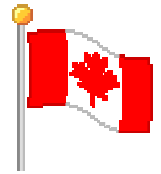




REFLECTOR



PO BOX 8895
HALIFAX NS
B3K 5M5

March 2019, Volume 80 Number 3
club web site is www.halifax-arc.org



March 20 is the First Day of Spring Happy Saint Patrick's Day

HARC Club Station phone number - 902-490-6421

Executive

President - Bill Elliott, VE1MR	865-8567	bowser.elliott@ns.sympatico.cm
First V.P. - Jason Ingraham, VE1PYE	292-9924	VE1PYE@bellaliant.net
2nd V.P. - VACANT		
Secretary - Roger Stein, VA1RST	403-3738	burch.craft@gmail.com
Treasurer - Bill Simm, VA1ALW		williamrham@live.ca
Member-at-Large: -Tim Delaney, VA1TIM		kimdelaney@ns.sympatico.ca
Station Manager: - Brian Allen, VA1CC	489-4656	basailor@eastlink.ca
Past President - Jeremy Fowler, VE1JHF	240-4302	ve1jhf.harc@gmail.com
Director Emeritus - Bill Elliott, VE1MR	865-8567	bowser.elliott@ns.sympatico.c

Committees/Offices/Prime Contacts

Government & Media Relations - Gary Murphy VA1GGM, 461-9416
garygmurphy@gmail.com
twomacds@ns.sympatico.ca

QSL Bureau Mgr - Murray MacDonald (VE1BB)
EMO Coordinator - David George, VE1AJP 466-8723 dgeorge@dal.ca
EMO Trailer coordinator - David Musgrave, VE1EDA 435-4333 ve1eda@rac.ca
Reflector editor - Lynn Bowser, VE1ENT 865-8567 bowser.elliott@ns.sympatico.ca
Reflector Hardcopy Dist. - Jeremy Fowler, VE1JHF 240-4302 ve1jhf@gmail.com
Membership - Jim Calvesbert, VE1PPA jim.calvesbert@gmail.com
Reflector electronic Dist.; Jim Calvesbert, VE1PPA jim.calvesbert@gmail.com
Web site content Manager - Brandon Fowler, VE1BMF bmfowler95@gmail.com
Basic ham course - Jason Ingraham, VE1PYE 292-9924 VE1PYE@bellaliant.net
2019 Flea market Chair - George Snow, VE1CAW ve1caw@gmail.com
2019 Field Day Coordinator - Dick Grantham, VE1AI rgrantham@ns.sympatico.ca
Safety Officer - Pat Kavanaugh, VE1PK ve1phk@rac.ca
VA1MMA Project Manager - Dick Grantham, VE1AI rgrantham@ns.sympatico.ca
NSARA Director - Bill Elliott, VE1MR 865-8567 bowser.elliott@ns.sympatico.ca
Honorary Legal Counsel - Paul Radford, VE1ARH

Non Club Contacts

RAC Atlantic Director - Dave Goodwin, VE9CB ve9cb@rac.ca
RAC Section Manager - Dave Hull, VE1HUL d.hull@ns.sympatico.ca
RAC Assistant Director for HRM Scott Wood, VE1QD, 823-2191 ve1qd@rac.ca

All phone numbers must be preceded by area code 902 when dialling, unless otherwise indicated

The March 2019 General Meeting of the Halifax Amateur Radio Club will be held Wednesday, March 20, in the training room at Station 50 in Hammonds Plains. Please see information on page 3 of January's Reflector re parking, etc.

6:30-7:00pm - Social half-hour with refreshments.

7:00-8:00pm - Presentation: A Primer on FT-8: A New Digital Mode on the Air
Presenter: Bob Schofield VE1RSM.

8:00-9:00pm General Business Meeting

Guests are welcome

When Insults Had Class.
"His mother should have thrown him away and kept the stork."
-Mae West

Deadline for submissions to the April Reflector is Saturday, April 6, 2019

GENERAL INFORMATION



Sunday evenings:
TAKE-15 NET at 8:30 PM

CLUB REPEATERS:
VE1PSR - 147.270 MHz + TX=82.5
VE1PSR/UHF - 444.350 MHz +
VE1PSR/6M - 53.550 MHz -
access tone 151.4 Hz
VE1HNS - 146.940 MHz - TX=82.5
PACKET: VE1NSD 145.050 MHz
LAN NODE

Take-15 Net Controllers

This will be the rotation. We need more net controllers. If you want to join, let Bill Elliott, VE1MR, know.



March 17	Bill	VA1ALW
March 24	Cam	VE1BIT
March 31	Peter	VE1PJW
April 7	Gary	VA1GGM
April 14	Bill	VA1ALW

"The Budget should be balanced, the Treasury should be refilled, public debt should be reduced, the arrogance of officialdom should be tempered and controlled, and the assistance to foreign lands should be curtailed, lest Rome will become bankrupt. People must again learn to work instead of living on public assistance."
Cicero, 55 B.C.

