the concept before going to continuous operation with the designed 50W transmitters, CW tests were first sporadically exchanged with an operator in the German embassy in Madrid who had a 20W rig to reply with. To live within the regulations, even with a war going on, call signs were needed. So the beacons started to pound out D4WYF/2 and /5 by an automated mechanism. A motor gear reduction spun a disk with the appropriate Morse code call engraved into it slowly. A cam follower contacted the disk the switch attached to the cam keyed the transmitter.

Of course this ham installation being a wartime tool, lasted only three months before it was bombed out of commission for first time.

For a more detailed outline of this development, look up the article in CQ, Nov 1992, pages 17 and 18. And start to search out what beacons can tell you when you are searching out long distance contacts

Mike Wilde, P.Eng. PMP  
Project Manager, Transportation Systems Engineering Associate



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## What is a Calling Frequency?

So you might be an experienced ham (maybe even labelled as OM), or just starting your studying to try to get your operating permit. If you are somewhere between these two camps you still might need a bit of a refresher on calling frequencies. The following is drawn in part from a CQ magazine article of September 1992.

If you are new to Ham Radio you might think of VHF operation as strictly limited to the repeaters programmed into your handheld transceiver. This is just not so.

To divide up our permitted operating bands there are agreements (not strictly regulations, but it is nicer for all if we don't intentionally throw sand in our radio allocation's sand boxes).

For the 2M band once you step away from repeaters and talk directly radio to radio it is called simplex operation. If you have a fancy new radio, as our last ARES SET might have showed, it may not be so easy to figure out how to make the radio want to do this. Practice – it may be a skill to have one day.

To find other operators to talk to on 2M independent of being on a repeaters frequency, it is agreed to listen and talk first on 146.520MHz, referred to as a calling frequency. Once you find someone to converse with it is considered polite to step away from this frequency to hold your conversation. Other frequencies that are allocated for simplex operations are 146.415MHz and every 15kHz step up to 146.595. There is another band that starts at 147.420MHz again every 15kHz step up to 147.585.

If you operate on 2M in modes other than FM ( yes, some people with radios that can step away from FM to another mode do this) then they tend to use 144.200 as a calling frequency. The step to do this is not always a small step, because to operate on other than FM usually means rotating your 2m antenna from a vertical to a horizontal polarization as well.

In a similar manner on the 222MHz band 223.500MHz is considered a calling frequency, and 222.100 is the weak signal calling frequency.

On 440MHz the calling frequency is 446.000MHz and 432.100MHz is the weak signal calling frequency

On frequencies below 50MHz you can transmit on any frequency within our permitted bands. Higher up, and the bands are said to be channelized i.e. you might only transmit every 15MHz or steps more apart.

The magazine article that got me started on this little piece was written over 22 years ago. Along since then a bevy of digital modes have come into use. They too have agreed on calling frequencies. So I would encourage you to get a current band plan, and look up the calling frequencies. Who knows who you might meet there!

Mike Wilde, P.Eng. PMP

Project Manager, Transportation Systems Engineering Associate

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## *The Twelve (Ham) Days of Christmas:*

*On the Twelfth Day of Christmas My True Love Gave to Me:*

*Twelve Folks Conversing*

*Eleven Geezers Griping*

*Ten Novices Keying*

*Nine Ragers Chewing*

*Eight Amateurs Arguing*

*Seven Turkeys Babbling*

*Six Extras Explaining*

*Five Garrulous Hams*

*Four Chattering Chicks*

*Three Bantering Biddies*

*Two Crackling Speakers*

*And a Radio Listen To It All With*

*Submitted in seasons good cheer by Mike Wilde, P.Eng. PMP*

*(Editors Note this was found in an ad in a December 1987 issue of C2 Magazine)*

### **A comment from the editor:**

At this time I would like to take a moment to give some helpful hints when submitting articles.

- a) Text should be single spaced, with no headers or footers, as text is going to be converted into a desktop publishing format.
- b) Most fonts are fine, "Pages" (the software I'm using) has many more fonts than most, but just to be safe side just use standard fonts, like arial, helvetica, century, etc.
- c) Avoid using spaces instead of tabs. Tabs work great in conversion, spaces not so much. if in doubt, just type text unformatted, "Pages" will take care of most the mundane formatting, and the rest I'll do, I'm going to have to do it anyway. might as well make it easier for you.





