



Canada's Amateur Radio Magazine

La Revue des Radioamateurs Canadiens

JULY / AUGUST 2016 – JUILLET / AOÛT 2016

Amateur Radio Emergency Service and the Fort McMurray Wildfire: An Inside Look



RAC AGM
September 10
see pages 8-10



RFinder is now the Online Repeater Directory of ARRL. Eight countries now! The RFinder team would like to thank RAC and its members.

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RFinder - The Official Repeater Directory of RAC. Support RAC by choosing RFinder as your repeater directory.

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RFinder Liste des relais

Position: 45.5087 -73.554 [FN35fm] V4.14.314

WWRD-Annuaire Relais Officelle du Canada

VE2MRC-L 3,624 mi [NW]
442,45 MHz (0) PL: 103,5
IRLP: Echo:464013 All*

VE2XDI 1 [Greenfield Park] 4.075 mi [NW]
1z

Official Repeater Directory

Location: 52.196500, -106.696600 [DD62pe] v5.15.237

VE5CC:Saskatoon 3.9mi [SW]
1z
449.975MHz (-0.005) PL:0.0
IRLP: AllStar: IRLP:1360EchoLink:

VE5FUN:Saskatoon WIN System Affiliate 4.0mi [SW]
VA
147.525MHz (0.0) PL:100.0
4z
AllStar: IRLP:1667EchoLink:

VE5FUN:Saskatoon 4.4mi [S]
IR
441.650MHz (+5.0) PL:100.0
VE
AllStar: IRLP: EchoLink:

4VA5DR:Saskatoon 4.4mi [S]
D
448.125MHz (-5.0) PL:0.0
AllStar: IRLP: EchoLink:

VE5CC:Saskatoon 4.4mi [S]
146.970MHz (-0.6) PL:100.0
AllStar: IRLP: EchoLink:

VE5SK:Saskatoon 4.4mi [S]
146.640MHz (-0.6) PL:0.0
AllStar: IRLP: EchoLink:

VE5CMR:Saskatoon 4.4mi [S]
443.150MHz (+5.0) PL:0.0
AllStar: IRLP:1330EchoLink:

VA5SV:Saskatoon 4.4mi [S]
145.330MHz (-0.6) PL:100.0
AllStar: IRLP: EchoLink:

Dist Freq Call Map

www.rfinder.net/routesearch.html

Your Source for Amateur Radio Repeater Data Worldwide!

RFinder
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www.rfinder.net

ROUTE SEARCH
Search around a location instead

User E-Mail
bobothedeep@gmail.com

Password

Remember me on this computer
Don't have a password? Register Now!
Forgot your password?

Define Route
Origin: signal hill newfoundland
(zip, city, landmark, address, etc.)
Destination: victoria british columbia
(zip, city, landmark, address, etc.)

Band Selection
 28MHz 144MHz 420MHz
 50MHz 222MHz 902+MHz

Distance off road
Max. 40 miles (65 km)
20 miles km

Waypoints Along Route
(zip, city, landmark, address, etc.)
sudbury
thunder bay
saskatoon
edmonton

RFinder Worldwide Repeater Directory Web - Route Search

Show List

Export List FORMAT: CSV-AvMap/Garmin TPE-TravelPlus CSV-TomTom Import CSV-CHIRP Import

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“Meanwhile, on the ground in Fort McMurray, the crisis situation rapidly escalated. On May 3, fanned by 40 to 60 kilometre winds and temperatures rising during the morning to 29°C, the fire crossed the Horse River and became a real and immediate threat to the Beacon Hill and Abasand subdivisions that prompted a mandatory evacuation of both subdivisions, soon followed by the entire city. This left the remaining local ARES members, caught in the gridlock of traffic, helping their families evacuate to safety.”

– see page 50 for the complete story

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ARTICLES WANTED

We would love to receive your articles – both technical and non-technical. Please send them to the TCA Editor at tcamag@yahoo.ca. The deadlines for the next issues of TCA are July 15 and September 15.

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For a complete Author's Guide visit:
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Silent Keys – In Memoriam

With regret, we record the passing of these Amateur Radio operators.
Nous avons le regret de vous annoncer le décès des radioamateurs suivants.

- VA3COA – Miles Copeland, of Ottawa, ON, on April 27, 2016.
VA3FV – Gary Bell, of Owen Sound, ON, at age 64, on April 21, 2016.
VA3LR – Lee Russell, of Windsor, ON, at age 74, on April 16, 2016.
VA3MAA – Mike Allsop, of Windsor, ON, at age 57, on April 1, 2016.
VA3OZ – John Tyler, of North Bay, ON, at age 82, on March 29, 2016.
VA3PD – Owen Dowd, of Ottawa, ON, at age 94, on April 9, 2016.
VE1LZ – John Brown, of Oromocto, NB, in April 2016.
VE2IB – Charles-André Lamontagne, of Chicoutimi, QC, at age 88, on April 9, 2016.
VE2POT – Gérard Lamontagne, of Sherbrooke, QC, at age 81, on April 23, 2016.
VE3BRA – Al Lamouroux, of Simcoe, ON, at age 87, on January 17, 2016.
VE3BUY – Bruce Hermiston, of Haileybury, ON, at age 81, on March 21, 2016.
VE3DLE – Tom Daley, of Fonthill, ON, at age 84, on January 6, 2016.
VE3EJA – Eric Ambler, of Campbellford, ON, at age 88, on April 13, 2016.
VE3FMD – John Sernasie, of Welland, ON, at age 89, on April 1, 2016.
VE3FQF – Bill Krawecki, of Hamilton, ON, at age 89, on February 22, 2016.
VE3GHE – Al Barnes, of Ottawa, ON, at age 77, on August 14, 2015.
VE3ILK – Larry Sullivan, of Val Caron, ON, at age 76, on April 7, 2016.
VE3KIO – Peter Cassidy, of Ottawa, ON, at age 75, on April 20, 2015.
VE3OGQ – Mary Urbanski, of Hamilton, ON, at age 79, on February 17, 2016.
VE3OXP – Gord Hurley, of Milton, ON, at age 66, on April 27, 2016.
VE3SMI – Coenraad Smit, of Port Elgin, ON, at age 77, on March 11, 2016.
VE6ADV – Tom Forman, of Edmonton, AB, at age 96, on April 9, 2016.
VE6AVJ – David Cope, of Gibbons, AB, at age 72, on March 19, 2016.
VE6CAI – Joe Vanderbeek, of Lethbridge, AB, at age 79, on May 3, 2016.
VE6WI – Irwin Few, of Edmonton, AB, at age 91, on May 2, 2016.
VE7PEM – Pennie Garvie, of Port Hardy, BC, on April 22, 2016.
VE9GIL – Gilles Lavigne, of Bathurst, NB, at age 59, on April 1, 2016.
VE9PK – Kal White, of Rothesay, NB, at age 80, on March 29, 2016.
VE9RG – Eldon Rogers, of Miramichi, NB, at age 85, on April 17, 2016.
VE9VT – Vance Trynor, of Burton, NB, at age 88, on February 23, 2016.
VO1HX – Harry White, of Twillingate, NL, at age 80, on April 4, 2016.
VY2AD – Ralph Dickieson, of Charlottetown, PE, at age 88, on March 29, 2016.

*Note: In the above list an * indicates that a call sign has been reissued. The list of Silent Keys is prepared by volunteers at RAC Headquarters. Please send obituary notices by email directly to rachq@rac.ca. For more information on how the list of Silent Keys is prepared please see the article "Behind the Silent Key Notices" by Mike Kelly, VE3FFK, on page 7 of the November-December 2015 TCA.*

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new Treasurer.
Please see the
Help Wanted
item on page 14
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*For complete
Section Reports
please see
the Section News
on page 58.*



Feedback: Readers write to The Canadian Amateur

COME SEE US AT THE RAC AGM & NL HAMFEST



The Heart's Content Cable Station (photo by Steve Kelly, Ottawa)

As some of you know by now, the RAC Annual General Meeting will be held this year in Heart's Content at the Cable Station Museum on September 10, 2016, in conjunction with the 150th anniversary of the first successful transatlantic cable (see page 8). This event is jointly sponsored by UTARC, BARK and SONRA.

It will be a sort of a mini-hamfest, along with the RAC AGM. Plans are to have a couple of tables available for a



swapshop, some presentations, etc. Nothing too fancy, just a small, simple get-together. The day will end at VO1DM / Doug's summer cottage in Green's Harbour (just up the road a bit) with a BBQ Steak Dinner. You can cook your own, or have one of our skilled chef's (hi hi) attend to it for you. Everything for the meal will be provided. Cost for this is just \$15. We ask if you plan on attending, please get in touch with either of those listed below to arrange payment by August 30. We need a little time to order the steaks.

For hams on the Avalon, this should be easy to attend, and get back home again before dark. For those planning to come in from off the Avalon, it's after Labour Day so the local motels, B&B's and cabins should not be too busy, making it easy to find a place to stay. One of us can certainly point you in the right direction if you are not familiar with the area.

Please pass this message along to anyone in your address books you think may be interested. Hope to see you there.

Boyd Snow, VO1DI: 709-596-2461
Doug Mercer, VO1DM: 709-364-4741
George Hopkins, VO1EGH: 709-596-2697
Barry Harris, VO1NC: 709-586-2634

73, Boyd Snow, VO1DI/VO1CBS
RAC Section Manager NL

THE FIRST "PERMANENT" TRANSATLANTIC CABLE

The announcement of the "Heart's Content Cable Station 150th Anniversary Hamfest" (May-June 2016 TCA, page 7) to commemorate the 150th anniversary "of the *first* transatlantic cable coming ashore from Europe in 1866" is an error.

In fact, the first transatlantic cable landed at Heart's Content (from Valentia, Ireland) on August 5, 1858 some eight years before. This is a verifiable fact from many sources including Wikipedia among others. I have a four-inch sample section of that cable along with the provenance in the form of a letter signed by Cyrus W. Field of The Atlantic Telegraph Company dated August 24, 1858.

It seems that there was about 20 miles of cable remaining and they were sold to Tiffany & Company of New York then cut into four-inch sections and made available as mementos of what was considered a great engineering achievement up to that time. These sections of cable are available on eBay from time to time.

Gordon Hogarth, VE3CNA – Toronto, Ontario

Reply to Gordon:

Thanks for letting me know Gordon. From the links below it looks like it should have said the "first permanent..." as described on this plaque at Heart's Content.



Gordon's response:

Thanks for the reply. The 1858 cable did transmit messages successfully both ways but failed permanently after about a month. This established the fact that messages could be sent by very long-distance, undersea cables leading to the laying of later cables.

There is no doubt that the 1858 cable was the first to span the Atlantic Ocean and worked albeit for only a short while. There had been other, successful undersea telegraph cables laid before, nothing anywhere close to this length. My point is that the 1858 cable was first.

I think that the organizers of the celebration are to be congratulated for observing this historic moment as it is an important landmark in the history of signalling using electricity.

Gordon Hogarth, VE3CNA – Toronto, Ontario

A MESSAGE FROM THE PRESIDENT / UN MESSAGE DU PRÉSIDENT

The summer months are often a bit of a lull in organized amateur radio activities because many clubs hold their last meeting in June and restart in September. I'd like to take the opportunity of this break to consider some of what has happened so far and start thinking about what the fall will bring.

Radio Amateurs of Canada participated in the Dayton Hamvention in mid-May. Dayton is a great place to catch up on amateur radio developments, see the latest hardware and software and pick up bargains at the fleamarket. Dayton attracts radio amateurs from around the world and I'd be surprised if there was another event or location where I could meet so many RAC members from across Canada. RAC has had a booth for several years at Dayton near those of the ARRL and other major national amateur radio organizations. Over the course of the two and a half day event about 150 Canadians visited our booth. This provided an unparalleled opportunity to discuss what was happening across the country. Many were leaders in amateur radio in their communities, regions and nationally and able to describe challenges they face and successes they've accomplished.

Talking to one another is vitally important for a national amateur radio organization as we often face similar situations. We are working to expand our ability to communicate and develop material members and affiliated clubs can use. We continue to develop our new website and are making greater use of social media.

Print materials still continue to have value and we are working on these as well. At Dayton we distributed a draft of a leaflet aimed at those curious about amateur radio and asked for comments. Several clubs had asked for material that they could give the public at events like Field Day and public service events. We are updating the leaflet incorporating comments we received and making it available on our website so that members and clubs can download it and print copies to use at their public events. We are also developing a new ARES leaflet and will continue to develop similar material dealing with particular aspects of amateur radio or directed to specific audiences. Our plan is to make these leaflets available from the Downloads section of the RAC website and provide space on them so that clubs or ARES groups using them can add their contact information.

We also used our participation at Dayton to induct Larry Price, W4RA, former President of the both the American Radio Relay League (ARRL) and the International Amateur Radio Union (IARU), into the Canadian Amateur Radio Hall of Fame. He is the first honorary member of the Hall and his contribution to amateur radio in Canada and around the world is described on page 16. The presentation at Dayton allowed many people who know and respect Larry to attend. They included RAC Directors and Executive, RAC members from across the country, ARRL International Affairs Vice-President Jay Bellows, K0QB, and IARU President Tim Ellam, VE6SH.

We went to Dayton knowing that Innovation Science and Economic Development Canada (formerly Industry Canada) had received RAC's request for special event call signs that could be used by any Canadian radio amateur during 2017 to celebrate



Glenn MacDonell, VE3XRA
ve3xra@rac.ca

Les mois d'été sont souvent un peu moins propices à l'organisation des activités radioamateurs du fait que plusieurs clubs tiennent leur dernière réunion en juin pour ne recommencer qu'en septembre. J'aimerais profiter de ce temps de relâchement pour évaluer ce que nous avons accompli jusqu'à maintenant et commencer à penser à ce que l'automne nous apportera.

Radio Amateurs du Canada a participé à la Dayton Hamvention à la mi-mai. Dayton est un lieu favorable pour saisir l'importance du développement radioamateur, voir les derniers appareils et logiciels et profiter des occasions du marché aux puces. Dayton attirent les radioamateurs de partout au monde et je serais surpris si quelqu'autre événement ou endroit au Canada me permettait de rencontrer autant de membres de RAC. RAC occupe un kiosque depuis plusieurs années à Dayton près de celui de l'ARRL et autres organisations radioamateurs nationales majeures. Au cours de cet événement de deux jours et demi, environ 150 Canadiens ont visité notre kiosque. Ceci procure une bonne occasion de discuter de ce qui arrive au pays. Plusieurs étaient des leaders radioamateurs dans leurs communautés, régions et au plan national, donc capable de comprendre et réaliser avec succès les défis qu'ils doivent affronter.

Parler aux autres est d'une extrême importance pour une organisation radioamateur nationale qui doit affronter des situations similaires. Nous travaillons actuellement à élargir notre capacité à communiquer et développer des ressources que les membres et les clubs pourront utiliser. Nous poursuivons le développement de notre nouveau site web et faisons meilleur usage des médias sociaux.

L'imprimé garde sa valeur et nous continuons de l'utiliser. À Dayton, nous avons distribué un feuillet à l'intention de ceux qui sont intéressés par le radioamateurisme et leur avons demandé leurs commentaires. Plusieurs clubs ont demandé des articles qu'ils pourraient distribuer au public à l'occasion d'événements comme le Field Day et autres de service public. Nous sommes à mettre à niveau un feuillet comprenant des commentaires reçus. Nous les rendrons disponibles sur le site web de manière à ce que les membres et les clubs puissent les télécharger et en imprimer des copies pour leurs propres événements publics. Nous travaillons aussi à développer un nouveau dépliant pour le SURA (ARES) ainsi que des imprimés semblables mettant en valeur les divers aspects du radioamateurisme; ils sont aussi destinés à des groupes spécifiques. Notre plan est de rendre ces feuillets ou dépliants disponibles à partir de la section de téléchargement du site web de RAC et d'y laisser assez d'espace pour que les clubs ou les groupes SURA puissent s'en servir à leurs propres fins.

Nous avons profité de notre participation à Dayton pour inscrire Larry Price, W4RA, au Temple de la Renommée Radio Amateur. Larry est un ancien président de l'American Radio Relay League (ARRL) et de l'Union internationale Radio Amateur (UIRA). Il est le premier membre honoraire du Temple et sa contribution au radioamateurisme au Canada et à travers le monde est décrite à la page 16. Cette présentation à Dayton permet à plusieurs personnes, qui connaissent et respectent Larry, de venir nous rendre visite et de participer à l'événement. Parmi eux, il faut inclure les membres de l'Exécutif, les directeurs de RAC, des membres de RAC de partout au pays, Jay Bellows, K0QB, vice-président de l'ARRL affaires internationales et le président de l'UIRA, Tim Ellam, VE6SH.

Canada's 150th anniversary. ISED had set aside four prefixes for that purpose. We shared that knowledge with those who came to the booth and returned home to find the formal response confirming ISED's approval. The prefixes and their use are described on page 13 and on our website.

Almost as many Americans as Canadians visited the booth. Many complimented RAC on its Canada Day and Winter contests and there was a lot of interest in our HF Band Plan that had been released in December. A few asked tongue in cheek questions about moving to Canada, prompted by the current US presidential election, and the most common questions were about operating while visiting Canada. RAC has a number of American associate members and in fact we sold more new memberships to Americans than Canadians this year!

In the last issue of *The Canadian Amateur*, Brian Jackson, VE6JBJ, began a series of articles on working with young people (see page 20). Brian is the Coordinator of RAC's Youth Education Program. Canadian hams have long participated in activities like Jamboree on the Air and School Club Roundup. Radio amateurs are also participating in Maker Fairs that attract technically oriented young people. In May, together with three other radio amateurs, I participated in an exhibition of amateur radio at a Robotics Competition for elementary and secondary school students organized by a local IEEE group. We weren't sure what to expect but found many interested people – not only the competitors but also their parents and teachers. We'll be back again for sure next year. If you or your club are working to bring amateur radio to young people please let us know. For our hobby to survive and thrive, as Brian said in his article: "We must find innovative and meaningful ways to draw youth into our world".

Looking towards the fall, our first major event will be the Annual General Meeting at the Heart's Content Cable Station in Newfoundland on September 10 (see page 8). I know of a few people who are inspired by this event to make their first visit to Newfoundland and explore this wonderful part of Canada. For those unable to attend in person we will make it possible to observe the proceedings on the Internet. Information on how to connect with the AGM will be posted on our website.

This year's AGM will consider a motion updating the RAC bylaws. The present set of bylaws was created when RAC was formed in 1993. Some of the prescribed processes, such as for the election of Directors, are outdated and needlessly restrictive. The RAC Board of Directors has approved a set of changes to modernize and simplify them. The intent of the bylaws will not be changed and the modernization will ensure that RAC will be using more effective and efficient procedures. A description of the proposed changes can be found on page 8.

*Glenn MacDonell, VE3XRA
RAC President and Chair*

Nous sommes allé à Dayton en sachant que Innovation, Sciences et Développement économique Canada (anciennement Industrie Canada) avait accepté la demande de RAC pour des indicatifs d'appel d'événements spéciaux destinés à être utilisés par tous les radioamateurs durant l'année 2017, afin de célébrer le 150^{ième} anniversaire du Canada. ISDE a sélectionné quatre préfixes à cet effet. Nous avons partagé cette information avec tous ceux qui sont venus au kiosque. À leur retour à la maison, ils devaient y trouver la réponse formelle confirmant l'approbation de l'ISDE. Les préfixes et leur utilisation sont décrits à la page 14 et sur notre site web.

Presque autant d'Américains que de Canadiens ont visité le kiosque. Plusieurs ont complimenté RAC sur le concours du Canada Day et celui de l'Hiver, en plus de montrer beaucoup d'intérêt pour le plan de bandes lancé en décembre. Quelques uns, intrigués par la présente élection présidentielle américaine, ont posé des questions sur le déménagement au Canada; et la plupart des questions portaient sur le comportement à adopter lors d'une visite au Canada. RAC possède un certain nombre de membres associés américains; dans les faits, nous avons vendu plus de nouvelles cartes de membre à des Américains qu'à des Canadiens cette année!

Dans le dernier numéro de *The Canadian Amateur*, Brian Jackson, VE6JBJ, débute une série d'articles sur la façon de travailler avec les jeunes (voir page 20). Brian est le coordonnateur du programme d'éducation de RAC pour la jeunesse. Les amateurs canadiens participent depuis longtemps à des activités comme le Jamboree sur l'air et le Rassemblement des clubs scolaires (School Club Roundup). Les radioamateurs participent aussi à la Foire des fabricants (Maker Fairs) qui attire les personnes fascinées par la technique. Au mois de mai, avec trois autres radioamateurs, j'ai participé à une exposition radioamateur et à une compétition robotique pour étudiants du primaire et du secondaire organisée par un groupe local, l'IEEE. Nous n'étions pas certains du résultat, mais nous avons remarqué qu'il y avait beaucoup d'intéressés – par seulement les compétiteurs eux-mêmes – mais aussi leurs parents et professeurs. Nous reviendrons sûrement l'année prochaine. Si vous ou votre club travaillé actuellement à attirer des jeunes vers le radioamateurisme, s'il-vous-plaît nous le laisser savoir. Pour que notre hobby survive et progresse, comme Brian le dit dans son article: "Nous devons innover et trouver des moyens efficaces d'attirer la jeunesse vers notre monde".

En prévoyant l'automne, notre premier événement majeur sera l'Assemblée générale annuelle (AGM) à la station Heart's Content Cable à Terre-Neuve, le 10 septembre (voir page 9). Je connais quelques personnes qui sont intéressées par cet événement au point de faire leur première visite à Terre-Neuve et découvrir cette merveilleuse partie de Canada. Pour ceux qui sont incapables de venir en personne, nous ferons en sorte qu'ils puissent suivre les procédures et l'assemblée sur Internet. L'information nécessaire à la connexion avec l'AGM sera affichée sur notre site web.

L'AGM de cette année prendra en considération la mise à niveau de la réglementation de RAC. L'ensemble des actuels règlements a été créé au moment de la formation de RAC en 1993. Certains, prescrivant un processus, tel l'élection des directeurs, sont dépassés et inutilement restrictifs. Le Bureau des directeurs de RAC a approuvé un bon nombre de modifications afin de les moderniser et de les simplifier. L'objectif des règlements sera préservé et la modernisation assurera à RAC des procédures plus efficaces et de meilleurs rendements. Une description des changements est affichée à la page 9.

*Glenn MacDonell, VE3XRA
RAC Président-directeur général*

– Traduction par Claude Lalande, VE2CLF. Merci Claude!

NOTICE TO RAC MEMBERS: 2016 RAC ANNUAL GENERAL MEETING

The Radio Amateurs of Canada is pleased to hold its Annual General Meeting (AGM) in Heart's Content in Newfoundland. The AGM event will be held in conjunction with the Heart's Content Cable Station 150th Anniversary Hamfest which is being sponsored by the Society of Newfoundland Radio Amateurs (SONRA), the Baccalieu Amateur Radio Klub (BARK) and the Upper Trinity Amateur Radio Club (UTARC). All RAC members are encouraged to attend the Annual General Meeting.

Date: Saturday, September 10

Time: 1:00 pm (Newfoundland Daylight Saving Time)

Place: The Annual General Meeting will be held at the Heart's Content Cable Station Provincial Historic Site, which is located on Highway 80 in Heart's Content about 90 minutes from St. John's, Newfoundland.

Agenda items will include:

- Report of the President
- Review of the 2015 finances
- Appointment of auditors for 2016
- Amendment to RAC Constitution (see the right column)
- Question and Answer period



This is your opportunity to hear what your representatives have been doing over the past year, to raise questions, and to make suggestions about how RAC is managed and where it is going in the future. The meeting will be attended by some of the members of the RAC Board of Directors and Executive and is open to all RAC members. In addition there will be a planned Webinar which RAC members can attend remotely. Details on how to connect to the Webinar will be published on the RAC website.

HEART'S CONTENT CABLE STATION 150TH ANNIVERSARY HAMFEST

The Society of Newfoundland Radio Amateurs (SONRA), Baccalieu Amateur Radio Klub (BARK) and the Upper Trinity Amateur Radio Club (UTARC) are pleased to host the RAC Annual General Meeting on **Saturday, September 10** as part of the Heart's Content Cable Station 150th Anniversary Hamfest.

Place: The Heart's Content Cable Station in historic Heart's Content, the site of the first permanent transatlantic cable coming ashore from Europe in 1866. The Cable Station is 90 minutes west of St John's, Newfoundland along the Trans-Canada Highway.

Time: Doors open to the public and vendors at 9 am.

Featured events include:

- Tours of the Museum
- Amateur Radio Presentations
- Fleamarket
- Lunch compliments of SONRA
- Coffee compliments of BARK and UTARC
- RAC Annual General Meeting at 1 pm
- An evening social at Doug Mercer, VO1DM's summer residence in Green's Harbour on Route 80 (30 minutes from the Hamfest). The event is BYOB.

Cost: \$15 per person; The evening social is BYOB.

Talkin: VO1GT 146.940- or VO1TCR 146.970-

For more information please contact Doug, VO1DM, at dougvo1dtm@gmail.com or visit <http://www.sonra.ca>.

CONSTITUTIONAL CHANGE NOTICE

The RAC Executive has reviewed the governance structure of Radio Amateurs of Canada and the proposed changes are provided below. No changes will be made without first presenting them to the RAC membership at the Annual General Meeting which will be held on September 10, 2016.

It is the recommendation of the RAC Board of Directors:

- 1) That the by-laws be amended to permit any required voting of members to take place electronically provided that at least 10 votes are received.
- 2) That the by-laws relating to Notice of Meetings be simplified to read as follows (changes from the current shown by italics):

Notice of any annual or special meeting of members and a summary of the purposes of the meeting containing enough information to allow a reasoned decision, shall be published in the organization's official publication, and *may be sent electronically* to the members not more than 60 days and not less than 21 days prior to the date of the meeting.

Any vote of the members to be conducted may be in paper or electronic means in the specific form and fashion to be determined from time to time by the Board of Directors. The sending of any notices to the members may, unless a form and fashion are specifically prescribed by the Act, be in paper or electronic means in the specific form and fashion to be determined from time to time by the Board of Directors. In the case of any notices sent to members, the Corporation may rely on the last physical or electronic address that a member has given notice of.

Directors Elections

- 3) That the by-laws relating to the method of election of Directors be simplified to read:

From time to time the Board of Directors shall establish a procedure for the election or appointment of Directors in each of the regions. Such procedure shall include:

- the establishment of a committee to oversee any election comprising no less than 3 members;
- a solicitation of nominations from among the members of a period of no less than 30 days
- nominations shall require the support of no fewer than the number of members in good standing established by the committee based on the size of the region and the distribution of members
- the provision of information on the background of nominations
- the conduct of the vote in paper or electronic means as determined
- the declaration as elected of a sole nominee when the period for nominations closes; and
- in the event that no nominations are received, the ability of the Board to appoint someone for the region

– continued on page 10

AVIS AUX MEMBRES DE RAC : ASSEMBLÉE GÉNÉRALE ANNUELLE 2016

Radio Amateurs du Canada est heureux de tenir son Assemblée générale annuelle (AGM) au Heart's Content à Terre-Neuve. L'AGM aura lieu en même temps que le hamfest du 150^{ième} anniversaire de la Heart's Content Cable Station. L'AGM est commanditée par la Society of Newfoundland Radio Amateurs (SONRA), le Baccalieu Amateur Radio Klub (BARK) et le Upper Trinity Amateur Radio Club (UTARC). Tous les membres de RAC sont priés d'assister à l'Assemblée générale annuelle.

Date : samedi le 10 septembre

Heure : 13h00 (heure d'été)

Lieu : l'AGM se déroulera sur le site historique provincial de la Heart's Content Cable Station située près de l'autoroute 80 à Heart's Content, environ 90 minutes de St John's, Terre-Neuve.

Les points à l'ordre du jour incluent :

- le rapport du président
- la présentation des états financiers de 2015
- nomination de l'auditeur pour 2016
- amendement à la constitution de RAC (voir colonne à droite)
- période de questions et réponses



Voici votre chance d'écouter ce que vos représentants ont accompli durant la dernière année, poser vos questions et faire vos suggestions à propos de la gestion et de l'orientation future de RAC.

Plusieurs membres du Conseil d'administration et de l'Exécutif participeront à l'Assemblée à laquelle tous les membres de RAC sont invités. De plus, nous prévoyons un Webinar au moyen duquel les membres de RAC pourront, à distance, participer à la réunion. Les détails de connexion au Webinar seront affichés sur le site web de RAC.

HAMFEST POUR SOULIGNER LE 150^{ième} ANNIVERSAIRE DE LA HEART'S CONTENT CABLE STATION

La Society of Newfoundland Radio Amateurs (SONRA), Baccalieu Amateur Radio Klub (BARK) et le Upper Trinity Amateur Radio Club (UTARC) sont heureux d'accueillir l'Assemblée générale annuelle de RAC, le samedi 10 septembre dans le cadre du hamfest soulignant le 150^{ième} anniversaire de la Heart's Content Cable Station.

Lieu : la Heart's Content Cable Station sur le site historique de Heart's Content, lequel est le lieu d'arrivée du premier câble transatlantique permanent en provenance d'Europe, en 1866. La Cable Station est à 90 minutes à l'ouest de St John's, Terre-Neuve, le long de l'autoroute transcanadienne.

Heure : les portes seront ouvertes au public et aux représentants à 9h00.

Les points saillants de l'événement incluent :

- visite du musée
- présentations radioamateurs
- marché aux puces
- dîner offert par SONRA
- café, avec les compliments de BARK et UTARC
- Assemblée générale annuelle de RAC à 13h00
- activité sociale à la résidence d'été de Doug Mercer, VO1DM à Green's Harbour sur la route 80 (à 30 minutes du hamfest). L'événement est du type AVB (apporter votre bière).

Coût : 15 \$ par personne et apporter votre bière.

Liens : VO1GT 146.940- ou VO1TCR 146.970-

Pour plus d'informations, veuillez s.v.p. communiquer avec Doug, VO1DM, à dougvo1dtm@gmail.com ou aller à <http://www.sonra.ca>.

– Traduction par Claude Lalande, VE2LCF –

AVIS DE CHANGEMENTS À LA CONSTITUTION

Le Conseil exécutif de RAC a révisé la structure administrative de Radio Amateurs du Canada et a proposé les changements ci-dessous. Aucun changement n'entrera en vigueur avant d'être présenté aux membres de RAC à l'Assemblée générale annuelle laquelle aura lieu le 10 septembre 2016.

Le Bureau des directeurs de RAC recommande :

- 1) Que le règlement soient modifié de manière à permettre le vote électronique des membres dans la mesure où 10 votes sont reçus.
- 2) Que le règlement relatif à l'avis de réunion soit simplifié pour permettre l'utilisation les formulations suivantes (les changements sont en italique) :

L'avis de toute réunion des membres, régulière ou spéciale, avec un résumé des raisons de la réunion contenant suffisamment d'informations et permettant une décision éclairée, sera publié dans la publication officielle de l'organisation, et *pourrait être envoyé électroniquement* aux membres pas plus tôt que 60 jours, mais pas plus tard que 21 jours avant la date de la réunion.

Tout vote des membres se fera par écrit ou par moyen électronique selon un format ou une façon à déterminer périodiquement par le Bureau des directeurs. L'envoi de tout avis aux membres se fera, à moins d'être prévu selon une forme et une façon particulières par le règlement, soit sur papier ou par moyen électronique selon la forme et la manière particulières à déterminer de temps à autre par le Bureau des directeurs. Dans le cas d'avis envoyé à tous les membres, la corporation pourrait s'en remettre à la dernière adresse électronique ou physique fournit par le membre.

L'élection des directeurs

- 3) Que le règlement relatif à la méthode des élections des directeurs soit plus facile à comprendre :

De temps en temps le Bureau des directeurs établira une procédure électorale ou de nomination des directeurs dans chacune des régions. Une telle procédure inclura :

- la mise sur pied d'un comité de surveillance de l'élection comprenant pas moins de 3 membres;
- un appel de mise en nomination à tous les membres sur une période ne pouvant être inférieure à 30 jours;
- le soutien aux mises en nomination ne devra pas excéder le nombre de membres reconnus par le comité qui tiendra compte de l'importance de la région et la répartition des membres;

– suite à la page 10

– RAC Constitutional Change Notice, continued from page 8

4) That the by-laws relating to filling vacancies on the Board of Directors be amended to allow the Board to fill any vacancy if no one is nominated for the position. Preference in such an appointment will be given to someone who has most recently served as the Deputy Director for the region concerned.

5) That the by-laws relating to Assistant Directors and Deputy Directors be amended to confirm that such offices are appointed by the Director concerned and that when such Director vacates their office, all positions of Assistant Director and Deputy Director are continued subject to a new appointment by a new Director.

For information: No other changes are currently proposed. Issues relating to term limits and regional distribution of Directors and the appointment of officers were considered. However, at present, no other changes are proposed.

At the 2016 Annual General Meeting, RAC members who are in attendance will be invited to vote on and give final approval to the special resolution.

I look forward to your attendance.

Glenn MacDonell, VE3XRA
President – Radio Amateurs of Canada



- une provision d'informations sur le vécu des nominés;
- le vote sur papier ou électronique tel que déterminé;
- un nominé unique est déclaré élu une fois la période de mise en nomination terminée; et
- dans le cas où aucune mise en nomination n'aurait été reçue, le Bureau des directeurs sera habilité à nommer quelqu'un de la région

4) Que le règlement définissant le remplacement des postes vacants au Conseil des directeurs soit modifié pour permettre au Conseil des directeurs de pourvoir tout poste vacant si aucune personne n'est déjà nommé au poste. Le choix préférentiel pour une telle nomination sera accordé à celui qui a récemment démontré son implication comme assistant directeur dans la région concernée.

5) Que le règlement relatif aux assistants directeurs et aux sous-directeurs soit amendé de manière à permettre les nominations par le directeur concerné. Mais si un tel directeur quitte sa fonction, les postes de l'assistant directeur et du sous-directeur demeurent sujets à de nouvelles nominations par un nouveau directeur.

Pour information : aucun autre changement n'est proposé pour le moment. Les enjeux relatifs à la limite des mandats et à la répartition régionale des directeurs, de même que la nomination des responsables (officiers) ont été pris en compte. Cependant, actuellement, aucun autre changement n'est proposé.

À l'Assemblée générale annuelle de 2016, les membres de RAC qui sont en attente, seront invités à voter et à donner leur approbation finale lors de la résolution spéciale

J'espère votre participation.

Glenn MacDonell, VE3XRA
President – Radio Amateurs of Canada



Feedback: Readers write to The Canadian Amateur

THE HIGHER THE BETTER?

Other than a handful of pirated YI call signs appearing on the band occasionally, there hasn't been much ham radio activity in Iraq in the past few years. That's why I got excited when I found out there were two new licenses issued in the YI-land to two new Radio Amateurs: Wahhab, YI3WHR and Sal, YI1SAL.

I sent an email to Wahhab to request a sked. He uses low power and a homemade dipole low above his rooftop. He asked me how he could improve his signal. I thought I would teach this new ham a valuable lesson about antennas by telling him "the higher the better", but instead I learned from him when he told me "in Iraq the lower the better".



YI3WHR QSL card: "Ishtar Gate: the eighth gate of Babylon city 575 BC."

After a couple of unsuccessful attempts, we finally made a QSO on 20m SSB. It was a big deal for both of us so when Wahhab received his QSL cards from the printer, he dedicated the very first one to me. He wrote: "My 1st QSL card go to Canada VE3VEE Marvin".

This QSO was my DXCC entity # 301. All 301 have been worked and confirmed in 3½ years since my return to ham radio after 27 years of being QRT.

You can find more information about YI3WHR on QRZ.com at <https://www.qrz.com/db/yi3whr>.

Update (June 13): Wahhab, YI3WHR, has been very busy over the past few weeks, exploring his new hobby. His low dipole has been replaced with a bit higher Moxon and now he is thinking of replacing even that with a 3-element Yagi, 12 metres above the ground.

After his on-the-air start with SSB, he has since ventured to RTTY, PSK, SSTV, JT65 and JT9. He now wants to learn Morse code! Don't you just love a young brand new ham in 2016 who wants to learn Morse code!

Two days ago (June 11), he told me he had just received his new Logbook of the World (LoTW) certificate. Look forward to receiving an LoTW confirmation from him.

Marvin Hlavac, VE3VEE
Richmond Hill, Ontario



**** NEW CONTACT INFO ****
 Allen Wootton, VY1KX
 Box 21217
 Whitehorse, Yukon
 E: vy1kx@rac.ca

In the December 2015 issue of the RSGB journal *Radcom*, Andy Talbot, G4JNT, describes some communication techniques used on 73 kHz in the early days of Amateur experimentation, around 1997, on this frequency.

At first, he says, dedicated chips were used for the digitization and decoding of signals, and then, with the advent of sound cards, these became the usual choice for audio sampling. According to him, however, the use of sound cards involved a step backwards in technology because the long and short term stability of their RC oscillators was terrible.

When he mentions a "150 microwatt 9 kHz transmission from the US being successfully decoded in the UK using a receive bandwidth of 46 microhertz", the necessity of very precise frequency measurement and stability is clear.

Nowadays RF signals locked to rubidium standards or GPS seem to be in common usage – both techniques not easily available in 1997.

This article got me thinking about timing and frequency and reminded me how far we have come with regard to their measurement.

QUA – A TOPICAL DIGEST

FREQUENCY MEASUREMENT...

A "Wavemeter"

For example, a few years ago my friend Austin Candy, VE7KX, (SK) gave me a Bach-Simpson model "77" wavemeter. In Figure 1 you can see this instrument in its box with four coils: one each for the 80m, 40m, 20m and 10m bands. In use, the appropriate coil is plugged into contacts on the side of the wavemeter and, in conjunction with the coil, the instrument's internal components form a parallel LC tuned circuit that shows a maximum meter reading when the circuit is tuned to the frequency being measured. This is done by adjusting the dial in the centre which turns a variable capacitor. On the meter's bottom left a small button can be pressed to increase the sensitivity, and on its bottom right is a jack for an external antenna to provide a stronger signal to the instrument.

The coils are for the 80, 40, 20 and 10 metre bands. To use the wavemeter to measure one's frequency on the 20m band, for example, the 20m coil is plugged into the side of the instrument and the dial is adjusted for maximum meter deflection. Then by comparing the dial reading with the chart shown in Figure 2 the frequency can be estimated.