Event for Your Calendar

The CNPOTA Event is supported by Radio Amateurs of Canada and Parks Canada and will run from 00:00 UTC January 1, 2019 until 23:59 UTC December 31, 2019.

February 3 until March 29, 2019 - Alex, VE1RUS, will be in Eureka for a month starting on February 2 so **VY0ERC will be QRV from Eureka**, NU (NA-008) in SSB, Digital and CW, time and weather permitting.

Satellite activities from ER60, EQ79 grids are also scheduled.

73! Alex, VE1RUS

mid-March - **HATS Field Exercise**

April 7 & 8 - The 20th annual Shearwater Spring Hobby Show will be held at the Sea King Club, 242 Warrior Avenue, Shearwater, from 10 AM - 4 PM on Saturday & Sunday April 7 & 8. Craig, VE1MA, is willing to take the lead on HARC's display but will need lots of help as he will still be recovering from hip surgery.

The **SMART 2019** is scheduled for April 27 in Springhill at the Dr Carson & Marion Murray Community Centre. Registration is now open. Go to the webpage for more information and registration.

www.westcumb.ca/s-m-a-r-t-2019

May 26 – the MS Walk

July 27-28 – the MS Bike Tour

Contact Sheldon Page at sheldon.page@gmail.com to help out

Last full weekend of July – IOTA (Islands On The Air)

QSL BUREAU UPDATE

Within the past few weeks, all QSL cards on hand have been reviewed and as a result hundreds of mailouts have taken place involving many thousand cards. If you did not receive any cards and were expecting some; either you do not have any or enough money on deposit, or we do not have your personal information for mailing out the cards.

With the restrictions in place on the

THE HALIFAX ARC FLEA MARKET**WHEN**

Saturday May 25th 2019

WHERE

Same location as last year
The Royal Canadian Legion
45 Sackville Cross Road
Lower Sackville

TIME

Sellers may set up after 8 AM
Buyers allowed in after 10 AM

GENERAL ADMISSION

Buyer - \$5.00

Seller - \$10.00

Which includes a 3' X 6' selling space - some with power

Space is limited so book your table as soon as possible.

Contact Fraser MacDougall

ve1wo@eastlink.ca

Phone : 902-406-5327

Buyer entrance tickets will be pre-sold before 10 AM

Talk in frequency
146.970 - VE1CDN

Industry Canada and other sites, some personal information is no longer accessible.

If you wish to receive **QSL cards**, please assist us by ensuring that you have sufficient money on deposit and that we have your current information. Recently the postal rates were raised and it is suggested that a deposit of at least \$5.00 should be maintained.

There are hundreds of cards on file that we are unable to send out because either the recipient has little or no funds on deposit.

If you do not wish to receive cards, please let us know as well as those with whom you have a QSO.

The system works well when we all cooperate. If you provide the bureau with sufficient funds and your current information, we will ensure that your cards are sent out to you in a timely manner.

Thank you,

Murray Mac Donald, VE1BB

Brit Fader QSL Bureau



Canadian
National Parks
ON THE AIR **2019**

**CNPOTA 2019 UPDATE**

The Canadian National Parks on the Air (CNPOTA) software development team of Sheldon Hartling, VE1GPY, Doug McComber, VE1FAL & Ryan Hickman, VO1RCH, worked diligently through the second half of 2018 and into the December holidays to get the cnpota.ca website ready for its January 1 launch. This turned out to be just-in-time, with a number of very keen participants jumping onboard to activate parks at 00:00Z on January 1!

One of these was the Inverhuron Ham Radio Club which has been activating periodically for the event at Point Clark Lighthouse National Historic Site in Ontario (CNPOTA site ON37).

As of February 9, the cnpota.ca website had 430 registered subscribers and that number is growing daily. The event is off to a great start with 265 log files successfully uploaded as of that date. The dedicated website will accept log files generated by most Amateur Radio logging programs in both ADIF & Cabrillo formats. So far, most of the logs received have been in ADIF format (92%).

All participants – chasers & activators – are encouraged to upload their log files as soon as possible. There are many eyes closely following the 3 CNPOTA leader boards waiting for confirmation of their recent activity.

The newly-developed software used to upload log files, confirm & track contacts, accumulate statistics, and report progress in the leader boards is proving its mettle. The site is working very well; so far, only a few minor refinements have been needed.

Speaking of refinements, there have been a few rule changes made to accommodate feedback & suggestions

(Continued on page 9)

PRESIDENT'S MESSAGE for February, 2019

Time is passing quickly and I hope Winter is almost over. The HARC activity year started with the Guides on the Air (GOTA) and the Ham breakfast in February. There are other upcoming events such as a HATS exercise in mid March and the 20th annual Shearwater Spring Hobby Show in early April.

The parts are ordered to repair the reflector element of the HF beam and once those are in and reassembled there will be a small work party to reinstall the element & swing the 900 MHz beam to Riverlake JEM.

The remote station is operational and by the next meeting the keypads for the radio room and office should be working. The manual and automatic antenna switching is now fully operational and only needs some labelling to be complete. Funding is underway for upgrading the radios and computers in the radio room but that will probably be several months away.