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Across	Down
2 What an antenna tuner can reduce from TX eyes	1 Directional radiator used where no icing risk
4 Feeling after day of tower climbing	3 Budget but often effective radiator
6 Mast to ground stabiliser	5 Modern feed line used under microwave frequencies
9 Core element of antenna	7 Used for multiple band service from a single radiator
10 Common element of some antennae designs	8 Pre WW2 favoured lowest loss feed line
12 Attempted radiation from a beam, ___ directional	11 Beverage et. al. radiators
14 End fed German radiator	13 Idealized point radiation, ___ tropic
16 Desired goal of most amplifiers	15 Feeling when antenna fails mid winter: __'d
18 What foils your branch aimed throw lir	16 Tool for tower erection, ___ pole
19 Flat diamond like big space wire radiator	17 What skills come into HSMM antennae links
23 DX antenna with low take off angle, but urban noisy	20 Around an angel, or round antenna
24 PL-259 water block, _elf _malgamating _lastic tape	21 Top of tower strong tube
27 When tower crew is supposed to show up	22 R-L-C behaviour of system under AC influence
28 30-300 million cycles per second	25 Never enough feature of a vertical antenna
30 DX antenna when you have lots of space and cash	26 Typical signal strength at RX input terminal
33 directional antennae Uda often forgotten from	29 E's or M's of interest
34 Longest RF part of most beams	30 Used often with modern feedlines
35 Antenna farm starting tool: plot plan and _____	31 Used to equal impedances, trans _____
36 Long distance communication ionosphere bugaboo	32 Best used when assembling before dropping parts
37 Between MF and VHF	



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[Toronto FM Communications Society \(TFMCS\)](#) wrote a new note:

[TFMCS New update November 8 at 7:25am](#) ·

Over the past weeks, we have been making a lot of changes at the Skyloft site and we would like thank you all for your support, either financially or by volunteering. It has been so great, that we have not captured all those that have actually dropped in and we have failed to capture your name or callsign. If you have, can you please drop us an email so we can recognize you all accordingly.

#### What has happened so far:

- The old and very trusted 6809 micro controller was removed from service last Sunday after literally decades of amazing service. There isn't much electronics that runs that long in today's world. It is a credit to those that designed her in the first place and how great a job they did starting from scratch. This innovation was so great in its time, that it was written up in IEEE magazine. We also thank Nigel VE3ID who has been one of the key surgeons who has kept her running for the last 10 years including recovering from a very major lightning strike over 10 years ago. The back of the rack is no longer off limits. :)
- With the 6809 gone, that allows us to clean out the back room and remove everything. In order to do that, we have to turn off all the repeaters on Sunday at Skyloft. This didn't include the 2 repeaters at the CN Tower.

#### What works today:

- VE3RPT 147.060 + 103.5Hz (DR1X repeater) -- is up and running at 25 watts on a new very big vertical antenna. This repeater is now a Yaesu DR1X System Fusion. For a few days, this repeater will be running in Dual Mode (normal FM -- Called F3) and Fusion Digital (Called C4FM). Normal FM users don't have to worry about doing anything special, other than to make sure you have both CTCSS encode and decode turned on in your radio so you don't hear the digital data should it come on. In dual (or Auto mode), we share the repeater on the same frequency and it can only run 1 mode at a time. Before you get excited :), this is a temporary thing and it will be turned back to a normal FM (F3) mode shortly - when the new controller is installed
- VE3BEG 226.86- 103.5Hz - is up and running with 3 watts power out and no repeater tail and pretty darn good coverage, even at 3 watts. In the coming weeks, this will be replaced with a higher power set of radios, again once the new controller is up and functioning.
- VE3RPT C - 145.25- DSTAR - is up and running on a new VHF 4 Bay antenna with coverage favoring a bit more to the north and a little less into the city. Neil VE3SST and I are still working on this antenna. It is full time connected to XRF005 C which we try to push as a GTA only reflector. This allows you to only hear those people in the GTA. John VA3BL and I are pressing the other major DSTAR repeater owners to convert one of their nodes to XRF005 C. If you would like to see which nodes are connected to what, start here: <http://www.va3uv.com/VE3TNK.htm>
- VE3RPT B - 443.225+ DSTAR - is up and running with excellent coverage. We are connected to XRF005 B which is a huge party line. You can make a call on this repeater/reflector anytime and get a response. In case you'd like to see just who is on DSTAR at any time, just watch <http://status.ircddb.net/>. Both B and C modules can be linked to other reflectors.
- VE3TWR - VHF - 145.41- 103.5Hz - is up and running on the CN Tower as a normal F3 repeater (you read what F3 was earlier, correct?)
- VE3TWR - UHF - 444.400+ 1035Hz and System Fusion (DR1 repeater) - This is a dual mode repeater, so users share its functions of F3 and C4FM. It is also one of our busiest repeaters, so we ask that you be courteous to others who may want to make other calls if this is one of your favourite repeaters. Considering also using VE3TWR 145.41 as well. Yaesu and Radio World 'gave' this repeater to TFMCS so that we can showcase System Fusion and we ask that you give both Yaesu and Radio World your support please.