Along with the instrument came four calibration charts showing the relationship between the dial setting and frequency. One of these charts is shown in Figure 2.

I tried measuring my transmitter's frequency using the wavemeter. With the transmitter connected to a dummy load at first I had trouble getting a wavemeter response, but as I experimented I soon found a measurable signal. By adjusting the dial I was able to get a nice sharp peak reading on the meter. I read the dial setting and located its value on the calibration chart's vertical axis.



Figure 1: A Bach-Simpson Model "77" wavemeter.

Then moving horizontally across the chart to the calibration line and from there vertically

downwards to the horizontal axis, I found the frequency according to the instrument.

Unfortunately, the frequency was very inaccurate – about 80 kHz high.

Perhaps someone ignored the warning in the instruction booklet that says "Do not, under any circumstances attempt to adjust the semi-variable trimmer

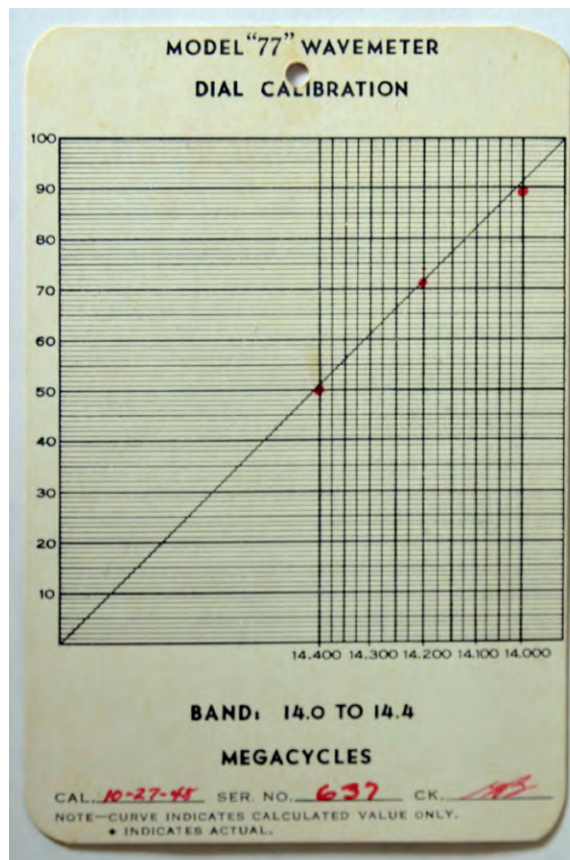


Figure 2: The 20m calibration chart for the wavemeter.

available through the small hole on the back of the case”, or perhaps it’s just the aging of components over the nearly 70 years since the instrument was calibrated. Maybe I should send the instrument back to the factory for recalibration – after all, the instruction booklet says “The fee for this service is one dollar – providing this sum is included at the time the unit is returned; and is available to model 77 owners at any time”.

Crystal Calibrators

At the time I got my Amateur certificate 100 kHz crystal calibrators were the usual method by which one adjusted a receiver’s analogue dial. I built one from a Knight Kit – it took power from the receiver for its operation and provided harmonics throughout the HF range as accurate frequency markers. My TS-520s has a similar crystal oscillator, but with 25 kHz markers. I think that with an old general coverage receiver, like the one I had, 25 kHz markers would have been too frequent; it would have been easy to adjust the very imprecise dial to the wrong harmonic.

Measuring Frequencies at VE7BQO

Nowadays, of course, digital readouts to 10 or even 1 Hz are common on our transceivers. In one of the ARRL frequency measuring tests of a few years ago I was quite surprised to be able to measure the frequencies of three different transmitters to within less than 5 Hz, just by adjusting my FT-817 to zero beat with the signals by ear. I switched the BFO injection back and forth between high and low side and matched the tones to as nearly equal as I could. Since the FT-817 provides 10 Hz precision, I had to interpolate between the nearest readout values for my final result.

Measuring Frequencies at VE3GSO

While I was very pleased with my results they were nowhere near the limit of what others achieved with their measurements of within a fraction of a hertz to that of the transmitters. One such set of results is described by Dave McCarter, VE3GSO, in an article entitled “Measuring Frequencies at VE3GSO” in the April 2015 issue of QST. In this very interesting article Dave describes how he used his FT-950 and freely available Spectrum Lab software, running on an out-of-date computer, to measure the test frequencies very accurately.

To achieve his excellent results Dave first used the Spectrum Lab software and the signals from WWV to calibrate the sample rate of his computer’s sound card. Once this was done he was able to use Spectrum Lab once again, this time to calibrate his transceiver against WWV and CHU signals which, except for the 160m test signal, spanned the range of frequencies involved in the ARRL frequency measuring test. His measurements of the three test frequencies were all within 1 Hz: his 80m result was +0.02 Hz, on 40m +0.04 Hz and on 160m (where the calibration was least accurate) –0.94 Hz. Like me, Dave had assumed that this sort of precision required state of the art rubidium time standards, or some such, and his elation at being able to accomplish such a feat comes across clearly in his article.

Dave concludes: *“The technical challenge, the adrenalin rush during the limited measurement period, the satisfaction of making use of the equipment I had on hand and used regularly, these are all in the best traditions of ham radio.”*

They certainly are, as is his desire to better understand frequency determining circuits of his transceiver so as to be able to do even better in future. It was a pleasure to read about Dave’s methods and accomplishment.

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Portable Operation

If, like me, you are interested in portable operation, you may have seen some of the great ideas for antennas and operating that Peter Parker, VK3YE, presents in his YouTube videos and Internet writing. Recently, Peter has put some of his thoughts together in a 200-page eBook entitled “Minimum QRP: Doing more with under five watt amateur radio” that I have been enjoying reading and perhaps some of you might too. It covers a wide range of material – why QRP; equipment; antennas; propagation; operating; information and equipment sources – and provides much food for thought.

My major criticism is that because it covers so much material its treatment of some topics is limited and perhaps short of detail for someone getting started. On the other hand, as I read the book I thought about some of my own experiences with QRP and portable operation and how to make use of Peter’s ideas for better and even more enjoyable operation in the future. While the book’s title suggests its contents are applicable only to QRP operation, in fact most of the material is equally valid for operation at higher power too. Peter’s enthusiasm is contagious and for about \$6 to download the book to an e-reader it offers good value.

As always, if you have any comments please contact me via email at my new email address at vy1kx@rac.ca. Please also see my new contact information on page 11 following my move to Whitehorse this spring.



AROUND THE CORNER...

People, Places, News and Events on the Canadian Amateur Radio Scene

The following news items have been compiled from Industry Canada, RAC bulletins and the RAC website at <http://wp.rac.ca>. Traduction par Claude Lalande, VE2LC.

NEW DIRECTOR FOR ALBERTA/NWT/NU REGION

RAC would like to welcome Ernest Clintberg, VE6EC/VE6ECK, as our newly elected Director for the Alberta, Northwest Territories and Nunavut Region. Ernest was elected by the members of the region and will complete the remainder of a two-year term that started on January 1, 2016 and will end on December 31, 2017.

Ernest resides in Spruce Grove, Alberta with his wife Linda. They have been married 45 years and have two children and two grandchildren. Since 2003 he has acted as Director of the North Central Alberta Amateur Radio Club he has served as its Secretary since 2011. He has been a RAC member since 1995 and also holds memberships in the Northern Alberta Amateur Radio Club (NARC), the Quarter Century Amateur Radio Club (QCARC), the American Radio Relay League (ARRL) and Ten-Ten International.

*Glenn MacDonell, VE3XRA
RAC President and Chair*

NOUVEAU DIRECTEUR POUR LA RÉGION DE L'ALBERTA/TNO/NU

RAC souhaite la bienvenue à Ernest Clintberg, VE6EC/VE6ECK, nouveau directeur élu pour la région de l'Alberta, Territoires du Nord-Ouest et Nunavut. Ernest a été élu par les membres de la région et complètera le mandat de deux ans qui débutait le 1er janvier 2016 pour se terminer le 31 décembre 2017.

Ernest demeure à Spruce Grove, Alberta avec son épouse Linda. Ils sont mariés depuis 45 ans et sont parents de deux enfants et grands parents de deux petits enfants. Depuis 2003 il a travaillé à titre de directeur du Club radioamateur de l'Alberta du Nord central (North Central Alberta Amateur Radio Club). Il en est le secrétaire depuis 2011. Il est membre de RAC depuis 1995 tout en étant aussi membre du Club radioamateur du Nord de l'Alberta (Northern Alberta Amateur Radio Club – NARC), du Club radioamateur Quarter Century (QCARC), de l'American Radio Relay League (ARRL) et de Ten-Ten International.

*Glenn MacDonell, VE3XRA
RAC Président-directeur général*

DEPUTY DIRECTOR ALBERTA/NWT/NU REGION

Radio Amateurs of Canada would like to welcome David Gervais, VE6KD, as the Deputy Director for the Alberta, Northwest Territories and Nunavut region.

David holds a Bachelor of Education degree and a journeyman's ticket in motor mechanics. He served as a public school teacher and has worked for the Workmen's Compensation Board of Alberta and has also operated his own business.

David belongs to several Amateur Radio groups including the North Central Amateur Radio Club (charter member) and the Quarter Century Amateur Radio Club, and he has been a member of Radio Amateurs of Canada since its inception.

David has also been active as a certified Amateur Radio examiner for over 15 years.

*Ernest Clintberg, VE6EC/VE6ECK
RAC Director for Alberta/NWT/NU*

ASSISTANT DIRECTEUR – RÉGION DE L'ALBERTA / TNO / NU

Radio Amateurs du Canada souhaite la bienvenue à David Gervais, VE6KD, nouvel assistant directeur pour la région de l'Alberta, Territoires du Nord-Ouest et Nunavut.

David détient un baccalauréat en éducation et sa carte de qualification en mécanique des moteurs. Il a été professeur à l'école public, travaillé pour la Commission des accidents du travail de l'Alberta et dirigé sa propre entreprise.

David est membre de plusieurs groupes radioamateurs dont le Central Amateur Radio Club (membre fondateur) et du Quarter Century Amateur Radio Club. Il est aussi un membre de Radio Amateurs du Canada depuis sa création.

David a aussi été actif à titre d'examineur radioamateur autorisé pendant plus de 15 ans.

*Ernest Clintberg, VE6EC/VE6ECK
Directeur de RAC pour l'Alberta/TNO/NU*



CANADA 150: SPECIAL EVENT PREFIXES FOR CANADA'S SESQUICENTENNIAL

At the Dayton Hamvention, Radio Amateurs of Canada announced that it has secured permission for all Canadian Radio Amateurs to use special call sign prefixes to celebrate the 150th anniversary of Canada's Confederation.

National, regional and local events will take place throughout 2017 to celebrate the anniversary and Canadian Amateurs will let their counterparts around the world know of our celebration by using the following special prefixes:

- Amateurs and clubs whose regular call signs start with VA will be able to use the CF prefix instead of VA (for example, VA3RAC will be authorized to use the CF3RAC call sign).
- Amateurs and clubs whose regular call signs start with VE will be able to use the CG prefix instead of VE (e.g., VE4RAC will be authorized to use CG4RAC).
- Amateurs and clubs whose regular call signs start with VO will be able to use the CH prefix instead of VO (e.g., VO1RAC will be authorized to use CH1RAC).
- Amateurs and clubs whose regular call signs start with VY will be able to use the CI prefix instead of VY (e.g., VY2RAC will be authorized to use CI2RAC).

These special prefixes are optional and Amateurs can choose if and when to use the special prefix vs their normal prefix at any time during the year.

"The Canada 150 logo is composed of a series of diamonds, or 'celebratory gems', arranged in the shape of the iconic maple leaf. The four diamonds at the base represent the four original provinces that

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formed Confederation in 1867: Ontario, Quebec, New Brunswick and Nova Scotia. Additional diamonds extend out from the base to create nine more points – in total representing the 13 provinces and territories. Created by Ariana Cuvin from Toronto, Ontario, the logo was the winning design in a nation-wide competition.”

For more information on Canada150 visit <http://canada.pch.gc.ca/eng/1342792785740>.

CANADA 150: PRÉFIX SPÉCIAUX POUR LE 150^e ANNIVERSAIRE DU CANADA

À la Hamvention, Radio Amateurs du Canada a annoncé qu'il a obtenu l'autorisation formelle pour que tous les radioamateurs du Canada soient en mesure d'utiliser des préfixes spéciaux ajoutés à leur indicatif d'appel dans le cadre de la célébration du 150^e anniversaire de la Confédération canadienne.

Les événements nationaux, régionaux et locaux auront lieu durant toute l'année 2017 pour célébrer cet anniversaire et les amateurs canadiens le feront savoir à leurs collègues partout au monde en utilisant les préfixes spéciaux suivants :

- Les amateurs et les clubs dont le indicatif d'appel débute par VA pourront utiliser le préfixeCF au lieu de VA (par exemple, VA3RAC pourra utiliser l'indicatif CF3RAC).
- Les amateurs et les clubs dont l'indicatif régulier commence par VE pourront utiliser le préfixeCG à la place de VE (e.g., VE4RAC sera autorisé à utiliser l'indicatif CG4RAC).
- Les amateurs et les clubs dont l'indicatif régulier débute par VO pourront utiliser le préfixe CH au lieu de VO (e.g., VO1RAC sera autorisé à utiliser CH1RAC).

NEW RAC BROCHURES/HANDOUTS

Radio Amateurs of Canada has created a new Brochures/Handouts area on our Downloads page. Here you will find publications for use at events such as Field Day and Hamfest season.

Our new “Welcome to the Wonderful World of Amateur Radio” brochure is now available for download in English. A French version will be posted on this page as soon as it has been translated and designed.

The brochure offers an introduction into “Amateur Radio: a form of communication; a hobby; a community service” and provides some information on how to get started. It also has a convenient space for clubs and individuals to customize the brochure by inserting their own contact information. Stay tuned to the “Downloads” page for more publications in the near future.



- Les amateurs et les clubs dont l'indicatif régulier commence par VY pourront utiliser le préfixeCI au lieu de VY (e.g., VY2RAC sera autorisé à utiliser CI2RAC).

Ces préfixes spéciaux sont optionnels et les amateurs peuvent décider du moment et du lieu d'utilisation du préfixe spécial, versus leur préfixe régulier, n'importe quand durant l'année.

« *Le logo se compose d'une série de diamants, ou « gemmes festifs », disposés de manière à former la feuille d'érable emblématique. Les quatre diamants à la base représentent les quatre provinces à l'origine de la Confédération de 1867, soit l'Ontario, le Québec, le Nouveau-Brunswick et la Nouvelle-Écosse. À eux se greffent neuf autres pointes diamantaires, le tout figurant les 13 provinces et territoires. Le logo gagnant d'un concours national est l'œuvre d'Ariana Cuvin, une résidente de Toronto (Ontario).* »

Pour plus d'information sur le 150^e du Canada, visitez : <http://canada.pch.gc.ca/fra/1342792785740/1342793251811>.

FOX-1CLIFF, D LAUNCH NET JULY 28

AMSAT Vice President – Engineering Jerry Buxton, N0JY, announced at the Dayton Hamvention AMSAT Forum on Saturday, May 21 that the launch for Fox-1Cliff and Fox-1D is now NET (No Earlier Than) July 28, 2016.

Fox-1Cliff and Fox-1D will be integrated onto the Spaceflight Sherpa platform for its maiden flight aboard a SpaceX Falcon 9 launch from Vandenberg Air Force Base. For more information please visit <http://www.amsat.org/?p=5235>

Source: AMSAT News; courtesy of N0JY

RAC TREASURER NEEDED

The Radio Amateurs of Canada is looking for a Treasurer who is a Chartered Accountant, Certified General Accountant or Certified Management Accountant. A certification in Amateur Radio is optional.



As RAC's financial advisor, we need someone to provide direction on the accounts and act as liaison with the external auditors. Experience with QuickBooks would be an asset.

Radio Amateurs of Canada is a non-profit corporation providing services to members and has a mandate to enhance Amateur Radio in Canada.

Please speak with your friends; there must be a RAC member who either qualifies or can approach someone for this volunteer position. Certification in Amateur Radio is not a requirement for this position. Interested parties please contact the RAC Corporate Secretary at va3wid@rac.ca.

Sukwan Widajat, VA3WID
RAC Corporate Secretary



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CALL FOR NOMINATIONS / MISE EN NOMINATION

THE CANADIAN AMATEUR RADIO HALL OF FAME

TEMPLE DE LA RENOMMÉE DES RADIOAMATEURS CANADIENS

What is the Hall of Fame all About?

Ed Frazer, VE7EF – Chair of Board of Trustees of the Canadian Amateur Radio Hall of Fame

Radio Amateurs of Canada recognizes deserving Amateurs by appointments to the Canadian Amateur Radio Hall of Fame. The Constitution of the Hall specifies that the appointment as Member of the Hall is for "outstanding achievement and excellence of the highest degree, for serious and sustained service to Amateur Radio in Canada, or to Amateur Radio at large". So what does all that mean?

The Trustees of the Hall have interpreted the Constitution to mean that the person has performed significant service over many years to enhance the well-being of Amateur Radio. For example, the Amateur may have served on: Canada's national Amateur Radio organizations (the Canadian Radio Relay League, the Canadian Amateur Radio Federation or Radio Amateurs of Canada); technical, regulatory or international committees; and/or Provincial or local associations such as repeater or emergency councils.

He or she may have become proficient in one or more areas of expertise and then shared this knowledge with other Amateurs by publishing articles, giving classes or providing seminars. They may have given back to Amateur Radio by becoming Accredited Examiners or teaching classes (Basic, Advanced and Morse Code) for several years.

No single achievement would necessarily qualify an Amateur for the Hall of Fame, but a lifetime of service would be favorable. Look at the list of Hall Members at <http://wp.rac.ca/canadian-amateur-radio-hall-of-fame-2/> and you will find Amateurs who have made distinguished contributions in many areas.

Please get together with your fellow Amateurs or club members and submit a nomination or two. Let us avoid the situation where no nominations are received as in past years. Let's not wait until a worthy Amateur becomes a Silent Key before he or she is honoured.

How do you nominate someone?

Any resident of Canada who holds a current Amateur Radio Operator Certificate issued by the Government of Canada, or any Canadian Amateur Radio organization, other than Radio Amateurs of Canada, may submit a nomination for Member of the Canadian Amateur Radio Hall of Fame. Membership in RAC is not mandatory.

Any resident of Canada who holds a current Amateur Radio Operator Certificate issued by the Government of Canada, except a Radio Amateurs of Canada employee, officer, Director, Assistant Director, volunteer manager, or leadership official in the Field Organization, may be appointed as a Member of the Hall. Membership in RAC is not mandatory.

Nomination or appointment for Member or Honorary Member of the Hall may be after the death of the nominee. A person who is not a resident of Canada may be appointed only as an Honorary Member of the Hall. The other requirements for appointment as Honorary Member of the Hall are the same as for Member.

Qu'est-ce que le Temple de la renommée?

Ed Frazer, VE7EF – Président du Conseil d'administration des fiduciaires du « Temple de la renommée radioamateur canadien »

Radio Amateurs du Canada marque sa reconnaissance envers les amateurs impliqués en les nommant au Temple de la renommée radioamateur canadien. La constitution du Temple de la renommée indique clairement que la nomination au Temple est liée à une réalisation hors du commun et à excellence au plus haut niveau, pour service d'envergure et soutien au radioamateurisme au Canada ou au-delà ». Qu'est-ce que tout cela veut dire?

Le conseil d'administration du Temple a interprété la constitution de manière à reconnaître les personnes qui ont rendu un imminent service et consacré plusieurs années à l'avancement du radioamateurisme. Par exemple, l'amateur peut avoir servi dans les organisations radioamateurs du Canada (la Canadian Radio Relay League, la Canadian Amateur Radio Federation ou Radio Amateurs du Canada); dans le domaine technique, réglementation ou comités internationaux; et/ou dans des associations provinciales ou locales tels répéteurs ou conseils d'urgence.

Il ou elle peut être devenu expert dans un ou plusieurs champs d'expertise et alors partager la connaissance acquise avec d'autres amateurs en publiant des articles, en donnant des conférences ou en organisant des séminaires. Ils ou elles peuvent avoir redonné au radioamateurisme en devenant examinateurs accrédités ou en donnant des cours (radioamateur de base, supérieur et code morse) durant plusieurs années.

Une réalisation spécifique n'est pas obligatoire pour se qualifier pour le Temple de la renommée. Une vie de service est tout aussi favorable. Voyez la liste des membres du Temple au <http://wp.rac.ca/canadian-amateur-radio-hall-of-fame-2/> et vous lirez le nom d'amateurs qui se sont distingués par des contributions dans plusieurs domaines.

Veillez s.v.p. vous réunir entre amateurs ou membres de clubs et soumettez une ou deux nominations. Évitez l'absence de nominations comme cela s'est produit dans des années antérieures. N'attendez pas qu'un ou une amateur qualifiable devienne une clé silencieuse avant de lui accorder cet honneur.

Comment se fait une mise en nomination?

Tout résident du Canada qui détient un certificat régulier de radioamateur émis par le gouvernement du Canada, ou toute organisation radioamateur canadienne autre que Radio Amateurs of/du Canada, peut proposer une candidature au titre de membre du Temple de la Renommée des Radioamateurs Canadiens. Être membre de RAC n'est pas obligatoire.

Tout résident du Canada qui détient un certificat régulier de radioamateur émis par le gouvernement du Canada, sauf un employé de Radio Amateurs of/du Canada, dirigeant, directeur, assistant directeur, gestionnaire bénévole ou chef attiré dans l'Organisation sur le terrain, peut être choisi comme membre du Temple de la renommée. Être membre de RAC n'est pas obligatoire.

LARRY PRICE INDUCTED AS HONORARY MEMBER OF HALL OF FAME

Prepared by Ed Frazer, VE7EF

Chair of Trustees, Canadian Amateur Radio Hall of Fame

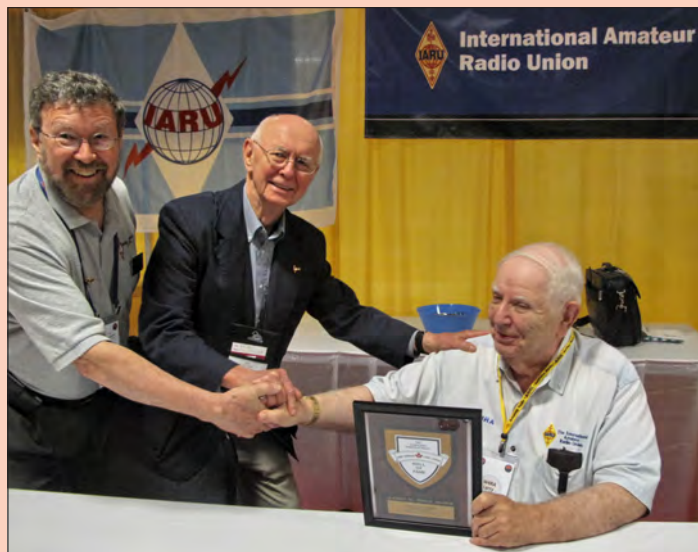


On Saturday, May 21 at the 2016 Dayton Hamvention, RAC President Glenn MacDonell, VE3XRA, inducted Larry E. Price, W4RA, of Statesboro, Georgia as an Honorary Member of the Canadian Amateur Radio Hall of Fame.

RAC awarded this honour to Larry for his many years of support to the Canadian

Amateur Radio Federation (CARF) and the Canadian Radio Relay League (CRRL) and to Radio Amateurs of Canada (RAC) during the years of merger negotiation which led to the creation of RAC.

Larry's contribution to RAC and to Amateur Radio internationally is considerable. He served many years in several positions in the American Radio Relay League (ARRL), becoming President from 1984 to 1992. As the ARRL Vice-President, he was a delegate to the International Amateur Radio Union (IARU) and later served as its Secretary, Vice-President and President.



From left: RAC President Glenn MacDonell, VE3XRA, Ed Frazer, VE7EF (Chair of Trustees, Canadian Amateur Radio Hall of Fame) induct Larry E. Price, W4RA, into Hall of Fame. Photos by Carole Eng.

It is fitting for Larry Price, W4RA, to be the first Honorary Member of the Canadian Amateur Radio Hall of Fame. For additional information on Larry's achievements please see the article on page 22 of the March-April 2016 issue of TCA magazine.

Only the RAC Board of Directors, by majority vote, is allowed to nominate candidates for Honorary Member (those persons not residents of Canada). Because of the requirement for Canadian residency for appointment as Member of the Hall, it is incumbent upon the nominator to confirm the Canadian residency of a nominee prior to submitting a nomination.

Nominations shall be submitted to the Board of Trustees using the Canadian Amateur Radio Hall of Fame Nomination Form which is available on request from RAC Headquarters or for download from the RAC website at <http://wp.rac.ca/nomination-canadian-amateur-radio-hall-of-fame/>.

All nominations shall include a biographical sketch or curriculum vitae. Three references shall be included for Member of the Hall.

All nominations for Member of the Canadian Amateur Radio Hall of Fame must be received at RAC Headquarters by the close of the last business day of September.

Late nominations will be considered in the next year. Once received, all handling shall be conducted in a secure and confidential manner. On or before the last business day of November, the Chair of the Board of Trustees for the Hall of Fame shall advise the Custodian (RAC) of the decisions of the Board of Trustees on appointments for the calendar year.

The Board may appoint a person who has been nominated in a previous year. For this reason, no advice shall be issued to the nominator that the nomination has not resulted in an appointment, nor any reason given why an appointment has not been made as a result of that nomination.

La mise en nomination ou le choix d'un membre régulier ou honoraire au Temple de la renommée est possible à titre posthume. Une personne qui ne réside pas au Canada peut devenir membre du Temple de la renommée à titre honoraire seulement. Les autres prérequis de mise en nomination honoraire sont similaires à ceux réservés au membre.

Seulement le Bureau des directeurs, majoritairement, est habilité à nommer un candidat honoraire ne résidant pas au Canada. En raison de l'obligation de résidence canadienne pour une nomination au titre de membre du Temple de la renommée, il est impératif pour celui qui nomme un candidat de s'assurer de sa résidence canadienne avant de présenter sa candidature.

Les mises en nomination devront être présentées au Conseil d'administration du concours (Board of Trustees) au moyen du formulaire "Canadian Amateur Radio Hall of Fame" disponible sur demande au siège social de RAC. Le formulaire peut être téléchargé à partir du site web de RAC à <http://wp.rac.ca/nomination-canadian-amateur-radio-hall-of-fame/>.

Toute nomination doit inclure un résumé biographique ou un curriculum vitae (CV) du candidat. Trois références doivent accompagner le formulaire de mise en candidature.

Toute mise en nomination au Temple de la Renommée des Radioamateurs Canadiens doit arriver au siège social de RAC avant la fin du dernier jour ouvrable de septembre.

Les mises en nomination retardataires seront prises en compte l'année suivante. Une fois reçue, la mise en nomination sera traitée de façon sécuritaire et confidentielle. Le ou avant le dernier jour ouvrable de novembre, le président du Conseil d'administration du Temple de la renommée avise le responsable (RAC) de la décision du Conseil relativement aux mises en nomination de l'année.

Le Conseil peut nommer une personne nommée l'année précédente. Pour cette raison, aucun avis ne sera fourni au proposeur lui indiquant que la mise en nomination est demeurée sans résultat, ni tout autre raison indiquant le non choix du candidat.

THE OTTAWA AMATEUR RADIO CLUB PRESENTS THE 2016 OTTAWA (CARP) HAMFEST



SATURDAY, SEPTEMBER 10, 2016

(The week after the Labour Day Weekend)

**Commercial Vendor setup: 7:30 am; Private Vendors: 8 am
Fleamarket Open: 9 am until 12 noon**

CARP AGRICULTURAL FAIRGROUNDS
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- Just Minutes from the Diefenbunker
- Enjoy Scenic Ottawa – Canada's Capital City

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<http://wp.rac.ca/>

CALL FOR NOMINATIONS: RAC AMATEUR OF THE YEAR AWARD

To qualify for the title "Amateur of the Year", an individual should have made an outstanding contribution to Amateur Radio in the past year, or have contributed consistently to the welfare of Amateur Radio over several years. RAC Directors, Officers and Section Managers are not eligible for the award while in office, and not in respect to their term(s) of office.

Nominations with supporting documentation are to be addressed to the RAC Corporate Secretary (see address at bottom of the page) and received at RAC Headquarters by the close of the last business day of September, for consideration for the current year.

Selection of the winning candidate will be by majority vote of the RAC Board of Directors based on the supporting documentation submitted with the nomination. The winning candidate will be notified by mail.

Due recognition will appear in *The Canadian Amateur* and a suitable plaque will be presented at an appropriate time and place.



http://www.cafepress.ca/rac_radio

MISE EN NOMINATION : PRIX AMATEUR DE L'ANNÉE DE RAC

Pour se qualifier au titre « Amateur de l'année », une personne doit avoir fourni une contribution hors du commun à la cause radioamateur au cours de l'année qui se termine, ou avoir travaillé substantiellement au bien-être du radioamateurisme depuis plusieurs années. Les directeurs de RAC, dirigeants et gérants de section ne sont pas éligibles au Prix aussi longtemps qu'ils sont en fonction, et sans considération quant à leur(s) mandat(s).

Les mises en nomination, documentées, doivent être envoyées au secrétaire de RAC de manière à ce qu'elles parviennent au siège social de RAC au plus tard à la fin du dernier jour ouvrable du mois de septembre pour être prises en considération la même année.

Le choix du candidat gagnant est effectué à la majorité des membres du Bureau des directeurs, basé sur la documentation accompagnant la mise en nomination. Le candidat gagnant est avisé par la poste.

The Canadian Amateur (TCA) publiera un texte de félicitation et une plaque sera remise au récipiendaire en temps et lieu appropriés.

Radio Amateurs of/du Canada
720 Belfast Road
Suite / Bureau 217
Ottawa, ON, Canada
K1G 0Z5



AMATEUR RADIO SATELLITES



Keith Baker, VA3KSF/KB1SF
PO Box 33
Corunna, ON N0N 1G0
E: va3ksf@rac.ca

In previous columns I've been sharing a bit of AMSAT's history and bringing you up to date on its more recent activities. In this column I'll share information about some brand new Amateur Radio satellites now in orbit and others that are awaiting launch. I'll also provide some exciting news about the Amateur Radio on the International Space Station (ARISS) program.

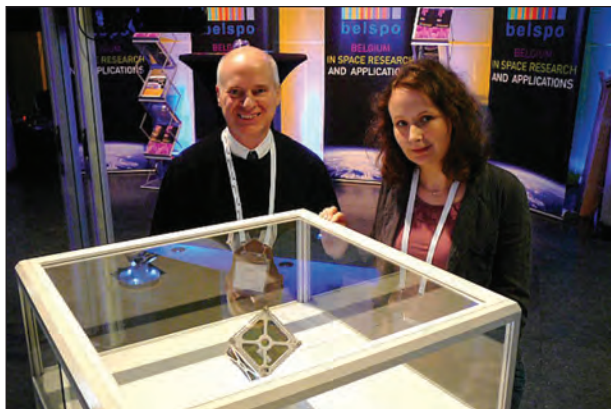
THREE NEW CUBESATS

Three CubeSats, developed by student teams under the direction of the European Space Agency (ESA) Education Office's "Fly Your Satellite!" program, were successfully launched via Soyuz flight VS14 aboard a Russian Soyuz-STA Fregat-M rocket on April 25 from ESA's Kourou Spaceport in French Guiana. The launch placed all three satellites into a 453 x 644 kilometre, 98.2° inclination orbit.

The first of the three satellites is OUF1-1, built by students at the Université of Liège in Belgium. OUF1-1 carries the first dedicated Amateur D-STAR satellite transponder.

Next is e-st@r-II, built by students at the Polytechnic of Turin in Italy. Their satellite

Professor Jacques Verly, ON9CWD, of the Montefiore Institute and Amandine Denis, ON4EYA, Head of the OUF1 (LTAS) Project, pose with the flight model structure of OUF1-1. (Courtesy: ESA)



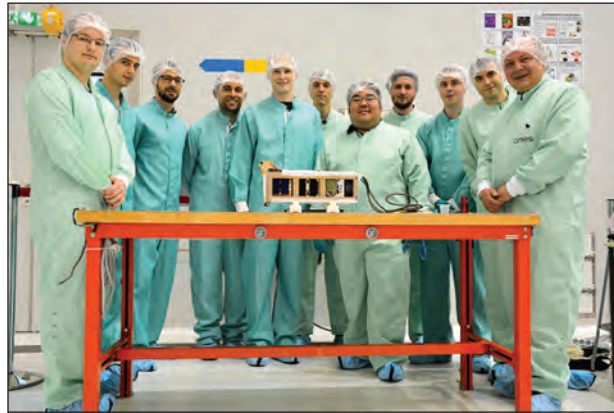
will demonstrate an attitude control system using measurements of the Earth's magnetic field.

Finally, there's AAUSAT-4 which was constructed by students at the University of Aalborg in Denmark. Their satellite will operate an automated ocean vessel identification system.

The "Fly Your Satellite!" program is aimed at training the next generation of European aerospace professionals. The three chosen student teams were selected to develop 1U CubeSats carrying Amateur Radio payloads.

The three satellites arrived in South America on Friday, March 25. Upon arrival, the satellites were given a security escort from the airport to the Guiana Space Centre near Kourou. The student teams arrived soon after to take charge of their brainchildren and prepare them for launch. On March 30, the students removed the so-called "Remove Before Flight" pins and successfully verified that their CubeSats were ready for launch. Afterwards, the lateral access ports of the satellite's P-POD launcher were put back in place. The next pre-launch activities consisted of completing the application of a special thermal-optical tape on the outside of the P-POD launcher, which ensured the (then unpowered) CubeSats were shielded from extreme thermal radiation during the launch phase.

At press time, ground controllers indicated that signals from the e-st@r satellite's 1200 bps beacon were very weak which may indicate an antenna deployment issue or unexpectedly low transmit power. ESA reports the e-st@r team is



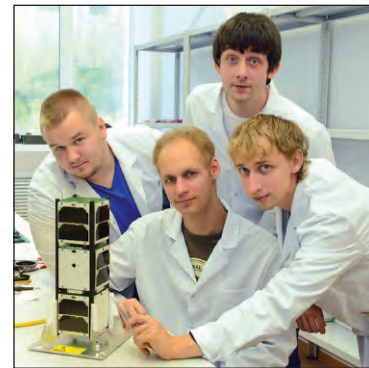
The OUF1-1, e-st@r-II and AAUSAT-4 project teams pose with their satellites at ESA's Spaceport in French Guiana just prior to the integration of the satellites into the Soyuz launcher's upper stage. (Courtesy: AMSAT)

working to consolidate the radio communication link with their satellite.

More information about the "Fly Your Satellite program!" (and the latest launch) can be found at

http://www.esa.int/Education/CubeSats_-_Fly_Your_Satellite/Fly_Your_Satellite!_programme

AISt-2D AND SAMSAT-218D



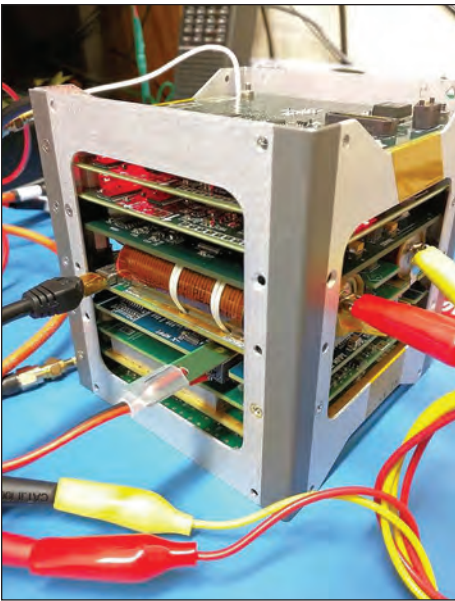
The SamSat-218 development team pose with the fruits of their labour: the flight model of their satellite at the Samara Aerospace University in Russia. (Courtesy: Samara University)

Two Russian satellites, AISt-2D and SamSat-218D, operating in the Amateur Radio bands, were successfully launched on April 28 at 02:01 UT on a Soyuz 2-1A launch vehicle from the new Vostochny Cosmodrome located in the Amur Oblast of Russia. Both satellites were successfully placed into a 471 x 485 kilometre orbit with a 97.3° inclination to the Earth's equator.

AISt-2D weighs 500 kilograms and is a technology demonstration and scientific research satellite developed at the Samara National Research University (formerly the Samara Aerospace University) in Russia. The 3U CubeSat SamSat-218 was developed by students at the Samara State University and weighs just 4 kilograms. More information about these satellites can be found at <https://amsat-uk.org/2016/04/30/aist-2d-and-samsat-218/>

Fox 1C, Fox 1D and Fox-1E

At press time, work was proceeding to prepare Fox 1C and Fox 1D for an impending launch. The exact launch dates for these two satellites – slated to be launched onboard the maiden flight of the SHERPA CubeSat launcher via a Space-X launch vehicle – had not yet been determined. In the meantime, work to prepare both Fox-1B



The engineering model of the Fox 1-B satellite undergoes performance testing at AMSAT's Fox Labs in Texas. (Courtesy: AMSAT).

(RadFXsat-II) and Fox-1E for flight was also progressing and an engineering model of the RADFX hardware – designed to measure the radiation effects of various satellite components in space – was undergoing ground testing at AMSAT's "Fox Labs" in Texas. So far, all tests were nominal.

ARISS CELEBRATES SCHOOL CONTACT #1,000

On March 10, the ARISS team proudly celebrated its 1,000th school radio contact. You may recall that the very first ARISS contact took place in the year 2000, some 16 years ago. Astronaut Tim Kopra, KE5UDN, on the International Space Station (ISS) did the honours for the 1,000th linkup speaking to students gathered at the University of North Dakota (UND) in Grand Forks, North Dakota. The event was also the very first Amateur Radio contact with the ISS that has been hosted at a school in North Dakota.

Astronaut Kopra spoke in real time to excited scholars at the event organized by the North Dakota Space Grant Consortium (NDSGC). During the 10-minute ARISS contact, he answered questions formulated by 20 different pupils in kindergarten all the way up to the graduate school level. A member of the winning 10th Grade team from the Space Grant's high altitude balloon competition last fall was also awarded one of the slots to interview Kopra.