There is still a need for members to step forward to help out with various events and tasks. Notably the Hobby show and weekly radio checks. Please consider donating a few hours of your time.

Another item that may be slipping through the cracks is the time and mileage you volunteer. Some volunteer hours are likely to be in support of EMO and reportable as volunteer hours and any mileage involved. You may ask, are an hour or two and a few kilometres going to make a real difference? If 20 people think this, then that may be 20 hours and 400 km volunteered in a particular month that is not reported. This thinking can lead to missing out on 240 volunteer hours and up to 5000 km. Even the time to fill out the form is countable - you may not use more than 15 or 20 minutes for the report but that can be reported every 3 or 4 months as 1 more volunteer hour. Some months you may not have enough to report but small amounts of accumulated time and mileage can be reported later. This reporting is one way to justify the support we have from EMO.

73 - Bill Elliott, VE1MR, President of the HARC

HELP NEEDED

The annual Shearwater Hobby Show is on the 7th and 8th of April this year. Craig, VE1JMA is willing to take the lead but will be looking for help. For the past several years the same people have helped Craig but several of those people will not be able to offer help this year.

A couple of people are needed for set up on Saturday morning. A couple of people are needed to help man the table. Shifts can be arranged - generally Saturday morning then Saturday afternoon. Again Sunday morning and then take down later Sunday. Please consider spending a shift of 3 or 4 hours to help out.

This event offers good exposure for the club and the hobby.

REMINDER Have renewed your membership for 2019? Have you changed your mailing address? Your E-mail address? Got a new call sign? We need to know your correct address to get the newsletter to you. Please inform Membership chairman Jim Calvesbert, VE1PPA at jim.calvesbert@gmail.com of any address changes

Silent Key

As posted in the Atlantic Amateur VE1EET - Richard Salsman With regret, I wish to inform you of the passing of Richard/VE1EET His obituary can be viewed at <https://www.dignitymemorial.com/obituaries/halifax-ns/richard-salsman-8156277>

The Atlantic Amateur

Ham Radio
for the **Atlantic Provinces**
www.atlanticamateur.ca

*I read that 4,153,237 people got married last year.
Not to cause any trouble....
but shouldn't that be an even number?*

HARC Booking Calendar

Looking to find out what is going on in the HARC Station? If so, you should go to our on-line room booking calendar at:

<https://teamup.com/ksa1105421c0509940>

There you can find information on events taking place in the:

- Club Station Main Meeting Room
- Club Library / Technical Room
- Club Radio Station Room
- Club Remote Radio Reservation Booking

If you want to reserve space in one of the above three rooms, or if you are approved to use and want to book

time on the Club Remote Radio, then send an email to our Station Manager, Brian at 902-489-4656 or basailor@eastlink.ca or to our Club Website Manager, Brandon, VE1BMF, at bmfowler95@gmail.com and they will make your booking.

Report from the Museum

The museum activities are beginning to ramp up for the season. The wireless room will be activated during March Break 16 Mar. to 23 Mar. It is a good time to promote amateur radio to all who stop by the “Wireless Room”. March break gives us the opportunity to meet a lot of people from the local area, whereas during the tourist season the visitors are from all over the world, literally.

We had some serious storm damage to the antenna system at the museum over the winter. The multiband vertical antenna broke for a second time and needed to be replaced. The DARC (Dartmouth club) had a surplus Alpha Delta DX-CC multi band dipole which we were able to acquire for the museum. On March 1, a brave group consisting of myself, Brian VA1CC, Alastair VE1PAB, Bill VA1ALW, and Corey VE1PAX of the museum staff, went up on the roof and replaced the 40-80 dipole with the DX-CC (5 Band dipole). The vertical is still there and secured to the tower but not operational. To our delight, the sun was out, the wind was down, the pulley system worked, we could un-tie the knots, (Corey from the museum could tie some fancy knots), we raised the “new” dipole, and even though the WX was good.....IT WORKED. (We all know antennas installed in a blinding blizzard work best).

Anyone wanting to join our list of volunteers for the “Maritime Museum of the Atlantic” project should contact me Dick Grantham VE1AI via e-mail ve1ai@rac.ca.

Dick Grantham VE1AI

**Eureka researchers bring niche radio to High Arctic**

Amateur radio club revives early communication of Ellesmere weather station

NUNATSIAQ NEWS 8 March, 2019

From the article by Beth Brown

The original article with photos is at

<https://nunatsiaq.com/stories/article/eureka-researchers-bring-niche-radio-to-high-arctic/>

When High Arctic researcher Pierre Fogal calls “CQ, CQ” over his high-frequency radio in Eureka, Nunavut, it means he’s looking for contacts.

“This is Victor Yankee Zero Echo Romeo Charlie,” he’ll say, using the phonetic alphabet to announce the Eureka Amateur Radio Club’s call sign and station, VY0ERC.