#### What doesn't work today:

- All Linking - in the next month as I learn the HamStack controller linking should return. You can throw out all your link sheets now.
- IRLP - expected to be online by November 14th on the new Controller



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- VE3DHL - 1286Mhz - expected to be online by November 14. One holdup is that the Duplexors are out at Maple Leaf Communications. Thanks Bob for all your help! He is a great source of antennas and things.
- VE3SIX - 53.03Mhz - expected to be online by November 14
- VE3TFM - 29.62 - this will be some time as 10FM requires a split site with the transmitter in one place and the receiver at Skyloft
- Skyloft Weather readings - although that might get fixed over the weekend
- VE3TWR - VHF repeater will be replaced by a System Fusion repeater for F3 only (DR1X repeater)
- VE3RPT - HUB will be replaced by a System Fusion repeater, possibly dual mode (DR1X repeater)

#### What we need from you!

- Our new controller is from HamStack. They make some awesome quality stuff and have been very helpful and supportive to the TFMCS group. They also are the backbone of the Cactus Linking system. This is one impressive network. I am looking for volunteers that want to work with the HamStack Macro and Scripting. I'm a 'hack' at it and welcome some help.
- What we need from the membership is what they need out of their repeater system so that we are work to design it that way. What we (!?) have in mind is:
- VE3RPT - HUB 442.100+ 103.5Hz - We may turn this into a normal repeater and this is a majour change from the previous design. Comments are welcome. We (!?) would also like to see this a dual mode (F3/C4FM) service. This will be some of our most complicated switching from modes, link hub or normal use, but I believe we can do it with the HamStack controller
- Your thoughts on the future of repeaters that we support. What technology do you use?

Feel free to feedback to Feedback . Ray does a great job of forwarding those emails to the core team for input and we do always reply. If we don't, then we didn't get the original email.

Also, we couldn't make all the changes without all your support as members. It is the membership that has funded all this new hardware. We thank you all.

Michael Walker VA3MW  
(Technical Director)

(editors note, this was copied from Facebook by suggestion of John Lorenc, VA3XJL)



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VE3MIS/VE3RCX

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November 2014

## Membership Renewal

By Rick Brown VE3IMG

It's a new club year and time to renew your membership. There are changes to our fee structure and revisions to the membership form.

We have reduced the number of membership types and revised our rates. Gone are Student, Family and Individual memberships. They all have been rolled into one Basic Membership, \$40 per family household. We offer preferential rates to Radio Amateur of Canada members in good standing. Provide us with your RAC membership number and you can join for \$35. The same family household rule applies.

With changes to the Canadian Anti-Spam legislation, we have revised and simplified our membership form. All members need to submit a completed form when renewing. We now require your express permission to:

- 1) Receive email notifications when a new MARC Newsletters is made available.
- 2) To be included in the MARC\_Members\_Yahoogroup
- 3) To make personal contact information available to club members.

You can download the membership form at:

[http://www.marc.on.ca/marc/documents/doc\\_marc\\_mbrshp.asp](http://www.marc.on.ca/marc/documents/doc_marc_mbrshp.asp).

Filling out the Excel version of the form is preferable to the handwritten pdf. Bring your completed form along with cheque or cash to a club meeting for processing. If you can't make it to a meeting, you can mail the form and cheque to our Post Office box:

Mississauga Amateur Radio Club  
Attention: Membership  
P.O. Box 2003  
Square One Post Office  
Mississauga, ON L5B 3C6  
Canada

Make all cheques payable to Mississauga Amateur Radio Club i.e. not MARC. Please renew promptly. The club relies on membership revenue to conduct business.

See you all at the next meeting with forms and payment in hand.