As with the 999 school contacts that preceded it, an ARISS event is far more than just an Amateur Radio contact. In this case the NDSGC team that included college student volunteers made multiple visits to pupils in the second through fifth grades at schools including: Emerado Elementary (Emerado, ND); Highland Elementary (Crookston, MN); Century Elementary (Grafton, ND); Century Elementary (Grand Forks, ND); and Discover Elementary (Grand Forks, ND). The university teams led the young students in hands-on activities to learn about aerospace, priming these youths for their interview with Kopra. The students, many from smaller rural communities, also built and launched rockets, crafted and tested parachutes similar to those on NASA's Orion capsule, and designed and tested neutral buoyant objects.

Students in the audience for the 1,000th contact numbered nearly 500. Local TV and newspaper reporters captured the action; the university media team filmed it, and John Spasojevich, AG9D, handled live streaming of the contact.

During the ISS contact, one student asked: "What advice would you give to students, such as myself, who wish to work for NASA one day?" Kopra advised: "Study very hard and work hard in school because if you do well in school you'll learn a lot and it's like money in the bank for you and your future career."

Commenting on the contact, a UND staff member noted that:

"Experiential learning has proven to be the most effective method of knowledge retention, so this [ARISS] experience would grant them [students] the skills necessary to be successful individuals in their future careers. The problem-solving, creativity, and perseverance required by radio communications are cross-disciplinary skills that students can use as they enter STEM (Science, Technology, Engineering and Math) fields and careers, enhancing the NASA-relevant workforce of North Dakota."

Frank Bauer, KA3HDO, the International Chairman for ARISS and AMSAT's Vice-President of Human Spaceflight, also commented on this noteworthy accomplishment:

"With the outstanding support of NASA and the International Space Agencies participating in ISS, the ISS on-orbit crew members... encompassing all 48 expeditions and the hundreds of ARISS volunteers worldwide... the ARISS team has now reached this tremendous milestone. Since our first contact in December 2000 to the 1,000th contact in North Dakota, hundreds of thousands of students have participated in hands-on STEM learning that the ARISS program affords. In addition, many millions from the general public have witnessed Human Spaceflight in action through an ARISS contact."

HOW THE 1,000th CONTACT WAS MADE

ARISS telebridge station W6SRJ operators Tim Bosma, W6MU and Don Dalby, KE6UJAY, in Santa Rosa, California, skillfully supported the North Dakota Amateur Radio linkup as the ISS passed overhead, relaying astronaut Tim Kopra's radio signal to the students in North Dakota. Charlie Sufana, AJ9N – an AMSAT member and ARISS mentor who was also the lead operator for ARISS Contact #1 – guided the UND Dakota Student Amateur Radio Association and the FORX Amateur Radio Club in all aspects of the ARISS contact.

FREQUENCY AND MODE DATA				
Satellite	Mode	Uplink (MHz)	Downlink (MHz)	Beacons (MHz)
OUFTI-1	AFSK & D-Star	435.045	145.950	145.980 (CW)
e-st@r-II	CW and AFSK		437.485	
AAUSAT-4			437.425	
ANST-2D	Telemetry Telemetry Synthetic Radar		435.3065 – 435.3235 435.3565 – 435.3735 433 – 438	
SAMSAT-218D	TRXSSAU (Digital)	435.590 – 435.610	145.850 – 145.890	145.870 (CW)

MORE ABOUT ARISS

Amateur Radio on the International Space Station (ARISS) is a cooperative venture of international Amateur Radio societies and the space agencies that support the International Space Station (ISS).

In the United States, sponsors are the Radio Amateur Satellite Corporation (AMSAT), the American Radio Relay League (ARRL), the Center for the Advancement of Science in Space (CASIS) and the National Aeronautics and Space Administration (NASA).



The primary goal of ARISS is to promote the exploration of Science, Technology, Engineering and Mathematics (STEM) topics by organizing scheduled contacts via Amateur Radio between crewmembers aboard the ISS and students in classrooms or informal education venues. With the help of experienced Amateur Radio volunteers, ISS crews speak directly with large audiences in a variety of public forums. Before and during these radio contacts, students, teachers, parents and communities learn about space, space technologies and Amateur Radio.

Ian MacFarquhar, VE9IM, was appointed by RAC as the ARISS regional representative. More information about the ARISS Project can be found on page 35 and at <http://www.ariss.org>.

WRAP UP

That's all for this time. As you can see, it's a very exciting time for the Amateur Satellite Service with several new satellites in orbit and several more (such as AMSAT's Fox-1C and 1D) now awaiting launch "real soon now".

In the meantime, stay tuned to the AMSAT website (<http://www.amsat.org>) for all the very latest Amateur satellite information.



SUMMER FUN FOR YOUTH AND CLUBS!

*Submitted by Brian Jackson, VE6JBJ,
RAC Youth Education Program
Coordinator – ve6bjb@rac.ca*

The summer months are upon us and kids and their families are looking for things to do. This is a prime opportunity to introduce them to the wonders of Amateur Radio.

Over the years, I have had the chance to see clubs actively taking Amateur Radio to the masses, through parks and campgrounds, and clubs and camps.

In this article I would like to share some of the ideas that have been shared with me.

CAMPGROUND

Darrell Dickinson, VE6DDE, introduced me to the fun of QRP many years ago in a campground in British Columbia.

Imagine setting up a QRP rig or a larger antenna and just talking to people as they wander by your campsite. Curiosity will get the best of those who are walking their dog or are headed to the general store for ice cream.

YOUR LOCAL PARK

Set up your QRP rig in a park where families are enjoying some of the sunshine.

The same curiosity that brought them to your campsite will bring them over to ask about your equipment and ask to speak to someone on the other end of the radio.

It doesn't have to be on the HF bands. Local repeaters provide that voice for people to talk to.

SCIENCE CENTRES / OBSERVATORIES

If you are really serious about getting the word out about Amateur Radio, have your club approach a local science centre or observatory.

These facilities are always looking for exciting new events to offer the people who attend their facilities each day.

Setting up a display and giving them a chance to talk on the radio is a surefire way to put a mic in their hand and get them interested in our hobby.

Have a pamphlet ready for them that refers them to future club activities and invite them to attend.



SUMMER CAMPS

Youth groups of all types offer summer camps for their members.

Either day or residential camps, summer is full of eager young minds at camp who are looking for something to do.

Look for your local Scout or Guide troop, or a 4-H club, or a summer recreational program to bring your equipment to.

Show them the wonders of Amateur Radio and all it has to offer.

CONTESTING

As summer contests take place invite families from your community to come and join you in competing in some of the summer contests. Gain points and share the experience of youth on the radio.

A MESSAGE FOR THE YOUTH

Why not take a parent for a walk and stop at a local hamshack? Look for the big antennas and VE licence plates and ask if you can see what equipment they are using in their hamshack.

Ask questions about the type of equipment they are using and ask them to make a contact as a demonstration for you.

Our Amateur Radio hobby only grows if people know about it. Introducing radio to youth only happens if you show them how amazing your first contact feels. They only get hooked when you put a microphone in their hands and let them talk to someone across their city or around the world.

The benefit for all of us is a youth who is interested and shares this with their friends and joins the hobby. It sounds like it might take some work but it seems like it is worth it to me.

World Radiocommunication Conference Update

Bryan Rawlings, VE3QN
Special Advisor WRC-19
Radio Amateurs of Canada

The first series of Preparatory Meetings for the 2019 World Radiocommunication Conference (WRC-19) dealt with Amateur Radio issues which included trying to ensure access to the 6-metre band worldwide, protection of Amateur activities – current and future – in our 5 cm microwave band and keeping an eye on the development of Wireless Power Transfer for its possible impact on Amateur bands.

The Amateur Radio Working Group also continued work on an update to an ITU document which sets out the details of the signals Amateurs transmit – this is to be used, as needed, in sharing studies. In addition, the approvals process was begun on a document which describes encoded data and weak-signal modes such as JT65 and JT9.

Preparatory Meetings are held twice a year – usually at the headquarters of the International Telecommunication Union (ITU) in Geneva, Switzerland – so there may be six more meetings before WRC-19, now tentatively scheduled for October 2019, takes place.

Along with the International Amateur Radio Union (IARU), which is a sector (non-voting) member of the ITU, several administrations include Radio Amateurs as part of their national delegations. We in Canada are fortunate that our regulator is one of these working through Radio Amateurs of Canada.

The six-metre Agenda Item seeks an international allocation to the Amateur Radio Service in 50 to 54 MHz in ITU Region 1 (Europe, Middle East and Africa).

In Region 1 the frequency range 47 to 68 MHz is allocated to broadcasting and has been used in the past for analog television. Six metre operations in Region 1, where authorized, are by a local domestic allocation and are usually for the lower two megahertz only. Key to achieving this allocation will be determining if the conversion to digital television and the migration of TV away from this frequency range, by 2020, will be complete. Work is now beginning by our Amateur colleagues in Region 1 to make the case for an Amateur Radio allocation from 50 to 54 MHz once this happens.

The Amateur 5 cm band is a secondary allocation in 5650 to 5850 MHz worldwide and, in Region 2, to 5925 MHz. The primary users are radiolocation and radiodetermination services including space-based systems. There is also secondary use by Industrial, Scientific and Medical (ISM) systems including Wi-Fi and cordless devices. What is being sought by WRC-19 Agenda Item 1.16 is an expansion of use by Wireless Access Networks (WAN) and Radio Local Area Networks (RLAN). A complicated process is just beginning to consider how much, if any, additional spectrum these systems should be allowed, who might be impacted by this and what restrictions might have to be imposed. As a secondary user, Radio Amateurs will have to be alert for possible impacts and how we would best make our case to avoid them.

Wireless Power Transfer (WPT) is a technology likely to be much in demand as more and more electric cars come into service.



The early work in WRC-19 is studying the 100 to 300 kHz range. As Amateurs we have a band at 135.7 to 137.8 kHz which we will want to protect. We will also want to be reassured that any technologies for WPT are not likely to cause out-of-band interference.

Spectrum Sharing Studies in the ITU, as they apply to Amateur Radio, were briefly discussed in the November-December 2014 issue of TCA (see page 11). Some years ago the Amateur Radio Working Group authored an ITU Recommendation setting out the technical characteristics of all the different signals which Radio Amateurs emit. This document is currently undergoing an update to – among other things – include new Amateur bands at 137 and 472 kHz, document Amateur bands above 81 GHz and update data pertaining to the Amateur satellite service. It is expected the revision will be ready for approval for the October 2016 Preparatory Meetings.

During the last WRC cycle, the Amateur Working Group processed an ITU Recommendation on the Varicode alphabet used for PSK. The current project is to document, in a new Recommendation, digital encoding for weak-signal work, e.g., for JT65 and JT9. It is expected the approval process will stretch over the next one or two meetings.

As I commented in articles at the end of the last WRC, Radio Amateurs benefit and help ensure the continuance of our pastime by showing up and getting involved in the dealings with our own regulator, now called the Department of Innovation, Science and Economic Development (mercifully abbreviated to ISED) and with the ITU. Your contributions to the Defence of the Amateur Radio Fund, and the management of the trust by RAC, help Canada to continue to play a significant role.

The Defence of Amateur Radio Fund

The Defence of Amateur Radio Fund (DARF) is a Trust Fund that was established in the early 1990s by the Canadian Radio Relay League to provide financial support for research, and to defray travel expenses of a delegate to World Radio Conferences (WRC) to defend the Amateur Radio bands.



It costs a lot to attend a WRC meeting such as the recent WRC-15 meeting last November. Travel and meeting expenses for a three- to four-week conference can top \$10,000 or more in an international city like Geneva, Switzerland – even for the most frugal. Without new donations, DARF funds on hand won't last indefinitely.

Donations may be made by cheque only. Cheques should be made out to "Radio Amateurs of Canada" but should also include a memo indicating that the donation is for "DARF". Cheques may be sent by mail to: Radio Amateurs of Canada, 720 Belfast Road, Suite 217 Ottawa K1G 0Z5. For more information please visit darf.rac.ca.

CANADIAN LISTINGS IN THE RADIO AMATEUR CALL BOOKS

John Gilbert, VE3CXL

The *Radio Amateur Call Book Magazine* was published by The Radio Amateur Call Book Inc., in Chicago, Illinois. The magazines were known, from the artwork on the cover, as the “Flying Horse” Call Books. Publication began in 1926, with Canadian information compiled from official lists of licence holders prepared by the Department of Marine and Fisheries which became known, in 1936, as the Department of Transport (DOT).

INTRODUCTION

There is considerable literature covering the development and licensing of radio in Canada prior to 1926. ¹ Spud Roscoe, VE1BC, for example, writing about what became the “Amateur Experimental Service”, is the source for these snippets about the early days:

1) Guglielmo Marconi (1874-1937) never held a radio licence but one would have to agree that he was one of the first Radio Amateurs. He actually stated that he was “only an amateur”.

2) In Canada licences were issued by the Naval Service of the federal government in 1912.

3) There is a record that the first Amateur Radio licence issued in Canada was to Frank Vaughan of Saint John, New Brunswick, in the fiscal year ending March 31, 1911.

4) The Wireless Association of Ontario was formed in 1912 to provide some form of regulation to the Amateur Radio community. This association assigned call signs with the letter “X” as the prefix, and then the first letter of the holder’s surname, and then a letter in alphabetical order. A list of members in 1912 appears in “Spark to Space” including several names (e.g., Rogers, Gloster) which appear in later years.

5) Canadian Amateur Radio call signs were first assigned a numerical prefix in 1919 as follows:

1 – Nova Scotia, New Brunswick and Prince Edward Island

2 – Quebec

3 – Ontario

4 – Alberta, Saskatchewan and Manitoba (later VE6, VE5 and VE4)

5 – British Columbia, Northwest Territories and Yukon Territory (later VE7 and VE8)

6 – Training Schools

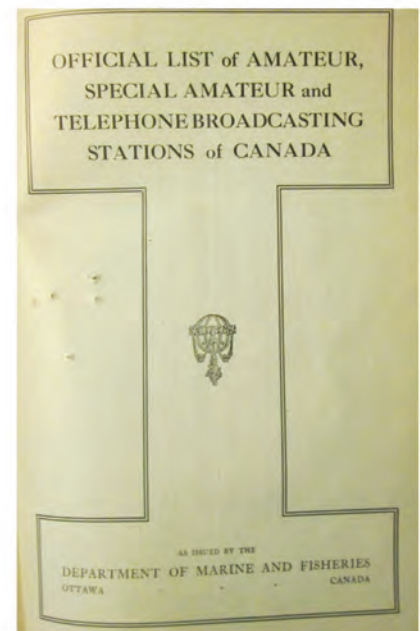
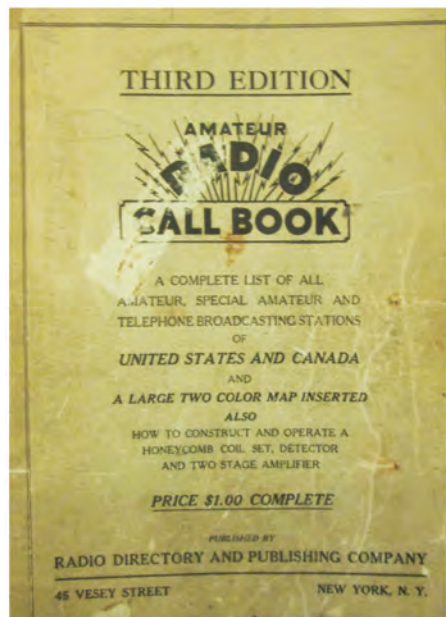


Figure 1: Excerpt from Vol 1, Number 3, December 1922. From the John Gilbert Collection.

7 and 8 – not assigned

9 – Experimental

10 – Amateur Broadcasting

On May 1, 1919, the Department of Marine and Fisheries lifted the wartime ban on Amateur Radio and issued a list of licensed Amateurs which ran to seven pages. Calls ran from 1AA through 5HD, with no VE prefix.

The early period covered by the Call Books (1922-1959) reveals a very different environment from today. Innovation in communications was largely led by individuals, many of whom were Amateurs not necessarily associated with a commercial entity.

The distinction between Amateur and commercial activity was less clearly defined than today. Virtually all the executives of the government’s Radio Regulations Division were Amateurs. They were highly active and supportive of the Experimental Service.

Further, there was a close and cooperative relationship between Amateurs in Canada and the United States. Several profiles of Canadian Amateurs were run in *QST* – no doubt a matter of pride for the individuals concerned. Examples are:

- J.D. Jarest of Lévis, Quebec, 2AB (*QST*, December 1919);
- A.H.K. Russell of Toronto, XRE, 9AL (*QST*, March 1923); and

- William D. Wood of Vancouver, 5BR, 9BD (*QST*, April 1922 and again in May 1923).

Around 1929 the prefix “VE”, still in use today, was added to Amateur call signs.

The Canadian Amateur magazine *XTAL* (short for “Crystal”) was published by the Canadian Amateur Radio Operators Association between 1935 and 1950. ² Copies of all of the issues of the magazine can be viewed online at: <http://onradiohistory.ve3we.org/>

The editorial policy of *XTAL* was to report on Canadian activity but the magazine always stressed the benefits of a close association between Canada and the United States and Britain.

THE CALL BOOKS

Starting in 1922, a publication, which included Canadian listings, appeared as the *Citizen’s Radio Call Book* published by the *Citizen’s Radio Service Bureau* in Chicago. Copies of these publications can be viewed online at: <http://www.americanradiohistory.com/Citizens-Radio-Call-Book-Master-Page.htm>

The Amateur listings were part of a more comprehensive listing of radio information and, in 1926, the *Citizen’s Radio Call Book* spun off the Amateur listings (US and Canada) in a separate publication, also on line. It seems to have been a single issue, perhaps overtaken by the publication of the *Flying Horse* series that year.

Prior to the appearance of the Flying Horse Call Books, there appears to have been more than one publisher of Radio Amateur calls. Volume 1, Number 3, December 1922, is entitled "Amateur Radio Call Book", and was published by the Radio Directory and Publishing Company of New York (see Figure 1 on page 22).

It is not known if this was a competitor of the Chicago company or, perhaps, a predecessor of the Flying Horse series. It contains a Canadian listing, probably from the same source as the "Citizen's" books, and some Canadian advertising along with a list of Canadian telephone broadcast stations.

From 1926 the Flying Horse Call Books, in normal times, appeared quarterly by subscription and were available for sale in radio stores. Until around 1959 the Canadian listings were combined with those of the United States, but after that time they appear in a separate publication of foreign listings. The last issue of the Call Book in hard copy format is believed to have been the 75th edition around 1997. Current call sign information is now readily available online.

WHY BOTHER WITH THE CALL BOOKS?

As mentioned above, the Citizen's Radio Call Book, 1922-26, has been digitized in searchable format. At the present time, only one of the Flying Horse series has been digitized: Volume 30, 1952. It can be found in Google Books. Although it is theoretically searchable the process is not satisfactory due to the scanning resolution, although a clumsy workaround is available. There appears to be little demand for further volumes to be scanned. At first glance, except for the occasional "look-up" to trace the call sign or address of a family member, research using the Call Books would hardly seem to be worth the effort.

About a decade ago, Industry Canada asked a small group of retirees from the Department to organize a website to document the history of radio regulations in Canada (i.e., Industry Canada and its predecessors). In its present format this site is known as RadioAlumni.ca. It has expanded to document radio history in Canada more generally including, for example, the history of the Radio Branch of the Department of Transport and its predecessor (Department of Marine and Fisheries). For more information visit: <http://www.radioalumni.ca/>

One of the objectives of the site has been to create a Roll Call of individuals who served as radio operators, the "source" occupation for many jobs in radio



THEY HELPED D.O.T. GROW—These veterans of radio regulations all joined the department before 1936, when it got its present name. They are, seated, from left: G. B. Gard, now retired, Miss A. F. Bennet, also retired, W. A. Caton, controller of radio regulations, and Miss A. B. Warner. Standing, from left: G. Guy, F. Richards, J. J. McWatters, R. M. Graham, H. M. Cox, A. G. E. Argue, H. R. Newcombe, A. P. Stark, R. L. Bunt and C. J. Acton.

Figure 2: Photo of DOT employees. "They helped DOT grow: These veterans of radio regulations all joined the department before 1936, when it got its present name."

communications in the Government of Canada over the years. My collection of Call Books was used, in part, to compile this Roll Call which now comprises several hundred names and includes many firsthand stories and profiles of the lives and experiences of ex-radio operators. The Call Books proved to be an excellent research tool for this exercise, providing information not readily available elsewhere.

THE CALL BOOKS AS A RESEARCH TOOL

Historically, the Amateur and commercial functions of radio operators overlapped. Prior to the 1960s, many commercial operators were also Amateurs. In fact, holders of commercial licences did not have to sit the Amateur examination and could secure a call sign (and a listing in the Call Book) simply by asking – and many did.

Since radio operators were required at airports, meteorological and marine stations, often in remote areas, their addresses were frequently the address of their work location and they are easily recognizable in the listings as DOT radio employees.

One call area (VE8 – Northwest Territories and Yukon) is almost completely a list of such names and locations. Similar lists to that on the RadioAlumni site could readily be compiled for Amateur licence holders at remote stations working for the Royal

Canadian Mounted Police, the Hudson's Bay Company, the Department of National Defence and so on.

Radio Amateurs have historically been proud and possessive of their call signs to the extent that many Amateur Radio publications referred only to call signs without mentioning the names of individuals.

When compiling profiles of individuals, where the date of an event is known, using the Call Book to cross-check a call with a name can often fill in gaps in a story. Conversely, there are occasions where the names of individuals are known and, through their call signs as recorded in the Call Book, their rough timeline can be constructed. An example is the above photo (see Figure 2) from *News on the Dot*, November/December 1961, which shows radio regulations veterans who were already serving in the government when the Department of Transport was created in 1936.

Most of these people would have held Amateur call signs including Mr. Caton, Controller of Radio Regulations. His Amateur "career", and those of the last five names in the photo, are shown here:

- W.A. Caton**, 3FE (Napanee) 1926; 3FT (Toronto – portable) 1932; VE3ZZ (Toronto) 1936; 1946, 1948 – then Ottawa.

A.G.E. Argue, VE3GQ (Port Rowan) 1932; VE3ZU (Kingston) 1948); then Ottawa.

H.R. Newcombe, 3TH (Simcoe) 1926; VE5FK (Cape Hopes Advance) 1932; VE3HN (Ottawa) 1948 – then Ottawa.

A.P. Stark, VE5AE (Victoria) 1932; Vancouver (1936); VE3AW (Ottawa) 1948) – then Ottawa.

R.L. Bunt, 3MX (Kingston) 1926; VE3MX (Ottawa) 1932; 1936; 1946 – then Ottawa.

C.J. Acton, VE3AC (Ottawa) 1932, 1936, 1946; 1948 – then Ottawa.

The late **F. Gordon Nixon**, who retired as the Administrator in the DOC (the highest level radio regulations position in Canada), had been VE3ABH, joining the DOT in 1936 just after its formation.

The Canadian Telecommunications Hall of Fame (which ran from 2005 to 2011) documented several individual innovators of early radio in Canada, who were Radio Amateurs. Examples are **Edward S. Rogers, Sr** (VE3BP) and **Donald Hings** (VE5BH, 1936; VE7BH).

Ron Hook, VE5EY, father of radio in northern Saskatchewan, was accorded a lifetime achievement award by the Hall. Many interesting individuals remain undocumented and unacknowledged. Two currently being researched, with timelines which can be researched in the Call Books, are:

Bud Punched, (Founding member of Nortel). VE3CJ (Toronto) 1932; VE2KK (Montreal) 1936; 1945; (Valois) 1946; 1948; VE3YP (Belleville) 1951 then VE3UD (Ottawa).

Arch Wicks, (Great Lakes Marine Radar pioneer). VE4FW (Moose Jaw) 1936; VE3DAW (Toronto) 1949; VE3FX (Long Branch) 1949; 1951; then to USA W6SWZ.

Similarly, the Amateur Radio history of a single family, such as the Stunden family of Calgary and Winnipeg can be traced:

W.G. Stunden. 4IC (Calgary) 1926; VE4HQ (Calgary) 1932, 1936; car accident January 1945; VE6HQ (Calgary) 1946; 1948.

W.A. Stunden. VE4GS (Calgary) 1945; VE8AJ (Whitehorse) 1946-48; VE4BJ (Winnipeg) 1948;

R.A. Stunden. VE6UB (Calgary) 1951 then Vancouver.

A COLLECTION OF CALL BOOKS

It would be pointless to collect a large run of the Call Books as there were often only minor changes between the quarterly issues.

My collection was a modest one comprising 12 copies of the Canadian list running from 1922 through 1979. Given that there is a gap of five years during WWII when Canadian Amateur activity was prohibited, the Collection provided a reasonable representation of Amateur licences through the period.

The Canadian listings in three of the Call Books in the collection (1946, 1951 and 1954) appear to have been the result of a deliberate effort on behalf of the DOT to clean up their database. These have proved to be most useful sources of information.



Figure 3: Radio Amateur Call Book Magazine, Fall 1946. From the John Gilbert Collection.

Most of the issues contain “boilerplate” information, such as great circle routes, time zones and a directory of international prefixes (Canada being VE) – all now easily accessible on the Internet. However, some issues contain information not readily available elsewhere which might be valuable to researchers.

Two examples include:

“Notes on Shortwave stations” (1932-33 Call Book).

“Telegraphic abbreviations in current use” (1977 Call Book).

The author's collection of Call Books has been donated to the Canada Science and Technology Museum

Notes:

¹ See, for example, Spud Roscoe, <http://www.ve1bc.com/>; *Radio Wizard: Edward Samuel Rogers and the Revolution of Communications*, by Ian A Anthony (2000); and *From Spark to Space: The Story of Amateur Radio in Canada*, by the Saskatoon Amateur Radio Club (1968).

² Volume 1, No. 1, March 1935 to Volume 12, No 7, December 1950.

³ Some work has already been done on the Hudson's Bay Company. See <http://canadashistory.ca/> “The Saga of Northern Radio” for references to D.G. Sturrock, VE4JR, 1932; then VE5LD, and George Horner, VE4SG.

John Gilbert, VE3CXL, was licensed in 1954 as VE3BOH. He operated as VE8OW from 1956-58. He held the call sign FP0GNS (St. Pierre and Miquelon) and has operated from Amateur stations of the International Telecommunication Union in Geneva, Switzerland and Kyoto, Japan. He is a member of Chapter 70 of the Quarter Century Wireless Association (QCWA).



CALLING ALL NEW AMATEURS: GET YOUR NAME IN LIGHTS

Did you get your Amateur Radio certificate within the past year or two and want to introduce yourself through TCA to the Amateur Radio community? If so we would love to hear from you.

Drop a line to tcamag@yahoo.ca and tell us how you were introduced to the magic of Amateur Radio.

Do you credit any particular Amateur (“Elmer”) with getting you started? Which aspect of the hobby do you enjoy so far?

Please be sure to include your name, call sign, date and level of certificate – and don't forget to include a photo or two.

We hope to hear from you soon.

RANDOM THOUGHTS...



Dirk Moraal, VY1NM
Box 75
Tagish, YT YO8 1T0

When you drive a certain

brand of vehicle you soon notice all other cars of the same brand occupying the road.

I drive a Jeep, and as soon as I bought it, it seemed as if all the other Jeeps in the Yukon took to the highway. (And there appear to be a lot of Jeeps in the Yukon, at least while the seasons are on the opposite side of tank top and short-shorts weather).

But mine now sports an HF mobile antenna sticking up from the middle of the roof. And that makes it look a wee bit exotic doesn't it. But no one ever asks to see if there actually is a radio inside the vehicle.

The same goes for rigs in the shack, I guess. Since there sometimes is a piquant element of one-upmanship in this hobby I wonder if we might, just for fun, mention using some radio with an added cool quotient we may have just sitting on our bench.

But no one ever asks to see.

Maybe I should try this someday just to test the premise. There never seems to be a lack of kooky ideas floating around this shack. It all adds to the fun of the game.

In which I ponder the question of Believing vs Knowing...

Often, as part of the ongoing search for where I fit in Amateur radio, there is nothing for me to do but drive around and just listen to the mail and learn.

So one fine day on the road, with poor propagation, and QSB cutting in and out like a fast SUV on a crowded rush hour highway, I happened to come across some stations from a neighbouring entity carrying on a little competition. Oddly enough, they were talking about mobile ham radio. So, always in the mood for a chuckle or two, I locked the dial and listened to the dust up. The chatter was mainly about each feller's gear and it sounded like these guys were playing with some serious equipment in their cars. By comparison it made my modest low power mobile rig sound like a mere toy.

The funny part is that while dispensing all their wisdom, they all were in solid agreement on only one point. "You can only believe half of what you see and nothing of what you hear". Hmm. I wonder if they considered the irony. Which begs the question, let us stop and consider for a moment, which half of what is found written here should be believed by the kind readers of these scribbles?

In a previous column, I made much of having had some exceptional luck with my first mobile radio installation, which included some surprising European DX while radiating 35 watts PEP from an antenna less than a metre long. I mentioned various things which I had noticed seemed to have made a difference. I listened fascinated as the mobile Big Guns rattled this same information back and forth and it was like listening to my own thoughts. I also heard them say, but do not know if it is to be believed, that they relied heavily on "full legal power" amplifiers in their vehicles – a scary thought that, if true, having so much RF so close to sundry parts of their anatomy.

One of them mentioned 2500 watts but didn't say how it was measured. I have no amp. In glaring contrast, I had chosen to invest my few copper pennies in antennas and in doing so had discovered a pair of the really efficient models. ATAS 120 worked well with my modest setup. I will stick with that but, should I ever feel that primal urge for power lurking in the back of my brain, quite likely I will tinker with some more antenna ideas instead of getting an amp. After all I have been leaning more and more towards low power DX. Fewer contacts maybe, but each one is much more fulfilling. Each one entails much more than just talking. But I digress.

I was just about to give a tentative nod to their collective wisdom, when their credibility rating came crashing down because they all agreed that you could only get good HF reception if both stations used the same type of antenna, because that way the signals were polarized correctly at both ends. Yeah, but. Maybe, if they were talking VHF-UHF. Though for VHF, I have seen for myself that even this is not always the case. After a knowledge search, I found out that things do not work like that with HF simply because, golly gosh, who knows what happens to the polarization of the signal in the miles and miles between the two HF antennas. Besides, I thought of contests and Field Days, where a variety of antenna types work just fine with each other.

And I have confirmation of that on good professional authority. If anyone needs a quick brush up on these points, I could again mention reading a few pages in *The Amateur Radio Vertical Antenna Handbook* by Paul Lee, N6PL. This is good reading, besides having what works and what does not work (mostly for verticals) explained with few confusing circumlocutions. In this we benefit from the straightforward manner of an ex-naval officer, few of whom can afford to waste words in their work. And this book is one case where the "believe half" rule quoted above does not apply.

Looking at their "rule" from a safe distance, it would seem there is some truth to it, just not all of the time.

For me, I would modify the quote by adding: "until you have proven the question for yourself".

And one might adopt a line from a fellow writer, with the euphonious name of Finn Aagard (now a "silent pen"), who when confronted with facts, would gently ask the speaker "And, how do you know this to be true?"

It is good to have a reality check to sort things out, especially when I'm listening to other folk's mail. HI!

Random thought from the Confused Ham:

Have you ever noticed how a homebrew antenna looks better and better the further you back away from it?

Until the next Thought happens, 73!

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Thong Thai, VE3TNM
Alexey Tikhomirov, VE1RUS
Vincen Trepanier, VE2GSQ
Dennis Tsang, VA7DIT
Edward Tu, VA7VTX
Giulia Vendramin, VA7CEF
Randy Waugh
Alan Wheeler, VE7DY
Ian White, VE5AP
Frank Widmann, WA2VYA
Richard Williams, VE7BEF
David Witten, KD0EAG
Nancy Yoshida, K9DIG

Transatlantic VHF Digital Beacon Receiver Site VO1FN

Frank Davis, VO1HP

On May 19 antennas were erected and the VHF SDR turned on to inaugurate the Transatlantic VHF Digital Beacon Receiver Site VO1FN (GN37). This is a joint project sponsored in part by the Society of Newfoundland Radio Amateurs (SONRA), Baccalieu Amateur Radio Klub (BARK) and the Upper Trinity Amateur Radio Club (UTARC).

HISTORY

Many attempts have been made from Newfoundland to bridge the North Atlantic with a VHF Amateur Radio signal. The ultimate challenge is to carry out a confirmed two-way VHF QSO between Europe and North America. This milestone has never been achieved and would be a first in the history of radio communications. The prize would be the "glory", however fleeting, to those involved on both sides of the Atlantic and of course the **Brendan Award** sponsored by the Irish Radio Transmitting Society (for more information see <http://www.irts.ie/cgi/st.cgi?brendan>).

The most recent "Brendan Quest" attempt was staged by a large group of Amateurs from Nova Scotia in the summer of 2014 using call sign VC1T.

Using a unique 33-metre long VHF "ultra-light" yagi and a complicated, high power station, digital signals (FSK441; JT65) were transmitted towards Europe from Pouch Cove, Newfoundland.

The signal was actually decoded in the United Kingdom by G4SWX. It was ultimately concluded, however, that the signal was reflected from the International Space Station and the claim could not qualify under the Brendan Award rules.

NEW PROJECT

Interest grew in online discussions in continuing the experiment. An offer came from John, MI0AAZ, to donate a Raspberry Pi computer and a software defined radio (SDR) to the project. These discussions resulted in



From left: Frank, VO1HP, George, VO1EGH, and Boyd, VO1DI, at the VO1FN/b site.

Frank, VO1HP, making his summer location and equipment in Freshwater, Conception Bay North in Newfoundland (47.7394N; -53.1831W) available for a receive-only site to monitor VHF propagation and to listen for signals from

established VHF beacon transmitters operating in Europe. The VO1HP site has an unobstructed view of the North Atlantic across the vastness of Conception Bay.

Frank approached SONRA President Doug Mercer, VO1DM, who in turn canvassed funding contributions from the other two clubs (VO1DM also made a personal donation). This funding allowed the purchase of two InnovAntenna 5-element LFA Q High Gain VHF yagis. InnovAntenna, through Justin, G0KSC, sponsored the project by donating the coax cable phasing harness and the power combiner unit.

The VO1HP site is providing the housing, AC power and high speed access networking as well as the site tower, PC and FunCube Dongle Plus SDR receiver.

The VHF Digital Receive site is now operational and ready for experimentation by beacon operators and well equipped VHF stations in Europe. The antennas can be rotated to point to stations that are located in southern regions of Europe. For further information please contact: Frank, VO1HP, at invl160@gmail.com

Ben Collins, VO1FN (SK 1990) was a long-time member of SONRA and a great all round Amateur with diverse technical expertise. He quite active on VHF for many years. He left us far too soon. His call was retained by the Newfoundland Telephone Amateur Radio Club through Jack, VO1FD. The call sign has been released to the Transatlantic VHF Digital Beacon project.



First ISS Reflection from Europe to North America

Following two weeks of preparation Tim Fern, G4LOH, in Helston, Cornwall, England (IO70jc) and Roger Sturtevant, VE1SKY, in Bridgetown, Nova Scotia (FN74iu) used FSK441 to try a "Brendan Quest style" reflection off the International Space Station (ISS).

Employing AMSAT satellite software, both stations aimed at the calculated grid HO11nl for a 144.175 MHz QSO attempt with a mutual window of less than one minute.

At 12:22 UTC May 2, 2016, VE1SKY copied G4LOH at a distance of 4,441 kilometres (approximately 2753 miles). The signal decoded once completely by "cursor clicking" and then partially.

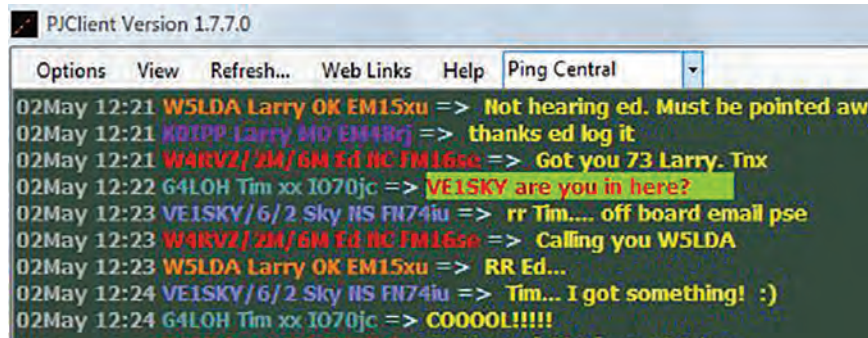
This was the first received ISS signal bounce from EU to NA, and the first "intentional" signal by ISS reflection received in any direction across the North or South Atlantic.

A screenshot is shown on the right and is available online at QRZ.com/VE1SKY.

The reception is being verified as a possible DX record for satellite reflection.

Tim has since been received twice in the much closer GN37 grid by VO1HP using Morse code.

Source: Roger Sturtevant, VE1SKY FN74iu – Bridgetown, Nova Scotia and Southgate Amateur Radio News at <http://www.southgatearc.org/news>



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A Sleeveless Sleeve Dipole Antenna

Ed Spingola, VA3TPV

The following article is an updated version of an article that was published in the May 2011 issue of the Mississauga ARC's newsletter "The Communicator" and on the Royal Signals Amateur Radio Society's website and is being used with their permission. Thank you!

Antennas are one of my favourite topics to read and write about. Each month, when the publications that I subscribe arrive in the post, I eagerly scan the issues for new or novel antenna ideas which I may be able to use in my own designs. One such antenna design is the Sleeve Dipole and although it is not a new design, the implementation by Robert Zimmerman¹, VE3RKZ, which I describe below, is certainly new in the Amateur Radio literature. But first I will give some background antenna information.

A common type of radio antenna is the dipole. The dipole antenna can be made of simple wire and fed at the centre by splitting the wire in half and placing an insulator at this point. The wire is then fed at this centre point with either a balanced line – i.e., ladder or open wire – or through a balun to coaxial cable.

The typical wire dipole shown in Figure 1 is a half-wavelength long at the resonant frequency of interest and, in this instance, is hung horizontally to receive and transmit horizontally polarized radio waves.