Fogal is a station manager at an atmospheric research station on Ellesmere Island known as PEARL, or the Polar Environment Atmospheric Research Laboratory. But he’s also an amateur radio operator, so when he’s calling out “CQ” over HF radio, he’s doing so as part of his hobby.

Amateur or “ham” radio uses non-commercial radio frequencies to exchange personal and non-commercial messages. From Eureka, where he and another researcher run an amateur station

during their work postings, Fogal has spoken to other amateur radio operators around the world.

“I get asked a lot about the weather,” said Fogal, speaking to Nunatsiaq News from his desk at the University of Toronto.

Right now, amateur radio operators can use contact with the rare Nunavut station to get points for non-commercial radio competitions.

But when the first weather and research station opened at Eureka in 1947, amateur radio was the most reliable way for staff to make any kind of personal contact with the south. That’s especially since mail didn’t always make it



(Continued on page 5)

(Continued from page 4)

to the remote posting.

There were two amateurs in the first set of six Canadian and American staff who opened up the Eureka station. They weren't given the right equipment to do amateur radio, but operators ordered some parts and built up ham radio equipment over the following decade. The original call sign for Eureka's amateur radio station was VE8MA.

"In the early days it was the only kind of communications available—HF or high-frequency radio," Fogal said. "The amateur side was the only voice communication to family when folks were up there before the advent of internet communications."

At that time, amateur radio operators would have connected with another amateur in the south who could set up what's called a phone patch. The Ellesmere station would also have been in daily communication with other research posts on the Queen Elizabeth Islands, like those at Resolute Bay, Mould Bay and Alert.

But as communication became more reliable, and satellite internet came to the High Arctic, amateur radio had become largely obsolete in Eureka, until Fogal and his colleague Alex Tikhomirov started operating as amateurs from the station in their spare time.

Two years ago, 2017, marked the 70th anniversary of amateur radio at Eureka. In recognition of this, Fogal, and Tikhomirov were given a licence to run a new station at Eureka. That's the station VY0ERC. There are now

around 16 members of the Eureka Radio Club, and the two founders are always looking for more members, and more contacts. The station has logged over 10,000 contacts.

Pierre Fogal works at the VY0ERC radio station in Eureka, from the PEARL research lab. "We've recreated that ability," Fogal said.

But running amateur radio in the High Arctic isn't always easy, even when it's as a hobby. The radios use all different sizes of antennas, large and small, and some have been built by Fogal and Tikhomirov.

"The wind and frost and ice that can build up there is very destructive to antennas," Fogal said.

In the fall, radio operators have to worry about northern lights, which will absorb, scatter and bend radio frequencies.

"There is an oval shape region of the polar atmosphere—we refer to it as the aurora oval," Fogal said. "Eureka happens to sit pretty much dead centre in that, and the oval and the auroral process has a negative impact on radio frequencies."

"Those good aurora days are bad radio days," he said.

When the sky is clear of aurora, a lack of light makes operating ham radio more challenging than in southern latitudes.

"Some frequencies work better during the daytime, which is high frequencies," said Tikhomirov. The club has antennas for radio frequencies that work best in the summer when it's light all the time, but

right now they're running a fundraiser to purchase antennas that are more reliable during the winter months when it's dark from late October until late February.

"Antennas are expensive to build well," Fogal said.

The club has had a good response on that fundraiser, likely from other hobbyist radio operators looking to support ham radio competitions globally. VY0ERC is one of only a few working amateur radio stations in the frequency area known as Zone 2, which stretches across all of northern Canada, from Yukon over to east Greenland.

"We are the rare station because we are located so far in the North," Tikhomirov said. "People chase this station in order to get awards."

Because of work schedules, the two men only operate the radio station at Eureka part-time, for a few weeks at a time, five to six times a year. They are able to operate some parts of the station remotely, and other amateurs can search for VY0ERC through satellite radio.

Fogal did say that the Eureka Radio Club is largely reliant on continued operations at PEARL, a station that has closed in the past when research there goes unfunded.

An antenna used by amateur radio operators at the PEARL lab. Other hobby radio operators globally work to contact the amateur station at Eureka to win high-frequency radio competitions.

Tower: "TWA 2341, for noise abatement turn right 45 Degrees."

TWA 2341: "Center, we are at 35,000 feet.. How much noise can we make up here?"

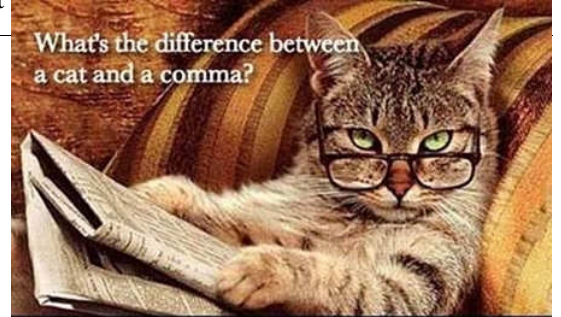
Tower: "Sir, have you ever heard the noise a 747 makes when it hits a 727?"