*(editors note: I have included the membership form available at the above mentioned link)*



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Mississauga Amateur Radio Club  
 P. O. Box 2003  
 Square One Post Office  
 Mississauga, Ontario, L5B 3C6  
<http://www.marc.on.ca>

2014 / 2015 MEMBERSHIP REGISTRATION FORM				Date:	
Call Signs		Last Name		First Name	
Address Street				Apt	
City		Prov/State	Postal Code	Country	
Home Phone		Business Phone	Ext	Cell Phone	
E-mail Address			E-mail address associated with MARC_Members Yahooogroup		

Family members residing in the same household can be included in the base membership for free. Please provide the following information for interested parties:

Family	Call Sign	Name	E-mail
1			
2			
3			

To conform with Canada's Anti-Spam legislation, we require your permission to provide the following club services. No response will be considered as a "No".	Yes / No
Do you wish to receive an email notification when a club newsletter is posted to the web? Current & past newsletters can be downloaded from <a href="http://www.marc.on.ca/marc/documents/doc_news.asp">http://www.marc.on.ca/marc/documents/doc_news.asp</a> .	
Do you wish to join the MARC Members Yahooogroup? This is a forum where MARC members post information related to Amateur Radio and Club events. You receive postings by email. Access is restricted to participating club members.	
The club roster is posted to the MARC Yahooogroup. It contains personal information provided on this form. It will be available to club members who join the group. Please indicate if we can list phone, e-mail and address information in the roster. The club executive will have access to all information on this form.	Phone
	e-mail
	Address
Do you wish to participate in ARES (Amateur Radio Emergency Services)?	

Membership Fee (One per household)			Class Fee		Course Manual		TOTAL
Regular \$40.00	RAC \$35.00	RAC Membership No. Required for discount	QTY	\$30.00 / Person	QTY	\$50.00 / Manual	
				\$30.00		\$50.00	
Office Use Only	Date Pmt Received	Cash	Cheque	PayPal	Received By Signature		

Personal information collected in accordance with Mississauga Amateur Radio Club privacy policy available at [http://www.marc.on.ca/marc/site/site\\_legal.asp](http://www.marc.on.ca/marc/site/site_legal.asp)

# Radio Amateurs of Canada

## Ontario



### Join RAC Today

Help give amateur radio a strong voice in Canada and throughout the world

Full - Regular - paper TCA \$56.00 + \$7.28 (tax) = \$63.28  
Full - Family \$25.00 + \$3.25 (tax) = \$28.25  
Full - Blind \$25.00 + \$3.25 (tax) = \$28.25  
Full - Maple Leaf Operator \$100.00 + \$13.00 (tax) = \$113.00  
Full - Limited \$38.00 + \$4.94 (tax) = \$42.94  
Full - Regular - e-TCA Only \$48.00 + \$6.24 (tax) = \$54.24

Associate - Regular - paper TCA \$56.00 + \$7.28 (tax) = \$63.28  
Associate - Family \$25.00 + \$3.25 (tax) = \$28.25  
Associate - Blind \$25.00 + \$3.25 (tax) = \$28.25  
Associate - Regular - e-TCA Only \$48.00 + \$6.24 (tax) = \$54.24  
Associate - Corporate \$150.00 + \$19.50 (tax) = \$169.50

Note that the family membership fee applies to each family member who joins in addition to the principle member.

I wish to join for 1 yr

Donations: RAC \$ \_\_\_\_\_ | ARES \$ \_\_\_\_\_ | DARF (International Use) \$ \_\_\_\_\_ | YEP \$ \_\_\_\_\_ | RAC Foundation \$ \_\_\_\_\_ |

Visa/Mastercard _____ Exp: ____ / ____ Signature _____ Join or renew online! <a href="http://www.rac.ca">www.rac.ca</a>	Paying by Cheque? Please make payable to: <b>Radio Amateurs of Canada</b> #217-720 Belfast Rd. Ottawa, ON K1G 0Z5 1-877-273-8304
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If were previously a member please give your membership number  
or the callsign you held when you were previously a member \_\_\_\_\_

Name \_\_\_\_\_ Callsign \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Province \_\_\_\_\_ Postal Code \_\_\_\_\_

Phone \_\_\_\_\_ E-mail \_\_\_\_\_

Family Members \_\_\_\_\_

For blind membership please provide your CNIB number \_\_\_\_\_