Although the horizontal configuration is quite useful if you should have the necessary vertical supports – for example, trees, poles, etc – wouldn't it be great to hang this dipole vertically requiring

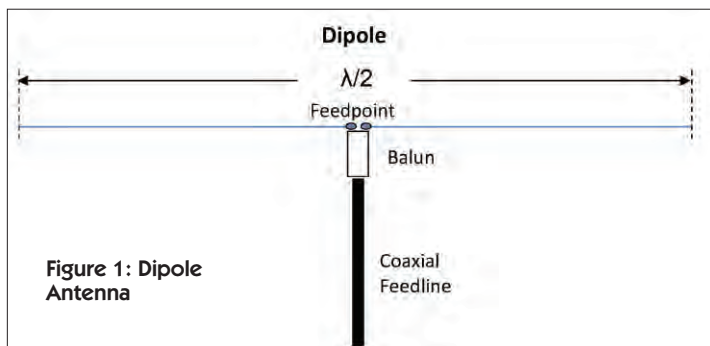


Figure 1: Dipole Antenna

only one support? The only problem being, that for proper operation, the feedline must come away perpendicular to the dipole, i.e., at 90 degrees.

The solution to the vertical mounting dilemma is a type of antenna called the Sleeve Dipole as shown in Figure 2.

The Sleeve Dipole is fed from one end of the antenna and therefore may be conveniently mounted either horizontally or vertically by the appropriate support structure(s).

As the name implies, part of the antenna is made up of a metallic sleeve, as shown in Figure 2, which fits over the coaxial feedline. The sleeve forms one half of a half-wavelength dipole and extends over the coax, but is insulated from the coax except at the feedpoint where the braid of the feedline coax is connected to the metallic sleeve.

The sleeve antenna has found use at both HF and VHF frequencies and there are many construction articles on such antennas in the various ARRL and other publications as well as on the Internet. Just search for "Sleeve Dipole".

I will leave it up to the reader to determine the $\lambda/2$ length for their particular frequency of interest and also the method of constructing the sleeve. But as always,



the standard formulas for a $\lambda/2$ dipole shown below serve as a starting point:

- $l = 143/f$ (metres) and
- $l = 468/f$ (feet)
- where l is length and f is the frequency in MHz

I note that these formulas do not take into account the thickness of the antenna elements or the affects of insulation. Therefore some adjustment of the antenna's length will be required as shown in Figure 3. Just remember to trim each side of the dipole equally.

An interesting phenomenon occurs as the RF energy travels along the feedline.

The sleeve antenna works because as the RF energy travels along the feedline and due to skin effect, the currents travel on the outer surface of the centre conductor and the inner surface of the coaxial shield. As the currents emerge from the coax at the feedpoint, the current on the centre conductor continues to travel along the continuation of the centre conductor making up $\lambda/4$ of the antenna.

The current, travelling along the inner surface of the coaxial shield, has no where to go except back down along the outer surface of the metallic sleeve which makes up the remaining $\lambda/4$ of the $\lambda/2$ dipole and, of course, the current flow stops at the end of the sleeve. The $\lambda/4$ extension of the coax centre conductor and the $\lambda/4$ sleeve therefore form a complete $\lambda/2$ centre-fed dipole.

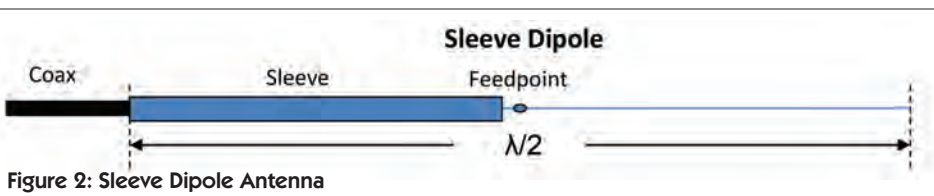


Figure 2: Sleeve Dipole Antenna

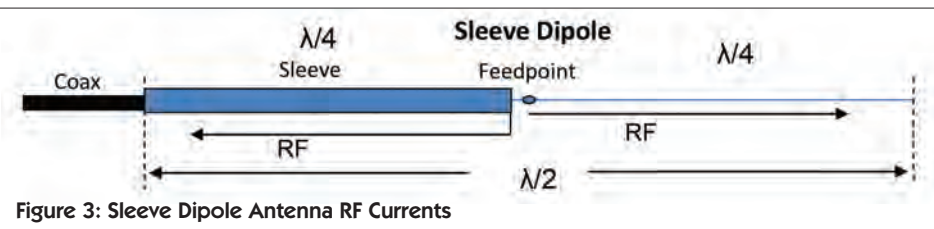


Figure 3: Sleeve Dipole Antenna RF Currents

A variation of the Sleeve Dipole, without the metallic sleeve, has been proposed by Robert Zimmerman ¹, VE3RKZ, in the July/August 2010 issue of QEX magazine. Zimmerman described a 20m band antenna which used a feedline choke along the coax as shown in Figure 4.

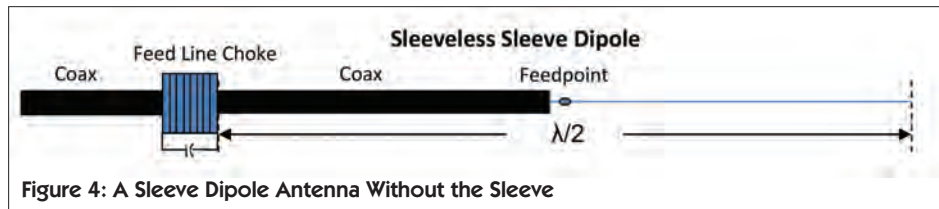


Figure 4: A Sleeve Dipole Antenna Without the Sleeve

Zimmerman's feedline choke is constructed of several turns of coax wound around a coil form with a capacitor resonating the resulting trap at the desired frequency of operation of the antenna.

The resonant feedline choke is placed at a point $\lambda/4$ distant from the feedpoint. Note that the resonating capacitor is only connected across the shield of the coax. The inner conductor of the coax is not part of the resonant choke. The voltage at the open end of a dipole can reach several thousand volts, even for a 100 watt transmitter. Therefore, the resonant capacitor needs to be a high voltage type of several KV rating.

Zimmerman also used this resonant feedline choke in the design of a portable 20 metre band antenna ² for emergency use. In Zimmerman's design, the high impedance of the resonant coaxial trap provides a high impedance choking action to define the end of a $\lambda/4$ section of the antenna.

An untried variation proposed by myself, to Zimmerman's resonant feedline choke, would be to use a coaxial choke balun made from suitable ferrite beads, such as the BA-8 or BA-58 kits from Palomar Engineers ³, instead of Zimmerman's feedline choke. The question is whether the coaxial balun would provide enough choking action on the coax at the desired operating frequency. Possibly multiple BA-8 or BA-58 kits would be required to provide sufficient choking action. Other mixes of ferrite core with a suitable frequency range could also be used.

ANTENNA CONSTRUCTION

As with most antennas, the theory is well known and the challenge is in the mechanical construction of the antenna. These details will depend upon your particular circumstances of how you will be using the antenna. No construction details are therefore



Figure 5: Ferrite Bead Balun on Feedline

given in this article, other than the usual formula for a half-wavelength as given above. A good rule of thumb is to measure lengths slightly longer than calculated and then trim to the frequency desired using an antenna analyzer.

To implement Zimmerman's method you will not need to correct the length of the coax from the feedpoint to the choke point by the velocity factor of the specific coax that you are using because the antenna current is on the exterior of the sleeve. However, there will be a slight shortening of the $\lambda/4$ sleeve because of the reduction in propagation velocity along the sleeve due to the insulating material in the jacket of the coaxial feedline. Remember to use a high voltage capacitor.

For the 20 metre band, resonating at 14.200 MHz, Zimmerman has used a 24 pF capacitor and a 7 μ H inductor as his starting point. You can use the ARRL *Single-Layer Coil Winding Calculator* ⁴ or other convenient handbook formula to determine the number of turns required. A variable capacitor could be used to tune the antenna to resonance with your constructed coaxial coil. Then measure the capacitor value and substitute a high voltage fixed capacitor. Alternatively choose a fixed capacitor value and adjust the coils number of turns and turn spacing to achieve the desired resonant frequency.

Striving for a simpler mechanical design, I wanted to try the use of ferrite beads to provide the necessary choking action to define the end of the $\lambda/4$ section of the

antenna. I chose a Sleeve Dipole variation using a coaxial choke balun made from 10 ferrite beads. A test antenna was made for the 15m band, resonant at 21.2 MHz using a telescoping 31-foot fiberglass mast as a support structure. I suggest using the ferrite BA-58 or BA-58E kits from the Palomar Engineers ³. These ferrite beads are tubular and fit nicely over RG-58 coax. Figure 5 illustrates the ferrite bead balun on the feedline. Of course the application of shrink sleeve material could be used for waterproofing the assembly.

The question is whether the coaxial balun of ferrite beads would provide enough choking action on the coax at the desired operating frequency.

Two Palomar BA-58 balun kits (5 ferrites each) were used with RG-58 (50 ohm) coaxial cable. The top $\lambda/4$ section used an 11-foot length of #14 AWG stranded antenna wire. The bottom $\lambda/4$ section was 10 feet, 8 inches from the top of the coaxial feedline to the top of the BA-58 ferrite bead balun.

According to the Palomar literature, the BA-58 balun kits (5 beads) have an impedance of 925 ohms at 21 MHz. Two baluns in series were used. An article by Lou Burke, W7JI, describing *An Easy to Build 500 W Mini Balun* ⁵ gave me the confidence that the ferrite choke would be able to handle the 100 watt output of my transceiver.

The sleeveless Sleeve Dipole antenna is easily tuned by sliding the ferrite bead choke balun along the coaxial feedline until the best SWR is achieved. Take specific note of the lowest SWR frequency and adjust the upper and lower $\lambda/4$ antenna section lengths to achieve the desired resonant frequency point. Just remember to trim each side of the dipole equally.

PERFORMANCE

To ascertain the performance that could be expected from the Sleeve Dipole, the antenna was modeled with EZNEC. ⁶ The modeling was done for an antenna with the sleeve ending at a height of nine feet above Real/MINNIIEC ground. The EZNEC model showed that a reasonable SWR and impedance at 21.2 MHz could be obtained.

The EZNEC plot is shown in Figure 6. The model used #14 AWG for the top $\lambda/4$ wire and #4 AWG to simulate the diameter of the coaxial sleeve. Note that the calculated impedance is $57.72 - j1.073$ ohms with an SWR of 1.16 at 21.21 MHz relative to 50 ohms. Relative to 75 ohms the SWR rises to 1.3 at 21.21 MHz.

In order to have the maximum energy radiated, the feedline characteristic impedance should closely match the impedance of the antenna at the desired operating frequency. In our test antenna, the antenna's impedance was a reasonable match to either 50 ohm or 75 ohm coaxial cable.

Figure 7 shows the elevation pattern for the vertical dipole. Note the maximum gain of 2.00 dBi at 15.0 degrees. The azimuth pattern for this antenna is omni-directional.

THEORETICAL MEETS REALITY

Theoretical analysis is fine for proposing an antenna design but in reality the only measure of effectiveness is on-the-air testing. At this date, the sunspot cycle is at a low point and HF propagation is not normally very good. In fact propagation on the 15m band is poor at best. In spite of poor propagation, QSOs were made from my QTH in southern Ontario to Florida and to Cuba receiving 59s reports. On the receive side, the signal strengths were within an S unit of my Cushcraft R5 vertical. In some observations the Sleeve Dipole was two to three S-units better, e.g., Italy. In a recent DX contest, QSOs were accomplished with many DX stations including Japan, Hawaii, Caribbean islands, Peru, Ecuador, Argentina, Brazil, Europe, Ukraine and many other locations. This antenna is definitely a keeper.

FURTHER DISCOVERY

In doing a bit more research, I found that the earliest mention of the Sleeve Dipole antenna was by A.F. Stahler (then AA6AX) in an article ⁷ in 1978. Stahler had used the concept of the resonant feedline choke. In 1991, James E. Taylor, W2OZH, proposed the use of a coil of coax ⁸ as the choking mechanism. In 1994, Taylor published his *Improved Resonant Feedline Dipole*. ⁹ In this article, Taylor employs a ferrite toroid wound with coax instead of the open air choke previously used which results in a more compact assembly.

Remembering that a dipole has a low feedpoint impedance and a high impedance at the ends of the dipole, one of the issues in the Sleeve Dipole is obtaining adequate choking action to define the end of the $\lambda/4$ sleeve. The

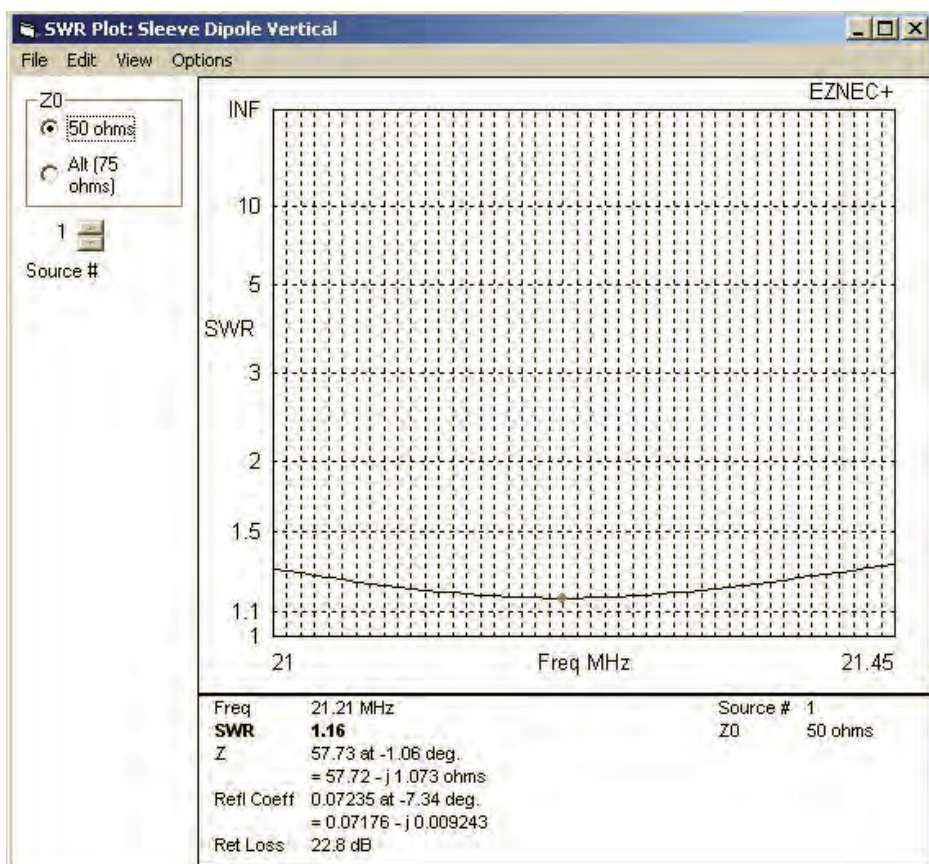


Figure 6: Vertical Dipole 15M Band SWR Plot

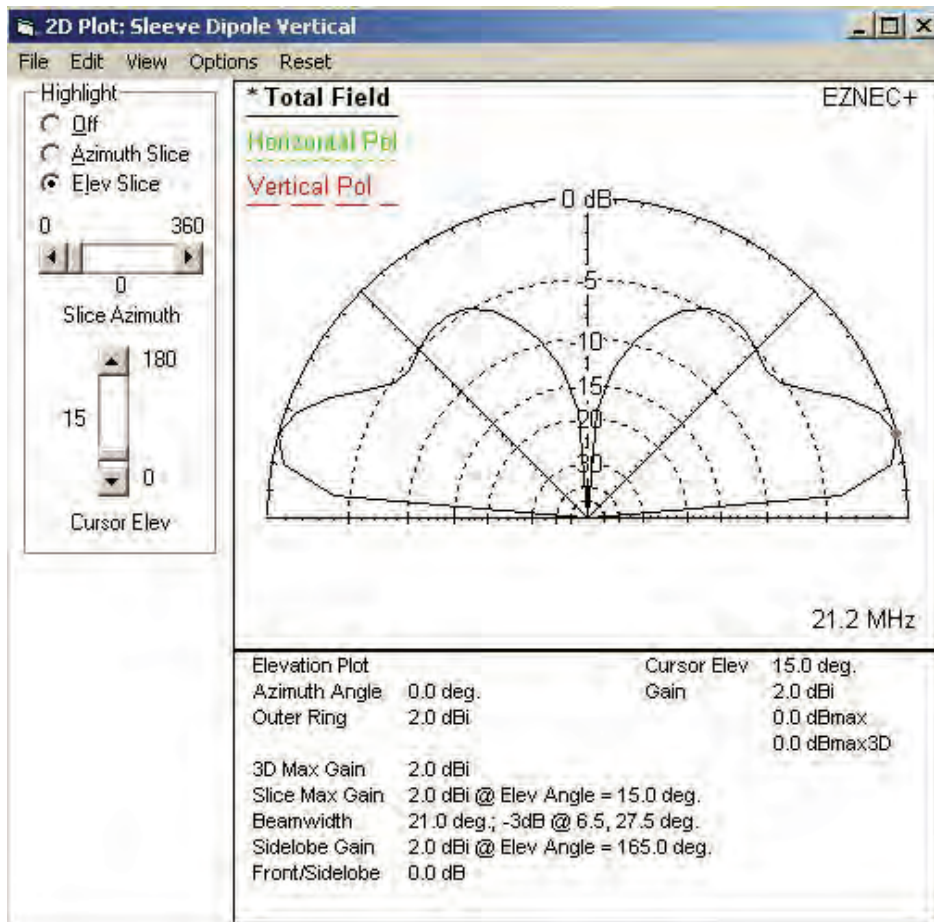


Figure 7: Vertical Dipole 15M Band Elevation Plot

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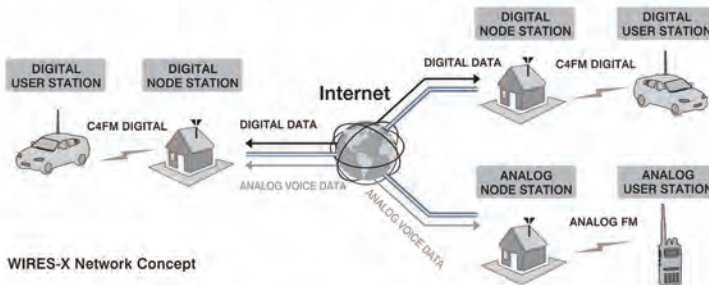


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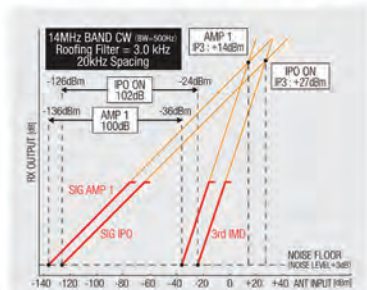
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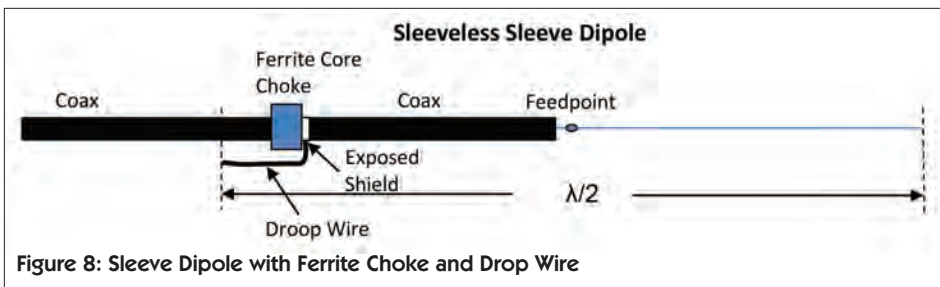


Figure 8: Sleeve Dipole with Ferrite Choke and Drop Wire

resonant feedline choke by Zimmerman and others provide the high impedance choking action required by means of a parallel tuned circuit resonant at the operating frequency.

A more recent implementation of the Sleeve Dipole using a ferrite choke is an article by Kazimierz "Kal" Siwiak, KE4PT.¹⁰ Siwiak describes a multiband Off Centre End Fed antenna for portable use. What is unique in Siwiak's implementation is movement of the ferrite choke two feet closer to the feedpoint, but cleverly completing the $\lambda/4$ section of the sleeve with a two-foot "droop wire" as shown in Figure 8. The "droop" wire effectively moves the choking point to the lower impedance point along the antenna, therefore reducing the choking action requirements.

APPLICATIONS

In summary, the Sleeve Dipole antenna being an omni-directional vertical dipole, is not a pileup breaker. However, for its simplicity, it is effective, easy to make and quick to deploy. You are on the air quickly making QSOs.

Possible applications of a Sleeve Dipole antenna range from a portable antenna for travellers to apartment dwellers without access to two supporting structures. An HF Sleeve Dipole, being end fed, can simply be extended vertically downward from a balcony or open window providing, of course, that the balcony is of sufficient height.

The ferrite beads are easily slid along the coax. This makes it possible to build a multiband end fed link dipole or an end fed fan-dipole antenna. I will leave it up to the reader to determine the mechanical details of how this can be accomplished.

Whether you prefer to call this antenna a Sleeve Dipole or a resonant feedline dipole, give this antenna a try. You might be surprised at the results. I would be interested in hearing from anyone who has tried this type of antenna. You can reach me at va3tpv@rac.ca.

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Edward Spingola, VA3TPV, lives in Mississauga and is a retired Electrical Engineer who has been an Amateur since 1996. He holds an Advanced operator's certificate and is active on the HF bands enjoying casual contesting and DXing. His interest in antennas started with a need for an easy-to-build portable antenna. Edward enjoys kit building, and modeling and building antennas.

CENTRAL STATES VHF SOCIETY 50TH ANNIVERSARY CONFERENCE

The Central States VHF Society is excited to announce its Golden Anniversary Conference, to be held in the rolling hills farm country of Rochester, Minnesota from Thursday, July 28 to Sunday, July 31.



We invite you to come to Rochester to help celebrate this very special 50th Anniversary Conference!

The conference will feature many exciting activities including state-of-the-art technical programs, noise figure measurement, antenna range, "VHF 101", "Rover Row", "Dish Bowl", presentations for newcomers to weak signal operation, luncheons, evening socials/hospitality suites and, of course, the ever-popular grand finale banquet.

In addition, since this is the 50th anniversary of the CSVHFS and conference, we will have "Gear of Yesteryear" presentations and demonstrations to reflect on where we've been and just how far we've come!

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Additional details are available on the Central States VHF Society website at CSVHFS.org.

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Cambridge Bay Contact: "ARISS Provides the Dream"

Steve McFarlane, VE3TBD

On April 6 at 18:02 UTC, Kiilnik High School and Kullik Ilihakvik Elementary School in Cambridge Bay, Nunavut, teamed up to coordinate and undertake an ARISS Space Station event with US Astronaut Jeff Williams, KD5TVQ. This marked event 1,040 under the highly successful ARISS (Amateur Radio on the International Space Station) program that has been connecting students in real time all over the world with astronauts onboard Space Station.



Students and teachers of Kiilnik High School and Kullik Ilihakvik Elementary School in Cambridge Bay, Nunavut celebrate a successful contact with the ARISS Team and Jack the robot.

Ground station VK4KHZ, located in Australia and operated by Shane Lynd, is one of a number of ground stations around the world that is utilized by ARISS to undertake such events. While all ARISS events are solely operated and controlled by Amateur Radio operators, not all contacts can be undertaken direct from all schools or institutions involved – by direct we mean the radio station is set up at the school and contact is established from the school to the Space Station with no one else involved. This direct approach, while the preferred approach, is not always possible due to the Space Station's orbit and its limited availability of date and time that need to match exactly with the school's requirements and schedule.

The Telebridge option – while essentially the same thing as the direct contact except that the radio station is located remotely – allows us to offer the school more flexibility on date and time. Ground station VK4KHZ was one of many ground stations that was chosen for Cambridge Bay because it met all conditions for date and time by both the school and by the NASA planners who schedule all of the astronaut activities. A direct contact can be undertaken from Cambridge Bay, but the limited number of options and the low elevation pass, convinced the ARISS team to select the Telebridge option for this event. The fact that it was -45°C did have some impact on the decision, but I am determined to undertake a direct contact from Resolute Bay or nearby at some point in the near future.

For the event in Cambridge Bay to take place, many people were involved. In addition to the network required to connect ground station VK4KHZ with

Cambridge Bay, we had others located all over the world coordinating and scheduling this event. In Italy, Peter Kofler was the world Scheduler for this event and others. Kenneth Ransom manages all the events from Houston, Texas and he ensures they do in fact get scheduled. Brian Jackson, VE6JBJ (RAC's Youth Education Program Coordinator, see page 20) is located in Airdrie, Alberta (near Calgary) and he moderates and mentors many events across Canada. Several additional volunteers also manage other aspects of the contacts including IRLP and the EchoLink distribution of the event.

I actually travelled to Cambridge Bay to mentor this event along with a team consisting of Teacher Lori McFarlane, audio/video specialist Brad McLean and Hunter McFarlane, who was a presenter on robotics. Claude Lacasse, our long-time audio/video designer, was unable to join us this time but he played an important role in support and testing from Ottawa.

We believe that one of the key elements to the success of the ARISS program in Canada – aside from the great work undertaken by the Amateur Radio teams – is the inclusion and involvement of teachers. A school like Cambridge Bay (most schools actually) is very shy about undertaking these events, mostly because they lack the required resources.

Our team offers a complete package: we will arrive at the school a few days before the event to begin preparations; set up all technical aspects; organize the presentation; and connect the students with the international Space Station (ISS) – *at no cost to the school whatsoever.*

No cost to schools, how is that done?

We have made many friends over the years through the ARISS program. Those who have witnessed a school contact become instant fans of the program and have, in many cases, teamed up with us to support us and ensure we continue. We are all *volunteers* and because of that, it is not always easy to build and hold on to a team that travels to these very isolated areas. Cambridge Bay takes at least two travel days because of limited flights, extra nights in hotels, meals and taking time off work. Our key sponsors for these northern events include First Air, Air Inuit and its parent company Makivik Corporation. These firms are solidly behind the program in Northern Canada and have shown incredible support by flying and accommodating us, and purchasing pro-level presentation gear we can use anywhere we go in Canada.

Part of the equipment we utilize includes a humanoid robot costing \$10,000! We were given the robot by Pita Atami, President of Air Inuit. Pita has been a great supporter and continues to encourage us to do better and greater things for the schools and educational facilities up north. This robot is the second of two robots we have used in ARISS events and is clearly as popular as the contact itself. The students love the interaction and autonomous manner in which he operates. He presents STEM educational objectives – science, technology, engineering and mathematics – extremely well but he also connects better with students than anything else we have seen. Pairing this robotic technology up with a question period with astronauts on Space Station fits very well and is clearly impacting students.



For the Cambridge Bay contact, we were given our date and time with only 10 days lead time to get there and set up. We typically do know many months in advance what week the event will take place, but we never get the actual day and time until only 10 days out. We were flown to Yellowknife for an overnight stay and then to Cambridge Bay the following day. On arrival at the community we were greeted and taken directly to the school to set up and prepare for the following day's event.

Our great concern is always the phone connection to the network and the

less-than-slow Internet that is typical in these remote communities. Thankfully, all connections were good but, as anyone can tell you, things can change quickly up there and not everything works all of the time. We ran tests, set up the screens and audio gear, ran cable and we were even prepared to use our cellphones – yes cellphones work in Cambridge Bay. Very few areas up north have cell support but that is changing quickly.

Several days before our arrival at events, Ron Ralph, the representative for Makivik and First Air, travels to the communities and educates the students on the many

aspects of life onboard the Space Station. Ron not only goes from class to class, but he makes good use of his time and prepares students and teachers for the upcoming ARISS contact. Ron is our contact person and arranges travel for us, along with any equipment needs and unusual setup issues we might have.

Cambridge Bay, like all of these remote communities, is a close-knit community and people depend on each other for almost everything. There are few stores or supporting agencies. The temperatures on our arrival was -40°C and remained there throughout our stay.

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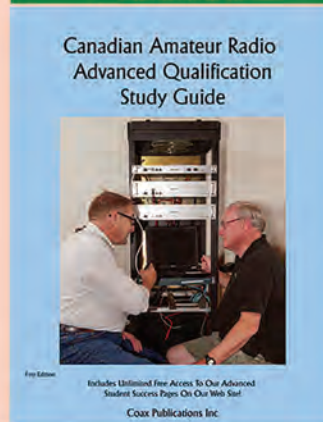
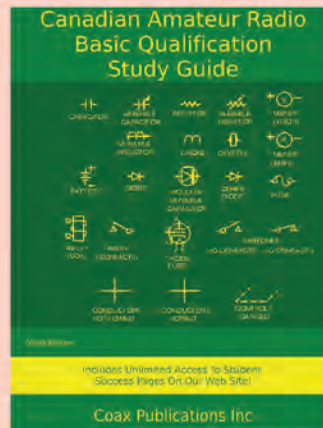
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Cambridge Bay is a community on the move. There is a new Arctic research facility under construction, tourism for the short summer months is growing and the hotel we stayed in would suit anyone.

An interesting aspect of Cambridge Bay for me was its two famous ships: the *HMS Erebus* and *The Maud*. The first ship, *HMS Erebus*, was the flagship of the fabled Franklin Expedition in 1845 in search of the Northwest Passage. Although the ship is over 150 miles away and under water, Cambridge Bay is the launching point to investigate that historic discovery.

Norwegian Explorer Roald Amundsen's ship, *The Maud*, was built for his second expedition to the Arctic. After being sold to the Hudson's Bay Company and renamed *Baymaud*, it became frozen in the ice at Cambridge Bay in the winter of 1926 and sank in 1930. Plans are now underway to raise the ship this summer and take it back home to Norway for a full restoration. A better and more complete history of Cambridge Bay can be found at <http://www.cambridgebay.ca/visitors/history>.

At precisely 18:02 UTC, on April 6, we established a link with Space Station and astronaut Jeff Williams, KD5TVQ.

The students were well prepared and asked and received answers for all 12 questions they had written. Jeff Williams, one of the most experienced astronauts anywhere, did a fantastic job by offering relevant and well thought out answers to their questions.

Some of the questions included one from Shayanne: "Is the passage of time on Space Station different than Earth"; or a more philosophical approach from Kale: "You are 400 kilometres up, zero gravity, far away from family, friends, watching the universe and earth go by, looking and pondering into the universe – what is that like".

The presentation before the event went well and our Humanoid Robot – we named him "Jack" – was a huge hit. Many students inquired about him staying on and giving more presentations. Jack can do them in 12 languages and we are looking into the possibility of having Jack speak Inuit. Perhaps down the road, given time, we will get there.

No sooner had we completed the Cambridge Bay contact, our team was travelling back to Ottawa. The only way in and out of Cambridge Bay at this time of year is by air over the Arctic.

I love flying over the Arctic and landing in the small villages along the way. While many of them look similar, you get to see so much of the geography – never mind the chance of witnessing some wildlife.

We sometimes wonder why we put ourselves through the stress in preparing for the contacts and the worry about whether it will work, but once it is over we know why. It is the satisfaction in knowing that you may have just changed someone's life and the connections you have made with people who are not even on the same planet never mind the communities that, at times, seem further off the planet than the astronauts.

Here is a saying I like and have used on many occasions:

A nation's best measure of success is in its children's opportunity to dream.

ARISS provides the dream, Canada provides the opportunity.

Steve McFarlane, VE3TBD
Coordinator / Mentor
ARISS Canada
Steve@lochspace.com



All Things Digital

Amateur Radio for the 21st Century

Robert C. Mazur, VA3ROM

E: va3rom@gmail.com

W: <http://www.va3rom.com>



BUILD A 10 MHz EXTERNAL REFERENCE DEVICE: PART 2

Part 1 appeared in the May-June 2016 TCA. Special thanks to Brian Grant, VE3GEN, in providing the initial information for this project and explaining a few things to me. Later, I obtained more details from the excellent websites of Clint Turner, KA7OEL and Doug Hunter, VK4ADC.

CALIBRATION, CALIBRATION, CALIBRATION

Part 1 covered the building and operation of a 10 MHz oven controlled crystal oscillator (OCXO) reference device, and this part continues with its calibration. Most OCXO's operate very close to their stated frequencies once they have warmed up and reached electronic thermal equilibrium. They are extremely stable and will not deviate in frequency because of their internal compensation control circuitry unless connected to multiple external loads (a distribution amplifier is then required). As shown in Table 1 on the right, of the three tested OCXOs, the worst case uncorrected parts-per-million (ppm) error and frequency error in hertz (Hz) was -0.9 ppm and -9 Hz (at 10 MHz) so this one definitely needed in-circuit recalibration, and there are two ways we can do this:

1) Use a very stable and accurate radio frequency (RF) signal generator, or a rubidium/cesium clock, or a GPS disciplined oscillator (GPSDO) to calibrate an RF frequency counter (with at least 1 Hz accuracy); then adjust the OCXO device RF output frequency to exactly 10 MHz (measured with the counter); or...

2) Use the 10 MHz WWV time signal received by a frequency stable and accurate high frequency (HF) receiver or transceiver (radio), and feed its audio output to a computer/soundcard running digital signal processing (DSP) software to determine an audio frequency (AF) reference signal (AF out); then substitute the OCXO device for WWV, and adjust its RF output to produce the same AF out.

	I Oven (max)		I Oven (min)		Time Oven	OCXO Case	Δ Freq.		Time Freq.	RF Out
	VDC	Heat (ma)	Ready (ma)	Ready			Temp °C	High (Hz)		
OFC/McCoy	12	430	80	3m	28	1	-255	3m	9/9.5	
ISOTEMP	12	750	200	10m	38	260	-9	15m	6/7.8	
GPS Disciplined Clock	12	1300	380	18m	31	3	-250	11m	23/13.6	

Notes

- ISOTEMP frequency starts out high, drops down with an undershoot then climbs back up to near 0 Hz error.
- ISOTEMP internal frequency adjust used to bring it to 0 Hz error (instead of external VR1 adjust).
- OFC/McCoy frequency starts out low then very rapidly climbs up and stabilizes.
- OFC/McCoy has no internal frequency adjust, external VR1 adjust used to bring it to 0 Hz error.
- GPS disciplined clock requires 3 dB in-line attenuator to bring signal below 10 dBm.
- GPS disciplined clock OCXO inside GPS aluminum housing & actual temperature likely a few degrees higher.
- GPS disciplined clock starts out low, rises up with an overshoot then self-corrects to 0 Hz error.

A. OCXO case temperatures measured with Clear Temp IRT0421 IR thermometer.
B. RF power output (all sine wave) measured with calibrated OHR WM-2 QRP wattmeter.
C. Frequency measured at 1-minute intervals with Ramsey CT-2000 counter (calibrated with GPS disciplined clock).
D. Voltage & current measured at 1-minute intervals with inline "Watts-Up" MCU meter.

Table 1: OCXO and GPSDO comparisons

Most Amateurs probably don't have the equipment required for method one so I'll just cover the second because most of us have HF radios, computers/soundcards, and the required DSP software is free.

Note: Parts-per-million error is actually a percentage error (1 ppm = 0.000001 percent) and is a constant value. On the other hand, frequency error changes with frequency because it's derived by multiplying ppm error and frequency; i.e., 1 ppm error at 10 MHz produces 10 Hz frequency error (0.000001 x 10000000) but 1 ppm error at 30 MHz produces 30 Hz frequency error.

Step 1: Radio plus Soundcard Calibration (see Figure 1 on page 39)

Note: I use *Spectran*, but if you use a different DSP audio program (Argo, Spectrum Lab, etc.) you may have to slightly modify these steps.

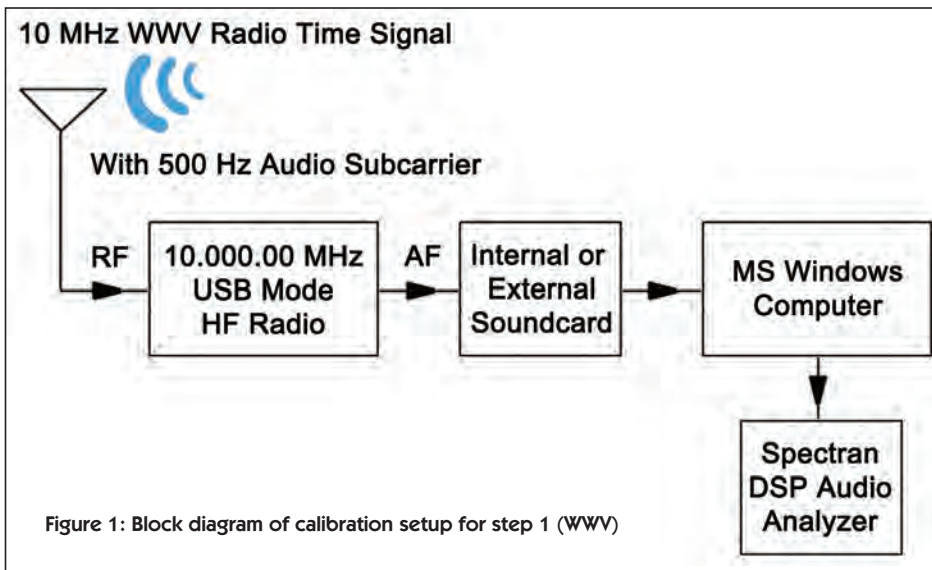
a) Connect an audio patch cord between the test radio's audio/speaker output to your computer soundcard's input (microphone or line).

b) Set up the *Spectran* soundcard input and control settings, then slide the frequency scale to the 500 to 600 Hz audio range (see Figure 2).

Note: The *Spectran* manual covers setup and operation in detail, but I will mention the noticeable processing delay before any audio input changes are reacted to and displayed (this varies with computer "horsepower").

c) Connect your radio to a suitable HF antenna, switch it to upper sideband (USB) mode, ensure all radio controls are in their "neutral" or "disabled" positions (i.e., no IF shift, RIT zeroed, etc) and tune the radio dial to exactly 10 MHz (WWV). Figure 3 on page 40 depicts the WWV radio time signal format with its various audio subcarriers, and the most important (for us) are the 500 Hz and 600 Hz "minute markers", which alternate between even and odd minutes (there are a few exceptions).

d) Adjust the radio's audio output and soundcard's audio input levels so *Spectran*'s audio level indicator is "in the green" (see Figure 4).