NOTICE:

If you are interested in getting fall arrest certification for tower climbing, please contact an executive member. No course is currently scheduled but you want to be sure to be on the list for a seat.

What's the difference between a cat and a comma?



One has claws at the end of its paws, and one is a pause at the end of a clause.

**Halifax Amateur Radio Club
Minutes of the HARC Monthly
General Meeting 20 February 2019**

1. Welcome to the HARC monthly meeting for February 2019:

Called to order by President Bill, VE1MR at 2000 AST

2. Report of any Silent Keys:

January 13 – VE1OR, Roy Power
Florence NS

January 21 – VE1RR,
Wayne Gillcash – Sackville NB

January 27 – VE1BTI, Rheal Hebert
Bathurst NB

February 8 – VE1BYT, Ed Banks
Cole Harbour NS

February 10 – VE1EET,
Richard Salsman – Halifax NS

3. Roll Call: 23 members present

4. Acceptance of the Agenda:

Doug, VE1LDL moved to accept the agenda, seconded by Fraser, VE1WO.

5. Approval of Minutes of 17 Jan. 2019 as printed in the Reflector:

Brian, VA1CC moved to approve the minutes, seconded by Jason, VE1PYE.

6. Correspondence:

Roger, VA1RST reported, QSL cards and other matters for the QSL Bureau, bank statement, ARRL QST renewal notice, and the AMSAT publication were received

7. President's Report:

We need members to step forward to help with upcoming events, please contact the event organizers to help out where you can. Station renovations are ongoing and were held up while Brian was ill. The remote station is up and running thanks to Don, VE1DTR and Fraser, VE1WO. The antenna switching arrangement is nearly complete, all components are ready to be installed. The keypad access will soon be in place – Jeremy will report details on that. Parts have been identified to repair the reflector element that fell off the beam and will be ordered soon. EMO will help with the parts and getting the reflector element

back in place as well as swinging the 900 MHz beam towards Riverlake JEM (Station 45).

If anybody is interested in helping with the weekly radio checks and the monthly exercise handshake, please contact Brian VA1CC or any executive member.

8. Treasurer's Report:

Monthly Report: Bill, VE1ALW reported on beginning balance as of January 1 income, expenses, and ending balance as of January 31. All appeared to be in order. Bill, VE1ALW moved for acceptance, seconded by Tim, VA1TIM.

9. Other Executive Reports:

Class in progress, 17 total participants.

Staying with the Mosley beam, parts are obtainable though cost as much as the shipping, long box required for tubing.

10. Committee, Event and Special Projects Reports

a) Membership Report:

Jim, VE1PPA Paid up YTD 67 full members, 4 associate, 4 life members, 19 complimentary (new class), 64 from last year remaining to renew.

b) EMO: Nothing to report.

c) Search & Rescue:

George VE1CAW Reported a rat infiltrated the command center, put traps and caught the culprit though sanitation was required!

Station Manager Report – Brian, VA1CC nothing to report.

d) HATS:

Scott, VE1QD is still away, Jim, VE1PPA said many reports came in for HATS reporting, send all info to Jim as it all gets reported/recorded as EMO activity

e) Other reports:

Parks on the air, long discussion, a very active activity!

11. Old Business:

Still waiting on half a dozen security badges, Don Mosher handling.

12. New Business:

a) Fund raiser:

The Bay Treasure Chest offers a \$500 honorarium to assist with one weekly count. Jeremy, VE1JHF reported there are approximately 20 participating locations, a unique # assigned to the player is written on sticker and adhered to a Twonie, put in the chest and a weekly drawing is held. The Pizza place across from the Fire Station participates. All the Treasure Chests are collected weekly and a count as a group takes place at the Bay Road Fire Hall. The qualified group doing the sorting and counting receives \$500 for 3 hours work with 4 or more people. The club agreed to as a group to pursue this opportunity. An application will be submitted.

b) HAM Breakfast:

The Ham Breakfast will be held at the Steak and Stein at 10 am February 24, send e-mail to Jeremy if you plan to attend.

c) Guides on the air:

Took place the weekend of February 16 & 17. Fraser VE1WO reported that 2 leaders and 3 guides were at the HARC station. Contacts were made on hf & vhf, demonstrating amateur radio. One 9 year old stayed after the demonstration sending all the alphabet in code while waiting for her ride!

13. Round Table - Member News: the brief sharing of important personal news.

Roger VA1RST shared ARRL CW DX Contest experience, working ZL1IF on 40m.

John, VE1JMB would like an antenna building workshop, much discussion followed!

14. 50:50 Draw: \$18.50 Ticket #116 was drawn, Jason VE1PYE was the winner.

15. Motion for Adjournment: Moved to adjourn Jeremy VE1JHF

Respectfully submitted Roger Stein
VA1RST Secretary

HARC GOTA Report – February 16 & 17, 2019
By Helen Archibald VAIYL

Guides on the Air (GOTA) is what got me into amateur radio. In 1991, I was a Guide Leader and I brought some Girl Guides in to Fred's shack. We had fun! In 1992 I got my ticket just before Guides on the Air. My licence was still wet but we did talk to a nice man in Ottawa who spoke to every girl brave enough to speak to him.

Guides on the Air was started in 1967 by Cathy VE3GJH. Back then, Guides Canada sent out boxes of QSL cards, instructions, phonetics, and certificates. It cost them a fortune. After about 1995, they cut off all their support. They don't even publish the dates! Sigh.

When I moved to Nova Scotia (Canning) I joined Guides Canada & advertised GOTA to the local Guiders. I infected a group of people and we have had GOTA every year since 2004 except the year we were away. This year I had thirty-eight Guides from Sparks to Trefoil. We had a sched with some Guides in Fredericton and met a Guider in Ontario. We talked to a daughter of a ham in USA & a granddaughter of another ham. We talked to a little boy.

I get each girl to put something on the back of a QSL card & I send them to the hams who talk to us. When propagation was bad a few years ago I got out the Morse Code Key & the girls loved sending out their names! Summer VE5SDH loved sending the girls names in Morse Code & the girls loved hearing it! Sadly Summer became a SK last summer. I copied the Morse Code certificate from the Maritime Museum of the Atlantic and modified it for Kings County ARC. The girls get it when they send their names.

This winter my sister in Montreal met a nurse who remembered me and told my sister about how she loved GOTA back in the 90's. I haven't heard that any of the hundreds of Girls who came to GOTA got their tickets, except for our daughter, Margaret VE2ZOO.

Sadly I couldn't get on 2 Meters this year to talk to the Guides at HARC!

The United Kingdom is really big into Guides on the Air. They call it Thinking Day on the Air (TDOTA) and they have a wonderful web page and get people to publish when they will be on the air. Sadly they are hours ahead of us so they are usually gone to tea when we get on!

Helen Archibald VAIYL

At HARC, Guides On The Air (GOTA) took place the weekend of February 16 & 17. Fraser VE1WO reported that 2 leaders and 3 guides were at the HARC station. Contacts were made on hf and vhf, demonstrating amateur radio. One 9 year old stayed after the demonstration sending all the alphabet in code while waiting for her ride!

The Internet of Digital Radio

The topic of how radio evolves and embraces available technology is one that describes the hobby itself. From spark-gap through AM, SSB and FM our community picked up or invented solutions to make communication possible. When the internet came along it too became a tool ripe for picking and in 1997 a connection between a radio and the internet was made with the Internet Radio Linking Project or IRLP when Dave VE7LTD, a student at the University of British Columbia, joined the UBC Amateur Radio Society. Using a radio, some hardware and a computer, you could send audio between radios across the internet.

Since then this field has exploded with D-STAR, Echolink, DMR, AllStar, Wires, CODEC2, System Fusion and Brandmeister.

At a glance they're all the same thing,
radio + internet = joy.

Looking closer there are two distinct kinds of internet radio contraptions, those where the radio is digital and those where it's not. IRLP is an example of an analogue radio connecting to hardware that does the encoding into digital and transmits across the internet. At the other end the reverse process, decoding, happens and another analogue radio is used to hear the result. This encoding and decoding is done by a piece of software called a CODEC.

If we continue for a moment down the analogue path, Echolink, AllStar and Wires do similar things. In 2002 Echolink made its way onto the scene, similar to IRLP, but it didn't need any specialised hardware, any computer running the Echolink software could be used as both a client and a server, that is, you could use it to listen to Echolink, or you could use it to connect a radio to another Echolink computer.

AllStar, which started life in 2008 went a step further by making the linking completely separate. It uses the metaphor of a telephone exchange to connect nodes together, which is not surprising if you know that it's built on top of the open source telephone switching software Asterisk.

In 2012 or so, Yaesu introduced Wires which is much like Echolink and AllStar. There are servers with rooms, not unlike chat rooms, where you connect a node to and in turn your radio.

Blurring the lines between these technologies happened when you could build a computer that spoke both IRLP and Echolink at the same time. Now you can also add AllStar to that mix.

Essentially these systems do similar things. They manage switching differently, handle DTMF differently, use a different audio CODEC and handle authentication in a variety of ways, but essentially they're ways of connecting

(Continued on page 8)

*The Internet of Digital Radio**(Continued from page 7)*

normal hand-held radios, generally FM, to each other via the internet using intermediary computers called nodes. Before you start sending angry letters, I know, there's more to it, but I've got more to tell.

While Dave was busy in Canada inventing IRLP back in the late 1990's, in Japan the Ministry of Posts and Telecommunications funded research, administered by the Japan Amateur Radio League into the digitisation of amateur radio. In 2001 that research resulted in what we know today as D-STAR. Two years later, ICOM started developing D-STAR hardware which resulted in actual physical radios less than a year later. Today you can get D-STAR hardware from ICOM, Kenwood and FlexRadio Systems.

Unlike the other technologies where the audio was converted at a central place, in D-STAR the audio is encoded in the radio and a digital signal is sent across the airwaves. That in turn means that the software that does the encoding, the CODEC, needs to be inside the radio. Since the information is digital right from the point of transmit, you can send other information, like GPS locations and messages along with the audio.