Your radio/soundcard pair won't produce the same AF out as mine – it may be higher, lower or spot on 500 Hz. If it's not, and you're a "perfectionist", you can try using the main tuning dial or RIT control to tune the AF out to exactly 500 Hz, but my test radio can only tune/shift frequencies in 10 Hz steps (and it really doesn't matter, if you think about it). While software defined radios (SDRs) can be tuned in small frequency increments, I went with an analog radio because the majority of Amateurs probably use analog radios, however SDRs make the calibration process way easier.

Step 2: OCXO Device Calibration

Note: In step 2, the OCXO device replaces WWV, but it only transmits a 10 MHz continuous wave (CW) radio signal so we create the audio subcarrier effect by offsetting the radio's receive frequency to heterodyne or "beat" with the incoming signal (direct conversion method). By tuning your radio 500 Hz lower (USB mode), the beat note equals 500 Hz – plus or minus any radio/soundcard combined ppm and frequency errors.

a) Use the same setup as describe in step 1, except the HF antenna is disconnected and the OCXO device's RF output is connected to the radio's antenna jack. Most receivers can only accept low-level, direct input RF signals at or below 10 decibels per milliwatt (dBm) so a 3 or 6 dB inline attenuator may be required, or just sit the OCXO device near the radio with a short piece of wire connected to the OCXO's RF output (an ersatz antenna).

b) "Fire" up the OCXO circuit and let it reach oven ready and thermal equilibrium. Set your radio to USB mode and tune the dial frequency 500 Hz lower than 10 MHz (see Figure 5 on page 41).

c) My AF error reference signal is 495.19 Hz (from step 1) so while viewing the *Spectran* waterfall display, the OCXO circuit's fine frequency tuning (VR1) potentiometer is adjusted (in small increments) until the resulting AF out is as close as possible to 495.19 Hz. When the OCXO's output is tuned to exactly 10 MHz, it must/will produce the same AF out result as did the WWV signal because the radio/soundcard ppm and frequency errors remain the same for both steps (see Figure 6).

Note: Remember to wait for *Spectran* to "react" to any changes – make a slight turn of VR1 (left or right) – and then stop, wait and watch.

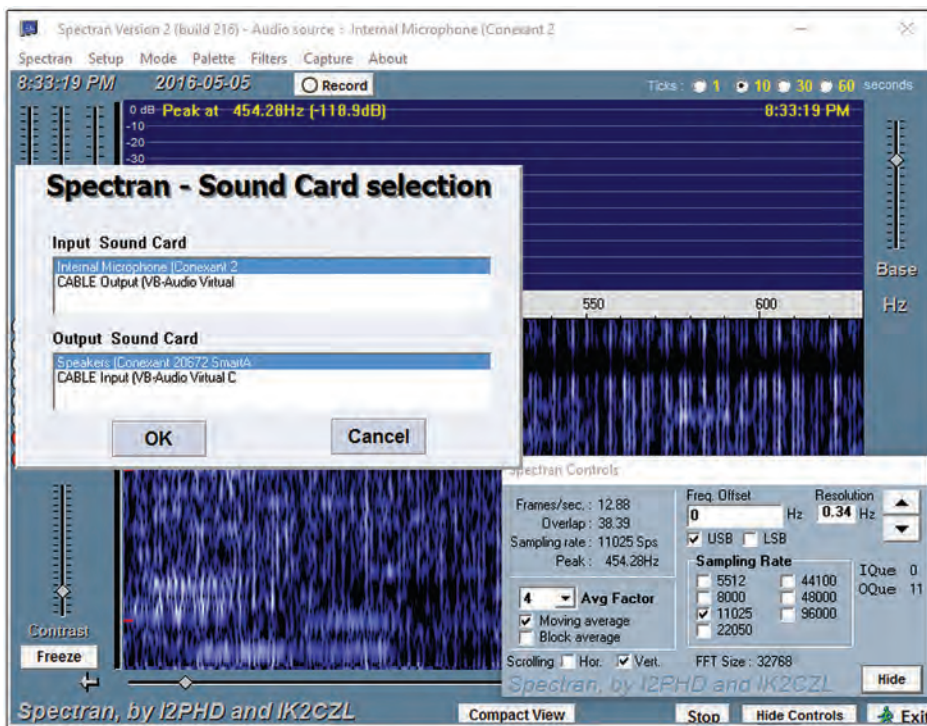


Figure 2: *Spectran* setup screens. Use the *Spectran* Control settings as indicated, and select the appropriate internal or external soundcard and input (microphone or line).

Note: Before going on, let your radio warm up for at least 60 minutes to ensure it has reached electronic thermal equilibrium.

If there are no ppm and frequency errors (radio plus soundcard), you'll see these two audio subcarriers "falling" down *Spectran*'s waterfall, alternating each minute at exactly 500 Hz then 600 Hz. You can use either signal, but I prefer 500 Hz.

Note: WWV's 100 Hz binary coded decimal (BCD) audio subcarrier contains digitally encoded date/time data (transmitted continuously) and you can try using it, but I've found that many radios, soundcards, and/or soundcard interfaces have poor low frequency audio response.

In Figure 4, WWV's 500 Hz audio subcarrier is indicating 495.19 Hz in *Spectran*'s waterfall and digital display, which indicates the combined ppm and frequency errors of my radio/soundcard combination shifted it by 4.81 Hz. This just means 495.19 Hz is my AF out reference or calibration signal to use for the next step (instead of 500 Hz).

Spectran's frequency readout will "dance" back-and-forth by fractions of a hertz mainly due to soundcard "sampling jitter" caused by clock timing errors, but large variations indicate a serious problem you need to find and fix before going on.

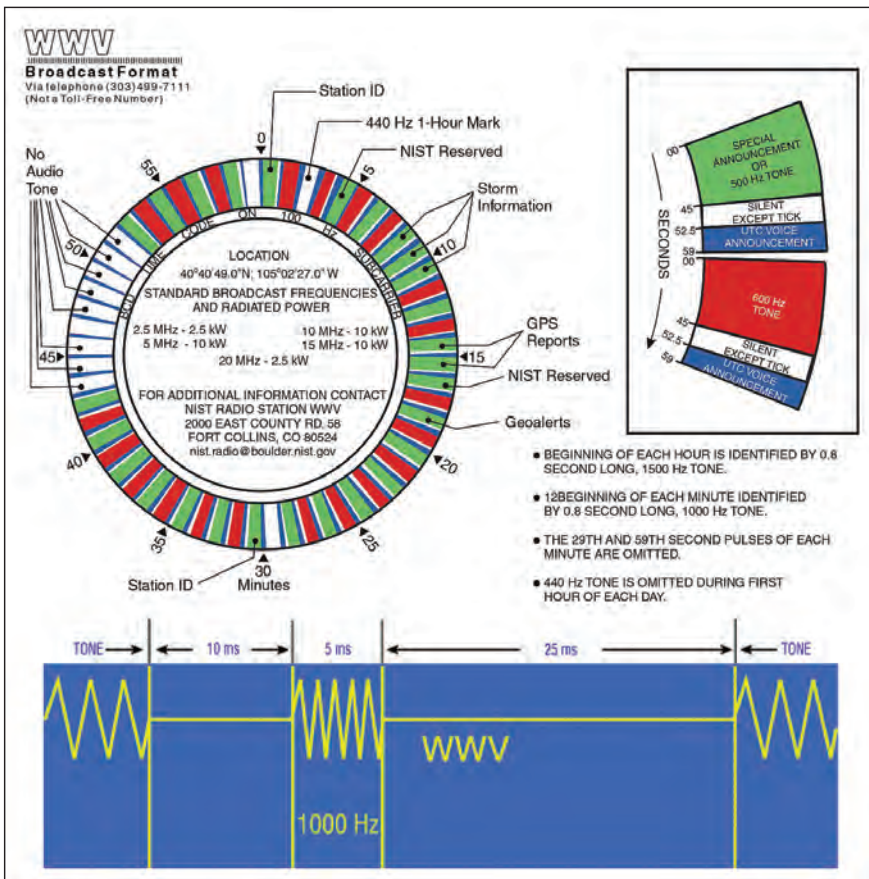


Figure 3: WWV time signal broadcast format. Image courtesy National Institute of Standards and Technology (NIST).

circuitry has some kind of user accessible calibration control you can “tweak”, but be very, very careful when you do!

Many “high end” SDRs have a 10 MHz reference signal input port you can connect to an OCXO, and doing this creates a very frequency stable and accurate radio, ready to go for those ARRL FMTs, or for using as your calibration and/or spectrum analyzer tool, frequency counter, etc. I’m certain you can find many more uses around the shack.

VARIATION ON A THEME

“Kits and Parts” sold a frequency and reference standard kit (no longer available) and the schematic and parts list are posted on their website. It uses a 5-volt, 20 MHz TCXO with divide-by-two digital circuitry to produce RF signals at 2.5, 5, 10 and 20 MHz. It’s an excellent tool for creating a radio dial calibration card because dial error varies with frequency, unless the ppm error is zero. However, 5-volt TCXOs usually (unless stated otherwise) output a square wave because they are mainly used in transistor-transistor-logic (TTL) digital/binary circuits, but many external RF devices can only accept a sine wave (or a close approximation).

A square wave is composed of the fundamental frequency sine wave plus its odd multiples or “harmonics” – to infinity and beyond – so adding an appropriate low pass filter (LPF) allows only the fundamental frequency sine wave to “pass”, and sharply attenuates the harmonics. This produces a very good looking sine wave with about 3 dB of signal attenuation, which is useful too.

SOME USES

We’ve just calibrated one 10 MHz OCXO reference device and can use it to calibrate other electronics (WWV is no longer needed). You can verify an oscilloscope’s frequency and waveform accuracy, or recalibrate/check a frequency counter, or calibrate other OCXOs devices, etc. Most electronic

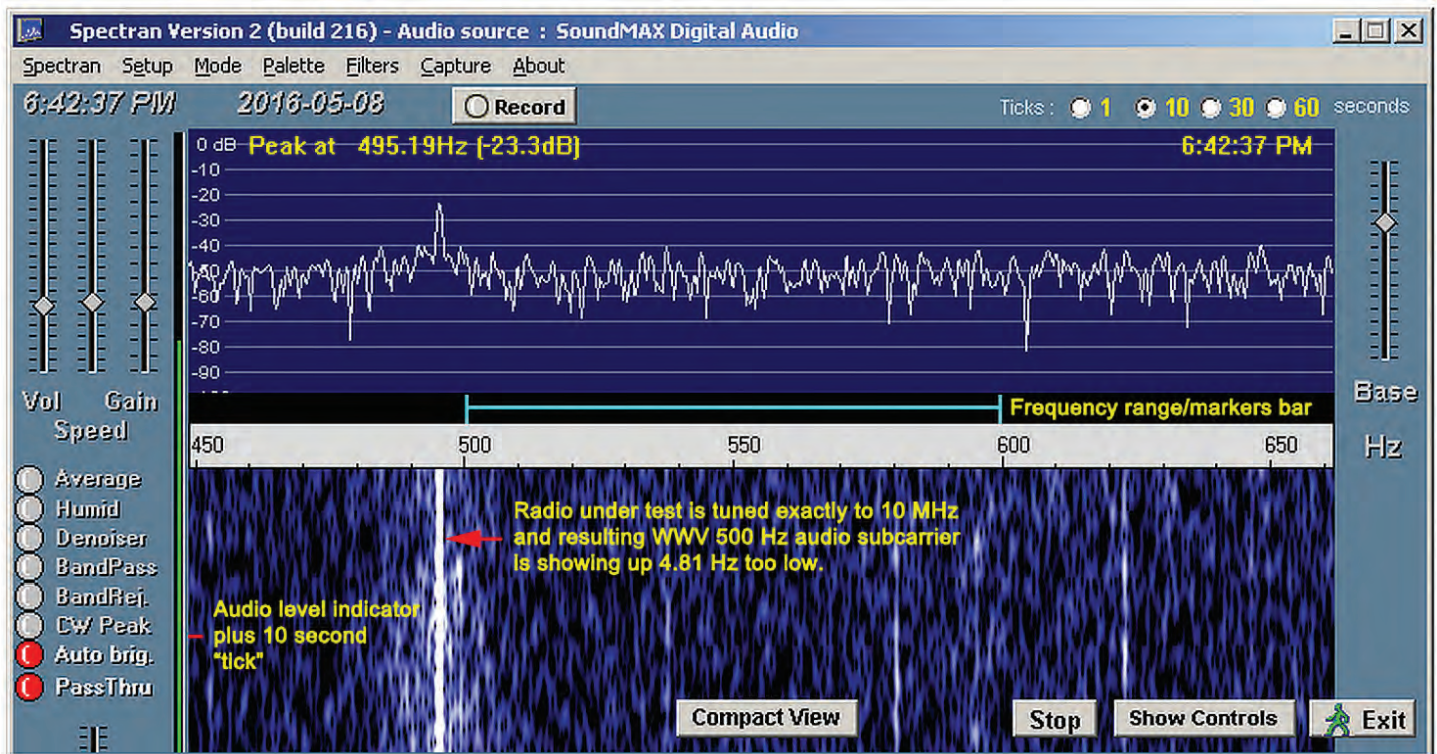


Figure 4: Spectran control screen and waterfall display for step 1 (WWV). Determining the AF error reference frequency signal (AF out).

My Introduction to Amateur Radio

Murray Macfarlane, VESXO

Practically all my life I have been intrigued with radios. I once had a crystal radio, no battery or power source, but I hooked it up to the overhead telephone wires and could get one or two AM stations. I thought it was amazing!

As a young teenager I remember hearing stories about “hams” who could talk over long distances and I couldn’t understand how such a thing could take place. I went into a store, actually a jewellery store, in Carnduff (a small town in southeastern Saskatchewan near our farm), and asked the owner if he had any catalogues with radios that would be capable of picking up distant stations. I didn’t even know to refer to them as shortwave radios. Anyway there were some shown in his catalogue but I didn’t order one – I just went home and kept on dreaming.

I also approached another man in Carnduff who repaired radios and TVs thinking he might know something about ham radios, but he discouraged me saying I probably wouldn’t be able to get a licence unless I took some classes. That was about the last straw because I didn’t even know a ham radio operator let alone where to take classes. Along the way I did learn that to get a ham licence one had to learn Morse code. I was mesmerized as I used to watch the railway agent in my hometown of Glen Ewen listen to the chatter and translate it into messages.

As time went on, somewhere I got a copy of “So You Want to Be a Ham” by Robert Hertzberg, W2DJJ, so I learned a little, albeit with an American slant. Then somehow, around 1967, I obtained a copy of the *Canadian Radio Licensing Handbook* by Jim Kitchin, VE7KN. In it was a list of Canadian hams and one was listed as being in Oxbow, 18 miles from where I lived. Alas after inquiry, I was informed J. Wood, VE5DX, no longer lived there, but in Estevan, 60 miles away, there were supposed to be seven hams – but which one would be interested in talking to me about ham radio?

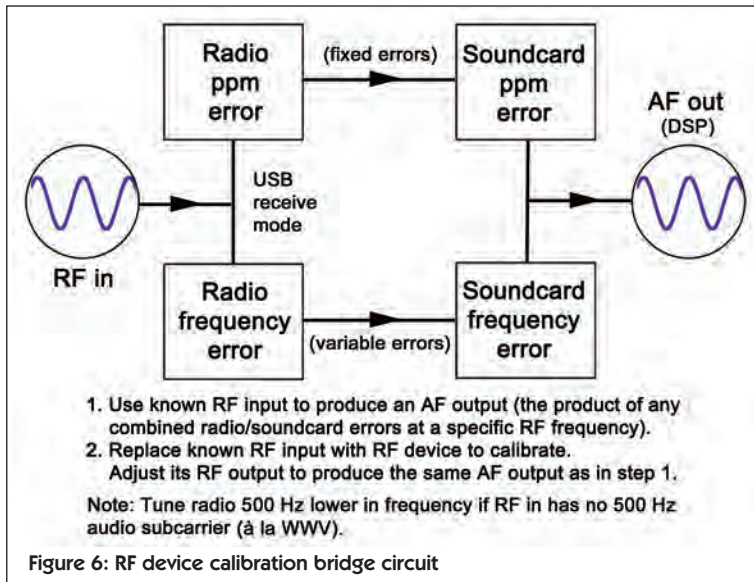
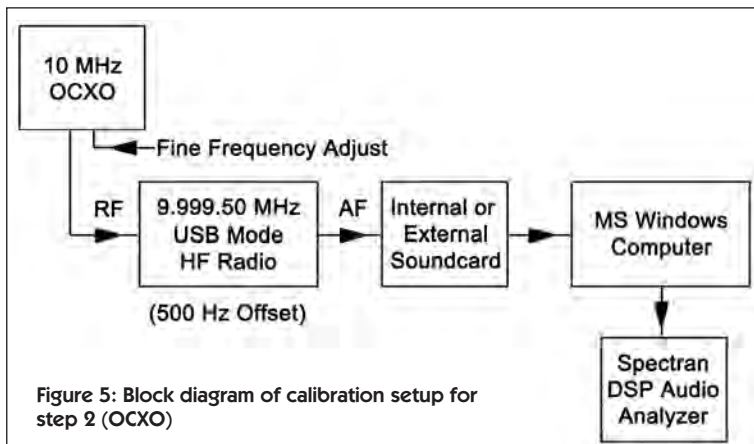
And so in Estevan, somewhere around 1973 and at 10 in the morning, using Kitchin’s list I took the dive and phoned a Marv Paulson, VE5OO. After I spit out my story he invited me over but said to wait a few minutes until he got dressed for the day. I thought to myself, what kind of a guy is not out of bed by 10? I wasn’t aware that he had worked the night shift at SaskPower.

Well the ball finally started rolling when Marv told me where to get study books, a keyer and whatever else I needed. Shortly after, a teacher named Satya Sharma, VE5SH, moved to Oxbow and he helped me as did Roy, VE5HD (from Estevan), Robert, VESOE (from Steelman), Roland, VESQM (from Bellegarde) and several others as well.

I never took a class anywhere and found it hard going. When it came to studying the code, my wife Ruth (who later became VESABW) joined me in the evenings at the kitchen table when the kids were in bed. It came to her like music whereas for me it was a jumble of dits and dahs. I persevered by reading, listening to cassette tapes and asking my mentors a lot of questions.

Finally, in April 1976, I took the exam with Ray Bourne as the Examining Officer and later became VESXO. I got my Advanced ticket in April 1978 and my wife delayed her Advanced exam long enough to be grandfathered in!

I have never been good at code and know very little about electronics, but ham radio has been a great hobby for me. I have met many new and interesting people, made some great friends, and had a lot of amazing contacts near and far.



MY FINAL

The next column revisits the Arduino microcontroller world to build an external analog gadget which connects with the very popular SDRSharp SDR control software. – 73

REFERENCES AND RESOURCES

ARRL FMT

<http://www.k5cm.com>
<http://tinyurl.com/hbkpvdw>

Frequency Standard / Reference Kit

<http://tinyurl.com/jenlk2x>

KA7OEI OCXO design

<http://tinyurl.com/jl5a7ad>

KP4MD 10 MHz LPF (YouTube video)

<http://tinyurl.com/gruwpzy>

VE2AZX (FMT)

<http://tinyurl.com/jsbjlfz>

VE2ZAZ (GPS clock)

<http://tinyurl.com/ju3vdhz>

WWV

<http://tinyurl.com/o83mtmt>
<http://tinyurl.com/cqcnosd>

VA3ROM (All Things Digital)

<http://tinyurl.com/og2acxq>

THE KL7RST/VY1 STORY: THE OTHER ROVERS

John Reisenauer Jr, KL7JR

Note: this article is dedicated to the memory of Wasilla, Alaska RST operator Gary, AL9A, who became a Silent Key during the event.

In the May-June 2016 issue of TCA, I told you about my Yukon roving adventures in the 2016 Worked All "RST" Stations special event. Our other rovers – Bill, KL7IDA; Bill, VE8AP; Alex, VE1RUS and Pierre, VE3KTB also have stories to tell from Alaska, the Yukon, the Northwest Territories and Nunavut.

Bill, KL7IDA, hit the road in his old pickup truck equipped with a Hustler mobile vertical and operated CW and SSB from Snag Junction, Yukon and on other trips near Beaver Creek as KL7RST/VY1. Bill also operated as VE8RST/KL7 from his home QTH in Delta Junction, Alaska. In early February of 1947, the bottom dropped out of the thermometer across Canada's Yukon Territory. Snag holds the record of the coldest spot in North America at -62.2°C ! Bill's lovely XYL Margaret, WL7CLH, logged while Bill banged out QSO after QSO from Alaska and the Yukon during mostly poor band conditions. Some of the lucky DX making his log was J39JP, LY1CG, OK2PAY, CO8LY, ZL2IFB, JO1WKO and many others. I first met Bill in 2013 when we had a 17 metre QSO when I was HI3/KL7JR.

Bill, VE8AP, lit up Yellowknife as KL7RST/VE8. Bill was the only other station from the Northwest Territories to join our special event besides Garth, VE8NSD, our VE8RST fixed station (Garth came on HF with many modes including SSTV!) from Hay River. Bill works at Ekati Diamond Mine, 300 miles northwest of Yellowknife, and joined us as work permitted. Maybe next year Bill can find time to come on from the mine to make our event even more unique. Bill and I go back over 10 years ago when we hooked up on 20 metre groundwave when I was VE8/KL7JR from Fort Providence.

Alex, VE1RUS, as VE8RST/VY0, and Pierre, VE3KTB, as VY1RST/VY0, came on from the Polar Environment Atmospheric Research Laboratory (PEARL), a CANDAC facility for atmospheric research in the high Canadian Arctic on Ellesmere Island, Nunavut. Operating continuously since 2005, it is a research-level station with a large complement of instrumentation for measuring atmospheric properties. PEARL is located on Ellesmere Island, 15 kilometres from Eureka, a remote weather station, and about 1,100 kilometres from the North Pole.



Pierre, VE3KTB (L) and Alex, VE1RUS, at PEARL (photo by VE1RUS)

W4ALF: "Love this idea of the frozen network to represent the wonderful north!"

VE3CBK/QRP: "Garth as VE8RST was really easy. He was booming in 59+. VY1RST was not too bad but not as strong, and KL7RST was no problem at 59. Thanks!"

WB8AHT: "First I would like to commend you and your team of Amateurs for this special Northern North America event... To create a Special Event for working all the northern areas of North America is a brilliant way to create exposure for these rarer Amateurs and to give us other Amateurs the opportunity to work them."

MW0YVK: "Worked KL7RST and VY1RST/VY0 yesterday. Today worked VY1RST."

The geographical location is: 80°N , $86^{\circ}25'\text{W}$. The observatory includes four large laboratories and a rooftop observing platform for instrumentation. It is in all respects a self-contained scientific laboratory. Hearing their stories of travelling to and from their jobs and operating HF from 80 degrees north, rekindled my experiences working and operating from Prudhoe Bay, Alaska in the 1990s. The Eureka team, at club station VY0ERC (probably the most northerly Amateur Radio station in the world!), worked many hams under mostly trying conditions from the frozen north! Some of the DX logged included; UA0CW, F6EYD, G3OAG, DJ3AA, IV3YTB, PA2LO and S53X.

Here is what Amateurs had to say:

NA8B: "I made contact with KL7RST/VY1 Whitehorse, YT. Wow, already confirmed on LOTW! Thanks for putting together this fun event..."

K1GJY: "Thank you, again, for your help with everything regarding this event; you made it much easier!"

N3EEI: "I have worked KL7RST, KL7RST/VY1, VY0RST and VE8RST. Thanks!"

N7OSU: "Thank your team for doing this as without them this type of event wouldn't happen".

VE3HED: "A big thanks to all the operators. They worked very hard to ensure callers made it into the logs. A special mention for Shan – she spent a lot of time on the air and is a great op."

In conclusion, my hat is off to the RST rovers who aided in a successful special event which united the north by Amateur Radio. The RST stations, consisting of KL7RST, VY1RST, VE8RST and VY0RST, made about 9,500 contacts overall on SSB, CW, PSK31, JT-65, JT-9, RTTY and SSTV on 10-160 metres with about 3,000 contacts compliments of the rovers! The RST team, pioneers of this first-time ever joint venture, has agreed to make this an annual event. We've added OX7RST in Greenland which is geophysically part of North America to our festivity for 2017!

See you next year.





Figure 1: The GM-20 Transceiver and the QRP "Companion" together

The coil for the tuner portion consists of 21 turns of 18 gauge enameled wire spaced over 75 millimetres on a 50 millimetre diameter plastic pipe.

The inductance of this coil is approximately 17 uH. The coil is tapped in four places. This provides sufficient matching capability for finetuning antennas such as coil shortened verticals or quarter-wave wires.

The capacitor is a two-gang variable from a broadcast band radio (C3a and C3b). Switch S4 is used to select the taps on the coil to vary the inductance.

Switch S3 is used to alternate the configuration from capacitor input to inductor input. This provides more flexibility to deal with a variety of antenna impedances. Switch S5 is used to switch in or out the second gang of the dual-gang capacitor for added flexibility. Switch S1 allows for switching the tuner to bypass mode when it is not required.

The resistive SWR bridge design is from *QRP Classics: The Best QRP Projects from QST and the ARRL Handbook*, which is published by the American Radio Relay League. This design was also published in an earlier article in *QST* by Doug Demaw, W1FB. The SWR bridge is made up three main components: a 50 ohm dummy load, a bridge circuit and a metering circuit.

A QRP "COMPANION"...

Tom Hardy, VE4AKI

The equipment described in this article was built as a companion to a QRP transceiver built from a kit. The kit was supplied by Small Wonder Labs and is called the GM-20. It featured a superhet receiver and the transmitter puts out 1 to 3 watts.

The kit is supplied as a "BOP" kit, that is a bag of parts. The builder has to solder all the parts onto the circuit board and package it in a suitable enclosure. The enclosure I used was fabricated from sheet aluminum and has plenty of space for adding additional features. It was finished in a two-tone scheme with automotive spray paint.

To accompany this transceiver I decided to build a combined antenna matching unit and a standing wave ratio (SWR) meter. Figure 1 shows the GM-20 transceiver together with its "Companion".

After researching various circuits I elected to use an "L" type matching circuit and a resistive type SWR meter. I chose the "L" circuit because it requires only one inductor and one variable capacitor. The resistive type of SWR meter is not commonly used but is well suited for use at QRP power levels.

CIRCUIT DESCRIPTION AND DETAILS

The circuit diagram (see Figure 2 below) shows the circuit I developed for my QRP Companion.

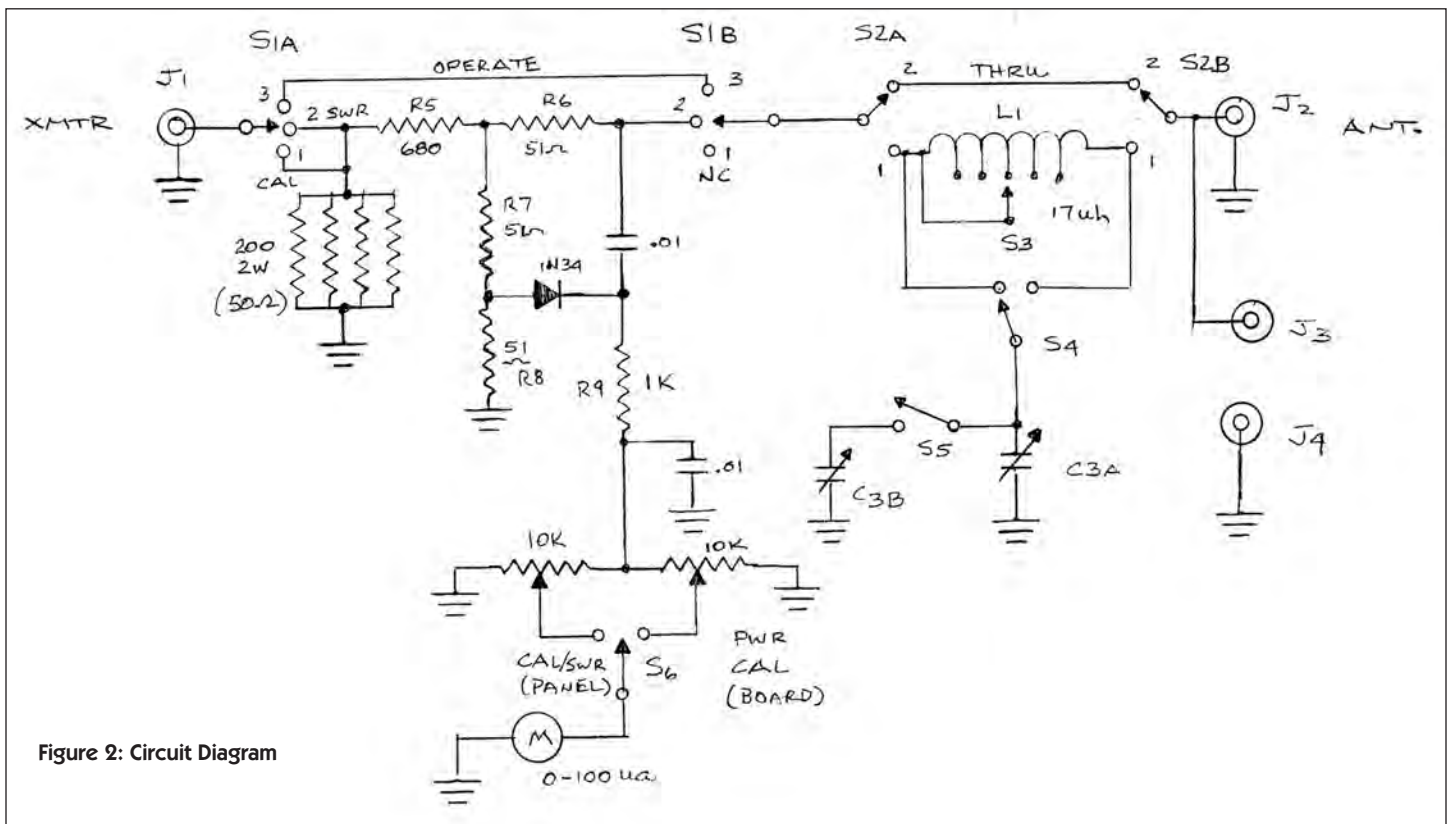


Figure 2: Circuit Diagram

**Figure 3:
The internal arrangement**

The dummy load is made from four 200 ohm, 2-watt resistors in parallel.

This combination yields 50 ohms and should handle 5 watts for intermittent use.

Resistors R6, R7, R8 and the impedance of the antenna form a bridge circuit.

Diode D1 rectifies the voltage and the meter is used to measure this voltage. When the antenna presents a 50 ohm match, the bridge is balanced and the meter will read 0 volts.

Pot R10 (panel mounted) is used to calibrate the meter when measuring SWR. Trim pot R11 is used to calibrate the meter for power measurement. It is set for a full-scale reading at the 5-watt level. Switch S6 switches between SWR and power measurement.

Meter M1 can be any meter with a 50 to 100 ua movement. The meter I used came from an old CB SWR meter and has dual scales of 0 to 50 and 0 to 100.

METER OPERATION

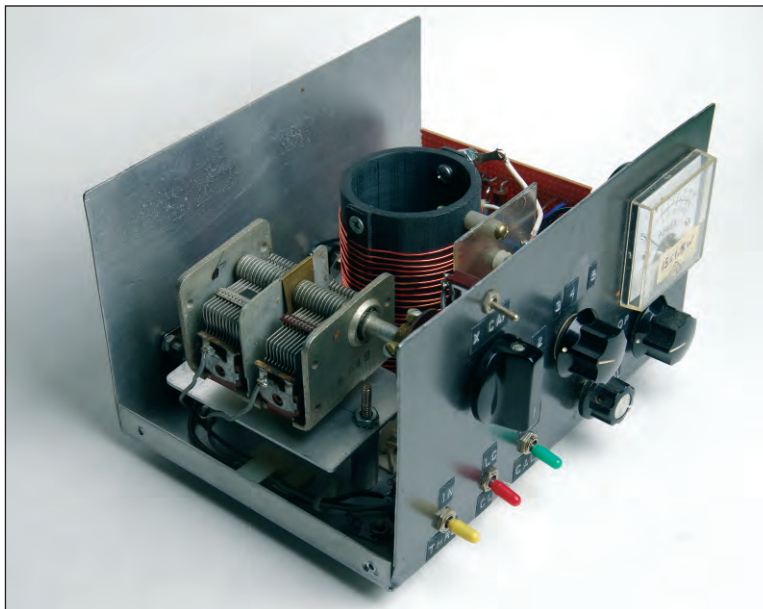
To read the SWR, place switch S2 in the calibrate position and feed some RF (5 watts or less) into J1.

Set S6 to the calibrate/SWR position.

Adjust R10 to read full-scale on the meter.

Set S2 in the SWR position and read the meter.

**Figure 4:
The finished unit.**



If the antenna is matched the meter will read 0. If the meter does not read 0, adjust the tuner settings until a reading of 0 is obtained. Once a low SWR is achieved change S2 to the operate position.

CONSTRUCTION HINTS

The dummy load resistors R5, R6, R7, R8, resistor R4, trim pot R11 as well as diode D1 are all mounted on a homebrew circuit board. The circuit board is fabricated from perf board and the traces are made with copper tape.

All the switches, pot R10 and the meter are mounted on the front panel of the enclosure. J1 and J2 are SO-239 connectors, and J3 and J4 are three-way binding posts.

The complete unit is packaged in a homebrew cabinet similar to the transceiver previously mentioned. Both are painted in a two-tone paint scheme (grey and black) using auto spray paint.



Figure 3 shows the internal arrangement while Figure 4 shows the finished unit. Figure 1 on the previous page shows the GM-20 transceiver and the "Companion" together. All the parts necessary for construction are listed in the parts list.

This unit has proven to be a useful companion to the Small Wonder GM-20 transceiver and is suitable for use with any rig in the 1 to 5 watt class. It is easy to use and very sensitive at low power levels. It can be fabricated from readily available parts, even junkbox parts as mine was and no special techniques are required for construction. This project would make a good start for a neophyte homebrewer.

PARTS LIST

- L1: 17 uh air wound coil
- R1-R4: 200 ohm, 2-watt carbon resistors
- R5: 680 ohm, 1/2-watt carbon resistor
- R6, R7, R8: 51 ohm, 1/2-watt carbon resistors
- R9: 1K ohm, 1/2-watt carbon resistor
- R10: 10 K ohm potentiometer
- R11: 10 K ohm trimmer potentiometer
- C1, C2: .01 uf disc ceramic capacitors
- D1: 1N34 germanium diode
- M1: 100 ua meter
- C3A, C3B: dual-gang broadcast band variable capacitor
- S1: DPDT toggle switch
- S2: DP3P rotary switch
- S3, S6: SPDT toggle switch
- S4: SP4P rotary switch
- S5: SPST toggle switch
- J1, J2: SO-239 coax fittings
- J3, J4: 3-way binding posts

Tom Hardy, VE4AKI, lives in Winnipeg and is a retired vocational teacher who has been a licensed Amateur for 30 years. He holds an Advanced class licence and is active on all the HF bands as well as 6 metres. He has been involved in QRP activity for over 20 years, both CW as well as SSB. "I enjoy designing and building all kinds of ham equipment especially antennas. I live on a small city lot and am currently concentrating on limited space antennas."





Making Waves

...Testing the Chain

Bill Karle, VE1YY | Lantz, Nova Scotia | E: ve1yy@yahoo.ca



INTRODUCTION

Well into an evening ragchew on 80, one of your buddies says that your audio is not as fine as usual. He thinks the problem is either a loose connection or RF getting into the audio circuit. Springtime QRN is too great to do on air testing so you QRT saying you're going to look into the issue and later get back to the group.

This time we are going to sketch the typical audio system and assess it using a couple of test protocols. The test practices also may be applied to other modes.

THE CHAIN

The transmission system is like a chain: starting with the source of the signal, the Amateur; through devices such as key, microphone and keyboard; to the transmitter or transceiver; and on to the transmission line and antenna. Whatever the mode, we need to think in terms of a chain – and you know the result of a weak link in a chain.

Focusing on voice modulation, consider the key parts. There's your voice, the microphone, the transceiver or transmitter, the communication intent, and the antenna system. We will consider the first four items during this discussion.

Your Voice

You might think that there's not much that you can do about your voice. Yet, anyone can sound better in real life and on the radio if one remembers to breathe. Take a good breath before you start talking. Get the air deep into your lungs by inhaling with your

diaphragm (think gut), not just your chest. You'll suck a lot more air into your lungs and be able to talk with more vigour, and longer. Your voice will have a rounder timbre.

The human voice covers a wide bandwidth of frequencies from about 20 Hz to about 15,000 Hz. Figure 1 graphs an idealized human voice frequencies bandwidth.

We don't need all those frequencies in order to communicate. Bandwidth can be considerably narrower. Indeed, the telephone companies discovered this years ago. The telephony voice bandwidth is roughly 300 Hz to 3,400 Hz.

There is a penalty. Those missing higher frequencies contain the sounds that allow us to determine the difference between "s" and "f" and well as "g", "t", "b", and "v". Using phonetics overcomes that penalty.

The Microphone

A microphone is a transducer converting sound pressure or velocity variations into electrical variations. The more usefully it converts sound into electricity, the better the microphone. Notice that I said "usefully" for, in communication mikes, we do not need high fidelity sound conversion; we need useful sound conversion, the kind that gets the message through.

Microphones vary depending on the transducer element. We hams are familiar with the dynamic and electret mikes. Some of us recall using carbon and piezoelectric, so-called "crystal", microphones.

Mikes include close talking ones (see Figure 2 at right), that is, your lips are close to the



Idealized Voice Frequencies Bandwidth

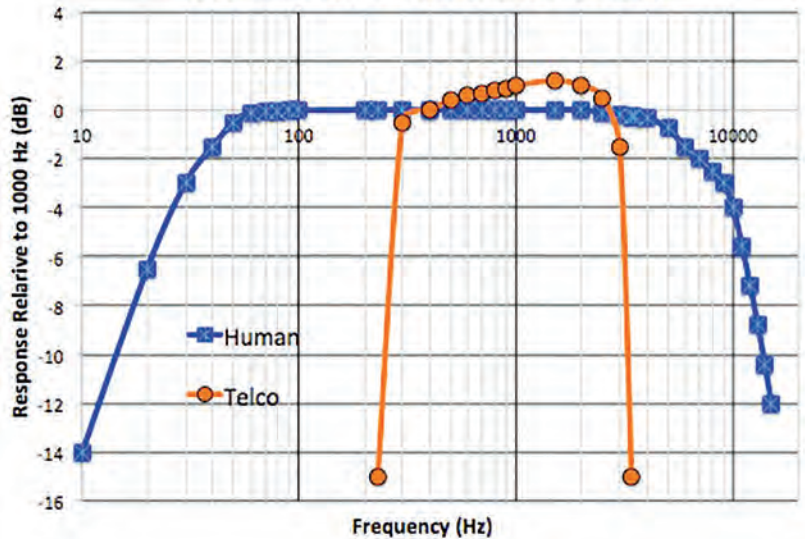


Figure 1: Idealize Human Voice Bandwidth and Reduced Telco Bandwidth

input side of the unit. Others are noise-cancelling kinds. Both of these typically are handheld and have narrow voice frequency response.

There are broadcast and studio microphones with extended frequency range. They perfectly pick up all the voice and music frequencies from 20 Hz to well above 15,000 Hz if not 20,000 Hz. This range is inappropriate in an Amateur transmission system that is limited to a few kilohertz of bandwidth. The units come in handheld, stand- and boom-mounted forms. The user can be centimetres to metres distant from these mikes. Finally, there are headsets with attached mikes (see Figures 3 and 4).

Figure 2: A Close Talking Mike (courtesy of Shure America)

Figure 3 (below): Heil Pro-set Headset with Attached Microphone and Icom Handheld Microphone





Figure 4: Desk microphone (left) and one that can be handheld or used on a desk or boom-mount (courtesy of Heil Sound)

The pickup pattern of a microphone can be tailored at manufacture. You know of omnidirectional and unidirectional *antenna* patterns where the radiation is equal in all directions or channelled into a preferred direction. In mikes, the directional sensitivity to incoming sound is similar. We have omnidirectional mikes, those that respond to sound coming from almost all directions; cardioid pattern ones that have a heart-shaped sensitivity that respond to sounds in front but not behind the mike; and bidirectional mikes that are sensitive to sound coming from the front and back but not from the sides.

How one uses a microphone is important. Speaking across, rather than into, the mike's element is supposed to reduce "popping" and "rasping" noises. However, close talking, noise cancelling and end-fire mikes require that you talk directly into the element. How do you know? Check the specs.

The Transceiver

Depending on how high up the feature hill your transceiver is, you will find several audio chain adjustments. Except in the most basic of handi-talkies, you will have a microphone gain control. This varies the amount of audio amplification of the microphone input signal and, thus, the amount of audio that is applied to the modulation stage.

If you are blessed with a rig that features audio processing in the transmit chain, you are likely to have significant control over your transmitted sound.

Some audio chains have a "low cut" control, meaning that the lower audio frequencies can be reduced while leaving untouched the middle and upper ranges of audio frequencies. At the other end of the spectrum, is a "high cut", reducing the higher frequencies relative to middle and lower range audio frequencies. Some will have "low boost" meaning enhancing the lower audio frequencies and some will sport "high boost". You might even have a mid-range cut or boost.

Some rigs have selectable voice bandwidth controls bandwidths such as "wide", "medium", and "narrow", each with a fixed or variable low and high frequency roll-offs. Figure 5 shows one setup of my Icom IC-756PROIII. The compressor is on (COMP ON) and the widest audio bandwidth of 100 to 2900 Hz is in use.

Many rigs have compression working in either the audio or low-level radio

frequency stages of the radio. Terms might include "audio digital signal processing", "digital signal processing", "RF processing", or similar. This feature allows the operator to put more output power where it will make a difference: the whisper more fully modulates the rig, the roar less so. The outcome is evenness in transmitted power. This feature is often adjusted to extremes and the voice not only sounds unnatural but also undesirably distorted.

The Intent

Why would you perfect these features? It's to improve your station's ability to deliver a readable signal to your listener.

Rapiers at the ready, DXing and contesting call for a bandwidth of 400 Hz to 1800 Hz and copious compression. Casual ragchewing needs a middle-wide bandwidth, say, 300 Hz to 2300 Hz, and low compression. Seeking to sound like a broadcast station, one requires the widest bandwidth consistent with the regulations, some compression and exotic voice adjustments beyond the ken of this article.

A GOOD TESTING PROTOCOL

The worst test is one that cannot yield measurable and repeatable results. You want to tame the elements in any test.

I am a fan of "A-B tests". The way this works is that I test one set-up under one variable condition and call it the "A" test with its own "A" observation. Then, I make a change to the variable, run a new test, the "B" one, and collect the "B" results. Given that the only item changed is the variable, it is easy to see the effect of changing it by comparing the "A" and the "B" results. You will find that a series of such tests will allow you to zero-in on the variable that you want to improve.

I encourage you to use this protocol, both when testing by yourself and especially when testing with a friend. For complicated tests – those with many factors that individually need to be adjusted and/or interact with each other – I make lists of which test run goes first with which variable to be tuned up; then, which test is next and the included variable, and so on. Don't forget to keep notes!

LISTENING TO YOURSELF

The monitoring function offered by many contemporary transceivers might not be providing a true picture of your station's output. The monitor gives a limited assurance that all is as it should be. For example, many do not demodulate your CW output; they just provide an internally

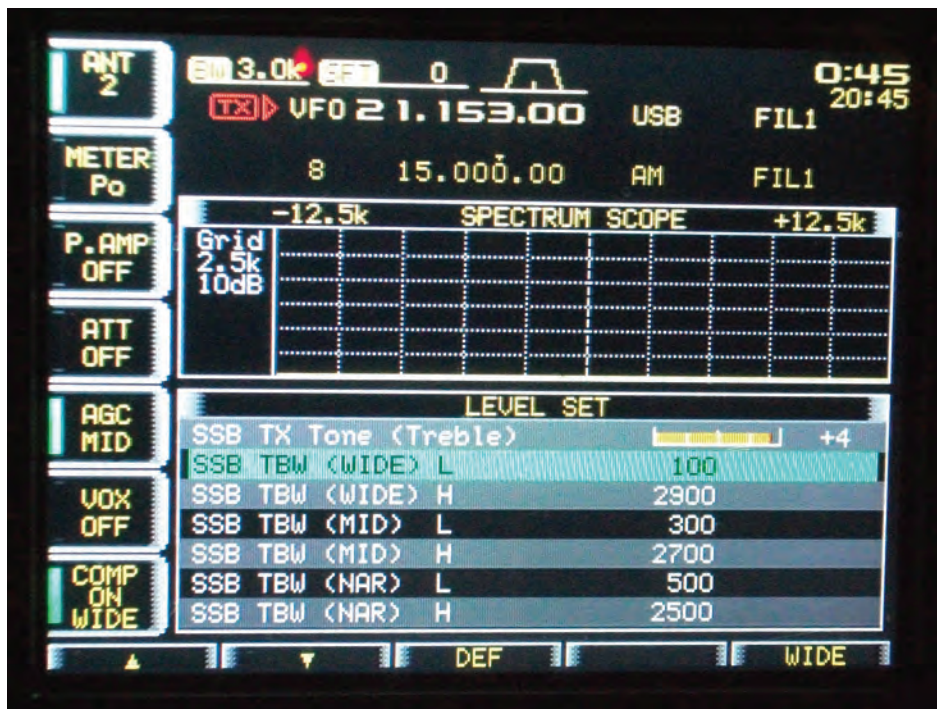


Figure 5: SSB Transmit Bandwidth (TBW) for three bandwidths each with their own Low (L) and High (H) roll-offs



Figure 6: A Set of Terminations

generated tone that does not tell you anything about your outgoing signal. If it suffers from hum, chirp or clicks, you will not know. The other modes may be monitored in an early stage and you will learn nothing about how the signal is influenced by later stages. A transceiver monitor function tells you nothing about any power amplifier, transverter or other outboard hardware that you might use.

Listening on another receiver overcomes such shortcomings. The requirement is that you do not overload the monitoring receiver. Overload likely will occur when running even a few watts output.

It is easy to prevent overload. At VE1YY, a termination is inserted into the monitoring receiver's antenna jack, replacing the transmission line. The termination is a 50-ohm, one-half watt, carbon-composition, non-inductive resistor mounted inside of a PL-259 or BNC plug. Resistor lead lengths are very short and are inside of the plug so that the assembly does not act like an antenna. Even so, I sometimes resort to a PL-259 or BNC plug that has the centre pin shorted directly to the shell to dramatically reduce input to the radio.

Figure 6 shows a set of handy terminations. The one on the far left is a 600-ohm one, mounted on a 1/4 inch audio plug, used to load the output or input of lower impedance audio circuits. Next is a short-circuited PL-259. The next two are 50-ohm terminations; the upper one is homebrew while the lower one is commercial. Second from the right we see a commercial 75-ohm termination and on the far right is a homebrew 100-ohm termination.

Once the monitoring receiver's input is terminated, its preamplifier is turned off, the internal attenuator is set to maximum, the noise blanker and any other noise cancelling features are set to "off", and the

receive bandwidth is set to one suitable for the mode in use (for example, ~500 Hz for CW, ~2.4 kHz for SSB voice, etc). If possible, deactivate Automatic Gain Control (AGC). Once the test begins, the attenuator and/or RF Gain may be adjusted to give a discernible signal. When running the test transceiver at VE1YY into the kilowatt (KW) amplifier and then into a KW dummy load, the monitor receiver is not overloaded. I then do my series of "A-B" tests.

There's another way to listen to you. Select any of the many online receivers. Find one that is likely to be able to copy you given the propagation at the time. For a rundown on this method, see the article by Robert Mazur, VA3ROM, in the March-April 2014 issue of *The Canadian Amateur* or online at <http://www.va3rom.com/docs/ATD012.pdf>.

However you arrange to listen to your signal, the noise evident during the earlier QSO ought to be apparent. A scratchiness, especially if worsened when moving the mike cable, suggests a bad connection within the mike or more likely at its connector with the rig. A raspy quality that seems to vary as you speak louder and softer, evokes the idea that RF is getting into the audio stage. Look for a broken shield on the mike line.

LET'S TANGO

Let's do a test with a friend as an assistant. You, of course, will return the favour in the future. The principles below apply to voice, CW and even digital modulation modes. The details of execution will vary.

Careful monitoring needs a colleague who has the skills, interest and time to assist. I recall helping a buddy optimize his keying. Involving both a transceiver and an amplifier, the testing took hours. A dose of geekiness helps! We tested on a dead band so we'd not interfere other stations.

Let's envision checking your signal as heard at a friend's station.

The caution is to not overload your friend's receiver. He or she preferably should be at a distance such that sky wave communication does *not* play a role with its attendant QRM, QRN, and QSB. Your helper should have the received signal well below S9, perhaps brought down to S5 or S7. Your friend also needs to deactivate the noise elimination features and use a bandwidth suitable to the mode.

Be specific about what you want your friend to monitor. Assess one feature at a time while keeping all others constant. For example, if testing audio settings, use the same voice (well, it deserves to be mentioned!), microphone, transceiver, antenna, and so on for each test. As mentioned above about complex tests, a list of tests will keep everything organized.

WRAP

The important concept is to think of transmitting as a chain. Another idea is to use a controlled and contained protocol when doing tests. Keeping a record is important. Next time we'll wrap up voice modulation and then delve into CW modulation.

THANKS

My previous column had an error in Table 2 that was discovered by my intrepid readers. Thank you all. The corrected Table 2 is included below.



Table 2: The RSQ System

Readability

- 1 Not readable
- 2 From 20% to and including 39% readable
- 3 From 40% to and including 79% readable
- 4 From 80% to and including 94% readable
- 5 From 95% to 100% readable

Strength

- 1 Barely perceptible trace
- 3 Weak trace
- 5 Moderate trace
- 7 Strong trace
- 9 Very strong trace

Quality

- 1 Splatter over much of the audio spectrum
- 3 Multiple visible pairs of unwanted sidebands
- 5 One easily visible pair of unwanted sidebands
- 7 One barely visible pair of unwanted sidebands
- 9 Clean signal; no visible unwanted sidebands

– after VK3GN (formerly VK3BGH)



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Many new Canadian

Amateurs would love to have the opportunity to talk to hams in other cities or countries, but they either don't have access to HF equipment (which can be quite expensive) or just simply do not have operating privileges on HF. Many other new hams have heard about "linking" but are unsure what that is. So if you want to talk well beyond your local repeater with just your handheld rig, read on.

Amateur Radio linking is the process in which a repeater or simplex station is connected to another repeater or simplex station. For local networks, you most probably will find a number of repeaters linked up either permanently or on-demand via radio links. For instance, affiliated clubs may link their repeaters together to create an open or closed network for their members and visitors, or for emergency communications. Some repeater operators may link both their VHF and UHF repeaters together so any transmission to one repeater is retransmitted on both. This radio linking method extends a repeater's coverage over a wider area.

But to talk around the world, there are linking systems that let repeaters do it over the Internet. Using VoIP, or Voice Over Internet Protocol, the transmission received by the link repeater or station sends that audio over the

FRESH ON THE AIR

— ADVENTURES FOR THE NEW AND BEGINNING HAM

No Need for HF. Amateur Radio Linking Connects You to the World...

Internet to another station connected to the network, and that station retransmits the signal over the air in that area. For instance, a ham in Vancouver wants to talk to another ham in Halifax. She keys up her local repeater and if it is not already linked to the Halifax repeater or to the network, she enters the DTMF code to access the Halifax repeater. The Vancouver repeater sends the "signal" over the Internet to the Halifax repeater which keys up and transmits her signal over the air. The station she is calling keys up his radio and responds. They then have a QSO, after which the Halifax station then connects up the local simplex station to the network to allow other hams in the immediate local area to join the conversation.

It may seem complicated, but think of the Internet as being the radio signal between the two repeaters. And it just doesn't have to be between two repeaters. Linking could be between five repeaters and three simplex stations; or 100 simplex stations and 300 repeaters, whatever the network is equipped for.

There are currently three major linking networks that you can connect your station to (and some are connected to two or all three). There is much information available on each service's website – including their history, how to use software and hardware so your repeater or simplex station can become part of the network, and how to access the system from your local repeater – so I won't get into that here due to space restrictions. However, I will provide a brief overview of each service below.

Internet Radio Linking Project (IRLP) (<http://www.irlp.net/>)

IRLP provides repeater to repeater and radio to radio access to hundreds of towns and cities around the world, and it is probably the largest of the linking networks out there. Each station is called a node and each node is assigned a four-digit number. Essentially, you access the network from your radio through your local IRLP repeater, key in the codes to turn on the node you want to connect to, and then you can communicate with other Amateurs on that node (repeater or simplex station). If you want to connect to two or more nodes at once, you can go through a "reflector" node which allows many nodes to connect together.

EchoLink (<http://www.echolink.org/>)

EchoLink is similar to IRLP in that it connects simplex and repeater stations together across the planet using nodes and DTMF codes, but it also has one value-add benefit: it can also connect computer stations to radio stations. That's right,

you don't even have to have a radio to use EchoLink and talk around the world. All you need is to demonstrate that you are a qualified Radio Amateur and have access to a computer, with speakers and a microphone, and the Internet.

Once validated by the site and after installing and setting up the EchoLink software, you can connect to any station, repeater or simplex on the system and begin your conversation. There are also nodes that are topic or country specific. You transmit on the system by pressing a user-defined key that acts as a push-to-talk (PTT) switch.

AllStar (<https://allstarlink.org/>)

The AllStar network is similar to both IRLP and EchoLink in that you can access your local repeater to link up to other repeaters and simplex stations around the world via the Internet. Like EchoLink, you can also connect to stations on the network via your computer; but unlike EchoLink, you log into the AllStar website net and connect through the Web Transceiver. Again, there is no need to have a radio.

Some clubs let any Amateur access the network for free and they post the access codes on their website. Other clubs require membership and release the access codes only to club members. To access the IRLP, EchoLink and/or the AllStar network provided by your local club or repeater/simplex station operator, your best bet is to contact the person responsible for maintaining the station or the sponsor for the club call sign. You can easily find this information on the club's website or via the Industry Canada call sign search at [http://apc-cap.ic.gc.ca/pls/apc_anon/query_amat_cs\\$.startup](http://apc-cap.ic.gc.ca/pls/apc_anon/query_amat_cs$.startup).

Amateur linking networks connect up Amateurs all over the world via radio and computer. If you are a new Amateur Radio operator, using these networks – even if you don't have a radio yet but do have the proper certification – can let you meet other hams around the world and get you going in the hobby.

Transmission Tidbit: Got a Ham Radio joke? Send it in to me and I'll use it here for a Transmission Tidbit!

Write me via the magazine, email me at phillipjboucher@gmail.com, or via my website at www.phillipjboucher.com.

My book, "The Almost Complete Guide to Yaesu's VX-6R" is available in PDF for \$14.95. Visit www.phillipjboucher.com to order. It's also available in ePub format at Amazon Kindle at <http://www.amazon.com/Almost-Complete-Guide-Yaesu-VX-6R-ebook/dp/B001WN7SJI>.



A Brief Summary of Canadian Amateur Radio Organizations and Publications

Doug Leach, VE3XK

This article lists the organizations operating at the national or provincial level and their publications. There were also some independent Canadian Amateur Radio magazines. A listing of the organizations whose major concern is repeaters is not included, as they are listed in repeater directories. Also not included are local Amateur Radio clubs and their newsletters.

ONLINE REPRINTS AVAILABLE

The excellent website "Long-Delayed Echoes" – created and maintained by Gordon Hogarth, VE3CNA and hosted by the Scarborough Amateur Radio Club – is a wealth of historical Amateur Radio information, and it is the basis for several of the listings below. It can be found at <http://onradiohistory.ve3we.org>.

In addition to other listings, the website contains association listings and online reprints of some issues of *The Ontario Amateur*, *XTAL* magazine, *Skywire: The Canadian Radio Amateur's Journal*, and the BC-based *The Canadian Amateur* magazine. Contributions of pdf scans or the loan of one or more missing issues to be scanned is most welcome. Many past issues of RAQI's *Radioamateur du Québec* are posted on the RAQI website at <http://www.raqi.ca/taxonomy/term/4>

NATIONAL CANADIAN AMATEUR RADIO ORGANIZATIONS AND PUBLICATIONS

Canadian Division of American Radio Relay League, 1920-1988
Prior to 1988, Canadian developments were shown on a Canadian page of the ARRL's *QST* magazine.

Canadian Amateur Radio Operators Association, 1935-1950
XTAL (Crystal) Magazine – March 1935 to September 1939 and continued June 1945 to December, 1950. Some issues of *XTAL* were later included in *Electron* magazine.

Canadian Radio Relay League (CRRL), 1988-1993
QST Canada magazine – June 1988 to June 1993
The Canadian Radio Relay League merged with the Canadian Amateur Radio Federation in 1993.

The Radio Experimenters of Canada
This is a publisher, not a membership association.
The Canadian Amateur magazine January 1959 to April 1960.

Canadian Ladies Amateur Radio Association (CLARA), 1967 to the present. CLARA was a regular feature of the YL News and Views column in Radio Amateurs of Canada's membership journal, *The Canadian Amateur* magazine. The association runs the CLARA Net and sponsors the CLARA Contest.

Canadian Amateur Radio Federation (CARF), 1967-1993
Formed in Winnipeg, Manitoba with Jim Roik, VE4UX, as the Acting President and Jim Couprie, VE4CS, as Secretary/Treasurer. Initially, the intent was to provide a federation of provincial organizations, but it soon became clear that this was not a practical financial model and CARF became a member-based organization. *The Canadian Amateur* (TCA) magazine was published from 1972 to 1993 by CARF Publications.

Radio Amateurs of Canada (RAC), May 1, 1993 to the present (formed through the merger of CARF and the CRRL)
The Canadian Amateur (TCA) magazine has been published since 1993 by CARF Publications and now by RAC.

Skywire: The Canadian Radio Amateur's Journal began in 1948 as the official organ of the **Montreal Amateur Radio Club** under Editor Fenwick Job, VE2TH. He moved to Brampton, Ontario in 1950, became VE3WO, and the magazine continued as an independent publication until June 1953.

PROVINCIAL AMATEUR RADIO ORGANIZATIONS

Ontario:

Wireless Association of Ontario, 1912-1955. This group was associated with University of Toronto. They hosted the First Canadian National Radio Convention at the Prince George Hotel in Toronto on September 8 and 9, 1922

Ontario Amateur Radio Federation, 1957-1962

Ontario Amateur Radio Association, 1959-1962

Radio Society of Ontario, April 1962 to 1988 (formed through the merger of OARF and OARA)
The Ontario Amateur magazine, was published from April 1966 to December 1986.

Ontario Trilliums, 1965-1995, was formed by and for female Amateurs and became the Canadian Ladies Amateur Radio Association (CLARA).

Manitoba:

Amateur Radio League of Manitoba, 1952-1968
The Manitoba Amateur, 1971-1981

Newfoundland & Labrador:

Society of Newfoundland Radio Amateurs (SONRA), 1959 to the present.

VO Amateur Radio Association (VOARA) was formed in 1994 to take on the provincial responsibilities that had been part of SONRA. VOARA is no longer active and the provincial responsibilities have been returned to SONRA which continues as a local St. John's club.

Quebec:

Association des Radio Amateurs du Quebec, Inc., 1951 to the present. *Radioamateur du Québec*, 1976 to the present.

Saskatchewan:

Saskatchewan Amateur Radio League, 1952 to the present.

Yukon:

Yukon Amateur Radio Association, 1976 to the present.

If any reader is aware of any other national or provincial publication not mentioned above, I would appreciate hearing about it. Please contact the author via email at ve3xk@rac.ca or by mail to call sign database listing or QRZ.com.



Amateur Radio Emergency Service and the Fort McMurray Wildfire: An Inside Look

Submitted by Al Parsons, VE6RFM

On the morning of May 2, Al Parsons, VE6RFM, the Interim Amateur Radio Emergency Services (ARES) Emergency Coordinator (EC) for the Regional Municipality of Wood Buffalo, reported to the Regional Emergency Operations Centre (REOC) in the City of Fort McMurray. The time was 7:20 am.

After being briefed of the current situation, calls were made to the local ARES group that put them on alert for possible activation. Two of these ARES members, Matthew Lewis, VE6JI and Brian Willcott, VE6BEW, came by the REOC and offered their assistance.

A crossband repeater was set up in the parking lot to enable radio communication from inside the REOC to repeater VE6TRC on Stony Mountain, and hence, connect the Fort McMurray REOC to the Provincial Operations Centre in Edmonton via the IRLP link. This two-way link could not be established due to an apparent malfunction in the IRLP's modem.

Communications were established on May 2 via telephone between Al Parsons, VE6RFM, Curtis Bidulock, VE6AEW (Provincial Emergency Radio Communications Service [PERCS] Alberta Assistant Coordinator) and Garry Naylor, VE6FGN (ARES EC Cold Lake).

Over the next few hours Edmonton PERCS and the Cold Lake Amateur Radio Society assembled an experienced team of emergency radio communicators and equipment that could provide HF, VHF and UHF capability into Edmonton. The plan was for these teams to be self-sustainable for 5-7 days, placed on standby and ready to roll pending a request for their services from the Alberta Emergency Management Agency (AEMA).

Paul Giffin, VA7MPG (ARES EC for Nanaimo, British Columbia) was asked to monitor 3716 kHz for HF radio communications. He assigned monitoring tasks to Mike Hale, VE7DXD (Coordinator of Emergency Communications [CEC]) and Al Ross, VE7CYY. Later, because there was no HF communication coming out of Fort McMurray as there were no



Fire threatens the Regional Emergency Operations Centre in Fort McMurray on May 4 at 12:30 pm prompting the initial evacuation to a temporary Emergency Operations Centre at Nexen/Long Lake. Photo courtesy of Al Parsons, VE6RFM.

HF operators left due to the evacuation, Paul Giffin was asked to stand down.

Meanwhile, on the ground in Fort McMurray, the crisis situation rapidly escalated. On May 3, fanned by 40 to 60 kilometre winds and temperatures rising during the morning to 29°C, the fire crossed the Horse River and became a real and immediate threat to the Beacon Hill and Abasand subdivisions that prompted a mandatory evacuation of both subdivisions, soon followed by the entire city. This left the remaining local ARES members, caught in the gridlock of traffic, helping their families evacuate to safety.

On the morning of Wednesday, May 4, the wildfire continued its destructive path and by 1240 hours had prompted the evacuation of the REOC itself. Within 90 minutes all the REOC staff, including the three ARES members, evacuated safely and set up a

temporary Emergency Operations Centre (EOC) at the Nexen/Long Lake oil production facility approximately 20 kilometres to the south of Fort McMurray. During the REOC evacuations, telephone communications were maintained with Cold Lake and Edmonton by Al Parsons. However, the fire was relentless. Driven by the high winds and afternoon record temperatures of 31°C+, it gained width, it gained momentum, and was now threatening Anzac plus the Nexen/Long Lake facility itself.

At 2030 hours, the REOC team, including its ARES members, evacuated their EOC at Nexen and headed for Lac La Biche, 250 kilometres to the south of Fort McMurray on Highway 881. The plan was to regroup and head back north to the REOC in Fort McMurray when it was safe to do so.



A pyroclastic cloud rapidly advances toward Anzac and the Nexen/Long Lake facility prompting evacuation of Anzac, and the temporary Emergency Operations Centre, resulting in our retreat down Highway 881 to Lac La Biche some 250 kilometres south. This photo was taken on May 4 at 9:32 pm by Al Parsons, VE6RFM.

On the morning of May 5, the fire risk to the REOC in Fort McMurray had passed, and the REOC staff headed back to Fort McMurray on Highway 881 in two escorted convoys.

The first group made it through without incident. The second smaller group was turned back as the wildfire had forced the closure of Highway 63 at the 881 intersection.

At no time during this event did any radio or telephone communication system in the area totally fail. This was due to the redundancy of its communications infrastructure provided by the City's main communications' carrier, Telus.

The first responders used the provincial Alberta First Responders Radio Communication System (AFRRCS). As a result of the communication infrastructure, this major disaster did not become a communication event for ARES involvement. At 2313 hours on May 6, the Fort McMurray ARES group was asked to stand down by AEMA.



A combined ground and air attack successfully protects the REOC from the rapidly advancing wildfire.

Even though ARES did not get activated, the firsthand experience as well as observation of the well trained professionals handling this very dangerous and rapidly escalating event was priceless. Relationships were developed, ARES members met the leaders, and ARES members let them know why ARES was there and how ARES could help. Then ARES got out of their way.

Al Parsons said:

"We had the privilege of being in communication with our mutual-aid partners in Cold Lake and Edmonton, who gave us their counsel, their technical expertise, a plan to secure a communications link into Edmonton, and people and equipment to execute that plan, should we have been activated. We were not alone."

To that end, Al Parsons would like to say a sincere thank you to the following people:

- Brian Willcott, VE6BEW, for helping out at the REOC
- Garry Naylor, VE6FGN, for his counsel and inspiration
- Cold Lake Amateur Radio Society for being there for us with their EmComm Capability
- Curtis Bidoluck, VE6AEW, for linking plan, technical support and liaison with AEMA
- Keehan Dowd, VA6KD, for volunteering to tow a mobile communications unit to Fort McMurray
- Dave Devine, VE6DEV, who, on behalf of the Northern Alberta Radio Club, offered us the use of an HF mobile rig, AT and Power Supply
- Paul Giffin, VA7MPG, Mike Hale, VE7DX and Al Ross, VE7CYY, for standing by
- And last, but by no means least, his good friend Matthew Lewis, VE6JI, for assisting inside the REOC and returning with the REOC staff after ARES was asked to stand down. He continued to assist with logistics and as Al Parson's direct contact with ground zero until he was released by the REOC Logistics Team on Sunday, May 29 – after 28 consecutive days on site.

And to Ernest Clintberg, RAC Regional Director for AB/NWT/NU for all your patience and help in editing this article. Without your subtle inference that "something needs to be written" (my interpretation), this article may not have been written at all.

Al Parsons, VE6RFM is a 40-year resident of Fort McMurray. He has been an Amateur for 29 years and associated with ARES for the past five years. His interests include DXing, contesting and experimentation and he is now experimenting with 60 metres as viable EmComm link between remote locations and centres.



FES-NL Kicks Off Emergency Preparedness Week

Doug Mercer, VO1DM CEC Newfoundland-Labrador ARES

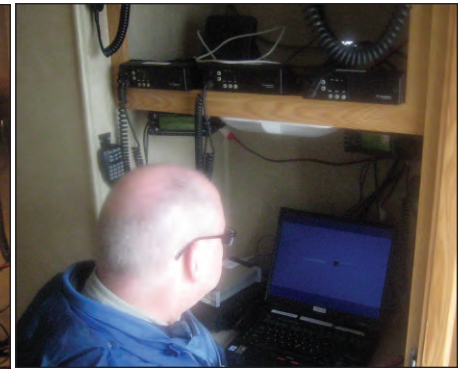
On Sunday May 1, Fire and Emergency Services – Newfoundland and Labrador (FES-NL) kicked off “Emergency Preparedness Week” with a demonstration of cooperation between all first responder partners, ARES and Amateur Radio operators from all across the Province, many of which participated from their local fire hall.

The event consisted of three elements:

- a first responder interoperability net
- a Province-wide Amateur Radio VHF net
- a demonstration of our Pactor-III digital capability

First Responder Interoperability Net

As the event began, Doug, VO1DM – RAC Vice-President and Community Services Officer – opened the net and began calling each command centre on the agreed frequency 149.08, which is the Nationwide Search and Rescue (SAR) frequency. All contacts were successfully completed including the Eastern Health Air Services shown in the photo at the top right.



Province-wide Amateur Radio VHF Net

At 2 pm, the VHF net was activated and broadcast over the FES-NL Command Centre public address system. The net continued for 45 minutes with more than 40 stations checking in from all over Newfoundland and Labrador. Cross-island communications is achieved by combining RF linking and VoIP connections like EchoLink and All Star. Jordan Elliott, VO1FZY, was the net controller for the VHF net (left photo, second row) and Paul Burggraaf, VO1PRB, was at the Pactor-III station (right photo).



Pactor-III Digital Demonstration

During the afternoon, emails were sent to all first responders present who, one by one, stopped by the FES command centre to confirm receipt. This exercise helped to demonstrate the FES-NL Command Centre’s ability to access the Internet even when deployed to remote locations where there is no access to internet. Pictured below is the FES-NL Command Centre with members of our group finishing up.

This was a huge success for everyone who participated. From an Amateur Radio ARES perspective, it once again taught me the value of exercising in real time with those stakeholders who will be your partners when a real disasters occurs.



Symposium of Maritime Amateur Radio Techs



Submitted by Jim Langille, VE1JBL
Maritime Amateur Webmaster (<http://www.maritimeamateur.ca/>)

On Saturday April 30, the WestCumb Amateur Radio Club hosted the Symposium of Maritime Amateur Radio Techs (SMART). The event began on Friday evening with several Amateurs attending a Meet & Greet from 7 to 9 pm at the ED Fullerton Municipal Building in Amherst, Nova Scotia.

On Saturday, the day began with a breakfast provided by the Amherst Masonic Society at the Masonic Temple on Lawrence Street. At the same time, volunteers began arriving at the County building including Treva Hebb and Marjorie Smith, who looked after registration and the sale of 50/50 tickets. Classes started at 9 am in two separate rooms and continued each hour until 5 pm for a total of 14 classes. Several classes were full (30) and all classes during the day averaged 20 Amateurs per room. There were also several displays set up including DMR, D-STAR and other digital communications.

Nova Scotia Public Safety and Field Communications displayed their communications vehicle which was very popular with the Amateurs. Thanks to Al Cycles, VE1CYP and Alan Prosser, VE1AWP, for arranging for the vehicle.

At noon, WestCumb volunteers Kevin Burke, VE1KEV and Mike Masters, VE1XDT, fired up the barbecues and provided all with hamburgers and hot dogs. Classes continued after lunch and at the end of the day all presenters of classes were given a small token of appreciation from Cumberland Regional Emergency Management Organization (REMO) Manager, Mike Johnson, VE1MWJ. Presenters included: Mike Masters, VE1XDT; Rick MacMillan, VE9MTB; Bernie Cormier, VE9BGC; Scott Wood, VE1QD; Yvon Hackey, VE1VON; Jeff Briggs, VY2ZM; JP LeBlanc, VE9BK; Steve Frost, VE9SF; Bill Karle, VE1YY, Dave Goodwin, VE9CB, Tobie Boubot, VE9XAB, Charles Levasseur, VE9CEL and Gary Capson, VE1VHF.

After the presentations the WestCumb ARC hosted a fox hunt which was won by Misha LeBlanc, VE1/VE9GIS, from Moncton, New Brunswick. Jim Hannon, VE1AFH, presented Misha with a new dual-band portable radio. The 50/50 draw was won by Doug Holmes, VE1AHF of Antigonish, Nova Scotia. There was also a third prize of a Raspberry Pi which was won by Scott Wood, VE1QD of Glen Margaret, Nova Scotia.

There were a total of 61 Amateurs at this event which was twice the number we expected. All four Atlantic provinces were represented. After hearing from several Amateurs this may turn into an annual event. We are also looking for feedback of what went right and what needs improvement. Please send reports to Mike Johnson, VE1MWJ at mjohnson@cumberlandcounty.ns.ca or George Dewar, VY2GF at vy2gf@rac.ca.

A photo gallery of the event, can be found on the Maritime Amateur website at <http://www.maritimeamateur.ca>.

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THE SPORTS PAGE

— THE CANADIAN CONTEST SCENE



Tom Haavisto, VE3CX
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Randy Thompson, K5ZD, recently posted an interesting observation: anyone who has been licensed in the last 20 years has never known a world without the DX Cluster.

I was licensed 42 years ago so I do remember how it was, not only chasing DX, but contesting. With no cluster, one had to call CQ a lot in order to advertise your interest in having a contest QSO.

You would get the odd pileup, and interestingly enough, when you had a pileup (or found someone else with a pileup), it actually helped generate even more activity. In order to keep the pileup going, frequent IDing (sending your call) was the name of the game.

Some operators could do two or three QSOs, at most, without sending their call. We also did not have the problem of people in the pileup sending their call, over and over, and blocking out the running station – so in some ways life was simpler.

Fast forward to today with the DX Cluster being widely available and things have changed. When a desirable station appears on the air and calls CQ, he can very quickly have a huge

Assisted vs Unassisted

pileup. In order to help get things back under control – by working stations quickly and stopping the pileup from getting even larger – stations will sometimes not ID as frequently as they should. Some stations will just send “QRZ?”, TU (thank you), or dit dit, and just work the next station.

With the wide availability of the DX cluster, some feel they don’t have to ID as often. The thinking is: let’s shave a few seconds off each QSO, and I can work even more stations by not sending my call. The expectation is that Search and Pounce (S&P) stations will see the call posted on the cluster and click on the spot. Since the running stations call will be pre-populated in the S&P stations logging software, there is not a need for the running station to ID. Some S&P stations will complete the contest QSO without actually “hearing” the running stations call sign being sent over the air! As you can well imagine, this can create all manner of problems.

First off, what happens if the call sign posted to the cluster is incorrect – also known as a “busted” spot? Sometimes operators will purposely post just such a “bad spot”. The call sign is close but slightly off: replace an “o” with a zero (0); an “l” (lower case letter L) with a one (1); add a letter; or miss a letter. There seems to be an endless number of errors that can be made if the intent is to cause problems. If this “bad call” ends up in your log, you are the one who will get a penalty!

What can also happen is the running station can change frequency and a different (running) station ends up on, or close to, the same frequency. By depending on the cluster, you could end up working the running station, but end up with the wrong call in your log! It is best to verify the running stations call sign before logging him. Good operators send their call often enough that it should not be a problem confirming the call before it goes into your log.

On the running side, having a busted spot posted to your frequency can also be problematic. Suddenly, many stations – some of which you have already worked – are calling you again. It does happen; people copy your call incorrectly and will work you again. When you get a lot of duplicates in a row, chances are that a bad spot has been posted to the cluster. While there is no penalty for working dupes, there are also no additional points either. When this happens, there are two solutions: change frequencies or work through the dupes, IDing frequently and hoping that the S&P stations realize you have already worked.

Using the cluster places you in the “assisted” category, if the contest supports it. You are being assisted in finding stations to work by others telling you the call sign and frequency of the running station.

It should be noted that for some contests, the use of a code reader can also put you into the assisted category. For some contests, such as the ARRL DX, Sweepstakes and RTTY Roundup, they refer to this class as “Unlimited”. Yes there is still only one operator and one transmitted signal at a time allowed, but you are being assisted in finding stations to work.

Interestingly enough, the RAC Canada Day and Winter contests do *not* have an assisted category. Using the cluster to find stations means entering in either the multi-single or multi-multi category. With multi-single (multiple operators, one transmitter), once you have logged a QSO on a band, you must stay on the band for 10 minutes. If you are using two radios (SO2R) and doing rapid band changes, you need to enter in the multi-multi class. Yes that means you are in the same class as other stations that could have many operators and multiple signals on the air at the same time.

Using the cluster can have a huge impact on your score. It can help you to quickly locate stations (and multipliers), alert you to band openings and help with call sign decoding. This gives you a very formidable advantage over stations not using the cluster. With all these advantages, why would folks *not* want to use the cluster?

As it turns out, there are several reasons. Some operators like to spin the dial in order to find other stations, and don’t want to use the cluster. If you can find a running station before they are spotted, it can be far easier to get through. Once the running station is spotted, and they have a huge pileup, getting through can be more difficult.

For those elite operators who make it to the World Radiosport Team Championship (WRTC), stations are not allowed to use the cluster. The CQWW also has a “Classic” overlay category where folks can operate like they did in years past. One radio, 24 hours, no cluster. In some cases stations are located in remote locations with no or poor Internet service.

When operating a contest, please keep in mind that not everyone is using the cluster, and sending your call after every QSO will make for more fun for everyone.