In 2005 DMR started life as a group of companies, now up to around 40, agreeing on some standards for digital audio in much the same way as D-STAR. Mostly in use by commercial users, DMR has the ability to have two users simultaneously on-air using alternate channels by having separate time slots for each channel, alternating between the two of them. They agreed to use the same CODEC to ensure compatibility. Formal interoperability testing has been happening since 2010, but because DMR allows manufacturers to build in extra features many brands cannot actually work together on the same network.

For many years D-STAR and DMR-

MARC, the DMR Motorola Amateur Radio Club World Wide Network, were the main digital radio systems around in amateur radio. That changed in 2013 when Yaesu introduced System Fusion. It too made digital audio at the radio, but it added a wrinkle by making it possible to have both analogue and digital audio on the same repeater. Depending on how the repeater is configured, analogue and digital radios can coexist and communicate with each other.

The Wires system that Yaesu rolled out was upgraded in 2016, renamed to Wires X and now also incorporates digital information to allow the linking of their System Fusion repeaters.

In 2014 at the Ham Radio Exhibition in Friedrichshafen in Germany, Artem R3ABM planned to make an alternative master server for DMR+ & DMR-MARC; the result was a German wordplay which we know today as Brandmeister. It acts as a network for digital radios in much the same way as DMR, but it's run as an open alternative to the commercially available options made by Motorola and Hytera.

The story isn't complete without mentioning one other development, CODEC2. It started in 2008 when Bruce Perens K6BP contacted Jean-Marc Valin, famous for the SPEEX audio compressor and David Rowe VK5DGR about the proprietary and patented nature of low data use voice encoders such as those in use in D-STAR, DMR and System Fusion. David had already been working in this area a decade earlier and started writing code.

In 2012 during Linux Conference Australia, Jean-Marc and David spent some time together hacking and managed to make a 25% improvement and CODEC2 was well under way. Today CODEC2 forms the basis of several projects including FreeDV in software, the

SM1000 FreeDV adaptor in hardware and the roadmap for the future of open and free digital voice is bright.

I should mention that this information is brief to give you an overview of the landscape. Hopefully I've not made too many glaring errors, but feel free to drop me a line if you do find a problem.

Digital radio and the internet, is not just a single mode; it's a whole cloud of modes, and I haven't even started with WSPR, FT8 or JT65.

I'm Onno VK6FLAB

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Feel free to get in touch directly via email: onno@itmaze.com.au, or follow on twitter: @VK6FLAB (<http://twitter.com/vk6flab/>)

to join the weekly net for new and returning amateurs, check out the details at

<http://ftroop.vk6.net>

The net runs every week on Saturday, from 00:00 to 01:00 UTC on Echolink, IRLP, AllStar Link and 2m FM via various repeaters.



If your best shots are the practice swing and the 'gimme putt', you might wish to reconsider this game.

The grass may be greener on the other side, but at least you don't have to mow it.

HATS NEWS: March 2019

The Halifax Auxiliary Telecommunications Service (HATS) is an operational vehicle through which HARC and DARC contribute to emergency telecommunications when a man-made or natural disaster strikes our community. This service is a joint effort of amateur radio clubs in the Halifax region and functions under the direction of the Emergency Management Division of Halifax Regional Fire and Emergency (HRFE).

NEWS: This month I am reporting from Mexico, but will be returning to Halifax on 26 March.

So far this winter, we have been in standby mode several times because of storm alerts, but have not had to mount a response. However, each “near miss” is a reminder for us to be prepared!

Work continues on developing a Net Controller course. We have been coordinating the curriculum with HRFE-EMD and have prepared a power point presentation. I hope we will soon be able to announce a date for the course.

The design and message formulation for HATS display material are moving ahead and include bug banners, display boards and other display materials. These will be used to facilitate our interaction with visitors at public events in which we participate, including our field exercises. It is hoped that this project will be funded and completed in this fiscal year.

The Emergency Management Division of Halifax Regional Fire and Emergency will hold a Volunteer Appreciation Celebration on 13 April to honour volunteers who serve the community through HATS, Joint Emergency Management (JEM) groups and Ground Search and Rescue (GSAR) units. For details about the time and place, look below at Up Coming Events below. If you plan to attend, you will need to RSVP.

Annually the federal agency, **Emergency Preparedness Canada**, sponsors Emergency Preparedness Week. This year it will take place on 6 - 11 May and plans are being formulated to mount a HATS field exercise as part of the events of this week. We have our eye on a highly visible public location and will announce details when the

availability of the location is confirmed.

As soon as I am back in Halifax, I will be scheduling meetings of both the HATS Steering Committee and General HATS Membership.

UP COMING EVENTS:

- Every Sunday at 1930 hrs the WinLink Express Practise Net takes place on 146.685 MHz. Following check-in members exchange messages via Telenet or VHF. If you want more information about the net, please contact David Musgrave: ve1eda@bellaliant.net

- Normally the HRFE/EMO – Amateur Radio Advisory Committee Meeting is held at 10:00 am on the second Wednesday of the month. The March meeting has been cancelled.

- 26 March (Tuesday) at 1900 hrs. Exercise Handshake tests readiness of key communication nodes and individual HATS members stations.

- 13 April (Saturday) from 1000 - 1400 hrs. Halifax Regional Fire and Emergency, Emergency Management Division, Volunteer Appreciation Celebration will be held at the NSCC Ivany Campus cafeteria. Please RSVP by 22 March to Don Mosher at moshedo@haliax.ca

- 6 - 11 May Emergency Preparedness Week will feature a HATS Exercise details to be announced as soon as we have commitments in place.

ACTION:

Please plan to attend the HRFE - EMD Appreciation event and be sure to RSVP. A good turnout on our part is an important part of our involvement with them!

Remember to submit your **HATS monthly volunteer time and travel data for February** to Jim Calvesbert, VE1PPA – jim.calvesbert@gmail.com

Do you want membership information? Please contact Dave Musgrave, VE1EDA.

He is our membership officer and will see that you get the necessary information and application forms. His contact information is via email: ve1eda@bellaliant.net

73 de Scott

K. Scott Wood, VE1QD, Coordinator

Halifax Auxiliary Telecommunication Service (HATS)

Email: scott.ve1qd@gmail.com

Tele: 902 823-2191 (h)

CNPOTA (Continued from page 2)
from participants.

1) Reported QSO times must now be within 10 minutes of each other to be confirmed. Originally, this was planned as 70 minutes but “Roves” that activated multiple Units in less than an hour made this a problem.

2) Canadians may now make QSOs for chaser credit while in the United

States as well as in Canada. This is a change to Rule 10(iv) which allowed Americans to work both countries but restricted Canadians to just Canada. You might call this the “snowbird” rule.

3) More than one call sign can now be used during an activation with the same equipment and antennas provided:

a) each call sign makes its own contacts;

b) separate logs are maintained and submitted for each call sign;

c) once a call sign is changed it cannot be changed again for 30 minutes.

This should allow for some friendly competition between the husband/

(Continued on page 10)

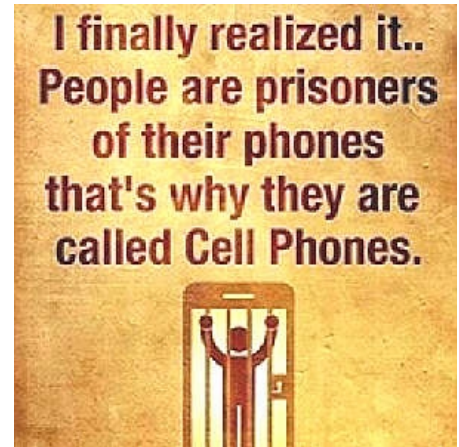
CNPOTA (Continued from page 9)

wife teams that requested this change.

A reminder: We've been asked by Parks Canada to remind Activators that "they must operate independently. Parks Canada cannot provide power sources for their equipment nor be expected to allow them to do any kind of formal interpretation at any of Parks Canada's Sites". Parks Canada has already received these kinds of requests.

As of February 12, 13 of the 220 Canadian National Parks and Historic Sites have been successfully activated. This is turning out to be a fun activity and there's still time for you to be a first activator for one of the 205 remaining units!

Alan Griffin, TCA Editor | MarCom Director



HALIFAX AMATEUR RADIO CLUB MEMBERSHIP - For 2019

- Same address as last year New address
- I would like newsletter as PDF E-Mail (Please note by taking the newsletter online you save the Club significant mailing and printing costs)
- I would prefer to have the newsletter mailed to my home **at an additional cost of \$10.00 to the regular membership fee structure below..**



E Mail Address _____ (Please provide for our files)

Call Sign _____ Are you currently a RAC member? _____

First Name _____ Initial _____ Surname _____

Street Address (Mailing) _____

City/Town _____ Province _____ Postal Code _____ Telephone Number _____

- Fees Full Member, must be a licensed Amateur (\$30.00)* Associate member (Non Voting) (\$20.00)
- Family membership (one newsletter) (\$30.00)* + \$20.00* each additional person.* Amount submitted \$_____.

The membership year is from January 1 to December 31.

All members receive the newsletter, which is also available on the HARC website.

Please fill in method of payment cheque cash Interac/e-transfer

✉ Mail to: Membership Chair CARD _____
 Halifax Amateur Radio Club
 P.O. Box 8895 ENTERED _____
 Halifax, NS B3K 5M5

Or if using Interac e-transfer to pay, please follow the instructions on the HARC website's Membership page for e-mailing this form and your Interac funds.

Payment Options ... In addition to mailing a cheque to the Club mailing address along with the application form, or paying at a Club meeting, we have set up an electronic money transfer process.
 Go to the H.A.R.C. Website's membership page at <http://www.halifax-arc.org/pages/membership.html> for more details.