73, Tom, VE3CX



IARU HF WORLD CHAMPIONSHIP 2015

Call	QSO	Mult	Score	Power	Class
VY2ZM	2,281	284	2,536,404	HP	SO MIX
CK3AT (VE3AT)	2,430	229	2,032,604	HP	SO MIX
VE3UTT	1,965	265	1,923,105	HP	MS
VA2EW	1,703	250	1,623,250	HP	SO(A) MIX
VE3MIS	1,614	221	1,227,876	HP	MS
VO1MP	1,314	187	958,936	HP	SO CW
VE9AA	1,412	193	941,068	LP	SO MIX
VE7CC	1,347	174	800,574	HP	SO MIX
VE2BWL	1,064	202	743,360	HP	MS
VE3CX	1,020	188	603,480	HP	SO(A) MIX
VA3DF	924	180	550,800	HP	MS
NY4G/VY2	1,142	131	531,074	HP	MS
VE3XB	625	169	324,311	LP	SO CW
VE3BR	598	145	259,260	LP	SO MIX
VA2EN	567	134	226,594	HP	MS
CK4EA (VE4EA)	683	94	201,066	HP	MS
VE7ACN	520	119	195,160	HP	SO(A) MIX
VE6EX	717	81	176,337	LP	SO MIX
VE7XF	419	129	174,795	HP	SO(A) CW
VE3IAE	426	120	164,640	LP	SO(A) CW
VE3MGY	635	77	148,995	LP	SO(A) CW
VE4YU	449	104	143,832	LP	SO MIX
VE1DT	324	139	140,390	HP	SO(A) CW
VE1WOW	280	119	109,599	LP	SO PH
VE3FH	349	99	106,425	LP	SO CW
VE3SD	332	105	103,320	LP	SO MIX
VE3FJ	324	86	100,964	HP	SO CW
VE3TW	292	87	82,302	HP	SO(A) MIX
VE5SDH	360	74	81,400	LP	SO CW
VE1ANU	248	109	78,044	LP	SO CW
VA7ST	377	63	75,033	HP	SO CW
VA3ZNQ	233	105	73,605	HP	SO PH
VE2AWR	299	71	68,657	LP	SO MIX
VE2QY	283	76	65,436	LP	SO CW
VE7KW	334	57	63,555	LP	SO(A) CW
VA3TPS	204	85	50,490	LP	SO PH
VE3ZY	223	75	49,275	LP	SO CW
VE3HED	168	95	48,260	HP	SO PH
VE3KTB/VY0	194	81	47,790	LP	SO PH
VE9ZZ	155	74	37,222	LP	SO PH
K2NV/VE3	179	70	36,470	LP	SO CW
VE2FU	180	61	33,306	HP	SO CW
VE5ZX	159	62	29,946	HP	SO(A) CW
VE3LJQ	140	69	29,532	LP	SO PH
VA3TIC	125	57	23,769	HP	SO PH
VE7DDG	116	57	23,712	LP	SO CW
VA7DX	270	23	18,906	HP	SO(A) CW
VA2AGW	96	56	18,144	HP	SO PH
VE2GHI	165	37	18,093	LP	SO CW
VE9OA	110	46	16,744	LP	SO(A) MIX
VE6AX	105	40	14,520	LP	SO(A) MIX
VE9BWK	118	35	14,140	LP	SO(A) CW
VA3IK	94	46	12,880	LP	SO CW
VE6NS	139	32	12,768	LP	SO CW
VA2QR	79	55	11,495	HP	SO(A) PH
VE3JSO	83	49	11,025	LP	SO(A) PH
VE2FK	95	35	11,025	HP	SO(A) CW
VE3TU	124	29	10,382	LP	SO PH
VE3IGJ	114	30	10,320	LP	SO CW
VE3XD	98	32	9,856	QRP	SO CW
VA3PCJ	98	32	9,664	QRP	SO CW
VE3DXK	76	39	8,424	LP	SO CW
VO1BQ	69	32	7,200	LP	SO CW
VE7VAW	68	33	6,666	LP	SO PH
VE7KJR	82	23	6,302	LP	SO PH
VA3FN	75	28	5,796	LP	SO CW
VE6AMI	72	21	4,788	LP	SO CW
AA1K/VE2	58	21	4,116	LP	SO CW
VA7HZ	43	27	3,483	LP	SO(A) MIX
VA7BWG (VE7GM)	54	20	3,200	LP	SO CW
VE3EEU	47	22	3,102	LP	SO PH
VE3MCF	38	26	2,652	LP	SO PH
VE7YU	31	33	2,541	LP	SO CW
VA7AM	39	21	2,247	LP	SO PH
VE7BGP	27	21	2,037	LP	SO MIX
VE7FCO	34	11	1,276	LP	SO PH
VE2GT (VE2PIJ)	22	17	986	LP	SO(A) PH
VE3XAT	23	13	949	LP	SO(A) CW
VE2QV	31	10	910	LP	SO CW
VE3LXL	29	10	830	LP	SO CW
VE3NJE	21	15	795	LP	SO PH
VE2SCA	19	14	714	LP	SO MIX

VE5DLD	24	7	476	QRP	SO PH
VY2LI	11	9	315	LP	SO MIX
VA2GN	10	9	198	LP	SO PH
CK9EX	5	5	65	LP	SO(A) PH
VE3NKL	2	2	12	LP	SO PH
VE3AJ	2	2	8	LP	SO PH

DL-DX RTTY 2015

Call	QSO	DXCC	Area	Score	Class
VE2FU	295	77	32	460,560	SOAB
VA7ST	144	30	35	109,850	SOAB
VE2EBK	99	39	22	81,435	SOAB
VA7RY	113	23	31	79,920	SOAB
VE5KS	97	40	27	79,730	SOAB 6HR
VE6AX	51	21	13	20,230	SOAB
VA7AQD	47	10	25	18,025	SOAB
VE6AMI	41	21	10	16,430	SOAB
VE3MCF	27	12	5	5,950	SOAB
VE3AJ	12	5	6	1,595	SOAB LTD

RSGB IOTA CONTEST 2015

Call	QSO	Mult	Score	Category
VY2TT	1927	257	3,748,345	IOTA FIX SOU MIX 24H HP
VE7JH	906	138	1,022,580	IOTA FIX SOA CW 24H HP
VO1HP	492	87	329,730	IOTA FIX SOU CW 24H LP
VE3UTT	157	124	288,769	WORLD SOA CW 12H HP
VY2OX	224	103	265,740	IOTA FIX SOU CW 24H LP
VY2OX	224	103	265,740	IOTA FIX SOU CW 24H LP
VE3KTB/VY0	615	33	123,255	IOTA DXPN SOU SSB 24H LP
VE3ZZ	126	71	101,885	WORLD SOA MIX 24H QRP
VE1OP	200	42	65,100	IOTA FIX SOA CW 12H HP
VY2LI	384	21	45,990	IOTA FIX SOU SSB 12H HP
VE2FK	210	35	39,270	WORLD SOA CW 24H HP
VO1BQ	100	35	30,800	IOTA FIX SOU MIX 12H HP
VE3FJ	66	38	29,222	WORLD SOU CW 12H HP
VE3IAE	127	34	27,200	WORLD SOA CW 24H LP
VE1DT	58	23	12,880	IOTA FIX SOA CW 12H HP
VE3EJ	52	27	12,636	WORLD SOU CW 12H LP
VE6BMX	24	23	8,280	WORLD SOA MIX 24H HP
VE1SQ	30	16	5,744	WORLD SOU SSB 12H LP
VE3LJQ	31	17	5,695	WORLD SOU SSB 24H QRP
VE3AD	30	16	4,912	WORLD SOU SSB 12H HP
VA7ST	30	13	3,822	WORLD SOU CW 12H HP
VA7JC	28	13	3,263	WORLD SOA CW 12H LP
VA2AM	19	13	2,691	WORLD SOA MIX 12H HP
VE2QV	30	11	2,233	WORLD SOU CW 24H LP
VE7TJF	22	10	1,740	WORLD SOA SSB 12H LP
VE3SD	19	10	1,680	WORLD SOU MIX 12H LP
VE9PLS	12	9	1,386	WORLD SOA SSB 24H HP
VA3RKM	14	6	636	WORLD SOU CW 12H QRP
VE9BWK	25	4	460	WORLD SOA CW 12H QRP
VE2GT	9	5	415	WORLD SOA SSB 12H LP
VE3TW	4	3	180	WORLD SOU MIX 12H LP
VA7QLT	2	1	17	WORLD SOA SSB 12H HP
VE3NJE	1	0	0	WORLD SOU SSB 12H LP

CQWW VHF CONTEST 2015

Call	QSO	Grid	Score	Class
VE3CRU/R	81	60	8,160	R
VE3SMA	76	53	6,095	M
VE3DS	68	40	4,200	A
VE5UF	27	26	1,144	A
VE7XF	46	16	736	6
VE2DSB	20	19	665	A
VA2LGQ	22	17	561	M
VA7FC	26	17	510	A
VE3IQZ	18	11	385	A
VE2ZT	14	12	252	A
VE3GTC	15	10	250	A
VA3NW	13	9	234	H
VE9AA	12	10	150	A
VE3XB	15	9	135	6
VE2HAY	9	7	119	A
VA3TIC	9	6	108	2
VE3RX	6	6	54	A
VA7MM	4	4	20	Q
VE2GT	2	2	8	2
VA3PC	2	2	6	A
VE7DAY	1	1	1	6

TARA GRID DIP SHINDIG 2015

Call	QSO	Mult	Score	Power
VE6AX	20	17	3,400	RTTY-Low
VE7FCO	15	15	2,250	RTTY-Low

WAE DX CW 2015

Call	QSO	Mult	QTC	Score	Category
VE2ZM	1,847	538	1,874	2,001,898	SOHP
VE3AT	1,524	485	1,537	1,484,585	SOHP
VA2WA	1,427	461	1,438	1,320,765	SOHP
VA2EW	1,110	406	1,121	905,786	SOLP
VE3DZ	956	364	956	695,968	SOLP
VE9AA	726	412	738	603,168	SOLP
VE2FK	785	284	789	447,016	SOHP
VE3UTT	585	312	597	368,784	SOHP
VE2FU	598	285	619	346,845	SOHP
VE7UF (VE7JH)	506	200	521	205,400	SOHP
VE7CC	468	207	486	197,478	SOHP
VO1BQ	312	216	329	138,456	SOHP
VE3BR	281	229	291	130,988	SOLP
VE3VV	196	207	203	82,593	SOHP
VE3TG	226	179	179	72,495	SOLP
VE3EJ	147	224	146	65,632	SOHP
VE3IAE	197	134	209	54,404	SOLP
VE3FJ	141	110	138	30,690	SOHP
VE3EY	116	128	121	30,336	SOHP
VE9BWK	117	120	113	27,600	SOLP
VE3TW	120	110	125	26,950	SOHP
VE9OA	88	134	108	26,264	SOLP
VE1OP	127	78	127	19,812	SOHP
VE5MX	99	77	107	15,862	SOHP
VE4VT	78	75	86	12,300	SOLP
VE4YU	60	69	76	9,384	SOLP
VE3CX	50	89	46	8,544	SOHP
VE2BWL	51	60	50	6,060	SOLP
VA7ST	69	43	66	5,805	SOHP
VA3IK	41	65	41	5,330	SOLP
VE6EX	50	49	54	5,096	SOLP
VA3FN	26	36	19	1,620	SOLP
VE3RCN	36	42	0	1,512	SOLP
VA3RKM	18	27	0	486	SOLP
VE7BGP	13	24	0	312	SOLP

NCJ JULY NORTH AMERICAN QSO PARTY, RTTY 2015

Call	QSO	Mult	Score	Class
VE2RYY	407	103	41,921	SOAB LP
N2WQ/VE3	346	118	40,828	SOAB LP
VA3DF	357	109	38,913	SOAB LP
VA7ST	340	94	31,960	SOAB LP
VE7SZ	340	93	31,620	SOAB LP
VE6QO	363	85	30,855	SOAB LP
VE2EBK	290	88	25,520	SOAB LP
VE3RZ	290	88	25,520	SOAB LP
VE3CX	273	93	25,389	SOAB LP
VA3XH	255	86	21,930	SOAB LP
VE3UTT	209	79	16,511	SOAB LP
VE3IAE	201	67	13,467	SOAB LP
VE2NMB	154	61	9,394	SOAB LP
VE6AX	140	66	9,240	SOAB LP
VE4YU	128	59	7,552	SOAB LP
VE3MGY	120	53	6,360	SOAB LP
VE7FCO	108	49	5,292	SOAB LP
VE2FK	140	33	4,620	M2
VE3AJ	114	40	4,560	M2
VA3PC	100	43	4,300	SOAB LP
VA3WR	79	46	3,634	SOAB QRP
VE3XD	71	39	2,769	SOAB QRP
VA7AM	61	36	2,196	SOAB LP
VE7BGP	53	39	2,067	SOAB LP
VE3HG	54	36	1,944	SOAB LP
VE6SPS	58	32	1,856	SOAB LP
VE3FJ	58	29	1,682	SOAB LP
VA3IK	50	29	1,450	SOAB LP
VE7RK	41	30	1,230	SOAB LP
VA2ES (VE2AXO)	44	24	1,056	SOAB LP
VE2FU	25	16	400	SOAB QRP
VA7AD	18	15	270	SOAB QRP
VA3RKM	9	8	72	SOAB QRP
VA7HZ	7	7	49	SOAB LP
VE3TW	5	2	10	SOAB LP

NCJ JULY NORTH AMERICAN QSO PARTY, CW 2015

Call	QSO	Mult	Score	Class
VE3EJ	949	221	209,729	SOAB LP
VE3JM	958	207	198,306	SOAB LP
VE3DZ	910	198	180,180	SOAB LP
VE3KI	778	176	136,928	SOAB LP
VE3XB	749	178	133,322	SOAB LP
VE3RZ	645	178	114,810	SOAB LP
VA7AAA (KL7SB)	706	159	112,254	SOAB LP
VE3CX	567	171	96,957	SOAB LP
VA3DF	572	168	96,096	SOAB LP
VE2BWL	528	145	76,560	SOAB LP
VA7ST	500	143	71,500	SOAB LP
VE3UTT	451	134	60,434	SOAB LP
VE5KS	308	134	41,272	SOAB LP
VA3ATT	338	110	37,180	SOAB LP
VA3EC	299	118	35,282	SOAB LP
VE3VV	257	127	32,639	M2
VE4YU	256	125	32,000	SOAB LP
VE3GFN	296	108	31,968	SOAB LP
VE5SDH	302	95	28,690	SOAB LP
VE2FK	254	102	25,908	M2
VE2FU	263	87	22,881	SOAB LP
VA7JC	221	88	19,448	M2
VE3MGY	204	65	13,260	SOAB LP
VA2TTA	162	81	13,122	SOAB LP
VA2WA	172	73	12,556	SOAB LP
VE4DDO	152	80	12,160	SOAB LP
VE3XD	150	67	10,050	SOAB LP
VE5MX	129	64	8,256	SOAB LP
VE3TW	116	61	7,076	SOAB LP
VA3FN	113	60	6,780	SOAB LP
VE7SL	131	43	5,633	SOAB LP
K2NV/VE3	104	54	5,616	M2
VA3RKM	83	52	4,316	SOAB QRP
VE3FJ	98	34	3,332	SOAB LP
VE7BGP	63	45	2,835	SOAB LP
VE3RCN	69	40	2,760	SOAB LP
VE9OA	55	38	2,090	SOAB LP
VE9BWK	57	29	1,653	M2
VA7BWG (VE7GM)	52	31	1,612	SOAB LP
VE7JH	50	24	1,200	SOAB LP
VE3DTI (VA3PCJ)	15	11	165	SOAB QRP
VA3WR	7	5	35	SOAB QRP
VE3NKL	3	3	9	SOAB LP

NCJ JULY NORTH AMERICAN QSO PARTY, SSB 2015

Call	QSO	Mult	Score	Class
VE3RZ	244	86	20,984	SOAB LP
VE3KTB	166	70	11,620	SOAB LP
VE3CX	172	48	8,256	SOAB LP
VE7SCC	142	53	7,526	M2
VE3RCN	138	49	6,762	SOAB LP
VE9AA	121	42	5,082	SOAB LP
VE3FJ	87	38	3,306	SOAB LP
VE2BWL	76	39	2,964	SOAB LP
VE4YU	70	36	2,520	SOAB LP
VA3TIC	93	26	2,418	SOAB LP
VE4DRK	58	35	2,030	SOAB LP
VE7NA (VE7BGP)	45	27	1,215	SOAB LP
VA7HZ	32	19	608	SOAB LP
VA3PCJ	28	15	420	SOAB LP
VE3LJQ	25	14	350	SOAB LP
VE8GER	21	12	252	SOAB LP
VE7GTW	13	7	91	SOAB LP
VE3DQN	14	6	84	SOAB LP
VE3QEE	11	7	77	SOAB LP
VA7ST	7	7	49	SOAB LP
VA3WR	5	5	25	SOAB LP
VA3RKM	6	3	18	SOAB LP
VE7WNO	4	4	16	SOAB LP
VE2GT (VE2PIJ)	3	3	9	SOAB LP

OHIO QSO PARTY 2015

Call	CW Q	CW Mult	SSB Q	SSB Mult	Score	Class
VE3KZ	111	48	156	53	38,178	SOHP
VE9AA	43	37	9	7	7,876	SOLP
VE5KS	51	30	23	17	5,875	SOLP
VE7JH	60	30	0	0	3,600	SOLP
VE3HED	0	0	55	30	1,650	SOHP
VA3ATT	18	16	0	0	576	SOLP
VA3PCJ	6	6	14	10	416	SO QRP
VA7BWG	11	7	0	0	154	SOLP
VE2GT	0	0	10	6	60	SOLP
VA3PDG	0	0	3	3	9	SOLP

CONTEST CALENDAR FOR JULY, AUGUST AND EARLY SEPTEMBER 2016

Contest Name	Start	End	Web Address
RAC Canada Day Contest	0000Z Jul 1	2359Z Jul 1	http://wp.rac.ca/canada-day-contest-rules/
DL-DX RTTY Contest	1100Z Jul 2	1059Z Jul 2	http://www.drcg.de/dldxrtty/dl-dx-rtty-english.html
Marconi Memorial HF Contest	1400Z Jul 2	1400Z Jul 3	http://www.arifano.it/contest_marconi.html
IARU HF World Championship	1200Z Jul 9	1200Z Jul 10	http://www.arrrl.org/iaru-hf-championship
FISTS Summer Sprint	0000Z Jul 9	0400Z Jul 9	http://www.fistsna.org/operating.html#sprints
North American QSO Party, RTTY	1800Z Jul 16	0559Z Jul 17	http://www.ncjweb.com/NAQP-Rules.pdf
CQ Worldwide VHF Contest	1800Z Jul 16	2100Z Jul 17	http://www.cqww-vhf.com/
NAQCC CW Sprint	0030Z Jul 21	0230Z Jul 21	http://naqcc.info/sprint201607.html
RSGB IOTA Contest	1200Z Jul 30	1200Z Jul 31	http://www.rsgbcc.org/hf/rules/2015/riota.shtml
TARA Grid Dip Shindig	0000Z Aug 6	2400Z Aug 6	http://www.n2ty.org/seasons/tara_grid_rules.html
10-10 Int. Summer Contest, SSB	0001Z Aug 6	2359Z Aug 7	http://www.ten-ten.org/index.php/activity/2013-07-22-20-26-48/qso-party-rules
European HF Championship	1200Z Aug 6	2359Z Aug 6	http://lea.hamradio.si/~scc/euhf/euhfrules.htm
North American QSO Party, CW	1800Z Aug 6	0559Z Aug 7	http://www.ncjweb.com/NAQP-Rules.pdf
SARL HF Phone Contest	1300Z Aug 7	1630Z Aug 7	http://www.sk3bg.se/contest/sarlhf.htm
WAE DX Contest, CW	0000Z Aug 13	2359Z Aug 14	http://www.darc.de/referate/dx/contest/waedc/en/rules/
Maryland-DC QSO Party	1600Z Aug 13	2400Z Aug 14	http://mdcqsoparty.w3vpr.org/Documents/Maryland_QSO_Party_Rules_2014.pdf
SARTG WW RTTY Contest	0000Z Aug 20	1600Z Aug 21	http://www.sartg.com/contest/wwrules.htm
ARRL 10 GHz and Up Contest	0600 Aug 20*	2400 Aug 21*	http://www.arrrl.org/10-ghz-up
North American QSO Party, SSB	1800Z Aug 20	0559Z Aug 21	http://www.ncjweb.com/NAQP-Rules.pdf
Ohio QSO Party	1600Z Aug 27	0400Z Aug 28	http://www.ohqp.org/adminRules.htm
YO DX HF Contest	1200Z Aug 27	1200Z Aug 28	http://www.yodx.ro/en/english
SCC RTTY Championship	1200Z Aug 27	1159Z Aug 28	http://lea.hamradio.si/scc/rtty/rttyrules.htm
Hawaii QSO Party	0700Z Aug 27	2200Z Aug 28	http://www.hiqsoparty.org/Rules/HQP/HQPRules.html
SARL HF CW Contest	1400Z Aug 28	1600Z Aug 28	http://www.sk3bg.se/contest/sarlhf.htm
All Asian DX Contest, Phone	0000 Z Sep 3	2400Z Sep 4	https://www.jarl.org/English/4_Library/A-4-3_Contests/2015AA_rule.htm
MI QRP Labor Day CW Sprint	2300Z Sep 5	0300Z Sep 6	http://www.qsl.net/miqrclub/contest.html
WAE DX Contest, SSB	0000Z Sep 10	2359 Z Sep 11	http://www.darc.de/referate/dx/contest/waedc/en/rules/
ARRL September VHF Contest	1800Z Sep 10	0300Z Sep 12	http://www.arrrl.org/september-vhf
North American Sprint, CW	0000Z Sep 11	0400Z Sep 11	http://ncjweb.com/Sprint-Rules.pdf

For more contest information check out these sites: <http://www.hornucopia.com/contestcal/weeklycont.html>; <http://www.contesting.com>; <http://www.sk3bg.se/contest/>; <http://www.arrrl.org/contests/calendar.html>; <http://www.arrrl.org/contests/rate-sheet/about.html>; <http://www.cq-amateur-radio.com/awards.html>; http://www.arrrl.org/files/file/DXCC/2013%20DXCC%20Current_a.pdf
 The "Contest Calendar" at the end of this column is presented as a guide only. RAC and TCA do not necessarily endorse or support any of the contests or the accuracy of the information. Bands: The 30, 17 and 12m bands are never used in any contest.

KANSAS QSO PARTY 2015

Call	CW	PH	DIG	Mult	Score
VE7CV	136	57	0	91	47,602
VE5KS	138	57	5	87	47,341
VE2FK	109	0	0	69	22,663
VA3ATT	79	0	0	54	12,898
VE3HED	0	99	0	58	11,584
VE3GXW	57	30	0	47	10,957
VE7JH	53	12	0	50	9,250
VE4YU	34	18	0	38	5,344
VE9OA	30	22	0	39	5,326
VA3PDG	0	30	0	19	1,240
VE2GT	0	15	0	12	460
VA3PCJ	12	2	0	10	400

10 GHz AND UP 2015

Call	QSO	Calls Wkd	Distance Pts	Score	Category
VE3SMA	73	21	6,433	8,533	UP
VE3FMH	67	15	5,125	6,625	UP
VE3FN	14	9	4,268	5,168	10G
VE2JWH	29	13	3,487	4,787	10G
VE3NYZ	19	11	1,723	2,823	10G
VE3EG	20	11	1,419	2,519	UP
VE4MA	2	2	2,094	2,294	10G
VE3WJ	9	5	541	1,041	10G
VE3MSC	4	4	433	833	10G

SCC RTTY CHAMPIONSHIP 2015

Call	QSO	Mult	Score	Category
VA2UP	546	158	210,298	SOAB HP
VE7CC	381	145	130,645	SOAB HP
VE2RYY	346	68	61,268	SO20
VE2FU	292	67	49,245	SO20
VE3FH	160	95	35,435	SOAB LP
VE7SZ	95	57	12,141	SOAB HP
VE2FK	68	49	7,644	SOAB HP
VE2NMB	38	28	2,296	SOAB LP
VA7ST	17	16	560	SO20

SARTG WW RTTY CONTEST 2015

Call	QSO	Mult	Score	Category
VE7CC	251	73	210,970	SOAB HP
VE3DZ	151	65	111,150	SOAB LP
VE7IO	166	55	97,350	SOAB HP
VE2FK	147	54	90,180	SOAB HP
VE3FH	118	55	73,150	SOAB LP
VE2FU	161	39	72,735	SO 20
VA7ST	131	42	58,170	SOAB HP
VE2EBK	127	37	51,245	SO 20
VE5MX	67	32	22,240	SOAB HP
VE2NMB	61	32	20,800	SOAB LP
VE3AJ	33	31	11,935	SOAB LP
VE7BHS	35	15	5,100	SO 20
VA3SB	26	15	4,350	SOAB LP
VA7HZ	14	14	2,030	SOAB LP

BRITISH COLUMBIA/YUKON:

SM Acting Bill Gipps, VE7XS
 A/SM Ron McFadyen, VY1RM
 A/SM Neil King, VA7DX
 STM Al Ross, VE7WJ
 SEC Acting Al Munnik, VA7MP
 SEC Terry Maher, VYIAK (Yukon)
 OBM Bill Foster, VE7WWW
 OOC: Dennis Wight, VE7IJJ
 ACC: Karla Wakefield, VA7KJW
 Website: www.va7mpg.ca

MARCH-APRIL SM REPORT:

Two members of the Delta Amateur Radio Society and the RAC Director for BC & YT, met with the Provincial government about Amateur Radio and Distracted Driving on April 25. We met with the Minister of Public Safety & Solicitor General (the Honourable Mike Morris), the Minister of State for Emergency Preparedness (the Honourable Naomi Yamamoto) and the Superintendent of Motor Vehicles (Sam MacLeod).

We identified that we were concerned that the apparent exemption for Amateur Radio operators had been removed from the Ministry of Justice (MOJ) guide. In addition, at least one Amateur had been charged and convicted of Distracted Driving for using their hand microphones while in their vehicle. We also highlighted the inconsistencies in the wording of the legislation, and that the MOJ handout was downright wrong in some of the information it was providing to Amateur Radio operators.

We offered to work with the Province to correct the errors and to help reword the legislation to make it clear what was legal and what was not, when it came to using Amateur Radio in a moving vehicle.

We held a working session on May 27. It was a very productive meeting with a Senior Policy Advisor and his associate, two members of the Delta club, and myself. We discussed our concerns, we explained more about how Amateur Radio was used, and we reviewed our suggested rewording of the language that governs Distracted Driving. There will be more working sessions in the future. Additional information will be made available shortly so please check with your Affiliated RAC Club.

Public Service Honour Roll

March:
 VE7XLH: 150; VA7MPG: 105;
 VE7GN: 140; VE7WJ: 105.
April:
 VE7XLH: 165; VE7GN: 155;
 VE7WJ: 115; VA7MPG: 185.

– Bill Gipps, VE7XS

ALBERTA:

SM: Garry Jacobs, VE6CIA
 SEC: Brian Davies, VE6CKC
 STM: Jack Humphries, VE6JRH
 OO: Don Momen, VE6JY

MARCH-APRIL SM REPORT:

It's been a busy time here in Alberta so my report is a short one.

We have been very busy with the Red Cross assisting 80,000 evacuees in Alberta. When the wildfire began in Fort McMurray we initially started a net and started rounding up resources to respond but the call from the Alberta Emergency Management Agency (AEMA) never came. They stood down several hours later and never did get a call.

The Emergency Operations Centre had 100 satellite phones, being in the middle of the oil patch, so there was no need for comms. Garry, VE6FGN, the EC for Cold Lake, was loaded with provisions, portable HF gear and had a trailer ready to roll and was then stood down.

Al Parsons, VE6RFM, the Interim Amateur Radio Emergency Services (ARES) Emergency Coordinator (EC) for the Regional Municipality of Wood Buffalo, provides a complete report on ARES and the Fort McMurray wildfire in the Public Service / ARES column on page 50.

Now on to the rest of my report.

A welcome goes out to Ernest Clintberg, VE6EC, the new RAC Alberta/NWT/NU Director. I look forward to working with him going forward.

The Basic Amateur Radio course in Red Deer in March saw 21 students pass, several with honours. The radio equipment from the estate of Carl, VE6VG, was made available after the exam and several new owners went home with radios and other gear.

The Calgary Amateur Radio Association fleamarket in April was a huge success. Several radio give-away draws made the winners very happy as well as other draw prizes from the many sponsors.

Lloydminster Report Joe, VE5JM

The March-April period has been a little busier than the previous period. The repeater program is continuing, now that the Alberta Lottery funding has come in.

MESSAGE FROM RAC COMMUNITY SERVICES OFFICER

ARES Services

A number of specific services are available to ARES clients, letting them tailor ARES communications support to fit their organizational and operational needs.

Emergency Communications Stations

This is the most commonly requested service. Emergency communications stations provide voice and data communications between specific locations. These stations augment existing communications, adding capacity and flexibility.

Shadowing

Shadowing involves attaching telecommunications operators to specific "high value" personnel in an organization. This ensures that key people are kept in touch, regardless of location, communications overloads or failures, or other factors.

Mobile Communications Service

ARES mobile communications service attaches ARES operators to mobile units. Operators ensure connectivity between mobile units and Emergency Operation Centres (EOC) or coordination points. Mobile service is also a valuable tool to act as a relay station when there is poor coverage on simplex or repeater networks.

Data Messaging

Data messaging service is provided using D-STAR, ad-hoc packet radio LANs, Wi-Fi networks and point to point Ethernet radio links. These stations are set up at key points such as evacuation centers and EOCs, allowing the efficient transfer of large quantities of data.

Rapid Community Assessment

During many types of emergencies, getting information about conditions in the community at large can be crucial. The ARES network provides an easy way to get basic information very quickly from a large number of locations throughout the region.

Backup Communications

ARES backup service places ARES emergency communication stations at or near existing high-value communications stations to provide backup in the event of failure or overload.



CFSO Doug Mercer, VO1DTM
 Email: vo1dm@rac.ca
 (see page 4 for contact info)

Interoperable Communications (Interagency Bridging)

In situations where aid, response and recovery efforts are being hampered by incompatible communications systems, ARES can assist by providing a communications "bridge."

Wide Area Communications Relays

ARES can provide communications connectivity outside the local area when required. This service is useful during emergencies that disrupt telephone and Internet service over a wide area.

RAC AGM and NL Hamfest

Don't forget the upcoming RAC Annual General Meeting and NL Hamfest on September 10 at the Heart's Content Cable Station. This historic location welcomed the first permanent transatlantic telegraph cable when the ship, *Great Eastern*, laid the cable 150 years ago. Why not come and sample the hospitality of this beautiful island?

Simulated Emergency Test

Mark your calendar for the upcoming RAC Simulated Emergency Test on Saturday, October 8.

In Ontario, the SET will be held on Saturday, October 8 but at Emergency Operations Centres that are located in Municipal offices, that can't get access on the weekend, the SET will also be held on Wednesday, October 5.

Please see page 60 for more information on the rules and reporting instructions.

I hope that you are enjoying summer!

Doug Mercer, VO1DTM
 Community Services Officer

We are in the process of putting together a quote for a complete HF station for the Lloydminster EOC, and will be submitting that soon.

That's all for this time from the Sask/Alta Radio Club

– SM Garry, VE6CIA

MANITOBA:

SM: Jan Schippers, VE4JS
STM: Jan Schippers, VE4JS
SEC: Vacant
DECs: Jeff Dovyak, VE4MBQ (Capital Region and CANWARN); Gord Snarr, VE4GLS (South-East Central Region / South-West Region); Wayne Warren, VE4WR (North Region and Special Projects); Vacant (North-Eastern Region); Vacant (North-West Region).
ECs: Ron Williscroft, VE4QE (Selkirk and District); Bill Boskwick, VE4BOZ (RM of Grey, RM of Dufferin & Town of Carman); Jason Coombe, VE4JYC, (Brokenhead ARES); EC Grant Delaney, VA4GD

MARCH-APRIL SM REPORT:

Congratulations to our new EC, Grant Delaney, VA4GD, for the Local Government District (LGD) of Pinawa and the surrounding municipalities.

The Winnipeg ARC's Spring Fleamarket was held on Sunday, April 17 at the Heritage Victoria Community Centre, 950 Sturgeon Road in Winnipeg. This was a great event and many thanks to the organizers and volunteers. I was one of the sellers this year and had a lot of fun. The only problem is that I was too busy to visit.

The summer is upon us so that means severe weather may be on the horizon. One good thing was there was no flooding this spring in and around Winnipeg. Let's all hope for a safe enjoyable summer.

Education Report

Rob Strierner, VE4SHS

BSC11 Concludes: The Winnipeg ARC's Basic Short Course 11 concluded on Saturday, March 19 at Shaftesbury High School with the writing of the final exam. Thirteen students earned their call signs. Congratulations to all the successful students and thank you to all the volunteer instructors and our examiners, Adam Romanchuk and Bob Jacobs. Thanks also to Bill Fleury and the Manitoba Amateur Radio Museum (MARM) which provided each student with free passes to it and the Manitoba Agricultural Museum in Austin, Manitoba.

Winnipeg ARES

Jeff Dovyak, VE4MBQ

Fourteen ARES members and affiliates provided Amateur Radio communications on March 5 and 6 at Camp Amisk during the Klondike Derby. Thanks go to Bob Poole,

VE4MAQ, for coordinating this event and thanks also to volunteer operators: VA4AJG; and VE4s: MAQ, KAZ, FDM, DXR, WX, JAH, TRO, CIB, KEH, GWB, CDM, CLK and TTH.

Our March meeting featured Cameron Buchanan, VE4CWB, Regional Manager of Public Safety Canada, speaking about "The Role of Public Safety Canada in Emergencies". We now have a new impetus or challenge to get VE4PSC organized so that any Amateur should be able to walk in and run the radios (although only ARES members are allowed access).

CANWARN Spotter Training was held on Saturday, March 10 at Union Station in the Citizenship Court. Twenty-Eight individuals were in attendance for the presentations by Warning Preparedness Meteorologist, Natalie Hasell, VE4NAT and ARES Coordinator, Jeff Dovyak, VE4MBQ:

VA4s: AJG, MAC and Tyler Bruneau.

VE4s: DJS, WTZ, DLA, PH, PEH, WAL, GMT, VD, WZ, YYL, GWN, WX, JNF, DTF, GKS, MMW, GIS, DWG, FDM, GLS, MHZ, RCA, CDM and MBQ.

Thanks to Jim Sutton, VE4SIG, for assistance in setting up.

Door Prize winners were VA4AJG, VE4DWG, VE4RCA, VE4GMT and VE4DTF.

Thanks to Natalie from Environment and Climate Change Canada and from the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) for the door prizes. Thanks to Jim, VE4SIG and Winnipeg ARES for supplying the Wallet Cards and Spotter Badges.

There was a planned activation for the Manitoba Emergency Coordination Centre (MECC) on Tuesday, March 22; VE4EMO was activated by VE4SIG and VE4MBQ.

Thanks to all those who supported Winnipeg ARES at the recent WARC Fleamarket by donating items or purchasing tickets. Fundraising Co-Chairs Hamish Donaldson, VE4JDH and Nicki Albus, VE4MMW supported by Susan Collings, VE4SYM, Jim Sutton, VE4SIG and Rosi Napady, VE4YYL, did a great job. Prize lot winners included: James Phillips, VE4GWS; Grant Delaney, VA4GD; Pat Harapiak, VE4PTH; Sunday Satiada, VE4SBS; Paul Champagne, VE4OPC; Hamish Donaldson, VE4JDH; Gary Goodman, VA4RWT; and Mike Kadniuk VE4KEM.

Two lots were not claimed.

Donors included: CoCoRaHS; Canadian Super Shop; Costco; Environment & Climate Change

Canada; Jerry's Hair Salon & Day Spa; Reliance Products; St John Ambulance; Wild Birds Unlimited; Jim Sutton, VE4SIG; Garth Blumm, VE4GWB; Tom Mills, VE4SE; Susan Collings, VE4SYM; Glen Napady, VE4GWN; and Rosi Napady, VE4YYL.

Bob Schkawritka, Quality Assessment & Compliance Officer for Manitoba Hydro, gave us a very interesting presentation on the Manitoba Hydro Storm Response System and related topics at our April General Meeting.

Brokenhead ARES Coordinator *Jason Coombe, VE4JYC*

On March 19, I had the privilege and opportunity to attend the first Brokenhead and Beasejour Emergency Measures open house. Ed Evanko, VE4EDE and I were there representing Brokenhead ARES. We had a display table set up with typical ARES Amateur Radio equipment and brochures. Attendance was good and about 40 individuals from within the community attended, listened to the presentations, and then had a chance to wander around to the different tables. There was a wide mix of attendees including municipal leaders, members from the local RCMP, the local fire department and the Regional Health Authority, along with the general public. There was some interest in ARES, in particular a member of the Regional Municipality of Reynolds Emergency Measures collected our information to be added to their emergency plan.

– Jan Schippers, VE4JS

Traffic Totals

March: 7

April: 3

ONTARIO NORTH:

SM: Allan (Al) Boyd, VE3AJB
ve3ajb@vianet.ca
STM: Patrick (Pat) Dopson, VE3HZW
dopsonp@vianet.ca
SEC: Stiig Larsen VE3LXB
slarsen@vianet.ca
OBM: Paul Caccamo, VA3PC
va3pc@ciinet.org
Website: <http://ontario.racares.ca>

MARCH-APRIL SM REPORT:

I had the pleasure to visit the Sudbury Amateur Radio Club on the March 22 and spoke with the members about RAC-related issues. As I serve as your Section Manager and Director for Ontario North /East, my goal is to visit all the clubs in my section over the next few years. I want to hear personally from each of you as to where you would like to see RAC go; not only with the Field Services but other issues as well.

It was nice to visit with many Amateurs at the Dayton

Hamvention at the RAC booth and it was sure nice to see so many Canadian Amateurs there.

On June 2, I had the pleasure to visit and speak with the Algoma Amateur Radio Club in Sault Ste Marie. I understand many of you participated in this year's Field Day and did an amazing job. Congratulations to the effort put forth by many of the clubs and ARES groups in Northern Ontario where this is a real test of emergency communications. Again thanks for your continued support to me and to Radio Amateurs of Canada.

– Allan Boyd, VE3AJB

Amethyst District

Thunder Bay: On Saturday, April 30, a joint exercise took place between the Thunder Bay ARES group and the Grand Maris, Minnesota ARES club. This annual event, the 2016 Emergency Services Conference, is a combined effort from the Lake County and Cook County Emergency Management teams. This year, the Amateur Radio groups were invited to participate in establishing cross-border communications between Canada and the United States. The conference was held in Grand Maris, Minnesota, but we were asked to stay in Thunder Bay as the Cook County Amateur Radio Team (CCART) was leading the radio portion of the conference.

Our role was to demonstrate cross-border communications. We did this by working all modes, digital, CW, VHF and HF. In the morning we demonstrated all modes, and in the afternoon we passed messages. We started an ARES net on the VE3YQT repeater (our local and main repeater). We activated the phone tree and went to the North Central Fire Hall station to test our VHF/UHF station equipment.

This all took place at the VE3SAO station (our EOC) at the 55 Plus Centre, 700 River Street in Thunder Bay. Set up began at 10 am and we shut down at 3 pm. We had six members attend the VE3SAO station, and seven members checked in with the local ARES net, giving their status, whether on base or mobile. Dennis Brescacin, the City of Thunder Bay Director of Administration/Community Emergency Management Coordinator, was present to observe and participate in the exercise.

We were successful in establishing communications with Grand Maris, using the Grand Portage repeater (VHF) and Digital modes, RMS express (Winlink). We tried using

80m and 40m but were unsuccessful on these HF bands.

I would like to thank the following: Jayne, N0UIQ, of the CCART for inviting us to participate in this exercise and for all her hard work; Jeff, KCOMKS, the EC for the Lake County Radio Club NOLCR for his work behind the scenes; and all the Thunder Bay ARES Group members who either checked in to the net and /or came down to the VE3SAO station. Thanks also to Bill, VE3XT, who helped manage the digital end of things. Lastly, a big thank you to Dennis Brescacin for being a part of this Cross-Border Communication Exercise.

Killarney District

Manitoulin Island and North Shore

On Tuesday, March 22, Al Boyd VE3AJB, Ontario North/East Director travelled to Sudbury to give a presentation to the members of the radio club at their monthly meeting. Al talked about the benefits of belonging to RAC and the progress of the ARES groups in the area. Following the RAC information, Al proceeded to do a presentation on the Yaesu Fusion systems including the repeater design and the radios that have Fusion integrated into them. The meeting was attended by 18 local Amateurs from the Sudbury area.

A presentation on ARES was given to the attendees of a Basic Amateur Radio course hosted by the Manitoulin Amateur Radio Club in April. Twelve new Amateurs are awaiting their certificates and eight of them joined the local radio club.

Sudbury

AEC Wayne, VE3THN, conducted the monthly field kit and EOC radio tests. Wayne also works hard every month keeping our laptops updated with latest versions of all the software we use for digital modes. A huge thank you to Wayne for his continued dedication and time!

EC Alan, along with AECs Wayne and Réal, will be giving presentations in the near future to Red Cross and City Emergency Management to showcase our digital capabilities.

DECs reporting:

VA3s: PC
VE3s: FAL, JX, LJM

ECs reporting:

VA3s: AJV, SPT
VE3s: EGC, LJM, MXJ, OTL, SUT

ONTARIO – GREATER TORONTO AREA:

SM: Rick Harrison, VA3NV
SEC: Rick Harrison, VA3NV

MARCH-APRIL SM REPORT:

Spring is approaching and already the public service events are beginning. ARES teams in GTA West have been very busy with these events over the past few years and this year looks to be no different. Already communications assistance has been provided to a half-marathon and a 70 kilometre bike race as well as several smaller, more local charity events.

DEC – GTA West Kevin Andrews, VA3KRA

See Halton and Peel ARES groups reports below.

DEC – Toronto Malcolm Kendall, VE3BGD

Our monthly meetings were held at the Toronto Red Cross HQ. The faulty antenna has been replaced and tested. Discussions were held with the Toronto Red Cross DM lead about the newly formed Red Cross Communications Group and how the integration will take place. We also discussed the conditions for the upcoming Simulated Emergency Test.

Durham Region – EC Alison Honsberger, VE3GRL

Efforts continue to rebuild ARES in Durham Region and to reestablish contacts with the Regional and Municipal CEMCs.

Halton Region

Burlington ARES – EC Kevin Andrews, VA3KRA

The Burlington EC attended the March and April general and Board of Directors meetings of the Burlington Amateur Radio club and provided an ARES report and general information update.

On March 6, the group assisted with communications for the annual Chilly Half Marathon and Frosty 5K charity road race in Burlington. This was the event's 20th anniversary and approximately 3,000 runners took part. Eighteen radio operators from ARES teams in Burlington, Hamilton, South Halton and Toronto helped with communications. Thanks to Gary, VE3TTO, Shawn, VA3MFD, Darren, VA3EGG, John, VA3BL, Joan, VE3JNX, Jeff, VA3CQC, George, VE3OGP, Bob, VA3RHH, Janusz, VE3OKZ, Ryan, VA3ERF, Dave, VA3DDA, Judy, VA3JDA, Charles, VE3YCM, Mark, VA3FLC, Stan, VA3SBB, Rob, VA3WXR, Rick, VA3NV and Kevin, VA3KRA, for their assistance.

ECC Kevin, VA3KRA and AEC Shawn, VA3MFD attended the March meeting of the Halton

RAC SIMULATED EMERGENCY TEST

SATURDAY, OCTOBER 8



Note: In Ontario the Simulated Emergency Test will be held on Saturday, October 8 but at Emergency Operations Centres that are located in Municipal offices, that can't get access on the weekend, the SET will also be held on Wednesday, October 5.

This nationwide exercise is the chance to test your emergency operating skills and the readiness of your communications equipment and accessories in an emergency-like deployment.

RAC Field Organization Leaders at the Section and local levels, along with many other volunteers who are active in public service and emergency communications, are developing simulated emergency scenarios in consultation with served agencies.

To find out how you can step up and be a part of the local or Section-level activities, contact your Section Manager. You can find contact information for all RAC Section Managers on page 4 of any issue of *The Canadian Amateur*. Additional contact information may also be found on the RAC website.

The Amateur Radio Emergency Service (ARES) and the National Traffic System (NTS) and members of the RAC Field Organization will participate and practise emergency operation plans, nets and procedures.

The RAC Simulated Emergency Test is an ideal opportunity to demonstrate the capabilities of Amateur Radio.

Community and public service agency officials will learn first-hand by taking a role in the SET and by providing an objective evaluation afterwards from their perspective. Have designated stations originate messages on behalf of served agencies. Test messages may be sent simulating requests for supplies. Simulated emergency messages (just like real emergency messages) should be signed by an authorized official.

Formulate your plans around a man-made or natural simulated disaster. Possible scenes could be: a flood; a serious fire; a severe ice storm; a missing person; a serious accident (automobile, bus, aircraft); a broken gas line; or any other imaginable disaster. Elaborate on the situation by developing a scenario to be implemented during the SET.

In consideration of local and Section-wide schedules with agencies and many others, RAC Field Organization Leaders have the option of conducting their local or Section-wide SET on another weekend in the fall season. Check with your local RAC Field Organization leadership for the exact date in your particular area. Your help is needed and the RAC SET is a great way to get involved in emergency communications.

For more information on guidelines, preparing and reporting for a SET, forms for RAC Field Leaders are posted on the RAC website at:

<http://wp.rac.ca/welcome/simulated-emergency-test/>

Region Emergency Communications Team. In addition, Kevin provided OBS services for the HRECT net on March 8 and April 12 and acted as NCS for the HRECT net on March 22 and April 26.

On Sunday, April 24 members of Burlington ARES assisted with communications for the Paris to Ancaster Bicycle Race. Just over 3,500 riders took part, riding on roads, fields, trails and through woods. Twenty-six different checkpoints required radio coverage. Thanks to the following radio operators who assisted: Paul, VE3XPS, Rick, VE3UG, Dave, VA3ADG, Rick, VE3BK, Peter, VE3PWJ, John, VE3POJ, Norm, VE3ZKO, Bob, VE3CYE, Shawn, VA3MFD, Joan, VE3JNX, Mardy, VE3QEE, Bob, VA3RHH, George, VE3OGP, Shawn, VE3XYY, Charles, VE3YCM, Rob, VE3WHO, Susan, VE3TLK, Gary, VE3TTO and Kevin, VA3KRA.

South Halton ARES – EC George Davis, VE3OGP

South Halton ARES members assisted with communications for the Chilly Half Marathon in Burlington on March 6. This year was the 20th anniversary of the charity run and good weather brought out nearly 3,000 runners. Multiple frequencies and two repeaters were used and communications were excellent.

AECs Russ, VE3JUZ and Peter, VA3PRE attended the March meeting of the Halton Region Emergency Communications Team.

Participation and checkins to the weekly South Halton ARES net on Monday evenings continue to be strong.

SHARES assisted Durham ARES with their information table/display set up at the Durham Hamfest on April 16. A large amount of interest was generated and will hopefully provide the Durham group with new members as they continue to rebuild.

A new software suite has been purchased for use during contests, events, activations and general group management. Thanks to Glenn, VE3CEZ, for the initial idea and to all of those who participated in the fundraising campaign.

Several members assisted with communications for the Paris to Ancaster bike race.

AECs Russ, VE3JUZ and Peter, VA3PRE attended the March meeting of the Halton Region Emergency Communications Team.

Halton Hills (Georgetown) ARES – EC Lyle Winfield, VA3VI

(Report provided by AEC Bob Scanferla, VA3RJS)

VHF (VE3OD) and UHF (VE3HR) repeaters are operational, both with 100% up time.

Tests were completed on the VE3PKG, packet node, Winlink was tested and it is operational; BBS and other services were available all month. Tests also included 9600 baud RF connectivity to VA3BAL, with FBB forwarding. We are working to establish BBS forwarding to VE3MIS (via VE3EXI), VE3PRC, and VA3BAL on the 9600 baud RF backbone and are studying possible introduction of an HSMM node to the packet infrastructure.

Peel Region

Mississauga ARES – EC Brian Herling, VE3XBH

Our monthly ARES meeting was held on March 17. Discussion about ARES training and about the display at the HAMEX fleamarket took place. The display at HAMEX consisted of two tables, portable radio kits and message handling via Fldigi. Approximately 50 ARES brochures were handed out to interested parties.

At our meeting on April 21, discussions included the status of the Amateur Radio station at the Red Cross Ontario Zone office in Mississauga, the GTA local SET being held in May, additional ARES training and the testing of the group's callout tree using SMS text messaging.

Toronto

See Toronto DEC report above.

York Region

At our meeting on April 14, we discussed data modes and Field Day. Guests included the GTA Section Manager and GTA West DEC.

DECs reporting:
VE3BGD and VA3KRA.

ECs reporting:
VA3s: BXG, KDJ, RMU, VI/RJS (AEC).
VE3s: GRL, OGP, OV, TMA, XBH.

Number of Registered ARES members in Section: 216

ONTARIO EAST:

SM: Michael Hickey, VE3IPC
Email: ve3ipc@gmail.com
SEC: Michael Hickey, VE3IPC
STM: Vacant
OBM: Vacant
Website: <http://ontario.racares.ca>

MARCH-APRIL SM REPORT:

I am very happy to report that on April 28, Clive Padget, VA3RVW, new Group Coordinator for the Peterborough ARES group, and

RAC FIELD ORGANIZATION REPORTS National Traffic System (NTS) Net Reports

Net (Manager)	Sessions	QNI	QTC
March 2016:			
APSN (VA6IX)	31	1349	30
Alberta ARES	10	290	21
Aurora (VE7GBO)	31	2693	41
BCEN (VE7XLH)	31	235	22
BCYTN (VE7WJ)	31	474	59
MEPN (VE4JS)	31	717	5
MMWXN (VA4GD)	31	426	0
MRS (VE4HK)	8	281	0
MSMN (VE4AEW)	23	625	0
OPN (VE3HMS)	–	35	7
April 2016:			
APSN (VA6IX)	30	1099	12
Alberta ARES	8	109	4
Aurora (VE7GBO)	30	2047	29
BCEN (VE7XLH)	33	272	23
BCYTN (VE7WJ)	30	446	72
MEPN (VE4JS)	29	616	1
MMWXN (VA4GD)	30	465	1
MRS (VE4HK)	8	272	0
MSMN (VE4AEW)	21	623	0
OPN (VE3HMS)	–	40	9

Paul Hazell, VE3KBI, new Group Coordinator for the new ARES group in Umerland County, travelled to RAC Headquarters in Ottawa. Their agenda was to attend the necessary ARES orientation session with their Section Manager, and to receive a number of ARES tools to take with them for their ARES toolbox. With these tools and guidance they can now begin to build each of their groups by providing the required EmComm training and exercises. Both have indicated that they would most likely work together as a "training team" in the training of each their groups separately. Clive and Paul often have coffee together in Peterborough, which helps to facilitate their informal discussions in either separate and or cooperative ARES EmComm building planning.

While at the RAC office, they had the opportunity to meet with RAC President Glenn MacDonnell, VE3XRA, who was pleased to answer all their important questions regarding the RAC Insurance Program for clubs whose members may or not be a RAC member, and what the difference is either way for their coverage. They also wanted to know more about the nature of the coverage for club activities with a few examples provided. They were both satisfied in the knowledge and assurance they received regarding the insurance policy. For more information on the RAC Insurance Program visit: <http://wp.rac.ca/insurance/>

On another note, I trust that you are all having a great summer so far and I look forward to receiving your Field Day 2016 reports. No doubt it was a fun experience and there was much camaraderie gained, which will help with the preparations for next year's FD.

I wish you all a pleasant summer!

ARES / EmComm Groups reports:

Submitted by EMRG/Ottawa ARES group AEC Mike, VE3FFK

The Ottawa EMRG/ARES group held their monthly repeater test on March 2 and it went well, with a good turnout. Thanks go to Ron, VA3ACZ, Bob, VA3QV, Tracy, VA3TXN, Jean, VE2OCQ, Sandy, VE3AAC and AEC Mike, VE3FFK for their help. The usual anomalies (hum/dropouts) seemed a bit worse. There was some QRM on one of the repeaters, coming from a 2m beacon close by.

The distribution of the Ontario bulletin extracts via the BBS system in Ottawa went well in both March and April, and the Winlink packet to Internet email gateway also operated very well.

The checkins into the weekly EMRG coordinated RPT test net in April were Tim, VA3PYC, Tracy, VA3TXN, Sandy, VE3AAC, Mike, VE3FFK and Stuart, VE3SMF. As usual, the net was coordinated by Dave, VE3KMW.

A spring tune-up session was held for people to check out their gear to make sure it survived the winter and was ready for the upcoming Public Service events.

The tune-up was well attended with about seven Amateurs helping each other to sort out the challenges, which included a problem with an SMA connector on an adaptor cable, programming issues with a Kenwood TM-D710GA, and help sorting through numerous rigs.

To put it simply: "Some worked, some work now, some to sell, some to keep." There was also some Anderson Powerpole connector work to be attended to.

**Submitted by
Renfrew County
West ARES Group
Coordinator
Bob, VE3YX**

The Renfrew County West (RCW)-ARES group reports that in March the group had five VHF nets on their linked repeaters. The group's website URL has changed from www.technifest.com/~rcares to www.rcarc.ca. Bob, VE3YX, the Group Coordinator, gives us a reminder of the weekly Ontario ARES 40 metre SSB net on Sunday afternoons at 13:00 local on 7080 kHz. As Bob stated, "Let's get some more checksins!".

**Districts reporting:
Eastern Ontario
March-April 2016
ECs (GCs) or assistants reporting:
VE3FFK and VE3YX.**

OBS reporting: VE3FFK, VE3KII, VE3IQZ and VE3YX.

– 73, Michael Hickey, VE3IPC

NEWFOUNDLAND-LABRADOR:

SM: Boyd Snow, VO1DI

MARCH-APRIL SM REPORT:

Nearing the end of March for most of the country marks the beginning of spring, but here in the NL section, as we all know, it's still winter, and spring doesn't make it to us until late April, if at all. Some years we just move from winter to summer. In any event, we take it in stride and move on.

The slow moving winter leaves us with more time to plan for Amateur Radio projects once summer does arrive. The Baccalieu and Upper Trinity clubs have been busy making plans for another VHF repeater. This will complete the upgrades they started last year and greatly improve coverage in that area.



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The Society of Newfoundland Radio Amateurs (SONRA) is completing an Amateur Radio Basic course. Doug, VO1DM, reports it is going well and it looks like the Amateur community will gain another nine new members. Best of luck to them; it's nice to see there is still some interest in our wonderful hobby.

This year marks 150 years since the first successful Transatlantic Cable came ashore in Heart's Content, Newfoundland. The Heart's Content Cable Station Museum is holding a small celebration of this important achievement and RAC will also hold its Annual General Meeting at the site on September 10.

The Society of Newfoundland Radio Amateurs (SONRA), Baccalieu Amateur Radio Klub (BARK) and the Upper Trinity Amateur Radio Club (UTARC) are working together to host the event and everyone is welcome to attend.

This will be a mini-hamfest type event, ending with a social at Doug's summer home in Green's Harbour. BBQ Steak dinner with all the fixings for \$15. Contact Doug, vo1dm@rac.ca to reserve yours. Bring your own beverages. For more information see pages 8-10.

There it is, as I have it, for this time around. Please remember that our wonderful hobby is meant to be enjoyed by all who participate. If there is a club or ARES group in your area, join in, or at least support their efforts. Please keep up the good work and keep the news coming.

– Boyd Snow, VO1DI

How Does the World Sound from BC?

Koji Kimoto, VA7KO, in British Columbia

This is actually harder to answer than you might think because British Columbia covers such a vast territory, and hearing/being heard often depends on the location within BC, whether that is Vancouver Island, the Lower Mainland or north to the Interior. Naturally, equipment (antenna, radio, etc) also play a part, and big-gun stations will have an easier time than little pistol stations.

But let me answer the question from a contester's perspective. When I get on the air to try to attract the attention of DX stations, it is to pick up multipliers and build a good score. There are many variables involved in this effort, from band conditions to the operating strategies of DX stations, which I obviously have no control over.

These variable definitely impact how I hear the world and the world hears me. In general, though, Asia-Oceania is relatively easy from the West Coast and the European Union (EU) is tough.

One reason that EU is so difficult is that VE7s have to transmit across a distance twice that of stations on the East Coast. Also, we have to deal with auroral activity because our most direct route is over the north pole, while the East Coast stations just hop across the Atlantic. If the aurora creeps south over northern Ontario, our EU path is blocked. Going east, over a non-great-circle route, means punching a hole in the eastern wall – that is, all the activity on the East Coast – which is extremely difficult.

Signals from the West Coast to Asia have to travel farther than those from the East Coast to EU, so even though we can put more JA and AS stations in our logs, it is still a challenge to hear/be heard all the way across the Pacific Ocean.

Another challenge is to hear/be heard in the Caribbean and in Central and South America, because, again, our signals have to get through the US and there is so much on-air activity there during a big contest. In addition, EU is a huge draw for stations everywhere, so if operators in the Caribbean and the Americas are beaming EU, they won't hear us no matter how good our signals are. If they are beaming north and conditions are good, they are loud and clear.

A couple of years ago, when conditions were good, I had QSOs with EU, JA and AS on 10m so easily. I remember having QSOs on 20m with A6, 4X and stations east of EU around midnight local time, going the over-the-pole route. But that's not possible anymore.

DXpeditions are completely different from contest stations, with a different set of objectives, strategies and variables. Operators will often specify the target area, such as EU, NA, JA or AS, and that will lessen the QRM. DXpeditions also tend to run split, which minimizes QRM.

And that's how the world sounds from my QTH.

How does the world sound from yours? Let us know by sharing your stories with us at tcamag@yahoo.ca.



**Newfoundland-Labrador
Traffic Totals
March**
Cod Jigger Net 485
Evening Traffic Net 833
VHF Caribou Net 496

April
Cod Jigger Net 416
Evening Traffic Net 896
VHF Caribou Net 578

COMING EVENTS

THE HAMFEST AND FLEAMARKET CALENDAR

The following events are listed by date. Some dates and details are tentative. For more Hamfests and Fleamarkets please go to: <http://rac.eton.ca/events/upcoming.php>

ONTARIO HAMFEST

Sponsor: Burlington Amateur Radio Club
Date: Saturday, July 9.
Time: Inside & Commercial Vendors 7 am, Robert St Gate; Tailgate Vendors 8 am, Robert St Gate; Public 9 am, Thomas St Gate only.
Place: Milton, ON; at the Milton Agricultural Fairgrounds, 136 Robert Street.
Description: Great location. Lots of room for Tailgaters. Always something for the Radio Amateur, Computer Enthusiast or Hobby involving Electronics. Come early as many bargains will be gone by 11:30 am! Hamburgers, sausage on a bun, and pop will be available. As always, coffee is free.
Cost: Public \$8; Children 12 free with adult accompaniment; Inside Vendors \$8 plus Tables \$20 each; Tailgating Vendors \$8 plus \$8 per single width vehicle space. Pre-registration is not required for Tailgating Vendors.
Talkin: 146.520 MHz
Info: General: ontariohamfest@barc.ca; Vendors: ontariohamfesttables@barc.ca
Web: <http://www.barc.ca>

53RD INTERNATIONAL HAMFEST

Date: Saturday, July 9.
Place: US Lodge in the International Peace Garden, south of Brandon, Manitoba on the Canadian-US border.
Description: Fleamarket, Rabbit Hunts, Mobile Judging, Homebrew Contest, Prizes, Food Concession, Saturday night Dance, and a free Saturday lunch for those registered. Campers, identify yourself at the gate for special camping rates.
Cost: Registration fee \$20 per person.
Info: Richard Holder, VE4QK, ve4qk@mts.net or 204-268-1702.
Web: <http://www.mts.net/~holderr/inf.htm>

PARRY SOUND HAMFEST

Sponsor: Parry Sound ARC
Date: Saturday, August 13.
Time: Public and Vendors 7:30 am. Free coffee! Hamfest runs from 7:30 to noon.
Place: Parry Sound, ON; McDougall Recreation Centre, 148 Hammel Avenue, Nobel, ON P0G 1G0.
Description: A brand new hamfest. Parry Sound indoor hamfest garage sale. Bring any or all of your surplus Amateur Radio items.
Cost: Public free; Vendors \$7 per space. Bring your own tables and chairs. Extra spaces are \$5. Space is limited. First come, first served!
Talkin: 145.490 No tone.
Info: Mike, VE3MKX, mxk@bell.net
Web: <http://ontarioswapshop.com>

SPARC-FEST IV

Sponsor: Sun Parlour Amateur Radio Club
Date: Sunday, August 14.
Time: 9 am to 1 pm.
Place: Leamington, ON; at the home of Mike, VE3UCY, 1002 Mersea Road 4, N8H 3V6.
Description: Annual summer hamfest and club picnic held at the home of VE3UCY.

Outdoor fleamarket, Amateur Radio exams, commercial retailer onsite and a plethora of activities.
Cost: Free admission.
Talkin: 146.970 (-) 118.8 Hz pl via the VE3TOM repeater.
Info: Contact either Mike, VE3UCY, or Bill, VE3ES, at ve3es@arrl.net

8TH ANNUAL JUNK IN THE TRUNK HAMFEST

Sponsor: Ontario Swap Shop
Date: Saturday, August 27.
Time: 7:30 am until 12 noon.
Place: Newmarket, ON; Newmarket Theatre, 505 Pickering Crescent, in the beautiful large paved parking lot. The closest intersection is Leslie Street and Mulock Drive.
Description: A huge Amateur Radio garage sale and hamfest. Bring any or all of your surplus radio related items. Rain or shine. Over 45 vendors attended last year!
Cost: Public: Free! Vendors \$5 per space per car; additional spaces \$5. All money is donated to the Theatre group.
Talkin: 146.520 local repeater is 147.225.
Info: Nick, VE3NJK, nickve3njg@rogers.com; Mike, VE3MKX, mxk@bell.net.
Web: <http://ontarioswapshop.com>

OTTAWA (CARP) 18TH ANNUAL HAMFEST

Sponsor: Ottawa Amateur Radio Club, Inc.
Date: Saturday, September 10.
Time: Commercial Vendor setup: 7:30 am; Private Vendor setup: 8 am; Public: 9 am to noon.
Place: Ottawa (Carp), ON; Carp Agricultural Fairgrounds (in the W. Erskine Johnston Arena at the north end of the fairgrounds), 3832 Carp Road.
Description: The region's largest fleamarket and hamfest. All of the big Amateur Radio retailers are going to be there! Major doorprize draws! Breakfast, coffee, and lunch concession. Volunteer organizations and displays. Onsite Amateur Radio licence exams. Get your licence, or upgrade during the hamfest! Note: if you are upgrading, bring the 11-digit certificate number on your licence to speed processing.
Cost: Public \$6; Tables \$14/table (plus admission). Please book tables early to reserve your preferred table location.
Talkin: VE2CRA, 146.94-, 100 Hz.
Info: Ed, VE3WGO at fleamarket@oarc.net and see the ad on page 17.
Web: <http://www.oarc.net/fleamarket>

HEART'S CONTENT CABLE STATION 150TH ANNIVERSARY AND RAC AGM

The Society of Newfoundland Radio Amateurs (SONRA), Baccalieu Amateur Radio Klub (BARK) and the Upper Trinity Amateur Radio Club (UTARC) are pleased to host the RAC Annual General Meeting as part of the Heart's Content Cable Station 150th Anniversary Hamfest.
Date: Saturday, September 10.
Time: The event begins at 9 am and continues until we depart for an evening social at Green's Harbour.



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- Ladder Line (300, 440, & 450 Ohm)
- Antenna Wire (bare, tinned, & insulated)
- Baluns 1:1, 4:1, 6:1 (stainless hardware)
- RF Coaxial Chokes (160m thru 6m)
- Fiberglass Rods & Tubes
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Fax: (705) 435-2996



email: info@mapleleafcom.com

Place: Heart's Content, NL.
Description: See the article on pages 8-10 for information.
Cost: Admission \$15.
Talkin: 146.940- VO1GT.
Info: Contact Doug, VO1DM, at dougvo1dtm@gmail.com
Web: <http://www.sonra.ca>

VICTORIA-HALIBURTON AMATEUR RADIO ASSOCIATION SWAP MEET

Sponsor: Victoria-Haliburton Amateur Radio Association (VHARA)
Date: Saturday, September 17.
Time: Vendors 7 am; Public 8 to 11 am.
Place: Lindsay, ON; Masonic Temple, 10 Ridout Street.
Cost: Public free. Indoor Vendor 6-foot (floor) space \$12. Payment required in advance (price is for floor space only. One chair provided for use.) A very limited number of 6' indoor tables are available for use, at a cost of \$10, with payment required in advance. Outdoor Tailgate Space \$8. All vendors (indoor and outdoor tailgate) are required to supply all tables and chairs.
Talkin: VE3LNZ Repeater 147.195 MHz +.
Info: Contact ve3wah@gmail.com.
Web: <http://www.vhara.ca>

Note: the deadline for the next issues of TCA are July 15 and September 15. Please send your submissions to tcamag@yahoo.ca.

LONDON ARC 39TH ANNUAL HAMFEST

Sponsor: London Amateur Radio Club
Date: Sunday, September 18.
Time: Vendors 8 am; Public 9 to 12 noon.
Place: London, ON; Hellenic Community Centre, 133 Southdale Road West. Wheelchair accessible with washrooms
Description: Commercial Dealers and wheelchair access. Coffee and muffins. Free parking.
Cost: Public \$8; Tables \$15 + admission; Extra Tables \$10; Tailgating \$7 per car + admission.
Talkin: VA3LON, 147,060 PL 114.8
Info: LARChaamfest@gmail.com
Web: <http://www.larc.ca>

HARC HAMFEST 2016

Sponsor: Hamilton Amateur Radio Club
Date: Saturday, October 1.
Time: Vendors 7 am; Public 9 am.
Place: Ancaster, ON. Ancaster Fairgrounds; in the School Fair Building at 630 Trinity Road, Ancaster, L0R 1R0 the southwest corner of highways #52 and #53, just west of Ancaster. Directions: Latitude 43° 11' 25" N Longitude 80° 02' 32" W.
Description: An Amateur Radio, computer and electronics fleamarket. A mobile food truck is on site.
Cost: Admission \$7 per person; Tables \$12. Tables are reserved upon receipt of payment on a first come basis. Please book in advance to avoid disappointment.
Talkin: 146.76 (-) with tone 131.8 VE3NCF
Info: Vendor liaison: Mardy Eedson, VE3QEE ve3qee@hamiltonarc.ca or 905-648-0187.
Mail payment to: Hamilton Amateur Radio Club, 117-350 King Street East, PO Box 75073, Hamilton, Ontario L8N 4G6
Email contact: hamfest@hamiltonarc.ca
Web: <http://www.hamiltonarc.ca>

MONTREAL SOUTH SHORE HAMFEST

Sponsor: Club Radio Amateur Rive-Sud de Montréal.
Date: Saturday, October 15.
Time: Vendors 6 am; Public 9 am.
Place: Longueuil, QC (10 minutes from downtown Montreal); Place Desaulniers, 1023 Taschereau Boulevard.
Description: The biggest Hamfest in Quebec. Accessible. Restaurant. Free parking. ATM.
Cost: Table \$10 (individual entry(s) not included); Public \$7.
Talkin: 145,390 (-) ctcss 103,5 Hz, VE2RSM
Info: Noël Marci, VE2BR, 450-691-2009
Email contact: hamfest@ve2clm.ca
Web: <http://www.ve2clm.ca/articles.php?lng=fr&pg=120>

WINNIPEG ARC SPRING FLEAMARKET

Sponsor: Winnipeg Amateur Radio Club Inc.
Date: Sunday, October 16.
Time: Coffee, muffins, eyeball QSOs 9:30 am; Vendors 9:45 am; Public 10:30 am; Prize Draws 11:30 am; Wrap up 12 noon
Place: Winnipeg, MB; Heritage Victoria Community Club, 950 Sturgeon Road.
Description: Opportunity to buy and sell new and old equipment of interest to Amateurs.

Also, the best chance for new hams to meet oldtimers and learn more about our hobby.
Cost: Public \$5, exact change preferred; Tables \$5 each for WARC members, \$10 for everyone else. To book your table contact Ruth, VE4XYL, at ve4se@mymts.net or 204-837-6915
Info: Contact Peter Toth at ve4tth@gmail.com.
Talkin: 147.390 MHz + offset 127.3 tone.

40TH YORK REGION HAMFEST

Sponsor: York Region ARC
Date: Saturday, November 5.
Time: Vendors 6:30; Public: the general public will be admitted to Hall 2 at 7:30, with free coffee and tea. A pancake breakfast will be available. Doors open for the public to the sales areas in Halls 3 and 4 at 9 am.
Place: Markham, ON; Markham Fairgrounds, 10801 McCowan Road.
Description: Lots of Parking. Vendors galore in two separate halls, plus a separate hall for admissions. DXCC, WAS & VUCC Card Checking. Licensing Examinations: \$15. Please register with the Hamfest Coordinator prior to the Hamfest to ensure we have sufficient exams.
Cost: Admission \$7. Children 12 and under admitted free. Cost of admission includes a door prize ticket. Draws for door prizes every 20 minutes at the Prizes Booth in Hall 2. Grand Prize tickets will be available at the Prizes Booth in Hall 2.
Talkin: VE3YRA 145.350 MHz(-): T:103.5 Hz; VE3YRC(V) 147.225 MHz (+): Tone 103.5Hz; VE3YRC(U)444.225 MHz(+): No tone. Note: All repeaters are linked.
Info: Contact yrarc.hamfest@gmail.com
Web: <http://yrarc.org/index.php/our-hamfest>

MAPLE RIDGE SWAP MEET

Sponsor: Maple Ridge Amateur Radio Club
Date: Sunday, November 6.
Time: Vendors 7:30 am; Public: 9 am; open for pancake breakfast at 8 am.
Place: Pitt Meadows, British Columbia; 12460 Harris Road, one block south of the Lougheed Highway in the old REC Building.
Description: Ham Radio & Computer Swapmeet. The largest in the Fraser Valley. Great prices lots of stuff. Pancake breakfast between 8 am and 9 am. Concession will remain open during the event.
Cost: Tables \$20 includes one entry and a chance to win a radio; Public: Admission \$5 includes a chance to win a radio.
Talkin: 146.800 -600 + Tone 156.7.
Info: Call Nick 604-465-9476.
Email contact: ve7te@mrarc.net
Web: <http://www.mrarc.net>

BIG EVENT 39 FLEAMARKET/HAMFEST

Sponsor: Niagara Peninsula Amateur Radio Club, Inc.
Date: Saturday, February 4.
Time: Vendors 7 am; Public 9 am.
Place: St. Catharines, ON; Merriton Community Centre, 7 Park Avenue.
Cost: Admission \$7; Tables: \$13 (Tables only). All tables are 6-feet long. Power only available at tables around the perimeter of the room.

TRYLON TOWERS

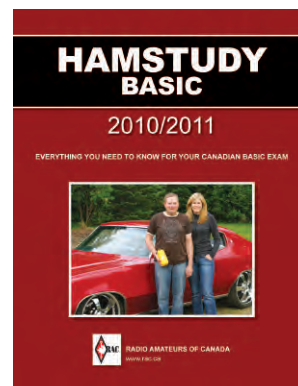
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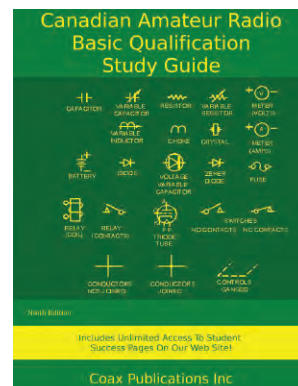
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See the ad on page 37 and visit:
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Talkin: VE3NRS 147.240 MHz + Offset Tone 107.2 Hz.
Info: Contact Kevin, VA3KGS, at vendors@nparc.on.ca to book tables. Or contact Peter, VA3WET, at bigevent@nparc.on.ca or va3wet@gmail.com for more information.
Web: <http://www.nparc.on.ca/bigevent.php>

RADIO AMATEURS OF CANADA — MAPLE LEAF LEGACY CIRCLE

RADIO AMATEURS OF CANADA — CERCLE DES LÉGATEURS MAPLE LEAF

**Your Personal Legacy: Making A Difference
for the Future of Amateur Radio**

**Votre Legs Personnel : Assurer pour longtemps
un meilleur avenir au radioamateurisme**

RAC would like to recognize and honour Amateur Radio operators who have made the ultimate gift by voluntarily including Radio Amateurs of Canada in their will or other estate plans by welcoming them into the RAC Maple Leaf Legacy Circle.



RAC aimerait rendre hommage aux radioamateurs qui ont décidé de faire de Radio Amateurs of/du Canada un de leurs légataires légaux par l'expression testamentaire de leur volonté ou autrement, et ce en leur souhaitant la bienvenue dans le Cercle des légateurs Maple Leaf de RAC.

One of the most important matters that everyone must manage and establish at some point in life is proper financial due diligence in estate planning for your family and loved ones.

One may also choose to express their gratitude to those organizations that meant the most to you in your life.

RAC is well aware of many testimonials whereby Amateur Radio played a very important role in many people's lives as a fulfilling hobby and for some it even became a stepping stone to their financial success in professional life.

Choosing to enroll in this RAC program is a very thoughtful and generous action we wish to recognize.

RAC Maple Leaf Legacy Circle Benefits:

- Custom-designed RAC Maple Legacy Circle pin with engraved call sign
- RAC automobile window decals and various RAC store items
- Personalized certificate (signed by the RAC President)

Contact RAC for further information:

1-877-273-8304 – raccomms@gmail.com

The Radio Amateurs of Canada Inc., is a not-for-profit organization holding the following registration information:

Corporation Number 2858592

Business Number (BN) 899715189RC0001

Governing Legislation Canada Corporations Act

Une des choses les plus importantes que chaque personne a à décider et gérer à un moment donné de sa vie est la juste valeur des biens et immeubles qu'il souhaite léguer à sa famille et à ceux qu'il aime.

Vous pouvez aussi choisir d'exprimer votre gratitude envers des organisations qui signifient beaucoup pour vous.

RAC est bien conscient des multiples facteurs qui démontrent le rôle très important que le radioamateurisme joue dans la vie de beaucoup de personnes à titre de hobby principal et, pour plusieurs, jusqu'à devenir une rampe de lancement pour leur succès financier et leur vie professionnelle.

Choisir d'adhérer au programme de RAC est donc une difficile mais généreuse décision. Nous le reconnaissons.

Les bénéfices du Cercle des légateurs Maple Leaf de RAC :

- Épinglette du Cercle des légateurs Maple Leaf gravée à votre indicatif d'appel
- Collants automobile RAC et divers items RAC
- Certificat personnalisé (signé par le président de RAC)

Communiquez avec RAC pour plus d'informations :

1-877-273-8304 – raccomms@gmail.com

Radio Amateurs of/du Canada inc. est une organisation sans but lucratif enregistrée sous les désignations et numéros suivants :

Corporation 2858592

Affaires 899715189RC0001

Gouvernement Loi sur les corporations du Canada

Radioworld

4335 Steeles Ave. West, Toronto, ON M3N 1V7

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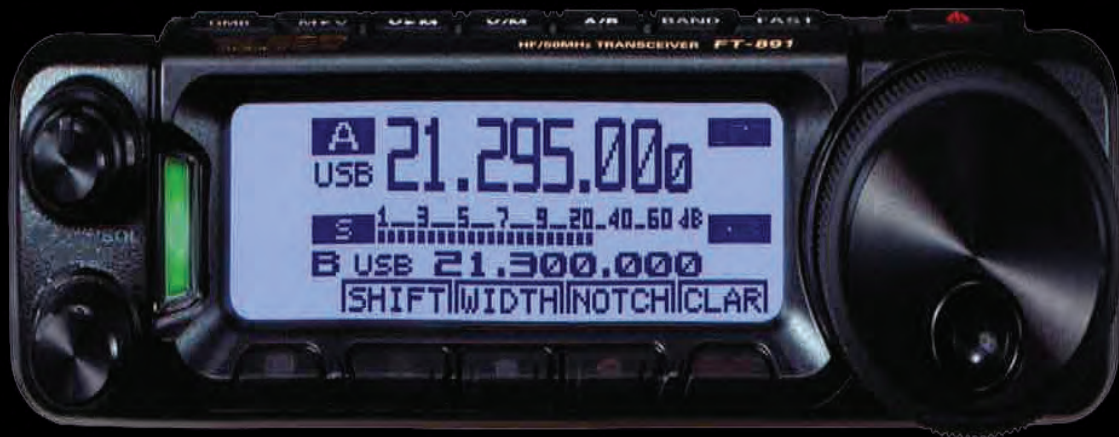
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